TPC Benchmark™ C
Full Disclosure Report
for
IBM® @server® xSeries® 366
using
Microsoft® SQL Server 2000 Enterprise Edition
and
Microsoft Windows® Server 2003 Enterprise Edition

TPC-C Version 5.3

Submitted for Review
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Notes

[1] GHz and MHz only measures microprocessor internal clock speed, not application performance. Many factors affect application performance.
[2] When referring to hard disk capacity, GB, or gigabyte, means one thousand million bytes. Total user-accessible capacity may be less.

Abstract

IBM Corporation conducted the TPC Benchmark™ C on the IBM® @server® xSeries® 366 configured as a client/server system. This report documents the full disclosure information required by the TPC Benchmark C Standard Specification, Revision 5.3, including the methodology used to achieve the reported results. All testing fully complied with this revision level.

The software used on the xSeries 366 system includes Microsoft® Windows® Server 2003 Enterprise Edition operating system with SP1 and Microsoft SQL Server 2000 Enterprise Edition database.

Two standard metrics, transactions per minute-C (tpmC) and price per tpmC ($/tpmC), are reported as required by the TPC Benchmark C Standard Specification.

The benchmark results are summarized in the following table.

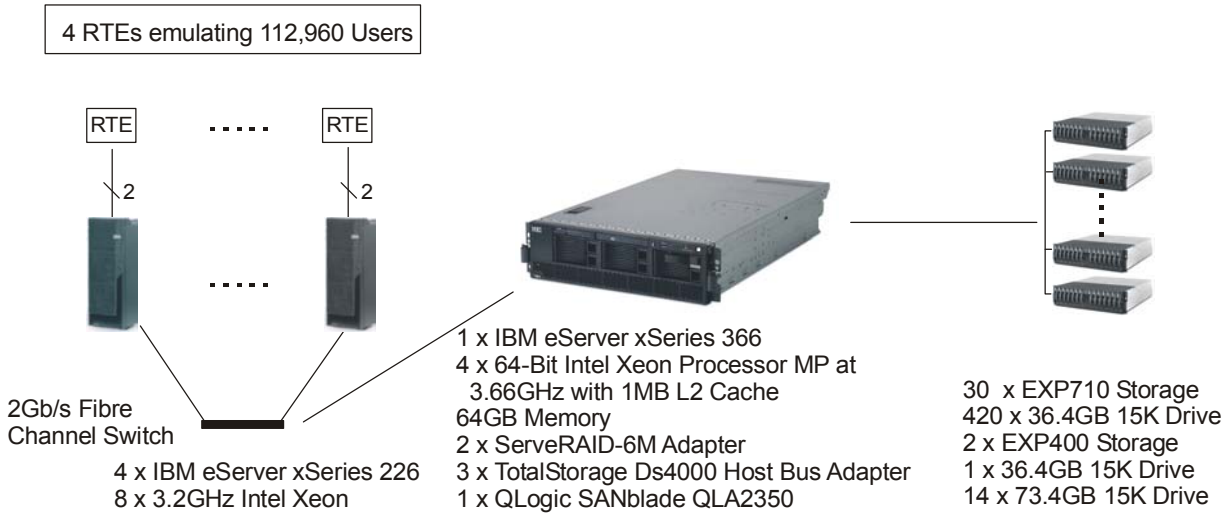
Hardware	Software	Total System Cost	tpmC	$/tpmC	Total Solution Availability Date
IBM @server xSeries 366	Microsoft SQL Server 2000 Enterprise Edition SP3 with QFE 821334 Microsoft Windows Server 2003 Enterprise Edition with SP1	$993,179 USD	141,504	$7.02 USD	August 20, 2005

The results of the benchmark and test methodology used were audited by Bradley J. Askins of InfoSizing, Inc. The auditor's attestation letter is contained in Section 9 of this report.

IBM	**IBM®@server® xSeries® 366 c/s with Microsoft® SQL Server 2000**	TPC-C Rev. 5.3 Report Date: April 21, 2005

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
$993,179 USD	**141,504 tpmC**	**$7.02 USD / tpmC**	**Aug. 20, 2005**

Database Server Processors/Cores/ Threads	Database Manager	Operating System	Other Software	Number of Users
4/4/8 64-Bit Intel® Xeon™ Processor MP at 3.66GHz	**Microsoft SQL Server 2000 Enterprise Edition SP3 with QFE 821334**	**Microsoft Windows® Server 2003 Enterprise Edition with SP1**	**Microsoft Visual C++ 6.0 Microsoft COM+**	**112,960**



System Component	Qty	Server:	Qty	Each of Four Clients:
Processors/Cores/ Threads	**4/4/8**	**Intel Xeon Processor MP at 3.66GHz**	**2/2/4**	**3.2GHz Xeon**
Cache		**1MB L2 Cache**		**1MB L2 Cache**
Memory	**16**	**4GB ECC RDIMM**	**4**	**512MB**
Disk Controllers	**2**	**ServeRAID-6M Adapter**	**1**	**Ultra320 SCSI Interface**
Disk Drives	**1**	**36.4GB (15000 rpm)**	**1**	**36.4GB (15000 rpm)**
	420	**36.4GB (15000 rpm)**		
	14	**73.4GB (15000 rpm)**		
Total Storage		**15229.59GB**		

IBM Corporation	IBM @server xSeries 366 c/s with Microsoft SQL Server 2000				TPC-C Revision 5.3 Report Date: April 21, 2005		
Description	**Part Number**	**Third Party Brand**	**Pricing**	**Unit Price**	**Quantity**	**Extended Price**	**3-Yr. Maint. Price**
Server Hardware							
xSeries 366 with 1 x 3.66GHz/1MB L2 Cache Intel Xeon Processor MP	8863-2RU	IBM	1	9,999	1	9,999	
xSeries 3.66GHz/1MB L2 Cache Intel Xeon Processor MP	13N0695	IBM	1	1,999	3	5,997	
8GB (2x4GB) PC2-3200 CL3 2RX4 ECC DDR2 SDRAM RDIMM	30R5145	IBM	1	17,879	8	143,032	
Active Memory™ 4-Slot Memory Expansion Card	13M7409	IBM	1	499	3	1,497	
ServeRAID-6M Ultra320 SCSI Adapter	32P0033	IBM	1	999	2	1,998	
E54 15" (13.8" Viewable) Color Monitor	633147N	IBM	1	149	1	149	
IBM Preferred Pro Full-Size Keyboard PS/2	31P7415	IBM	1	29	1	29	
IBM Sleek 2-Button Mouse	28L3673	IBM	1	15	1	15	
QLogic SANBlade QLA2350 FC-VI Adapter (2 spares)	QLA2350-BK	QLogic	3	1,995	3	5,985	
ServicePac for 3-Year 24x7x4 Support (x366)	96P2253	IBM	1	900	1		900
ServicePac for 3-Year 24x7x4 Support (Monitor)	30L9183	IBM	1	90	1		90
Discount on xSeries Hardware (15%)						24,407	
Discount on ServicePacs (20%)							198
					Subtotal	144,294	792
Server Storage							
IBM TotalStorage DS4000 Host Bus Adapter	24P0960	IBM	1	1,485	3	4,455	
IBM TotalStorage DS4500 Midrange Disk Subsystem	17429OU	IBM	1	66,500	3	199,500	
IBM DS4000 Mini Hub	19K1269	IBM	1	899	6	5,394	
IBM Short Wave SFP Module	19K1271	IBM	1	499	127	63,373	
IBM 1m LC-LC Fibre Channel Cable	19K1247	IBM	1	79	48	3,792	
IBM 5m LC-LC Fibre Channel Cable	19K1248	IBM	1	129	21	2,709	
IBM TotalStorage DS4000 EXP710 Storage Exp. Unit	1740710	IBM	1	6,000	30	180,000	
IBM TotalStorage SAN Fibre Channel Switch Model H16	2005H16	IBM	1	11,755	1	11,755	
2Gbps FC 36.4GB 15K Hot-Swap HDD	06P5772	IBM	1	1,115	420	468,300	
IBM EXP400 Rack Storage Exp. Enclosure	17331RU	IBM	1	3,099	2	6,198	
73.4GB 15K Ultra320 SCSI Hot-Swap Drive	90P1319	IBM	1	499	14	6,986	
36.4GB 15K Ultra320 SCSI Drive	90P1318	IBM	1	349	1	349	
Netfinity 4.2M Ultra2 SCSI Cable	03K9310	IBM	1	75	3	225	
IBM UPS 750TLV	21301TX	IBM	1	299	1	299	
IBM S2 42U Standard Rack	93074SX	IBM	1	1,489	4	5,956	
ServicePac for 3-Year 24x7x4 Support (EXP700)	41L2768	IBM	1	760	30		22,800
ServicePac for 3-Year 24x7x4 Support (DS4500)	96P2062	IBM	1	1,087	3		3,261
ServicePac for 3-Year 24x7x4 Support (EXP400)	41L2768	IBM	1	760	2		1,520
ServicePac for 3-Year 24x7x4 Support (Rack)	41L2760	IBM	1	300	4		1,200
ServicePac for 3-Year 24x7x4 Support (Switch)	29R5130	IBM	1	2,460	1		2,460
Discount on Fibre Channel Disks (30%)						140,490	
Discount on Fibre Channel Storage (20%)						94,196	
Discount on xSeries Storage (15%)						3,002	
Discount on ServicePacs (20%)							6,248
					Subtotal	721,603	24,993
Server Software							
Microsoft SQL Server 2000 Enterprise Edition*	810-00846	Microsoft	2	16,541	4	66,164	
Microsoft Windows Server 2003 Enterprise Edition*	P72-00264	Microsoft	2	2,334	1	2,334	
Microsoft Problem Resolution Services		Microsoft	2	245	1		245
					Subtotal	68,498	245
Client Hardware							
x226 with 3.2GHz/1MB Xeon DP, 512MB (2x256MB) Memory	8648-2AU	IBM	1	1,515	4	6,060	
3.2GHz/1MB Xeon DP Processor Upgrade	13N0673	IBM	1	799	4	3,196	
1GB (2x512MB) PC-3200 DDR2 ECC SDRAM RDIMM	73P3522	IBM	1	399	8	3,192	
36.4GB 15K Ultra320 SCSI Drive	90P1318	IBM	1	349	4	1,396	
PRO/1000 MT Dual-Port Server Adapter	73P2701	Intel	1	249	4	996	
E54 15" (13.8" Viewable) Color Monitor	633147N	IBM	1	149	4	596	
QLogic SANblade QLA 2350 FC-VI Adapter	QLA2350-BK	QLogic	3	1,995	4	7,980	
ServicePac for 3-Year 24x7x4 Support (x226)	96P2250	IBM	1	750	4		3,000
ServicePac for 3-Year 24x7x4 Support (Monitor)	30L9183	IBM	1	90	4		360
Discount on xSeries Hardware (15%)						2,315	
Discount on ServicePacs (20%)							672
					Subtotal	21,101	2,688
Client Software							
Microsoft Windows 2000 Server with COM+*	C11-00821	Microsoft	2	738	4	2,952	
Microsoft Visual C++ Professional 6.0	254-00170	Microsoft	2	109	1	109	
					Subtotal	3,061	
Network Components							
IBM TotalStorage SAN Fibre Channel Switch Model H08	2005H08	IBM	1	4,750	1	4,750	
IBM Short Wave SFP Module	19K1271	IBM	1	499	1	499	
IBM 5M LC-LC Fibre Channel Cable	19K1248	IBM	1	129	5	645	
ServicePac for 3-Year 24x7x4 Support (Switch)	29R5122	IBM	1	1,487	1		1,487
Discount on TotalStorage Hardware (20%)						1,179	
Discount on ServicePac (20%)							297
					Subtotal	4,715	1,190
					Total	963,272	29,907

Pricing: 1- IBM - To order, call 1-888-SHOP-IBM, and ask for xSeries Sales.	**Three-Year Cost of Ownership USD:**	$993,179
Volume discounts based on IBM Direct Guidance (Call 1-919-486-0818 for price verification.)		
2 - Microsoft (*See Quote for Discounts); 3 - QLogic	**tpmC:**	141,504
Audited by Bradley J. Askins, InfoSizing, Inc.	**$ USD/tpmC:**	$7.02

Prices used in TPC benchmarks reflect the actual prices a customer would pay for a one-time purchase of the stated components. Individually negotiated discounts are not permitted.
Special prices based on assumptions about past or future purchases are not permitted. All discounts reflect standard pricing policies for the listed components. For complete details, see the pricing sections of the TPC benchmark specifications. If you find that stated prices are not available according to these terms, please inform the TPC at pricing @ tpc.org.

Numerical Quantities Summary

MQTh, Computed Maximum Qualified Throughput: **141,504 tpmC**

Response Times (in seconds)	90th Percentile	Average	Maximum
New-Order	0.52	0.34	7.11
Payment	0.46	0.28	4.02
Delivery	0.36	0.19	0.92
Stock Level	0.88	0.64	2.48
Order Status	0.48	0.31	7.39
Delivery (Deferred)	0.18	0.13	4.61
Menu	0.33	0.19	1.63

Response Time Delay Added for Emulated Components: 0.1 Seconds

Transaction Mix (in percent of total transactions)	Percent
New-Order	44.96
Payment	43.02
Delivery	4.01
Stock-Level	4.01
Order Status	4.01

Keying/Think Times (in seconds)	Minimum	Average	Maximum
New Order	18.00 / 0.00	18.00 / 12.04	18.03 / 120.31
Payment	3.00 / 0.00	3.00 / 12.04	3.03 / 120.33
Delivery	2.00 / 0.00	2.00 / 5.04	2.03 / 50.31
Stock Level	2.00 / 0.00	2.00 / 5.04	2.03 / 50.31
Order Status	2.00 / 0.00	2.00 / 10.06	2.03 / 100.33

Test Duration	
Ramp-up time	51 minutes 25 seconds
Measurement interval	120 minutes
Number of checkpoints	4
Checkpoint interval	30 minutes
Number of transactions (all types) completed in measurement interval	39,279,828

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Preface

The TPC Benchmark™ C was developed by the Transaction Processing Performance Council (TPC). The TPC was founded to define transaction processing benchmarks and to disseminate objective, verifiable performance data to the industry. This full disclosure report is based on the TPC Benchmark C Standard Specification Version 5.3.

The TPC describes this benchmark in Clause 0.1 of the specification as follows:

TPC Benchmark C is an On Line Transaction Processing (OLTP) workload. It is a mixture of read-only and update-intensive transactions that simulate the activities found in complex OLTP application environments. It does so by exercising a breadth of system components associated with environments, which are characterized by:

- The simultaneous execution of multiple transaction types that span a breadth of complexity
- On-line and deferred transaction execution modes
- Multiple on-line terminal sessions
- Moderate system and application execution time
- Significant disk input/output
- Transaction integrity (ACID properties)
- Non-uniform distribution of data access through primary and secondary keys
- Databases consisting of many tables with a wide variety of sizes, attributes and relationships
- Contention on data access and update

The performance metric reported by TPC-C is a "business throughput" measuring the number of orders processed per minute. Multiple transactions are used to simulate the business activity of processing an order, and each transaction is subject to a response time constraint. The performance metric for this benchmark is expressed in transactions-per-minute-C (tpmC). To be compliant with the TPC-C standard, all references to tpmC results must include the tpmC rate, the associated price-per-tpmC, and the availability date of the priced configuration.

Despite the fact that this benchmark offers a rich environment that emulates many OLTP applications, this benchmark does not reflect the entire range of OLTP requirements. In addition, the extent to which a customer can achieve the results reported by a vendor is highly dependent on how closely TPC-C approximates the customer application. The relative performance of systems derived from this benchmark does not necessarily hold for other workloads or environments. Extrapolations to any other environment are not recommended.

Benchmark results are highly dependent upon workload, specific application requirements, and systems design and implementation. Relative system performance will vary as a result of these and other factors. Therefore, TPC-C should not be used as a substitute for a specific customer application benchmarking when critical capacity planning and/or product evaluation decisions are contemplated.

General Items

Benchmark Sponsor

A statement identifying the benchmark sponsor(s) and other participating companies must be provided.

This benchmark was sponsored by International Business Machines Corporation.

Application Code Disclosure and Definition Statements

The application program (as defined in Clause 2.1.7) must be disclosed. This includes, but is not limited to, the code implementing the five transactions and the terminal input and output functions.

Appendix A contains all source code implemented in this benchmark.

Parameter Settings

Settings must be provided for all customer-tunable parameters and options that have been changed from the defaults found in actual products, including but not limited to:

- *Database tuning options*
- *Recovery/commit options*
- *Consistency/locking options*
- *Operating system and application configuration parameters.*
- *Compilation and linkage options and run-time optimizations used to create/install applications, OS, and/or databases.*

This requirement can be satisfied by providing a full list of all parameters and options.

Appendix C contains the tunable parameters for the database, the operating system, and the transaction monitor.

Configuration Diagrams

Diagrams of both measured and priced configurations must be provided, accompanied by a description of the differences.

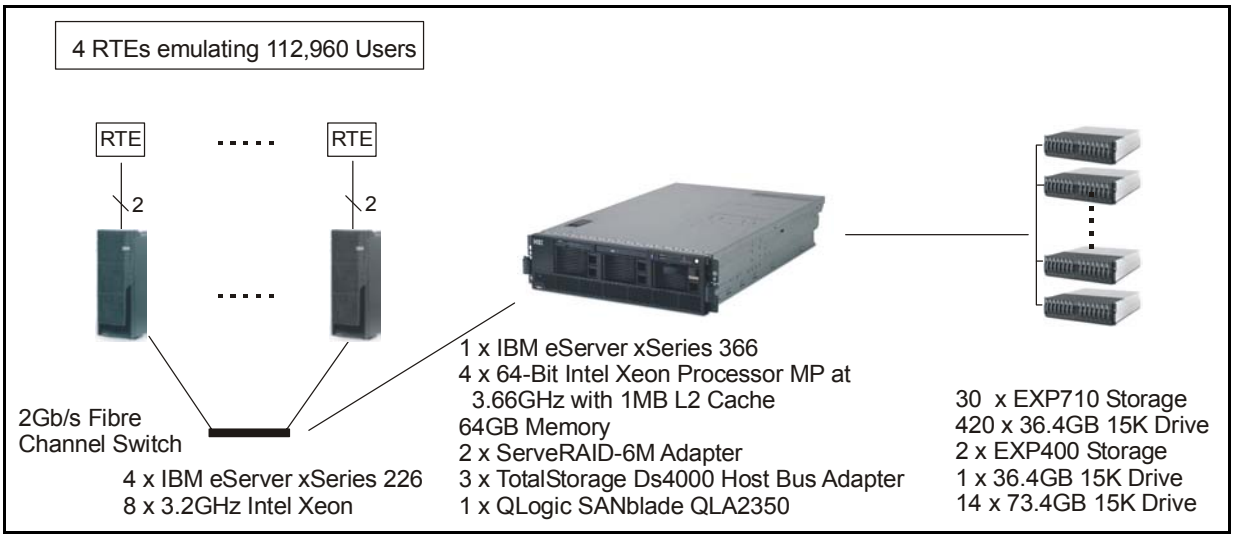
The configuration diagrams for the tested and priced systems are provided on the following pages.

The Remote Terminal Emulator (RTE) used for these TPC Benchmark C tests is an IBM-developed propriety RTE, BenchMaster. The components of the configuration being emulated by the RTE are the workstations. Appendix C contains a listing of the RTE scripts and inputs used in the benchmark testing.

The measured configuration used four IBM xSeries 226 systems, each configured with two 3.2GHz Intel Xeon processors, as clients, which executed the terminal I/O and submitted transactions to COM+ servers, which were also running on the clients. These COM+ servers forwarded the transaction requests to the server, and returned the results to the RTE. Microsoft SQL Server 2000 Enterprise Edition was the DBMS executing on the server.

Measured Configuration

The measured and priced configurations were identical. For the priced configuration, see the Executive Summary.



Clause 1: Logical Database Design Related Items

Table Definitions

Listings must be provided for all table definition statements and all other statements used to set up the database.

Appendix B contains the code used to define and load the database tables.

Physical Organization of the Database

The physical organization of tables and indexes within the database must be disclosed.

Physical space was allocated to Microsoft SQL Server on the server disks as detailed in Figure 4-2.

Insert and Delete Operations

It must be ascertained that insert and/or delete operations to any of the tables can occur concurrently with the TPC-C transaction mix. Furthermore, any restriction in the SUT database implementation that precludes inserts beyond the limits defined in Clause 1.4.11 must be disclosed. This includes the maximum number of rows that can be inserted and the maximum key value for these new rows.

All insert and delete functions were fully operational during the running of the benchmark. The space required for an additional 5 percent of the initial table cardinality was allocated to Microsoft SQL Server 2000 and priced as static space.

Horizontal or Vertical Partitioning

While there are few restrictions placed upon horizontal or vertical partitioning of tables and rows in the TPC-C benchmark (see Clause 1.6), any such partitioning must be disclosed.

Partitioning was not used in this benchmark.

Replication

Replication tables, if used, must be disclosed (see Clause 1.4.6).

Replication was not used in this benchmark.

Table Attributes

Additional and/or duplicated attributes in any table must be disclosed, along with a statement on the impact on performance (see Clause 1.4.7).

No additional attributes were used in this benchmark.

Clause 2: Transaction and Terminal Profiles Related Items

Random Number Generation

The method of verification for the random number generation must be disclosed.

The seeds and offsets for the random number generator were collected and verified to be different for each driver. The auditor selected samples of the generated numbers from the database. The samples were verified to have no discernible patterns.

Screen Layout

The actual layouts of the terminal input/out screens must be disclosed.

All screen layouts followed the TPC Benchmark C Standard Specification.

Terminal Verification

The method used to verify that the emulated terminals provide all the features described in Clause 2.2.2.4 must be explained. Although not specifically priced, the type and model of the terminals used must for the demonstration in 8.1.3.3 must be disclosed and commercially available (including supporting software and maintenance).

The auditor verified terminal features by direct experimentation. The benchmarked configuration uses Microsoft Internet Explorer 6.0 SP1 and HTML scripts as the terminal interface.

Intelligent Terminals

Any usage of presentation managers or intelligent terminals must be explained.

The terminals emulated in the priced configuration are IBM PC desktop computer systems. All processing of the input/output screens was handled by the xSeries 226 clients. The screen input/output was managed via HTML strings that comply with the HTML Version 2.0 specification.A listing of the code used to implement the intelligent terminals is provided in Appendix A. All data manipulation was handled by the xSeries 366 database server.

Transaction Profiles

The percentage of home and remote order-lines in the New-Order transactions must be disclosed.
The percentage of New-Order transactions that were rolled back as a result of an unused item number must be disclosed.

The number of items per orders entered by New-Order transactions must be disclosed. The percentage of home and remote Payment transactions must be disclosed. The percentage of Payment and Order-Status transactions that used non-primary key (C_LAST) access to the database must be disclosed.

The percentage of Delivery transactions that were skipped as a result of an insufficient number of rows in the NEW-ORDER table must be disclosed.

The mix (i.e., percentages) of transaction types seen by the SUT must be disclosed.

Table 2-1. Transaction Statistics

New Order	Value (%)
Home warehouse order lines	99.00
Remote warehouse order lines	1.00
Rolled back transactions	1.00
Average number of items per order	10.00
Payment	
Home warehouse payment transactions	0.85
Remote warehouse payment transactions	0.15
Non-Primary Key Access	
Payment transactions using C_LAST	60.00
Order-Status transactions using C_LAST	60.04
Delivery	
Delivery transactions skipped	0
Transaction Mix	
New-Order	44.96
Payment	43.02
Delivery	4.01
Stock Level	4.01
Order Status	4.01

Deferred Delivery Mechanism

The queuing mechanism used to defer execution of the Delivery transaction must be disclosed.

The deferred delivery operation is queued by making an entry in an array within the application process (tpcc.dll) running on the client. Background threads within the application asynchronously process the queued delivery transactions.

The source code is listed in Appendix A.

Clause 3: Transaction and System Properties Related Items

The results of the ACID test must be disclosed, along with a description of how the ACID requirements were met. This includes disclosing which case was followed for the execution of Isolation Test 7.

Atomicity Requirements

The system under test must guarantee that database transactions are atomic; the system will either perform all individual operations on the data, or will assure that no partially completed operations leave any effects on the data.

All ACID tests were conducted according to specification.

Completed Transactions

The following steps were performed to verify the Atomicity of completed transactions.

1. The balance was retrieved from the CUSTOMER table for a random Customer, District and Warehouse, giving BALANCE_1.
2. The Payment transaction was executed for the Customer, District and Warehouse used in step 1.
3. The balance was retrieved again for the Customer used in step 1 and step 2, giving BALANCE_2. It was verified that BALANCE_1 was greater than BALANCE_2 by AMT.

Aborted Transactions

The following steps were performed to verify the Atomicity of the aborted Payment transaction:

1. The Payment application code was changed to execute a rollback of the transaction instead of performing the commit.
2. Using the balance, BALANCE_2, from the CUSTOMER table retrieved for the completed transaction, the Payment transaction was executed for the Customer, District and Warehouse used in step 1 of section 3.1.1. The transaction rolled back due to the change in the application code from step 1.
3. The balance was retrieved again for the Customer used for step 2, giving BALANCE_3. It was verified that BALANCE_2 was equal to BALANCE_3.

Consistency Requirements

Consistency is the property of the application that requires any execution of a database transaction to take the database from one consistent state to another, assuming that the database is initially in a consistent state.

Consistency conditions one through four were tested using a bat file to issue queries to the database.The results of the queries demonstrated that the database was consistent for all four tests.

Isolation Requirements

Sufficient conditions must be enabled at either the system or the application level to ensure that the required isolation defined in Clause 3.4.1 is obtained.

Isolation tests one through seven were run using the bat files to issue queries to the database. Each file included timestamps to demonstrate the concurrency of operations. The results of the queries were captured and placed in files. The auditor reviewed the results and verified that the isolation requirements had been met.

In addition, the phantom tests and the stock-level tests were run and verified.

Case A was followed for Isolation test seven.

Durability Requirements

The tested system must guarantee durability: the ability to preserve the effects of committed transactions and ensure database consistency after recovery from any one of the failures listed in Clause 3.5.3.

- *Permanent irrecoverable failure of any single durable medium containing TPC-C database tables or recovery log data (this test includes failure of all or part of memory)*
- *Instantaneous interruption (system crash/system hang) in processing that requires system reboot to recover*
- *Failure of all or part of memory (loss of contents)*

Loss of Data Test

The following steps were successfully performed to pass the Durability test of failure of a disk unit with database tables:

1. The contents of the database were backed up to several database dump devices during the initial database load. There were no dump devices on the disk array from which a drive was removed as part of this test.
2. The current count of the total number of orders was determined by the sum of D_NEXT_O_ID for all rows in the district table giving SUM1.
3. A test was started with 14,120 users submitting transactions.
4. A disk containing a portion of each of the tables in the tpcc database was removed causing SQL Server to report errors accessing that device.
5. The run was aborted and SQL Server was restarted. Upon restart, the database tpcc reported numerous errors relating to the failed database device.
6. The transaction log was dumped to disk and the failed disk was replaced with a spare disk and was recovered.
7. The database was recovered and restored from the backup dump devices. Afterwards, the transaction log was applied to the database.
8. Step 2 was repeated to obtain the current count of the total number of orders giving SUM2.
9. It was verified that the sum of D_NEXT _O_ID after the database is recovered is greater than or equal to the sum of D_NEXT_O_ID before the run, plus all new order transactions completed during the run minus any rollback transactions.
10. Consistency Condition 3 was verified.

Loss of Log and Loss of System (Instantaneous Interruption and Loss of Memory)

1. The current count of the total number of orders was determined by the sum of D_NEXT_O_ID for all rows in the district table gving SUM1.
2. This test was executed on a full scale benchmark run with 93.75% users.
3. The test continued and the system continued to run for 5 minutes 0 seconds after all users were connected to the server.

4. One disk from the log array was removed. Since the disk was RAID-1 mirrored, SQL Server continued to process transactions without interruption.
5. The test continued to run for another 7 minutes 0 seconds.
6. The server under test was powered off, which removed power from the system and the memory.
7. The server was powered on again.
8. SQL Server was started to initiate automatic recovery from its log.
9. Step 1 was repeated to obtain the current count of the total number of orders giving SUM2.
10. It was verified that the sum of D_NEXT_O_ID after the database recovered was greater than or equal to the sum of D_NEXT_O_ID before the run, plus all new order transactions completed during the run minus any rollback transactions.

Clause 4: Scaling and Database Population Related Items

Cardinality of Tables

The cardinality (e.g., the number of rows) of each table, as it existed at the start of the benchmark run (see Clause 4.2), must be disclosed. If the database was over-scaled and inactive rows of the WAREHOUSE table were deleted (see Clause 4.2.2), the cardinality of the WAREHOUSE table as initially configured and the number of rows deleted must be disclosed.

The database was built with 11,680 warehouses and the audited run used 11,296 warehouses. The warehouses over 11,296 were deleted each time the database was restored from backups. The script delwh.sql was used to delete the warehouses. See Appendix B for the code.

Table 4-1. Initial Cardinality of Tables

Table Name	Rows
Warehouse	11,296
District	116,800
Item	100,000
New Order	105,119 ,997
History	350,400,003
Orders	350,400,003
Customer	350,400,003
Order Line	3,503,986,183
Stock	1,168,000,000
Inactive Warehouses	384

Distribution of Tables and Logs

The distribution of tables and logs across all media must be explicitly depicted for the tested and priced systems.)

Figure 4-2 depicts the database configuration of the tested and priced systems to meet the 8-hour steady state requirement.

Figure 4-2. Data Distribution for the Benchmarked Configuration

Disk #	Drives	Partition	Size	Use
1	14 - 73.4GB EXP400 Enclosure	E: F:	312.99GB 165.07GB (NTFS)	Logfile MDF File
2	14 - 36.4GB EXP710 Enclosure	C:\mp\c1 c:\mp\m1 G:	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
3	14 - 36.4GB EXP710 Enclosure	C:\mp\c2 c:\mp\m2 H:	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
4	14 - 36.4GB EXP710 Enclosure	C:\mp\c3 c:\mp\m3 I:	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
5	14 - 36.4GB EXP710 Enclosure	C:\mp\c4 c:\mp\m4 J:	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
6	14 - 36.4GB EXP710 Enclosure	C:\mp\c5 c:\mp\m5 K:	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
7	14 - 36.4GB EXP710 Enclosure	C:\mp\c6 c:\mp\m6 L:	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
8	14 - 36.4GB EXP710 Enclosure	C:\mp\c7 c:\mp\m7 M:	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
9	14 - 36.4GB EXP710 Enclosure	C:\mp\c8 c:\mp\m8 N:	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
10	14 - 36.4GB EXP710 Enclosure	C:\mp\c9 c:\mp\m9 O:	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
11	14 - 36.4GB EXP710 Enclosure	C:\mp\c10 c:\mp\m10 P:	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
12	14 - 36.4GB EXP710 Enclosure	C:\mp\c11 c:\mp\m11 Q:	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
13	14 - 36.4GB EXP710 Enclosure	C:\mp\c12 c:\mp\m12 R:	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
14	14 - 36.4GB EXP710 Enclosure	C:\mp\c13 c:\mp\m13 S:	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
15	14 - 36.4GB EXP710 Enclosure	C:\mp\c14 c:\mp\m14 T:	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
16	14 - 36.4GB EXP710 Enclosure	C:\mp\c15 c:\mp\m15 U:	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
17	14 - 36.4GB EXP710 Enclosure	C:\mp\c16 c:\mp\m16 V:	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files

18	14 - 36.4GB EXP710 Enclosure	C:\mp\c17 c:\mp\m17 W:	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
19	14 - 36.4GB EXP710 Enclosure	C:\mp\c18 c:\mp\m18	22.95GB 13.19GB 430.98GB (NTFS)	Customer and StockMiscellaneousBackup files
20	14 - 36.4GB EXP710 Enclosure	C:\mp\c19 c:\mp\m19	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
21	14 - 36.4GB EXP710 Enclosure	C:\mp\c20 c:\mp\m20	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
22	14 - 36.4GB EXP710 Enclosure	C:\mp\c21 c:\mp\m21	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
23	14 - 36.4GB EXP710 Enclosure	C:\mp\c22 c:\mp\m22	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
24	14 - 36.4GB EXP710 Enclosure	C:\mp\c23 c:\mp\m23	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
25	14 - 36.4GB EXP710 Enclosure	C:\mp\c24 c:\mp\m24	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
26	14 - 36.4GB EXP710 Enclosure	C:\mp\c25 c:\mp\m25	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
27	14 - 36.4GB EXP710 Enclosure	C:\mp\c26 c:\mp\m26	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
28	14 - 36.4GB EXP710 Enclosure	C:\mp\c27 c:\mp\m27	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
29	14 - 36.4GB EXP710 Enclosure	C:\mp\c28 c:\mp\m28	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
30	14 - 36.4GB EXP710 Enclosure	C:\mp\c29 c:\mp\m29	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files
31	14 - 36.4GB EXP710 Enclosure	C:\mp\c30 c:\mp\m30	22.95GB 13.19GB 430.98GB (NTFS)	Customer and Stock Miscellaneous Backup files

Database Model Implemented

A statement must be provided that describes:

1. *The database model implemented by the DBMS used (e.g., relational, network, hierarchical)*
2. *The database interface (e.g., embedded, call level) and access language (e.g., SQL, DL/1, COBOL, read/write) used to implement the TPC-C transactions. If more than one interface/access language is used to implement TPC-C, each interface/access language must be described and a list of which interface/access language is used with which transaction type must be disclosed.*

Microsoft SQL Server 2000 Enterprise Edition is a relational database. The interface used was Microsoft SQL Server stored procedures accessed with Remote Procedure Calls embedded in C code using the Microsoft ODBC

interface.

Partitions/Replications Mapping

The mapping of database partitions/replications must be explicitly described.

The database was neither partitioned nor replicated.

60-Day Space Requirement

Details of the 60-day space computations, along with proof that the database is configured to sustain 8 hours of growth for the dynamic tables (Order, Order-Line, and History) must be disclosed (see Clause 4.2.3).

See Appendix D for details about how the 60-day space requirements were calculated.

Clause 5: Performance Metrics and Response Time Related Items

Measured tpmC

Measured tpmC must be reported.

Measured tpmC: 141,504 tpmC
Price per tpmC: $7.02 USD per tpmC

Response Times

Ninetieth percentile, maximum and average response times must be reported for all transaction types as well as for the Menu response time.

The TPC-C requirements for the average response time and the 90th percentile were met. Table 5-1 provides the response times for each of the transaction types and the menu for the measured system.

Table 5-1. Response Times in Seconds

Transaction Type	Average	Maximum	90 %-tile
New-Order	0.34	7.11	0.52
Payment	0.28	4.02	0.46
Delivery	0.19	0.92	0.36
Stock Level	0.64	2.48	0.88
Order Status	0.31	7.39	0.48
Delivery (Deferred)	0.13	4.61	0.18
Menu	0.19	1.63	0.33

Keying/Think Times

The minimum, the average, and the maximum keying and think times must be reported for each transaction type.)

Table 5-2 lists the keying/think times for the measured system.

Table 5-2. Keying/Think Times

Transaction Type	Average	Minimum	Maximum
New-Order	18.00 / 12.04	18.00 / 0.00	18.03 / 120.31
Payment	3.00 / 12.04	3.00 / 0.00	3.03 / 120.33
Delivery	2.00 / 5.04	2.00 / 0.00	2.03 / 50.31
Stock Level	2.00 / 5.04	2.00 / 0.00	2.03 / 50.31
Order Status	2.00 / 10.06	2.00 / 0.00	2.03 / 100.33

Response Time Frequency Distribution Curves

Response time frequency distribution curves (see Clause 5.6.1) must be reported for each transaction type.

Figure 5-1. New-Order Transaction - Response Time Frequency Distribution

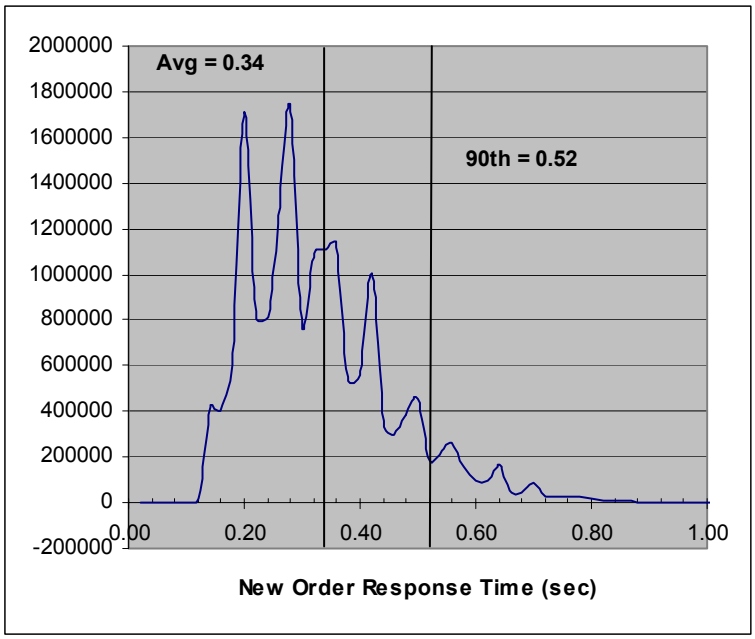


Figure 5-2. Payment Transaction - Response Time Frequency Distribution

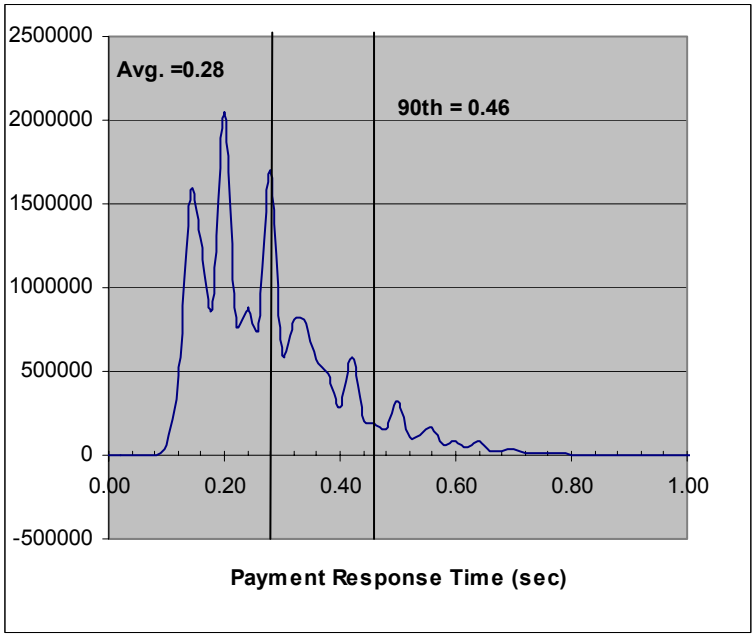


Figure 5-3. Order-Status Transaction - Response Time Frequency Distribution

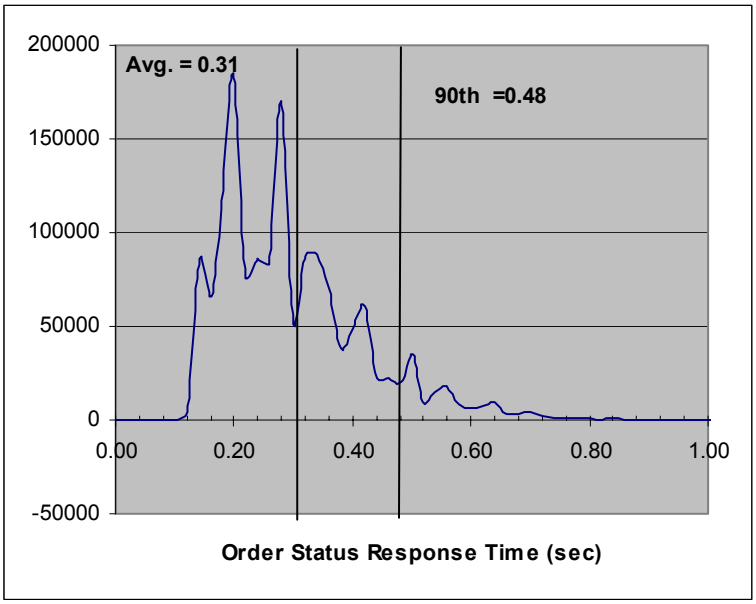


Figure 5-4. Delivery Transaction - Response Time Frequency Distribution

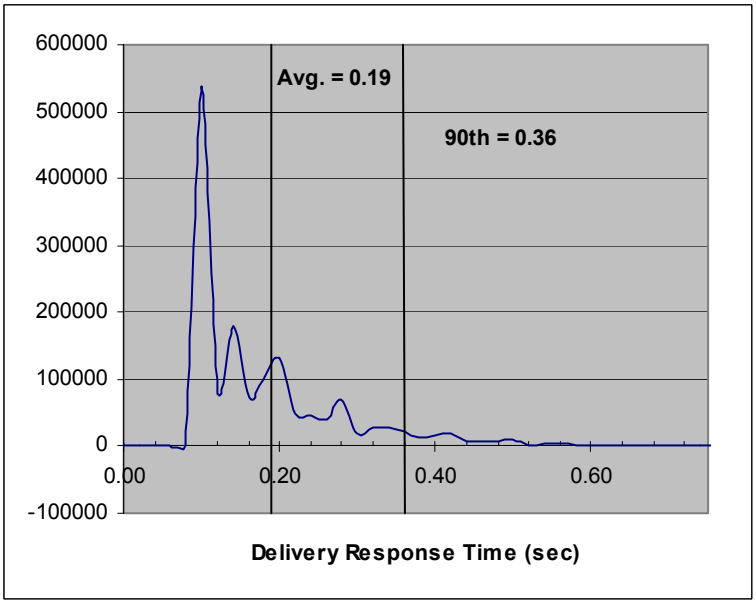
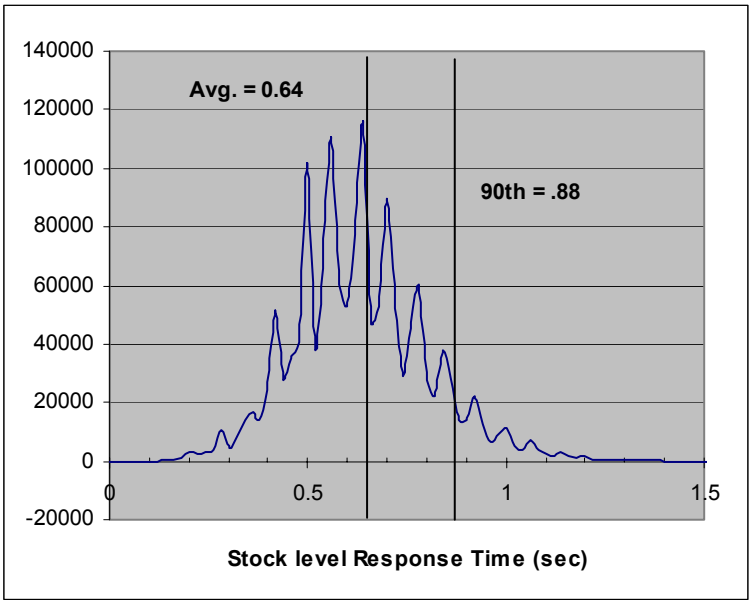


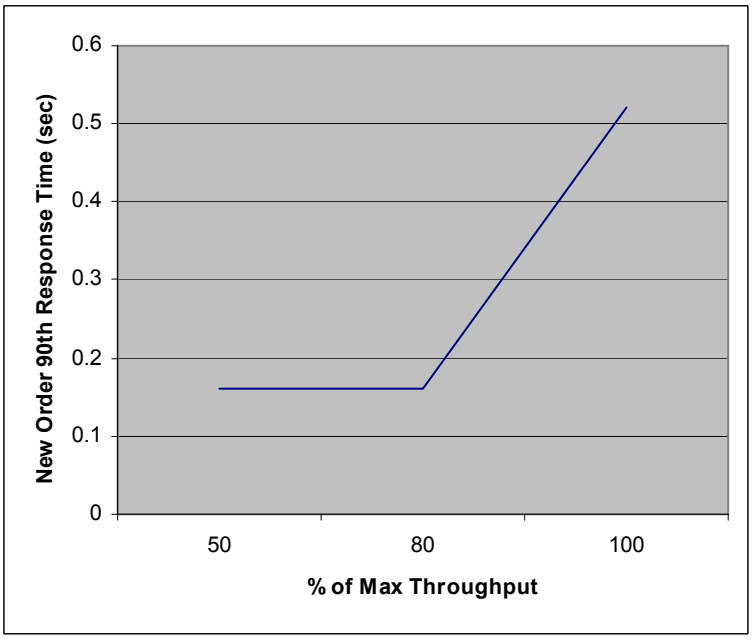
Figure 5-5. Stock-Level Transaction - Response Time Frequency Distribution



Performance Curve for Response Time vs. Throughput

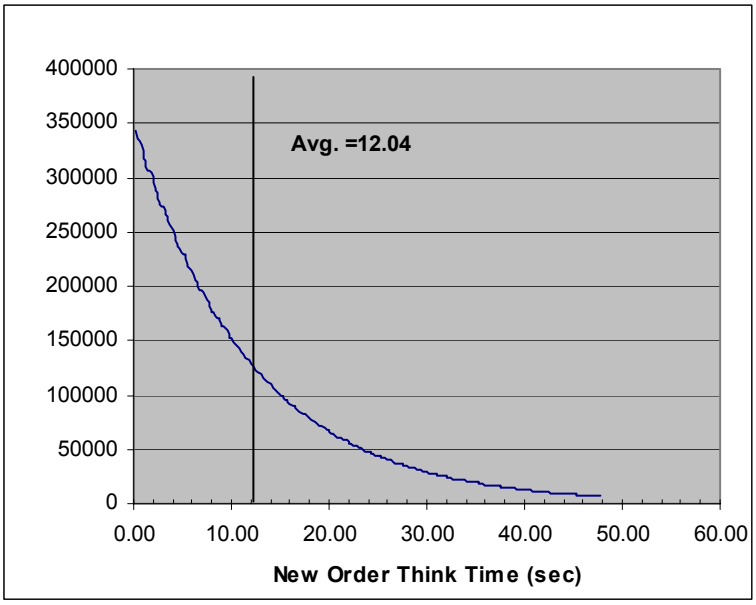
The performance curve for response time vs. throughput (see Clause 5.6.2) must be reported for the New-Order transaction.

Figure 5-6. New-Order Response Time vs. Throughput



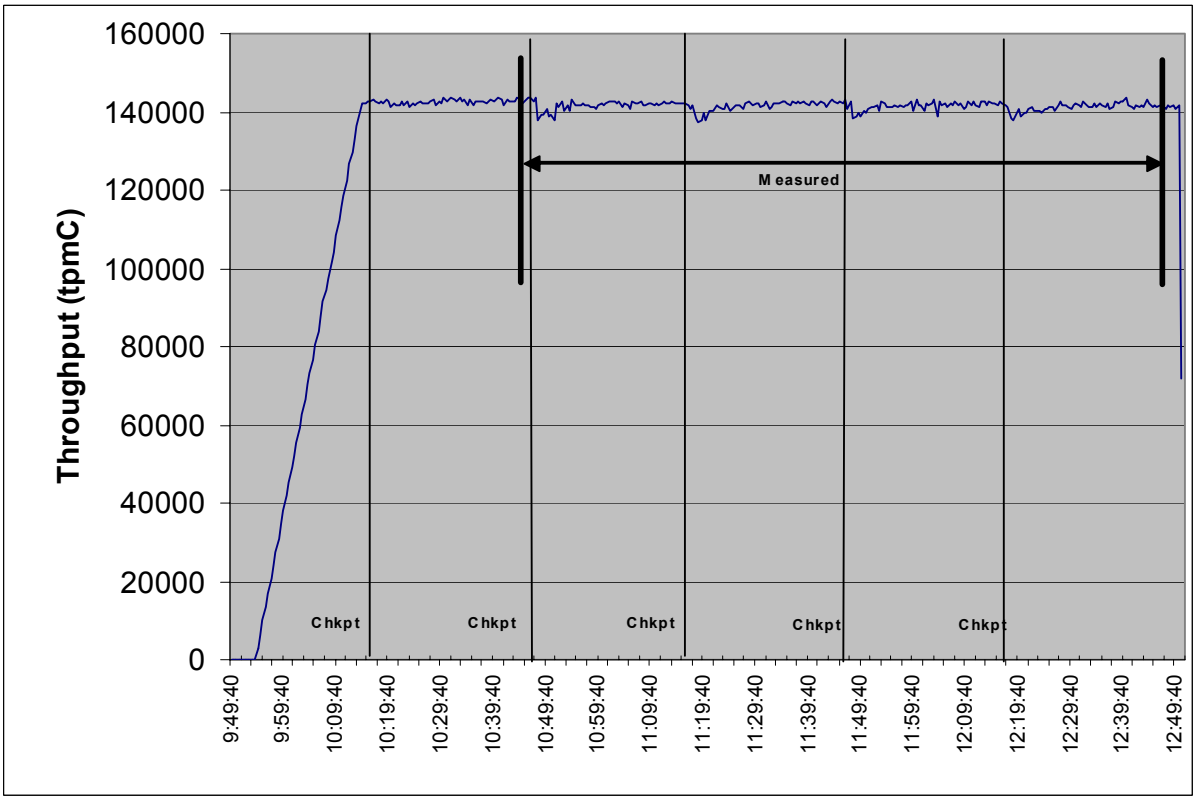
New Order Think Time Distribution

Figure 5-7. New-Order Think Time Distribution



A graph of throughput vs. elapsed time (see Clause 5.6.5) must be reported for the New-Order transaction.

Figure 5-8. New-Order Throughput vs. Elapsed Time



Steady State Methodology

The method used to determine that the SUT had reached a steady state prior to commencing the measurement interval (see Clause 5.5) must be described.

Figure 5-8 shows that the system was in steady state at the beginning of the measurement interval.

Work Performed during Steady State

A description of how the work normally performed during a sustained test (e.g., checkpointing, writing redo/undo log records) actually occurred during the measurement interval must be reported.

Transaction Flow

The RTE generated the required input data to choose a transaction from the menu. This data was time-stamped. The response for the requested transaction was verified and time-stamped in the RTE log files.

The RTE generated the required input data for the chosen transaction. It waited to complete the minimum required key time before transmitting the input screen. The transmission was time-stamped. The return of the screen with the required response data was time-stamped. The difference between these two time-stamps was the response time for that transaction and was logged in the RTE log. The RTE then waited the required think time interval before repeating the process starting at selecting another transaction from the menu.

The RTE transmissions were sent to application processes running on the client machines through Ethernet LANs. These client application processes handled all screen I/O as well as all requests to the database on the server. The applications communicated with the database server over a 2Gb/s Fibre Channel network using Microsoft SQL Server ODBC library and RPC calls.

Checkpoints

Checkpoints were executed on the server during the ramp-up phase and at 30-minute intervals. The measured run contained four checkpoints. SQL Server was started with trace flag 3502, which caused it to log the occurrence of the checkpoint. This information was used to verify that the checkpoints occurred at the appropriate times during the test run.

During a checkpoint, SQL Server flushes all dirty pages from its cache to disk. It places a record in the database transaction log indicating that the checkpoint has completed and that all transactions, which were committed prior to the checkpoint have been written to disk.

Measurement Interval

A statement of the duration of the measurement interval for the reported Maximum Qualified Throughput (tpmC) must be included.

The measurement interval was 120 minutes.

Transaction Mix

The method of regulation of the transaction mix (e.g., card decks or weighted random distribution) must be described. If weighted distribution is used and the RTE adjusts the weights associated with each transaction type, the maximum adjustments to the weight from the initial value must be disclosed. (8.1.6.13)

The RTE was given a weighted random distribution, which was not adjusted during the run. See Table 5-3.

Percentage of Total Mix

The percentage of the total mix for each transaction type must be disclosed.

See Table 5-3.

Table 5-3. Transaction Statistics and Transaction Mix

New Order	Value (%)
Home warehouse order lines	99.00
Remote warehouse order lines	1.00
Rolled back transactions	1.00
Average number of items per order	10.00
Payment	
Home warehouse payment transactions	0.85
Remote warehouse payment transactions	0.15
Non-Primary Key Access	
Payment transactions using C_LAST	60.00
Order-Status transactions using C_LAST	60.04
Delivery	
Delivery transactions skipped	0
Transaction Mix	
New-Order	44.96
Payment	43.02
Delivery	4.01
Stock Level	4.01
Order-Status	4.01

Number of Checkpoints

The number of checkpoints in the Measurement Interval, the time in seconds from the start of the Measurement Interval to the first checkpoint, and the Checkpoint Interval must be disclosed.

Checkpoints were performed during the ramp-up period and during each measured run interval. The first measurement interval checkpoint started 116 seconds after the start of the measurement interval. The checkpoint interval was 30 minutes. The four checkpoints in the measured interval are shown in Table 5-4.

Table 5-4. Checkpoint Start Time and Duration

Checkpoint	Start Time	Duration
1	10:46:16	28 minutes
2	11:16:13	28 minutes
3	11:46:10	28 minutes
4	12:16:07	28 minutes

Clause 6: SUT, Driver and Communication Definition Related Items

Description of RTE

The RTE input parameters, code fragments, functions, etc., used to generate each transaction input field must be disclosed.

The RTE used is IBM-developed proprietary software. The RTE input is listed in Appendix C.

Emulated Components

It must be demonstrated that the functionality and performance of the components being emulated in the Driver System are equivalent to that of the priced system. The results of the test described in Clause 6.6.3.4 must be disclosed.

No components were emulated.

Benchmarked and Targeted System Configuration Diagrams

A complete functional diagram of both the benchmarked configuration and the configuration of the proposed (target) system must be disclosed. A detailed list of all software and hardware functionality being performed on the Driver System, and its interface to the SUT must be disclosed (see Clause 6.6.3.6).

The driver RTE generated the transaction input data and transmitted it to the client in HTML format. The driver RTE received the output from the System Under Test, time-stamped it, and forwarded it to the Master RTE for post-test processing. No other functionality was included on the driver RTE.

Detailed diagrams of the benchmarked and priced configurations are provided in the section called "General Items" at the beginning of this document.

Network Configuration

The network configurations of both the tested services and the proposed (target) services which are being represented and a thorough explanation of exactly which parts of the proposed configuration are being replaced with the Driver System must be disclosed (see Clause 6.6.4).

See the measured and priced configuration diagrams for details about the network configuration.

Network Bandwidth

The bandwidth of the network(s) used in the tested/priced configuration must be disclosed.

The Ethernet used in the LAN connecting the clients and driver RTEs complies with the IEEE.802.3 standard. The Ethernet LAN had a bandwidth of 1Gbps. The LAN that connected the clients to the server was a Fibre Channel network whose bandwidth was 2Gb/s.

Operator Intervention

If the configuration requires operator intervention (see Clause 6.6.6), the mechanism and the frequency of this intervention must be disclosed.

The configuration did not require any operator intervention to sustain the reported throughput.

Clause 7: Pricing Related Items

Hardware and Software Components

A detailed list of the hardware and software used in the priced system must be reported. Each separately orderable item must have a vendor part number, description and release/revision level, and either general availability status or committed delivery date. If package-pricing is used, vendor part number of the package and a description uniquely identifying each of the components of the package must be disclosed.

Pricing source(s) and effective date(s) must also be reported.

The total 3-year price of the entire configuration must be reported, including: hardware, software, and maintenance charges. Separate component pricing is recommended. The basis of all discounts used must be disclosed.

A detailed list of all hardware and software, including the 3-year price, is provided in the Executive Summary at the front of this report. All third-party quotations are included in Appendix E at the end of this document.

Availability Date

The committed delivery date for general availability (availability date) of products used in the price calculations must be reported. When the priced system includes products with different availability dates, the reported availability for the priced system must be the date at which all components are committed to be available.

The total solution as priced will be generally available August 20, 2005.

Measured tpmC

A statement of the measured tpmC, as well as the respective calculations for the 3-year pricing, price/performance (price/tpmC) and the availability date must be included.

- Maximum Qualified Throughput: 141,504 tpmC
- Price per tpmC: $7.02USD per tpmC
- Three-year cost of ownership: $993,179 USD

Country-Specific Pricing

Additional Clause 7 related items may be included in the Full Disclosure Report for each country-specific priced configuration. Country-specific pricing is subject to Clause 7.1.7.

The configuration is priced for the United States of America.

Usage Pricing

For any usage pricing, the sponsor must disclose:

- *Usage level at which the component was priced.*
- *A statement of the company policy allowing such pricing.*

The component pricing based on usage is shown below:

- 1 Microsoft Windows Server 2003 Enterprise Edition with SP1
- 4 Microsoft Windows 2000 Server
- 4 Microsoft SQL Server 2000 Enterprise Edition (based on per-processor price)

- 3-year support for hardware components (except for components for which 10 percent spares are provided)

System Pricing

System pricing should include subtotals for the following components: Server Hardware, Server Software, Client Hardware, Client Software, and Network Components used for terminal connection (see Clause 7.2.2.3).
System pricing must include line item indication where non-sponsoring companies' brands are used. System pricing must also include line item indication of third-party pricing.

A detailed list of all hardware and software, including the 3-year price, is provided in the Executive Summary at the front of this report. All third-party quotations are included in Appendix E at the end of this document.

Clause 9: Audit Related Items

Auditor

The auditor's name, address, phone number, and a copy of the auditor's attestation letter indicating compliance must be included in the Full Disclosure Report.

This implementation of the TPC-C benchmark was audited by Bradley J. Askins of InfoSizing, Inc. The auditor's attestation letter is provided in this section.

Availability of the Full Disclosure Report

The Full Disclosure Report must be readily available to the public at a reasonable charge, similar to the charges for similar documents by the test sponsor. The report must be made available when results are made public. In order to use the phrase "TPC Benchmark™C," the Full Disclosure Report must have been submitted to the TPC Administrator as well as written permission obtained to distribute same.

The TPC Benchmark C Full Disclosure Report can be obtained from www.tpc.org.

INFO SIZING

TPC TRANSACTION PROCESSING PERFORMANCE COUNCIL CERTIFIED AUDITOR

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Research Triangle Park, NC 27709

April 21, 2005

I verified the TPC Benchmark™ C performance for the following Client/Server configuration:

Platform:	**IBM @server xSeries 366 c/s**
Operating system:	**Microsoft Windows Server 2003 Enterprise Edition with SP1**
Database Manager:	**Microsoft SQL Server 2000 Enterprise Edition SP3 w/ QFE 821334**
Transaction Manager:	**Microsoft COM+**

The results were:

CPU's Speed	Memory	Disks	NewOrder 90% Response Time	**tpmC**
Server: IBM @server xSeries 366				
4 x Xeon MP (3.66GHz)	64 GB Main (1MB L2 Cache per processor)	14 x 73.4 GB ext. 420 x 36.4 GB ext. 1 x 36.4 GB int.	0.52 Seconds	**141,504.77**
Clients: Four (4) IBM @server xSeries 226 (Specification for each)				
2 x Xeon DP (3.2 GHz)	2 GB Main (1 MB L2 Cache per processor)	1 x 36.4 GB	n/a	n/a

In my opinion, these performance results were produced in compliance with the TPC's requirements for the benchmark. The following verification items were given special attention:

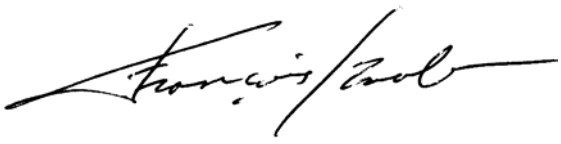
- The database records were the proper size

- The database was properly scaled and populated
- The required ACID properties were met
- The transactions were correctly implemented
- Input data was generated according to the specified percentages
- The transaction cycle times included the required keying and think times
- The reported response times were correctly measured.
- All 90% response times were under the specified maximums
- At least 90% of all delivery transactions met the 80 Second completion time limit
- The reported measurement interval was 120 minutes (7200 seconds)
- The reported measurement interval was representative of steady state conditions
- Four checkpoints were taken during the reported measurement interval
- The 60 day storage requirement was correctly computed
- The system pricing was verified for major components and maintenance

Additional Audit Notes:

None.

Respectfully Yours,



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Appendix A: Source Code

Web Client Source Code

db_odbc_dll.dsp

```
# Microsoft Developer Studio Project File - Name="db_odbc_dll" - Package
Owner=<4>
# Microsoft Developer Studio Generated Build File, Format Version 6.00
# ** DO NOT EDIT **

# TARGTYPE "Win32 (x86) Dynamic-Link Library" 0x0102

CFG=db_odbc_dll - Win32 IceCAP
!MESSAGE This is not a valid makefile. To build this project using NMAKE,
!MESSAGE use the Export Makefile command and run
!MESSAGE
!MESSAGE NMAKE /f "db_odbc_dll.mak".
!MESSAGE
!MESSAGE You can specify a configuration when running NMAKE
!MESSAGE by defining the macro CFG on the command line. For example:
!MESSAGE
!MESSAGE NMAKE /f "db_odbc_dll.mak" CFG="db_odbc_dll - Win32
IceCAP"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "db_odbc_dll - Win32 Release" (based on "Win32 (x86)
Dynamic-Link Library")
!MESSAGE "db_odbc_dll - Win32 Debug" (based on "Win32 (x86)
Dynamic-Link Library")
!MESSAGE "db_odbc_dll - Win32 IceCAP" (based on "Win32 (x86)
Dynamic-Link Library")
!MESSAGE

# Begin Project
# PROP AllowPerConfigDependencies 0
# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CPP=cl.exe
MTL=midl.exe
RSC=rc.exe

!IF  "$(CFG)" == "db_odbc_dll - Win32 Release"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir "Release"
# PROP BASE Intermediate_Dir "Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MT /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD CPP /nologo /MD /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "NDEBUG" /mktyplib203 /o /win32 "NUL"
# ADD MTL /nologo /D "NDEBUG" /mktyplib203 /o /win32 "NUL"
# ADD BASE RSC /l 0x409 /d "NDEBUG"
# ADD RSC /l 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /dll /machine:I386
# ADD LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib odbccp32.lib
/nologo /subsystem:windows /dll /machine:I386 /out:".\bin/tpcc_odbc.dll"

!ELSEIF  "$(CFG)" == "db_odbc_dll - Win32 Debug"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "Debug"
# PROP BASE Intermediate_Dir "Debug"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MTd /W3 /Gm /GX /Zi /Od /D "WIN32" /D
"_DEBUG" /D "_WINDOWS" /YX /FD /c
# ADD CPP /nologo /MDd /W3 /GX /ZI /Od /D "WIN32" /D "_DEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "_DEBUG" /mktyplib203 /o /win32 "NUL"
# ADD MTL /nologo /D "_DEBUG" /mktyplib203 /o /win32 "NUL"
# ADD BASE RSC /l 0x409 /d "_DEBUG"
# ADD RSC /l 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /dll /debug /machine:I386
/pdbtype:sept
# ADD LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib odbccp32.lib
/nologo /subsystem:windows /dll /debug /machine:I386
/out:".\bin/tpcc_odbc.dll" /pdbtype:sept

!ELSEIF  "$(CFG)" == "db_odbc_dll - Win32 IceCAP"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "db_odbc_"
# PROP BASE Intermediate_Dir "db_odbc_"
# PROP BASE Ignore_Export_Lib 0
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MDd /W3 /Gm /GX /Zi /Od /D "WIN32" /D
"_DEBUG" /D "_WINDOWS" /YX /FD /Gh /c
# ADD CPP /nologo /MD /W3 /Gm /GX /Zi /O2 /D "WIN32" /D "NDEBUG"
/D "_WINDOWS" /D "ICECAP" /YX /FD /Gh /c
# ADD BASE MTL /nologo /D "_DEBUG" /mktyplib203 /o /win32 "NUL"
# ADD MTL /nologo /D "_DEBUG" /mktyplib203 /o /win32 "NUL"
# ADD BASE RSC /l 0x409 /d "_DEBUG"
# ADD RSC /l 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
```

```
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /dll /debug /machine:I386
/out:".\bin/tpcc_odbc.dll" /pdbtype:sept
# ADD LINK32 icap.lib kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /dll /debug /machine:I386
/out:".\bin/tpcc_odbc.dll" /pdbtype:sept

!ENDIF

# Begin Target

# Name "db_odbc_dll - Win32 Release"
# Name "db_odbc_dll - Win32 Debug"
# Name "db_odbc_dll - Win32 IceCAP"
# Begin Group "Source"

# PROP Default_Filter "*.cpp"
# Begin Source File

SOURCE=.\src\tpcc_odbc.cpp
# End Source File
# End Group
# Begin Group "Header"

# PROP Default_Filter "*.h"
# Begin Source File

SOURCE=..\common\src\error.h
# End Source File
# Begin Source File

SOURCE=.\src\tpcc_odbc.h
# End Source File
# Begin Source File

SOURCE=..\common\src\trans.h
# End Source File
# Begin Source File

SOURCE=..\common\src\txn_base.h
# End Source File
# End Group
# End Target
# End Project
```

dlldata.c

```
/*********************************************************
   DllData file -- generated by MIDL compiler

       DO NOT ALTER THIS FILE

   This file is regenerated by MIDL on every IDL file compile.

   To completely reconstruct this file, delete it and rerun MIDL
   on all the IDL files in this DLL, specifying this file for the
   /dlldata command line option

*********************************************************/


#include <rpcproxy.h>
#ifdef __cplusplus
extern "C"   {
#endif

EXTERN_PROXY_FILE( tpcc_com_ps )


PROXYFILE_LIST_START
/* Start of list */
  REFERENCE_PROXY_FILE( tpcc_com_ps ),
/* End of list */
PROXYFILE_LIST_END


DLLDATA_ROUTINES( aProxyFileList, GET_DLL_CLSID )

#ifdef __cplusplus
}  /*extern "C" */
#endif

/* end of generated dlldata file */
```

error.h

```
/*          FILE:                   ERROR.H
 *                                          Microsoft TPC-C Kit Ver.
4.20.000
 *                                          Copyright Microsoft, 1999
 *          All Rights Reserved
 *
 *                                          Version 4.10.000 audited by
Richard Gimarc, Performance Metrics, 3/17/99
 *
 *          PURPOSE:            Header file for error exception classes.
 *
 *  Change history:
 *                      4.20.000 - updated rev number to match kit
 *                      4.21.000 - fixed bug: ~CBaseErr needed to be declared
virtual
 */

#pragma once

#ifndef _INC_STRING
        #include <string.h>
#endif

const int m_szMsg_size = 512;
const int m_szApp_size = 64;
const int m_szLoc_size = 64;

//error message structure used in ErrorText routines
typedef struct _SERRORMSG
{
        int             iError;
//error id of message
        char    szMsg[256];                             //message to
sent to browser
} SERRORMSG;

typedef enum _ErrorLevel
{
        ERR_FATAL_LEVEL                                 = 1,
        ERR_WARNING_LEVEL               = 2,
        ERR_INFORMATION_LEVEL = 3
} ErrorLevel;
```

```
#define ERR_TYPE_LOGIC
        -1                      //logic error in program; internal error
#define ERR_SUCCESS
                        0               //success (a non-error error)
#define ERR_BAD_ITEM_ID
        1                       //expected abort record in txnRecord
#define ERR_TYPE_DELIVERY_POST
2                       //expected delivery post failed
#define     ERR_TYPE_WEBDLL
                        3               //tpcc web generated error
#define     ERR_TYPE_SQL
        4                       //sql server generated error
#define     ERR_TYPE_DBLIB
        5                       //dblib generated error
#define     ERR_TYPE_ODBC
        6                       //odbc generated error
#define ERR_TYPE_SOCKET
        7                       //error on communication socket client rte
only
#define ERR_TYPE_DEADLOCK
        8                       //dblib and odbc only deadlock condition
#define ERR_TYPE_COM
        9                       //error from COM call
#define ERR_TYPE_TUXEDO
        10                      //tuxedo error
#define ERR_TYPE_OS
                        11              //operating system error
#define ERR_TYPE_MEMORY
        12                      //memory allocation error
#define ERR_TYPE_TPCC_ODBC
        13                      //error from tpcc odbc txn module
#define ERR_TYPE_TPCC_DBLIB
        14                      //error from tpcc dblib txn module
#define ERR_TYPE_DELISRV
15                      //delivery server error
#define ERR_TYPE_TXNLOG
        16                      //txn log error
#define ERR_TYPE_BCCONN
        17                      //Benchcraft connection class
#define ERR_TYPE_TPCC_CONN
        18                      //Benchcraft connection class
#define ERR_TYPE_ENCINA
        19                      //Encina error
#define ERR_TYPE_COMPONENT
        20                      //error from COM component
#define ERR_TYPE_RTE
        21                      //Benchcraft rte
#define ERR_TYPE_AUTOMATION
        22                      //Benchcraft automation errors
#define ERR_TYPE_DRIVER
        23                      //Driver engine errors
#define ERR_TYPE_RTE_BASE
        24                      //Framework errors
#define     ERR_BUF_OVERFLOW
        25                      //Buffer overflow during receive
// TPC-W error types
#define ERR_TYPE_TPCW_CONN
        50                      //Benchcraft connection class
#define ERR_TYPE_TPCW_HTML
        51                      //error from TpcwHtml dll
#define ERR_TYPE_TPCW_USER
        52                      //error from TPC-W user class
#define ERR_TYPE_TPCW_ENG_BASE
53
#define ERR_TYPE_TPCW_ENG_OS
54
#define ERR_TYPE_HTML_RESP
        55
#define ERR_TYPE_TPCW_ODBC
        56
#define ERR_TYPE_SCHANNEL
        57

#define ERR_INS_MEMORY                  "Insufficient Memory
to continue."
#define ERR_UNKNOWN                             "Unknown
error."
#define ERR_MSG_BUF_SIZE        512
#define INV_ERROR_CODE                  -1
#define ERR_INS_BUF_OVERFLOW    "Insufficient Buffer size to recieve
HTML pages."



class CBaseErr
{
public:

        CBaseErr(LPCTSTR szLoc = NULL)
        {
                m_idMsg         = INV_ERROR_CODE;


                if (szLoc)
                {
                        m_szLoc = new char[m_szLoc_size];
                        strcpy(m_szLoc, szLoc);
                }
                else
                        m_szLoc   = NULL;

                m_szApp         = new char[m_szApp_size];
                GetModuleFileName(GetModuleHandle(NULL),
m_szApp, m_szApp_size);
        }



        CBaseErr(int idMsg, LPCTSTR szLoc = NULL)
        {
                m_idMsg         = idMsg;


                if (szLoc)
                {
                        m_szLoc = new char[m_szLoc_size];
                        strcpy(m_szLoc, szLoc);
                }
                else
                        m_szLoc   = NULL;

                m_szApp         = new char[m_szApp_size];
                GetModuleFileName(GetModuleHandle(NULL),
m_szApp, m_szApp_size);
        }

        virtual ~CBaseErr(void)
        {
                if (m_szApp)
                        delete [] m_szApp;
                if (m_szLoc)
                        delete [] m_szLoc;
        };
```

```
	virtual void Draw(HWND hwnd, LPCTSTR szStr = NULL)
	{
		int			j = 0;
		char		szTmp[512];

		if (szStr)
			j = wsprintf(szTmp, "%s\n",szStr);
		if (ErrorNum() != INV_ERROR_CODE)
			j += wsprintf(szTmp+j, "Error = %d\n",
ErrorNum());
		if (m_szLoc)
			j += wsprintf(szTmp+j, "Location = %s\n",
GetLocation());

		j += wsprintf(szTmp+j, "%s\n", ErrorText());

		::MessageBox(hwnd, szTmp, m_szApp, MB_OK);
	}

	char *GetApp(void) { return m_szApp; }
	char *GetLocation(void) { return m_szLoc; }
	virtual int ErrorNum() { return m_idMsg; }



	virtual int ErrorType() = 0;		// a value which distinguishes the
kind of error that occurred
	virtual char *ErrorText() = 0; // a string (i.e., human readable)
representation of the error


protected:
	char		*m_szApp;
	char		*m_szLoc;// code location where the error occurred
	int			m_idMsg;

	//short		m_errType;
};

class CSocketErr : public CBaseErr
{
public:
	enum Action
	{
		eNone = 0,
		eSend,
		eSocket,
		eBind,
		eConnect,
		eListen,
		eHost,
		eRecv,
		eGetHostByName,
		eWSACreateEvent,
		eWSASend,
		eWSASendImage,
		eWSAGetOverlappedResult,
		eWSARecv,
		eWSARecvImage,
		eWSAWaitForMultipleEvents,
		eWSAStartup,
		eWSAResetEvent,
		eNonRetryable,
	};

	CSocketErr(Action eAction, LPCTSTR szLocation = NULL);
	~CSocketErr()
	{
		if (m_szErrorText != NULL)
			delete [] m_szErrorText;
	};

	Action		m_eAction;
	char		*m_szErrorText;

	int ErrorType() { return ERR_TYPE_SOCKET;};
	char *ErrorText(void);

};

class CSystemErr : public CBaseErr
{
public:
	enum Action
	{
		eNone = 0,
		eTransactNamedPipe,
		eWaitNamedPipe,
		eSetNamedPipeHandleState,
		eCreateFile,
		eCreateProcess,
		eCallNamedPipe,
		eCreateEvent,
		eCreateThread,
		eVirtualAlloc,
		eReadFile = 10,
		eWriteFile,
		eMapViewOfFile,
		eCreateFileMapping,
		eInitializeSecurityDescriptor,
		eSetSecurityDescriptorDacl,
		eCreateNamedPipe,
		eConnectNamedPipe,
		eWaitForSingleObject,
		eRegOpenKeyEx,
		eRegQueryValueEx = 20,
		ebeginthread,
		eRegEnumValue,
		eRegSetValueEx,
		eRegCreateKeyEx,
		eWaitForMultipleObjects,
		eRegisterClassEx,
		eCreateWindow,
		eCreateSemaphore,
		eFSeek,
		eFRead,
		eFWrite,
		eTmpFile,
		eSetFilePointer,
		eNew,
	};

			CSystemErr(Action eAction, LPCTSTR
szLocation);
			CSystemErr(int iError, Action eAction,
LPCTSTR szLocation);
	int		ErrorType() { return ERR_TYPE_OS;};
	char	*ErrorText(void);
	void	Draw(HWND hwnd, LPCTSTR szStr = NULL);

	Action		m_eAction;

private:
	char m_szMsg[ERR_MSG_BUF_SIZE];
```

```
};

class CMemoryErr : public CBaseErr
{
public:
        CMemoryErr();

        int ErrorType() {return ERR_TYPE_MEMORY;}
        char *ErrorText() {return ERR_INS_MEMORY;}
};


class CBufferOverflowErr : public CBaseErr
{
        public:
        CBufferOverflowErr(int,LPTSTR);

        int ErrorType() {return ERR_BUF_OVERFLOW;}

        char *ErrorText() {return ERR_INS_BUF_OVERFLOW;}
};
```

install.c

```
/*      FILE:           INSTALL.C
 *                              Microsoft TPC-C Kit Ver. 4.20.000
 *                              Copyright Microsoft, 1999
 *      All Rights Reserved
 *
 *                              not audited
 *
 *      PURPOSE:        Automated installation application for TPC-C Web Kit
 *      Contact:    Charles Levine (clevine@microsoft.com)
 *
 *  Change history:
 *              4.20.000 - added COM installation steps
 */

#include <windows.h>
#include <direct.h>
#include <io.h>
#include <stdlib.h>
#include <stdio.h>
#include <commctrl.h>
#include "..\..\common\src\ReadRegistry.h"

#include "resource.h"

#define WM_INITTEXT             WM_USER+100

HICON           hIcon;
HINSTANCE       hInst;

DWORD                   versionExeMS;
DWORD                   versionExeLS;
DWORD                   versionExeMM;
DWORD                   versionDllMS;
DWORD                   versionDllLS;

// TPC-C registry settings
TPCCREGISTRYDATA        Reg;

static  int             iPoolThreadLimit;
static  int             iThreadTimeout;
static  int             iListenBackLog;
static  int             iAcceptExOutstanding;

static  int             iMaxPhysicalMemory;
//max physical memory in MB
static  char    szLastFileName[64];             // last file we worked on (for error reporting)


BOOL    CALLBACK        LicenseDlgProc(HWND hwnd, UINT uMsg, WPARAM wParam, LPARAM lParam);
BOOL    CALLBACK        UpdatedDlgProc(HWND hwnd, UINT uMsg, WPARAM wParam, LPARAM lParam);
BOOL    CALLBACK        MainDlgProc(HWND hwnd, UINT uMsg, WPARAM wParam, LPARAM lParam);
BOOL    CALLBACK        CopyDlgProc(HWND hwnd, UINT uMsg, WPARAM wParam, LPARAM lParam);
static  void            ProcessOK(HWND hwnd, char *szDllPath);
static  void            ReadRegistrySettings(void);
static  void            WriteRegistrySettings(char *szDllPath);
static  BOOL            RegisterDLL(char *szFileName);
static  int                     CopyFiles(HWND hDlg, char *szDllPath);
static  BOOL            GetInstallPath(char *szDllPath);
static  void            GetVersionInfo(char *szDLLPath, char *szExePath);
static  BOOL            CheckWWWebService(void);
static  BOOL            StartWWWebService(void);
static  BOOL            StopWWWebService(void);
static  void            UpdateDialog(HWND hDlg);

BOOL install_com(char *szDllPath);

#include "..\..\common\src\ReadRegistry.cpp"

int WINAPI WinMain( HINSTANCE hInstance, HINSTANCE hPrevInstance, LPSTR lpCmdLine, int nCmdShow )
{
        int iRc;

        hInst = hInstance;

        InitCommonControls();

        hIcon = LoadIcon(hInstance, MAKEINTRESOURCE(IDI_ICON1));

        iRc = DialogBox(hInstance, MAKEINTRESOURCE(IDD_DIALOG4), GetDesktopWindow(), LicenseDlgProc);
        if ( iRc )
        {
                iRc = DialogBox(hInstance, MAKEINTRESOURCE(IDD_DIALOG1), GetDesktopWindow(), MainDlgProc);
                if ( iRc )
                {
                        DialogBoxParam(hInstance, MAKEINTRESOURCE(IDD_DIALOG2), GetDesktopWindow(), UpdatedDlgProc, (LPARAM)iRc);
                }
        }

        DestroyIcon(hIcon);
        return 0;
}

BOOL CALLBACK LicenseDlgProc(HWND hwnd, UINT uMsg, WPARAM wParam, LPARAM lParam)
```

```
{
	HGLOBAL		hRes;
	HRSRC		hResInfo;
	BYTE		*pSrc, *pDst;
	DWORD		dwSize;
	static HFONT	hFont;

	switch(uMsg)
	{
		case WM_INITDIALOG:
			hFont = CreateFont(-12, 0, 0, 0, 400, 0, 0, 0,
0, 0, 0, 0, 0, "Arial");
			SendMessage( GetDlgItem(hwnd,
IDR_LICENSE1), WM_SETFONT, (WPARAM)hFont, MAKELPARAM(0, 0)
);
			PostMessage(hwnd, WM_INITTEXT,
(WPARAM)0, (LPARAM)0);
			return TRUE;
		case WM_INITTEXT:
			hResInfo = FindResource(hInst,
MAKEINTRESOURCE(IDR_LICENSE1), "LICENSE");
			dwSize = SizeofResource(hInst, hResInfo);
			hRes = LoadResource(hInst, hResInfo );
			pSrc = (BYTE *)LockResource(hRes);
			pDst = (unsigned char *)malloc(dwSize+1);
			if ( pDst )
			{
				memcpy(pDst, pSrc, dwSize);
				pDst[dwSize] = 0;
				SetDlgItemText(hwnd,
IDC_LICENSE, (const char *)pDst);
				free(pDst);
			}
			else
				SetDlgItemText(hwnd,
IDC_LICENSE, (const char *)pSrc);
			return TRUE;
		case WM_DESTROY:
			DeleteObject(hFont);
			return TRUE;
		case WM_COMMAND:
			if ( wParam == IDOK )
				EndDialog(hwnd, TRUE);
			if ( wParam == IDCANCEL )
				EndDialog(hwnd, FALSE);
		default:
			break;
	}
	return FALSE;
}

BOOL CALLBACK UpdatedDlgProc(HWND hwnd, UINT uMsg, WPARAM
wParam, LPARAM lParam)
{
	switch(uMsg)
	{
		case WM_INITDIALOG:
			switch(lParam)
			{
				case 1:
				case 2:
					SetDlgItemText(hwnd,
IDC_RESULTS, "TPC-C Web Client Installed");
					break;
			}
			return TRUE;
		case WM_COMMAND:
			if ( wParam == IDOK )
				EndDialog(hwnd, TRUE);
			break;
		default:
			break;
	}
	return FALSE;
}

BOOL CALLBACK MainDlgProc(HWND hwnd, UINT uMsg, WPARAM
wParam, LPARAM lParam)
{
	PAINTSTRUCT		ps;
	MEMORYSTATUS	memoryStatus;
	OSVERSIONINFO	VI;
	char			szTmp[256];
	static char		szDllPath[256];
	static char		szExePath[256];

	switch(uMsg)
	{
		case WM_INITDIALOG:
			GlobalMemoryStatus(&memoryStatus);
			iMaxPhysicalMemory=
(memoryStatus.dwTotalPhys/ 1048576);

			if ( GetInstallPath(szDllPath) )
			{
				MessageBox(hwnd, "Error internet
service inetsrv is not installed.", NULL, MB_ICONSTOP | MB_OK);
				EndDialog(hwnd, FALSE);
				return TRUE;
			}

			// set default values
			ZeroMemory( &Reg, sizeof(Reg) );
			Reg.dwNumberOfDeliveryThreads = 4;
			Reg.dwMaxConnections = 100;
			Reg.dwMaxPendingDeliveries    = 100;
			Reg.eDB_Protocol = DBLIB;
			Reg.eTxnMon = None;
			strcpy(Reg.szDbServer,
"");
			strcpy(Reg.szDbName,
"tpcc");
			strcpy(Reg.szDbUser,		"sa");
			strcpy(Reg.szDbPassword,	"");

			iPoolThreadLimit =  iMaxPhysicalMemory *
2;
			iThreadTimeout = 86400;
			iListenBackLog = 15;
			iAcceptExOutstanding = 40;

			ReadTPCCRegistrySettings( &Reg );
			ReadRegistrySettings();

			GetModuleFileName(hInst, szExePath,
sizeof(szExePath));
			GetVersionInfo(szDllPath, szExePath);

			wsprintf(szTmp, "Version %d.%2.2d.%3.3d",
versionExeMS, versionExeMM, versionExeLS);
			SetDlgItemText(hwnd, IDC_VERSION,
szTmp);

			SetDlgItemText(hwnd, IDC_PATH,
szDllPath);
```

```
                        SetDlgItemText(hwnd, ED_DB_SERVER,
Reg.szDbServer);
                        SetDlgItemText(hwnd, ED_DB_USER_ID,
Reg.szDbUser);
                        SetDlgItemText(hwnd,
ED_DB_PASSWORD, Reg.szDbPassword);
                        SetDlgItemText(hwnd, ED_DB_NAME,
Reg.szDbName);

                        SetDlgItemInt(hwnd, ED_THREADS,
Reg.dwNumberOfDeliveryThreads, FALSE);
                        SetDlgItemInt(hwnd,
ED_MAXCONNECTION, Reg.dwMaxConnections, FALSE);
                        SetDlgItemInt(hwnd,
ED_MAXDELIVERIES, Reg.dwMaxPendingDeliveries, FALSE);
                        SetDlgItemInt(hwnd,
ED_IIS_MAX_THEAD_POOL_LIMIT, iPoolThreadLimit, FALSE);
                        SetDlgItemInt(hwnd,
ED_IIS_THREAD_TIMEOUT, iThreadTimeout, FALSE);
                        SetDlgItemInt(hwnd,
ED_IIS_LISTEN_BACKLOG, iListenBackLog, FALSE);
                        SetDlgItemInt(hwnd,
ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE, iAcceptExOutstanding,
FALSE);

                        CheckDlgButton(hwnd, IDC_DBLIB, 0);
                        CheckDlgButton(hwnd, IDC_ODBC,  0);
                        if ( Reg.eDB_Protocol == DBLIB )
                                CheckDlgButton(hwnd,
IDC_DBLIB, 1);
                        else
                                CheckDlgButton(hwnd,
IDC_ODBC,  1);

                        // check OS version level for COM.  Must be
at least Windows 2000
                        VI.dwOSVersionInfoSize = sizeof(VI);
                        GetVersionEx( &VI );
                        if (VI.dwMajorVersion < 5)
                        {
                                HWND hDlg = GetDlgItem(
hwnd, IDC_TM_MTS );
                                EnableWindow( hDlg, 0 );        //
disable COM option
                                if (Reg.eTxnMon == COM)
                                        Reg.eTxnMon = None;
                        }

                        CheckDlgButton(hwnd, IDC_TM_NONE,
0);
                        CheckDlgButton(hwnd, IDC_TM_TUXEDO,
0);
                        CheckDlgButton(hwnd, IDC_TM_MTS,    0);
                        CheckDlgButton(hwnd, IDC_TM_ENCINA,
0);
                        switch (Reg.eTxnMon)
                        {
                        case None:
                                CheckDlgButton(hwnd,
IDC_TM_NONE,   1);
                                break;
                        case TUXEDO:
                                CheckDlgButton(hwnd,
IDC_TM_TUXEDO, 1);
                                break;
                        case ENCINA:
                                CheckDlgButton(hwnd,
IDC_TM_ENCINA, 1);
                                break;
                        case COM:
                                CheckDlgButton(hwnd,
IDC_TM_MTS,    1);
                                break;
                        }

                        return TRUE;
                case WM_PAINT:
                        if ( IsIconic(hwnd) )
                        {
                                BeginPaint(hwnd, &ps);
                                DrawIcon(ps.hdc, 0, 0, hIcon);
                                EndPaint(hwnd, &ps);
                                return TRUE;
                        }
                        break;
                case WM_COMMAND:
                        if ( HIWORD(wParam) == BN_CLICKED )
                        {
                                switch( LOWORD(wParam) )
                                {
                                        case IDC_DBLIB:
                                                return
TRUE;
                                        case IDC_ODBC:
                                                return
TRUE;
                                        case IDOK:

ProcessOK(hwnd, szDllPath);
                                                return
TRUE;
                                        case IDCANCEL:

EndDialog(hwnd, FALSE);
                                                return
TRUE;
                                        default:
                                                return
FALSE;
                                }
                        }
                        break;
                default:
                        break;
        }
        return FALSE;
}

static void ProcessOK(HWND hwnd, char *szDllPath)
{
        int             d;
        HWND    hDlg;
        int             rc;

        char    szFullName[256];
        char    szErrTxt[128];

        // read settings from dialog
        Reg.dwNumberOfDeliveryThreads  = GetDlgItemInt(hwnd,
ED_THREADS, &d, FALSE);
        Reg.dwMaxConnections = GetDlgItemInt(hwnd,
ED_MAXCONNECTION, &d, FALSE);
        Reg.dwMaxPendingDeliveries = GetDlgItemInt(hwnd,
ED_MAXDELIVERIES, &d, FALSE);
```

```
	GetDlgItemText(hwnd, ED_DB_SERVER, Reg.szDbServer,
sizeof(Reg.szDbServer));
	GetDlgItemText(hwnd, ED_DB_USER_ID, Reg.szDbUser,
sizeof(Reg.szDbUser));
	GetDlgItemText(hwnd, ED_DB_PASSWORD, Reg.szDbPassword,
sizeof(Reg.szDbPassword));
	GetDlgItemText(hwnd, ED_DB_NAME, Reg.szDbName,
sizeof(Reg.szDbName));

	if ( IsDlgButtonChecked(hwnd, IDC_DBLIB) )
	{
		Reg.eDB_Protocol = DBLIB;
		rc = 1;
	}
	else if ( IsDlgButtonChecked(hwnd, IDC_ODBC) )
	{
		Reg.eDB_Protocol = ODBC;
		rc = 2;
	}

	if ( IsDlgButtonChecked(hwnd, IDC_TM_NONE) )
		Reg.eTxnMon = None;
	else if ( IsDlgButtonChecked(hwnd, IDC_TM_TUXEDO) )
		Reg.eTxnMon = TUXEDO;
	else if ( IsDlgButtonChecked(hwnd, IDC_TM_MTS) )
		Reg.eTxnMon = COM;
	else if ( IsDlgButtonChecked(hwnd, IDC_TM_ENCINA) )
		Reg.eTxnMon = ENCINA;

	iPoolThreadLimit = GetDlgItemInt(hwnd,
ED_IIS_MAX_THEAD_POOL_LIMIT, &d, FALSE);
	iThreadTimeout = GetDlgItemInt(hwnd,
ED_IIS_THREAD_TIMEOUT,   &d, FALSE);
	iListenBackLog = GetDlgItemInt(hwnd,
ED_IIS_LISTEN_BACKLOG, &d, FALSE);
	iAcceptExOutstanding = GetDlgItemInt(hwnd,
ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE, &d, FALSE);


	ShowWindow(hwnd, SW_HIDE);
	hDlg = CreateDialog(hInst,
MAKEINTRESOURCE(IDD_DIALOG3), hwnd, CopyDlgProc);
	ShowWindow(hDlg, SW_SHOWNA);
	UpdateDialog(hDlg);


	// write binaries to inetpub\wwwroot
	rc = CopyFiles(hDlg, szDllPath);
	if ( !rc )
	{
		ShowWindow(hwnd, SW_SHOWNA);
		DestroyWindow(hDlg);
		strcpy( szErrTxt, "Error(s) occured when creating " );
		strcat( szErrTxt, szLastFileName );
		MessageBox(hwnd, szErrTxt, NULL, MB_ICONSTOP |
MB_OK);
		EndDialog(hwnd, 0);
		return;
	}

	// update registry
	SetDlgItemText(hDlg, IDC_STATUS, "Updating Registry.");
	SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0,
0);
	UpdateDialog(hDlg);
	WriteRegistrySettings(szDllPath);

	// register com proxy stub
	strcpy(szFullName, szDllPath);
	strcat(szFullName, "tpcc_com_ps.dll");
	if (!RegisterDLL(szFullName))
	{
		ShowWindow(hwnd, SW_SHOWNA);
		DestroyWindow(hDlg);
		strcpy( szErrTxt, "Error occured when registering " );
		strcat( szErrTxt, szFullName );
		MessageBox(hwnd, szErrTxt, NULL, MB_ICONSTOP |
MB_OK);
		EndDialog(hwnd, 0);
		return;
	}

	// if using COM
	if (Reg.eTxnMon == COM)
	{
		SetDlgItemText(hDlg, IDC_STATUS, "Configuring
COM.");
		SendDlgItemMessage(hDlg, IDC_PROGRESS1,
PBM_STEPIT, 0, 0);
		UpdateDialog(hDlg);

		if (install_com(szDllPath))
		{
			ShowWindow(hwnd, SW_SHOWNA);
			DestroyWindow(hDlg);
			strcpy( szErrTxt, "Error occured when
configuring COM settings." );
			MessageBox(hwnd, szErrTxt, NULL,
MB_ICONSTOP | MB_OK);
			EndDialog(hwnd, 0);
			return;
		}
	}

	Sleep(100);

	ShowWindow(hwnd, SW_SHOWNA);
	DestroyWindow(hDlg);

	EndDialog(hwnd, rc);
	return;
}

static void ReadRegistrySettings(void)
{
	HKEY	hKey;
	DWORD	size;
	DWORD	type;

	if ( RegOpenKeyEx(HKEY_LOCAL_MACHINE,
"SYSTEM\\CurrentControlSet\\Services\\Inetinfo\\Parameters", 0,
KEY_READ, &hKey) == ERROR_SUCCESS )
	{
		size = sizeof(iPoolThreadLimit);
		if ( RegQueryValueEx(hKey, "PoolThreadLimit", 0,
&type, (char *)&iPoolThreadLimit, &size) == ERROR_SUCCESS )
			if ( !iPoolThreadLimit )
				iPoolThreadLimit =
iMaxPhysicalMemory * 2;

		size = sizeof(iThreadTimeout);
		if ( RegQueryValueEx(hKey, "ThreadTimeout", 0,
&type, (char *)&iThreadTimeout, &size) == ERROR_SUCCESS )
			if ( !iThreadTimeout )
				iThreadTimeout = 86400;
```

```
                        size = sizeof(iListenBackLog);
                        if ( RegQueryValueEx(hKey, "ListenBackLog", 0,
&type, (char *)&iListenBackLog, &size) == ERROR_SUCCESS )
                                if ( !iListenBackLog )
                                        iListenBackLog = 15;

                        RegCloseKey(hKey);
        }

        if ( RegOpenKeyEx(HKEY_LOCAL_MACHINE,
"SYSTEM\\CurrentControlSet\\Services\\W3SVC\\Parameters", 0,
KEY_READ, &hKey) == ERROR_SUCCESS )
        {
                        size = sizeof(iAcceptExOutstanding);
                        if ( RegQueryValueEx(hKey, "AcceptExOutstanding", 0,
&type, (char *)&iAcceptExOutstanding, &size) == ERROR_SUCCESS )
                                if ( !iAcceptExOutstanding )
                                        iAcceptExOutstanding = 40;

                        RegCloseKey(hKey);
        }
}

static void WriteRegistrySettings(char *szDllPath)
{
        HKEY    hKey;
        DWORD   dwDisposition;
        char    szTmp[256];
        char    *ptr;
        int             iRc;

        if ( RegCreateKeyEx(HKEY_LOCAL_MACHINE,
"SOFTWARE\\Microsoft\\TPCC", 0, NULL,
REG_OPTION_NON_VOLATILE, KEY_ALL_ACCESS, NULL, &hKey,
&dwDisposition) == ERROR_SUCCESS )
        {
                        strcpy(szTmp, szDllPath);
                        ptr = strstr(szTmp, "tpcc");
                        if ( ptr )
                                *ptr = 0;

                        RegSetValueEx(hKey, "Path", 0, REG_SZ, szTmp,
strlen(szTmp)+1);

                        RegSetValueEx(hKey, "NumberOfDeliveryThreads", 0,
REG_DWORD, (char *)&Reg.dwNumberOfDeliveryThreads,
sizeof(Reg.dwNumberOfDeliveryThreads));
                        RegSetValueEx(hKey, "MaxConnections", 0,
REG_DWORD, (char *)&Reg.dwMaxConnections,
sizeof(Reg.dwMaxConnections));
                        RegSetValueEx(hKey, "MaxPendingDeliveries", 0,
REG_DWORD, (char *)&Reg.dwMaxPendingDeliveries,
sizeof(Reg.dwMaxPendingDeliveries));

                        RegSetValueEx(hKey, "DB_Protocol", 0, REG_SZ,
szDBNames[Reg.eDB_Protocol], strlen(szDBNames[Reg.eDB_Protocol])+1);
                        RegSetValueEx(hKey, "TxnMonitor", 0, REG_SZ,
szTxnMonNames[Reg.eTxnMon], strlen(szTxnMonNames[Reg.eTxnMon])+1);

                        RegSetValueEx(hKey, "DbServer", 0, REG_SZ,
Reg.szDbServer, strlen(Reg.szDbServer)+1);
                        RegSetValueEx(hKey, "DbName", 0, REG_SZ,
Reg.szDbName, strlen(Reg.szDbName)+1);
                        RegSetValueEx(hKey, "DbUser", 0, REG_SZ,
Reg.szDbUser, strlen(Reg.szDbUser)+1);
                        RegSetValueEx(hKey, "DbPassword", 0, REG_SZ,
Reg.szDbPassword, strlen(Reg.szDbPassword)+1);

                        strcpy(szTmp, "YES");
                        RegSetValueEx(hKey, "COM_SinglePool", 0, REG_SZ,
szTmp, strlen(szTmp)+1);

                        RegFlushKey(hKey);
                        RegCloseKey(hKey);
        }

        if ( (iRc=RegCreateKeyEx(HKEY_LOCAL_MACHINE,
"SYSTEM\\CurrentControlSet\\Services\\Inetinfo\\Parameters", 0, NULL,
REG_OPTION_NON_VOLATILE, KEY_ALL_ACCESS, NULL, &hKey,
&dwDisposition)) == ERROR_SUCCESS )
        {
                        RegSetValueEx(hKey, "PoolThreadLimit", 0,
REG_DWORD, (char *)&iPoolThreadLimit, sizeof(iPoolThreadLimit));
                        RegSetValueEx(hKey, "ThreadTimeout", 0,
REG_DWORD, (char *)&iThreadTimeout, sizeof(iThreadTimeout));
                        RegSetValueEx(hKey, "ListenBackLog", 0,
REG_DWORD, (char *)&iListenBackLog, sizeof(iListenBackLog));

                        RegFlushKey(hKey);
                        RegCloseKey(hKey);
        }

        if ( (iRc=RegCreateKeyEx(HKEY_LOCAL_MACHINE,
"SYSTEM\\CurrentControlSet\\Services\\W3SVC\\Parameters", 0, NULL,
REG_OPTION_NON_VOLATILE, KEY_ALL_ACCESS, NULL, &hKey,
&dwDisposition)) == ERROR_SUCCESS )
        {
                        RegSetValueEx(hKey, "AcceptExOutstanding", 0,
REG_DWORD, (char *)&iAcceptExOutstanding,
sizeof(iAcceptExOutstanding));

                        RegFlushKey(hKey);
                        RegCloseKey(hKey);
        }

        return;
}

BOOL CALLBACK CopyDlgProc(HWND hwnd, UINT uMsg, WPARAM
wParam, LPARAM lParam)
{
        if ( uMsg == WM_INITDIALOG )
        {
                        SendDlgItemMessage(hwnd, IDC_PROGRESS1,
PBM_SETRANGE, 0, MAKELPARAM(0, 16));
                        SendDlgItemMessage(hwnd, IDC_PROGRESS1,
PBM_SETSTEP, (WPARAM)1, 0);
                        return TRUE;
        }
        return FALSE;
}

BOOL RegisterDLL(char *szFileName)
{
        HINSTANCE       hLib;
        FARPROC                 lpDllEntryPoint;

        hLib = LoadLibrary(szFileName);
        if ( hLib == NULL )
                return FALSE;
        // Find the entry point.
        lpDllEntryPoint = GetProcAddress(hLib, "DllRegisterServer");
        if (lpDllEntryPoint != NULL)
        {
                return ((*lpDllEntryPoint)() == S_OK);
        }
```

```
	else
		return FALSE;		//unable to locate entry point
}

BOOL FileFromResource( char *szResourceName, int iResourceId, char
*szDllPath, char *szFileName )
{
	HGLOBAL				hDLL;
	HRSRC				hResInfo;
	HANDLE				hFile;
	DWORD				dwSize;
	BYTE				*pSrc;
	DWORD				d;
	char				szFullName[256];

	hResInfo = FindResource(hInst,
MAKEINTRESOURCE(iResourceId), szResourceName);

	strcpy(szFullName, szDllPath);
	strcat(szFullName, szFileName);

	dwSize = SizeofResource(hInst, hResInfo);
	hDLL = LoadResource(hInst, hResInfo );
	pSrc = (BYTE *)LockResource(hDLL);
	remove(szFullName);

	if ( !(hFile = CreateFile(szFullName, GENERIC_WRITE, 0, NULL,
CREATE_ALWAYS, FILE_ATTRIBUTE_NORMAL, NULL)) )
		return FALSE;

	if ( !WriteFile(hFile, pSrc, dwSize, &d, NULL) )
		return FALSE;

	CloseHandle(hFile);

	UnlockResource(hDLL);
	FreeResource(hDLL);
	return TRUE;
}

static int CopyFiles(HWND hDlg, char *szDllPath)
{
	BOOL		bSvcRunning;

	bSvcRunning = CheckWWWebService();
	if ( bSvcRunning )
	{
		SetDlgItemText(hDlg, IDC_STATUS, "Stopping Web
Service.");
		SendDlgItemMessage(hDlg, IDC_PROGRESS1,
PBM_STEPIT, 0, 0);
		UpdateDialog(hDlg);

		StopWWWebService();
		SendDlgItemMessage(hDlg, IDC_PROGRESS1,
PBM_STEPIT, 0, 0);
		UpdateDialog(hDlg);
	}

	SetDlgItemText(hDlg, IDC_STATUS, "Copying Files...");
	SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0,
0);
	UpdateDialog(hDlg);

	// install TPCC.DLL
	strcpy( szLastFileName, "tpcc.dll" );
	if (!FileFromResource( "TPCCDLL", IDR_TPCCDLL, szDllPath,
szLastFileName ))
		return 0;
	SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0,
0);
	UpdateDialog(hDlg);

	// install tpcc_dblib.dll
	strcpy( szLastFileName, "tpcc_dblib.dll" );
	if (!FileFromResource( "DBLIB_DLL", IDR_DBLIB_DLL,
szDllPath, szLastFileName ))
		return 0;
	SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0,
0);
	UpdateDialog(hDlg);

	// install tpcc_odbc.dll
	strcpy( szLastFileName, "tpcc_odbc.dll" );
	if (!FileFromResource( "ODBC_DLL", IDR_ODBC_DLL,
szDllPath, szLastFileName ))
		return 0;
	SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0,
0);
	UpdateDialog(hDlg);

	// install tuxapp.exe
	strcpy( szLastFileName, "tuxapp.exe" );
	if (!FileFromResource( "TUXEDO_APP", IDR_TUXEDO_APP,
szDllPath, szLastFileName ))
		return 0;
	SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0,
0);
	UpdateDialog(hDlg);

	// install tpcc_tuxedo.dll
	strcpy( szLastFileName, "tpcc_tuxedo.dll" );
	if (!FileFromResource( "TUXEDO_DLL", IDR_TUXEDO_DLL,
szDllPath, szLastFileName ))
		return 0;
	SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0,
0);
	UpdateDialog(hDlg);

	// install tpcc_com.dll
	strcpy( szLastFileName, "tpcc_com.dll" );
	if (!FileFromResource( "COM_DLL", IDR_COM_DLL, szDllPath,
szLastFileName ))
		return 0;
	SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0,
0);
	UpdateDialog(hDlg);

	// install tpcc_com_all.tlb
	strcpy( szLastFileName, "tpcc_com_all.tlb" );
	if (!FileFromResource( "COM_TYPLIB",
IDR_COMTYPLIB_DLL, szDllPath, szLastFileName ))
		return 0;
	SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0,
0);
	UpdateDialog(hDlg);

	// install tpcc_com_ps.dll
	strcpy( szLastFileName, "tpcc_com_ps.dll" );
	if (!FileFromResource( "COM_PS_DLL", IDR_COMPS_DLL,
szDllPath, szLastFileName ))
		return 0;
	SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0,
0);
	UpdateDialog(hDlg);
```

```
	// install tpcc_com_all.dll
	strcpy( szLastFileName, "tpcc_com_all.dll" );
	if (!FileFromResource( "COM_ALL_DLL", IDR_COMALL_DLL,
szDllPath, szLastFileName ))
		return 0;
	SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0,
0);
	UpdateDialog(hDlg);

	//if we stopped service restart it.
	if ( bSvcRunning )
	{
		SetDlgItemText(hDlg, IDC_STATUS, "Starting Web
Service.");
		SendDlgItemMessage(hDlg, IDC_PROGRESS1,
PBM_STEPIT, 0, 0);
		UpdateDialog(hDlg);
		StartWWWebService();
	}

	SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0,
0);
	UpdateDialog(hDlg);

	return 1;
}

static BOOL GetInstallPath(char *szDllPath)
{
  HKEY	hKey;
	BYTE	szData[256];
	DWORD	sv;
	BOOL	bRc;
	int		len;
	int		iRc;


	// Registry key
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\InetStp\PathWWWRoot
is used to find the
	// IIS default web site directory and determine that IIS is installed.

	szDllPath[0] =  0;
	bRc = TRUE;
	if ( RegOpenKeyEx(HKEY_LOCAL_MACHINE,
"SOFTWARE\\Microsoft\\InetStp", 0, KEY_ALL_ACCESS, &hKey) ==
ERROR_SUCCESS )
	{
		sv = sizeof(szData);
		iRc = RegQueryValueEx( hKey, "PathWWWRoot",
NULL, NULL, szData, &sv );  // used by IIS 5.0 & 6.0
		if (iRc == ERROR_SUCCESS)
		{
			bRc = FALSE;
			strcpy(szDllPath, szData);
			len = strlen(szDllPath);
			if ( szDllPath[len-1] != '\\' )
			{
				szDllPath[len] = '\\';
				szDllPath[len+1] = 0;
			}
		}

		RegCloseKey(hKey);
	}

	return bRc;
}

static void GetVersionInfo(char *szDLLPath, char *szExePath)
{
	DWORD				d;
	DWORD				dwSize;
	DWORD				dwBytes;
	char				*ptr;
	VS_FIXEDFILEINFO	*vs;

	versionDllMS = 0;
	versionDllLS = 0;
	if ( _access(szDLLPath, 00) == 0 )
	{
		dwSize = GetFileVersionInfoSize(szDLLPath, &d);
		if ( dwSize )
		{
			ptr = (char *)malloc(dwSize);
			GetFileVersionInfo(szDLLPath, 0, dwSize,
ptr);
			VerQueryValue(ptr, "\\",&vs, &dwBytes);
			versionDllMS = vs->dwProductVersionMS;
			versionDllLS = vs->dwProductVersionLS;
			free(ptr);
		}
	}

	versionExeMS = 0x7FFF;
	versionExeLS = 0x7FFF;
	dwSize = GetFileVersionInfoSize(szExePath, &d);
	if ( dwSize )
	{
		ptr = (char *)malloc(dwSize);
		GetFileVersionInfo(szExePath, 0, dwSize, ptr);
		VerQueryValue(ptr, "\\",&vs, &dwBytes);

		versionExeMS = vs->dwProductVersionMS;
		versionExeLS = LOWORD(vs->dwProductVersionLS);
		versionExeMM = HIWORD(vs->dwProductVersionLS);
		free(ptr);
	}
	return;
}

static BOOL CheckWWWebService(void)
{
	SC_HANDLE		schSCManager;
	SC_HANDLE		schService;
	SERVICE_STATUS  ssStatus;

	schSCManager = OpenSCManager(NULL, NULL,
SC_MANAGER_ALL_ACCESS);
	schService = OpenService(schSCManager, TEXT("W3SVC"),
SERVICE_ALL_ACCESS);
	if (schService == NULL)
		return FALSE;

	if (! QueryServiceStatus(schService, &ssStatus) )
		goto ServiceNotRunning;

	if ( !ControlService(schService, SERVICE_CONTROL_STOP,
&ssStatus) )
		goto ServiceNotRunning;
	//start Service pending, Check the status until the service is running.
	if (! QueryServiceStatus(schService, &ssStatus) )
		goto ServiceNotRunning;

	CloseServiceHandle(schService);
	return TRUE;
```

```
ServiceNotRunning:

        CloseServiceHandle(schService);
        return FALSE;
}

static BOOL StartWWWebService(void)
{
        SC_HANDLE               schSCManager;
        SC_HANDLE               schService;
        SERVICE_STATUS  ssStatus;
        DWORD                   dwOldCheckPoint;

        schSCManager = OpenSCManager(NULL, NULL,
SC_MANAGER_ALL_ACCESS);
        schService = OpenService(schSCManager, TEXT("W3SVC"),
SERVICE_ALL_ACCESS);
        if (schService == NULL)
                return FALSE;

        if (! StartService(schService, 0, NULL) )
                goto StartWWWebErr;
        //start Service pending, Check the status until the service is running.
        if (! QueryServiceStatus(schService, &ssStatus) )
                goto StartWWWebErr;
        while( ssStatus.dwCurrentState != SERVICE_RUNNING)
        {

                dwOldCheckPoint = ssStatus.dwCheckPoint;
        //Save the current checkpoint.
                Sleep(ssStatus.dwWaitHint);
                        //Wait for the specified interval.
                if ( !QueryServiceStatus(schService, &ssStatus) )
//Check the status again.
                        break;
                if (dwOldCheckPoint >= ssStatus.dwCheckPoint)
//Break if the checkpoint has not been incremented.
                        break;
        }

        if (ssStatus.dwCurrentState == SERVICE_RUNNING)
                goto StartWWWebErr;

        CloseServiceHandle(schService);
        return TRUE;

StartWWWebErr:
        CloseServiceHandle(schService);
        return FALSE;
}

static BOOL StopWWWebService(void)
{
        SC_HANDLE               schSCManager;
        SC_HANDLE               schService;
        SERVICE_STATUS  ssStatus;
        DWORD                   dwOldCheckPoint;

        schSCManager = OpenSCManager(NULL, NULL,
SC_MANAGER_ALL_ACCESS);
        schService = OpenService(schSCManager, TEXT("W3SVC"),
SERVICE_ALL_ACCESS);
        if (schService == NULL)
                return FALSE;

        if (! QueryServiceStatus(schService, &ssStatus) )
                goto StopWWWebErr;
        if ( !ControlService(schService, SERVICE_CONTROL_STOP,
&ssStatus) )
                goto StopWWWebErr;
        //start Service pending, Check the status until the service is running.
        if (! QueryServiceStatus(schService, &ssStatus) )
                goto StopWWWebErr;
        while( ssStatus.dwCurrentState == SERVICE_RUNNING)
        {

                dwOldCheckPoint = ssStatus.dwCheckPoint;
        //Save the current checkpoint.
                Sleep(ssStatus.dwWaitHint);
                        //Wait for the specified interval.
                if ( !QueryServiceStatus(schService, &ssStatus) )
//Check the status again.
                        break;
                if (dwOldCheckPoint >= ssStatus.dwCheckPoint)
//Break if the checkpoint has not been incremented.
                        break;
        }

        if (ssStatus.dwCurrentState == SERVICE_RUNNING)
                goto StopWWWebErr;

        CloseServiceHandle(schService);
        return TRUE;

StopWWWebErr:
        CloseServiceHandle(schService);
        return FALSE;
}

static void UpdateDialog(HWND hDlg)
{
        MSG msg;

        UpdateWindow(hDlg);
        while( PeekMessage(&msg, hDlg, 0, 0, PM_REMOVE) )
        {
                TranslateMessage(&msg);
                DispatchMessage(&msg);
        }
        Sleep(250);
        return;
}
```

install.dsp

```
# Microsoft Developer Studio Project File - Name="install" - Package
Owner=<4>
# Microsoft Developer Studio Generated Build File, Format Version 6.00
# ** DO NOT EDIT **

# TARGTYPE "Win32 (x86) Application" 0x0101

CFG=install - Win32 Release
!MESSAGE This is not a valid makefile. To build this project using NMAKE,
!MESSAGE use the Export Makefile command and run
!MESSAGE
!MESSAGE NMAKE /f "install.mak".
!MESSAGE
!MESSAGE You can specify a configuration when running NMAKE
!MESSAGE by defining the macro CFG on the command line. For example:
!MESSAGE
!MESSAGE NMAKE /f "install.mak" CFG="install - Win32 Release"
!MESSAGE
```

```
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "install - Win32 Release" (based on "Win32 (x86) Application")
!MESSAGE "install - Win32 Debug" (based on "Win32 (x86) Application")
!MESSAGE

# Begin Project
# PROP AllowPerConfigDependencies 0
# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CPP=cl.exe
MTL=midl.exe
RSC=rc.exe

!IF  "$(CFG)" == "install - Win32 Release"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir ".\Release"
# PROP BASE Intermediate_Dir ".\Release"
# PROP BASE Target_Dir "."
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir "."
# ADD BASE CPP /nologo /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /c
# ADD CPP /nologo /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "NDEBUG" /win32
# ADD MTL /nologo /D "NDEBUG" /mktyplib203 /win32
# ADD BASE RSC /l 0x409 /d "NDEBUG"
# ADD RSC /l 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /machine:I386
# ADD LINK32 version.lib comctl32.lib kernel32.lib user32.lib gdi32.lib
winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib
uuid.lib odbc32.lib odbccp32.lib /nologo /subsystem:windows /machine:I386
/out:"..\bin\install.exe"

!ELSEIF  "$(CFG)" == "install - Win32 Debug"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir ".\Debug"
# PROP BASE Intermediate_Dir ".\Debug"
# PROP BASE Target_Dir "."
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir "."
# ADD BASE CPP /nologo /W3 /Gm /GX /Zi /Od /D "WIN32" /D "_DEBUG"
/D "_WINDOWS" /YX /c
# ADD CPP /nologo /W3 /Gm /GX /ZI /Od /D "WIN32" /D "_DEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "_DEBUG" /win32
# ADD MTL /nologo /D "_DEBUG" /mktyplib203 /win32
# ADD BASE RSC /l 0x409 /d "_DEBUG"
# ADD RSC /l 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /debug /machine:I386
# ADD LINK32 version.lib comctl32.lib kernel32.lib user32.lib gdi32.lib
winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib
uuid.lib odbc32.lib odbccp32.lib /nologo /subsystem:windows /debug
/machine:I386 /out:"..\bin\install.exe"

!ENDIF

# Begin Target

# Name "install - Win32 Release"
# Name "install - Win32 Debug"
# Begin Group "Source Files"

# PROP Default_Filter "cpp;c;cxx;rc;def;r;odl;hpj;bat;for;f90"
# Begin Source File

SOURCE=.\src\install.c
# End Source File
# Begin Source File

SOURCE=.\src\install.rc
# ADD BASE RSC /l 0x409 /i "src"
# ADD RSC /l 0x409 /i "src" /i "..\src"
# End Source File
# Begin Source File

SOURCE=.\src\install_com.cpp
# End Source File
# End Group
# Begin Group "Header Files"

# PROP Default_Filter "h;hpp;hxx;hm;inl;fi;fd"
# End Group
# Begin Group "Resource Files"

# PROP Default_Filter "ico;cur;bmp;dlg;rc2;rct;bin;cnt;rtf;gif;jpg;jpeg;jpe"
# Begin Source File

SOURCE=.\SRC\ICON1.ICO
# End Source File
# Begin Source File

SOURCE=.\SRC\ICON2.ICO
# End Source File
# End Group
# Begin Source File

SOURCE=.\SRC\LICENSE.TXT
# End Source File
# Begin Source File

SOURCE=..\isapi_dll\bin\tpcc.dll
# End Source File
# Begin Source File

SOURCE=..\tm_com_dll\bin\tpcc_com.dll
# End Source File
# Begin Source File

SOURCE=..\tpcc_com_all\bin\tpcc_com_all.dll
# End Source File
```

```
# Begin Source File

SOURCE=..\tpcc_com_ps\bin\tpcc_com_ps.dll
# End Source File
# Begin Source File

SOURCE=..\db_dblib_dll\bin\tpcc_dblib.dll
# End Source File
# Begin Source File

SOURCE=..\db_odbc_dll\bin\tpcc_odbc.dll
# End Source File
# Begin Source File

SOURCE=..\tm_tuxedo_dll\bin\tpcc_tuxedo.dll
# End Source File
# Begin Source File

SOURCE=..\tuxapp\bin\tuxapp.exe
# End Source File
# End Target
# End Project
```

install.h

```
//{{NO_DEPENDENCIES}}
// Microsoft Developer Studio generated include file.
// Used by install.rc
//

#define IDD_DIALOG1                     101
#define IDI_ICON1                       102
#define IDR_TPCCDLL                     103
#define IDD_DIALOG2                     105
#define IDI_ICON2                       106
#define IDR_DELIVERY                    107
#define IDD_DIALOG3                     108

#define BN_LOG                          1001
#define ED_KEEP                         1002
#define ED_THREADS                      1003
#define ED_THREADS2                     1004
#define IDC_PATH                        1007
#define IDC_VERSION                     1009
#define IDC_RESULTS                     1010
#define IDC_PROGRESS1                   1011
#define IDC_STATUS                      1012
#define IDC_BUTTON1                     1013
#define ED_MAXCONNECTION                1014
#define ED_IIS_MAX_THEAD_POOL_LIMIT             1015
#define ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE               1017
#define ED_IIS_THREAD_TIMEOUT                   1018
#define ED_IIS_LISTEN_BACKLOG                   1019
#define IDC_DBLIB                       1021
#define IDC_ODBC                        1022
#define IDC_CONNECT_POOL
1023
#define ED_USER_CONNECT_DELAY_TIME
1024

// Next default values for new objects
//
```

install.rc

```
//Microsoft Developer Studio generated resource script.
//
#include "resource.h"

#define APSTUDIO_READONLY_SYMBOLS
////////////////////////////////////////////////////////////////////////
//
// Generated from the TEXTINCLUDE 2 resource.
//
#include "afxres.h"

////////////////////////////////////////////////////////////////////////
#undef APSTUDIO_READONLY_SYMBOLS

////////////////////////////////////////////////////////////////////////
// English (U.S.) resources

#if !defined(AFX_RESOURCE_DLL) || defined(AFX_TARG_ENU)
#ifdef _WIN32
LANGUAGE LANG_ENGLISH, SUBLANG_ENGLISH_US
#pragma code_page(1252)
#endif //_WIN32

////////////////////////////////////////////////////////////////////////
//
// Dialog
//

IDD_DIALOG1 DIALOGEX 0, 0, 219, 351
STYLE DS_MODALFRAME | DS_CENTER | WS_MINIMIZEBOX |
WS_POPUP | WS_CAPTION |
    WS_SYSMENU
CAPTION "TPC-C Web Client Installation Utility"
FONT 8, "MS Sans Serif"
BEGIN
    EDITTEXT        ED_THREADS,164,45,34,12,ES_RIGHT | ES_NUMBER,
                    WS_EX_RTLREADING
    EDITTEXT        ED_MAXDELIVERIES,164,59,34,12,ES_RIGHT |
ES_NUMBER,
                    WS_EX_RTLREADING
    EDITTEXT        ED_MAXCONNECTION,164,73,34,12,ES_RIGHT |
ES_NUMBER,
                    WS_EX_RTLREADING
    CONTROL
"None",IDC_TM_NONE,"Button",BS_AUTORADIOBUTTON |
                    WS_GROUP | WS_TABSTOP,43,100,33,10
    CONTROL
"COM",IDC_TM_MTS,"Button",BS_AUTORADIOBUTTON |
                    WS_TABSTOP,43,113,32,10
    CONTROL
"TUXEDO",IDC_TM_TUXEDO,"Button",BS_AUTORADIOBUTTON |
                    WS_TABSTOP,106,100,46,10
    CONTROL
"ENCINA",IDC_TM_ENCINA,"Button",BS_AUTORADIOBUTTON |
                    WS_DISABLED | WS_TABSTOP,106,113,43,10
    EDITTEXT        ED_DB_SERVER,131,152,67,12,ES_AUTOHSCROLL
    EDITTEXT        ED_DB_USER_ID,131,165,67,12,ES_AUTOHSCROLL
    EDITTEXT        ED_DB_PASSWORD,131,178,67,12,ES_AUTOHSCROLL
    EDITTEXT        ED_DB_NAME,131,191,67,12,ES_AUTOHSCROLL
    CONTROL
"DBLIB",IDC_DBLIB,"Button",BS_AUTORADIOBUTTON | WS_GROUP |
                    WS_TABSTOP,45,219,39,12
    CONTROL
"ODBC",IDC_ODBC,"Button",BS_AUTORADIOBUTTON | WS_TABSTOP,
                    91,219,39,12
    EDITTEXT
ED_IIS_MAX_THEAD_POOL_LIMIT,164,263,34,12,ES_RIGHT |
                    ES_NUMBER,WS_EX_RTLREADING
```

```
    EDITTEXT
ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE,164,277,34,12,ES_RIGHT |
                ES_NUMBER,WS_EX_RTLREADING
    EDITTEXT        ED_IIS_THREAD_TIMEOUT,164,291,34,12,ES_RIGHT |
ES_NUMBER,
                WS_EX_RTLREADING
    EDITTEXT        ED_IIS_LISTEN_BACKLOG,164,305,34,12,ES_RIGHT |
ES_NUMBER,
                WS_EX_RTLREADING
    DEFPUSHBUTTON   "OK",IDOK,53,331,50,14
    PUSHBUTTON      "Cancel",IDCANCEL,119,331,50,14
    EDITTEXT        IDC_PATH,106,26,91,13,ES_AUTOHSCROLL |
ES_READONLY
    LTEXT           "Number of Delivery Threads:",IDC_STATIC,35,45,115,12
    LTEXT           "Max Number of Connections:",IDC_STATIC,35,73,115,12
    RTEXT           "Version 4.11",IDC_VERSION,120,4,89,9
    LTEXT           "IIS Max Thread Pool Limit:",IDC_STATIC,36,263,115,12
    LTEXT           "Web Service Backlog Queue
Size:",IDC_STATIC,36,277,115,
                12
    LTEXT           "IIS Thread Timeout (seconds):",IDC_STATIC,36,291,115,12
    LTEXT           "IIS Listen Backlog:",IDC_STATIC,36,307,115,10
    GROUPBOX        "Database
Interface",IDC_STATIC,35,208,163,27,WS_GROUP
    LTEXT           "Installation directory:",IDC_STATIC,35,29,71,10
    GROUPBOX        "Transaction Monitor",IDC_STATIC,33,90,165,37
    LTEXT           "Server Name:",IDC_STATIC,35,155,56,8
    LTEXT           "User ID:",IDC_STATIC,35,168,60,8
    LTEXT           "User Password:",IDC_STATIC,35,181,83,8
    LTEXT           "Database Name:",IDC_STATIC,35,194,54,8
    GROUPBOX        "SQL Server Connection
Properties",IDC_STATIC,22,139,187,
                102
    GROUPBOX        "Web Client Properties",IDC_STATIC,22,15,187,118
    GROUPBOX        "IIS Settings",IDC_STATIC,22,247,187,79
    LTEXT           "Max Pending Deliveries:",IDC_STATIC,35,59,115,12
END

IDD_DIALOG2 DIALOGEX 0, 0, 117, 62
STYLE DS_SETFOREGROUND | DS_3DLOOK | DS_CENTER |
WS_POPUP | WS_BORDER
EXSTYLE WS_EX_STATICEDGE
FONT 12, "MS Sans Serif", 0, 0, 0x1
BEGIN
    DEFPUSHBUTTON   "OK",IDOK,33,45,50,9
    CTEXT           "HTML TPC-C Installation
Successfull",IDC_RESULTS,7,22,
                102,18,0,WS_EX_CLIENTEDGE
    ICON            IDI_ICON2,IDC_STATIC,50,7,18,20,SS_REALSIZEIMAGE,
                WS_EX_TRANSPARENT
END

IDD_DIALOG3 DIALOG DISCARDABLE  0, 0, 91, 40
STYLE DS_SYSMODAL | DS_MODALFRAME | DS_3DLOOK |
DS_CENTER | WS_CAPTION
CAPTION "Installing TPC-C Web Client"
FONT 12, "Arial Black"
BEGIN
    CONTROL
"Progress1",IDC_PROGRESS1,"msctls_progress32",WS_BORDER,
                7,20,77,13
    CTEXT           "Static",IDC_STATUS,7,7,77,12,SS_SUNKEN
END

IDD_DIALOG4 DIALOG DISCARDABLE  0, 0, 291, 202
STYLE DS_MODALFRAME | DS_CENTER | WS_POPUP | WS_CAPTION |
WS_SYSMENU
CAPTION "Client End User License"
FONT 8, "MS Sans Serif"
BEGIN
    EDITTEXT        IDC_LICENSE,7,7,271,167,ES_MULTILINE |
ES_AUTOVSCROLL |
                ES_AUTOHSCROLL | ES_READONLY | WS_VSCROLL |
WS_HSCROLL
    DEFPUSHBUTTON   "I &Agree",IDOK,87,181,50,14
    PUSHBUTTON      "&Cancel",IDCANCEL,153,181,50,14
END


/////////////////////////////////////////////////////////////////////////////
//
// DESIGNINFO
//

#ifdef APSTUDIO_INVOKED
GUIDELINES DESIGNINFO DISCARDABLE
BEGIN
    IDD_DIALOG1, DIALOG
    BEGIN
        LEFTMARGIN, 22
        RIGHTMARGIN, 209
        VERTGUIDE, 35
        VERTGUIDE, 198
        TOPMARGIN, 4
        BOTTOMMARGIN, 345
    END

    IDD_DIALOG2, DIALOG
    BEGIN
        LEFTMARGIN, 7
        RIGHTMARGIN, 109
        TOPMARGIN, 7
        BOTTOMMARGIN, 54
    END

    IDD_DIALOG3, DIALOG
    BEGIN
        LEFTMARGIN, 7
        RIGHTMARGIN, 84
        TOPMARGIN, 7
        BOTTOMMARGIN, 33
    END

    IDD_DIALOG4, DIALOG
    BEGIN
        LEFTMARGIN, 7
        RIGHTMARGIN, 278
        TOPMARGIN, 7
        BOTTOMMARGIN, 195
    END
END
#endif    // APSTUDIO_INVOKED


#ifdef APSTUDIO_INVOKED
/////////////////////////////////////////////////////////////////////////////
//
// TEXTINCLUDE
//

1 TEXTINCLUDE DISCARDABLE
BEGIN
    "resource.h\0"
END

2 TEXTINCLUDE DISCARDABLE
```

```
BEGIN
    "#include ""afxres.h""\r\n"
    "\0"
END

3 TEXTINCLUDE DISCARDABLE
BEGIN
    "\r\n"
    "\0"
END

#endif    // APSTUDIO_INVOKED


/////////////////////////////////////////////////////////////////////////////
//
// Icon
//

// Icon with lowest ID value placed first to ensure application icon
// remains consistent on all systems.
IDI_ICON1               ICON    DISCARDABLE     "icon1.ico"
IDI_ICON2               ICON    DISCARDABLE     "icon2.ico"

/////////////////////////////////////////////////////////////////////////////
//
// TPCCDLL
//

IDR_TPCCDLL             TPCCDLL DISCARDABLE
"..\\..\\isapi_dll\\bin\\tpcc.dll"

#ifndef _MAC
/////////////////////////////////////////////////////////////////////////////
//
// Version
//

VS_VERSION_INFO VERSIONINFO
 FILEVERSION 0,4,20,0
 PRODUCTVERSION 0,4,20,0
 FILEFLAGSMASK 0x3fL
#ifdef _DEBUG
 FILEFLAGS 0x1L
#else
 FILEFLAGS 0x0L
#endif
 FILEOS 0x40004L
 FILETYPE 0x1L
 FILESUBTYPE 0x0L
BEGIN
    BLOCK "StringFileInfo"
    BEGIN
        BLOCK "040904b0"
        BEGIN
            VALUE "Comments", "TPC-C Web Client Installer\0"
            VALUE "CompanyName", "Microsoft\0"
            VALUE "FileDescription", "install\0"
            VALUE "FileVersion", "0, 4, 20, 0\0"
            VALUE "InternalName", "install\0"
            VALUE "LegalCopyright", "Copyright © 1999\0"
            VALUE "OriginalFilename", "install.exe\0"
            VALUE "ProductName", "Microsoft install\0"
            VALUE "ProductVersion", "0, 4, 20, 0\0"
        END
    END
    BLOCK "VarFileInfo"
    BEGIN
        VALUE "Translation", 0x409, 1200
    END
END

#endif    // !_MAC


/////////////////////////////////////////////////////////////////////////////
//
// LICENSE
//

IDR_LICENSE1            LICENSE DISCARDABLE     "license.txt"

/////////////////////////////////////////////////////////////////////////////
//
// DBLIB_DLL
//

IDR_DBLIB_DLL           DBLIB_DLL DISCARDABLE
"..\\..\\db_dblib_dll\\bin\\tpcc_dblib.dll"

/////////////////////////////////////////////////////////////////////////////
//
// ODBC_DLL
//

IDR_ODBC_DLL            ODBC_DLL DISCARDABLE
"..\\..\\db_odbc_dll\\bin\\tpcc_odbc.dll"

/////////////////////////////////////////////////////////////////////////////
//
// TUXEDO_APP
//

IDR_TUXEDO_APP          TUXEDO_APP DISCARDABLE
"..\\..\\tuxapp\\bin\\tuxapp.exe"

/////////////////////////////////////////////////////////////////////////////
//
// TUXEDO_DLL
//

IDR_TUXEDO_DLL          TUXEDO_DLL DISCARDABLE
"..\\..\\tm_tuxedo_dll\\bin\\tpcc_tuxedo.dll"

/////////////////////////////////////////////////////////////////////////////
//
// COM_DLL
//

IDR_COM_DLL             COM_DLL DISCARDABLE
"..\\..\\tm_com_dll\\bin\\tpcc_com.dll"

/////////////////////////////////////////////////////////////////////////////
//
// COM_PS_DLL
//

IDR_COMPS_DLL           COM_PS_DLL DISCARDABLE
"..\\..\\tpcc_com_ps\\bin\\tpcc_com_ps.dll"

/////////////////////////////////////////////////////////////////////////////
//
// COM_ALL_DLL
//
```

```
IDR_COMALL_DLL          COM_ALL_DLL DISCARDABLE
"..\\..\\tpcc_com_all\\bin\\tpcc_com_all.dll"

/////////////////////////////////////////////////////////////////////////////
//
// COM_TYPLIB
//

IDR_COMTYPLIB_DLL       COM_TYPLIB DISCARDABLE
"..\\..\\tpcc_com_all\\src\\tpcc_com_all.tlb"

#endif    // English (U.S.) resources
/////////////////////////////////////////////////////////////////////////////



#ifndef APSTUDIO_INVOKED
/////////////////////////////////////////////////////////////////////////////
//
// Generated from the TEXTINCLUDE 3 resource.
//


/////////////////////////////////////////////////////////////////////////////
#endif    // not APSTUDIO_INVOKED
```

install_com.cpp

```
/*          FILE:                   INSTALL_COM.CPP
 *                                          Microsoft TPC-C Kit Ver.
4.20.000
 *                                          Copyright Microsoft, 1999
 *          All Rights Reserved
 *
 *                                          not audited
 *
 *          PURPOSE:                installation code for COM application for
TPC-C Web Kit
 *          Contact:    Charles Levine (clevine@microsoft.com)
 *
 *  Change history:
 *                      4.20.000 - first version
 */

#define _WIN32_WINNT 0x0500

#include <comdef.h>
#include <comadmin.h>
#include <stdio.h>
#include <tchar.h>

extern "C"
{
          BOOL install_com(char *szDllPath);
}

BOOL install_com(char *szDllPath)
{
          ICOMAdminCatalog*pCOMAdminCat = NULL;
          ICatalogCollection*   pCatalogCollectionApp    = NULL;
          ICatalogCollection*   pCatalogCollectionCo     = NULL;
          ICatalogCollection*   pCatalogCollectionItf    = NULL;
          ICatalogCollection*   pCatalogCollectionMethod = NULL;

          ICatalogObject*                   pCatalogObjectApp    = NULL;
          ICatalogObject*                   pCatalogObjectCo     = NULL;
          ICatalogObject*                   pCatalogObjectItf    = NULL;
          ICatalogObject*                   pCatalogObjectMethod = NULL;

          _bstr_t                                   bstrTemp, bstrTemp2,
bstrTemp3, bstrTemp4;
          _bstr_t                                   bstrDllPath =
szDllPath;
          _variant_t                        vTmp, vKey;
          long                                      lActProp, lCount,
lCountCo, lCountItf, lCountMethod;
          bool                                      bTmp;


          CoInitializeEx(NULL, COINIT_MULTITHREADED);

          HRESULT hr = CoCreateInstance(CLSID_COMAdminCatalog,

          NULL,

          CLSCTX_INPROC_SERVER,

          IID_ICOMAdminCatalog,

          (void**) &pCOMAdminCat);

          if (!SUCCEEDED(hr)) goto Error;

          bstrTemp = "Applications";

          // Attempt to connect to "Applications" in the Catalog
          hr = pCOMAdminCat->GetCollection(bstrTemp,

          (IDispatch**) &pCatalogCollectionApp);
          if (!SUCCEEDED(hr)) goto Error;

          // Attempt to load the "Applications" collection
          hr = pCatalogCollectionApp->Populate();
          if (!SUCCEEDED(hr)) goto Error;

          hr = pCatalogCollectionApp->get_Count(&lCount);
          if (!SUCCEEDED(hr)) goto Error;

          // iterate through applications to delete existing "TPC-C" application
(if any)
          while (lCount > 0)
          {
                    hr = pCatalogCollectionApp->get_Item(lCount - 1,
(IDispatch**) &pCatalogObjectApp);
                    if (!SUCCEEDED(hr)) goto Error;

                    hr = pCatalogObjectApp->get_Name(&vTmp);
                    if (!SUCCEEDED(hr)) goto Error;

                    if (wcscmp(vTmp.bstrVal, L"TPC-C"))
                    {
                              lCount--;
                              continue;
                    }
                    else
                    {
                              hr = pCatalogCollectionApp->Remove(lCount
- 1);
                              if (!SUCCEEDED(hr)) goto Error;
                              break;
                    }
          }
```

```
	hr = pCatalogCollectionApp->SaveChanges(&lActProp);
	if (!SUCCEEDED(hr)) goto Error;

	// add the new application
	hr = pCatalogCollectionApp->Add((IDispatch**)
&pCatalogObjectApp);
	if (!SUCCEEDED(hr)) goto Error;

	// set properties
	bstrTemp = "Name";
	vTmp = "TPC-C";
	hr = pCatalogObjectApp->put_Value(bstrTemp, vTmp);
	if (!SUCCEEDED(hr)) goto Error;

	// set as a library (in process) application
	bstrTemp = "Activation";
	lActProp = COMAdminActivationInproc;
	vTmp = lActProp;
	hr = pCatalogObjectApp->put_Value(bstrTemp, vTmp);
	if (!SUCCEEDED(hr)) goto Error;

	// set security level to process
	bstrTemp = "AccessChecksLevel";
	lActProp = COMAdminAccessChecksApplicationLevel;
	vTmp = lActProp;
	hr = pCatalogObjectApp->put_Value(bstrTemp, vTmp);
	if (!SUCCEEDED(hr)) goto Error;

	// save key to get the Components collection later
	hr = pCatalogObjectApp->get_Key(&vKey);
	if (!SUCCEEDED(hr)) goto Error;

	// save changes (app creation) so component installation will work
	hr = pCatalogCollectionApp->SaveChanges(&lActProp);
	if (!SUCCEEDED(hr)) goto Error;

	pCatalogObjectApp->Release();
	pCatalogObjectApp = NULL;

	bstrTemp  = "TPC-C";                                    //
app name
	bstrTemp2 =	bstrDllPath + "tpcc_com_all.dll";	//
DLL
	bstrTemp3 =	bstrDllPath + "tpcc_com_all.tlb";	//
type library (TLB)
	bstrTemp4 =	bstrDllPath + "tpcc_com_ps.dll";	//
proxy/stub dll

	hr = pCOMAdminCat->InstallComponent(bstrTemp,
					bstrTemp2,
					bstrTemp3,
					bstrTemp4);
	if (!SUCCEEDED(hr)) goto Error;


	bstrTemp = "Components";
	hr = pCatalogCollectionApp->GetCollection(bstrTemp, vKey,
(IDispatch**) &pCatalogCollectionCo);
	if (!SUCCEEDED(hr)) goto Error;

	hr = pCatalogCollectionCo->Populate();
	if (!SUCCEEDED(hr)) goto Error;

	hr = pCatalogCollectionCo->get_Count(&lCountCo);
	if (!SUCCEEDED(hr)) goto Error;

	// iterate through components in application and set the properties
	while (lCountCo > 0)
	{
		hr = pCatalogCollectionCo->get_Item(lCountCo - 1,
(IDispatch**) &pCatalogObjectCo);
		if (!SUCCEEDED(hr)) goto Error;

		// used for debugging (view the name)
		hr = pCatalogObjectCo->get_Name(&vTmp);
		if (!SUCCEEDED(hr)) goto Error;

		bstrTemp = "ConstructionEnabled";
		bTmp = TRUE;
		vTmp = bTmp;
		hr = pCatalogObjectCo->put_Value(bstrTemp, vTmp);
		if (!SUCCEEDED(hr)) goto Error;

		bstrTemp = "ConstructorString";
		bstrTemp2 = "dummy string (do not remove)";
		vTmp = bstrTemp2;
		hr = pCatalogObjectCo->put_Value(bstrTemp, vTmp);
		if (!SUCCEEDED(hr)) goto Error;

		bstrTemp = "JustInTimeActivation";
		bTmp = TRUE;
		vTmp = bTmp;
		hr = pCatalogObjectCo->put_Value(bstrTemp, vTmp);
		if (!SUCCEEDED(hr)) goto Error;

		bstrTemp = "MaxPoolSize";
		vTmp.Clear();		// clear variant so it isn't stored as a
bool (_variant_t feature)
		vTmp = (long)30;
		hr = pCatalogObjectCo->put_Value(bstrTemp, vTmp);
		if (!SUCCEEDED(hr)) goto Error;

		bstrTemp = "ObjectPoolingEnabled";
		bTmp = TRUE;
		vTmp = bTmp;
		hr = pCatalogObjectCo->put_Value(bstrTemp, vTmp);
		if (!SUCCEEDED(hr)) goto Error;



		// save key to get the InterfacesForComponent collection
		hr = pCatalogObjectCo->get_Key(&vKey);
		if (!SUCCEEDED(hr)) goto Error;

		bstrTemp = "InterfacesForComponent";
		hr = pCatalogCollectionCo->GetCollection(bstrTemp,
vKey, (IDispatch**) &pCatalogCollectionItf);
		if (!SUCCEEDED(hr)) goto Error;

		hr = pCatalogCollectionItf->Populate();
		if (!SUCCEEDED(hr)) goto Error;

		hr = pCatalogCollectionItf->get_Count(&lCountItf);
		if (!SUCCEEDED(hr)) goto Error;

		// iterate through interfaces in component
		while (lCountItf > 0)
		{
			hr =
pCatalogCollectionItf->get_Item(lCountItf - 1, (IDispatch**)
&pCatalogObjectItf);
			if (!SUCCEEDED(hr)) goto Error;
```

```
                                        // save key to get the MethodsForInterface
collection
                                        hr = pCatalogObjectItf->get_Key(&vKey);
                                        if (!SUCCEEDED(hr)) goto Error;

                                        bstrTemp = "MethodsForInterface";
                                        hr =
pCatalogCollectionItf->GetCollection(bstrTemp, vKey, (IDispatch**)
&pCatalogCollectionMethod);
                                        if (!SUCCEEDED(hr)) goto Error;

                                        hr = pCatalogCollectionMethod->Populate();
                                        if (!SUCCEEDED(hr)) goto Error;

                                        hr =
pCatalogCollectionMethod->get_Count(&lCountMethod);
                                        if (!SUCCEEDED(hr)) goto Error;

                                        // iterate through methods of interface
                                        while (lCountMethod > 0)
                                        {
                                                hr =
pCatalogCollectionMethod->get_Item(lCountMethod - 1, (IDispatch**)
&pCatalogObjectMethod);
                                                if (!SUCCEEDED(hr)) goto Error;

                                                bstrTemp = "AutoComplete";
                                                bTmp = TRUE;
                                                vTmp = bTmp;
                                                hr =
pCatalogObjectMethod->put_Value(bstrTemp, vTmp);
                                                if (!SUCCEEDED(hr)) goto Error;


pCatalogObjectMethod->Release();
                                                pCatalogObjectMethod = NULL;

                                                lCountMethod--;
                                        }

                                        // save changes
                                        hr =
pCatalogCollectionMethod->SaveChanges(&lActProp);
                                        if (!SUCCEEDED(hr)) goto Error;

                                        pCatalogObjectItf->Release();
                                        pCatalogObjectItf = NULL;

                                        lCountItf--;

                        }


                        pCatalogObjectCo->Release();
                        pCatalogObjectCo = NULL;

                        lCountCo--;
                }


                // save changes
                hr = pCatalogCollectionCo->SaveChanges(&lActProp);
                if (!SUCCEEDED(hr)) goto Error;

                pCatalogCollectionApp->Release();
                pCatalogCollectionApp = NULL;

                pCatalogCollectionCo->Release();
                pCatalogCollectionCo = NULL;

                pCatalogCollectionItf->Release();
                pCatalogCollectionItf = NULL;

                pCatalogCollectionMethod->Release();
                pCatalogCollectionMethod = NULL;


Error:
                CoUninitialize();

                if (!SUCCEEDED(hr))
                {
                        LPTSTR lpBuf;
                        DWORD dwRes =
FormatMessage(FORMAT_MESSAGE_ALLOCATE_BUFFER |
FORMAT_MESSAGE_FROM_SYSTEM,

                NULL,

                hr,

                MAKELANGID(LANG_NEUTRAL, SUBLANG_DEFAULT),

                (LPTSTR) &lpBuf,

                0,

                NULL);
//                      _tprintf(__T("Error adding components.  HRESULT:
0x%x\n%s"), hr, lpBuf);
                        return TRUE;
                }
                else
                        return FALSE;
}
```

install.resource.h

```
//{{NO_DEPENDENCIES}}
// Microsoft Developer Studio generated include file.
// Used by install.rc
//
#define IDD_DIALOG1                 101
#define IDI_ICON1                   102
#define IDR_TPCCDLL                 103
#define IDD_DIALOG2                 105
#define IDI_ICON2                   106
#define IDR_DELIVERY                107
#define IDD_DIALOG3                 108
#define IDR_LICENSE1                112
#define IDD_DIALOG4                 113
#define IDR_TPCCOBJ1                117
#define IDR_TPCCSTUB1               118
#define IDR_DBLIB_DLL               122
#define IDR_ODBC_DLL                123
#define IDR_TUXEDO_APP              124
#define IDR_TUXEDO_DLL              125
#define IDR_COM_DLL                 126
#define IDR_COMPS_DLL               127
#define IDR_COMALL_DLL              128
#define IDR_COMTYPLIB_DLL           129
#define BN_LOG                      1001
#define ED_KEEP                     1002
#define ED_THREADS                  1003
#define ED_THREADS2                 1004
#define IDC_PATH                    1007
```

```
#define IDC_VERSION                 1009
#define IDC_RESULTS                 1010
#define IDC_PROGRESS1               1011
#define IDC_STATUS                  1012
#define IDC_BUTTON1                 1013
#define ED_MAXCONNECTION            1014
#define ED_IIS_MAX_THEAD_POOL_LIMIT 1015
#define ED_MAXDELIVERIES            1016
#define ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE 1017
#define ED_IIS_THREAD_TIMEOUT       1018
#define ED_IIS_LISTEN_BACKLOG       1019
#define IDC_DBLIB                   1021
#define IDC_LICENSE                 1022
#define IDC_ODBC                    1022
#define IDC_CONNECT_POOL            1023
#define ED_DB_SERVER                1023
#define ED_USER_CONNECT_DELAY_TIME  1024
#define ED_DB_USER_ID               1024
#define IDC_MTS                     1025
#define IDC_TM_MTS                  1025
#define IDC_TM_TUXEDO               1026
#define IDC_TM_NONE                 1027
#define ED_DB_PASSWORD              1028
#define ED_DB_NAME                  1029
#define IDC_TM_ENCINA               1030

// Next default values for new objects
//
#ifdef APSTUDIO_INVOKED
#ifndef APSTUDIO_READONLY_SYMBOLS
#define _APS_NEXT_RESOURCE_VALUE    130
#define _APS_NEXT_COMMAND_VALUE     40001
#define _APS_NEXT_CONTROL_VALUE     1031
#define _APS_NEXT_SYMED_VALUE       101
#endif
#endif
```

isapi_dll.dsp

```
# Microsoft Developer Studio Project File - Name="isapi_dll" - Package
Owner=<4>
# Microsoft Developer Studio Generated Build File, Format Version 6.00
# ** DO NOT EDIT **

# TARGTYPE "Win32 (x86) Dynamic-Link Library" 0x0102

CFG=isapi_dll - Win32 IceCAP
!MESSAGE This is not a valid makefile. To build this project using NMAKE,
!MESSAGE use the Export Makefile command and run
!MESSAGE
!MESSAGE NMAKE /f "isapi_dll.mak".
!MESSAGE
!MESSAGE You can specify a configuration when running NMAKE
!MESSAGE by defining the macro CFG on the command line. For example:
!MESSAGE
!MESSAGE NMAKE /f "isapi_dll.mak" CFG="isapi_dll - Win32 IceCAP"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "isapi_dll - Win32 Release" (based on "Win32 (x86)
Dynamic-Link Library")
!MESSAGE "isapi_dll - Win32 Debug" (based on "Win32 (x86) Dynamic-Link
Library")
!MESSAGE "isapi_dll - Win32 IceCAP" (based on "Win32 (x86)
Dynamic-Link Library")
!MESSAGE

# Begin Project
# PROP AllowPerConfigDependencies 0
# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CPP=cl.exe
MTL=midl.exe
RSC=rc.exe

!IF  "$(CFG)" == "isapi_dll - Win32 Release"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir "Release"
# PROP BASE Intermediate_Dir "Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MT /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD CPP /nologo /MD /W3 /GX /O2 /D "NDEBUG" /D "WIN32" /D
"_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "NDEBUG" /mktyplib203 /o "NUL" /win32
# ADD MTL /nologo /D "NDEBUG" /mktyplib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "NDEBUG"
# ADD RSC /l 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /dll /machine:I386
# ADD LINK32 ..\common\txnlog\lib\release\rtetime.lib
..\common\txnlog\lib\release\spinlock.lib ..\common\txnlog\lib\release\error.lib
..\common\txnlog\lib\release\txnlog.lib wsock32.lib kernel32.lib user32.lib
gdi32.lib winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib
oleaut32.lib uuid.lib odbc32.lib odbccp32.lib /nologo /subsystem:windows /dll
/machine:I386 /nodefaultlib:"LIBCMT" /out:".\bin/tpcc.dll"
# SUBTRACT LINK32 /nodefaultlib

!ELSEIF  "$(CFG)" == "isapi_dll - Win32 Debug"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "Debug"
# PROP BASE Intermediate_Dir "Debug"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MTd /W3 /Gm /GX /Zi /Od /D "WIN32" /D
"_DEBUG" /D "_WINDOWS" /YX /FD /c
# ADD CPP /nologo /MDd /W3 /GX /ZI /Od /D "_DEBUG" /D "WIN32" /D
"_WINDOWS" /FR /YX /FD /c
# ADD BASE MTL /nologo /D "_DEBUG" /mktyplib203 /o "NUL" /win32
# ADD MTL /nologo /D "_DEBUG" /mktyplib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "_DEBUG"
# ADD RSC /l 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
```

```
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /dll /debug /machine:I386
/pdbtype:sept
# ADD LINK32 ..\common\txnlog\lib\debug\rtetime.lib
..\common\txnlog\lib\debug\spinlock.lib ..\common\txnlog\lib\debug\error.lib
..\common\txnlog\lib\debug\txnlog.lib wsock32.lib kernel32.lib user32.lib
gdi32.lib winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib
oleaut32.lib uuid.lib odbc32.lib odbccp32.lib /nologo /subsystem:windows /dll
/debug /machine:I386 /nodefaultlib:"LIBCMTD" /out:".\bin/tpcc.dll"
/pdbtype:sept
# SUBTRACT LINK32 /profile /pdb:none /nodefaultlib

!ELSEIF  "$(CFG)" == "isapi_dll - Win32 IceCAP"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "isapi_dl"
# PROP BASE Intermediate_Dir "isapi_dl"
# PROP BASE Ignore_Export_Lib 0
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MDd /W3 /GX /Zi /Od /D "_DEBUG" /D
"WIN32" /D "_WINDOWS" /FR /YX /FD /Gh /c
# ADD CPP /nologo /MD /W3 /GX /Zi /O2 /D "NDEBUG" /D "ICECAP" /D
"WIN32" /D "_WINDOWS" /FR /YX /FD /Gh /c
# ADD BASE MTL /nologo /D "_DEBUG" /mktyplib203 /o "NUL" /win32
# ADD MTL /nologo /D "_DEBUG" /mktyplib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "_DEBUG"
# ADD RSC /l 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /dll /debug /machine:I386
/out:".\bin/tpcc.dll" /pdbtype:sept
# SUBTRACT BASE LINK32 /profile /pdb:none
# ADD LINK32 icap.lib ..\common\txnlog\lib\release\rtetime.lib
..\common\txnlog\lib\release\spinlock.lib ..\common\txnlog\lib\release\error.lib
..\common\txnlog\lib\release\txnlog.lib wsock32.lib kernel32.lib user32.lib
gdi32.lib winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib
oleaut32.lib uuid.lib odbc32.lib odbccp32.lib /nologo /subsystem:windows /dll
/debug /machine:I386 /out:".\bin/tpcc.dll" /pdbtype:sept
# SUBTRACT LINK32 /profile /pdb:none /map

!ENDIF

# Begin Target

# Name "isapi_dll - Win32 Release"
# Name "isapi_dll - Win32 Debug"
# Name "isapi_dll - Win32 IceCAP"
# Begin Group "Source"

# PROP Default_Filter "*.cpp, *.def, *.rc"
# Begin Source File

SOURCE=.\src\tpcc.cpp
# End Source File
# Begin Source File

SOURCE=.\src\tpcc.def
# End Source File
# Begin Source File

SOURCE=.\src\tpcc.rc
# End Source File
# End Group
# Begin Group "Header Files"

# PROP Default_Filter "*.h, *.hpp"
# Begin Source File

SOURCE=..\common\src\error.h
# End Source File
# Begin Source File

SOURCE=..\common\src\ReadRegistry.h
# End Source File
# Begin Source File

SOURCE=.\src\tpcc.h
# End Source File
# Begin Source File

SOURCE=..\db_dblib_dll\src\tpcc_dblib.h
# End Source File
# Begin Source File

SOURCE=..\db_odbc_dll\src\tpcc_odbc.h
# End Source File
# Begin Source File

SOURCE=..\tm_tuxedo_dll\src\tpcc_tux.h
# End Source File
# Begin Source File

SOURCE=..\common\src\trans.h
# End Source File
# Begin Source File

SOURCE=..\common\src\txn_base.h
# End Source File
# End Group
# End Target
# End Project
```

isapi_dll_resource.h

```
//{{NO_DEPENDENCIES}}
// Microsoft Developer Studio generated include file.
// Used by tpcc.rc
//
#define IDD_DIALOG1                     101

// Next default values for new objects
//
#ifdef APSTUDIO_INVOKED
#ifndef APSTUDIO_READONLY_SYMBOLS
#define _APS_NEXT_RESOURCE_VALUE        102
#define _APS_NEXT_COMMAND_VALUE         40001
#define _APS_NEXT_CONTROL_VALUE         1000
#define _APS_NEXT_SYMED_VALUE           101
#endif
#endif
```

license.txt

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methods.h

```
/*          FILE:                   METHODS.H
 *                                          Microsoft TPC-C Kit Ver. 4.20.000
 *                                          Copyright Microsoft, 1999
 *          All Rights Reserved
 *
 *                                          not yet audited
 *
 *          PURPOSE:                Header file for COM components.
 *
 *  Change history:
 *                      4.20.000 - first version
 */

enum COMPONENT_ERROR
{
        ERR_MISSING_REGISTRY_ENTRIES = 1,
        ERR_LOADDLL_FAILED,
        ERR_GETPROCADDR_FAILED,
        ERR_UNKNOWN_DB_PROTOCOL
};

class CCOMPONENT_ERR : public CBaseErr
{
        public:
                CCOMPONENT_ERR(COMPONENT_ERROR Err)
                {
                        m_Error = Err;
                        m_szTextDetail = NULL;
                        m_SystemErr = 0;
                        m_szErrorText = NULL;
                };

                CCOMPONENT_ERR(COMPONENT_ERROR Err, char *szTextDetail, DWORD dwSystemErr)
                {
                        m_Error = Err;
                        m_szTextDetail = new char[strlen(szTextDetail)+1];
                        strcpy( m_szTextDetail, szTextDetail );
                        m_SystemErr = dwSystemErr;
                        m_szErrorText = NULL;
                };

                ~CCOMPONENT_ERR()
                {
                        if (m_szTextDetail != NULL)
                                delete [] m_szTextDetail;
                        if (m_szErrorText != NULL)
                                delete [] m_szErrorText;
                };

                COMPONENT_ERROR         m_Error;
                char                    *m_szTextDetail;
                char                    *m_szErrorText;
                DWORD                   m_SystemErr;

                int ErrorType() {return ERR_TYPE_COMPONENT;};
                int ErrorNum() {return m_Error;};
                char *ErrorText();
};


static void WriteMessageToEventLog(LPTSTR lpszMsg);


////////////////////////////////////////////////////////////////////////
// CTPCC_Common
class CTPCC_Common :
        public ITPCC,
        public IObjectControl,
        public IObjectConstruct,
        public CComObjectRootEx<CComSingleThreadModel>
{
public:
BEGIN_COM_MAP(CTPCC_Common)
        COM_INTERFACE_ENTRY(ITPCC)
        COM_INTERFACE_ENTRY(IObjectControl)
        COM_INTERFACE_ENTRY(IObjectConstruct)
END_COM_MAP()
```

```
        CTPCC_Common();
        ~CTPCC_Common();

// ITPCC
public:
        HRESULT __stdcall NewOrder(             VARIANT txn_in,
VARIANT* txn_out);
        HRESULT __stdcall Payment(              VARIANT txn_in,
VARIANT* txn_out);
        HRESULT __stdcall Delivery(             VARIANT txn_in,
VARIANT* txn_out) {return E_NOTIMPL;}
        HRESULT __stdcall StockLevel(VARIANT txn_in, VARIANT*
txn_out);
        HRESULT __stdcall OrderStatus(          VARIANT txn_in,
VARIANT* txn_out);

        HRESULT __stdcall CallSetComplete();

// IObjectControl
        STDMETHODIMP_(BOOL) CanBePooled() { return
m_bCanBePooled; }
        STDMETHODIMP Activate() { return S_OK; }        // we don't
support COM Services transactions (no enlistment)
        STDMETHODIMP_(void) Deactivate() { /* nothing to do */ }

// IObjectConstruct
        STDMETHODIMP Construct(IDispatch * pUnk);

        // helper methods
private:
        BOOL            m_bCanBePooled;
        CTPCC_BASE      *m_pTxn;

        struct COM_DATA
        {
                int retval;
                int error;
                union
                {
                        NEW_ORDER_DATA
NewOrder;
                        PAYMENT_DATA            Payment;
                        DELIVERY_DATA           Delivery;
                        STOCK_LEVEL_DATA        StockLevel;
                        ORDER_STATUS_DATA       OrderStatus;
                } u;
        };

};

/////////////////////////////////////////////////////////////////////////////
// CTPCC
class CTPCC :
        public CTPCC_Common,
        public CComCoClass<CTPCC, &CLSID_TPCC>
{
public:
DECLARE_REGISTRY_RESOURCEID(IDR_TPCC)

BEGIN_COM_MAP(CTPCC)
        COM_INTERFACE_ENTRY2(IUnknown, CComObjectRootEx)
        COM_INTERFACE_ENTRY_CHAIN(CTPCC_Common)
END_COM_MAP()

};


/////////////////////////////////////////////////////////////////////////////
// CNewOrder
class CNewOrder :
        public CTPCC_Common,
        public CComCoClass<CNewOrder, &CLSID_NewOrder>
{
public:
DECLARE_REGISTRY_RESOURCEID(IDR_NEWORDER)

BEGIN_COM_MAP(CNewOrder)
        COM_INTERFACE_ENTRY2(IUnknown, CComObjectRootEx)
        COM_INTERFACE_ENTRY_CHAIN(CTPCC_Common)
END_COM_MAP()

// ITPCC
public:
//      HRESULT __stdcall NewOrder(             VARIANT txn_in,
VARIANT* txn_out) {return E_NOTIMPL;}
        HRESULT __stdcall Payment(              VARIANT txn_in,
VARIANT* txn_out) {return E_NOTIMPL;}
        HRESULT __stdcall StockLevel(VARIANT txn_in, VARIANT*
txn_out) {return E_NOTIMPL;}
        HRESULT __stdcall OrderStatus(          VARIANT txn_in,
VARIANT* txn_out) {return E_NOTIMPL;}
};


        /////////////////////////////////////////////////////////////////////////////
// COrderStatus
class COrderStatus :
        public CTPCC_Common,
        public CComCoClass<COrderStatus, &CLSID_OrderStatus>
{
public:
DECLARE_REGISTRY_RESOURCEID(IDR_ORDERSTATUS)

BEGIN_COM_MAP(COrderStatus)
        COM_INTERFACE_ENTRY2(IUnknown, CComObjectRootEx)
        COM_INTERFACE_ENTRY_CHAIN(CTPCC_Common)
END_COM_MAP()

// ITPCC
public:
        HRESULT __stdcall NewOrder(             VARIANT txn_in,
VARIANT* txn_out) {return E_NOTIMPL;}
        HRESULT __stdcall Payment(              VARIANT txn_in,
VARIANT* txn_out) {return E_NOTIMPL;}
        HRESULT __stdcall StockLevel(VARIANT txn_in, VARIANT*
txn_out) {return E_NOTIMPL;}
//      HRESULT __stdcall OrderStatus(          VARIANT txn_in,
VARIANT* txn_out) {return E_NOTIMPL;}
};


/////////////////////////////////////////////////////////////////////////////
// CPayment
class CPayment :
        public CTPCC_Common,
        public CComCoClass<CPayment, &CLSID_Payment>
{
public:
DECLARE_REGISTRY_RESOURCEID(IDR_PAYMENT)

BEGIN_COM_MAP(CPayment)
        COM_INTERFACE_ENTRY2(IUnknown, CComObjectRootEx)
        COM_INTERFACE_ENTRY_CHAIN(CTPCC_Common)
END_COM_MAP()

// ITPCC
```

```
public:
        HRESULT __stdcall NewOrder(             VARIANT txn_in,
VARIANT* txn_out) {return E_NOTIMPL;}
//      HRESULT __stdcall Payment(              VARIANT txn_in,
VARIANT* txn_out) {return E_NOTIMPL;}
        HRESULT __stdcall StockLevel(VARIANT txn_in, VARIANT*
txn_out) {return E_NOTIMPL;}
        HRESULT __stdcall OrderStatus(          VARIANT txn_in,
VARIANT* txn_out) {return E_NOTIMPL;}
};


/////////////////////////////////////////////////////////////////////////////
// CStockLevel
class CStockLevel :
        public CTPCC_Common,
        public CComCoClass<CStockLevel, &CLSID_StockLevel>
{
public:
DECLARE_REGISTRY_RESOURCEID(IDR_STOCKLEVEL)

BEGIN_COM_MAP(CStockLevel)
        COM_INTERFACE_ENTRY2(IUnknown, CComObjectRootEx)
        COM_INTERFACE_ENTRY_CHAIN(CTPCC_Common)
END_COM_MAP()

// ITPCC
public:
        HRESULT __stdcall NewOrder(             VARIANT txn_in,
VARIANT* txn_out) {return E_NOTIMPL;}
        HRESULT __stdcall Payment(              VARIANT txn_in,
VARIANT* txn_out) {return E_NOTIMPL;}
//      HRESULT __stdcall StockLevel(VARIANT txn_in, VARIANT*
txn_out) {return E_NOTIMPL;}
        HRESULT __stdcall OrderStatus(          VARIANT txn_in,
VARIANT* txn_out) {return E_NOTIMPL;}
};
```

Null-txns.sql

```
-- File:    NULL-TXNS.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
--
-- Purpose:  This script will create stored procs which accept the same parame-
ters and
--          return correctly formed results sets to match the standard TPC-C stored
--          procs.  Of course, the advantage is that these stored procs place almost
--          no load on SQL Server and do not require a database.
--
--                  The purpose of these stored procs is to size and test the web
client without
--          the need of a fully scaled database.
--

drop proc tpcc_delivery
drop proc tpcc_neworder
drop proc tpcc_orderstatus
drop proc tpcc_payment
drop proc tpcc_stocklevel
drop proc tpcc_version
drop table order_line_null
go

create proc tpcc_delivery           @w_id          int,

                                                   @o_carrier_id   smallint
as

declare @d_id tinyint,
        @o_id int,
        @c_id int,
        @total numeric(12,2),
        @oid1 int,
        @oid2 int,
        @oid3 int,
        @oid4 int,
        @oid5 int,
        @oid6 int,
        @oid7 int,
        @oid8 int,
        @oid9 int,
        @oid10 int

declare @delaytime varchar(30)

-- uniform random delay of 0 - 1 second; avg = 0.50
select @delaytime = '00:00:0' + cast(cast((rand()*1.00) as decimal(4,3)) as
char(5))
waitfor delay @delaytime

select 3001, 3001, 3001, 3001, 3001, 3001, 3001, 3001, 3001, 3001


GO

create proc tpcc_neworder
                                                   @w_id          int,
                                                   @d_id          tinyint,
                                                   @c_id          int,
                                                   @o_ol_cnt      tinyint,
                                                   @o_all_local   tinyint,
                                                   @i_id1  int = 0,
@s_w_id1 int = 0, @ol_qty1 smallint = 0,
                                                   @i_id2  int = 0,
@s_w_id2 int = 0, @ol_qty2 smallint = 0,
                                                   @i_id3  int = 0,
@s_w_id3 int = 0, @ol_qty3 smallint = 0,
                                                   @i_id4  int = 0,
@s_w_id4 int = 0, @ol_qty4 smallint = 0,
                                                   @i_id5  int = 0,
@s_w_id5 int = 0, @ol_qty5 smallint = 0,
                                                   @i_id6  int = 0,
@s_w_id6 int = 0, @ol_qty6 smallint = 0,
                                                   @i_id7  int = 0,
@s_w_id7 int = 0, @ol_qty7 smallint = 0,
                                                   @i_id8  int = 0,
@s_w_id8 int = 0, @ol_qty8 smallint = 0,
                                                   @i_id9  int = 0,
@s_w_id9 int = 0, @ol_qty9 smallint = 0,
                                                   @i_id10 int = 0,
@s_w_id10 int = 0, @ol_qty10 smallint = 0,
                                                   @i_id11 int = 0,
@s_w_id11 int = 0, @ol_qty11 smallint = 0,
                                                   @i_id12 int = 0,
@s_w_id12 int = 0, @ol_qty12 smallint = 0,
                                                   @i_id13 int = 0,
@s_w_id13 int = 0, @ol_qty13 smallint = 0,
                                                   @i_id14 int = 0,
@s_w_id14 int = 0, @ol_qty14 smallint = 0,
                                                   @i_id15 int = 0,
@s_w_id15 int = 0, @ol_qty15 smallint = 0


as
```

```
declare     @w_tax          numeric(4,4),
        @d_tax          numeric(4,4),
        @c_last         char(16),
        @c_credit       char(2),
        @c_discount     numeric(4,4),
        @i_price        numeric(5,2),
        @i_name         char(24),
        @o_entry_d      datetime,
                @li_no          int,
                @o_id                   int,
                @commit_flag    tinyint,
        @li_id          int,
        @li_qty         smallint

declare @delaytime varchar(30)

begin
   -- uniform random delay of 0 - 0.6 second; avg = 0.3
   select @delaytime = '00:00:0' + cast(cast((rand()*0.60) as decimal(4,3)) as
char(5))
   waitfor delay @delaytime

   --  process orderlines

                select @commit_flag = 1, @li_no = 0

   while (@li_no < @o_ol_cnt)
                begin

                select @li_id = case @li_no
                                        when 1 then @i_id1
                                           when 2 then @i_id2
                                           when 3 then @i_id3
                                           when 4 then @i_id4
                                           when 5 then @i_id5
                                           when 6 then @i_id6
                                           when 7 then @i_id7
                                           when 8 then @i_id8
                                           when 9 then @i_id9
                                           when 10 then @i_id10
                                           when 11 then @i_id11
                                           when 12 then @i_id12
                                           when 13 then @i_id13
                                           when 14 then @i_id14
                                           when 15 then @i_id15
                                           end


        select @li_no = @li_no + 1
                select @i_price = 23.45, @li_qty = @li_no

                if (@li_id = 999999)
                        begin
                        select ",0,",0,0
                        select @commit_flag = 0
                        end
                else
                        begin
                        select 'Item Name blah',17,'G', @i_price, @i_price *
@li_qty
                        end

                end

--  return order data to client

                select      @w_tax = 0.1234,
                        @d_tax = 0.0987,
                        @o_id = 3001,
                        @c_last = 'BAROUGHTABLE',
                        @c_discount = 0.2198,
                        @c_credit = 'GC',
                        @o_entry_d = getdate()

                select      @w_tax,
                        @d_tax,
                        @o_id,
                        @c_last,
                        @c_discount,
                        @c_credit,
                        @o_entry_d,
                        @commit_flag

end

GO

create proc tpcc_orderstatus        @w_id               int,
                                    @d_id               tinyint,

                                    @c_id               int,
                                    @c_last     char(16) = ''

as

declare @c_balance          numeric(12,2),
        @c_first            char(16),
        @c_middle           char(2),
        @o_id                       int,
        @o_entry_d          datetime,
        @o_carrier_id       smallint,
                @ol_cnt                 smallint

declare @delaytime varchar(30)


   -- uniform random delay of 0 - 0.2 second; avg = 0.1
   select @delaytime = '00:00:0' + cast(cast((rand()*0.20) as decimal(4,3)) as
char(5))
   waitfor delay @delaytime

                select
                    @c_id      = 113,
                    @c_balance = -10.00,
                    @c_first   = '8YCodgytqCj8',
                    @c_middle  = 'OE',
                    @c_last    = 'OUGHTOUGHTABLE',
                    @o_id  = 3456,
                    @o_entry_d = getdate(),
                    @o_carrier_id = 1

                select @ol_cnt = (rand() * 11) + 5
                SET ROWCOUNT @ol_cnt

                select
                        ol_supply_w_id,
                        ol_i_id,
                    ol_quantity,
                    ol_amount,
                    ol_delivery_d
                from order_line_null

                select @c_id,
                  @c_last,
                  @c_first,
                  @c_middle,
```

```
                @o_entry_d,
                @o_carrier_id,
                @c_balance,
                @o_id


GO

create proc tpcc_payment        @w_id           int,
                                @c_w_id         int,
                                @h_amount       numeric(6,2),
                                @d_id           tinyint,
                                @c_d_id         tinyint,
                                @c_id           int,
                                @c_last         char(16) = ''

as
declare  @w_street_1     char(20),
        @w_street_2     char(20),
        @w_city         char(20),
        @w_state        char(2),
        @w_zip          char(9),
        @w_name         char(10),
        @d_street_1     char(20),
        @d_street_2     char(20),
        @d_city         char(20),
        @d_state        char(2),
        @d_zip          char(9),
        @d_name         char(10),
        @c_first        char(16),
        @c_middle       char(2),
        @c_street_1     char(20),
        @c_street_2     char(20),
        @c_city         char(20),
        @c_state        char(2),
        @c_zip          char(9),
        @c_phone        char(16),
        @c_since        datetime,
        @c_credit       char(2),
        @c_credit_lim   numeric(12,2),
        @c_balance      numeric(12,2),
        @c_discount     numeric(4,4),
        @data           char(500),
        @c_data         char(500),
        @datetime       datetime,
        @w_ytd          numeric(12,2),
        @d_ytd          numeric(12,2),
        @cnt            smallint,
        @val            smallint,
        @screen_data     char(200),
                @d_id_local             tinyint,
                @w_id_local             int,
                @c_id_local             int

declare @delaytime varchar(30)

   -- uniform random delay of 0 - 0.3 second; avg = 0.15
   select @delaytime = '00:00:0' + cast(cast((rand()*0.30) as decimal(4,3)) as
char(5))
   waitfor delay @delaytime

   select @screen_data = ''


--  get customer info and update balances

                select
                        @d_street_1 = 'rqSHHakqyV',
                        @d_street_2 = 'zZ98nW3BR2s',
                        @d_city     = 'ArNr4GNFV9',
                        @d_state    = 'aV',
                        @d_zip      = '453511111'

--  get warehouse data and update year-to-date

                select
                        @w_street_1 = 'rqSHHakqyV',
                        @w_street_2 = 'zZ98nW3BR2s',
                        @w_city     = 'ArNr4GNFV9',
                        @w_state    = 'aV',
                        @w_zip      = '453511111'

                select
                        @c_id             = 123,
                        @c_balance     = -10000.00,
                        @c_first       = 'KmR03Xureb',
                        @c_middle      = 'OE',
                        @c_last        = 'BAROUGHTBAR',
                        @c_street_1    = 'QpGdOHjv8mR9vNI8V',
                        @c_street_2    = 'dzKoCObBqbC3yu',
                        @c_city        = 'zAKZXdC037FQxq',
                        @c_state       = 'QA',
                        @c_zip         = '700311111',
                        @c_phone       = '2967264064528555',
                        @c_credit      = 'GC',
                        @c_credit_lim  = 50000.00,
                        @c_discount    = 0.3069,
                        @c_since       = getdate(),
                        @datetime      = getdate()



--  return data to client

select  @c_id,
                        @c_last,
                        @datetime,
                        @w_street_1,
                        @w_street_2,
                        @w_city,
                        @w_state,
                        @w_zip,
                        @d_street_1,
                        @d_street_2,
                        @d_city,
                        @d_state,
                        @d_zip,
                        @c_first,
                        @c_middle,
                        @c_street_1,
                        @c_street_2,
                        @c_city,
                        @c_state,
                        @c_zip,
                        @c_phone,
                        @c_since,
                        @c_credit,
                        @c_credit_lim,
                        @c_discount,
                        @c_balance,
                        @screen_data


GO

create proc tpcc_stocklevel     @w_id                   int,
```

```
                                        @d_id           tinyint,
                                        @threshhold     smallint
as

declare @delaytime varchar(30)

   -- uniform random delay of 0 - 3.6 second; avg = 1.8
   select @delaytime = '00:00:0' + cast(cast((rand()*3.60) as decimal(4,3)) as
char(5))
   waitfor delay @delaytime

   select 49

GO

create proc tpcc_version
as
declare @version        char(8)

begin
        select @version = '4.10.000'
        select @version as 'Version'
end

GO

CREATE TABLE order_line_null (
        [ol_i_id] [int] NOT NULL ,
        [ol_supply_w_id] [int] NOT NULL ,
        [ol_delivery_d] [datetime] NOT NULL ,
        [ol_quantity] [smallint] NOT NULL ,
        [ol_amount] [numeric](6, 2) NOT NULL
) ON [PRIMARY]
GO

insert into order_line_null values ( 101, 1, getdate(), 1, 123.45 )
insert into order_line_null values ( 102, 1, getdate(), 2, 123.45 )
insert into order_line_null values ( 103, 1, getdate(), 3, 123.45 )
insert into order_line_null values ( 104, 1, getdate(), 4, 123.45 )
insert into order_line_null values ( 105, 1, getdate(), 5, 123.45 )
insert into order_line_null values ( 106, 1, getdate(), 1, 123.45 )
insert into order_line_null values ( 107, 1, getdate(), 2, 123.45 )
insert into order_line_null values ( 108, 1, getdate(), 3, 123.45 )
insert into order_line_null values ( 109, 1, getdate(), 4, 123.45 )
insert into order_line_null values ( 110, 1, getdate(), 5, 123.45 )
insert into order_line_null values ( 111, 1, getdate(), 1, 123.45 )
insert into order_line_null values ( 112, 1, getdate(), 2, 123.45 )
insert into order_line_null values ( 113, 1, getdate(), 3, 123.45 )
insert into order_line_null values ( 114, 1, getdate(), 4, 123.45 )
insert into order_line_null values ( 115, 1, getdate(), 5, 123.45 )

GO
```

ReadRegistry.cpp

```
/*      FILE:                   READREGISTRY.CPP
 *                                      Microsoft TPC-C Kit Ver.
4.20.000
 *                                      Copyright Microsoft, 1999
 *      All Rights Reserved
 *
 *                                      not yet audited
 *
 *      PURPOSE:        Implementation for TPC-C Tuxedo class.
 *      Contact:    Charles Levine (clevine@microsoft.com)
 *
 *  Change history:
 *                      4.20.000 - first version
 */


/* FUNCTION: ReadTPCCRegistrySettings
 *
 * PURPOSE:     This function reads the NT registry for startup
parameters. There parameters are
 *                              under the TPCC key.
 *
 * RETURNS      FALSE = no errors
 *                              TRUE  = error reading registry
 */
BOOL ReadTPCCRegistrySettings( TPCCREGISTRYDATA *pReg )
{
        HKEY    hKey;
        DWORD   size;
        DWORD   type;
        DWORD   dwTmp;
        char    szTmp[256];

        if ( RegOpenKeyEx(HKEY_LOCAL_MACHINE,
"SOFTWARE\\Microsoft\\TPCC", 0, KEY_READ, &hKey) !=
ERROR_SUCCESS )
                return TRUE;

        // determine database protocol to use; may be either ODBC or
DBLIB
        pReg->eDB_Protocol = Unspecified;
        size = sizeof(szTmp);
        if ( RegQueryValueEx(hKey, "DB_Protocol", 0, &type, (BYTE
*)&szTmp, &size) == ERROR_SUCCESS )
        {
                if ( !stricmp(szTmp, szDBNames[ODBC]) )
                        pReg->eDB_Protocol = ODBC;
                else if ( !stricmp(szTmp, szDBNames[DBLIB]) )
                        pReg->eDB_Protocol = DBLIB;
        }

        pReg->eTxnMon = None;
        // determine txn monitor to use; may be either TUXEDO, or blank
        size = sizeof(szTmp);
        if ( RegQueryValueEx(hKey, "TxnMonitor", 0, &type, (BYTE
*)&szTmp, &size) == ERROR_SUCCESS )
        {
                if ( !stricmp(szTmp, szTxnMonNames[TUXEDO]) )
                        pReg->eTxnMon = TUXEDO;
                else if ( !stricmp(szTmp, szTxnMonNames[ENCINA]) )
                        pReg->eTxnMon = ENCINA;
                else if ( !stricmp(szTmp, szTxnMonNames[COM]) )
                        pReg->eTxnMon = COM;
        }

        pReg->bCOM_SinglePool = FALSE;
        size = sizeof(szTmp);
        if ( RegQueryValueEx(hKey, "COM_SinglePool", 0, &type, (BYTE
*)&szTmp, &size) == ERROR_SUCCESS )
        {
                if ( !stricmp(szTmp, "YES") )
                        pReg->bCOM_SinglePool = TRUE;
        }

        pReg->dwMaxConnections = 0;
        size = sizeof(dwTmp);
        if ( ( RegQueryValueEx(hKey, "MaxConnections", 0, &type,
(LPBYTE)&dwTmp, &size) == ERROR_SUCCESS )
                        && (type == REG_DWORD) )
                        pReg->dwMaxConnections = dwTmp;
```

```
        pReg->dwMaxPendingDeliveries = 0;
        size = sizeof(dwTmp);
        if ( ( RegQueryValueEx(hKey, "MaxPendingDeliveries", 0, &type,
(LPBYTE)&dwTmp, &size) == ERROR_SUCCESS )
                && (type == REG_DWORD) )
                pReg->dwMaxPendingDeliveries = dwTmp;

        pReg->dwNumberOfDeliveryThreads = 0;
        size = sizeof(dwTmp);
        if ( ( RegQueryValueEx(hKey, "NumberOfDeliveryThreads", 0,
&type, (LPBYTE)&dwTmp, &size) == ERROR_SUCCESS )
                && (type == REG_DWORD) )
                pReg->dwNumberOfDeliveryThreads = dwTmp;

        size = sizeof( pReg->szPath );
        if ( RegQueryValueEx(hKey, "Path", 0, &type, (BYTE
*)&pReg->szPath, &size) != ERROR_SUCCESS )
                pReg->szPath[0] = 0;

        size = sizeof( pReg->szDbServer );
        if ( RegQueryValueEx(hKey, "DbServer", 0, &type, (BYTE
*)&pReg->szDbServer, &size) != ERROR_SUCCESS )
                pReg->szDbServer[0] = 0;

        size = sizeof( pReg->szDbName );
        if ( RegQueryValueEx(hKey, "DbName", 0, &type, (BYTE
*)&pReg->szDbName, &size) != ERROR_SUCCESS )
                pReg->szDbName[0] = 0;

        size = sizeof( pReg->szDbUser );
        if ( RegQueryValueEx(hKey, "DbUser", 0, &type, (BYTE
*)&pReg->szDbUser, &size) != ERROR_SUCCESS )
                pReg->szDbUser[0] = 0;

        size = sizeof( pReg->szDbPassword );
        if ( RegQueryValueEx(hKey, "DbPassword", 0, &type, (BYTE
*)&pReg->szDbPassword, &size) != ERROR_SUCCESS )
                pReg->szDbPassword[0] = 0;

        RegCloseKey(hKey);

        return FALSE;
}
```

ReadRegistry.h

```
/*      FILE:           ReadRegistry.h
 *                              Microsoft TPC-C Kit Ver.
4.20.000
 *                              Copyright Microsoft, 1999
 *      All Rights Reserved
 *
 *                              not audited
 *
 *      PURPOSE:        Header for registry related code.
 *
 *  Change history:
 *              4.20.000 - first version
 */

enum DBPROTOCOL { Unspecified, ODBC, DBLIB };
const char *szDBNames[] = { "Unspecified", "ODBC", "DBLIB" };

enum TXNMON { None, TUXEDO, ENCINA, COM };
const char *szTxnMonNames[] = { "NONE", "TUXEDO", "ENCINA", "COM"
};

//This structure defines the data necessary to keep distinct for each terminal or
client connection.
typedef struct _TPCCREGISTRYDATA
{
        enum DBPROTOCOL eDB_Protocol;
        enum TXNMON eTxnMon;
        BOOL bCOM_SinglePool;
        DWORD dwMaxConnections;
        DWORD dwMaxPendingDeliveries;
        DWORD dwNumberOfDeliveryThreads;
        char szPath[128];
        char szDbServer[32];
        char szDbName[32];
        char szDbUser[32];
        char szDbPassword[32];
} TPCCREGISTRYDATA, *PTPCCREGISTRYDATA;

BOOL ReadTPCCRegistrySettings( TPCCREGISTRYDATA *pReg );
```

restore.vbs

```
'-----------------------------------------------------------------------------
'---  FILE:      RESTORE.VBS
'---             Microsoft TPC-C Kit Ver. 4.41
'---             Copyright Microsoft, 2001
'---             All Rights Reserved
'---
'---  PURPOSE:    This module executes a database restore
'---
'-----------------------------------------------------------------------------
'---------------------------------------
'--- open an windows scripting object
'---------------------------------------
set WshShell = CreateObject("WScript.Shell")
'---------------------------------------
'--- display a banner message
'---------------------------------------
wScript.Echo
"*************************************************************
*************"
wScript.Echo "*                                                           *"
wScript.Echo "*  Microsoft TPC-C V3 Benchmark Kit Ver. 4.41 - Restore
        *"
wScript.Echo "*                                                           *"
wScript.Echo
"*************************************************************
*************"
'-------------------------------------------------
'--- define function to check for any error messages
'-------------------------------------------------
Function CheckSQLOutput(SQL_Out)
        ErrorFlag = 0
        Set SQL_fso = CreateObject("Scripting.FileSystemObject")
        Set SQL_Out_File = SQL_fso.OpenTextFile(SQL_Out,1)
        Do While SQL_Out_File.AtEndOfStream <> True
                SQL_Line = SQL_Out_File.ReadLine
                'first check to see if the output contains a message about
the login password
                If InStr(SQL_Line, "Login failed") Then
                        'display the messages and get out of here
                        ErrorFlag = 1
                        wScript.Echo "The login for userid 'sa' failed."
                        wScript.Echo "Please restart SETUP with the
correct password."
                Else
```

```
                        If InStr(SQL_Line, "Msg") Then
                'find out where the "Msg" indicator is in the line
                LocMsg = InStr(SQL_Line, "Msg")
                'find out where the comma is after the error code
                LocComma = InStr(SQL_Line, ",")
                'now isolate the error code
                ErrorCode = Mid(SQL_Line, (LocMsg + 4), (LocComma -
(LocMsg + 4)))
                Select Case ErrorCode
                   Case "15069"
                      ErrorFlag = 1
                      wScript.Echo "One or more users are using the
database."
                      wScript.Echo "The requested operation cannot be
completed."
                   Case "3201"
                      ErrorFlag = 1
                      wScript.Echo "Cannot open backup device."
                      wScript.Echo "Device error or device off-line."
                      wScript.Echo "SQL Server Error 3201."
                      wScript.Echo "See the SQL Server error log for more
details."
                End Select
              End If
            End If
   Loop
         SQL_Out_File.Close
         CheckSQLOutput = ErrorFlag
End Function
'-------------------------------------------------
'--- end function
'-------------------------------------------------
'-------------------------------------------------
'--- open a file system object
'-------------------------------------------------
Set fs = CreateObject("Scripting.FileSystemObject")
'-------------------------------------------------
'--- grab the current directory value
'-------------------------------------------------
SetupDirectory = WshShell.CurrentDirectory & "\"
'-------------------------------------------------
'--- now calculate the other directories
'-------------------------------------------------
ScriptDirectory = SetupDirectory & "SCRIPTS\"
LogDirectory = SetupDirectory & "LOGS\"
'-----------------------------------------------------------------
'--- check to see if the user passed in the server name and sa password
'-----------------------------------------------------------------
Set objArgs = wScript.Arguments
Select Case objArgs.Length
         Case 0
                  '----------------------------------------
                  '--- the user did not pass us anything
                  '--- grab the Computer Name from Windows
                  '----------------------------------------
                  ServerName =
WshShell.ExpandEnvironmentStrings("%COMPUTERNAME%")
                  '-----------------------------------------------
                  '--- prompt the user to confirm the server name
                  '-----------------------------------------------
                  ServerName = InputBox("Enter your server
name",Test_Name,ServerName)
                  Do While ServerName = ""
                           rc = MsgBox ("You must enter a valid server
name.",21)
                           If rc = 2 Then
                                    wScript.Echo ""
                                    wScript.Echo "TPC-C Setup
cancelled by user."
                                    wScript.Quit
                           End If
                           ServerName =
WshShell.ExpandEnvironmentStrings("%COMPUTERNAME%")
                           ServerName = InputBox("Enter your server
name","Database Server Name",ServerName)
                  Loop
                  '----------------------------------------
                  '--- prompt the user for the sa password
                  '----------------------------------------
                  saPassword = InputBox("Enter the 'sa'
password",Test_Name)
         Case 1
                  '-----------------------------------------------------------------
                  '--- the user passed 1 argument, so assume it is the server
name
                  '-----------------------------------------------------------------
                  ServerName = objArgs(0)
                  '----------------------------------------
                  '--- prompt the user for the sa password
                  '----------------------------------------
                  saPassword = InputBox("Enter the 'sa'
password",Test_Name)
         Case 2
                  '-------------------------------------------------
                  '--- the user passed 2 arguments, so try to use them
                  '-------------------------------------------------
                  ServerName = objArgs(0)
                  saPassword = objArgs(1)
End Select
'-----------------------------------------------------------------
'--- now that we have all the variables filled in, let's get to work
'-----------------------------------------------------------------
If fs.FileExists(LogDirectory & "restore.log") Then
         fs.DeleteFile LogDirectory & "restore.log"
End If
Wscript.Echo "Restoring database from backup..."
Set oExec = WshShell.Exec("osql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ScriptDirectory & NumberWarehouses &
".war\database\restore.sql -o" & LogDirectory & "restore.log")
Do While oExec.Status = 0
   wScript.Sleep 100
Loop
rc = CheckSQLOutput(LogDirectory & "restore.log")
If rc <> 0 Then
         wScript.Quit
End If
wScript.Echo ""
wScript.Echo
"*************************************************************
*************"
wScript.Echo "*                                                    *"
wScript.Echo "*  Microsoft TPC-C Benchmark Kit Ver. 4.41
 *"
wScript.Echo "*                                                    *"
wScript.Echo "*  Database restore complete.                                *"
wScript.Echo "*                                                    *"
wScript.Echo
"*************************************************************
*************"
```

runsqlcfg.vbs

```
'---------------------------------------------------------------------------------
'---  FILE:      RESTORE.VBS
'---             Microsoft TPC-C Kit Ver. 4.41
'---             Copyright Microsoft, 2001
'---             All Rights Reserved
'---
'---  PURPOSE:    This module executes a database restore
'---
'---------------------------------------------------------------------------------
'--------------------------------------
'--- open an windows scripting object
'--------------------------------------
set WshShell = CreateObject("WScript.Shell")
'--------------------------------------
'--- display a banner message
'--------------------------------------
wScript.Echo
"*************************************************************
*************"
wScript.Echo "*                                                           *"
wScript.Echo "*  Microsoft TPC-C V3 Benchmark Kit Ver. 4.41 - Configure
SQL Server      *"
wScript.Echo "*                                                           *"
wScript.Echo
"*************************************************************
*************"
'-----------------------------------------------------
'--- define function to check for any error messages
'-----------------------------------------------------
Function CheckSQLOutput(SQL_Out)
        ErrorFlag = 0
        Set SQL_fso = CreateObject("Scripting.FileSystemObject")
        Set SQL_Out_File = SQL_fso.OpenTextFile(SQL_Out,1)
        Do While SQL_Out_File.AtEndOfStream <> True
                SQL_Line = SQL_Out_File.ReadLine
                'first check to see if the output contains a message about
the login password
                If InStr(SQL_Line, "Login failed") Then
                        'display the messages and get out of here
                        ErrorFlag = 1
                        Wscript.Echo "The login for userid 'sa'
failed."
                        Wscript.Echo "Please restart SETUP with the
correct password."
                End If
   Loop
        SQL_Out_File.Close
        CheckSQLOutput = ErrorFlag
End Function
'-----------------------------------------------------
'--- end function
'-----------------------------------------------------
'-----------------------------------------------------
'--- open a file system object
'-----------------------------------------------------
Set fs = CreateObject("Scripting.FileSystemObject")
'-----------------------------------------------------
'--- grab the current directory value
'-----------------------------------------------------
SetupDirectory = WshShell.CurrentDirectory & "\"
'-----------------------------------------------------
'--- now calculate the other directories
'-----------------------------------------------------
ScriptDirectory = SetupDirectory & "SCRIPTS\"
LogDirectory = SetupDirectory & "LOGS\"
'---------------------------------------------------------------------
'--- check to see if the user passed in the server name and sa password
'---------------------------------------------------------------------
Set objArgs = wScript.Arguments
Select Case objArgs.Length
        Case 0
                '----------------------------------------
                '--- the user did not pass us anything
                '--- grab the Computer Name from Windows
                '----------------------------------------
                ServerName =
WshShell.ExpandEnvironmentStrings("%COMPUTERNAME%")
                '----------------------------------------
                '--- prompt the user to confirm the server name
                '----------------------------------------
                ServerName = InputBox("Enter your server
name",Test_Name,ServerName)
                Do While ServerName = ""
                        rc = MsgBox ("You must enter a valid server
name.",21)
                        If rc = 2 Then
                                wScript.Echo ""
                                wScript.Echo "TPC-C Setup
cancelled by user."
                                wScript.Quit
                        End If
                        ServerName =
WshShell.ExpandEnvironmentStrings("%COMPUTERNAME%")
                        ServerName = InputBox("Enter your server
name","Database Server Name",ServerName)
                Loop
                '---------------------------------------
                '--- prompt the user for the sa password
                '---------------------------------------
                saPassword = InputBox("Enter the 'sa'
password",Test_Name)
        Case 1
                '-----------------------------------------------------------
                '--- the user passed 1 argument, so assume it is the server
name
                '-----------------------------------------------------------
                ServerName = objArgs(0)
                '---------------------------------------
                '--- prompt the user for the sa password
                '---------------------------------------
                saPassword = InputBox("Enter the 'sa'
password",Test_Name)
        Case 2
                '------------------------------------------------
                '--- the user passed 2 arguments, so try to use them
                '------------------------------------------------
                ServerName = objArgs(0)
                saPassword = objArgs(1)
End Select
'-----------------------------------------------------------
'--- now that we have all the variables filled in, let's get to work
'-----------------------------------------------------------
If fs.FileExists(LogDirectory & "runsqlcfg.log") Then
        fs.DeleteFile LogDirectory & "runsqlcfg.log"
End If
'------------------------------------------------
'--- configure SQL Server
'------------------------------------------------
wScript.Echo " "
wScript.Echo "Configuring Microsoft SQL Server installation..."
Set oExec = WshShell.Exec("osql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ScriptDirectory & "utility\runsqlcfg.sql -o" &
LogDirectory & "runsqlcfg.log")
Do While oExec.Status = 0
    WScript.Sleep 100
Loop
```

```
rc = CheckSQLOutput(LogDirectory & "runsqlcfg.log")
If rc <> 0 Then
        Wscript.Quit
End If
wScript.Echo " "
wScript.Echo "SQL Server Configuration Complete."
'-----------------------------------------------
'--- shutdown SQL Server
'-----------------------------------------------
wScript.Echo " "
wScript.Echo "Shutting down SQL Server..."
Set oExec = WshShell.Exec("osql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ScriptDirectory & "utility\sqlshutdown.sql")
wScript.Echo " "
wScript.Echo "Waiting for SQL Server to shutdown..."
Set oExec = WshShell.Exec("..\tools\sleep\sleep.exe 20")
Do While oExec.Status = 0
    WScript.Sleep 100
Loop
'-----------------------------------------------
'--- Restarting SQL Server
'-----------------------------------------------
wScript.Echo " "
wScript.Echo "Restarting SQL Server..."
wScript.Echo " "
CMD_String = "start sqlservr.exe -c -t3502"
oExec = WshShell.Run(CMD_String, 2, false)
wScript.Echo ""
wScript.Echo
"*************************************************************
*************"
wScript.Echo "*                                                    *"
wScript.Echo "*  Microsoft TPC-C Benchmark Kit Ver. 4.41
 *"
wScript.Echo "*                                                    *"
wScript.Echo "*  SQL Server configuration complete.                        *"
wScript.Echo "*                                                    *"
wScript.Echo
"*************************************************************
*************"
```

rtetime.h

```
                                                        /* FILE:
rtetime.h : header file
 * Copyright 1997 Microsoft Corp., All rights reserved.
 *
 * Source code licensed to Tandem Computers  for Internal
 * use only.  Redistribution of source or object files or
 * any derivative works is prohibited. By agreement, this
 * notice may not be removed.
 *
 * Authors: Charles Levine, Philip Durr
 *                                  Microsoft Corp.
 *
 */

//FILE: RTETIME.H

#define     MAX_JULIAN_TIME
0x7FFFFFFFFFFFFFFF
#define JULIAN_TIME             __int64
#define     TC_TIME             DWORD
extern "C"
{
BOOL                InitJulianTime(LPSYSTEMTIME lpInitTime);
JULIAN_TIME         GetJulianTime(void);
DWORD               MyTickCount(void);
void                GetJulianAndTC(JULIAN_TIME *pJulian, DWORD
*pTC);
JULIAN_TIME         ConvertTo64BitTime(int iYear, int iMonth, int iDay, int
iHour, int iMinute, int iSecond);
JULIAN_TIME         Get64BitTime(LPSYSTEMTIME lpInitTime);
int                         JulianDay( int yr, int mm, int dd );
void                JulianToTime(JULIAN_TIME julianTS, int* yr, int*
mm, int* dd, int *hh, int *mi, int *ss );
void                JulianToCalendar( int day, int* yr, int* mm, int* dd );
}
```

setup.vbs

```
'-------------------------------------------------------------------------------
'---  FILE:      SETUP.VBS
'---             Microsoft TPC-C Kit Ver. 4.41
'---             Copyright Microsoft, 2001
'---             All Rights Reserved
'---
'---  PURPOSE:    This module performs the tasks to create and populate a
TPC-C database
'---
'-------------------------------------------------------------------------------
'-----------------------------------------
'--- open an windows scripting object
'-----------------------------------------
set WshShell = CreateObject("WScript.Shell")
'-------------------------------------------------
'--- before we go any further, make sure that
'--- we are running Windows Scripting Host 5.6
'--- or higher
'-------------------------------------------------
If wScript.Version < 5.6 Then
        wScript.Echo
"!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
        wScript.Echo "!!                                                    !!"
        wScript.Echo "!! You do not have the proper version of the
Windows Scripting Host   !!"
        wScript.Echo "!! installed.  Please install the latest Windows
Scripting Host from  !!"
        wScript.Echo "!! ..\tools\wsh\scripten.exe and restart setup.
    !!"
        wScript.Echo "!!                                                    !!"
        wScript.Echo
"!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
        wScript.Quit
End If
'-----------------------------------------
'--- display banner message
'-----------------------------------------
wScript.Echo
"*************************************************************
*************"
wScript.Echo "*                                                    *"
wScript.Echo "*  Microsoft TPC-C Benchmark Kit Ver. 4.41 - Setup
    *"
wScript.Echo "*                                                    *"
wScript.Echo
"*************************************************************
*************"
'-------------------------------------------------
'--- define function to check for any error messages
'-------------------------------------------------
Function CheckSQLOutput(SQL_Out)
        ErrorFlag = 0
        Set SQL_fso = CreateObject("Scripting.FileSystemObject")
```

```
        If SQL_fso.FileExists(SQL_Out) Then
                Set SQL_Out_File =
SQL_fso.OpenTextFile(SQL_Out,1)
                Do While SQL_Out_File.AtEndOfStream <> True
                        SQL_Line = SQL_Out_File.ReadLine
                        'first check to see if the output contains a
message about the login password
                        If InStr(SQL_Line, "Login failed") Then
                                'display the messages and get out
of here
                                ErrorFlag = 1
                                wScript.Echo "The login for userid
'sa' failed."
                                wScript.Echo "Please restart
SETUP with the correct password."
                        Else
                                If InStr(SQL_Line, "Msg") Then
                                        'find out where the
"Msg" indicator is in the line
                                        LocMsg =
InStr(SQL_Line, "Msg")
                                        'find out where the
comma is after the error code
                                        LocComma =
InStr(SQL_Line, ",")
                                        'now isolate the error
code
                                        ErrorCode =
Mid(SQL_Line, (LocMsg + 4), (LocComma - (LocMsg + 4)))
                                        Select Case ErrorCode
                                                Case " 170"

ErrorFlag = 1

wScript.Echo "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"

wScript.Echo "Syntax Error."

wScript.Echo "SQL Server Error 170."

wScript.Echo "Check CREATEDB.SQL."

wScript.Echo "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
                                                Case "1801"

ErrorFlag = 1

wScript.Echo "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"

wScript.Echo "Database 'tpcc' already exists."

wScript.Echo "SQL Server Error 1801."

wScript.Echo "Check CREATEDB.SQL."

wScript.Echo "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
                                                Case "1802"

ErrorFlag = 1

wScript.Echo "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"

wScript.Echo "CREATE DATABASE failed."

wScript.Echo "SQL Server Error 1802."

wScript.Echo "Check CREATEDB.SQL."

wScript.Echo "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
                                                Case "1921"

ErrorFlag = 1

wScript.Echo "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"

wScript.Echo "CREATE INDEX failed."

wScript.Echo "SQL Server Error 1921."

wScript.Echo "Check " & SQL_Out & "."

wScript.Echo "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
                                                Case "3013"
                                                        ErrorFlag = 1
                                                        wScript.Echo
"!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"

wScript.Echo "BACKUP DATABASE is terminating abnormally."

wScript.Echo "SQL Server Error 3013."

wScript.Echo "Check the SQL Server error log for more details."

wScript.Echo "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
                                                Case "3201"
                                                        ErrorFlag = 1
                                                        wScript.Echo
"!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"

wScript.Echo "Cannot open backup device."

wScript.Echo "Device error or device off-line."

wScript.Echo "SQL Server Error 3201."

wScript.Echo "See the SQL Server error log for more details."

wScript.Echo "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
                                                Case "5105"
                                                        ErrorFlag = 1
                                                        wScript.Echo
"!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"

wScript.Echo "Device Activation Error."

wScript.Echo "SQL Server Error 5105."

wScript.Echo "Check CREATEDB.SQL."

wScript.Echo "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
                                                Case "5170"

ErrorFlag = 1

wScript.Echo "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"

wScript.Echo "Cannot create one or more files because it already exists."

wScript.Echo "SQL Server Error 5170."

wScript.Echo "Check CREATEDB.SQL."

wScript.Echo "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
                                                Case
"15010","15012"
```

```
ErrorFlag = 0
                                                        Case
"15069"
ErrorFlag = 1
wScript.Echo "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
wScript.Echo "One or more users are using the database."
wScript.Echo "The requested operation cannot be completed."
wScript.Echo "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
                                                        Case Else
ErrorFlag = 1
wScript.Echo "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
wScript.Echo "An error occurred."
wScript.Echo "SQL Server Error Code: " & ErrorCode & "."
wScript.Echo "Check " & SQL_Out & " for more information."
wScript.Echo "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
                                                End Select
                                        End If
                                End If
                        Loop
                        SQL_Out_File.Close
                End If
                CheckSQLOutput = ErrorFlag
End Function
'----------------------------------------
'--- end function
'----------------------------------------
'------------------------------------------------------------
'--- define function to prompt for user input if necessary
'------------------------------------------------------------
Function GetUserInput(UserInput)
        Select Case UserInput
                Case "ServerName"
                        '--- pre-fill the prompt with the machine name
                        TempServerName =
WshShell.ExpandEnvironmentStrings("%COMPUTERNAME%")
                        '--- prompt the use for the setup particulars
                        TempResponse = InputBox("Enter your server
name","TPC-C Setup",TempServerName)
                        Do While TempResponse = ""
                                rc = MsgBox ("You must enter a
valid server name.",21)
                                If rc = 2 Then
                                        wScript.Echo ""
                                        wScript.Echo "TPC-C
Setup cancelled by user."
                                        wScript.Quit
                                End If
                                TempResponse =
WshShell.ExpandEnvironmentStrings("%COMPUTERNAME%")
                                TempResponse = InputBox("Enter
your server name","TPC-C Setup",TempServerName)
                        Loop
                Case "saPassword"
                        TempResponse = InputBox("Enter the 'sa'
password")
                Case "NumberWarehouses"
                        TempResponse = InputBox("Enter the number
of warehouses to build","TPC-C Setup")
                        Do While TempResponse = ""
                                rc = MsgBox ("You must enter a
value for Number of Warehouses.",21)
                                If rc = 2 Then
                                        wScript.Echo ""
                                        wScript.Echo "TPC-C
Setup cancelled by user."
                                        wScript.Quit
                                End If
                                TempResponse = InputBox("Enter
the number of warehouses to build","TPC-C Setup")
                        Loop
                Case "BuildOption"
                        TempResponse = InputBox("Build Option" &
Chr(13) &
"(full,builddb,objects,objectsfull,bulkload,bulkloadfull,backup)","TPC-C
Setup","full")
                        Flag = 0
                        Do While Flag = 0
                                Select Case TempResponse
                                        Case
"full","Full","FULL"
TempResponse = "full"
                                                Flag = 1
                                        Case
"builddb","BuildDB","Builddb","BUILDDB"
TempResponse = "builddb"
                                                Flag = 1
                                        Case
"objects","Objects","OBJECTS"
TempResponse = "objects"
                                                Flag = 1
                                        Case
"objectsfull","ObjectsFull","Objectsfull","OBJECTSFULL"
TempResponse = "objectsfull"
                                                Flag = 1
                                        Case
"bulkload","BulkLoad","Bulkload","BULKLOAD"
TempResponse = "bulkload"
                                                Flag = 1
                                        Case
"bulkloadfull","BulkLoadFull","Bulkloadfull","BULKLOADFULL"
TempResponse = "bulkloadfull"
                                                Flag = 1
                                        Case
"backup","Backup","BACKUP"
TempResponse = "backup"
                                                Flag = 1
                                        Case Else
                                                rc =
MsgBox ("Invalid Database Build Option.",21)
                                                If rc = 2
Then
wScript.Echo ""
wScript.Echo "TPC-C Setup cancelled by user."
```

```
wScript.Quit
                                                        End If
                                                        Flag = 0

TempResponse = InputBox("Build Option" & Chr(13) &
"(full,builddb,objects,objectsfull,bulkload,bulkloadfull,backup)",,"full")

                                        End Select
                                Loop
                        Case "DatabaseType"
                                TempResponse = InputBox("Database Type"
& Chr(13) & "(normal or scale_down)","TPC-C Setup","normal")
                                '--- set flag
                                Flag = 0
                                Do While Flag = 0
                                        Select Case TempResponse
                                                Case
"normal","Normal","NORMAL"

TempResponse = "0"
                                                        Flag = 1
                                                Case
"scale_down","Scale_Down","Scale_down","SCALE_DOWN"

TempResponse = "1"
                                                        Flag = 1
                                                Case Else
                                                        rc =
MsgBox ("Invalid Database Type.",21)
                                                        If rc = 2
Then

wScript.Echo ""

wScript.Echo "TPC-C Setup cancelled by user."

wScript.Quit
                                                        End If
                                                        Flag = 0

TempResponse = InputBox("Database Type" & Chr(13) & "(normal or
scale_down)",,"normal")
                                        End Select
                                Loop
        End Select
        GetUserInput = TempResponse
End Function
'----------------------------------------
'--- end function
'----------------------------------------
'------------------------------------------------
'--- Initialize an array of the TPC-C table names
'------------------------------------------------
Dim TableArray(8)
TableArray(0) = "warehouse"
TableArray(1) = "district"
TableArray(2) = "customer"
TableArray(3) = "history"
TableArray(4) = "new_order"
TableArray(5) = "orders"
TableArray(6) = "order_line"
TableArray(7) = "item"
TableArray(8) = "stock"
'------------------------------------------------------
'--- Initialize an array of the TPC-C build log file names
'------------------------------------------------------
Dim LogFileArray(21)
LogFileArray(0)  = "version.log"
LogFileArray(1)  = "removedb.log"
LogFileArray(2)  = "createdb.log"
LogFileArray(3)  = "tables.log"
LogFileArray(4)  = "dbopt1.log"
LogFileArray(5)  = "idxordcl.log"
LogFileArray(6)  = "idxitmcl.log"
LogFileArray(7)  = "idxwarcl.log"
LogFileArray(8)  = "idxcuscl.log"
LogFileArray(9)  = "idxnodcl.log"
LogFileArray(10) = "idxdiscl.log"
LogFileArray(11) = "idxstkcl.log"
LogFileArray(12) = "idxodlcl.log"
LogFileArray(13) = "idxcusnc.log"
LogFileArray(14) = "idxhiscl.log"
LogFileArray(15) = "idxordnc.log"
LogFileArray(16) = "bulkload.log"
LogFileArray(17) = "dbopt2.log"
LogFileArray(18) = "nurand_load.log"
LogFileArray(19) = "backupdev.log"
LogFileArray(20) = "backupdev.log"
LogFileArray(21) = "verifyload.log"
'----------------------------------------
'--- open a file system object
'----------------------------------------
Set fs = CreateObject("Scripting.FileSystemObject")
'----------------------------------------
'--- grab the current directory value
'----------------------------------------
SetupDirectory = WshShell.CurrentDirectory & "\"
'SetupDirectory = "C:\MSTPCC.441\"
'----------------------------------------
'--- now calculate the other directories
'----------------------------------------
ACIDDirectory = LEFT(SetupDirectory,(LEN(SetupDirectory)-6))
ScriptDirectory = SetupDirectory & "SCRIPTS\"
LogDirectory = SetupDirectory & "LOGS\"
'------------------------------------------------------------------
'--- now determine if the user passed us any parameters.
'--- the order should be ServerName, sa Password, Number of Warehouses,
'--- Build Option, and Database Type
'------------------------------------------------------------------
Set objArgs = wScript.Arguments
Select Case objArgs.Length
        Case 0
                '----------------------------------------
                '--- get the server name
                '----------------------------------------
                ServerName = GetUserInput("ServerName")
                '----------------------------------------
                '--- get the sa password
                '----------------------------------------
                saPassword = GetUserInput("saPassword")
                '----------------------------------------
                '--- get the number of warehouses
                '----------------------------------------
                NumberWarehouses =
GetUserInput("NumberWarehouses")
                '----------------------------------------
                '--- get the build option
                '----------------------------------------
                BuildOption = GetUserInput("BuildOption")
                '----------------------------------------
                '--- get the database type
                '----------------------------------------
                DatabaseType = GetUserInput("DatabaseType")
        Case 1
                '----------------------------------------------------
```

```
                        '--- assume that the server name was passed correctly
                        '-------------------------------------------------
                        '-----------------------------------------
                        '--- store the server name
                        '-----------------------------------------
                        ServerName = objArgs(0)
                        '-----------------------------------------
                        '--- get the sa password
                        '-----------------------------------------
                        saPassword = GetUserInput("saPassword")
                        '-----------------------------------------
                        '--- get the number of warehouses
                        '-----------------------------------------
                        NumberWarehouses =
GetUserInput("NumberWarehouses")
                        '-----------------------------------------
                        '--- get the build option
                        '-----------------------------------------
                        BuildOption = GetUserInput("BuildOption")
                        '-----------------------------------------
                        '--- get the database type
                        '-----------------------------------------
                        DatabaseType = GetUserInput("DatabaseType")
                        If DatabaseType = "scale_down" or DatabaseType =
"Scale_Down" or DatabaseType = "Scale_down" Then
                                DatabaseType = 1
                        Else
                                DatabaseType = 0
                        End If
                Case 2
                        '-----------------------------------------------------------------
                        '--- assume that the server name and sa password was
passed correctly
                        '-----------------------------------------------------------------
                        '-----------------------------------------
                        '--- store the server name
                        '-----------------------------------------
                        ServerName = objArgs(0)
                        '-----------------------------------------
                        '--- store the sa password
                        '-----------------------------------------
                        saPassword = objArgs(1)
                        '-----------------------------------------
                        '--- get the number of warehouses
                        '-----------------------------------------
                        NumberWarehouses =
GetUserInput("NumberWarehouses")
                        '-----------------------------------------
                        '--- get the build option
                        '-----------------------------------------
                        BuildOption = GetUserInput("BuildOption")
                        '-----------------------------------------
                        '--- get the database type
                        '-----------------------------------------
                        DatabaseType = GetUserInput("DatabaseType")
                        If DatabaseType = "scale_down" or DatabaseType =
"Scale_Down" or DatabaseType = "Scale_down" Then
                                DatabaseType = 1
                        Else
                                DatabaseType = 0
                        End If
                Case 3

'-------------------------------------------------------------------------------
                        '--- assume that the server name,sa password, and number
of warehouses was passed correctly

'-------------------------------------------------------------------------------
                        '-----------------------------------------
                        '--- store the server name
                        '-----------------------------------------
                        ServerName = objArgs(0)
                        '-----------------------------------------
                        '--- store the sa password
                        '-----------------------------------------
                        saPassword = objArgs(1)
                        '-----------------------------------------
                        '--- store the number of warehouses
                        '-----------------------------------------
                        NumberWarehouses = objArgs(2)
                        '-----------------------------------------
                        '--- get the build option
                        '-----------------------------------------
                        BuildOption = GetUserInput("BuildOption")
                        '-----------------------------------------
                        '--- get the database type
                        '-----------------------------------------
                        DatabaseType = GetUserInput("DatabaseType")
                        If DatabaseType = "scale_down" or DatabaseType =
"Scale_Down" or DatabaseType = "Scale_down" Then
                                DatabaseType = 1
                        Else
                                DatabaseType = 0
                        End If
                Case 4

'-------------------------------------------------------------------------------
-------
                        '--- assume that the server name,sa password,number of
warehouses, and build option was passed correctly

'-------------------------------------------------------------------------------
-------
                        '-----------------------------------------
                        '--- store the server name
                        '-----------------------------------------
                        ServerName = objArgs(0)
                        '-----------------------------------------
                        '--- store the sa password
                        '-----------------------------------------
                        saPassword = objArgs(1)
                        '-----------------------------------------
                        '--- store the number of warehouses
                        '-----------------------------------------
                        NumberWarehouses = objArgs(2)
                        '-----------------------------------------
                        '--- store the build option
                        '-----------------------------------------
                        BuildOption = objArgs(3)
                        '-----------------------------------------
                        '--- get the database type
                        '-----------------------------------------
                        DatabaseType = GetUserInput("DatabaseType")
                        If DatabaseType = "scale_down" or DatabaseType =
"Scale_Down" or DatabaseType = "Scale_down" Then
                                DatabaseType = 1
                        Else
                                DatabaseType = 0
                        End If
                Case 5
                        '-----------------------------------------------------
                        '--- assume all the parameters were passed in correctly
                        '-----------------------------------------------------
                        '-----------------------------------------
                        '--- store the server name
                        '-----------------------------------------
```

```
                        ServerName = objArgs(0)
                        '-------------------------------------------
                        '--- store the sa password
                        '-------------------------------------------
                        saPassword = objArgs(1)
                        '-------------------------------------------
                        '--- store the number of warehouses
                        '-------------------------------------------
                        NumberWarehouses = objArgs(2)
                        '-------------------------------------------
                        '--- store the build option
                        '-------------------------------------------
                        BuildOption = objArgs(3)
                        '-------------------------------------------
                        '--- get the database type
                        '-------------------------------------------
                        DatabaseType = objArgs(4)
                        If DatabaseType = "scale_down" or DatabaseType =
"Scale_Down" or DatabaseType = "Scale_down" Then
                                DatabaseType = 1
                        Else
                                DatabaseType = 0
                        End If
End Select
'---------------------------------------------------------------------
'--- now that we have all the variables filled in, let's get to work
'--- cleanup any old .err files
'---------------------------------------------------------------------
For i = 0 to 8
        If fs.FileExists(LogPath & TableArray(i) & ".err") Then
                fs.DeleteFile LogPath & TableArray(i) & ".err"
        End If
Next
For i = 0 to 21
        If fs.FileExists(LogPath & LogFileArray(i)) Then
                fs.DeleteFile LogPath & LogFileArray(i)
        End If
Next
'---------------------------------------------------------------------
'--- now grab the version of SQL Server you are running this against
'---------------------------------------------------------------------
Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ScriptDirectory & "utility\version.sql -o" &
LogDirectory & "version.log")
Do While oExec.Status = 0
    wScript.Sleep 100
Loop
rc = CheckSQLOutput(LogDirectory & "version.log")
If rc <> 0 Then
        wScript.Quit
End If
If (BuildOption = "full" OR BuildOption = "builddb") Then
        wScript.Echo "Removing any existing TPCC database and backup
devices..."
        Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ScriptDirectory & NumberWarehouses &
".war\database\removedb.sql -o" & LogDirectory & "removedb.log")
        Do While oExec.Status = 0
            wScript.Sleep 100
        Loop
        rc = CheckSQLOutput(LogDirectory & "removedb.log")
        If rc <> 0 Then
                wScript.Quit
        End If
        wScript.Echo "Building database files and database..."
        Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ScriptDirectory & NumberWarehouses &
".war\database\createdb.sql -o" & LogDirectory & "createdb.log")
        Do While oExec.Status = 0
            wScript.Sleep 100
        Loop
        rc = CheckSQLOutput(LogDirectory & "createdb.log")
        If rc <> 0 Then
                wScript.Quit
        End If
End If
'-------------------------------------------
'--- build tables and stored procedures
'-------------------------------------------
If (BuildOption = "full" OR BuildOption = "builddb" _
   OR BuildOption = "objects" OR BuildOption = "objectsfull") Then
        wScript.Echo "Creating TPC-C database tables..."
        Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ScriptDirectory & NumberWarehouses &
".war\ddl\tables.sql -o" & LogDirectory & "tables.log")
        Do While oExec.Status = 0
            wScript.Sleep 100
        Loop
        rc = CheckSQLOutput(LogDirectory & "tables.log")
        If rc <> 0 Then
                wScript.Quit
        End If
        wScript.Echo "Creating database objects..."
        Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ScriptDirectory & "dml\neword.sql -o" &
LogDirectory & "sp_neword.log")
        Do While oExec.Status = 0
            wScript.Sleep 100
        Loop
        rc = CheckSQLOutput(LogDirectory & "sp_neword.log")
        If rc <> 0 Then
                wScript.Quit
        End If
        Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ScriptDirectory & "dml\payment.sql -o" &
LogDirectory & "sp_payment.log")
        Do While oExec.Status = 0
            wScript.Sleep 100
        Loop
        rc = CheckSQLOutput(LogDirectory & "sp_payment.log")
        If rc <> 0 Then
                wScript.Quit
        End If
        Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ScriptDirectory & "dml\ordstat.sql -o" &
LogDirectory & "sp_ordstat.log")
        Do While oExec.Status = 0
            wScript.Sleep 100
        Loop
        rc = CheckSQLOutput(LogDirectory & "sp_ordstat.log")
        If rc <> 0 Then
                wScript.Quit
        End If
        Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ScriptDirectory & "dml\delivery.sql -o" &
LogDirectory & "sp_delivery.log")
        Do While oExec.Status = 0
            wScript.Sleep 100
        Loop
        rc = CheckSQLOutput(LogDirectory & "sp_delivery.log")
        If rc <> 0 Then
                wScript.Quit
        End If
        Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ScriptDirectory & "dml\stocklev.sql -o" &
LogDirectory & "sp_stocklev.log")
```

```
        Do While oExec.Status = 0
            wScript.Sleep 100
        Loop
        rc = CheckSQLOutput(LogDirectory & "sp_stocklev.log")
        If rc <> 0 Then
                wScript.Quit
        End If
        Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ScriptDirectory & "dml\version.sql -o" &
LogDirectory & "sp_version.log")
        Do While oExec.Status = 0
            wScript.Sleep 100
        Loop
        rc = CheckSQLOutput(LogDirectory & "sp_version.log")
        If rc <> 0 Then
                wScript.Quit
        End If
        wScript.Echo "Database object creation complete..."
End If
If (BuildOption = "full" OR BuildOption = "builddb" _
   OR BuildOption = "objects" OR BUildOption = "objectsfull" _
   OR BuildOption = "bulkload" OR BuildOption = "bulkloadfull") Then
        wScript.Echo "Setting database options before load..."
        Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ScriptDirectory & "utility\dbopt1.sql -o" &
LogDirectory & "dbopt1.log")
        Do While oExec.Status = 0
            wScript.Sleep 100
        Loop
        rc = CheckSQLOutput(LogDirectory & "dbopt1.log")
        If rc <> 0 Then
                wScript.Quit
        End If
        '------------------------------------------------------------
        '--- before we start tpccldr.exe, check the registry
        '--- to ensure that the Shared Memory Protocol is off.
        '--- if it is on, store the setting so we can return
        '--- the system to the pre-tpccldr state.
        '------------------------------------------------------------
        SharedMemoryRegKey =
WshShell.RegRead("HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MS
SQLServer\Client\SharedMemoryOn")
        If SharedMemoryRegKey = 1 Then
                WshShell.RegWrite
"HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Client\S
haredMemoryOn", 0, "REG_DWORD"
        End If
        wScript.Echo "Beginning data load and index creation..."
        CMD_String = SetupDirectory & "\loader\bin\tpccldr.exe"
        CMD_String = CMD_String & " -S" & ServerName
        CMD_String = CMD_String & " -Usa"
        CMD_String = CMD_String & " -P" & saPassword
        CMD_String = CMD_String & " -W" & NumberWarehouses
        CMD_String = CMD_String & " -f" & LogDirectory &
"bulkload.log"
        CMD_String = CMD_String & " -L" & LogDirectory
        CMD_String = CMD_String & " -d" & ScriptDirectory &
NumberWarehouses & ".war\ddl"
        CMD_String = CMD_String & " -c" & DatabaseType
        oExec = WshShell.Run(CMD_String, 2, true)
        '------------------------------------------------------------
        '--- now that the loader is finished, put the
        '--- SharedMemoryOn registry key back to its original
        '--- value.
        '------------------------------------------------------------
        If SharedMemoryRegKey = 1 Then
                WshShell.RegWrite
"HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Client\S
haredMemoryOn", 1, "REG_DWORD"
        End If
        wScript.Echo "Setting database options after load..."
        Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ScriptDirectory & "utility\dbopt2.sql -o" &
LogDirectory & "dbopt2.log")
        Do While oExec.Status = 0
            wScript.Sleep 100
        Loop
        rc = CheckSQLOutput(LogDirectory & "dbopt2.log")
        If rc <> 0 Then
                wScript.Quit
        End If
        wScript.Echo "Data load and index creation complete."
        '----------------------------------------
        '--- now parse the index creation logs
        '--- to see if there were any errors
        '--- there.
        '----------------------------------------
        For i = 5 to 15
                rc = CheckSQLOutput(LogDirectory & LogFileArray(i))
                If rc <> 0 Then
                        wScript.Quit
                End If
        Next
        wScript.Echo "Calculating initial database space usage...."
        Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ACIDDirectory & "space\scripts\spused.sql -o" &
ACIDDirectory & "space\spused.ver")
        Do While oExec.Status = 0
            wScript.Sleep 100
        Loop
        Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ACIDDirectory & "space\scripts\splog.sql -o" &
ACIDDirectory & "space\splog.ver")
        Do While oExec.Status = 0
            wScript.Sleep 100
        Loop
        Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ACIDDirectory & "space\scripts\spfiles.sql -o" &
ACIDDirectory & "space\spfiles.ver")
        Do While oExec.Status = 0
            wScript.Sleep 100
        Loop
        '----------------------------------------
        '--- now that the loader is finished
        '--- check the .err files and if they
        '--- are of zero length, delete them.
        '----------------------------------------
        Set fsErr = CreateObject("Scripting.FileSystemObject")
        Set fErr = fsErr.GetFolder(LogDirectory)
        Set fcErr = fErr.Files
        For Each f1 In fcErr
                If f1.Type = "ERR File" Then
                        If f1.Size = 0 Then
                                f1.Delete
                        End If
                End If
        Next
        Set fcErr = Nothing
        Set fErr = Nothing
        Set fsErr = Nothing
End If
If (BuildOption = "full" _
   OR BUildOption = "objectsfull" _
   OR BuildOption = "bulkloadfull" _
```

```
   OR BuildOption = "backup") Then
            wScript.Echo "Creating Backup Device(s)..."
            Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ScriptDirectory & NumberWarehouses &
".war\database\backupdev.sql -o" & LogDirectory & "backupdev.log")
            Do While oExec.Status = 0
                wScript.Sleep 100
            Loop
            rc = CheckSQLOutput(LogDirectory & "backupdev.log")
            If rc <> 0 Then
                        wScript.Quit
            End If
            wScript.Echo "Backing up database..."
            Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ScriptDirectory & NumberWarehouses &
".war\database\backup.sql -o" & LogDirectory & "backup.log")
            Do While oExec.Status = 0
                wScript.Sleep 100
            Loop
            rc = CheckSQLOutput(LogDirectory & "backup.log")
            If rc <> 0 Then
                        wScript.Quit
            End If
            wScript.Echo "Database backup complete."
End If
If (BuildOption = "full" _
   OR BUildOption = "objectsfull" _
   OR BuildOption = "bulkloadfull") Then
            wScript.Echo "Verifying TPC-C database load..."
            Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
ServerName & " -e -i" & ScriptDirectory & "utility\verifytpccload.sql -o" &
LogDirectory & "verifyload.log")
            Do While oExec.Status = 0
                wScript.Sleep 100
            Loop
            rc = CheckSQLOutput(LogDirectory & "verifyload.log")
            If rc <> 0 Then
                        wScript.Quit
            End If
            wScript.Echo "Check logs\verifyload.log to verify database load."
End If
'----------------------------------------
'--- display banner message
'----------------------------------------
wScript.Echo
"*************************************************************
*************"
wScript.Echo "*                                                         *"
wScript.Echo "*  Microsoft TPC-C Benchmark Kit Ver. 4.41 - Setup Complete
          *"
wScript.Echo "*                                                         *"
wScript.Echo
"*************************************************************
*************"
```

spinlock.h

```
/*          FILE: SPINLOCK.H
 *
 * Copyright 1997 Microsoft Corp., All rights reserved.
 *
 * Source code licensed to Tandem Computers  for Internal
 * use only.  Redistribution of source or object files or
 * any derivative works is prohibited. By agreement, this
 * notice may not be removed.
 *
 * Authors: Mike Parkes, Charles Levine, Philip Durr
 *                                  Microsoft Corp.
 */

#ifndef _INC_Spinlock

          const LONG LockClosed          = 1;
          const LONG LockOpen                    = 0;


/*************************************************************
           *
           *  Spinlock and Semaphore locking.
           *
           *  This class provides a very conservative locking scheme.
           *  The assumption behind the code is that locks will be
           *  held for a very short time.  When a lock is taken a memory
           *  location is exchanged.  All other threads that want this
           *  lock wait by spinning and sometimes sleeping on a semaphore
           *  until it becomes free again.  The only other choice is not
           *  to wait at all and move on to do something else.  This
           *  module should normally be used in conjunction with cache
           *  aligned memory in minimize cache line misses.
           *
*************************************************************/

          class Spinlock
          {
                    // Private data.
                    HANDLE              Semaphore;
                    volatile LONG       m_Spinlock;
                    volatile LONG       Waiting;

                    #ifdef _DEBUG
                              // Counters for debugging builds.
                              volatile LONG     TotalLocks;
                              volatile LONG     TotalSleeps;
                              volatile LONG     TotalSpins;
                              volatile LONG     TotalWaits;
                    #endif

                    public:
                              // Public functions.

                              Spinlock( void );

                              inline BOOL ClaimLock( BOOL Wait =
TRUE );
                              inline void ReleaseLock( void );
                              ~Spinlock( void );
                              // Disabled operations.
                              Spinlock( const Spinlock & Copy );
                              void operator=( const Spinlock & Copy );

                    private:
                              // Private functions.
                              inline BOOL ClaimSpinlock( volatile LONG
*sl );
                              void WaitForLock( void );
                              void WakeAllSleepers( void );
          };


/*************************************************************
           *
           *  A guaranteed atomic exchange.
           *
           *  An attempt is made to claim the Spinlock.  This action is
           *  guaranteed to be atomic.
```

```
        *
*************************************************************/

        inline BOOL Spinlock::ClaimSpinlock( volatile LONG *Spinlock )
        {
                #ifdef _DEBUG
                        InterlockedIncrement( (LPLONG) &
TotalLocks );
                #endif
                return ( ((*Spinlock) == LockOpen) &&
(InterlockedExchange( (LPLONG)Spinlock, LockClosed ) == LockOpen) );
        }

        /************************************************
        *
        *   Claim the Spinlock.
        *
        *   Claim the lock if available else wait or exit.
        *
        ************************************************/

        inline BOOL Spinlock::ClaimLock( BOOL Wait )
        {
                if ( ! ClaimSpinlock( (volatile LONG*) & m_Spinlock ) )
                {
                        if ( Wait )
                                WaitForLock();
                        return Wait;
                }
                return TRUE;
        }


/*****************************************************
        *
        *   Release the Spinlock.
        *
        *   Release the lock and if needed wakeup any sleepers.
        *

*****************************************************/

        inline void Spinlock::ReleaseLock( void )
        {
                m_Spinlock = LockOpen;
                if ( Waiting > 0 )
                        WakeAllSleepers();
        }

        #define _INC_Spinlock

#endif
```

tm_com_dll.dsp

```
# Microsoft Developer Studio Project File - Name="tm_com_dll" - Package
Owner=<4>
# Microsoft Developer Studio Generated Build File, Format Version 6.00
# ** DO NOT EDIT **

# TARGTYPE "Win32 (x86) Dynamic-Link Library" 0x0102

CFG=tm_com_dll - Win32 Debug
!MESSAGE This is not a valid makefile. To build this project using NMAKE,
!MESSAGE use the Export Makefile command and run
!MESSAGE
!MESSAGE NMAKE /f "tm_com_dll.mak".
!MESSAGE
!MESSAGE You can specify a configuration when running NMAKE
!MESSAGE by defining the macro CFG on the command line. For example:
!MESSAGE
!MESSAGE NMAKE /f "tm_com_dll.mak" CFG="tm_com_dll - Win32
Debug"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "tm_com_dll - Win32 Release" (based on "Win32 (x86)
Dynamic-Link Library")
!MESSAGE "tm_com_dll - Win32 Debug" (based on "Win32 (x86)
Dynamic-Link Library")
!MESSAGE

# Begin Project
# PROP AllowPerConfigDependencies 0
# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CPP=cl.exe
MTL=midl.exe
RSC=rc.exe

!IF  "$(CFG)" == "tm_com_dll - Win32 Release"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir "Release"
# PROP BASE Intermediate_Dir "Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MT /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD CPP /nologo /MD /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "NDEBUG" /mktyplib203 /o "NUL" /win32
# ADD MTL /nologo /D "NDEBUG" /mktyplib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "NDEBUG"
# ADD RSC /l 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /dll /machine:I386
# ADD LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib odbccp32.lib
/nologo /subsystem:windows /dll /machine:I386 /out:".\bin/tpcc_com.dll"

!ELSEIF  "$(CFG)" == "tm_com_dll - Win32 Debug"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "Debug"
# PROP BASE Intermediate_Dir "Debug"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
```

```
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MTd /W3 /Gm /GX /Zi /Od /D "WIN32" /D
"_DEBUG" /D "_WINDOWS" /YX /FD /c
# ADD CPP /nologo /MDd /W3 /Gm /GX /ZI /Od /D "WIN32" /D "_DEBUG"
/D "_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "_DEBUG" /mktyplib203 /o "NUL" /win32
# ADD MTL /nologo /D "_DEBUG" /mktyplib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "_DEBUG"
# ADD RSC /l 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /dll /debug /machine:I386
/pdbtype:sept
# ADD LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib odbccp32.lib
/nologo /subsystem:windows /dll /debug /machine:I386
/out:".\bin/tpcc_com.dll" /pdbtype:sept

!ENDIF

# Begin Target

# Name "tm_com_dll - Win32 Release"
# Name "tm_com_dll - Win32 Debug"
# Begin Source File

SOURCE=.\src\tpcc_com.cpp
# End Source File
# Begin Source File

SOURCE=.\src\tpcc_com.h
# End Source File
# End Target
# End Project
```

tpcc.cpp

```
/*          FILE:                   TPCC.C
 *                                  Microsoft TPC-C Kit Ver.
4.20.000
 *                                  Copyright Microsoft, 1999
 *          All Rights Reserved
 *
 *                                  Version 4.10.000 audited by
Richard Gimarc, Performance Metrics, 3/17/99
 *
 *          PURPOSE:                Main module for TPCC.DLL which is an
ISAPI service dll.
 *          Contact:    Charles Levine (clevine@microsoft.com)
 *
 *  Change history:
 *                      4.20.000 - reworked error handling; added options for
COM and Encina txn monitors
 */

#include <windows.h>
#include <process.h>
#include <tchar.h>
#include <stdio.h>
#include <stdarg.h>
#include <malloc.h>
#include <stdlib.h>
#include <string.h>
#include <time.h>
#include <sys\timeb.h>
#include <io.h>
#include <assert.h>

#include <sqltypes.h>

#ifdef ICECAP
#include <icapexp.h>
#endif

#include "..\..\common\src\trans.h"                     //tpckit transaction
header contains definations of structures specific to TPC-C
#include "..\..\common\src\error.h"
#include "..\..\common\src\txn_base.h"
#include "..\..\common\src\ReadRegistry.h"

#include "..\..\common\txnlog\include\rtetime.h"
#include "..\..\common\txnlog\include\spinlock.h"
#include "..\..\common\txnlog\include\txnlog.h"

// Database layer includes
#include "..\..\db_dblib_dll\src\tpcc_dblib.h"          // DBLIB
implementation of TPC-C txns
#include "..\..\db_odbc_dll\src\tpcc_odbc.h"            // ODBC
implementation of TPC-C txns

// Txn monitor layer includes
#include "..\..\tm_com_dll\src\tpcc_com.h"                      // COM
Services implementation on TPC-C txns
#include "..\..\tm_tuxedo_dll\src\tpcc_tux.h"           // interface to Tuxedo
libraries
#include "..\..\tm_encina_dll\src\tpcc_enc.h"           // interface to Encina
libraries

#include "httpext.h"                                    //ISAPI DLL
information header
#include "tpcc.h"                                               //this dlls
specific structure, value e.t. header.


#define     LEN_ERR_STRING  256

// defines for Make<Txn>Form calls to distinguish input and output flavors
#define     OUTPUT_FORM     0
#define INPUT_FORM          1

char
szMyComputerName[MAX_COMPUTERNAME_LENGTH+1];

//Terminal client id structure
TERM      Term = { 0, 0, 0, NULL };

// The WEBCLIENT_VERSION string specifies the version level of this web
client interface.
// The RTE must be synchronized with the interface level on login, otherwise
the login
// will fail.  This is a sanity check to catch problems resulting from mismatched
versions
// of the RTE and web client.
#define WEBCLIENT_VERSION "410"

static      CRITICAL_SECTION                    TermCriticalSection;

static  HINSTANCE hLibInstanceTm = NULL;
static  HINSTANCE hLibInstanceDb = NULL;
```

```
TYPE_CTPCC_DBLIB        *pCTPCC_DBLIB_new;
TYPE_CTPCC_ODBC                 *pCTPCC_ODBC_new;
TYPE_CTPCC_TUXEDO       *pCTPCC_TUXEDO_new;
TYPE_CTPCC_ENCINA   *pCTPCC_ENCINA_new;
TYPE_CTPCC_ENCINA   *pCTPCC_ENCINA_post_init;
TYPE_CTPCC_COM          *pCTPCC_COM_new;

// For deferred Delivery txns:

CTxnLog                                         *txnDelilog = NULL;
        //used to log delivery transaction information

HANDLE                                          hWorkerSemaphore    =
INVALID_HANDLE_VALUE;
HANDLE                                          hDoneEvent
        = INVALID_HANDLE_VALUE;
HANDLE                                          *pDeliHandles
= NULL;

// configuration settings from registry
TPCCREGISTRYDATA                Reg;


DWORD
dwNumDeliveryThreads = 4;
CRITICAL_SECTION                DelBuffCriticalSection;
//critical section for delivery transactions cache
DELIVERY_TRANSACTION    *pDelBuff                       = NULL;
DWORD                                           dwDelBuffSize
= 100;          // size of circular buffer for delivery txns
DWORD                                           dwDelBuffFreeCount;
                        // number of buffers free
DWORD                                           dwDelBuffBusyIndex =
0;              // index position of entry waiting to be delivered
DWORD                                           dwDelBuffFreeIndex  =
0;              // index position of unused entry

#include "..\..\common\src\ReadRegistry.cpp"

/* FUNCTION: DllMain
 *
 * PURPOSE:             This function is the entry point for the DLL.  This
implementation is based on the
 *                      fact that DLL_PROCESS_ATTACH is only
called from the inet service once.
 *
 * ARGUMENTS:   HANDLE  hModule
module handle
 *                              DWORD   ul_reason_for_call
reason for call
 *                              LPVOID  lpReserved
reserved for future use
 *
 * RETURNS:             BOOL    FALSE
errors occured in initialization
 *                                                      TRUE
        DLL successfully initialized
 */

BOOL APIENTRY DllMain(HANDLE hModule, DWORD ul_reason_for_call,
LPVOID lpReserved)
{
        DWORD  i;
        char szEvent[LEN_ERR_STRING] = "\0";
        char szLogFile[128];
        char szDllName[128];

// debugging....
// DebugBreak();

        try
        {
                switch( ul_reason_for_call )
                {
                        case DLL_PROCESS_ATTACH:
                                {
                                        DWORD dwSize =
MAX_COMPUTERNAME_LENGTH+1;

GetComputerName(szMyComputerName, &dwSize);

szMyComputerName[dwSize] = 0;
                                }


DisableThreadLibraryCalls((HMODULE)hModule);

InitializeCriticalSection(&TermCriticalSection);

                                if ( ReadTPCCRegistrySettings(
&Reg ) )
                                        throw new
CWEBCLNT_ERR( ERR_MISSING_REGISTRY_ENTRIES );

                                dwDelBuffSize = min(
Reg.dwMaxPendingDeliveries, 10000 );  // min with 10000 as a sanity
constraint
                                dwNumDeliveryThreads = min(
Reg.dwNumberOfDeliveryThreads, 100 );  // min with 100 as a sanity constraint

                                TermInit();

                                // load DLL for txn monitor
                                if (Reg.eTxnMon == TUXEDO)
                                {
                                        strcpy( szDllName,
Reg.szPath );
                                        strcat( szDllName,
"tpcc_tuxedo.dll");
                                        hLibInstanceTm =
LoadLibrary( szDllName );
                                        if (hLibInstanceTm ==
NULL)
                                                throw new
CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );

                                        // get function pointer
to wrapper for class constructor

pCTPCC_TUXEDO_new = (TYPE_CTPCC_TUXEDO*)
GetProcAddress(hLibInstanceTm,"CTPCC_TUXEDO_new");
                                        if
(pCTPCC_TUXEDO_new == NULL)
                                                throw new
CWEBCLNT_ERR( ERR_GETPROCADDR_FAILED, szDllName,
GetLastError() );
                                }
                                else if (Reg.eTxnMon ==
ENCINA)
                                {
                                        strcpy( szDllName,
Reg.szPath );
                                        strcat( szDllName,
"tpcc_encina.dll");
```

```
                                                hLibInstanceTm =
LoadLibrary( szDllName );
                                                if (hLibInstanceTm ==
NULL)
                                                        throw new
CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );
                                                // get function pointer
to wrapper for class constructor

pCTPCC_ENCINA_new = (TYPE_CTPCC_ENCINA*)
GetProcAddress(hLibInstanceTm,"CTPCC_ENCINA_new");

pCTPCC_ENCINA_post_init = (TYPE_CTPCC_ENCINA*)
GetProcAddress(hLibInstanceTm,"CTPCC_ENCINA_post_init");
                                                if
(pCTPCC_ENCINA_new == NULL)
                                                        throw new
CWEBCLNT_ERR( ERR_GETPROCADDR_FAILED, szDllName,
GetLastError() );
                                        }
                                        else if (Reg.eTxnMon == COM)
                                        {
                                                strcpy( szDllName,
Reg.szPath );
                                                strcat( szDllName,
"tpcc_com.dll");
                                                hLibInstanceTm =
LoadLibrary( szDllName );
                                                if (hLibInstanceTm ==
NULL)
                                                        throw new
CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );

                                                // get function pointer
to wrapper for class constructor
                                                pCTPCC_COM_new =
(TYPE_CTPCC_COM*)
GetProcAddress(hLibInstanceTm,"CTPCC_COM_new");
                                                if
(pCTPCC_COM_new == NULL)
                                                        throw new
CWEBCLNT_ERR( ERR_GETPROCADDR_FAILED, szDllName,
GetLastError() );
                                        }

                                        // load DLL for database
connection
                                        if ((Reg.eTxnMon == None) ||
(dwNumDeliveryThreads > 0))
                                        {
                                                if (Reg.eDB_Protocol
== DBLIB)
                                                {
                                                        strcpy(
szDllName, Reg.szPath );
                                                        strcat(
szDllName, "tpcc_dblib.dll");

hLibInstanceDb = LoadLibrary( szDllName );
                                                        if
(hLibInstanceDb == NULL)

throw new CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName,
GetLastError() );

                                                        // get
function pointer to wrapper for class constructor

pCTPCC_DBLIB_new = (TYPE_CTPCC_DBLIB*)
GetProcAddress(hLibInstanceDb,"CTPCC_DBLIB_new");
                                                        if
(pCTPCC_DBLIB_new == NULL)

throw new CWEBCLNT_ERR( ERR_GETPROCADDR_FAILED, szDllName,
GetLastError() );
                                                }
                                                else if
(Reg.eDB_Protocol == ODBC)
                                                {
                                                        strcpy(
szDllName, Reg.szPath );
                                                        strcat(
szDllName, "tpcc_odbc.dll");

hLibInstanceDb = LoadLibrary( szDllName );
                                                        if
(hLibInstanceDb == NULL)

throw new CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName,
GetLastError() );

                                                        // get
function pointer to wrapper for class constructor

pCTPCC_ODBC_new = (TYPE_CTPCC_ODBC*)
GetProcAddress(hLibInstanceDb,"CTPCC_ODBC_new");
                                                        if
(pCTPCC_ODBC_new == NULL)

throw new CWEBCLNT_ERR( ERR_GETPROCADDR_FAILED, szDllName,
GetLastError() );
                                                }
                                        }

                                        if (dwNumDeliveryThreads)
                                        {
                                                // for deferred delivery
txns:
                                                hDoneEvent =
CreateEvent( NULL, TRUE /* manual reset */, FALSE /* initially not signalled
*/, NULL );

InitializeCriticalSection(&DelBuffCriticalSection);
                                                hWorkerSemaphore =
CreateSemaphore( NULL, 0, dwDelBuffSize, NULL );
                                                dwDelBuffFreeCount =
dwDelBuffSize;

                                                InitJulianTime(NULL);

                                                // create unique log file
name based on delilog-yymmdd-hhmm.log
                                                SYSTEMTIME Time;
                                                GetLocalTime( &Time
);
                                                wsprintf( szLogFile,
"%sdelivery-%2.2d%2.2d%2.2d-%2.2d%2.2d.log",

Reg.szPath, Time.wYear % 100, Time.wMonth, Time.wDay, Time.wHour,
Time.wMinute );
                                                txnDelilog = new
CTxnLog(szLogFile, TXN_LOG_WRITE);

                                                //write event into txn
log for START
```

```
txnDelilog->WriteCtrlRecToLog(TXN_EVENT_START,
szMyComputerName, sizeof(szMyComputerName));

                                                // allocate structures for
delivery buffers and thread mgmt
                                                pDeliHandles = new
HANDLE[dwNumDeliveryThreads];
                                                pDelBuff = new
DELIVERY_TRANSACTION[dwDelBuffSize];
                                                // launch
DeliveryWorkerThread to perform actual delivery txns
                                                for(i=0;
i<dwNumDeliveryThreads; i++)
                                                {

pDeliHandles[i] = (HANDLE) _beginthread( DeliveryWorkerThread, 0, NULL
);
                                                        if
(pDeliHandles[i] == INVALID_HANDLE_VALUE)

throw new CWEBCLNT_ERR( ERR_DELIVERY_THREAD_FAILED );
                                                }
                                        }

                                        break;

                                case DLL_PROCESS_DETACH:
                                        if (dwNumDeliveryThreads)
                                        {
                                                if (txnDelilog !=
NULL)
                                                {
                                                        //write event
into txn log for STOP

txnDelilog->WriteCtrlRecToLog(TXN_EVENT_STOP, szMyComputerName,
sizeof(szMyComputerName));

                                                        // This will
do a clean shutdown of the delivery log file
                                                        CTxnLog
*txnDelilogLocal = txnDelilog;
                                                        txnDelilog=
NULL;
                                                        delete
txnDelilogLocal;
                                                }

                                                delete [] pDeliHandles;
                                                delete [] pDelBuff;


                                                CloseHandle(
hWorkerSemaphore );
                                                CloseHandle(
hDoneEvent );

DeleteCriticalSection(&DelBuffCriticalSection);
                                        }


DeleteCriticalSection(&TermCriticalSection);

                                        if (hLibInstanceTm != NULL)
                                                FreeLibrary(
hLibInstanceTm );
                                        hLibInstanceTm = NULL;

                                        if (hLibInstanceDb != NULL)
                                                FreeLibrary(
hLibInstanceDb );
                                        hLibInstanceDb = NULL;

                                        Sleep(500);
                                        break;

                                default:
                                        /* nothing */;
                        }
                }
                catch (CBaseErr *e)
                {
                        WriteMessageToEventLog( e->ErrorText() );
                        delete e;
                        TerminateExtension(0);
                        return FALSE;
                }
                catch (...)
                {
                        WriteMessageToEventLog(TEXT("Unhandled
exception.  DLL could not load."));
                        TerminateExtension(0);
                        return FALSE;
                }

                return TRUE;
}


/* FUNCTION: GetExtensionVersion
 *
 * PURPOSE:             This function is called by the inet service when the DLL
is first loaded.
 *
 * ARGUMENTS:   HSE_VERSION_INFO        *pVer       passed in
structure in which to place expected version number.
 *
 * RETURNS:                     TRUE       inet service expected return value.
 */

BOOL WINAPI GetExtensionVersion(HSE_VERSION_INFO *pVer)
{
        pVer->dwExtensionVersion =
MAKELONG(HSE_VERSION_MINOR, HSE_VERSION_MAJOR);
        lstrcpyn(pVer->lpszExtensionDesc, "TPC-C Server.",
HSE_MAX_EXT_DLL_NAME_LEN);

        // TODO: why do we need this here instead of in the DLL attach?
        if (Reg.eTxnMon == ENCINA)
                pCTPCC_ENCINA_post_init();

        return TRUE;
}

/* FUNCTION: TerminateExtension
 *
 * PURPOSE:             This function is called by the inet service when the DLL
is about to be unloaded.
 *                              Release all resources in anticipation of being
unloaded.
 *
 * RETURNS:                     TRUE       inet service expected return value.
 */

BOOL WINAPI TerminateExtension( DWORD dwFlags )
{
```

```
	if (pDeliHandles)
	{
		SetEvent( hDoneEvent );
		for(DWORD i=0; i<dwNumDeliveryThreads; i++)
			WaitForSingleObject( pDeliHandles[i],
INFINITE );
	}

	TermDeleteAll();
	return TRUE;
}


/* FUNCTION: HttpExtensionProc
 *
 * PURPOSE:	This function is the main entry point for the TPCC DLL.
The internet service
 *			calls this function passing in the http string.
 *
 * ARGUMENTS:	EXTENSION_CONTROL_BLOCK	*pECB
structure pointer to passed in internet
 *
 *			service information.
 *
 * RETURNS:		DWORD	HSE_STATUS_SUCCESS
 *			connection can be dropped if error
 *
HSE_STATUS_SUCCESS_AND_KEEP_CONN	keep connect valid
comment sent
 *
 * COMMENTS:	None
 *
 */

DWORD WINAPI HttpExtensionProc(EXTENSION_CONTROL_BLOCK
*pECB)
{
	int			iCmd, FormId, TermId, iSyncId;
	char		szBuffer[4096];

	int			lpbSize;
	static char	szHeader[] = "200 Ok";
	DWORD		dwSize = 6;			// initial
value is strlen(szHeader)
	char		szHeader1[4096];


#ifdef ICECAP
	StartCAP();
#endif

	try
	{
		//process http query
		ProcessQueryString(pECB, &iCmd, &FormId, &TermId,
&iSyncId);

		if (TermId != 0)
		{
			if ( TermId < 0 || TermId >=
Term.iNumEntries || Term.pClientData[TermId].iNextFree != -1 )
			{
				// debugging...
				char szTmp[128];
				wsprintf( szTmp, "Invalid term ID;
TermId = %d", TermId );
				WriteMessageToEventLog( szTmp
);
				throw new CWEBCLNT_ERR(
ERR_INVALID_TERMID );
			}

			//must have a valid syncid here since termid is
valid
			if (iSyncId !=
Term.pClientData[TermId].iSyncId)
				throw new CWEBCLNT_ERR(
ERR_INVALID_SYNC_CONNECTION );

			//set use time
			Term.pClientData[TermId].iTickCount =
GetTickCount();
		}


		switch(iCmd)
		{
		case 0:
			WelcomeForm(pECB, szBuffer);
			break;
		case 1:
			switch( FormId )
			{
				case WELCOME_FORM:
				case MAIN_MENU_FORM:
					break;
				case NEW_ORDER_FORM:

ProcessNewOrderForm(pECB, TermId, szBuffer);
					break;
				case PAYMENT_FORM:

ProcessPaymentForm(pECB, TermId, szBuffer);
					break;
				case DELIVERY_FORM:

ProcessDeliveryForm(pECB, TermId, szBuffer);
					break;
				case ORDER_STATUS_FORM:

ProcessOrderStatusForm(pECB, TermId, szBuffer);
					break;
				case STOCK_LEVEL_FORM:

ProcessStockLevelForm(pECB, TermId, szBuffer);
					break;
			}
			break;
		case 2:
			// new-order selected from menu; display
new-order input form
			MakeNewOrderForm(TermId, NULL,
INPUT_FORM, szBuffer);
			break;
		case 3:
			// payment selected from menu; display
payment input form
			MakePaymentForm(TermId, NULL,
INPUT_FORM, szBuffer);
			break;
		case 4:
			// delivery selected from menu; display
delivery input form
			MakeDeliveryForm(TermId, NULL,
INPUT_FORM, szBuffer);
```

```
                        break;
                case 5:
                        // order-status selected from menu; display
order-status input form
                        MakeOrderStatusForm(TermId, NULL,
INPUT_FORM, szBuffer);
                        break;
                case 6:
                        // stock-level selected from menu; display
stock-level input form
                        MakeStockLevelForm(TermId, NULL,
INPUT_FORM, szBuffer);
                        break;
                case 7:
                        // ExitCmd
                        TermDelete(TermId);
                        WelcomeForm(pECB, szBuffer);
                        break;
                case 8:
                        SubmitCmd(pECB, szBuffer);
                        break;
                case 9:
                        // menu
                        MakeMainMenuForm(TermId,
Term.pClientData[TermId].iSyncId, szBuffer);
                        break;
                case 10:
                        // CMD=Clear
                        // resets all connections; should only be used
when no other connections are active
                        TermDeleteAll();
                        TermInit();
                        WelcomeForm(pECB, szBuffer);
                        break;
                case 11:    // CMD=Stats
                        StatsCmd(pECB, szBuffer);
                        break;
                }
        }
        catch (CBaseErr *e)
        {
                ErrorForm( pECB, e->ErrorType(), e->ErrorNum(),
TermId, iSyncId, e->ErrorText(), szBuffer );
                delete e;
        }
        catch (...)
        {
                ErrorForm( pECB, ERR_TYPE_WEBDLL, 0, TermId,
iSyncId, "Error: Unhandled exception in Web Client.", szBuffer );
        }

#ifdef ICECAP
        StopCAP();
#endif


        lpbSize = strlen(szBuffer);
        wsprintf(szHeader1,
                        "Content-Type: text/html\r\n"
                        "Content-Length: %d\r\n"
                        "Connection: Keep-Alive\r\n\r\n" , lpbSize);
        strcat( szHeader1, szBuffer );

        (*pECB->ServerSupportFunction)(pECB->ConnID,
HSE_REQ_SEND_RESPONSE_HEADER, szHeader, (LPDWORD) &dwSize,
(LPDWORD)szHeader1);

        //finish up and keep connection
        pECB->dwHttpStatusCode = 200;
        return HSE_STATUS_SUCCESS_AND_KEEP_CONN;
}


void WriteMessageToEventLog(LPTSTR lpszMsg)
{
   TCHAR   szMsg[256];
   HANDLE  hEventSource;
   LPTSTR  lpszStrings[2];

   // Use event logging to log the error.
   //
   hEventSource = RegisterEventSource(NULL, TEXT("TPCC.DLL"));

   _stprintf(szMsg, TEXT("Error in TPCC.DLL: "));
   lpszStrings[0] = szMsg;
   lpszStrings[1] = lpszMsg;

   if (hEventSource != NULL)
           {
      ReportEvent(hEventSource, // handle of event source
         EVENTLOG_ERROR_TYPE,  // event type
         0,                    // event category
         0,                    // event ID
         NULL,                 // current user's SID
         2,                    // strings in lpszStrings
         0,                    // no bytes of raw data
         (LPCTSTR *)lpszStrings,    // array of error strings
         NULL);                // no raw data

      (VOID) DeregisterEventSource(hEventSource);
   }
}


/* FUNCTION: DeliveryWorkerThread
 *
 * PURPOSE:          This function processes deferred delivery txns.  There are
typically several
 *                                threads running this routine.  The number of
threads is determined by an entry
 *                                read from the registry.  The thread waits for
work by waiting on semaphore.
 *                                When a delivery txn is posted, the semaphore
is released.  After processing
 *                                the delivery txn, information is logged to
record the txn status and execution
 *                                time.
 */

/*static*/ void DeliveryWorkerThread(void *ptr)
{
        CTPCC_BASE                      *pTxn = NULL;

        DELIVERY_TRANSACTION                delivery;
        PDELIVERY_DATA
pDeliveryData;
        TXN_RECORD_TPCC_DELIV_DEF       txnDeliRec;

        DWORD                                           index;
        HANDLE                                          handles[2];

        SYSTEMTIME                      trans_end;              //delivery
transaction finished time
        SYSTEMTIME                      trans_start;//delivery transaction
start time
```

```
	assert(txnDelilog != NULL);

	try
	{
		if (Reg.eDB_Protocol == ODBC)
			pTxn = pCTPCC_ODBC_new(
Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, szMyComputerName,
Reg.szDbName );
		else if (Reg.eDB_Protocol == DBLIB)
			pTxn = pCTPCC_DBLIB_new(
Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, szMyComputerName,
Reg.szDbName );
		pDeliveryData = pTxn->BuffAddr_Delivery();
	}
	catch (CBaseErr *e)
	{
		char szTmp[1024];
		wsprintf( szTmp, "Error in Delivery Txn thread.  Could
not connect to database.  "
				"%s.  Server=%s, User=%s,
Password=%s, Database=%s",
				e->ErrorText(), Reg.szDbServer,
Reg.szDbUser, Reg.szDbPassword, Reg.szDbName );
		WriteMessageToEventLog( szTmp );
		delete e;
		goto ErrorExit;
	}
	catch (...)
	{
		WriteMessageToEventLog(TEXT("Unhandled exception
caught in DeliveryWorkerThread."));
		goto ErrorExit;
	}

	while (TRUE)
	{
		try
		{
			//while delivery thread running, i.e. user has
not requested termination
			while (TRUE)
			{
				// need to wait for multiple objects:
program exit or worker semaphore;
				handles[0] = hDoneEvent;
				handles[1] = hWorkerSemaphore;
				index = WaitForMultipleObjects(
2, &handles[0], FALSE, INFINITE );
				if (index == WAIT_OBJECT_0)
					goto ErrorExit;

				ZeroMemory(&txnDeliRec,
sizeof(txnDeliRec));
				txnDeliRec.TxnType =
TXN_REC_TYPE_TPCC_DELIV_DEF;

				// make a local copy of current
entry from delivery buffer and increment buffer index

EnterCriticalSection(&DelBuffCriticalSection);
				delivery =
*(pDelBuff+dwDelBuffBusyIndex);
				dwDelBuffFreeCount++;
				dwDelBuffBusyIndex++;
				if (dwDelBuffBusyIndex ==
dwDelBuffSize)	// wrap-around if at end of buffer
					dwDelBuffBusyIndex =
0;

LeaveCriticalSection(&DelBuffCriticalSection);

				pDeliveryData->w_id =
delivery.w_id;
				pDeliveryData->o_carrier_id =
delivery.o_carrier_id;

				txnDeliRec.w_id =
pDeliveryData->w_id;
				txnDeliRec.o_carrier_id =
pDeliveryData->o_carrier_id;
				txnDeliRec.TxnStartT0 =
Get64BitTime(&delivery.queue);

				GetLocalTime( &trans_start );
				pTxn->Delivery();
				GetLocalTime( &trans_end );

				//log txn
				txnDeliRec.TxnStatus =
ERR_SUCCESS;
				for (int i=0; i<10; i++)
					txnDeliRec.o_id[i] =
pDeliveryData->o_id[i];
				txnDeliRec.DeltaT4 =
(int)(Get64BitTime(&trans_end) - txnDeliRec.TxnStartT0);
				txnDeliRec.DeltaTxnExec =
(int)(Get64BitTime(&trans_end) - Get64BitTime(&trans_start));

				if (txnDelilog != NULL)

txnDelilog->WriteToLog(&txnDeliRec);
			}
		}
		catch (CBaseErr *e)
		{
			char szTmp[1024];
			wsprintf( szTmp, "Error in Delivery Txn
thread.  %s", e->ErrorText() );
			WriteMessageToEventLog( szTmp );

			// log the error txn
			txnDeliRec.TxnStatus = e->ErrorType();
			if (txnDelilog != NULL)

txnDelilog->WriteToLog(&txnDeliRec);

			delete e;
		}
		catch (...)
		{
			// unhandled exception; shouldn't happen; not
much we can do...

WriteMessageToEventLog(TEXT("Unhandled exception caught in
DeliveryWorkerThread."));
		}
	}

ErrorExit:
	delete pTxn;
	_endthread();
}

/* FUNCTION: PostDeliveryInfo
 *
```

```
 * PURPOSE:		This function enters the delivery txn into the deferred
delivery buffer.
 *
 * RETURNS:			BOOL	FALSE	delivery information
posted successfully
 *                                                                      TRUE
error cannot post delivery info
 */

BOOL PostDeliveryInfo(short w_id, short o_carrier_id)
{
	BOOL bError;

	EnterCriticalSection(&DelBuffCriticalSection);
	if (dwDelBuffFreeCount > 0)
	{
		bError = FALSE;
		(pDelBuff+dwDelBuffFreeIndex)->w_id
= w_id;
		(pDelBuff+dwDelBuffFreeIndex)->o_carrier_id	=
o_carrier_id;

GetLocalTime(&(pDelBuff+dwDelBuffFreeIndex)->queue);

		dwDelBuffFreeCount--;
		dwDelBuffFreeIndex++;
		if (dwDelBuffFreeIndex == dwDelBuffSize)
			dwDelBuffFreeIndex = 0;			//
wrap-around if at end of buffer
	}
	else
		// No free buffers.  Return an error, which indicates that
the delivery buffer is full.
		// Most likely, the number of delivery worker threads
needs to be increased to keep up
		// with the txn rate.
		bError = TRUE;
	LeaveCriticalSection(&DelBuffCriticalSection);

	if (!bError)
		// increment worker semaphore to wake up a worker
thread
		ReleaseSemaphore( hWorkerSemaphore, 1, NULL );

	return bError;
}

/* FUNCTION: ProcessQueryString
 *
 * PURPOSE:		This function extracts the relevent information out of the
http command passed in from
 *				the browser.
 *
 * COMMENTS:	If this is the initial connection i.e. client is at welcome
screen then
 *				there will not be a terminal id or
current form id.  If this is the case
 *				then the pTermid and pFormid
return values are undefined.
 */

void ProcessQueryString(EXTENSION_CONTROL_BLOCK *pECB, int
*pCmd, int *pFormId, int *pTermId, int *pSyncId)
{
	char *ptr = pECB->lpszQueryString;
	char szBuffer[25];
	int i;

	//allowable client command strings i.e. CMD=command
	static char *szCmds[] =
	{
		"Process", "..NewOrder..", "..Payment..", "..Delivery..",
"..Order-Status..", "..Stock-Level..",
		"..Exit..", "Submit", "Menu", "Clear", "Stats", ""
	};

	*pCmd	= 0;			// default is the login screen
	*pTermId = 0;

	// if no params (i.e., empty query string), then return login screen
	if (strlen(pECB->lpszQueryString) == 0)
		return;

	// parse FORMID, TERMID, and SYNCID
	*pFormId = GetIntKeyValue(&ptr, "FORMID", NO_ERR,
NO_ERR);
	*pTermId = GetIntKeyValue(&ptr, "TERMID", NO_ERR,
NO_ERR);
	*pSyncId = GetIntKeyValue(&ptr, "SYNCID", NO_ERR,
NO_ERR);

	// parse CMD
	GetKeyValue(&ptr, "CMD", szBuffer, sizeof(szBuffer),
ERR_COMMAND_UNDEFINED);

	// see which command it matches
	for(i=0; ; i++)
	{
		if (szCmds[i][0] == 0)
			// no more; no match; return error
			throw new CWEBCLNT_ERR(
ERR_COMMAND_UNDEFINED );
		if ( !strcmp(szCmds[i], szBuffer) )
		{
			*pCmd = i+1;
			break;
		}
	}
}

/* FUNCTION: void WelcomeForm
 *
 */

void WelcomeForm(EXTENSION_CONTROL_BLOCK *pECB, char
*szBuffer)
{
	char szTmp[1024];

	//welcome to tpc-c html form buffer, this is first form client sees.
	strcpy( szBuffer,	"<HTML><HEAD><TITLE>TPC-C Web
Client</TITLE></HEAD><BODY>"

"<B><BIG>Microsoft TPC-C Web Client (ver 4.20)</BIG></B> <BR> <BR>"
"<font
face=\"Courier New\"><PRE>"
"Compiled:
"__DATE__", "__TIME__" <BR>"
"Source:
"__FILE__" ("__TIMESTAMP__") <BR>"

"</PRE></font>"
"<FORM
ACTION=\"tpcc.dll\" METHOD=\"GET\">"
"<INPUT
TYPE=\"hidden\" NAME=\"STATUSID\" VALUE=\"0\">"
```

```
                                                "<INPUT
TYPE=\"hidden\" NAME=\"ERROR\" VALUE=\"0\">"
                                                "<INPUT
TYPE=\"hidden\" NAME=\"FORMID\" VALUE=\"1\">"
                                                "<INPUT
TYPE=\"hidden\" NAME=\"TERMID\" VALUE=\"0\">"
                                                "<INPUT
TYPE=\"hidden\" NAME=\"SYNCID\" VALUE=\"0\">"
                                                "<INPUT
TYPE=\"hidden\" NAME=\"VERSION\" VALUE=\""
WEBCLIENT_VERSION "\">"
                                        );

        sprintf( szTmp,         "Configuration Settings: <BR><font
face=\"Courier New\" color=\"blue\"><PRE>"
                                                "Txn Monitor        =
<B>%s</B><BR>"
                                                "Database protocol
= <B>%s</B><BR>"
                                                "Max Connections
= <B>%d</B><BR>"
                                                "# of Delivery Threads
= <B>%d</B><BR>"
                                                "Max Pending
Deliveries = <B>%d</B><BR>"
                                        , szTxnMonNames[Reg.eTxnMon],
szDBNames[Reg.eDB_Protocol],
                                        Reg.dwMaxConnections,
dwNumDeliveryThreads, dwDelBuffSize );
        strcat( szBuffer, szTmp);

        if (Reg.eTxnMon == COM)
        {
                sprintf( szTmp,         "COM Single Pool      =
<B>%s</B><BR>",
                                        Reg.bCOM_SinglePool ? "YES" : "NO" );
                strcat( szBuffer, szTmp);
        }
        strcat( szBuffer, "</PRE></font>");

        if (Reg.eTxnMon == None)
                // connection options may be specified when not using a
txn monitor
                sprintf( szTmp,         "Please enter your database options
for this connection:<BR>"
                                                "<font
face=\"Courier New\" color=\"blue\"><PRE>"
                                                "DB Server
 = <INPUT NAME=\"db_server\" SIZE=20 VALUE=\"%s\"><BR>"
                                                "DB User
ID   = <INPUT NAME=\"db_user\" SIZE=20 VALUE=\"%s\"><BR>"
                                                "DB
Password  = <INPUT NAME=\"db_passwd\" SIZE=20
VALUE=\"%s\"><BR>"
                                                "DB Name
  = <INPUT NAME=\"db_name\" SIZE=20 VALUE=\"%s\"><BR>"

"</PRE></font>"
                                        , Reg.szDbServer, Reg.szDbUser,
Reg.szDbPassword, Reg.szDbName );
        else
                // if using a txn monitor, connection options are
determined from registry; can't
                // set per user.  show options fyi
                sprintf( szTmp,         "Database options which will be
used by the transaction monitor:<BR>"
                                                "<font
face=\"Courier New\" color=\"blue\"><PRE>"
                                                "DB Server
        = <B>%s</B><BR>"
                                                "DB User
ID          = <B>%s</B><BR>"
                                                "DB
Password          = <B>%s</B><BR>"
                                                "DB Name
         = <B>%s</B><BR>"

"</PRE></font>"
                                        , Reg.szDbServer, Reg.szDbUser,
Reg.szDbPassword, Reg.szDbName );
                strcat( szBuffer, szTmp);

                sprintf( szTmp,         "Please enter your Warehouse and District for
this session:<BR>"
                                                "<font face=\"Courier
New\" color=\"blue\"><PRE>" );
                strcat( szBuffer, szTmp);
                strcat( szBuffer,       "Warehouse ID = <INPUT NAME=\"w_id\"
SIZE=4><BR>"
                                                "District ID
= <INPUT NAME=\"d_id\" SIZE=2><BR>"

"</PRE></font><HR>"
                                                "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Submit\">"

"</FORM></BODY></HTML>");
}

/* FUNCTION: SubmitCmd
 *
 * PURPOSE:             This function allocated a new terminal id in the Term
structure array.
 *
 */

void SubmitCmd(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer)
{
        int                     iNewTerm;
        char        *ptr = pECB->lpszQueryString;

        char        szVersion[32]       = { 0 };
        char        szServer[32]        = { 0 };
        char        szUser[32]          = "sa";
        char        szPassword[32]      = { 0 };
        char        szDatabase[32]      = "tpcc";

        // validate version field; the version field ensures that the RTE is
synchronized with the web client
        GetKeyValue(&ptr, "VERSION", szVersion, sizeof(szVersion),
ERR_VERSION_MISMATCH);
        if ( strcmp( szVersion, WEBCLIENT_VERSION ) )
                throw new CWEBCLNT_ERR(
ERR_VERSION_MISMATCH );

        if (Reg.eTxnMon == None)
        {
                // parse Server name
                GetKeyValue(&ptr, "db_server", szServer,
sizeof(szServer), ERR_NO_SERVER_SPECIFIED);
                // parse User name
                GetKeyValue(&ptr, "db_user", szUser, sizeof(szUser),
NO_ERR);
                // parse Password
                GetKeyValue(&ptr, "db_passwd", szPassword,
sizeof(szPassword), NO_ERR);
```

```
                        // parse Database name
                        GetKeyValue(&ptr, "db_name", szDatabase,
sizeof(szDatabase), NO_ERR);
        }

        // parse warehouse ID
        int w_id = GetIntKeyValue(&ptr, "w_id",
ERR_HTML_ILL_FORMED, ERR_W_ID_INVALID);
        if ( w_id < 1 )
                throw new CWEBCLNT_ERR( ERR_W_ID_INVALID
);

        // parse district ID
        int d_id = GetIntKeyValue(&ptr, "d_id",
ERR_HTML_ILL_FORMED, ERR_D_ID_INVALID);
        if ( d_id < 1 || d_id > 10 )
                throw new CWEBCLNT_ERR( ERR_D_ID_INVALID
);


        iNewTerm = TermAdd();

        Term.pClientData[iNewTerm].w_id = w_id;
        Term.pClientData[iNewTerm].d_id = d_id;

        try
        {
                if (Reg.eTxnMon == TUXEDO)
                        Term.pClientData[iNewTerm].pTxn =
pCTPCC_TUXEDO_new();
                else if (Reg.eTxnMon == ENCINA)
                        Term.pClientData[iNewTerm].pTxn =
pCTPCC_ENCINA_new();
                else if (Reg.eTxnMon == COM)
                        Term.pClientData[iNewTerm].pTxn =
pCTPCC_COM_new( Reg.bCOM_SinglePool );
                else if (Reg.eDB_Protocol == ODBC)
                        Term.pClientData[iNewTerm].pTxn =
pCTPCC_ODBC_new( szServer, szUser, szPassword, szMyComputerName,
szDatabase );
                else if (Reg.eDB_Protocol == DBLIB)
                        Term.pClientData[iNewTerm].pTxn =
pCTPCC_DBLIB_new( szServer, szUser, szPassword, szMyComputerName,
szDatabase );
        }
        catch (...)
        {
                TermDelete(iNewTerm);
                throw;                  // pass exception upward
        }

        MakeMainMenuForm(iNewTerm,
Term.pClientData[iNewTerm].iSyncId, szBuffer);
}

/* FUNCTION: StatsCmd
 *
 * PURPOSE:     This function returns to the browser the total number of
active terminal ids.
 *                      This routine is for development/debugging
purposes.
 *
 */

void StatsCmd(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer)
{
        int i;
        int     iTotal;

        EnterCriticalSection(&TermCriticalSection);

        iTotal = 0;
        for(i=0; i<Term.iNumEntries; i++)
        {
                if (Term.pClientData[i].iNextFree == -1)
                        iTotal++;
        }

        LeaveCriticalSection(&TermCriticalSection);

        wsprintf( szBuffer,
                        "<HTML><HEAD><TITLE>TPC-C Web
Client Stats</TITLE></HEAD>"
                        "<BODY><B><BIG> Total Active
Connections: %d </BIG></B><BR></BODY></HTML>"
                        , iTotal );
}

char *CWEBCLNT_ERR::ErrorText()
{
        static SERRORMSG errorMsgs[] =
        {
                {       ERR_COMMAND_UNDEFINED,
                        "Command undefined."

        },
                {       ERR_D_ID_INVALID,
                        "Invalid District ID Must be 1 to 10."
                                                        },
                {       ERR_DELIVERY_CARRIER_ID_RANGE,
        "Delivery Carrier ID out of range must be 1 - 10."
                },
                {       ERR_DELIVERY_CARRIER_INVALID,
        "Delivery Carrier ID invalid must be numeric 1 - 10."
        },
                {       ERR_DELIVERY_MISSING_OCD_KEY,
        "Delivery missing Carrier ID key \"OCD*\"."
                                        },
                {       ERR_DELIVERY_THREAD_FAILED,
                        "Could not start delivery worker thread."
                                        },
                {       ERR_GETPROCADDR_FAILED,
                        "Could not map proc in DLL.  GetProcAddr
error.  DLL="                                   },
                {       ERR_HTML_ILL_FORMED,
                        "Required key field is missing from HTML string."
                        },
                {       ERR_INVALID_SYNC_CONNECTION,
        "Invalid Terminal Sync ID."
                                                        },
                {       ERR_INVALID_TERMID,
                        "Invalid Terminal ID."

        },
                {       ERR_LOADDLL_FAILED,
                        "Load of DLL failed.  DLL="

},
                {       ERR_MAX_CONNECTIONS_EXCEEDED,
                        "No connections available.  Max Connections is probably
too low."   },
                {       ERR_MISSING_REGISTRY_ENTRIES,
        "Required registry entries are missing.  Rerun INSTALL to correct."
},
                {
ERR_NEWORDER_CUSTOMER_INVALID,
```

```
"New Order customer id invalid data type, range = 1 to 3000."
},
                {       ERR_NEWORDER_CUSTOMER_KEY,
                "New Order missing Customer key \"CID*\"."
                                        },
                {       ERR_NEWORDER_DISTRICT_INVALID,
        "New Order District ID Invalid range 1 - 10."
                },
                {       ERR_NEWORDER_FORM_MISSING_DID,
                "New Order missing District key \"DID*\"."
                                },
                {       ERR_NEWORDER_ITEMID_INVALID,
        "New Order Item Id is wrong data type, must be numeric."
        },
                {       ERR_NEWORDER_ITEMID_RANGE,
                "New Order Item Id is out of range. Range = 1 to
999999."               },
                {
ERR_NEWORDER_ITEMID_WITHOUT_SUPPW,              "New Order
Item_Id field entered without a corresponding Supp_W."          },
                {       ERR_NEWORDER_MISSING_IID_KEY,
        "New Order missing Item Id key \"IID*\"."
                },
                {       ERR_NEWORDER_MISSING_QTY_KEY,
                "New Order Missing Qty key \"Qty##*\"."
                                        },
                {
ERR_NEWORDER_MISSING_SUPPW_KEY,
"New Order missing Supp_W key \"SP##*\"."
                },
                {       ERR_NEWORDER_NOITEMS_ENTERED,
                "New Order No order lines entered."
                                                },
                {       ERR_NEWORDER_QTY_INVALID,
                "New Order Qty invalid must be numeric range 1 - 99."
                },
                {       ERR_NEWORDER_QTY_RANGE,
                        "New Order Qty is out of range. Range = 1 to
99."                                    },
                {
ERR_NEWORDER_QTY_WITHOUT_SUPPW,
"New Order Qty field entered without a corresponding Supp_W."
},
                {       ERR_NEWORDER_SUPPW_INVALID,
                "New Order Supp_W invalid data type must be numeric."
                },
                {       ERR_NO_SERVER_SPECIFIED,
                "No Server name specified."

},
                {       ERR_ORDERSTATUS_CID_AND_CLT,
        "Order Status Only Customer ID or Last Name may be entered, not
both."   },
                {       ERR_ORDERSTATUS_CID_INVALID,
        "Order Status Customer ID invalid, range must be numeric 1 -
3000."   },
                {       ERR_ORDERSTATUS_CLT_RANGE,
                "Order Status Customer last name longer than 16
characters."           },
                {       ERR_ORDERSTATUS_DID_INVALID,
        "Order Status District invalid, value must be numeric 1 - 10."
},
                {
ERR_ORDERSTATUS_MISSING_CID_CLT,                "Order
Status Either Customer ID or Last Name must be entered."
},
                {
ERR_ORDERSTATUS_MISSING_CID_KEY,                "Order
Status missing Customer key \"CID*\"."
        },
                {
ERR_ORDERSTATUS_MISSING_CLT_KEY,                "Order
Status missing Customer Last Name key \"CLT*\"."
},
                {
ERR_ORDERSTATUS_MISSING_DID_KEY,                "Order
Status missing District key \"DID*\"."
        },
                {       ERR_PAYMENT_CDI_INVALID,
                "Payment Customer district invalid must be numeric."
                },
                {       ERR_PAYMENT_CID_AND_CLT,
                "Payment Only Customer ID or Last Name may be
entered, not both."    },
                {       ERR_PAYMENT_CUSTOMER_INVALID,
                "Payment Customer data type invalid, must be numeric."
                        },
                {       ERR_PAYMENT_CWI_INVALID,
                "Payment Customer Warehouse invalid, must be
numeric."                               },
                {       ERR_PAYMENT_DISTRICT_INVALID,
        "Payment District ID is invalid, must be 1 - 10."
                },
                {       ERR_PAYMENT_HAM_INVALID,
                "Payment Amount invalid data type must be numeric."
                        },
                {       ERR_PAYMENT_HAM_RANGE,
                        "Payment Amount out of range, 0 - 9999.99."
                                                        },
                {
ERR_PAYMENT_LAST_NAME_TO_LONG,
"Payment Customer last name longer than 16 characters."
        },
                {       ERR_PAYMENT_MISSING_CDI_KEY,
        "Payment missing Customer district key \"CDI*\"."
                },
                {       ERR_PAYMENT_MISSING_CID_CLT,
        "Payment Either Customer ID or Last Name must be entered."
        },
                {       ERR_PAYMENT_MISSING_CID_KEY,
        "Payment missing Customer Key \"CID*\"."
                        },
                {       ERR_PAYMENT_MISSING_CLT_KEY,
        "Payment missing Customer Last Name key \"CLT*\"."
                },
                {       ERR_PAYMENT_MISSING_CWI_KEY,
        "Payment missing Customer Warehouse key \"CWI*\"."
                },
                {       ERR_PAYMENT_MISSING_DID_KEY,
        "Payment missing District Key \"DID*\"."
                        },
                {       ERR_PAYMENT_MISSING_HAM_KEY,
        "Payment missing Amount key \"HAM*\"."
                                        },
                {
ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY,           "Stock
Level; missing Threshold key \"TT*\"."
        },
                {
ERR_STOCKLEVEL_THRESHOLD_INVALID,               "Stock
Level; Threshold value must be in the range = 1 - 99."          },
                {
ERR_STOCKLEVEL_THRESHOLD_RANGE,
"Stock Level Threshold out of range, range must be 1 - 99."
},
```

```
		{	ERR_VERSION_MISMATCH,
			"Invalid version field.  RTE and Web Client are probably out of sync." },
		{	ERR_W_ID_INVALID,
			"Invalid Warehouse ID."

	},
		{	0,
								""

									}
	};

	char szTmp[256];
	int i = 0;
	while (TRUE)
	{
		if (errorMsgs[i].szMsg[0] == 0)
		{
			strcpy( szTmp, "Unknown error number." );
			break;
		}
		if (m_Error == errorMsgs[i].iError)
		{
			strcpy( szTmp, errorMsgs[i].szMsg );
			break;
		}
		i++;
	}

	if (m_szTextDetail)
		strcat( szTmp, m_szTextDetail );
	if (m_SystemErr)
		wsprintf( szTmp+strlen(szTmp), "  Error=%d", m_SystemErr );

	m_szErrorText = new char[strlen(szTmp)+1];
	strcpy( m_szErrorText, szTmp );
	return m_szErrorText;

}

/* FUNCTION: GetKeyValue
 *
 * PURPOSE:		This function parses a http formatted string for specific key values.
 *
 * ARGUMENTS:	char			*pQueryString	http string from client browser
 *				char			*pKey		key value to look for
 *				char			*pValue		character array into which to place key's value
 *				int			iMax		maximum length of key value array.
 *				WEBERROR		err		error value to throw
 *
 * RETURNS:		nothing.
 *
 * ERROR:		if (the pKey value is not found) then
 *					if (err == 0)
 *						return (empty string)
 *					else
 *						throw CWEBCLNT_ERR(err)
 *
 * COMMENTS:	http keys are formatted either KEY=value& or KEY=value\0. This DLL formats
 *					TPC-C input fields in such a manner that the keys can be extracted in the
 *					above manner.
 */

void GetKeyValue(char **pQueryString, char *pKey, char *pValue, int iMax, WEBERROR err)
{
	char *ptr;

	if ( !(ptr=strstr(*pQueryString, pKey)) )
		goto ErrorExit;
	ptr += strlen(pKey);
	if ( *ptr != '=' )
		goto ErrorExit;
	ptr++;

	iMax--;  // one position is for terminating null
	while( *ptr && *ptr != '&' && iMax)
	{
		*pValue++ = *ptr++;
		iMax--;
	}
	*pValue = 0;  // terminating null

	*pQueryString = ptr;
	return;

ErrorExit:
	if (err != NO_ERR)
		throw new CWEBCLNT_ERR( err );
	*pValue = 0;  // return empty result string
}

/* FUNCTION: GetIntKeyValue
 *
 * PURPOSE:		This function parses a http formatted string for a specific key value.
 *
 * ARGUMENTS:	char			*pQueryString	http string from client browser
 *				char			*pKey		key value to look for
 *				WEBERROR		NoKeyErr	error value to throw if key not found
 *				WEBERROR		NotIntErr	error value to throw if value not numeric
 *
 * RETURNS:		integer
 *
 * ERROR:		if (the pKey value is not found) then
 *					if (NoKeyErr != NO_ERR)
 *						throw CWEBCLNT_ERR(err)
 *					else
 *						return 0
 *				else if (non-numeric char found) then
 *					if (NotIntErr != NO_ERR) then
 *						throw CWEBCLNT_ERR(err)
 *					else
 *						return 0
 *
```

```
 * COMMENTS:       http keys are formatted either KEY=value& or
KEY=value\0. This DLL formats
 *                                       TPC-C input fields in such a
manner that the keys can be extracted in the
 *                                       above manner.
 */

int GetIntKeyValue(char **pQueryString, char *pKey, WEBERROR
NoKeyErr, WEBERROR NotIntErr)
{
        char *ptr0;
        char *ptr;

        if ( !(ptr=strstr(*pQueryString, pKey)) )
                goto ErrorNoKey;
        ptr += strlen(pKey);
        if ( *ptr != '=' )
                goto ErrorNoKey;
        ptr++;

        ptr0 = ptr;             // remember starting point
        // scan string until a terminator (null or &) or a non-digit
        while( *ptr && *ptr != '&' && isdigit(*ptr) )
                ptr++;

        // make sure we stopped scanning for the right reason
        if ((ptr0 == ptr) || (*ptr && *ptr != '&'))
        {
                if (NotIntErr != NO_ERR)
                        throw new CWEBCLNT_ERR( NoKeyErr );
                return 0;
        }

        *pQueryString = ptr;
        return atoi(ptr0);

ErrorNoKey:
        if (NoKeyErr != NO_ERR)
                throw new CWEBCLNT_ERR( NoKeyErr );
        return 0;
}

/* FUNCTION: TermInit
 *
 * PURPOSE:        This function initializes the client terminal structure; it is
called when the TPCC.DLL
 *                                 is first loaded by the inet service.
 *
 */

void TermInit(void)
{
        EnterCriticalSection(&TermCriticalSection);

        Term.iMasterSyncId  = 1;
        Term.iNumEntries    = Reg.dwMaxConnections+1;

        Term.pClientData    = NULL;
        Term.pClientData    =
(PCLIENTDATA)malloc(Term.iNumEntries * sizeof(CLIENTDATA));
        if (Term.pClientData == NULL)
        {
                LeaveCriticalSection(&TermCriticalSection);
                throw new CWEBCLNT_ERR(
ERR_MEM_ALLOC_FAILED );
        }
        ZeroMemory( Term.pClientData, Term.iNumEntries *
sizeof(CLIENTDATA) );

        Term.iFreeList                  = Term.iNumEntries-1;
        // build free list
        // note: Term.pClientData[0].iNextFree gets set to -1, which marks it
as "in use".
        //      This is intentional, as the zero entry is used as an anchor and
never
        //                      allocated as an actual terminal.
        for(int i=0; i<Term.iNumEntries; i++)
                Term.pClientData[i].iNextFree = i-1;

        LeaveCriticalSection(&TermCriticalSection);
}

/* FUNCTION: TermDeleteAll
 *
 * PURPOSE:        This function frees allocated resources associated with
the terminal structure.
 *
 * ARGUMENTS:      none
 *
 * RETURNS:                None
 *
 * COMMENTS:       This function is called only when the inet service unloads
the TPCC.DLL
 *
 */

void TermDeleteAll(void)
{
        EnterCriticalSection(&TermCriticalSection);

        for(int i=1; i<Term.iNumEntries; i++)
        {
                if (Term.pClientData[i].iNextFree == -1)
                        delete Term.pClientData[i].pTxn;
        }

        Term.iFreeList                  = 0;
        Term.iNumEntries    = 0;
        if ( Term.pClientData )
                free(Term.pClientData);
        Term.pClientData    = NULL;

        LeaveCriticalSection(&TermCriticalSection);
}

/* FUNCTION: TermAdd
 *
 * PURPOSE:        This function assigns a terminal id which is used to
identify a client browser.
 *
 * RETURNS:                int                     assigned terminal id
 *
 */

int TermAdd(void)
{
        DWORD   i;
        int             iNewTerm, iTickCount;

        if (Term.iNumEntries == 0)
                return -1;

        EnterCriticalSection(&TermCriticalSection);
        if (Term.iFreeList != 0)
```

```
		{		// position is available
			iNewTerm = Term.iFreeList;
			Term.iFreeList =
Term.pClientData[iNewTerm].iNextFree;
			Term.pClientData[iNewTerm].iNextFree = -1;  //
indicates this position is in use
		}
		else
		{		// no open slots, so find the slot that hasn't been used in
the longest time and reuse it
			for(iNewTerm=1, i=1, iTickCount=0x7FFFFFFF;
i<Reg.dwMaxConnections; i++)
			{
				if (iTickCount >
Term.pClientData[i].iTickCount)
				{
					iTickCount =
Term.pClientData[i].iTickCount;
					iNewTerm = i;
				}
			}
			// if oldest term is less than one minute old, it probably
means that more connections
			// are being attempted than were specified as "Max
Connections" at install.  In this case,
			// do not bump existing connection; instead, return error
to requestor.
			if ((GetTickCount() - iTickCount) < 60000)
			{
				LeaveCriticalSection(&TermCriticalSection);
				throw new CWEBCLNT_ERR(
ERR_MAX_CONNECTIONS_EXCEEDED );
			}
		}

		Term.pClientData[iNewTerm].iTickCount = GetTickCount();
		Term.pClientData[iNewTerm].iSyncId = Term.iMasterSyncId++;
		Term.pClientData[iNewTerm].pTxn = NULL;

		LeaveCriticalSection(&TermCriticalSection);
		return iNewTerm;
}

/* FUNCTION: TermDelete
 *
 * PURPOSE:		This function makes a terminal entry in the Term array
available for reuse.
 *
 * ARGUMENTS:	int
id			Terminal id of client exiting
 *
 */

void TermDelete(int id)
{
		if ( id > 0 && id < Term.iNumEntries )
		{
			delete Term.pClientData[id].pTxn;

			// put onto free list
			EnterCriticalSection(&TermCriticalSection);

			Term.pClientData[id].iNextFree = Term.iFreeList;
			Term.iFreeList = id;

			LeaveCriticalSection(&TermCriticalSection);
		}
}
```

```
/* FUNCTION: MakeErrorForm
 */

void ErrorForm(EXTENSION_CONTROL_BLOCK *pECB, int iType, int
iErrorNum, int iTermId, int iSyncId, char *szErrorText, char *szBuffer )
{
		wsprintf(szBuffer,
			"<HTML><HEAD><TITLE>TPC-C
Error</TITLE></HEAD><BODY>"
			"<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
			"<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"%d\">"
			"<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"%d\">"
			"<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
			"<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
			"<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
			"<BOLD>An Error Occurred</BOLD><BR><BR>"
			"%s"
			"<BR><BR><HR>"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..NewOrder..\">"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
			"</FORM></BODY></HTML>"
			, iType, iErrorNum, MAIN_MENU_FORM, iTermId,
iSyncId, szErrorText );
}

/* FUNCTION: MakeMainMenuForm
 */

void MakeMainMenuForm(int iTermId, int iSyncId, char *szForm)
{
		wsprintf(szForm,
			"<HTML><HEAD><TITLE>TPC-C Main
Menu</TITLE></HEAD><BODY>"
			"Select Desired Transaction.<BR><HR>"
			"<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
			"<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"0\">"
			"<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
			"<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
			"<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
			"<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..NewOrder..\">"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
```

```
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                        "</FORM></BODY></HTML>"
                        , MAIN_MENU_FORM, iTermId, iSyncId);
}

/* FUNCTION: MakeStockLevelForm
 *
 * PURPOSE:             This function constructs the Stock Level HTML page.
 *
 * COMMENTS:    The internal client buffer is created when the terminal id
is assigned and should not
 *                                                      be freed except when the client
terminal id is no longer needed.
 */

void MakeStockLevelForm(int iTermId, STOCK_LEVEL_DATA
*pStockLevelData, BOOL bInput, char *szForm)
{
        int             c;

        c = wsprintf(szForm,
                        "<HTML><HEAD><TITLE>TPC-C Stock
Level</TITLE></HEAD><FORM ACTION=\"tpcc.dll\"
METHOD=\"GET\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"0\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                        "<PRE><font face=\"Courier\">
Stock-Level<BR>"
                        "Warehouse: %4.4d   District: %2.2d<BR> <BR>",
                        STOCK_LEVEL_FORM, iTermId,
Term.pClientData[iTermId].iSyncId,
                        Term.pClientData[iTermId].w_id,
Term.pClientData[iTermId].d_id);

        if ( bInput )
        {
                strcpy(szForm+c,
                                "Stock Level Threshold: <INPUT
NAME=\"TT*\" SIZE=2><BR> <BR>"
                                "low stock:    </font><BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR> <BR>"
                                " <BR> <BR> <BR> <BR> <BR> <BR>
<BR></PRE><HR>"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Process\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Menu\">"
                                "</FORM></HTML>" );
        }
        else
        {
                wsprintf(szForm+c,
                                "Stock Level Threshold: %2.2d<BR> <BR>"
                                "low stock: %3.3d</font> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR>"
                                " <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> <BR></PRE><HR>"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..NewOrder..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                                "</FORM></HTML>"
                                , pStockLevelData->threshold,
pStockLevelData->low_stock);
        }
}

/* FUNCTION: MakeNewOrderForm
 *
 * COMMENTS:    The internal client buffer is created when the terminal id
is assigned and should not
 *                                                      be freed except when the client
terminal id is no longer needed.
 */

void MakeNewOrderForm(int iTermId, NEW_ORDER_DATA
*pNewOrderData, BOOL bInput, char *szForm)
{
        int                     i, c;
        BOOL    bValid;
        static  char szBR[] = " <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR>";

        if (!bInput)
                assert( pNewOrderData->exec_status_code == eOK ||
pNewOrderData->exec_status_code == eInvalidItem );

        bValid = (bInput || (pNewOrderData->exec_status_code == eOK));

        c = wsprintf(szForm,
                "<HTML><HEAD><TITLE>TPC-C New
Order</TITLE></HEAD><BODY>"
                "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
                "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                "<PRE><font face=\"Courier\">
New Order<BR>"
                , bValid ? 0 : ERR_BAD_ITEM_ID,
NEW_ORDER_FORM, iTermId, Term.pClientData[iTermId].iSyncId);

        if ( bInput )
        {
                c += wsprintf(szForm+c, "Warehouse: %4.4d   ",
Term.pClientData[iTermId].w_id );

                strcpy( szForm+c,
```

```
                                "District: <INPUT NAME=\"DID*\"
SIZE=1>                 Date:<BR>"
                                "Customer:  <INPUT NAME=\"CID*\"
SIZE=4>   Name:                 Credit:     %Disc:<BR>"
                                "Order Number:          Number of Lines:
 W_tax:       D_tax:<BR> <BR>"
                                " Supp_W  Item_Id  Item Name              Qty
Stock  B/G  Price    Amount<BR>"
                                " <INPUT NAME=\"SP00*\" SIZE=4>
<INPUT NAME=\"IID00*\" SIZE=6>                  <INPUT
NAME=\"Qty00*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP01*\" SIZE=4>
<INPUT NAME=\"IID01*\" SIZE=6>                  <INPUT
NAME=\"Qty01*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP02*\" SIZE=4>
<INPUT NAME=\"IID02*\" SIZE=6>                  <INPUT
NAME=\"Qty02*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP03*\" SIZE=4>
<INPUT NAME=\"IID03*\" SIZE=6>                  <INPUT
NAME=\"Qty03*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP04*\" SIZE=4>
<INPUT NAME=\"IID04*\" SIZE=6>                  <INPUT
NAME=\"Qty04*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP05*\" SIZE=4>
<INPUT NAME=\"IID05*\" SIZE=6>                  <INPUT
NAME=\"Qty05*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP06*\" SIZE=4>
<INPUT NAME=\"IID06*\" SIZE=6>                  <INPUT
NAME=\"Qty06*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP07*\" SIZE=4>
<INPUT NAME=\"IID07*\" SIZE=6>                  <INPUT
NAME=\"Qty07*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP08*\" SIZE=4>
<INPUT NAME=\"IID08*\" SIZE=6>                  <INPUT
NAME=\"Qty08*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP09*\" SIZE=4>
<INPUT NAME=\"IID09*\" SIZE=6>                  <INPUT
NAME=\"Qty09*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP10*\" SIZE=4>
<INPUT NAME=\"IID10*\" SIZE=6>                  <INPUT
NAME=\"Qty10*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP11*\" SIZE=4>
<INPUT NAME=\"IID11*\" SIZE=6>                  <INPUT
NAME=\"Qty11*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP12*\" SIZE=4>
<INPUT NAME=\"IID12*\" SIZE=6>                  <INPUT
NAME=\"Qty12*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP13*\" SIZE=4>
<INPUT NAME=\"IID13*\" SIZE=6>                  <INPUT
NAME=\"Qty13*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP14*\" SIZE=4>
<INPUT NAME=\"IID14*\" SIZE=6>                  <INPUT
NAME=\"Qty14*\" SIZE=1><BR>"
                                "Execution Status:
Total:<BR>"
                                "</font></PRE><HR>"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Process\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Menu\">"
                                "</FORM></HTML>"
                                );
        }
        else
        {
                c += wsprintf(szForm+c, "Warehouse: %4.4d   District:
%2.2d                 Date: ",
                                pNewOrderData->w_id,
                                pNewOrderData->d_id);

                if ( bValid )
                {
                        c += wsprintf(szForm+c,
"%2.2d-%2.2d-%4.4d %2.2d:%2.2d:%2.2d",
                                pNewOrderData->o_entry_d.day,

pNewOrderData->o_entry_d.month,
                                pNewOrderData->o_entry_d.year,
                                pNewOrderData->o_entry_d.hour,

pNewOrderData->o_entry_d.minute,

pNewOrderData->o_entry_d.second);
                }

                c += wsprintf(szForm+c, "<BR>Customer:  %4.4d
Name: %-16s   Credit: %-2s   ",
                                pNewOrderData->c_id,
pNewOrderData->c_last, pNewOrderData->c_credit);

                if ( bValid )
                {
                        c += sprintf(szForm+c,
                                                                "%%Disc:
%5.2f          <BR>"
                                                                "Order
Number: %8.8d  Number of Lines: %2.2d       W_tax: %5.2f   D_tax: %5.2f
<BR> <BR>"
                                                                " Supp_W
Item_Id  Item Name              Qty  Stock  B/G  Price    Amount<BR>",

100.0*pNewOrderData->c_discount,
                                pNewOrderData->o_id,
                                pNewOrderData->o_ol_cnt,
                                100.0 * pNewOrderData->w_tax,
                                100.0 * pNewOrderData->d_tax);

                        for(i=0; i<pNewOrderData->o_ol_cnt; i++)
                        {
                                c += sprintf(szForm+c, "  %4.4d
%6.6d   %-24s  %2.2d    %3.3d    %1.1s   $%6.2f  $%7.2f  <BR>",

pNewOrderData->OL[i].ol_supply_w_id,

pNewOrderData->OL[i].ol_i_id,

pNewOrderData->OL[i].ol_i_name,

pNewOrderData->OL[i].ol_quantity,

pNewOrderData->OL[i].ol_stock,

pNewOrderData->OL[i].ol_brand_generic,

pNewOrderData->OL[i].ol_i_price,

pNewOrderData->OL[i].ol_amount );
                        }
                }
                else
                {
                        c += wsprintf(szForm+c,
                                "%Disc:<BR>"
                                "Order Number: %8.8d  Number
of Lines:          W_tax:       D_tax:<BR> <BR>"
```

```
                                        " Supp_W  Item_Id  Item Name
        Qty  Stock  B/G  Price    Amount<BR>"
                                        , pNewOrderData->o_id);

                                i = 0;
                        }

                        strncpy( szForm+c, szBR, (15-i)*5 );
                        c += (15-i)*5;

                        if ( bValid )
                                c += sprintf(szForm+c, "Execution Status:
Transaction commited.                   Total:  $%8.2f  ",
                                        pNewOrderData->total_amount);
                        else
                                c += wsprintf(szForm+c, "Execution Status:
Item number is not valid.               Total:");

                        strcpy(szForm+c,
                                " <BR></font></PRE><HR>"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..NewOrder..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                                "</FORM></HTML>"
                                );
                }
}

/* FUNCTION: MakePaymentForm
 *
 * COMMENTS:        The internal client buffer is created when the terminal id
is assigned and should not
 *                                      be freed except when the client
terminal id is no longer needed.
 */

void MakePaymentForm(int iTermId, PAYMENT_DATA *pPaymentData,
BOOL bInput, char *szForm)
{
        int c;

        c = wsprintf(szForm,
                "<HTML><HEAD><TITLE>TPC-C
Payment</TITLE></HEAD><BODY>"
                "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
                "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                "<PRE><font face=\"Courier\">
Payment<BR>"
                "Date: "
                        , PAYMENT_FORM, iTermId,
Term.pClientData[iTermId].iSyncId);

        if ( !bInput )
        {
                c += wsprintf(szForm+c, "%2.2d-%2.2d-%4.4d
%2.2d:%2.2d:%2.2d",
                        pPaymentData->h_date.day,
                        pPaymentData->h_date.month,
                        pPaymentData->h_date.year,
                        pPaymentData->h_date.hour,
                        pPaymentData->h_date.minute,
                        pPaymentData->h_date.second);
        }

        if ( bInput )
        {
                c += wsprintf(szForm+c,
                        "<BR> <BR>Warehouse: %4.4d"
                        "                District: <INPUT
NAME=\"DID*\" SIZE=1><BR> <BR> <BR> <BR> <BR>"
                        "Customer: <INPUT NAME=\"CID*\"
SIZE=4>"
                        "Cust-Warehouse: <INPUT NAME=\"CWI*\"
SIZE=4>  "
                        "Cust-District: <INPUT NAME=\"CDI*\"
SIZE=1><BR>"
                        "Name:                <INPUT
NAME=\"CLT*\" SIZE=16>          Since:<BR>"
                        "                                       Credit:<BR>"
                        "                                       Disc:<BR>"
                        "                                       Phone:<BR>
<BR>"
                        "Amount Paid:         $<INPUT
NAME=\"HAM*\" SIZE=7>     New Cust-Balance:<BR>"
                        "Credit Limit:<BR> <BR>Cust-Data: <BR>
<BR> <BR> <BR> <BR></font></PRE><HR>"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Process\"><INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Menu\">"
                        "</BODY></FORM></HTML>"
                        , Term.pClientData[iTermId].w_id);
        }
        else
        {
                c += wsprintf(szForm+c,
                        "<BR> <BR>Warehouse: %4.4d
  District: %2.2d<BR>"
                        "%-20s                  %-20s<BR>"
                        "%-20s                  %-20s<BR>"
                        "%-20s %-2s %5.5s-%4.4s       %-20s %-2s
%5.5s-%4.4s<BR> <BR>"
                        "Customer: %4.4d  Cust-Warehouse: %4.4d
Cust-District: %2.2d<BR>"
                        "Name:   %-16s %-2s %-16s     Since:
%2.2d-%2.2d-%4.4d<BR>"
                        "       %-20s                   Credit: %-2s<BR>"

                        , Term.pClientData[iTermId].w_id,
pPaymentData->d_id
                        , pPaymentData->w_street_1,
pPaymentData->d_street_1
                        , pPaymentData->w_street_2,
pPaymentData->d_street_2
                        , pPaymentData->w_city,
pPaymentData->w_state, pPaymentData->w_zip, pPaymentData->w_zip+5
                        , pPaymentData->d_city,
pPaymentData->d_state, pPaymentData->d_zip, pPaymentData->d_zip+5
```

```
                                        , pPaymentData->c_id,
pPaymentData->c_w_id,                   pPaymentData->c_d_id
                                        , pPaymentData->c_first,
pPaymentData->c_middle, pPaymentData->c_last
                                        , pPaymentData->c_since.day,
pPaymentData->c_since.month,  pPaymentData->c_since.year
                                        , pPaymentData->c_street_1,
pPaymentData->c_credit
                                        );

        c += sprintf(szForm+c,
                                        "       %-20s                   %%Disc:
%5.2f<BR>",
                                        pPaymentData->c_street_2,
100.0*pPaymentData->c_discount);

                        c += wsprintf(szForm+c,
                                        "       %-20s %-2s %5.5s-%4.4s      Phone:
%6.6s-%3.3s-%3.3s-%4.4s<BR> <BR>",
                                        pPaymentData->c_city,
pPaymentData->c_state, pPaymentData->c_zip, pPaymentData->c_zip+5,
                                        pPaymentData->c_phone,
pPaymentData->c_phone+6, pPaymentData->c_phone+9,
pPaymentData->c_phone+12 );

                        c += sprintf(szForm+c,
                                        "Amount Paid:         $%7.2f     New
Cust-Balance: $%14.2f<BR>"
                                        "Credit Limit:   $%13.2f<BR> <BR>"
                                        , pPaymentData->h_amount,
pPaymentData->c_balance
                                        , pPaymentData->c_credit_lim
                                        );

                        if ( pPaymentData->c_credit[0] == 'B' &&
pPaymentData->c_credit[1] == 'C' )
                                        c += wsprintf(szForm+c,
                                                        "Cust-Data:
%-50.50s<BR>        %-50.50s<BR>        %-50.50s<BR>
%-50.50s<BR>",
                                                        pPaymentData->c_data,
pPaymentData->c_data+50, pPaymentData->c_data+100,
pPaymentData->c_data+150 );
                        else
                                        strcpy(szForm+c, "Cust-Data: <BR> <BR>
<BR> <BR>");

                        strcat(szForm,          " <BR></font></PRE><HR>"
                                                        "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..NewOrder..\">"
                                                        "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Payment..\">"
                                                        "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Delivery..\">"
                                                        "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Order-Status..\">"
                                                        "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Stock-Level..\">"
                                                        "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Exit..\">"

"</BODY></FORM></HTML>");
                }

}

/* FUNCTION: MakeOrderStatusForm
 *
 * COMMENTS:        The internal client buffer is created when the terminal id
is assigned and should not
 *                                                be freed except when the client
terminal id is no longer needed.
 */

void MakeOrderStatusForm(int iTermId, ORDER_STATUS_DATA
*pOrderStatusData, BOOL bInput, char *szForm)
{
                int                     i, c;
                static char szBR[] = " <BR> <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR>";

                c = wsprintf(szForm,
                                "<HTML><HEAD><TITLE>TPC-C
Order-Status</TITLE></HEAD><BODY>"
                                "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
                                "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"0\">"
                                "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                                "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                                "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                                "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                                "<PRE><font face=\"Courier\">
Order-Status<BR>"
                                "Warehouse: %4.4d   ",
                                ORDER_STATUS_FORM, iTermId,
Term.pClientData[iTermId].iSyncId, Term.pClientData[iTermId].w_id);

                if ( bInput )
                {
                                strcpy(szForm+c,
                                                "District: <INPUT NAME=\"DID*\"
SIZE=1><BR>"
                                                "Customer: <INPUT NAME=\"CID*\"
SIZE=4>   Name:                 <INPUT NAME=\"CLT*\" SIZE=23><BR>"
                                                "Cust-Balance:<BR> <BR>"
                                                "Order-Number:          Entry-Date:
   Carrier-Number:<BR>"
                                                "Supply-W     Item-Id    Qty     Amount
Delivery-Date<BR> <BR> <BR> <BR> <BR>"
                                                " <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR></font></PRE>"
                                                "<HR><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Process\"><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Menu\">"
                                                "</BODY></FORM></HTML>" );
                }
                else
                {
                                c += wsprintf(szForm+c,
                                                "District: %2.2d<BR>"
                                                "Customer: %4.4d   Name: %-16s %-2s
%-16s<BR>",
                                                pOrderStatusData->d_id,
pOrderStatusData->c_id,
                                                pOrderStatusData->c_first,
pOrderStatusData->c_middle, pOrderStatusData->c_last);

                                c += sprintf(szForm+c, "Cust-Balance: $%9.2f<BR>
<BR>",
                                                pOrderStatusData->c_balance);

                                c += wsprintf(szForm+c,
```

```
                                        "Order-Number: %8.8d   Entry-Date:
%2.2d-%2.2d-%4.4d %2.2d:%2.2d:%2.2d   Carrier-Number: %2.2d<BR>"
                                        "Supply-W     Item-Id    Qty     Amount
Delivery-Date<BR>",
                                        pOrderStatusData->o_id,
                                        pOrderStatusData->o_entry_d.day,
                                        pOrderStatusData->o_entry_d.month,
                                        pOrderStatusData->o_entry_d.year,
                                        pOrderStatusData->o_entry_d.hour,
                                        pOrderStatusData->o_entry_d.minute,
                                        pOrderStatusData->o_entry_d.second,
                                        pOrderStatusData->o_carrier_id);

                        for(i=0; i< pOrderStatusData->o_ol_cnt; i++)
                        {
                                        c += sprintf(szForm+c, "  %4.4d       %6.6d
%2.2d     $%8.2f     %2.2d-%2.2d-%4.4d<BR>",

pOrderStatusData->OL[i].ol_supply_w_id,
                                                        pOrderStatusData->OL[i].ol_i_id,

pOrderStatusData->OL[i].ol_quantity,

pOrderStatusData->OL[i].ol_amount,

pOrderStatusData->OL[i].ol_delivery_d.day,

pOrderStatusData->OL[i].ol_delivery_d.month,

pOrderStatusData->OL[i].ol_delivery_d.year);
                        }

                        strncpy( szForm+c, szBR, (15-i)*5 );
                        c += (15-i)*5;

                        strcpy(szForm+c,
                                        "</font></PRE><HR><INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..NewOrder..\">"
                                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
                                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
                                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
                                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                                        "</BODY></FORM></HTML>" );
                }
}

/* FUNCTION: MakeDeliveryForm
 *
 * COMMENTS:        The internal client buffer is created when the terminal id
is assigned and should not
 *                                                be freed except when the client
terminal id is no longer needed.
 */

void MakeDeliveryForm(int iTermId, DELIVERY_DATA *pDeliveryData,
BOOL bInput, char *szForm)
{
                int             c;

                c = wsprintf(szForm,
                                "<HTML><HEAD><TITLE>TPC-C
Delivery</TITLE></HEAD><BODY>"
                                "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
                                "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"%d\">"
                                "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                                "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                                "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                                "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                                "<PRE><font face=\"Courier\">
Delivery<BR>"
                                "Warehouse: %4.4d<BR> <BR>",
                                (!bInput && (pDeliveryData->exec_status_code !=
eOK)) ? ERR_TYPE_DELIVERY_POST : 0,
                                DELIVERY_FORM, iTermId,
Term.pClientData[iTermId].iSyncId, Term.pClientData[iTermId].w_id);

                if ( bInput )
                {
                                strcpy( szForm+c,
                                                "Carrier Number: <INPUT NAME=\"OCD*\"
SIZE=1><BR> <BR>"
                                                "Execution Status: <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR>"
                                                " <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> </font></PRE><HR>"
                                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Process\">"
                                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Menu\">"
                                                "</BODY></FORM></HTML>" );
                }
                else
                {
                                wsprintf( szForm+c,
                                                "Carrier Number: %2.2d<BR> <BR>"
                                                "Execution Status: %s <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR>"
                                                " <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> </font></PRE>"
                                                "<HR><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..NewOrder..\">"
                                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
                                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
                                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
                                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                                                "</BODY></FORM></HTML>"

                                                , pDeliveryData->o_carrier_id,
                                                (pDeliveryData->exec_status_code == eOK) ?
"Delivery has been queued." : "Delivery Post Failed     "
                                                );
                }
}

/* FUNCTION: ProcessNewOrderForm
 *
 * PURPOSE:             This function gets and validates the input data from the
new order form
```

```
 *                              filling in the required input variables. it then
calls the SQLNewOrder
 *                              transaction, constructs the output form and
writes it back to client
 *                              browser.
 */

void ProcessNewOrderForm(EXTENSION_CONTROL_BLOCK  *pECB, int
iTermId, char *szBuffer)
{
        PNEW_ORDER_DATA                 pNewOrder;

        pNewOrder =
Term.pClientData[iTermId].pTxn->BuffAddr_NewOrder();

        ZeroMemory(pNewOrder, sizeof(NEW_ORDER_DATA));
        pNewOrder->w_id = Term.pClientData[iTermId].w_id;
        GetNewOrderData(pECB->lpszQueryString, pNewOrder);

        Term.pClientData[iTermId].pTxn->NewOrder();

        pNewOrder =
Term.pClientData[iTermId].pTxn->BuffAddr_NewOrder();
        MakeNewOrderForm(iTermId, pNewOrder, OUTPUT_FORM,
szBuffer );
}

/* FUNCTION: void ProcessPaymentForm
 *
 * PURPOSE:         This function gets and validates the input data from the
payment form
 *                              filling in the required input variables. It then
calls the SQLPayment
 *                              transaction, constructs the output form and
writes it back to client
 *                              browser.
 *
 * ARGUMENTS:     EXTENSION_CONTROL_BLOCK          *pECB
passed in structure pointer from inetsrv.
 *                                      int
                iTermId     client browser terminal id
 *
 */

void ProcessPaymentForm(EXTENSION_CONTROL_BLOCK *pECB, int
iTermId, char *szBuffer)
{
        PPAYMENT_DATA pPayment;

        pPayment =
Term.pClientData[iTermId].pTxn->BuffAddr_Payment();
        ZeroMemory(pPayment, sizeof(PAYMENT_DATA));
        pPayment->w_id = Term.pClientData[iTermId].w_id;
        GetPaymentData(pECB->lpszQueryString, pPayment);

        Term.pClientData[iTermId].pTxn->Payment();

        pPayment =
Term.pClientData[iTermId].pTxn->BuffAddr_Payment();
        MakePaymentForm(iTermId, pPayment, OUTPUT_FORM,
szBuffer);
}

/* FUNCTION: ProcessOrderStatusForm
 *
 * PURPOSE:         This function gets and validates the input data from the
Order Status
 *                              form filling in the required input variables. It
then calls the
 *                              SQLOrderStatus transaction, constructs the
output form and writes it
 *                              back to client browser.
 *
 * ARGUMENTS:     EXTENSION_CONTROL_BLOCK          *pECB
passed in structure pointer from inetsrv.
 *                                      int
                iTermId     client browser terminal id
 *
 */

void ProcessOrderStatusForm(EXTENSION_CONTROL_BLOCK *pECB, int
iTermId, char *szBuffer)
{
        PORDER_STATUS_DATA      pOrderStatus;

        pOrderStatus =
Term.pClientData[iTermId].pTxn->BuffAddr_OrderStatus();
        ZeroMemory(pOrderStatus, sizeof(ORDER_STATUS_DATA));
        pOrderStatus->w_id = Term.pClientData[iTermId].w_id;
        GetOrderStatusData(pECB->lpszQueryString, pOrderStatus);

        Term.pClientData[iTermId].pTxn->OrderStatus();

        pOrderStatus =
Term.pClientData[iTermId].pTxn->BuffAddr_OrderStatus();
        MakeOrderStatusForm(iTermId, pOrderStatus, OUTPUT_FORM,
szBuffer);
}

/* FUNCTION: ProcessDeliveryForm
 *
 * PURPOSE:         This function gets and validates the input data from the
delivery form
 *                              filling in the required input variables. It then
calls the PostDeliveryInfo
 *                              Api, The client is then informed that the
transaction has been posted.
 *
 * ARGUMENTS:     EXTENSION_CONTROL_BLOCK          *pECB
passed in structure pointer from inetsrv.
 *                                      int
                iTermId     client browser terminal id
 *
 */

void ProcessDeliveryForm(EXTENSION_CONTROL_BLOCK *pECB, int
iTermId, char *szBuffer)
{
        char        *ptr = pECB->lpszQueryString;

        PDELIVERY_DATA pDelivery;

        pDelivery =
Term.pClientData[iTermId].pTxn->BuffAddr_Delivery();
        ZeroMemory(pDelivery, sizeof(DELIVERY_DATA));
        pDelivery->w_id = Term.pClientData[iTermId].w_id;

        pDelivery->o_carrier_id             = GetIntKeyValue(&ptr, "OCD*",
ERR_DELIVERY_MISSING_OCD_KEY,
ERR_DELIVERY_CARRIER_INVALID);
        if ( pDelivery->o_carrier_id > 10 || pDelivery->o_carrier_id < 1 )
                throw new CWEBCLNT_ERR(
ERR_DELIVERY_CARRIER_ID_RANGE );

        if (dwNumDeliveryThreads)
```

```
	{
		//post delivery info
		if ( PostDeliveryInfo(pDelivery->w_id,
pDelivery->o_carrier_id) )
			pDelivery->exec_status_code =
eDeliveryFailed;
		else
			pDelivery->exec_status_code = eOK;
	}
	else // delivery is done synchronously if no delivery threads
configured
		Term.pClientData[iTermId].pTxn->Delivery();

	pDelivery =
Term.pClientData[iTermId].pTxn->BuffAddr_Delivery();
	MakeDeliveryForm(iTermId, pDelivery, OUTPUT_FORM,
szBuffer);
}

/* FUNCTION: ProcessStockLevelForm
 *
 * PURPOSE:		This function gets and validates the input data from the
Stock Level
 *			form filling in the required input variables. It
then calls the
 *			SQLStockLevel transaction, constructs the
output form and writes it
 *			back to client browser.
 *
 * ARGUMENTS:	EXTENSION_CONTROL_BLOCK		*pECB
passed in structure pointer from inetsrv.
 *				int
		iTermId	client browser terminal id
 *
 */

void ProcessStockLevelForm(EXTENSION_CONTROL_BLOCK *pECB, int
iTermId, char *szBuffer)
{
	char			*ptr = pECB->lpszQueryString;

	PSTOCK_LEVEL_DATA	pStockLevel;

	pStockLevel =
Term.pClientData[iTermId].pTxn->BuffAddr_StockLevel();
	ZeroMemory( pStockLevel, sizeof(STOCK_LEVEL_DATA) );

	pStockLevel->w_id = Term.pClientData[iTermId].w_id;
	pStockLevel->d_id = Term.pClientData[iTermId].d_id;

	pStockLevel->threshold = GetIntKeyValue(&ptr, "TT*",
ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY,
ERR_STOCKLEVEL_THRESHOLD_INVALID);
	if ( pStockLevel->threshold >= 100 || pStockLevel->threshold < 0 )
		throw new CWEBCLNT_ERR(
ERR_STOCKLEVEL_THRESHOLD_RANGE );

	Term.pClientData[iTermId].pTxn->StockLevel();

	pStockLevel =
Term.pClientData[iTermId].pTxn->BuffAddr_StockLevel();
	MakeStockLevelForm(iTermId, pStockLevel, OUTPUT_FORM,
szBuffer);
}

/* FUNCTION: GetNewOrderData
 *
 * PURPOSE:		This function extracts and validates the new order form
data from an http command string.
 *
 * ARGUMENTS:	LPSTR				lpszQueryString
client browser http command string
 *				NEW_ORDER_DATA
*pNewOrderData		pointer to new order data structure
 *
 */

void GetNewOrderData(LPSTR lpszQueryString, NEW_ORDER_DATA
*pNewOrderData)
{
	char	szTmp[26];
	int		i;
	short	items;
	int		ol_i_id, ol_quantity;
	char	*ptr = lpszQueryString;

	static char szSP[MAX_OL_NEW_ORDER_ITEMS][6] =
		{ "SP00*", "SP01*", "SP02*", "SP03*", "SP04*",
		  "SP05*", "SP06*", "SP07*", "SP08*", "SP09*",
		  "SP10*", "SP11*", "SP12*", "SP13*", "SP14*" };
	static char szIID[MAX_OL_NEW_ORDER_ITEMS][7] =
		{ "IID00*", "IID01*", "IID02*", "IID03*", "IID04*",
		  "IID05*", "IID06*", "IID07*", "IID08*", "IID09*",
		  "IID10*", "IID11*", "IID12*", "IID13*", "IID14*" };
	static char szQty[MAX_OL_NEW_ORDER_ITEMS][7] =
		{ "Qty00*", "Qty01*", "Qty02*", "Qty03*", "Qty04*",
		  "Qty05*", "Qty06*", "Qty07*", "Qty08*", "Qty09*",
		  "Qty10*", "Qty11*", "Qty12*", "Qty13*", "Qty14*" };

	pNewOrderData->d_id = GetIntKeyValue(&ptr, "DID*",
ERR_NEWORDER_FORM_MISSING_DID,
ERR_NEWORDER_DISTRICT_INVALID);
	pNewOrderData->c_id = GetIntKeyValue(&ptr, "CID*",
ERR_NEWORDER_CUSTOMER_KEY,
ERR_NEWORDER_CUSTOMER_INVALID);

	for(i=0, items=0; i<MAX_OL_NEW_ORDER_ITEMS; i++)
	{
		GetKeyValue(&ptr, szSP[i], szTmp, sizeof(szTmp),
ERR_NEWORDER_MISSING_SUPPW_KEY);
		if ( szTmp[0] )
		{
			if ( !IsNumeric(szTmp) )
				throw new CWEBCLNT_ERR(
ERR_NEWORDER_SUPPW_INVALID );
			pNewOrderData->OL[items].ol_supply_w_id
= (short)atoi(szTmp);

			ol_i_id = pNewOrderData->OL[items].ol_i_id
=
				GetIntKeyValue(&ptr, szIID[i],
ERR_NEWORDER_MISSING_IID_KEY,
ERR_NEWORDER_ITEMID_INVALID);
			if ( ol_i_id > 999999 || ol_i_id < 1 )
				throw new CWEBCLNT_ERR(
ERR_NEWORDER_ITEMID_RANGE );

			ol_quantity =
pNewOrderData->OL[items].ol_quantity =
				GetIntKeyValue(&ptr, szQty[i],
ERR_NEWORDER_MISSING_QTY_KEY,
ERR_NEWORDER_QTY_INVALID);
			if ( ol_quantity > 99 || ol_quantity < 1 )
				throw new CWEBCLNT_ERR(
ERR_NEWORDER_QTY_RANGE );
```

```
                        items++;
                }
                else
                {       // nothing entered for supply warehouse, so
item id and qty must also be blank
                        GetKeyValue(&ptr, szIID[i], szTmp,
sizeof(szTmp), ERR_NEWORDER_MISSING_IID_KEY);
                        if ( szTmp[0] )
                                throw new CWEBCLNT_ERR(
ERR_NEWORDER_ITEMID_WITHOUT_SUPPW );

                        GetKeyValue(&ptr, szQty[i], szTmp,
sizeof(szTmp), ERR_NEWORDER_MISSING_QTY_KEY);
                        if ( szTmp[0] )
                                throw new CWEBCLNT_ERR(
ERR_NEWORDER_QTY_WITHOUT_SUPPW );
                }
        }
        if ( items == 0 )
                throw new CWEBCLNT_ERR(
ERR_NEWORDER_NOITEMS_ENTERED );

        pNewOrderData->o_ol_cnt = items;
}

/* FUNCTION: GetPaymentData
 *
 * PURPOSE:         This function extracts and validates the payment form
data from an http command string.
 *
 * ARGUMENTS:    LPSTR                   lpszQueryString
client browser http command string
 *                                      PAYMENT_DATA
*pPaymentData                   pointer to payment data structure
 */

void GetPaymentData(LPSTR lpszQueryString, PAYMENT_DATA
*pPaymentData)
{
        char    szTmp[26];
        char    *ptr = lpszQueryString;
        BOOL    bCustIdBlank;

        pPaymentData->d_id = GetIntKeyValue(&ptr, "DID*",
ERR_PAYMENT_MISSING_DID_KEY,
ERR_PAYMENT_DISTRICT_INVALID);

        GetKeyValue(&ptr, "CID*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_CID_KEY);
        if ( szTmp[0] == 0 )
        {
                bCustIdBlank = TRUE;
                pPaymentData->c_id = 0;
        }
        else
        {       // parse customer id and verify that last name was NOT
entered
                bCustIdBlank = FALSE;
                if ( !IsNumeric(szTmp) )
                        throw new CWEBCLNT_ERR(
ERR_PAYMENT_CUSTOMER_INVALID );
                pPaymentData->c_id = atoi(szTmp);
        }

        pPaymentData->c_w_id = GetIntKeyValue(&ptr, "CWI*",
ERR_PAYMENT_MISSING_CWI_KEY,
ERR_PAYMENT_CWI_INVALID);

        pPaymentData->c_d_id = GetIntKeyValue(&ptr, "CDI*",
ERR_PAYMENT_MISSING_CDI_KEY, ERR_PAYMENT_CDI_INVALID);

        if ( bCustIdBlank )
        {       // customer id is blank, so last name must be entered
                GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_CLT_KEY);
                if ( szTmp[0] == 0 )
                        throw new CWEBCLNT_ERR(
ERR_PAYMENT_MISSING_CID_CLT );

                _strupr( szTmp );
                if ( strlen(pPaymentData->c_last) > LAST_NAME_LEN
)
                        throw new CWEBCLNT_ERR(
ERR_PAYMENT_LAST_NAME_TO_LONG );
                strcpy(pPaymentData->c_last, szTmp);
        }
        else
        {       // parse customer id and verify that last name was NOT
entered
                GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_CLT_KEY);
                if ( szTmp[0] != 0 )
                        throw new CWEBCLNT_ERR(
ERR_PAYMENT_CID_AND_CLT );
        }

        GetKeyValue(&ptr, "HAM*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_HAM_KEY);
        if (!IsDecimal(szTmp))
                throw new CWEBCLNT_ERR(
ERR_PAYMENT_HAM_INVALID );
        pPaymentData->h_amount = atof(szTmp);
        if ( pPaymentData->h_amount >= 10000.00 ||
pPaymentData->h_amount < 0 )
                throw new CWEBCLNT_ERR(
ERR_PAYMENT_HAM_RANGE );
}

/* FUNCTION: GetOrderStatusData
 *
 * PURPOSE:         This function extracts and validates the payment form
data from an http command string.
 *
 */
void GetOrderStatusData(LPSTR lpszQueryString, ORDER_STATUS_DATA
*pOrderStatusData)
{
        char    szTmp[26];
        char    *ptr = lpszQueryString;

        pOrderStatusData->d_id = GetIntKeyValue(&ptr, "DID*",
ERR_ORDERSTATUS_MISSING_DID_KEY,
ERR_ORDERSTATUS_DID_INVALID);

        GetKeyValue(&ptr, "CID*", szTmp, sizeof(szTmp),
ERR_ORDERSTATUS_MISSING_CID_KEY);
        if ( szTmp[0] == 0 )
        {       // customer id is blank, so last name must be entered
                pOrderStatusData->c_id = 0;
                GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_ORDERSTATUS_MISSING_CLT_KEY);
                if ( szTmp[0] == 0 )
                        throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_MISSING_CID_CLT );

                _strupr( szTmp );
```

```
                        if ( strlen(pOrderStatusData->c_last) >
LAST_NAME_LEN )
                                throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_CLT_RANGE );
                        strcpy(pOrderStatusData->c_last, szTmp);
                }
                else
                {       // parse customer id and verify that last name was NOT
entered
                        if ( !IsNumeric(szTmp) )
                                throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_CID_INVALID );
                        pOrderStatusData->c_id = atoi(szTmp);
                        GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_ORDERSTATUS_MISSING_CLT_KEY);
                        if ( szTmp[0] != 0 )
                                throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_CID_AND_CLT );
                }

}

/* FUNCTION: BOOL IsNumeric(char *ptr)
 *
 * PURPOSE:             This function determines if a string is numeric. It fails if
any characters other
 *                              than numeric and null terminator are present.
 *
 * ARGUMENTS:   char                            *ptr            pointer to
string to check.
 *
 * RETURNS:                     BOOL    FALSE   if string is not all
numeric
 *                                                              TRUE    if
string contains only numeric characters i.e. '0' - '9'
 */

BOOL IsNumeric(char *ptr)
{
        if ( *ptr == 0 )
                return FALSE;

        while( *ptr && isdigit(*ptr) )
                ptr++;
        return ( !*ptr );
}

/* FUNCTION: BOOL IsDecimal(char *ptr)
 *
 * PURPOSE:             This function determines if a string is a non-negative
decimal value.
 *          It fails if any characters other than a series of numbers followed by
 *                              a decimal point, another series of numbers,
and a null terminator are present.
 *
 * ARGUMENTS:   char                            *ptr            pointer to
string to check.
 *
 * RETURNS:                     BOOL    FALSE   if string is not a valid
non-negative decimal value
 *                                                              TRUE    if
string is OK
 */

BOOL IsDecimal(char *ptr)
{
        char *dotptr;
        BOOL  bValid;

        if ( *ptr == 0 )
                return FALSE;

        // find decimal point
        dotptr = strchr( ptr, '.' );
        if (dotptr == NULL)
                // no decimal point, so just check for numeric
                return IsNumeric(ptr);
        *dotptr = 0;  // temporarily replace decimal with a terminator

        if ( *ptr != 0 )
                bValid = IsNumeric(ptr);
        // string starts with decimal point
        else if (*(dotptr+1) == 0)
                return FALSE;  // nothing but a decimal point is bad
        else
                bValid = TRUE;

        if (*(dotptr+1) != 0)
                // check text after decimal point
                bValid &= IsNumeric(dotptr+1);

        *dotptr = '.';  // replace decimal point
        return bValid;
}
```

tpcc.cpp

```
/*      FILE:                   TPCC.C
 *                                      Microsoft TPC-C Kit Ver.
4.20.000
 *                                      Copyright Microsoft, 1999
 *      All Rights Reserved
 *
 *                                      Version 4.10.000 audited by
Richard Gimarc, Performance Metrics, 3/17/99
 *
 *      PURPOSE:                Main module for TPCC.DLL which is an
ISAPI service dll.
 *      Contact:    Charles Levine (clevine@microsoft.com)
 *
 *  Change history:
 *                      4.20.000 - reworked error handling; added options for
COM and Encina txn monitors
 */

#include <windows.h>
#include <process.h>
#include <tchar.h>
#include <stdio.h>
#include <stdarg.h>
#include <malloc.h>
#include <stdlib.h>
#include <string.h>
#include <time.h>
#include <sys\timeb.h>
#include <io.h>
#include <assert.h>

#include <sqltypes.h>

#ifdef ICECAP
#include <icapexp.h>
#endif

#include "..\..\common\src\trans.h"                     //tpckit transaction
header contains defination of structures specific to TPC-C
#include "..\..\common\src\error.h"
```

```
#include "..\..\common\src\txn_base.h"
#include "..\..\common\src\ReadRegistry.h"

#include "..\..\common\txnlog\include\rtetime.h"
#include "..\..\common\txnlog\include\spinlock.h"
#include "..\..\common\txnlog\include\txnlog.h"

// Database layer includes
#include "..\..\db_dblib_dll\src\tpcc_dblib.h"          // DBLIB
implementation of TPC-C txns
#include "..\..\db_odbc_dll\src\tpcc_odbc.h"            // ODBC
implementation of TPC-C txns

// Txn monitor layer includes
#include "..\..\tm_com_dll\src\tpcc_com.h"                      // COM
Services implementation on TPC-C txns
#include "..\..\tm_tuxedo_dll\src\tpcc_tux.h"           // interface to Tuxedo
libraries
#include "..\..\tm_encina_dll\src\tpcc_enc.h"           // interface to Encina
libraries

#include "httpext.h"                                    //ISAPI DLL
information header
#include "tpcc.h"                                               //this dlls
specific structure, value e.t. header.


#define     LEN_ERR_STRING  256

// defines for Make<Txn>Form calls to distinguish input and output flavors
#define     OUTPUT_FORM     0
#define INPUT_FORM          1

char
szMyComputerName[MAX_COMPUTERNAME_LENGTH+1];

//Terminal client id structure
TERM      Term = { 0, 0, 0, NULL };

// The WEBCLIENT_VERSION string specifies the version level of this web
client interface.
// The RTE must be synchronized with the interface level on login, otherwise
the login
// will fail.  This is a sanity check to catch problems resulting from mismatched
versions
// of the RTE and web client.
#define WEBCLIENT_VERSION "410"

static      CRITICAL_SECTION                    TermCriticalSection;

static  HINSTANCE hLibInstanceTm = NULL;
static  HINSTANCE hLibInstanceDb = NULL;

TYPE_CTPCC_DBLIB            *pCTPCC_DBLIB_new;
TYPE_CTPCC_ODBC                     *pCTPCC_ODBC_new;
TYPE_CTPCC_TUXEDO       *pCTPCC_TUXEDO_new;
TYPE_CTPCC_ENCINA   *pCTPCC_ENCINA_new;
TYPE_CTPCC_ENCINA   *pCTPCC_ENCINA_post_init;
TYPE_CTPCC_COM              *pCTPCC_COM_new;

// For deferred Delivery txns:

CTxnLog                                             *txnDelilog = NULL;
        //used to log delivery transaction information

HANDLE                                              hWorkerSemaphore    =
INVALID_HANDLE_VALUE;

HANDLE                                              hDoneEvent
        = INVALID_HANDLE_VALUE;
HANDLE                                              *pDeliHandles
= NULL;

// configuration settings from registry
TPCCREGISTRYDATA                    Reg;


DWORD
dwNumDeliveryThreads = 4;
CRITICAL_SECTION                    DelBuffCriticalSection;
//critical section for delivery transactions cache
DELIVERY_TRANSACTION    *pDelBuff                       = NULL;
DWORD                                               dwDelBuffSize
= 100;              // size of circular buffer for delivery txns
DWORD                                               dwDelBuffFreeCount;
                        // number of buffers free
DWORD                                               dwDelBuffBusyIndex =
0;                  // index position of entry waiting to be delivered
DWORD                                               dwDelBuffFreeIndex  =
0;                  // index position of unused entry

#include "..\..\common\src\ReadRegistry.cpp"

/* FUNCTION: DllMain
 *
 * PURPOSE:         This function is the entry point for the DLL.  This
implementation is based on the
 *                  fact that DLL_PROCESS_ATTACH is only
called from the inet service once.
 *
 * ARGUMENTS:   HANDLE  hModule
module handle
 *                                      DWORD   ul_reason_for_call
reason for call
 *                                      LPVOID  lpReserved
reserved for future use
 *
 * RETURNS:             BOOL    FALSE
errors occured in initialization
 *                                                                  TRUE
                DLL successfully initialized
 */

BOOL APIENTRY DllMain(HANDLE hModule, DWORD ul_reason_for_call,
LPVOID lpReserved)
{
        DWORD  i;
        char szEvent[LEN_ERR_STRING] = "\0";
        char szLogFile[128];
        char szDllName[128];

// debugging....
// DebugBreak();

        try
        {
                switch( ul_reason_for_call )
                {
                        case DLL_PROCESS_ATTACH:
                                {
                                        DWORD dwSize =
MAX_COMPUTERNAME_LENGTH+1;

GetComputerName(szMyComputerName, &dwSize);

szMyComputerName[dwSize] = 0;
```

```
                                        }

DisableThreadLibraryCalls((HMODULE)hModule);

InitializeCriticalSection(&TermCriticalSection);

                                        if ( ReadTPCCRegistrySettings(
&Reg ) )
                                                throw new
CWEBCLNT_ERR( ERR_MISSING_REGISTRY_ENTRIES );

                                        dwDelBuffSize = min(
Reg.dwMaxPendingDeliveries, 10000 );  // min with 10000 as a sanity
constraint
                                        dwNumDeliveryThreads = min(
Reg.dwNumberOfDeliveryThreads, 100 );  // min with 100 as a sanity constraint

                                        TermInit();

                                        // load DLL for txn monitor
                                        if (Reg.eTxnMon == TUXEDO)
                                        {
                                                strcpy( szDllName,
Reg.szPath );
                                                strcat( szDllName,
"tpcc_tuxedo.dll");
                                                hLibInstanceTm =
LoadLibrary( szDllName );
                                                if (hLibInstanceTm ==
NULL)
                                                        throw new
CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );

                                                // get function pointer
to wrapper for class constructor

pCTPCC_TUXEDO_new = (TYPE_CTPCC_TUXEDO*)
GetProcAddress(hLibInstanceTm,"CTPCC_TUXEDO_new");
                                                if
(pCTPCC_TUXEDO_new == NULL)
                                                        throw new
CWEBCLNT_ERR( ERR_GETPROCADDR_FAILED, szDllName,
GetLastError() );
                                        }
                                        else if (Reg.eTxnMon ==
ENCINA)
                                        {
                                                strcpy( szDllName,
Reg.szPath );
                                                strcat( szDllName,
"tpcc_encina.dll");
                                                hLibInstanceTm =
LoadLibrary( szDllName );
                                                if (hLibInstanceTm ==
NULL)
                                                        throw new
CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );
                                                // get function pointer
to wrapper for class constructor

pCTPCC_ENCINA_new = (TYPE_CTPCC_ENCINA*)
GetProcAddress(hLibInstanceTm,"CTPCC_ENCINA_new");

pCTPCC_ENCINA_post_init = (TYPE_CTPCC_ENCINA*)
GetProcAddress(hLibInstanceTm,"CTPCC_ENCINA_post_init");
                                                if
(pCTPCC_ENCINA_new == NULL)
                                                        throw new
CWEBCLNT_ERR( ERR_GETPROCADDR_FAILED, szDllName,
GetLastError() );
                                        }
                                        else if (Reg.eTxnMon == COM)
                                        {
                                                strcpy( szDllName,
Reg.szPath );
                                                strcat( szDllName,
"tpcc_com.dll");
                                                hLibInstanceTm =
LoadLibrary( szDllName );
                                                if (hLibInstanceTm ==
NULL)
                                                        throw new
CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );

                                                // get function pointer
to wrapper for class constructor
                                                pCTPCC_COM_new =
(TYPE_CTPCC_COM*)
GetProcAddress(hLibInstanceTm,"CTPCC_COM_new");
                                                if
(pCTPCC_COM_new == NULL)
                                                        throw new
CWEBCLNT_ERR( ERR_GETPROCADDR_FAILED, szDllName,
GetLastError() );
                                        }

                                        // load DLL for database
connection
                                        if ((Reg.eTxnMon == None) ||
(dwNumDeliveryThreads > 0))
                                        {
                                                if (Reg.eDB_Protocol
== DBLIB)
                                                {
                                                        strcpy(
szDllName, Reg.szPath );
                                                        strcat(
szDllName, "tpcc_dblib.dll");

hLibInstanceDb = LoadLibrary( szDllName );
                                                        if
(hLibInstanceDb == NULL)

throw new CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName,
GetLastError() );

                                                        // get
function pointer to wrapper for class constructor

pCTPCC_DBLIB_new = (TYPE_CTPCC_DBLIB*)
GetProcAddress(hLibInstanceDb,"CTPCC_DBLIB_new");
                                                        if
(pCTPCC_DBLIB_new == NULL)

throw new CWEBCLNT_ERR( ERR_GETPROCADDR_FAILED, szDllName,
GetLastError() );
                                                }
                                                else if
(Reg.eDB_Protocol == ODBC)
                                                {
                                                        strcpy(
szDllName, Reg.szPath );
                                                        strcat(
szDllName, "tpcc_odbc.dll");
```

```
hLibInstanceDb = LoadLibrary( szDllName );
                                                        if
(hLibInstanceDb == NULL)

throw new CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName,
GetLastError() );

                                                        // get
function pointer to wrapper for class constructor

pCTPCC_ODBC_new = (TYPE_CTPCC_ODBC*)
GetProcAddress(hLibInstanceDb,"CTPCC_ODBC_new");
                                                        if
(pCTPCC_ODBC_new == NULL)

throw new CWEBCLNT_ERR( ERR_GETPROCADDR_FAILED, szDllName,
GetLastError() );
                                                }
                                        }

                                        if (dwNumDeliveryThreads)
                                        {
                                                // for deferred delivery
txns:
                                                hDoneEvent =
CreateEvent( NULL, TRUE /* manual reset */, FALSE /* initially not signalled
*/, NULL );

InitializeCriticalSection(&DelBuffCriticalSection);
                                                hWorkerSemaphore =
CreateSemaphore( NULL, 0, dwDelBuffSize, NULL );
                                                dwDelBuffFreeCount =
dwDelBuffSize;

                                                InitJulianTime(NULL);

                                                // create unique log file
name based on delilog-yymmdd-hhmm.log
                                                SYSTEMTIME Time;
                                                GetLocalTime( &Time
);
                                                wsprintf( szLogFile,
"%sdelivery-%2.2d%2.2d%2.2d-%2.2d%2.2d.log",

Reg.szPath, Time.wYear % 100, Time.wMonth, Time.wDay, Time.wHour,
Time.wMinute );
                                                txnDelilog = new
CTxnLog(szLogFile, TXN_LOG_WRITE);

                                                //write event into txn
log for START

txnDelilog->WriteCtrlRecToLog(TXN_EVENT_START,
szMyComputerName, sizeof(szMyComputerName));

                                                // allocate structures for
delivery buffers and thread mgmt
                                                pDeliHandles = new
HANDLE[dwNumDeliveryThreads];
                                                pDelBuff = new
DELIVERY_TRANSACTION[dwDelBuffSize];
                                                // launch
DeliveryWorkerThread to perform actual delivery txns
                                                for(i=0;
i<dwNumDeliveryThreads; i++)
                                                {

pDeliHandles[i] = (HANDLE) _beginthread( DeliveryWorkerThread, 0, NULL
);
                                                        if
(pDeliHandles[i] == INVALID_HANDLE_VALUE)

throw new CWEBCLNT_ERR( ERR_DELIVERY_THREAD_FAILED );
                                                }
                                        }

                                        break;

                                case DLL_PROCESS_DETACH:
                                        if (dwNumDeliveryThreads)
                                        {
                                                if (txnDelilog !=
NULL)
                                                {
                                                        //write event
into txn log for STOP

txnDelilog->WriteCtrlRecToLog(TXN_EVENT_STOP, szMyComputerName,
sizeof(szMyComputerName));

                                                        // This will
do a clean shutdown of the delivery log file
                                                        CTxnLog
*txnDelilogLocal = txnDelilog;
                                                        txnDelilog=
NULL;
                                                        delete
txnDelilogLocal;
                                                }

                                                delete [] pDeliHandles;
                                                delete [] pDelBuff;

                                                CloseHandle(
hWorkerSemaphore );
                                                CloseHandle(
hDoneEvent );

DeleteCriticalSection(&DelBuffCriticalSection);
                                        }


DeleteCriticalSection(&TermCriticalSection);

                                        if (hLibInstanceTm != NULL)
                                                FreeLibrary(
hLibInstanceTm );
                                        hLibInstanceTm = NULL;


                                        if (hLibInstanceDb != NULL)
                                                FreeLibrary(
hLibInstanceDb );
                                        hLibInstanceDb = NULL;

                                        Sleep(500);
                                        break;

                                default:
                                        /* nothing */;
                        }
                }
                catch (CBaseErr *e)
                {
                        WriteMessageToEventLog( e->ErrorText() );
```

```
                delete e;
                TerminateExtension(0);
                return FALSE;
        }
        catch (...)
        {
                WriteMessageToEventLog(TEXT("Unhandled
exception.  DLL could not load."));
                TerminateExtension(0);
                return FALSE;
        }

        return TRUE;
}


/* FUNCTION: GetExtensionVersion
 *
 * PURPOSE:         This function is called by the inet service when the DLL
is first loaded.
 *
 * ARGUMENTS:     HSE_VERSION_INFO          *pVer       passed in
structure in which to place expected version number.
 *
 * RETURNS:                TRUE       inet service expected return value.
 */

BOOL WINAPI GetExtensionVersion(HSE_VERSION_INFO *pVer)
{
        pVer->dwExtensionVersion =
MAKELONG(HSE_VERSION_MINOR, HSE_VERSION_MAJOR);
        lstrcpyn(pVer->lpszExtensionDesc, "TPC-C Server.",
HSE_MAX_EXT_DLL_NAME_LEN);

        // TODO: why do we need this here instead of in the DLL attach?
        if (Reg.eTxnMon == ENCINA)
                pCTPCC_ENCINA_post_init();

        return TRUE;
}

/* FUNCTION: TerminateExtension
 *
 * PURPOSE:         This function is called by the inet service when the DLL
is about to be unloaded.
 *                         Release all resources in anticipation of being
unloaded.
 *
 * RETURNS:                TRUE       inet service expected return value.
 */

BOOL WINAPI TerminateExtension( DWORD dwFlags )
{
        if (pDeliHandles)
        {
                SetEvent( hDoneEvent );
                for(DWORD i=0; i<dwNumDeliveryThreads; i++)
                        WaitForSingleObject( pDeliHandles[i],
INFINITE );
        }

        TermDeleteAll();
        return TRUE;
}


/* FUNCTION: HttpExtensionProc
 *
 * PURPOSE:         This function is the main entry point for the TPCC DLL.
The internet service
 *                         calls this function passing in the http string.
 *
 * ARGUMENTS:     EXTENSION_CONTROL_BLOCK          *pECB
structure pointer to passed in internet
 *
                                service information.
 *
 * RETURNS:                DWORD   HSE_STATUS_SUCCESS
                        connection can be dropped if error
 *
HSE_STATUS_SUCCESS_AND_KEEP_CONN        keep connect valid
comment sent
 *
 * COMMENTS:       None
 *
 */

DWORD WINAPI HttpExtensionProc(EXTENSION_CONTROL_BLOCK
*pECB)
{
        int                             iCmd, FormId, TermId, iSyncId;
        char                    szBuffer[4096];

        int                             lpbSize;
        static char  szHeader[] = "200 Ok";
        DWORD                   dwSize = 6;                     // initial
value is strlen(szHeader)
        char                    szHeader1[4096];


#ifdef ICECAP
        StartCAP();
#endif

        try
        {
                //process http query
                ProcessQueryString(pECB, &iCmd, &FormId, &TermId,
&iSyncId);

                if (TermId != 0)
                {
                        if ( TermId < 0 || TermId >=
Term.iNumEntries || Term.pClientData[TermId].iNextFree != -1 )
                        {
                                // debugging...
                                char szTmp[128];
                                wsprintf( szTmp, "Invalid term ID;
TermId = %d", TermId );
                                WriteMessageToEventLog( szTmp
);

                                throw new CWEBCLNT_ERR(
ERR_INVALID_TERMID );
                        }

                        //must have a valid syncid here since termid is
valid
                        if (iSyncId !=
Term.pClientData[TermId].iSyncId)
                                throw new CWEBCLNT_ERR(
ERR_INVALID_SYNC_CONNECTION );

                        //set use time
                        Term.pClientData[TermId].iTickCount =
GetTickCount();
```

```
                }


                switch(iCmd)
                {
                case 0:
                        WelcomeForm(pECB, szBuffer);
                        break;
                case 1:
                        switch( FormId )
                        {
                                case WELCOME_FORM:
                                case MAIN_MENU_FORM:
                                        break;
                                case NEW_ORDER_FORM:
ProcessNewOrderForm(pECB, TermId, szBuffer);
                                        break;
                                case PAYMENT_FORM:
ProcessPaymentForm(pECB, TermId, szBuffer);
                                        break;
                                case DELIVERY_FORM:
ProcessDeliveryForm(pECB, TermId, szBuffer);
                                        break;
                                case ORDER_STATUS_FORM:
ProcessOrderStatusForm(pECB, TermId, szBuffer);
                                        break;
                                case STOCK_LEVEL_FORM:
ProcessStockLevelForm(pECB, TermId, szBuffer);
                                        break;
                        }
                        break;
                case 2:
                        // new-order selected from menu; display
new-order input form
                        MakeNewOrderForm(TermId, NULL,
INPUT_FORM, szBuffer);
                        break;
                case 3:
                        // payment selected from menu; display
payment input form
                        MakePaymentForm(TermId, NULL,
INPUT_FORM, szBuffer);
                        break;
                case 4:
                        // delivery selected from menu; display
delivery input form
                        MakeDeliveryForm(TermId, NULL,
INPUT_FORM, szBuffer);
                        break;
                case 5:
                        // order-status selected from menu; display
order-status input form
                        MakeOrderStatusForm(TermId, NULL,
INPUT_FORM, szBuffer);
                        break;
                case 6:
                        // stock-level selected from menu; display
stock-level input form
                        MakeStockLevelForm(TermId, NULL,
INPUT_FORM, szBuffer);
                        break;
                case 7:
                        // ExitCmd
                        TermDelete(TermId);
                        WelcomeForm(pECB, szBuffer);
                        break;
                case 8:
                        SubmitCmd(pECB, szBuffer);
                        break;
                case 9:
                        // menu
                        MakeMainMenuForm(TermId,
Term.pClientData[TermId].iSyncId, szBuffer);
                        break;
                case 10:
                        // CMD=Clear
                        // resets all connections; should only be used
when no other connections are active
                        TermDeleteAll();
                        TermInit();
                        WelcomeForm(pECB, szBuffer);
                        break;
                case 11:  // CMD=Stats
                        StatsCmd(pECB, szBuffer);
                        break;
                }
        }
        catch (CBaseErr *e)
        {
                ErrorForm( pECB, e->ErrorType(), e->ErrorNum(),
TermId, iSyncId, e->ErrorText(), szBuffer );
                delete e;
        }
        catch (...)
        {
                ErrorForm( pECB, ERR_TYPE_WEBDLL, 0, TermId,
iSyncId, "Error: Unhandled exception in Web Client.", szBuffer );
        }

#ifdef ICECAP
        StopCAP();
#endif


        lpbSize = strlen(szBuffer);
        wsprintf(szHeader1,
                        "Content-Type: text/html\r\n"
                        "Content-Length: %d\r\n"
                        "Connection: Keep-Alive\r\n\r\n" , lpbSize);
        strcat( szHeader1, szBuffer );

        (*pECB->ServerSupportFunction)(pECB->ConnID,
HSE_REQ_SEND_RESPONSE_HEADER, szHeader, (LPDWORD) &dwSize,
(LPDWORD)szHeader1);

        //finish up and keep connection
        pECB->dwHttpStatusCode = 200;
        return HSE_STATUS_SUCCESS_AND_KEEP_CONN;
}


void WriteMessageToEventLog(LPTSTR lpszMsg)
{
  TCHAR   szMsg[256];
  HANDLE  hEventSource;
  LPTSTR  lpszStrings[2];

  // Use event logging to log the error.
  //
  hEventSource = RegisterEventSource(NULL, TEXT("TPCC.DLL"));
```

```
    _stprintf(szMsg, TEXT("Error in TPCC.DLL: "));
    lpszStrings[0] = szMsg;
    lpszStrings[1] = lpszMsg;

    if (hEventSource != NULL)
            {
        ReportEvent(hEventSource, // handle of event source
            EVENTLOG_ERROR_TYPE,  // event type
            0,                    // event category
            0,                    // event ID
            NULL,                 // current user's SID
            2,                    // strings in lpszStrings
            0,                    // no bytes of raw data
            (LPCTSTR *)lpszStrings,    // array of error strings
            NULL);                // no raw data

        (VOID) DeregisterEventSource(hEventSource);
    }
}


/* FUNCTION: DeliveryWorkerThread
 *
 * PURPOSE:          This function processes deferred delivery txns.  There are typically several
 *                   threads running this routine.  The number of threads is determined by an entry
 *                   read from the registry.  The thread waits for work by waiting on semaphore.
 *                   When a delivery txn is posted, the semaphore is released.  After processing
 *                   the delivery txn, information is logged to record the txn status and execution
 *                   time.
 */

/*static*/ void DeliveryWorkerThread(void *ptr)
{
        CTPCC_BASE                      *pTxn = NULL;

        DELIVERY_TRANSACTION                    delivery;
        PDELIVERY_DATA                          pDeliveryData;
        TXN_RECORD_TPCC_DELIV_DEF       txnDeliRec;

        DWORD                                           index;
        HANDLE                                          handles[2];

        SYSTEMTIME                      trans_end;              //delivery transaction finished time
        SYSTEMTIME                      trans_start;//delivery transaction start time

        assert(txnDelilog != NULL);

        try
        {
                if (Reg.eDB_Protocol == ODBC)
                        pTxn = pCTPCC_ODBC_new( Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, szMyComputerName, Reg.szDbName );
                else if (Reg.eDB_Protocol == DBLIB)
                        pTxn = pCTPCC_DBLIB_new( Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, szMyComputerName, Reg.szDbName );
                pDeliveryData = pTxn->BuffAddr_Delivery();
        }
        catch (CBaseErr *e)
        {
                char szTmp[1024];
                wsprintf( szTmp, "Error in Delivery Txn thread.  Could not connect to database.  "
                                "%s.  Server=%s, User=%s, Password=%s, Database=%s",
                                e->ErrorText(), Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, Reg.szDbName );
                WriteMessageToEventLog( szTmp );
                delete e;
                goto ErrorExit;
        }
        catch (...)
        {
                WriteMessageToEventLog(TEXT("Unhandled exception caught in DeliveryWorkerThread."));
                goto ErrorExit;
        }

        while (TRUE)
        {
                try
                {
                        //while delivery thread running, i.e. user has not requested termination
                        while (TRUE)
                        {
                                // need to wait for multiple objects: program exit or worker semaphore;
                                handles[0] = hDoneEvent;
                                handles[1] = hWorkerSemaphore;
                                index = WaitForMultipleObjects( 2, &handles[0], FALSE, INFINITE );
                                if (index == WAIT_OBJECT_0)
                                        goto ErrorExit;


                                ZeroMemory(&txnDeliRec, sizeof(txnDeliRec));
                                txnDeliRec.TxnType = TXN_REC_TYPE_TPCC_DELIV_DEF;

                                // make a local copy of current entry from delivery buffer and increment buffer index

                                EnterCriticalSection(&DelBuffCriticalSection);
                                delivery = *(pDelBuff+dwDelBuffBusyIndex);
                                dwDelBuffFreeCount++;
                                dwDelBuffBusyIndex++;
                                if (dwDelBuffBusyIndex == dwDelBuffSize)        // wrap-around if at end of buffer
                                        dwDelBuffBusyIndex = 0;


                                LeaveCriticalSection(&DelBuffCriticalSection);

                                pDeliveryData->w_id = delivery.w_id;
                                pDeliveryData->o_carrier_id = delivery.o_carrier_id;

                                txnDeliRec.w_id = pDeliveryData->w_id;
                                txnDeliRec.o_carrier_id = pDeliveryData->o_carrier_id;
                                txnDeliRec.TxnStartT0 = Get64BitTime(&delivery.queue);
```

```
                                        GetLocalTime( &trans_start );
                                        pTxn->Delivery();
                                        GetLocalTime( &trans_end );

                                        //log txn
                                        txnDeliRec.TxnStatus =
ERR_SUCCESS;
                                        for (int i=0; i<10; i++)
                                                txnDeliRec.o_id[i] =
pDeliveryData->o_id[i];
                                        txnDeliRec.DeltaT4 =
(int)(Get64BitTime(&trans_end) - txnDeliRec.TxnStartT0);
                                        txnDeliRec.DeltaTxnExec =
(int)(Get64BitTime(&trans_end) - Get64BitTime(&trans_start));

                                        if (txnDelilog != NULL)

txnDelilog->WriteToLog(&txnDeliRec);
                                }
                        }
                        catch (CBaseErr *e)
                        {
                                char szTmp[1024];
                                wsprintf( szTmp, "Error in Delivery Txn
thread.  %s", e->ErrorText() );
                                WriteMessageToEventLog( szTmp );

                                // log the error txn
                                txnDeliRec.TxnStatus = e->ErrorType();
                                if (txnDelilog != NULL)

txnDelilog->WriteToLog(&txnDeliRec);

                                delete e;
                        }
                        catch (...)
                        {
                                // unhandled exception; shouldn't happen; not
much we can do...

WriteMessageToEventLog(TEXT("Unhandled exception caught in
DeliveryWorkerThread."));
                        }
                }

ErrorExit:
                delete pTxn;
                _endthread();
}

/* FUNCTION: PostDeliveryInfo
 *
 * PURPOSE:             This function enters the delivery txn into the deferred
delivery buffer.
 *
 * RETURNS:                     BOOL    FALSE   delivery information
posted successfully
 *                                                                      TRUE
error cannot post delivery info
 */

BOOL PostDeliveryInfo(short w_id, short o_carrier_id)
{
                BOOL bError;

                EnterCriticalSection(&DelBuffCriticalSection);
                if (dwDelBuffFreeCount > 0)
                {
                        bError = FALSE;
                        (pDelBuff+dwDelBuffFreeIndex)->w_id
= w_id;
                        (pDelBuff+dwDelBuffFreeIndex)->o_carrier_id          =
o_carrier_id;

GetLocalTime(&(pDelBuff+dwDelBuffFreeIndex)->queue);

                        dwDelBuffFreeCount--;
                        dwDelBuffFreeIndex++;
                        if (dwDelBuffFreeIndex == dwDelBuffSize)
                                dwDelBuffFreeIndex = 0;                 //
wrap-around if at end of buffer
                }
                else
                        // No free buffers.  Return an error, which indicates that
the delivery buffer is full.
                        // Most likely, the number of delivery worker threads
needs to be increased to keep up
                        // with the txn rate.
                        bError = TRUE;
                LeaveCriticalSection(&DelBuffCriticalSection);

                if (!bError)
                        // increment worker semaphore to wake up a worker
thread
                        ReleaseSemaphore( hWorkerSemaphore, 1, NULL );

                return bError;
}

/* FUNCTION: ProcessQueryString
 *
 * PURPOSE:             This function extracts the relevent information out of the
http command passed in from
 *                                      the browser.
 *
 * COMMENTS:        If this is the initial connection i.e. client is at welcome
screen then
 *                                              there will not be a terminal id or
current form id.  If this is the case
 *                                              then the pTermid and pFormid
return values are undefined.
 */

void ProcessQueryString(EXTENSION_CONTROL_BLOCK *pECB, int
*pCmd, int *pFormId, int *pTermId, int *pSyncId)
{
                char *ptr = pECB->lpszQueryString;
                char szBuffer[25];
                int i;

                //allowable client command strings i.e. CMD=command
                static char *szCmds[] =
                {
                        "Process", "..NewOrder..", "..Payment..", "..Delivery..",
"..Order-Status..", "..Stock-Level..",
                        "..Exit..", "Submit", "Menu", "Clear", "Stats", ""
                };

                *pCmd      = 0;                 // default is the login screen
                *pTermId = 0;

                // if no params (i.e., empty query string), then return login screen
                if (strlen(pECB->lpszQueryString) == 0)
                        return;
```

```
	// parse FORMID, TERMID, and SYNCID
	*pFormId = GetIntKeyValue(&ptr, "FORMID", NO_ERR,
NO_ERR);
	*pTermId = GetIntKeyValue(&ptr, "TERMID", NO_ERR,
NO_ERR);
	*pSyncId = GetIntKeyValue(&ptr, "SYNCID", NO_ERR,
NO_ERR);

	// parse CMD
	GetKeyValue(&ptr, "CMD", szBuffer, sizeof(szBuffer),
ERR_COMMAND_UNDEFINED);

	// see which command it matches
	for(i=0; ; i++)
	{
		if (szCmds[i][0] == 0)
			// no more; no match; return error
			throw new CWEBCLNT_ERR(
ERR_COMMAND_UNDEFINED );
		if ( !strcmp(szCmds[i], szBuffer) )
		{
			*pCmd = i+1;
			break;
		}
	}
}

/* FUNCTION: void WelcomeForm
 *
 */

void WelcomeForm(EXTENSION_CONTROL_BLOCK *pECB, char
*szBuffer)
{
	char szTmp[1024];

	//welcome to tpc-c html form buffer, this is first form client sees.
	strcpy( szBuffer,	"<HTML><HEAD><TITLE>TPC-C Web
Client</TITLE></HEAD><BODY>"

"<B><BIG>Microsoft TPC-C Web Client (ver 4.20)</BIG></B> <BR> <BR>"
"<font
face=\"Courier New\"><PRE>"
"Compiled:
"__DATE__", "__TIME__" <BR>"
"Source:
"__FILE__" ("__TIMESTAMP__") <BR>"

"</PRE></font>"
"<FORM
ACTION=\"tpcc.dll\" METHOD=\"GET\">"
"<INPUT
TYPE=\"hidden\" NAME=\"STATUSID\" VALUE=\"0\">"
"<INPUT
TYPE=\"hidden\" NAME=\"ERROR\" VALUE=\"0\">"
"<INPUT
TYPE=\"hidden\" NAME=\"FORMID\" VALUE=\"1\">"
"<INPUT
TYPE=\"hidden\" NAME=\"TERMID\" VALUE=\"0\">"
"<INPUT
TYPE=\"hidden\" NAME=\"SYNCID\" VALUE=\"0\">"
"<INPUT
TYPE=\"hidden\" NAME=\"VERSION\" VALUE=\""
WEBCLIENT_VERSION "\">"
	);

	sprintf( szTmp,	"Configuration Settings: <BR><font
face=\"Courier New\" color=\"blue\"><PRE>"
"Txn Monitor	=
<B>%s</B><BR>"
"Database protocol
= <B>%s</B><BR>"
"Max Connections
= <B>%d</B><BR>"
"# of Delivery Threads
= <B>%d</B><BR>"
"Max Pending
Deliveries = <B>%d</B><BR>"
	, szTxnMonNames[Reg.eTxnMon],
szDBNames[Reg.eDB_Protocol],
	Reg.dwMaxConnections,
dwNumDeliveryThreads, dwDelBuffSize );
	strcat( szBuffer, szTmp);

	if (Reg.eTxnMon == COM)
	{
		sprintf( szTmp,	"COM Single Pool	=
<B>%s</B><BR>",
			Reg.bCOM_SinglePool ? "YES" : "NO" );
		strcat( szBuffer, szTmp);
	}
	strcat( szBuffer, "</PRE></font>");

	if (Reg.eTxnMon == None)
		// connection options may be specified when not using a
txn monitor
		sprintf( szTmp,	"Please enter your database options
for this connection:<BR>"
"<font
face=\"Courier New\" color=\"blue\"><PRE>"
"DB Server
= <INPUT NAME=\"db_server\" SIZE=20 VALUE=\"%s\"><BR>"
"DB User
ID	= <INPUT NAME=\"db_user\" SIZE=20 VALUE=\"%s\"><BR>"
"DB
Password	= <INPUT NAME=\"db_passwd\" SIZE=20
VALUE=\"%s\"><BR>"
"DB Name
	= <INPUT NAME=\"db_name\" SIZE=20 VALUE=\"%s\"><BR>"

"</PRE></font>"
	, Reg.szDbServer, Reg.szDbUser,
Reg.szDbPassword, Reg.szDbName );
	else
		// if using a txn monitor, connection options are
determined from registry; can't
		// set per user.  show options fyi
		sprintf( szTmp,	"Database options which will be
used by the transaction monitor:<BR>"
"<font
face=\"Courier New\" color=\"blue\"><PRE>"
"DB Server
	= <B>%s</B><BR>"
"DB User
ID	= <B>%s</B><BR>"
"DB
Password	= <B>%s</B><BR>"
"DB Name
	= <B>%s</B><BR>"

"</PRE></font>"
	, Reg.szDbServer, Reg.szDbUser,
Reg.szDbPassword, Reg.szDbName );
	strcat( szBuffer, szTmp);
```

```
		sprintf( szTmp,		"Please enter your Warehouse and District for
this session:<BR>"
								"<font face=\"Courier
New\" color=\"blue\"><PRE>" );
		strcat( szBuffer, szTmp);
		strcat( szBuffer,		"Warehouse ID = <INPUT NAME=\"w_id\"
SIZE=4><BR>"
								"District ID
= <INPUT NAME=\"d_id\" SIZE=2><BR>"

"</PRE></font><HR>"
								"<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Submit\">"

"</FORM></BODY></HTML>");
}

/* FUNCTION: SubmitCmd
 *
 * PURPOSE:		This function allocated a new terminal id in the Term
structure array.
 *
 */

void SubmitCmd(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer)
{
		int			iNewTerm;
		char		*ptr = pECB->lpszQueryString;

		char		szVersion[32]		= { 0 };
		char		szServer[32]		= { 0 };
		char		szUser[32]		= "sa";
		char		szPassword[32]		= { 0 };
		char		szDatabase[32]		= "tpcc";

		// validate version field; the version field ensures that the RTE is
synchronized with the web client
		GetKeyValue(&ptr, "VERSION", szVersion, sizeof(szVersion),
ERR_VERSION_MISMATCH);
		if ( strcmp( szVersion, WEBCLIENT_VERSION ) )
			throw new CWEBCLNT_ERR(
ERR_VERSION_MISMATCH );

		if (Reg.eTxnMon == None)
		{
			// parse Server name
			GetKeyValue(&ptr, "db_server", szServer,
sizeof(szServer), ERR_NO_SERVER_SPECIFIED);
			// parse User name
			GetKeyValue(&ptr, "db_user", szUser, sizeof(szUser),
NO_ERR);
			// parse Password
			GetKeyValue(&ptr, "db_passwd", szPassword,
sizeof(szPassword), NO_ERR);
			// parse Database name
			GetKeyValue(&ptr, "db_name", szDatabase,
sizeof(szDatabase), NO_ERR);
		}

		// parse warehouse ID
		int w_id = GetIntKeyValue(&ptr, "w_id",
ERR_HTML_ILL_FORMED, ERR_W_ID_INVALID);
		if ( w_id < 1 )
			throw new CWEBCLNT_ERR( ERR_W_ID_INVALID
);

		// parse district ID
		int d_id = GetIntKeyValue(&ptr, "d_id",
ERR_HTML_ILL_FORMED, ERR_D_ID_INVALID);
		if ( d_id < 1 || d_id > 10 )
			throw new CWEBCLNT_ERR( ERR_D_ID_INVALID
);


		iNewTerm = TermAdd();

		Term.pClientData[iNewTerm].w_id = w_id;
		Term.pClientData[iNewTerm].d_id = d_id;

		try
		{
			if (Reg.eTxnMon == TUXEDO)
				Term.pClientData[iNewTerm].pTxn =
pCTPCC_TUXEDO_new();
			else if (Reg.eTxnMon == ENCINA)
				Term.pClientData[iNewTerm].pTxn =
pCTPCC_ENCINA_new();
			else if (Reg.eTxnMon == COM)
				Term.pClientData[iNewTerm].pTxn =
pCTPCC_COM_new( Reg.bCOM_SinglePool );
			else if (Reg.eDB_Protocol == ODBC)
				Term.pClientData[iNewTerm].pTxn =
pCTPCC_ODBC_new( szServer, szUser, szPassword, szMyComputerName,
szDatabase );
			else if (Reg.eDB_Protocol == DBLIB)
				Term.pClientData[iNewTerm].pTxn =
pCTPCC_DBLIB_new( szServer, szUser, szPassword, szMyComputerName,
szDatabase );
		}
		catch (...)
		{
			TermDelete(iNewTerm);
			throw;			// pass exception upward
		}

		MakeMainMenuForm(iNewTerm,
Term.pClientData[iNewTerm].iSyncId, szBuffer);
}

/* FUNCTION: StatsCmd
 *
 * PURPOSE:		This function returns to the browser the total number of
active terminal ids.
 *				This routine is for development/debugging
purposes.
 *
 */

void StatsCmd(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer)
{
		int i;
		int		iTotal;

		EnterCriticalSection(&TermCriticalSection);

		iTotal = 0;
		for(i=0; i<Term.iNumEntries; i++)
		{
			if (Term.pClientData[i].iNextFree == -1)
				iTotal++;
		}

		LeaveCriticalSection(&TermCriticalSection);

		wsprintf( szBuffer,
```

```
                                "<HTML><HEAD><TITLE>TPC-C Web
Client Stats</TITLE></HEAD>"
                                "<BODY><B><BIG> Total Active
Connections: %d </BIG></B><BR></BODY></HTML>"
                                , iTotal );
}

char *CWEBCLNT_ERR::ErrorText()
{
        static SERRORMSG errorMsgs[] =
        {
                {       ERR_COMMAND_UNDEFINED,
                        "Command undefined."

        },
                {       ERR_D_ID_INVALID,
                        "Invalid District ID Must be 1 to 10."
                                                        },
                {       ERR_DELIVERY_CARRIER_ID_RANGE,
        "Delivery Carrier ID out of range must be 1 - 10."
                },
                {       ERR_DELIVERY_CARRIER_INVALID,
        "Delivery Carrier ID invalid must be numeric 1 - 10."
        },
                {       ERR_DELIVERY_MISSING_OCD_KEY,
        "Delivery missing Carrier ID key \"OCD*\"."
                                        },
                {       ERR_DELIVERY_THREAD_FAILED,
                "Could not start delivery worker thread."
                                        },
                {       ERR_GETPROCADDR_FAILED,
                        "Could not map proc in DLL.  GetProcAddr
error.  DLL="                                   },
                {       ERR_HTML_ILL_FORMED,
                "Required key field is missing from HTML string."
                        },
                {       ERR_INVALID_SYNC_CONNECTION,
        "Invalid Terminal Sync ID."
                                                        },
                {       ERR_INVALID_TERMID,
                        "Invalid Terminal ID."

        },
                {       ERR_LOADDLL_FAILED,
                        "Load of DLL failed.  DLL="

},
                {       ERR_MAX_CONNECTIONS_EXCEEDED,
                "No connections available.  Max Connections is probably
too low."   },
                {       ERR_MISSING_REGISTRY_ENTRIES,
        "Required registry entries are missing.  Rerun INSTALL to correct."
},
                {
ERR_NEWORDER_CUSTOMER_INVALID,
"New Order customer id invalid data type, range = 1 to 3000."
},
                {       ERR_NEWORDER_CUSTOMER_KEY,
                "New Order missing Customer key \"CID*\"."
                                                },
                {       ERR_NEWORDER_DISTRICT_INVALID,
        "New Order District ID Invalid range 1 - 10."
                        },
                {       ERR_NEWORDER_FORM_MISSING_DID,
                "New Order missing District key \"DID*\"."
                                        },
                {       ERR_NEWORDER_ITEMID_INVALID,
        "New Order Item Id is wrong data type, must be numeric."
        },
                {       ERR_NEWORDER_ITEMID_RANGE,
                "New Order Item Id is out of range. Range = 1 to
999999."               },
                {
ERR_NEWORDER_ITEMID_WITHOUT_SUPPW,              "New Order
Item_Id field entered without a corresponding Supp_W."          },
                {       ERR_NEWORDER_MISSING_IID_KEY,
        "New Order missing Item Id key \"IID*\"."
                        },
                {       ERR_NEWORDER_MISSING_QTY_KEY,
                "New Order Missing Qty key \"Qty##*\"."
                                                },
                {
ERR_NEWORDER_MISSING_SUPPW_KEY,
"New Order missing Supp_W key \"SP##*\"."
                        },
                {       ERR_NEWORDER_NOITEMS_ENTERED,
                "New Order No order lines entered."
                                                        },
                {       ERR_NEWORDER_QTY_INVALID,
                "New Order Qty invalid must be numeric range 1 - 99."
                },
                {       ERR_NEWORDER_QTY_RANGE,
                        "New Order Qty is out of range. Range = 1 to
99."                                            },
                {
ERR_NEWORDER_QTY_WITHOUT_SUPPW,
"New Order Qty field entered without a corresponding Supp_W."
},
                {       ERR_NEWORDER_SUPPW_INVALID,
                "New Order Supp_W invalid data type must be numeric."
                        },
                {       ERR_NO_SERVER_SPECIFIED,
                "No Server name specified."

},
                {       ERR_ORDERSTATUS_CID_AND_CLT,
        "Order Status Only Customer ID or Last Name may be entered, not
both."       },
                {       ERR_ORDERSTATUS_CID_INVALID,
        "Order Status Customer ID invalid, range must be numeric 1 -
3000."       },
                {       ERR_ORDERSTATUS_CLT_RANGE,
                "Order Status Customer last name longer than 16
characters."                    },
                {       ERR_ORDERSTATUS_DID_INVALID,
        "Order Status District invalid, value must be numeric 1 - 10."
},
                {
ERR_ORDERSTATUS_MISSING_CID_CLT,                "Order
Status Either Customer ID or Last Name must be entered."
},
                {
ERR_ORDERSTATUS_MISSING_CID_KEY,                "Order
Status missing Customer key \"CID*\"."
        },
                {
ERR_ORDERSTATUS_MISSING_CLT_KEY,                "Order
Status missing Customer Last Name key \"CLT*\"."
},
                {
ERR_ORDERSTATUS_MISSING_DID_KEY,                "Order
Status missing District key \"DID*\"."
        },
```

```
                        {       ERR_PAYMENT_CDI_INVALID,
                        "Payment Customer district invalid must be numeric."
                        },
                        {       ERR_PAYMENT_CID_AND_CLT,
                        "Payment Only Customer ID or Last Name may be
entered, not both."     },
                        {       ERR_PAYMENT_CUSTOMER_INVALID,
                        "Payment Customer data type invalid, must be numeric."
                                },
                        {       ERR_PAYMENT_CWI_INVALID,
                        "Payment Customer Warehouse invalid, must be
numeric."                               },
                        {       ERR_PAYMENT_DISTRICT_INVALID,
                "Payment District ID is invalid, must be 1 - 10."
                        },
                        {       ERR_PAYMENT_HAM_INVALID,
                        "Payment Amount invalid data type must be numeric."
                                },
                        {       ERR_PAYMENT_HAM_RANGE,
                                "Payment Amount out of range, 0 - 9999.99."
                                                        },
                        {
ERR_PAYMENT_LAST_NAME_TO_LONG,
"Payment Customer last name longer than 16 characters."
                },
                        {       ERR_PAYMENT_MISSING_CDI_KEY,
                "Payment missing Customer district key \"CDI*\"."
                        },
                        {       ERR_PAYMENT_MISSING_CID_CLT,
                "Payment Either Customer ID or Last Name must be entered."
                },
                        {       ERR_PAYMENT_MISSING_CID_KEY,
                "Payment missing Customer Key \"CID*\"."
                                },
                        {       ERR_PAYMENT_MISSING_CLT_KEY,
                "Payment missing Customer Last Name key \"CLT*\"."
                        },
                        {       ERR_PAYMENT_MISSING_CWI_KEY,
                "Payment missing Customer Warehouse key \"CWI*\"."
                        },
                        {       ERR_PAYMENT_MISSING_DID_KEY,
                "Payment missing District Key \"DID*\"."
                                },
                        {       ERR_PAYMENT_MISSING_HAM_KEY,
                "Payment missing Amount key \"HAM*\"."
                                        },
                        {
ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY,           "Stock
Level; missing Threshold key \"TT*\"."
                },
                        {
ERR_STOCKLEVEL_THRESHOLD_INVALID,               "Stock
Level; Threshold value must be in the range = 1 - 99."          },
                        {
ERR_STOCKLEVEL_THRESHOLD_RANGE,
"Stock Level Threshold out of range, range must be 1 - 99."
},
                        {       ERR_VERSION_MISMATCH,
                        "Invalid version field.  RTE and Web Client are probably
out of sync." },
                        {       ERR_W_ID_INVALID,
                                "Invalid Warehouse ID."

                },
                        {       0,
                                                        ""

                                                                }
        };

        char szTmp[256];
        int i = 0;
        while (TRUE)
        {
                if (errorMsgs[i].szMsg[0] == 0)
                {
                        strcpy( szTmp, "Unknown error number." );
                        break;
                }
                if (m_Error == errorMsgs[i].iError)
                {
                        strcpy( szTmp, errorMsgs[i].szMsg );
                        break;
                }
                i++;
        }

        if (m_szTextDetail)
                strcat( szTmp, m_szTextDetail );
        if (m_SystemErr)
                wsprintf( szTmp+strlen(szTmp), "  Error=%d",
m_SystemErr );

        m_szErrorText = new char[strlen(szTmp)+1];
        strcpy( m_szErrorText, szTmp );
        return m_szErrorText;

}

/* FUNCTION: GetKeyValue
 *
 * PURPOSE:         This function parses a http formatted string for specific
key values.
 *
 * ARGUMENTS:     char                            *pQueryString
http string from client browser
 *                                      char
*pKey                           key value to look for
 *                                      char
*pValue                         character array into which to place key's value
 *                                      int
iMax                            maximum length of key value array.
 *                                      WEBERROR
err                             error value to throw
 *
 * RETURNS:                     nothing.
 *
 * ERROR:                       if (the pKey value is not found) then
 *                                                      if (err == 0)
 *                                                              return
(empty string)
 *                                                      else
 *                                                              throw
CWEBCLNT_ERR(err)
 *
 * COMMENTS:       http keys are formatted either KEY=value& or
KEY=value\0. This DLL formats
 *                                      TPC-C input fields in such a
manner that the keys can be extracted in the
 *                                      above manner.
 */

void GetKeyValue(char **pQueryString, char *pKey, char *pValue, int iMax,
WEBERROR err)
{
        char *ptr;
```

```
	if ( !(ptr=strstr(*pQueryString, pKey)) )
		goto ErrorExit;
	ptr += strlen(pKey);
	if ( *ptr != '=' )
		goto ErrorExit;
	ptr++;

	iMax--;  // one position is for terminating null
	while( *ptr && *ptr != '&' && iMax)
	{
		*pValue++ = *ptr++;
		iMax--;
	}
	*pValue = 0;  // terminating null

	*pQueryString = ptr;
	return;

ErrorExit:
	if (err != NO_ERR)
		throw new CWEBCLNT_ERR( err );
	*pValue = 0;  // return empty result string
}

/* FUNCTION: GetIntKeyValue
 *
 * PURPOSE:		This function parses a http formatted string for a specific
key value.
 *
 * ARGUMENTS:	char			*pQueryString
http string from client browser
 *			char
*pKey			key value to look for
 *			WEBERROR
NoKeyErr		error value to throw if key not found
 *			WEBERROR
NotIntErr		error value to throw if value not numeric
 *
 * RETURNS:		integer
 *
 * ERROR:		if (the pKey value is not found) then
 *				if (NoKeyErr !=
NO_ERR)
 *					throw
CWEBCLNT_ERR(err)
 *				else
 *					return 0
 *			else if (non-numeric char found)
then
 *				if (NotIntErr !=
NO_ERR) then
 *					throw
CWEBCLNT_ERR(err)
 *				else
 *					return 0
 *
 * COMMENTS:	http keys are formatted either KEY=value& or
KEY=value\0. This DLL formats
 *			TPC-C input fields in such a
manner that the keys can be extracted in the
 *			above manner.
 */

int GetIntKeyValue(char **pQueryString, char *pKey, WEBERROR
NoKeyErr, WEBERROR NotIntErr)
{
	char *ptr0;
	char *ptr;

	if ( !(ptr=strstr(*pQueryString, pKey)) )
		goto ErrorNoKey;
	ptr += strlen(pKey);
	if ( *ptr != '=' )
		goto ErrorNoKey;
	ptr++;

	ptr0 = ptr;		// remember starting point
	// scan string until a terminator (null or &) or a non-digit
	while( *ptr && *ptr != '&' && isdigit(*ptr) )
		ptr++;

	// make sure we stopped scanning for the right reason
	if ((ptr0 == ptr) || (*ptr && *ptr != '&'))
	{
		if (NotIntErr != NO_ERR)
			throw new CWEBCLNT_ERR( NoKeyErr );
		return 0;
	}

	*pQueryString = ptr;
	return atoi(ptr0);

ErrorNoKey:
	if (NoKeyErr != NO_ERR)
		throw new CWEBCLNT_ERR( NoKeyErr );
	return 0;
}

/* FUNCTION: TermInit
 *
 * PURPOSE:		This function initializes the client terminal structure; it is
called when the TPCC.DLL
 *				is first loaded by the inet service.
 *
 */

void TermInit(void)
{
	EnterCriticalSection(&TermCriticalSection);

	Term.iMasterSyncId  = 1;
	Term.iNumEntries    = Reg.dwMaxConnections+1;

	Term.pClientData    = NULL;
	Term.pClientData    =
(PCLIENTDATA)malloc(Term.iNumEntries * sizeof(CLIENTDATA));
	if (Term.pClientData == NULL)
	{
		LeaveCriticalSection(&TermCriticalSection);
		throw new CWEBCLNT_ERR(
ERR_MEM_ALLOC_FAILED );
	}

	ZeroMemory( Term.pClientData, Term.iNumEntries *
sizeof(CLIENTDATA) );

	Term.iFreeList			= Term.iNumEntries-1;
	// build free list
	// note: Term.pClientData[0].iNextFree gets set to -1, which marks it
as "in use".
	//	This is intentional, as the zero entry is used as an anchor and
never
	//			allocated as an actual terminal.
	for(int i=0; i<Term.iNumEntries; i++)
		Term.pClientData[i].iNextFree = i-1;
```

```
	LeaveCriticalSection(&TermCriticalSection);
}

/* FUNCTION: TermDeleteAll
 *
 * PURPOSE:		This function frees allocated resources associated with
the terminal structure.
 *
 * ARGUMENTS:	none
 *
 * RETURNS:			None
 *
 * COMMENTS:	This function is called only when the inet service unloads
the TPCC.DLL
 *
 */

void TermDeleteAll(void)
{
	EnterCriticalSection(&TermCriticalSection);

	for(int i=1; i<Term.iNumEntries; i++)
	{
		if (Term.pClientData[i].iNextFree == -1)
			delete Term.pClientData[i].pTxn;
	}

	Term.iFreeList			= 0;
	Term.iNumEntries	= 0;
	if ( Term.pClientData )
		free(Term.pClientData);
	Term.pClientData	= NULL;

	LeaveCriticalSection(&TermCriticalSection);
}

/* FUNCTION: TermAdd
 *
 * PURPOSE:		This function assigns a terminal id which is used to
identify a client browser.
 *
 * RETURNS:			int			assigned terminal id
 *
 */

int TermAdd(void)
{
	DWORD	i;
	int			iNewTerm, iTickCount;

	if (Term.iNumEntries == 0)
		return -1;

	EnterCriticalSection(&TermCriticalSection);
	if (Term.iFreeList != 0)
	{	// position is available
		iNewTerm = Term.iFreeList;
		Term.iFreeList =
Term.pClientData[iNewTerm].iNextFree;
		Term.pClientData[iNewTerm].iNextFree = -1;  //
indicates this position is in use
	}
	else
	{	// no open slots, so find the slot that hasn't been used in
the longest time and reuse it
		for(iNewTerm=1, i=1, iTickCount=0x7FFFFFFF;
i<Reg.dwMaxConnections; i++)
		{
			if (iTickCount >
Term.pClientData[i].iTickCount)
			{
				iTickCount =
Term.pClientData[i].iTickCount;
				iNewTerm = i;
			}
		}
		// if oldest term is less than one minute old, it probably
means that more connections
		// are being attempted than were specified as "Max
Connections" at install.  In this case,
		// do not bump existing connection; instead, return error
to requestor.
		if ((GetTickCount() - iTickCount) < 60000)
		{
			LeaveCriticalSection(&TermCriticalSection);
			throw new CWEBCLNT_ERR(
ERR_MAX_CONNECTIONS_EXCEEDED );
		}
	}

	Term.pClientData[iNewTerm].iTickCount = GetTickCount();
	Term.pClientData[iNewTerm].iSyncId = Term.iMasterSyncId++;
	Term.pClientData[iNewTerm].pTxn = NULL;

	LeaveCriticalSection(&TermCriticalSection);
	return iNewTerm;
}

/* FUNCTION: TermDelete
 *
 * PURPOSE:		This function makes a terminal entry in the Term array
available for reuse.
 *
 * ARGUMENTS:	int
id			Terminal id of client exiting
 *
 */

void TermDelete(int id)
{
	if ( id > 0 && id < Term.iNumEntries )
	{
		delete Term.pClientData[id].pTxn;

		// put onto free list
		EnterCriticalSection(&TermCriticalSection);

		Term.pClientData[id].iNextFree = Term.iFreeList;
		Term.iFreeList = id;

		LeaveCriticalSection(&TermCriticalSection);
	}
}


/* FUNCTION: MakeErrorForm
 */

void ErrorForm(EXTENSION_CONTROL_BLOCK *pECB, int iType, int
iErrorNum, int iTermId, int iSyncId, char *szErrorText, char *szBuffer )
{
	wsprintf(szBuffer,
		"<HTML><HEAD><TITLE>TPC-C
Error</TITLE></HEAD><BODY>"
		"<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
```

```
                        "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                        "<BOLD>An Error Occurred</BOLD><BR><BR>"
                        "%s"
                        "<BR><BR><HR>"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..NewOrder..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                        "</FORM></BODY></HTML>"
                        , iType, iErrorNum, MAIN_MENU_FORM, iTermId,
iSyncId, szErrorText );
}

/* FUNCTION: MakeMainMenuForm
 */

void MakeMainMenuForm(int iTermId, int iSyncId, char *szForm)
{
        wsprintf(szForm,
                        "<HTML><HEAD><TITLE>TPC-C Main
Menu</TITLE></HEAD><BODY>"
                        "Select Desired Transaction.<BR><HR>"
                        "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"0\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..NewOrder..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                        "</FORM></BODY></HTML>"
                        , MAIN_MENU_FORM, iTermId, iSyncId);
}

/* FUNCTION: MakeStockLevelForm
 *
 * PURPOSE:         This function constructs the Stock Level HTML page.
 *
 * COMMENTS:        The internal client buffer is created when the terminal id
is assigned and should not
 *                                                  be freed except when the client
terminal id is no longer needed.
 */

void MakeStockLevelForm(int iTermId, STOCK_LEVEL_DATA
*pStockLevelData, BOOL bInput, char *szForm)
{
        int             c;

        c = wsprintf(szForm,
                        "<HTML><HEAD><TITLE>TPC-C Stock
Level</TITLE></HEAD><FORM ACTION=\"tpcc.dll\"
METHOD=\"GET\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"0\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                        "<PRE><font face=\"Courier\">
Stock-Level<BR>"
                        "Warehouse: %4.4d   District: %2.2d<BR> <BR>",
                        STOCK_LEVEL_FORM, iTermId,
Term.pClientData[iTermId].iSyncId,
                        Term.pClientData[iTermId].w_id,
Term.pClientData[iTermId].d_id);

        if ( bInput )
        {
                strcpy(szForm+c,
                        "Stock Level Threshold: <INPUT
NAME=\"TT*\" SIZE=2><BR> <BR>"
                        "low stock:    </font><BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR> <BR>"
                        " <BR> <BR> <BR> <BR> <BR> <BR>
<BR></PRE><HR>"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Process\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Menu\">"
                        "</FORM></HTML>" );
        }
        else
        {
                wsprintf(szForm+c,
                        "Stock Level Threshold: %2.2d<BR> <BR>"
                        "low stock: %3.3d</font> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR>"
                        " <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR></PRE><HR>"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..NewOrder..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
```

```
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                                "</FORM></HTML>"
                                , pStockLevelData->threshold,
pStockLevelData->low_stock);
        }
}

/* FUNCTION: MakeNewOrderForm
 *
 * COMMENTS:    The internal client buffer is created when the terminal id
is assigned and should not
 *                                      be freed except when the client
terminal id is no longer needed.
 */

void MakeNewOrderForm(int iTermId, NEW_ORDER_DATA
*pNewOrderData, BOOL bInput, char *szForm)
{
        int                     i, c;
        BOOL    bValid;
        static  char szBR[] = " <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR>";

        if (!bInput)
                assert( pNewOrderData->exec_status_code == eOK ||
pNewOrderData->exec_status_code == eInvalidItem );

        bValid = (bInput || (pNewOrderData->exec_status_code == eOK));

        c = wsprintf(szForm,
                "<HTML><HEAD><TITLE>TPC-C New
Order</TITLE></HEAD><BODY>"
                "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
                "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                "<PRE><font face=\"Courier\">
New Order<BR>"
                , bValid ? 0 : ERR_BAD_ITEM_ID,
NEW_ORDER_FORM, iTermId, Term.pClientData[iTermId].iSyncId);

        if ( bInput )
        {
                c += wsprintf(szForm+c, "Warehouse: %4.4d   ",
Term.pClientData[iTermId].w_id );

                strcpy( szForm+c,
                        "District: <INPUT NAME=\"DID*\"
SIZE=1>                 Date:<BR>"
                        "Customer:  <INPUT NAME=\"CID*\"
SIZE=4>   Name:                 Credit:     %Disc:<BR>"
                        "Order Number:          Number of Lines:
 W_tax:        D_tax:<BR> <BR>"
                        " Supp_W  Item_Id  Item Name                Qty
Stock  B/G  Price    Amount<BR>"
                        "  <INPUT NAME=\"SP00*\" SIZE=4>
<INPUT NAME=\"IID00*\" SIZE=6>                  <INPUT
NAME=\"Qty00*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP01*\" SIZE=4>
<INPUT NAME=\"IID01*\" SIZE=6>                  <INPUT
NAME=\"Qty01*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP02*\" SIZE=4>
<INPUT NAME=\"IID02*\" SIZE=6>                  <INPUT
NAME=\"Qty02*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP03*\" SIZE=4>
<INPUT NAME=\"IID03*\" SIZE=6>                  <INPUT
NAME=\"Qty03*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP04*\" SIZE=4>
<INPUT NAME=\"IID04*\" SIZE=6>                  <INPUT
NAME=\"Qty04*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP05*\" SIZE=4>
<INPUT NAME=\"IID05*\" SIZE=6>                  <INPUT
NAME=\"Qty05*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP06*\" SIZE=4>
<INPUT NAME=\"IID06*\" SIZE=6>                  <INPUT
NAME=\"Qty06*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP07*\" SIZE=4>
<INPUT NAME=\"IID07*\" SIZE=6>                  <INPUT
NAME=\"Qty07*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP08*\" SIZE=4>
<INPUT NAME=\"IID08*\" SIZE=6>                  <INPUT
NAME=\"Qty08*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP09*\" SIZE=4>
<INPUT NAME=\"IID09*\" SIZE=6>                  <INPUT
NAME=\"Qty09*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP10*\" SIZE=4>
<INPUT NAME=\"IID10*\" SIZE=6>                  <INPUT
NAME=\"Qty10*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP11*\" SIZE=4>
<INPUT NAME=\"IID11*\" SIZE=6>                  <INPUT
NAME=\"Qty11*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP12*\" SIZE=4>
<INPUT NAME=\"IID12*\" SIZE=6>                  <INPUT
NAME=\"Qty12*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP13*\" SIZE=4>
<INPUT NAME=\"IID13*\" SIZE=6>                  <INPUT
NAME=\"Qty13*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP14*\" SIZE=4>
<INPUT NAME=\"IID14*\" SIZE=6>                  <INPUT
NAME=\"Qty14*\" SIZE=1><BR>"
                        "Execution Status:
Total:<BR>"
                        "</font></PRE><HR>"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Process\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Menu\">"
                        "</FORM></HTML>"
                        );
        }
        else
        {
                 c += wsprintf(szForm+c, "Warehouse: %4.4d   District:
%2.2d                   Date: ",
                        pNewOrderData->w_id,
                        pNewOrderData->d_id);

                 if ( bValid )
                 {
                        c += wsprintf(szForm+c,
"%2.2d-%2.2d-%4.4d %2.2d:%2.2d:%2.2d",
                                pNewOrderData->o_entry_d.day,
pNewOrderData->o_entry_d.month,
                                pNewOrderData->o_entry_d.year,
                                pNewOrderData->o_entry_d.hour,
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pNewOrderData->o_entry_d.minute,

pNewOrderData->o_entry_d.second);
                }

                c += wsprintf(szForm+c, "<BR>Customer:  %4.4d
Name: %-16s   Credit: %-2s   ",
                        pNewOrderData->c_id,
pNewOrderData->c_last, pNewOrderData->c_credit);

                if ( bValid )
                {
                        c += sprintf(szForm+c,
                                                "%%Disc:
%5.2f        <BR>"
                                                "Order
Number: %8.8d  Number of Lines: %2.2d       W_tax: %5.2f   D_tax: %5.2f
<BR> <BR>"
                                                " Supp_W
Item_Id  Item Name              Qty  Stock  B/G  Price    Amount<BR>",

100.0*pNewOrderData->c_discount,
                                        pNewOrderData->o_id,
                                        pNewOrderData->o_ol_cnt,
                                        100.0 * pNewOrderData->w_tax,
                                        100.0 * pNewOrderData->d_tax);

                                for(i=0; i<pNewOrderData->o_ol_cnt; i++)
                                {
                                        c += sprintf(szForm+c, "  %4.4d
%6.6d   %-24s %2.2d    %3.3d    %1.1s   $%6.2f  $%7.2f  <BR>",

pNewOrderData->OL[i].ol_supply_w_id,

pNewOrderData->OL[i].ol_i_id,

pNewOrderData->OL[i].ol_i_name,

pNewOrderData->OL[i].ol_quantity,

pNewOrderData->OL[i].ol_stock,

pNewOrderData->OL[i].ol_brand_generic,

pNewOrderData->OL[i].ol_i_price,

pNewOrderData->OL[i].ol_amount );
                                }
                }
                else
                {
                        c += wsprintf(szForm+c,
                                        "%Disc:<BR>"
                                        "Order Number: %8.8d  Number
of Lines:          W_tax:       D_tax:<BR> <BR>"
                                        " Supp_W  Item_Id  Item Name
      Qty  Stock  B/G  Price    Amount<BR>"
                                        , pNewOrderData->o_id);

                        i = 0;
                }

                strncpy( szForm+c, szBR, (15-i)*5 );
                c += (15-i)*5;

                if ( bValid )
                        c += sprintf(szForm+c, "Execution Status:
Transaction commited.          Total:  $%8.2f  ",
                                        pNewOrderData->total_amount);
                else
                        c += wsprintf(szForm+c, "Execution Status:
Item number is not valid.      Total:");

                strcpy(szForm+c,
                        " <BR></font></PRE><HR>"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..NewOrder..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                        "</FORM></HTML>"
                        );
        }
}

/* FUNCTION: MakePaymentForm
 *
 * COMMENTS:      The internal client buffer is created when the terminal id
is assigned and should not
 *                                      be freed except when the client
terminal id is no longer needed.
 */

void MakePaymentForm(int iTermId, PAYMENT_DATA *pPaymentData,
BOOL bInput, char *szForm)
{
        int c;

        c = wsprintf(szForm,
                "<HTML><HEAD><TITLE>TPC-C
Payment</TITLE></HEAD><BODY>"
                "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
                "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                "<PRE><font face=\"Courier\">
Payment<BR>"
                "Date: "
                , PAYMENT_FORM, iTermId,
Term.pClientData[iTermId].iSyncId);

        if ( !bInput )
        {
                c += wsprintf(szForm+c, "%2.2d-%2.2d-%4.4d
%2.2d:%2.2d:%2.2d",
                        pPaymentData->h_date.day,
                        pPaymentData->h_date.month,
                        pPaymentData->h_date.year,
                        pPaymentData->h_date.hour,
                        pPaymentData->h_date.minute,
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```
                                pPaymentData->h_date.second);
        }

        if ( bInput )
        {
                c += wsprintf(szForm+c,
                                "<BR> <BR>Warehouse: %4.4d"
                                "                District: <INPUT
NAME=\"DID*\" SIZE=1><BR> <BR> <BR> <BR> <BR>"
                                "Customer: <INPUT NAME=\"CID*\"
SIZE=4>"
                                "Cust-Warehouse: <INPUT NAME=\"CWI*\"
SIZE=4>  "
                                "Cust-District: <INPUT NAME=\"CDI*\"
SIZE=1><BR>"
                                "Name:                <INPUT
NAME=\"CLT*\" SIZE=16>          Since:<BR>"
                                "                                Credit:<BR>"
                                "                                Disc:<BR>"
                                "                                Phone:<BR>
<BR>"
                                "Amount Paid:        $<INPUT
NAME=\"HAM*\" SIZE=7>     New Cust-Balance:<BR>"
                                "Credit Limit:<BR> <BR>Cust-Data: <BR>
<BR> <BR> <BR> <BR></font></PRE><HR>"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Process\"><INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Menu\">"
                                "</BODY></FORM></HTML>"
                                , Term.pClientData[iTermId].w_id);
        }
        else
        {
                c += wsprintf(szForm+c,
                                "<BR> <BR>Warehouse: %4.4d
  District: %2.2d<BR>"
                                "%-20s                %-20s<BR>"
                                "%-20s                %-20s<BR>"
                                "%-20s %-2s %5.5s-%4.4s       %-20s %-2s
%5.5s-%4.4s<BR> <BR>"
                                "Customer: %4.4d  Cust-Warehouse: %4.4d
Cust-District: %2.2d<BR>"
                                "Name:   %-16s %-2s %-16s     Since:
%2.2d-%2.2d-%4.4d<BR>"
                                "       %-20s                Credit: %-2s<BR>"

                                , Term.pClientData[iTermId].w_id,
pPaymentData->d_id
                                , pPaymentData->w_street_1,
pPaymentData->d_street_1
                                , pPaymentData->w_street_2,
pPaymentData->d_street_2
                                , pPaymentData->w_city,
pPaymentData->w_state, pPaymentData->w_zip, pPaymentData->w_zip+5
                                , pPaymentData->d_city,
pPaymentData->d_state, pPaymentData->d_zip, pPaymentData->d_zip+5
                                , pPaymentData->c_id,
pPaymentData->c_w_id,           pPaymentData->c_d_id
                                , pPaymentData->c_first,
pPaymentData->c_middle, pPaymentData->c_last
                                , pPaymentData->c_since.day,
pPaymentData->c_since.month,   pPaymentData->c_since.year
                                , pPaymentData->c_street_1,
pPaymentData->c_credit
                                );

      c += sprintf(szForm+c,
                                "       %-20s                %%Disc:
%5.2f<BR>",
                                pPaymentData->c_street_2,
100.0*pPaymentData->c_discount);

                c += wsprintf(szForm+c,
                                "       %-20s %-2s %5.5s-%4.4s       Phone:
%6.6s-%3.3s-%3.3s-%4.4s<BR> <BR>",
                                pPaymentData->c_city,
pPaymentData->c_state, pPaymentData->c_zip, pPaymentData->c_zip+5,
                                pPaymentData->c_phone,
pPaymentData->c_phone+6, pPaymentData->c_phone+9,
pPaymentData->c_phone+12 );

                c += sprintf(szForm+c,
                                "Amount Paid:        $%7.2f     New
Cust-Balance: $%14.2f<BR>"
                                "Credit Limit:   $%13.2f<BR> <BR>"
                                , pPaymentData->h_amount,
pPaymentData->c_balance
                                , pPaymentData->c_credit_lim
                                );

                if ( pPaymentData->c_credit[0] == 'B' &&
pPaymentData->c_credit[1] == 'C' )
                        c += wsprintf(szForm+c,
                                                "Cust-Data:
%-50.50s<BR>        %-50.50s<BR>        %-50.50s<BR>
%-50.50s<BR>",
                                                pPaymentData->c_data,
pPaymentData->c_data+50, pPaymentData->c_data+100,
pPaymentData->c_data+150 );
                else
                        strcpy(szForm+c, "Cust-Data: <BR> <BR>
<BR> <BR>");

                strcat(szForm,          " <BR></font></PRE><HR>"
                                                                "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..NewOrder..\">"
                                                                "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Payment..\">"
                                                                "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Delivery..\">"
                                                                "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Order-Status..\">"
                                                                "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Stock-Level..\">"
                                                                "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Exit..\">"

"</BODY></FORM></HTML>");
        }

}

/* FUNCTION: MakeOrderStatusForm
 *
 * COMMENTS:        The internal client buffer is created when the terminal id
is assigned and should not
 *                                        be freed except when the client
terminal id is no longer needed.
 */

void MakeOrderStatusForm(int iTermId, ORDER_STATUS_DATA
*pOrderStatusData, BOOL bInput, char *szForm)
{
        int                     i, c;
```

```
	static char szBR[] = " <BR> <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR>";

	c = wsprintf(szForm,
		"<HTML><HEAD><TITLE>TPC-C
Order-Status</TITLE></HEAD><BODY>"
		"<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
		"<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"0\">"
		"<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
		"<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
		"<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
		"<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
		"<PRE><font face=\"Courier\">
Order-Status<BR>"
		"Warehouse: %4.4d   ",
		ORDER_STATUS_FORM, iTermId,
Term.pClientData[iTermId].iSyncId, Term.pClientData[iTermId].w_id);

	if ( bInput )
	{
		strcpy(szForm+c,
			"District: <INPUT NAME=\"DID*\"
SIZE=1><BR>"
			"Customer: <INPUT NAME=\"CID*\"
SIZE=4>   Name:              <INPUT NAME=\"CLT*\" SIZE=23><BR>"
			"Cust-Balance:<BR> <BR>"
			"Order-Number:          Entry-Date:
   Carrier-Number:<BR>"
			"Supply-W    Item-Id   Qty    Amount
Delivery-Date<BR> <BR> <BR> <BR> <BR>"
			" <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR></font></PRE>"
			"<HR><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Process\"><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Menu\">"
			"</BODY></FORM></HTML>" );
	}
	else
	{
		c += wsprintf(szForm+c,
			"District: %2.2d<BR>"
			"Customer: %4.4d   Name: %-16s %-2s
%-16s<BR>",
			pOrderStatusData->d_id,
pOrderStatusData->c_id,
			pOrderStatusData->c_first,
pOrderStatusData->c_middle, pOrderStatusData->c_last);

		c += sprintf(szForm+c, "Cust-Balance: $%9.2f<BR>
<BR>",
			pOrderStatusData->c_balance);

		c += wsprintf(szForm+c,
			"Order-Number: %8.8d   Entry-Date:
%2.2d-%2.2d-%4.4d %2.2d:%2.2d:%2.2d   Carrier-Number: %2.2d<BR>"
			"Supply-W    Item-Id   Qty    Amount
Delivery-Date<BR>",
			pOrderStatusData->o_id,
			pOrderStatusData->o_entry_d.day,
			pOrderStatusData->o_entry_d.month,
			pOrderStatusData->o_entry_d.year,
			pOrderStatusData->o_entry_d.hour,
			pOrderStatusData->o_entry_d.minute,
			pOrderStatusData->o_entry_d.second,
			pOrderStatusData->o_carrier_id);

		for(i=0; i< pOrderStatusData->o_ol_cnt; i++)
		{
			c += sprintf(szForm+c, "  %4.4d      %6.6d
%2.2d    $%8.2f     %2.2d-%2.2d-%4.4d<BR>",

pOrderStatusData->OL[i].ol_supply_w_id,
				pOrderStatusData->OL[i].ol_i_id,

pOrderStatusData->OL[i].ol_quantity,

pOrderStatusData->OL[i].ol_amount,

pOrderStatusData->OL[i].ol_delivery_d.day,

pOrderStatusData->OL[i].ol_delivery_d.month,

pOrderStatusData->OL[i].ol_delivery_d.year);
		}

		strncpy( szForm+c, szBR, (15-i)*5 );
		c += (15-i)*5;

		strcpy(szForm+c,
			"</font></PRE><HR><INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..NewOrder..\">"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
			"</BODY></FORM></HTML>" );
	}
}

/* FUNCTION: MakeDeliveryForm
 *
 * COMMENTS:	The internal client buffer is created when the terminal id
is assigned and should not
 *				be freed except when the client
terminal id is no longer needed.
 */

void MakeDeliveryForm(int iTermId, DELIVERY_DATA *pDeliveryData,
BOOL bInput, char *szForm)
{
	int		c;

	c = wsprintf(szForm,
		"<HTML><HEAD><TITLE>TPC-C
Delivery</TITLE></HEAD><BODY>"
		"<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
		"<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"%d\">"
		"<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
		"<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
		"<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
```

```
                "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                "<PRE><font face=\"Courier\">
Delivery<BR>"
                "Warehouse: %4.4d<BR> <BR>",
                (!bInput && (pDeliveryData->exec_status_code !=
eOK)) ? ERR_TYPE_DELIVERY_POST : 0,
                DELIVERY_FORM, iTermId,
Term.pClientData[iTermId].iSyncId, Term.pClientData[iTermId].w_id);

        if ( bInput )
        {
                strcpy( szForm+c,
                        "Carrier Number: <INPUT NAME=\"OCD*\"
SIZE=1><BR> <BR>"
                        "Execution Status: <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR>"
                        " <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> </font></PRE><HR>"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Process\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Menu\">"
                        "</BODY></FORM></HTML>" );
        }
        else
        {
                wsprintf( szForm+c,
                        "Carrier Number: %2.2d<BR> <BR>"
                        "Execution Status: %s <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR>"
                        " <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> </font></PRE>"
                        "<HR><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..NewOrder..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                        "</BODY></FORM></HTML>"

                        , pDeliveryData->o_carrier_id,
                        (pDeliveryData->exec_status_code == eOK) ?
"Delivery has been queued." : "Delivery Post Failed     "
                        );
        }
}

/* FUNCTION: ProcessNewOrderForm
 *
 * PURPOSE:          This function gets and validates the input data from the
new order form
 *                          filling in the required input variables. it then
calls the SQLNewOrder
 *                          transaction, constructs the output form and
writes it back to client
 *                          browser.
 */

void ProcessNewOrderForm(EXTENSION_CONTROL_BLOCK  *pECB, int
iTermId, char *szBuffer)
{
        PNEW_ORDER_DATA                 pNewOrder;

        pNewOrder =
Term.pClientData[iTermId].pTxn->BuffAddr_NewOrder();

        ZeroMemory(pNewOrder, sizeof(NEW_ORDER_DATA));
        pNewOrder->w_id = Term.pClientData[iTermId].w_id;
        GetNewOrderData(pECB->lpszQueryString, pNewOrder);

        Term.pClientData[iTermId].pTxn->NewOrder();

        pNewOrder =
Term.pClientData[iTermId].pTxn->BuffAddr_NewOrder();
        MakeNewOrderForm(iTermId, pNewOrder, OUTPUT_FORM,
szBuffer );
}

/* FUNCTION: void ProcessPaymentForm
 *
 * PURPOSE:          This function gets and validates the input data from the
payment form
 *                          filling in the required input variables. It then
calls the SQLPayment
 *                          transaction, constructs the output form and
writes it back to client
 *                          browser.
 *
 * ARGUMENTS:     EXTENSION_CONTROL_BLOCK          *pECB
passed in structure pointer from inetsrv.
 *                                  int
 *                      iTermId     client browser terminal id
 *
 */

void ProcessPaymentForm(EXTENSION_CONTROL_BLOCK *pECB, int
iTermId, char *szBuffer)
{
        PPAYMENT_DATA pPayment;

        pPayment =
Term.pClientData[iTermId].pTxn->BuffAddr_Payment();
        ZeroMemory(pPayment, sizeof(PAYMENT_DATA));
        pPayment->w_id = Term.pClientData[iTermId].w_id;
        GetPaymentData(pECB->lpszQueryString, pPayment);

        Term.pClientData[iTermId].pTxn->Payment();

        pPayment =
Term.pClientData[iTermId].pTxn->BuffAddr_Payment();
        MakePaymentForm(iTermId, pPayment, OUTPUT_FORM,
szBuffer);
}

/* FUNCTION: ProcessOrderStatusForm
 *
 * PURPOSE:          This function gets and validates the input data from the
Order Status
 *                          form filling in the required input variables. It
then calls the
 *                          SQLOrderStatus transaction, constructs the
output form and writes it
 *                          back to client browser.
 *
 * ARGUMENTS:     EXTENSION_CONTROL_BLOCK          *pECB
passed in structure pointer from inetsrv.
 *                                  int
 *                      iTermId     client browser terminal id
 *
```

```
 */

void ProcessOrderStatusForm(EXTENSION_CONTROL_BLOCK *pECB, int
iTermId, char *szBuffer)
{
        PORDER_STATUS_DATA      pOrderStatus;

        pOrderStatus =
Term.pClientData[iTermId].pTxn->BuffAddr_OrderStatus();
        ZeroMemory(pOrderStatus, sizeof(ORDER_STATUS_DATA));
        pOrderStatus->w_id = Term.pClientData[iTermId].w_id;
        GetOrderStatusData(pECB->lpszQueryString, pOrderStatus);

        Term.pClientData[iTermId].pTxn->OrderStatus();

        pOrderStatus =
Term.pClientData[iTermId].pTxn->BuffAddr_OrderStatus();
        MakeOrderStatusForm(iTermId, pOrderStatus, OUTPUT_FORM,
szBuffer);
}

/* FUNCTION: ProcessDeliveryForm
 *
 * PURPOSE:         This function gets and validates the input data from the
delivery form
 *                              filling in the required input variables. It then
calls the PostDeliveryInfo
 *                              Api, The client is then informed that the
transaction has been posted.
 *
 * ARGUMENTS:    EXTENSION_CONTROL_BLOCK         *pECB
passed in structure pointer from inetsrv.
 *                                      int
 *                      iTermId     client browser terminal id
 *
 */

void ProcessDeliveryForm(EXTENSION_CONTROL_BLOCK *pECB, int
iTermId, char *szBuffer)
{
        char        *ptr = pECB->lpszQueryString;

        PDELIVERY_DATA pDelivery;

        pDelivery =
Term.pClientData[iTermId].pTxn->BuffAddr_Delivery();
        ZeroMemory(pDelivery, sizeof(DELIVERY_DATA));
        pDelivery->w_id = Term.pClientData[iTermId].w_id;

        pDelivery->o_carrier_id             = GetIntKeyValue(&ptr, "OCD*",
ERR_DELIVERY_MISSING_OCD_KEY,
ERR_DELIVERY_CARRIER_INVALID);
        if ( pDelivery->o_carrier_id > 10 || pDelivery->o_carrier_id < 1 )
                throw new CWEBCLNT_ERR(
ERR_DELIVERY_CARRIER_ID_RANGE );

        if (dwNumDeliveryThreads)
        {
                //post delivery info
                if ( PostDeliveryInfo(pDelivery->w_id,
pDelivery->o_carrier_id) )
                        pDelivery->exec_status_code =
eDeliveryFailed;
                else
                        pDelivery->exec_status_code = eOK;
        }
        else // delivery is done synchronously if no delivery threads
configured
                Term.pClientData[iTermId].pTxn->Delivery();

        pDelivery =
Term.pClientData[iTermId].pTxn->BuffAddr_Delivery();
        MakeDeliveryForm(iTermId, pDelivery, OUTPUT_FORM,
szBuffer);
}

/* FUNCTION: ProcessStockLevelForm
 *
 * PURPOSE:         This function gets and validates the input data from the
Stock Level
 *                              form filling in the required input variables. It
then calls the
 *                              SQLStockLevel transaction, constructs the
output form and writes it
 *                              back to client browser.
 *
 * ARGUMENTS:    EXTENSION_CONTROL_BLOCK         *pECB
passed in structure pointer from inetsrv.
 *                                      int
 *                      iTermId     client browser terminal id
 *
 */

void ProcessStockLevelForm(EXTENSION_CONTROL_BLOCK *pECB, int
iTermId, char *szBuffer)
{
        char                *ptr = pECB->lpszQueryString;

        PSTOCK_LEVEL_DATA       pStockLevel;

        pStockLevel =
Term.pClientData[iTermId].pTxn->BuffAddr_StockLevel();
        ZeroMemory( pStockLevel, sizeof(STOCK_LEVEL_DATA) );

        pStockLevel->w_id = Term.pClientData[iTermId].w_id;
        pStockLevel->d_id = Term.pClientData[iTermId].d_id;

        pStockLevel->threshold = GetIntKeyValue(&ptr, "TT*",
ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY,
ERR_STOCKLEVEL_THRESHOLD_INVALID);
        if ( pStockLevel->threshold >= 100 || pStockLevel->threshold < 0 )
                throw new CWEBCLNT_ERR(
ERR_STOCKLEVEL_THRESHOLD_RANGE );

        Term.pClientData[iTermId].pTxn->StockLevel();

        pStockLevel =
Term.pClientData[iTermId].pTxn->BuffAddr_StockLevel();
        MakeStockLevelForm(iTermId, pStockLevel, OUTPUT_FORM,
szBuffer);
}

/* FUNCTION: GetNewOrderData
 *
 * PURPOSE:         This function extracts and validates the new order form
data from an http command string.
 *
 * ARGUMENTS:    LPSTR                           lpszQueryString
client browser http command string
 *                                      NEW_ORDER_DATA
*pNewOrderData              pointer to new order data structure
 *
 */

void GetNewOrderData(LPSTR lpszQueryString, NEW_ORDER_DATA
*pNewOrderData)
```

```
{
	char	szTmp[26];
	int		i;
	short	items;
	int		ol_i_id, ol_quantity;
	char	*ptr = lpszQueryString;

	static char szSP[MAX_OL_NEW_ORDER_ITEMS][6] =
		{ "SP00*", "SP01*", "SP02*", "SP03*", "SP04*",
		  "SP05*", "SP06*", "SP07*", "SP08*", "SP09*",
		  "SP10*", "SP11*", "SP12*", "SP13*", "SP14*" };
	static char szIID[MAX_OL_NEW_ORDER_ITEMS][7] =
		{ "IID00*", "IID01*", "IID02*", "IID03*", "IID04*",
		  "IID05*", "IID06*", "IID07*", "IID08*", "IID09*",
		  "IID10*", "IID11*", "IID12*", "IID13*", "IID14*" };
	static char szQty[MAX_OL_NEW_ORDER_ITEMS][7] =
		{ "Qty00*", "Qty01*", "Qty02*", "Qty03*", "Qty04*",
		  "Qty05*", "Qty06*", "Qty07*", "Qty08*", "Qty09*",
		  "Qty10*", "Qty11*", "Qty12*", "Qty13*", "Qty14*" };

	pNewOrderData->d_id = GetIntKeyValue(&ptr, "DID*",
ERR_NEWORDER_FORM_MISSING_DID,
ERR_NEWORDER_DISTRICT_INVALID);
	pNewOrderData->c_id = GetIntKeyValue(&ptr, "CID*",
ERR_NEWORDER_CUSTOMER_KEY,
ERR_NEWORDER_CUSTOMER_INVALID);

	for(i=0, items=0; i<MAX_OL_NEW_ORDER_ITEMS; i++)
	{
		GetKeyValue(&ptr, szSP[i], szTmp, sizeof(szTmp),
ERR_NEWORDER_MISSING_SUPPW_KEY);
		if ( szTmp[0] )
		{
			if ( !IsNumeric(szTmp) )
				throw new CWEBCLNT_ERR(
ERR_NEWORDER_SUPPW_INVALID );
			pNewOrderData->OL[items].ol_supply_w_id
= (short)atoi(szTmp);

			ol_i_id = pNewOrderData->OL[items].ol_i_id
=
				GetIntKeyValue(&ptr, szIID[i],
ERR_NEWORDER_MISSING_IID_KEY,
ERR_NEWORDER_ITEMID_INVALID);
			if ( ol_i_id > 999999 || ol_i_id < 1 )
				throw new CWEBCLNT_ERR(
ERR_NEWORDER_ITEMID_RANGE );

			ol_quantity =
pNewOrderData->OL[items].ol_quantity =
				GetIntKeyValue(&ptr, szQty[i],
ERR_NEWORDER_MISSING_QTY_KEY,
ERR_NEWORDER_QTY_INVALID);
			if ( ol_quantity > 99 || ol_quantity < 1 )
				throw new CWEBCLNT_ERR(
ERR_NEWORDER_QTY_RANGE );

			items++;
		}
		else
		{	// nothing entered for supply warehouse, so
item id and qty must also be blank
			GetKeyValue(&ptr, szIID[i], szTmp,
sizeof(szTmp), ERR_NEWORDER_MISSING_IID_KEY);
			if ( szTmp[0] )
				throw new CWEBCLNT_ERR(
ERR_NEWORDER_ITEMID_WITHOUT_SUPPW );
			GetKeyValue(&ptr, szQty[i], szTmp,
sizeof(szTmp), ERR_NEWORDER_MISSING_QTY_KEY);
			if ( szTmp[0] )
				throw new CWEBCLNT_ERR(
ERR_NEWORDER_QTY_WITHOUT_SUPPW );
		}
	}
	if ( items == 0 )
		throw new CWEBCLNT_ERR(
ERR_NEWORDER_NOITEMS_ENTERED );

	pNewOrderData->o_ol_cnt = items;
}

/* FUNCTION: GetPaymentData
 *
 * PURPOSE:		This function extracts and validates the payment form
data from an http command string.
 *
 * ARGUMENTS:	LPSTR				lpszQueryString
client browser http command string
 *				PAYMENT_DATA
*pPaymentData		pointer to payment data structure
 */

void GetPaymentData(LPSTR lpszQueryString, PAYMENT_DATA
*pPaymentData)
{
	char	szTmp[26];
	char	*ptr = lpszQueryString;
	BOOL	bCustIdBlank;

	pPaymentData->d_id = GetIntKeyValue(&ptr, "DID*",
ERR_PAYMENT_MISSING_DID_KEY,
ERR_PAYMENT_DISTRICT_INVALID);

	GetKeyValue(&ptr, "CID*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_CID_KEY);
	if ( szTmp[0] == 0 )
	{
		bCustIdBlank = TRUE;
		pPaymentData->c_id = 0;
	}
	else
	{	// parse customer id and verify that last name was NOT
entered
		bCustIdBlank = FALSE;
		if ( !IsNumeric(szTmp) )
			throw new CWEBCLNT_ERR(
ERR_PAYMENT_CUSTOMER_INVALID );
		pPaymentData->c_id = atoi(szTmp);
	}

	pPaymentData->c_w_id = GetIntKeyValue(&ptr, "CWI*",
ERR_PAYMENT_MISSING_CWI_KEY,
ERR_PAYMENT_CWI_INVALID);
	pPaymentData->c_d_id = GetIntKeyValue(&ptr, "CDI*",
ERR_PAYMENT_MISSING_CDI_KEY, ERR_PAYMENT_CDI_INVALID);

	if ( bCustIdBlank )
	{	// customer id is blank, so last name must be entered
		GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_CLT_KEY);
		if ( szTmp[0] == 0 )
			throw new CWEBCLNT_ERR(
ERR_PAYMENT_MISSING_CID_CLT );

		_strupr( szTmp );
```

```
                        if ( strlen(pPaymentData->c_last) > LAST_NAME_LEN
)
                                throw new CWEBCLNT_ERR(
ERR_PAYMENT_LAST_NAME_TO_LONG );
                        strcpy(pPaymentData->c_last, szTmp);
                }
                else
                {       // parse customer id and verify that last name was NOT
entered
                        GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_CLT_KEY);
                        if ( szTmp[0] != 0 )
                                throw new CWEBCLNT_ERR(
ERR_PAYMENT_CID_AND_CLT );
                }

                GetKeyValue(&ptr, "HAM*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_HAM_KEY);
                if (!IsDecimal(szTmp))
                        throw new CWEBCLNT_ERR(
ERR_PAYMENT_HAM_INVALID );
                pPaymentData->h_amount = atof(szTmp);
                if ( pPaymentData->h_amount >= 10000.00 ||
pPaymentData->h_amount < 0 )
                        throw new CWEBCLNT_ERR(
ERR_PAYMENT_HAM_RANGE );
}

/* FUNCTION: GetOrderStatusData
 *
 * PURPOSE:             This function extracts and validates the payment form
data from an http command string.
 *
 */
void GetOrderStatusData(LPSTR lpszQueryString, ORDER_STATUS_DATA
*pOrderStatusData)
{
                char            szTmp[26];
                char            *ptr = lpszQueryString;

                pOrderStatusData->d_id = GetIntKeyValue(&ptr, "DID*",
ERR_ORDERSTATUS_MISSING_DID_KEY,
ERR_ORDERSTATUS_DID_INVALID);

                GetKeyValue(&ptr, "CID*", szTmp, sizeof(szTmp),
ERR_ORDERSTATUS_MISSING_CID_KEY);
                if ( szTmp[0] == 0 )
                {       // customer id is blank, so last name must be entered
                        pOrderStatusData->c_id = 0;
                        GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_ORDERSTATUS_MISSING_CLT_KEY);
                        if ( szTmp[0] == 0 )
                                throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_MISSING_CID_CLT );

                        _strupr( szTmp );
                        if ( strlen(pOrderStatusData->c_last) >
LAST_NAME_LEN )
                                throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_CLT_RANGE );
                        strcpy(pOrderStatusData->c_last, szTmp);
                }
                else
                {       // parse customer id and verify that last name was NOT
entered
                        if ( !IsNumeric(szTmp) )
                                throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_CID_INVALID );
                        pOrderStatusData->c_id = atoi(szTmp);
                        GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_ORDERSTATUS_MISSING_CLT_KEY);
                        if ( szTmp[0] != 0 )
                                throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_CID_AND_CLT );
                }

}

/* FUNCTION: BOOL IsNumeric(char *ptr)
 *
 * PURPOSE:             This function determines if a string is numeric. It fails if
any characters other
 *                              than numeric and null terminator are present.
 *
 * ARGUMENTS:   char                            *ptr            pointer to
string to check.
 *
 * RETURNS:                     BOOL    FALSE   if string is not all
numeric
 *                                                                      TRUE    if
string contains only numeric characters i.e. '0' - '9'
 */

BOOL IsNumeric(char *ptr)
{
                if ( *ptr == 0 )
                        return FALSE;

                while( *ptr && isdigit(*ptr) )
                        ptr++;
                return ( !*ptr );
}

/* FUNCTION: BOOL IsDecimal(char *ptr)
 *
 * PURPOSE:             This function determines if a string is a non-negative
decimal value.
 *              It fails if any characters other than a series of numbers followed by
 *                              a decimal point, another series of numbers,
and a null terminator are present.
 *
 * ARGUMENTS:   char                            *ptr            pointer to
string to check.
 *
 * RETURNS:                     BOOL    FALSE   if string is not a valid
non-negative decimal value
 *                                                                      TRUE    if
string is OK
 */

BOOL IsDecimal(char *ptr)
{
                char *dotptr;
                BOOL  bValid;

                if ( *ptr == 0 )
                        return FALSE;

                // find decimal point
                dotptr = strchr( ptr, '.' );
                if (dotptr == NULL)
                        // no decimal point, so just check for numeric
                        return IsNumeric(ptr);
                *dotptr = 0;  // temporarily replace decimal with a terminator

                if ( *ptr != 0 )
```

```
                bValid = IsNumeric(ptr);
        // string starts with decimal point
        else if (*(dotptr+1) == 0)
                return FALSE;  // nothing but a decimal point is bad
        else
                bValid = TRUE;

        if (*(dotptr+1) != 0)
                // check text after decimal point
                bValid &= IsNumeric(dotptr+1);

        *dotptr = '.';  // replace decimal point
        return bValid;
}
```

tpcc.def

```
LIBRARY TPCC.DLL

EXPORTS

        GetExtensionVersion  @1
        HttpExtensionProc    @2
        TerminateExtension   @3
```

tpcc.h

```
//      File:           TPCC.H
//                              Microsoft TPC-C Kit Ver. 4.41
//                              Copyright Microsoft, 1996, 1997,
1998, 1999, 2000, 2001
//      Purpose:    Header file for TPC-C database loader


// Build number of TPC Benchmark Kit
#define TPCKIT_VER          "4.41"

// General headers
#include <windows.h>
#include <winbase.h>
#include <stdlib.h>
#include <stdio.h>
#include <process.h>
#include <stddef.h>
#include <stdarg.h>
#include <string.h>
#include <time.h>
#include <sys\timeb.h>
#include <sys\types.h>

// ODBC headers
#include <sql.h>
#include <sqlext.h>
#include <odbcss.h>

// General constants
#define MILLI               1000
#define FALSE                       0
#define TRUE                1
#define UNDEF                               -1
#define MINPRINTASCII                32
#define MAXPRINTASCII                126

// Default environment constants
#define SERVER                      ""
#define DATABASE                    "tpcc"
#define USER                        "sa"
#define PASSWORD                      ""

// Default loader arguments
#define BATCH                       10000
#define DEFLDPACKSIZE                       32768
#define LOADER_RES_FILE
"C:\\MSTPCC.440\\SETUP\\logs\\load.out"
#define LOG_PATH            "C:\\MSTPCC.440\\SETUP\\LOGS\\";
#define LOADER_NURAND_C                123
#define DEF_STARTING_WAREHOUSE      1
#define BUILD_INDEX                                         1
// build both data and indexes
#define INDEX_ORDER                                         1
// build indexes before load
#define SCALE_DOWN                                          0
  // build a normal scale database
#define INDEX_SCRIPT_PATH "scripts"

typedef struct
{
   char                     *server;
   char                     *database;
   char                     *user;
   char                     *password;
        BOOL                        tables_all;
// set if loading all tables
        BOOL                        table_item;
// set if loading ITEM table specifically
        BOOL                        table_warehouse;    //
set if loading WAREHOUSE, DISTRICT, and STOCK
        BOOL                        table_customer;
// set if loading CUSTOMER and HISTORY
        BOOL                        table_orders;
// set if loading NEW-ORDER, ORDERS, ORDER-LINE
   long                     num_warehouses;
   long                     batch;
   long                     verbose;
        long                        pack_size;
        char                        *loader_res_file;
        char                        *log_path;
        char                        *synch_servername;
        long                        case_sensitivity;
        long                        starting_warehouse;
        long                        build_index;
        long                        index_order;
        long                        scale_down;
        char                        *index_script_path;
} TPCCLDR_ARGS;

// String length constants
        #define SERVER_NAME_LEN          20
        #define DATABASE_NAME_LEN        20
        #define USER_NAME_LEN            20
        #define PASSWORD_LEN             20
        #define TABLE_NAME_LEN           20
        #define I_DATA_LEN               50
        #define I_NAME_LEN               24
        #define BRAND_LEN                1
        #define LAST_NAME_LEN            16
        #define W_NAME_LEN               10
        #define ADDRESS_LEN              20
        #define STATE_LEN                2
        #define ZIP_LEN                  9
        #define S_DIST_LEN               24
        #define S_DATA_LEN               50
        #define D_NAME_LEN               10
        #define FIRST_NAME_LEN           16
```

```
#define MIDDLE_NAME_LEN          2
#define PHONE_LEN               16
#define CREDIT_LEN               2
#define C_DATA_LEN             500
#define H_DATA_LEN              24
#define DIST_INFO_LEN           24
#define MAX_OL_NEW_ORDER_ITEMS  15
#define MAX_OL_ORDER_STATUS_ITEMS 15
#define STATUS_LEN              25
#define OL_DIST_INFO_LEN        24
#define C_SINCE_LEN
23
#define H_DATE_LEN
23
#define OL_DELIVERY_D_LEN       23
#define O_ENTRY_D_LEN           23


// Functions in random.c
void        seed();
long        irand();
double      drand();
void        WUCreate();
short       WURand();
long        RandomNumber(long lower, long upper);

// Functions in getargs.c;
void        GetArgsLoader();
void        GetArgsLoaderUsage();

// Functions in time.c
long        TimeNow();

// Functions in strings.c
void        MakeAddress();
void        LastName();
int         MakeAlphaString();
int         MakeOriginalAlphaString();
int         MakeNumberString();
int         MakeZipNumberString();
void        InitString();
void        InitAddress();
void        PaddString();
```

tpcc.rc

```
//Microsoft Developer Studio generated resource script.
//
#include "resource.h"

#define APSTUDIO_READONLY_SYMBOLS
////////////////////////////////////////////////////////////////////////
//
// Generated from the TEXTINCLUDE 2 resource.
//
#include "afxres.h"

////////////////////////////////////////////////////////////////////////
#undef APSTUDIO_READONLY_SYMBOLS

////////////////////////////////////////////////////////////////////////
// English (U.S.) resources

#if !defined(AFX_RESOURCE_DLL) || defined(AFX_TARG_ENU)
#ifdef _WIN32
LANGUAGE LANG_ENGLISH, SUBLANG_ENGLISH_US
#pragma code_page(1252)
#endif //_WIN32

#ifndef _MAC
////////////////////////////////////////////////////////////////////////
//
// Version
//

VS_VERSION_INFO VERSIONINFO
 FILEVERSION 0,4,0,0
 PRODUCTVERSION 0,4,0,0
 FILEFLAGSMASK 0x3fL
#ifdef _DEBUG
 FILEFLAGS 0x1L
#else
 FILEFLAGS 0x0L
#endif
 FILEOS 0x40004L
 FILETYPE 0x2L
 FILESUBTYPE 0x0L
BEGIN
   BLOCK "StringFileInfo"
   BEGIN
      BLOCK "040904b0"
      BEGIN
         VALUE "Comments", "TPC-C HTML DLL Server (DBLIB)\0"
         VALUE "CompanyName", "Microsoft\0"
         VALUE "FileDescription", "TPC-C HTML DLL Server (DBLIB)\0"
         VALUE "FileVersion", "0, 4, 0, 0\0"
         VALUE "InternalName", "tpcc\0"
         VALUE "LegalCopyright", "Copyright © 1997\0"
         VALUE "OriginalFilename", "tpcc.dll\0"
         VALUE "ProductName", "Microsoft tpcc\0"
         VALUE "ProductVersion", "0, 4, 0, 0\0"
      END
   END
   BLOCK "VarFileInfo"
   BEGIN
      VALUE "Translation", 0x409, 1200
   END
END

#endif    // !_MAC


#ifdef APSTUDIO_INVOKED
////////////////////////////////////////////////////////////////////////
//
// TEXTINCLUDE
//

1 TEXTINCLUDE DISCARDABLE
BEGIN
   "resource.h\0"
END

2 TEXTINCLUDE DISCARDABLE
BEGIN
   "#include ""afxres.h""\r\n"
   "\0"
END

3 TEXTINCLUDE DISCARDABLE
BEGIN
   "\r\n"
   "\0"
END
```

```
#endif    // APSTUDIO_INVOKED


//////////////////////////////////////////////////////////////////////////////
//
// Dialog
//

IDD_DIALOG1 DIALOG DISCARDABLE  0, 0, 186, 95
STYLE DS_MODALFRAME | WS_POPUP | WS_CAPTION |
WS_SYSMENU
CAPTION "Dialog"
FONT 8, "MS Sans Serif"
BEGIN
   DEFPUSHBUTTON   "OK",IDOK,129,7,50,14
   PUSHBUTTON      "Cancel",IDCANCEL,129,24,50,14
END


//////////////////////////////////////////////////////////////////////////////
//
// DESIGNINFO
//

#ifdef APSTUDIO_INVOKED
GUIDELINES DESIGNINFO DISCARDABLE
BEGIN
   IDD_DIALOG1, DIALOG
   BEGIN
      LEFTMARGIN, 7
      RIGHTMARGIN, 179
      TOPMARGIN, 7
      BOTTOMMARGIN, 88
   END
END
#endif    // APSTUDIO_INVOKED

#endif    // English (U.S.) resources
//////////////////////////////////////////////////////////////////////////////



#ifndef APSTUDIO_INVOKED
//////////////////////////////////////////////////////////////////////////////
//
// Generated from the TEXTINCLUDE 3 resource.
//


//////////////////////////////////////////////////////////////////////////////
#endif    // not APSTUDIO_INVOKED
```

tpcc_com.cpp

```
/*          FILE:                   TPCC_COM.CPP
 *                                          Microsoft TPC-C Kit Ver.
4.20.000
 *                                          Copyright Microsoft, 1999
 *          All Rights Reserved
 *
 *                                          not yet audited
 *
 *          PURPOSE:            Source file for TPC-C COM+ class
implementation.
 *          Contact:    Charles Levine (clevine@microsoft.com)
 *
 *  Change history:
 *                      4.20.000 - first version
 */

// needed for CoinitializeEx
#define _WIN32_WINNT 0x0400

#include <windows.h>

// need to declare functions for export
#define DllDecl  __declspec( dllexport )

#include "..\..\common\src\trans.h"                     //tpckit transaction
header contains defination of structures specific to TPC-C
#include "..\..\common\src\error.h"
#include "..\..\common\src\txn_base.h"
#include "tpcc_com.h"

#include "..\..\tpcc_com_ps\src\tpcc_com_ps_i.c"
#include "..\..\tpcc_com_all\src\tpcc_com_all_i.c"

// wrapper routine for class constructor
__declspec(dllexport) CTPCC_COM* CTPCC_COM_new(BOOL
bSinglePool)
{
        return new CTPCC_COM(bSinglePool);
}

CTPCC_COM::CTPCC_COM(BOOL bSinglePool)
{
        HRESULT hr = NULL;
        long lRet = 0;
        ULONG ulTmpSize = 0;

        m_pTxn                  = NULL;
        m_pNewOrder             = NULL;
        m_pPayment              = NULL;
        m_pStockLevel   = NULL;
        m_pOrderStatus  = NULL;

        m_bSinglePool   = bSinglePool;

        ulTmpSize = (ULONG) sizeof(COM_DATA);
        VariantInit(&m_vTxn);
        m_vTxn.vt = VT_SAFEARRAY;

        m_vTxn.parray = SafeArrayCreateVector(VT_UI1, ulTmpSize,
ulTmpSize);
        if (!m_vTxn.parray)
                throw new CCOMERR( E_FAIL );

        memset((void*)m_vTxn.parray->pvData,0,ulTmpSize);
        m_pTxn = (COM_DATA*)m_vTxn.parray->pvData;

        hr = CoInitializeEx(NULL, COINIT_MULTITHREADED);
        if (FAILED(hr))
        {
                throw new CCOMERR( hr );
        }

        // create components
        if (m_bSinglePool)
        {
                hr = CoCreateInstance(CLSID_TPCC, NULL,
CLSCTX_SERVER, IID_ITPCC, (void **)&m_pNewOrder);
                if (FAILED(hr))
                        throw new CCOMERR(hr);

                // all txns will use same component
```

```
                m_pPayment = m_pNewOrder;
                m_pStockLevel = m_pNewOrder;
                m_pOrderStatus = m_pNewOrder;
        }
        else
        {
                // use different components for each txn

                hr = CoCreateInstance(CLSID_NewOrder, NULL,
CLSCTX_SERVER, IID_ITPCC, (void **)&m_pNewOrder);
                if (FAILED(hr))
                        throw new CCOMERR(hr);

                hr = CoCreateInstance(CLSID_Payment, NULL,
CLSCTX_SERVER, IID_ITPCC, (void **)&m_pPayment);
                if (FAILED(hr))
                        throw new CCOMERR(hr);

                hr = CoCreateInstance(CLSID_StockLevel, NULL,
CLSCTX_SERVER, IID_ITPCC, (void **)&m_pStockLevel);
                if (FAILED(hr))
                        throw new CCOMERR(hr);

                hr = CoCreateInstance(CLSID_OrderStatus, NULL,
CLSCTX_SERVER, IID_ITPCC, (void **)&m_pOrderStatus);
                if (FAILED(hr))
                        throw new CCOMERR(hr);
        }

        // call setcomplete to release each component back into pool
        hr = m_pNewOrder->CallSetComplete();
        if (FAILED(hr))
                throw new CCOMERR(hr);

        if (!m_bSinglePool)
        {
                hr = m_pPayment->CallSetComplete();
                if (FAILED(hr))
                        throw new CCOMERR(hr);

                hr = m_pStockLevel->CallSetComplete();
                if (FAILED(hr))
                        throw new CCOMERR(hr);

                hr = m_pOrderStatus->CallSetComplete();
                if (FAILED(hr))
                        throw new CCOMERR(hr);
        }
}

CTPCC_COM::~CTPCC_COM()
{
        if (m_pTxn)
                SafeArrayDestroy(m_vTxn.parray);

        ReleaseInterface(m_pNewOrder);
        if (!m_bSinglePool)
        {
                ReleaseInterface(m_pPayment);
                ReleaseInterface(m_pStockLevel);
                ReleaseInterface(m_pOrderStatus);
        }
        CoUninitialize();
}

void CTPCC_COM::NewOrder()
{
        VARIANT   vTxn_out;

        HRESULT hr = m_pNewOrder->NewOrder(m_vTxn, &vTxn_out);
        if (FAILED(hr))
                throw new CCOMERR( hr );
        memcpy(m_pTxn, (void
*)vTxn_out.parray->pvData,vTxn_out.parray->rgsabound[0].cElements);
        SafeArrayDestroy(vTxn_out.parray);

        if ( m_pTxn->ErrorType != ERR_SUCCESS )
                throw new CCOMERR( m_pTxn->ErrorType,
m_pTxn->error );
}

void CTPCC_COM::Payment()
{
        VARIANT   vTxn_out;

        HRESULT hr = m_pPayment->Payment(m_vTxn, &vTxn_out);
        if (FAILED(hr))
                throw new CCOMERR( hr );
        memcpy(m_pTxn, (void
*)vTxn_out.parray->pvData,vTxn_out.parray->rgsabound[0].cElements);
        SafeArrayDestroy(vTxn_out.parray);

        if ( m_pTxn->ErrorType != ERR_SUCCESS )
                throw new CCOMERR( m_pTxn->ErrorType,
m_pTxn->error );
}

void CTPCC_COM::StockLevel()
{
        VARIANT   vTxn_out;

        HRESULT hr = m_pStockLevel->StockLevel(m_vTxn,
&vTxn_out);
        if (FAILED(hr))
                throw new CCOMERR( hr );
        memcpy(m_pTxn, (void
*)vTxn_out.parray->pvData,vTxn_out.parray->rgsabound[0].cElements);
        SafeArrayDestroy(vTxn_out.parray);

        if ( m_pTxn->ErrorType != ERR_SUCCESS )
                throw new CCOMERR( m_pTxn->ErrorType,
m_pTxn->error );
}

void CTPCC_COM::OrderStatus()
{
        VARIANT   vTxn_out;

        HRESULT hr = m_pOrderStatus->OrderStatus(m_vTxn,
&vTxn_out);
        if (FAILED(hr))
                throw new CCOMERR( hr );
        memcpy(m_pTxn, (void
*)vTxn_out.parray->pvData,vTxn_out.parray->rgsabound[0].cElements);
        SafeArrayDestroy(vTxn_out.parray);

        if ( m_pTxn->ErrorType != ERR_SUCCESS )
                throw new CCOMERR( m_pTxn->ErrorType,
m_pTxn->error );
}
```

tpcc_com.h

```
/*      FILE:                   TPCC_COM.H
```

```
 *                                      Microsoft TPC-C Kit Ver. 4.20.000
 *                                      Copyright Microsoft, 1999
 *          All Rights Reserved
 *
 *                                      not yet audited
 *
 *          PURPOSE:            Header file for TPC-C COM+ class implementation.
 *
 *  Change history:
 *                      4.20.000 - first version
 */

#pragma once

#include <stdio.h>
#include "..\..\tpcc_com_ps\src\tpcc_com_ps.h"

// need to declare functions for import, unless define has already been created
// by the DLL's .cpp module for export.
#ifndef DllDecl
#define DllDecl  __declspec( dllimport )
#endif

class CCOMERR : public CBaseErr
{
        private:
                char m_szErrorText[64];

        public:
                // use this interface for genuine COM errors
                CCOMERR( HRESULT hr )
                {
                        m_hr = hr;
                        m_iErrorType = 0;
                        m_iError = 0;
                }

                // use this interface to impersonate a non-COM error type
                CCOMERR( int iErrorType, int iError )
                {
                        m_iErrorType = iErrorType;
                        m_iError = iError;
                        m_hr = S_OK;
                }

                int             m_hr;
                int             m_iErrorType;
                int             m_iError;

                // A CCOMERR class can impersonate another class, which happens if the error
                // was not actually a COM Services error, but was simply transmitted back via COM.
                int ErrorType()
                {
                        if (m_iErrorType == 0)
                                return ERR_TYPE_COM;
                        else
                                return m_iErrorType;
                }

                int ErrorNum() {return m_hr;}

                char *ErrorText()
                {
                        if (m_hr == S_OK)
                                sprintf( m_szErrorText, "Error: Class %d, error # %d", m_iErrorType, m_iError );
                        else
                                sprintf( m_szErrorText, "Error: COM HRESULT %x", m_hr );
                        return m_szErrorText;
                }
};

class DllDecl CTPCC_COM : public CTPCC_BASE
{
        private:
                BOOL m_bSinglePool;

                // COM Interface pointers
                ITPCC*                  m_pNewOrder;
                ITPCC*                  m_pPayment;
                ITPCC*                  m_pStockLevel;
                ITPCC*                  m_pOrderStatus;

                struct COM_DATA
                {
                        int ErrorType;
                        int error;
                        union
                        {
                                NEW_ORDER_DATA          NewOrder;
                                PAYMENT_DATA            Payment;
                                DELIVERY_DATA           Delivery;
                                STOCK_LEVEL_DATA        StockLevel;
                                ORDER_STATUS_DATA       OrderStatus;
                        } u;
                } *m_pTxn;

                VARIANT m_vTxn;
        public:
                CTPCC_COM(BOOL bSinglePool);
                ~CTPCC_COM(void);

                inline PNEW_ORDER_DATA BuffAddr_NewOrder()      { return &m_pTxn->u.NewOrder; };
                inline PPAYMENT_DATA BuffAddr_Payment()         { return &m_pTxn->u.Payment;    };
                inline PDELIVERY_DATA BuffAddr_Delivery()       { return &m_pTxn->u.Delivery;   };
                inline PSTOCK_LEVEL_DATA BuffAddr_StockLevel() { return &m_pTxn->u.StockLevel;  };
                inline PORDER_STATUS_DATA BuffAddr_OrderStatus()        { return &m_pTxn->u.OrderStatus; };

                void NewOrder                   ();
                void Payment                    ();
                void StockLevel                 ();
                void OrderStatus        ();
                void Delivery                   () { throw new CCOMERR(E_NOTIMPL); }  // not supported
};


inline void ReleaseInterface(IUnknown *pUnk)
{
        if (pUnk)
```

```
	{
		pUnk->Release();
		pUnk = NULL;
	}
}


// wrapper routine for class constructor
extern "C" __declspec(dllexport) CTPCC_COM* CTPCC_COM_new(BOOL);

typedef CTPCC_COM* (TYPE_CTPCC_COM)(BOOL);
```

Tpcc_com_all.cpp

```
/*	FILE:		TPCC_COM_ALL.CPP
 *					Microsoft TPC-C Kit Ver. 4.20.000
 *					Copyright Microsoft, 1999
 *	All Rights Reserved
 *
 *					Version 4.10.000 audited by Richard Gimarc, Performance Metrics, 3/17/99
 *
 *	PURPOSE:	Implementation for TPC-C Tuxedo class.
 *	Contact:	Charles Levine (clevine@microsoft.com)
 *
 *  Change history:
 *		4.20.000 - updated rev number to match kit
 */

#define STRICT
#define _WIN32_WINNT 0x0400
#define _ATL_APARTMENT_THREADED

#include <stdio.h>
#include <atlbase.h>
//You may derive a class from CComModule and use it if you want to override
//something, but do not change the name of _Module
extern CComModule _Module;

#include <atlcom.h>
#include <initguid.h>
#include <transact.h>
#include <atlimpl.cpp>
#include <comsvcs.h>

#include <sqltypes.h>
#include <sql.h>
#include <sqlext.h>

#include "tpcc_com_ps.h"
#include "..\..\common\src\trans.h"
//tpckit transaction header contains definations of structures specific to TPC-C
#include "..\..\common\src\txn_base.h"
#include "..\..\common\src\error.h"
#include "..\..\common\src\ReadRegistry.h"
#include "..\..\db_dblib_dll\src\tpcc_dblib.h"		// DBLIB implementation of TPC-C txns
#include "..\..\db_odbc_dll\src\tpcc_odbc.h"		// ODBC implementation of TPC-C txns

#include "resource.h"
#include "tpcc_com_all.h"
#include "tpcc_com_all_i.c"
#include "Methods.h"
#include "..\..\tpcc_com_ps\src\tpcc_com_ps_i.c"
#include "..\..\common\src\ReadRegistry.cpp"



CComModule _Module;

BEGIN_OBJECT_MAP(ObjectMap)
	OBJECT_ENTRY(CLSID_TPCC, CTPCC)
	OBJECT_ENTRY(CLSID_NewOrder, CNewOrder)
	OBJECT_ENTRY(CLSID_OrderStatus, COrderStatus)
	OBJECT_ENTRY(CLSID_Payment, CPayment)
	OBJECT_ENTRY(CLSID_StockLevel, CStockLevel)
END_OBJECT_MAP()


// configuration settings from registry
TPCCREGISTRYDATA	Reg;
char szMyComputerName[MAX_COMPUTERNAME_LENGTH+1];

static  HINSTANCE hLibInstanceDb = NULL;

TYPE_CTPCC_DBLIB	*pCTPCC_DBLIB_new;
TYPE_CTPCC_ODBC		*pCTPCC_ODBC_new;


////////////////////////////////////////////////////////////////////////
// DLL Entry Point

extern "C"
BOOL WINAPI DllMain(HINSTANCE hInstance, DWORD dwReason, LPVOID /*lpReserved*/)
{
	char szDllName[128];

	try
	{
		if (dwReason == DLL_PROCESS_ATTACH)
		{
			_Module.Init(ObjectMap, hInstance);
			DisableThreadLibraryCalls(hInstance);

			DWORD dwSize = MAX_COMPUTERNAME_LENGTH+1;
			GetComputerName(szMyComputerName, &dwSize);
			szMyComputerName[dwSize] = 0;

			if ( ReadTPCCRegistrySettings( &Reg ) )
				throw new CCOMPONENT_ERR( ERR_MISSING_REGISTRY_ENTRIES );

			if (Reg.eDB_Protocol == DBLIB)
			{
				strcpy( szDllName, Reg.szPath );
				strcat( szDllName, "tpcc_dblib.dll");
				hLibInstanceDb = LoadLibrary( szDllName );
				if (hLibInstanceDb == NULL)
					throw new CCOMPONENT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );

				// get function pointer to wrapper for class constructor
				pCTPCC_DBLIB_new = (TYPE_CTPCC_DBLIB*) GetProcAddress(hLibInstanceDb,"CTPCC_DBLIB_new");
```

```
                                        if (pCTPCC_DBLIB_new ==
NULL)
                                                throw new
CCOMPONENT_ERR( ERR_GETPROCADDR_FAILED, szDllName,
GetLastError() );
                                }
                                else if (Reg.eDB_Protocol == ODBC)
                                {
                                        strcpy( szDllName, Reg.szPath );
                                        strcat( szDllName,
"tpcc_odbc.dll");
                                        hLibInstanceDb = LoadLibrary(
szDllName );
                                        if (hLibInstanceDb == NULL)
                                                throw new
CCOMPONENT_ERR( ERR_LOADDLL_FAILED, szDllName,
GetLastError() );

                                        // get function pointer to wrapper
for class constructor
                                        pCTPCC_ODBC_new =
(TYPE_CTPCC_ODBC*)
GetProcAddress(hLibInstanceDb,"CTPCC_ODBC_new");
                                        if (pCTPCC_ODBC_new ==
NULL)
                                                throw new
CCOMPONENT_ERR( ERR_GETPROCADDR_FAILED, szDllName,
GetLastError() );
                                }
                                else
                                        throw new CCOMPONENT_ERR(
ERR_UNKNOWN_DB_PROTOCOL );
                        }
                        else if (dwReason == DLL_PROCESS_DETACH)
                                _Module.Term();

                }
                catch (CBaseErr *e)
                {
                        WriteMessageToEventLog(e->ErrorText());
                        delete e;
                        return FALSE;
                }
                catch (...)
                {
                        WriteMessageToEventLog(TEXT("Unhandled exception
in object DllMain"));
                        return FALSE;
                }

                return TRUE;            // OK
}

////////////////////////////////////////////////////////////////////////
// Used to determine whether the DLL can be unloaded by OLE

STDAPI DllCanUnloadNow(void)
{
        return (_Module.GetLockCount()==0) ? S_OK : S_FALSE;
}

////////////////////////////////////////////////////////////////////////
// Returns a class factory to create an object of the requested type

STDAPI DllGetClassObject(REFCLSID rclsid, REFIID riid, LPVOID* ppv)
{
        return _Module.GetClassObject(rclsid, riid, ppv);
}

////////////////////////////////////////////////////////////////////////
// DllRegisterServer - Adds entries to the system registry

STDAPI DllRegisterServer(void)
{
        // registers object, typelib and all interfaces in typelib
        return _Module.RegisterServer(TRUE);
}

////////////////////////////////////////////////////////////////////////
// DllUnregisterServer - Removes entries from the system registry

STDAPI DllUnregisterServer(void)
{
        _Module.UnregisterServer();
        return S_OK;
}


static void WriteMessageToEventLog(LPTSTR lpszMsg)
{
  TCHAR   szMsg[256];
  HANDLE  hEventSource;
  LPTSTR  lpszStrings[2];

  // Use event logging to log the error.
  //
  hEventSource = RegisterEventSource(NULL, TEXT("tpcc_com_all.dll"));

  _stprintf(szMsg, TEXT("Error in COM+ TPC-C Component: "));
  lpszStrings[0] = szMsg;
  lpszStrings[1] = lpszMsg;

  if (hEventSource != NULL)
        {
    ReportEvent(hEventSource, // handle of event source
      EVENTLOG_ERROR_TYPE,  // event type
      0,                    // event category
      0,                    // event ID
      NULL,                 // current user's SID
      2,                    // strings in lpszStrings
      0,                    // no bytes of raw data
      (LPCTSTR *)lpszStrings,    // array of error strings
      NULL);                // no raw data

    (VOID) DeregisterEventSource(hEventSource);
  }
}

inline void ReleaseInterface(IUnknown *pUnk)
{
        if (pUnk)
        {
                pUnk->Release();
                pUnk = NULL;
        }
}

/* FUNCTION: CCOMPONENT_ERR::ErrorText
 *
 */

char* CCOMPONENT_ERR::ErrorText(void)
{
        static SERRORMSG errorMsgs[] =
        {
```

```
		{ ERR_MISSING_REGISTRY_ENTRIES,  "Required
entries missing from registry."                                 },
		{ ERR_LOADDLL_FAILED,
"Load of DLL failed.  DLL="
		},
		{ ERR_GETPROCADDR_FAILED,
"Could not map proc in DLL.  GetProcAddr error.  DLL="          },
		{ ERR_UNKNOWN_DB_PROTOCOL,
"Unknown database protocol specified in registry."              },
		{ 0,
	""
                                                                                }
	};

	char szTmp[256];
	int i = 0;
	while (TRUE)
	{
		if (errorMsgs[i].szMsg[0] == 0)
		{
			strcpy( szTmp, "Unknown error number." );
			break;
		}
		if (m_Error == errorMsgs[i].iError)
		{
			strcpy( szTmp, errorMsgs[i].szMsg );
			break;
		}
		i++;
	}

	if (m_szTextDetail)
		strcat( szTmp, m_szTextDetail );
	if (m_SystemErr)
		wsprintf( szTmp+strlen(szTmp), "  Error=%d",
m_SystemErr );

	m_szErrorText = new char[strlen(szTmp)+1];
	strcpy( m_szErrorText, szTmp );
	return m_szErrorText;
}


CTPCC_Common::CTPCC_Common()
{
	m_pTxn = NULL;
	m_bCanBePooled = TRUE;
}

CTPCC_Common::~CTPCC_Common()
{
	if (m_pTxn)
		delete m_pTxn;
}

HRESULT CTPCC_Common::CallSetComplete()
{
	IObjectContext* pObjectContext = NULL;

	// get our object context
	HRESULT hr = CoGetObjectContext( IID_IObjectContext, (void
**)&pObjectContext );
	pObjectContext->SetComplete();
	ReleaseInterface(pObjectContext);
	return hr;
}

//
//		called by the ctor activator
//
STDMETHODIMP CTPCC_Common::Construct(IDispatch * pUnk)
{
	// Code to access construction string, if needed later...
	//		if (!pUnk)
	//			return E_UNEXPECTED;
	//		IObjectConstructString * pString = NULL;
	//		HRESULT hr =
pUnk->QueryInterface(IID_IObjectConstructString, (void **)&pString);
	//		pString->Release();

	try
	{
		if (Reg.eDB_Protocol == ODBC)
			m_pTxn = pCTPCC_ODBC_new(
Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, szMyComputerName,
Reg.szDbName );
		else if (Reg.eDB_Protocol == DBLIB)
			m_pTxn = pCTPCC_DBLIB_new(
Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, szMyComputerName,
Reg.szDbName );
	}
	catch (CBaseErr *e)
	{
		WriteMessageToEventLog(e->ErrorText());
		delete e;
		return E_FAIL;
	}
	catch (...)
	{
		WriteMessageToEventLog(TEXT("Unhandled exception
in object ::Construct"));
		return E_FAIL;
	}

	return S_OK;
}

HRESULT CTPCC_Common::NewOrder(VARIANT txn_in, VARIANT*
txn_out)
{
	PNEW_ORDER_DATA		pNewOrder;
	COM_DATA		*pData;
	try
	{
		pData = (COM_DATA*)txn_in.parray->pvData;
		pNewOrder = m_pTxn->BuffAddr_NewOrder();

		memcpy(pNewOrder, &pData->u.NewOrder,
sizeof(NEW_ORDER_DATA));

		m_pTxn->NewOrder();			// do the
actual txn

		VariantInit(txn_out);
		txn_out->vt = VT_SAFEARRAY;
		txn_out->parray = SafeArrayCreateVector(VT_UI1,

txn_in.parray->rgsabound->cElements,

txn_in.parray->rgsabound->cElements);
		pData = (COM_DATA*) txn_out->parray->pvData;

		memcpy( &pData->u.NewOrder, pNewOrder,
sizeof(NEW_ORDER_DATA));

		pData->retval = ERR_SUCCESS;
```

```
                pData->error = 0;
                return S_OK;
        }
        catch (CBaseErr *e)
        {
                // check for lost database connection; if yes, component is
toast
                if ( ((e->ErrorType() == ERR_TYPE_DBLIB) &&
(e->ErrorNum() == 10005)) ||
                        ((e->ErrorType() == ERR_TYPE_ODBC)
&& (e->ErrorNum() == 10054)) )
                        m_bCanBePooled = FALSE;

                pData->retval = e->ErrorType();
                pData->error = e->ErrorNum();
                delete e;
                return E_FAIL;
        }
        catch (...)
        {
                WriteMessageToEventLog(TEXT("Unhandled
exception."));
                pData->retval = ERR_TYPE_LOGIC;
                pData->error = 0;
                m_bCanBePooled = FALSE;
                return E_FAIL;
        }
}

HRESULT CTPCC_Common::Payment(VARIANT txn_in, VARIANT*
txn_out)
{
        PPAYMENT_DATA pPayment;
        COM_DATA                *pData;
        try
        {
                pData = (COM_DATA*)txn_in.parray->pvData;
                pPayment = m_pTxn->BuffAddr_Payment();

                memcpy(pPayment, &pData->u.Payment,
sizeof(PAYMENT_DATA));

                m_pTxn->Payment();              // do the actual txn

                VariantInit(txn_out);
                txn_out->vt = VT_SAFEARRAY;
                txn_out->parray = SafeArrayCreateVector( VT_UI1,

txn_in.parray->rgsabound->cElements,

txn_in.parray->rgsabound->cElements);
                pData = (COM_DATA*) txn_out->parray->pvData;

                memcpy( &pData->u.Payment, pPayment,
sizeof(PAYMENT_DATA));

                pData->retval = ERR_SUCCESS;
                pData->error = 0;
                return S_OK;
        }
        catch (CBaseErr *e)
        {
                // check for lost database connection; if yes, component is
toast
                if ( ((e->ErrorType() == ERR_TYPE_DBLIB) &&
(e->ErrorNum() == 10005)) ||
                        ((e->ErrorType() == ERR_TYPE_ODBC)
&& (e->ErrorNum() == 10054)) )
                        m_bCanBePooled = FALSE;

                pData->retval = e->ErrorType();
                pData->error = e->ErrorNum();
                delete e;
                return E_FAIL;
        }
        catch (...)
        {
                WriteMessageToEventLog(TEXT("Unhandled
exception."));
                pData->retval = ERR_TYPE_LOGIC;
                pData->error = 0;
                m_bCanBePooled = FALSE;
                return E_FAIL;
        }
}

HRESULT CTPCC_Common::StockLevel(VARIANT txn_in, VARIANT*
txn_out)
{
        PSTOCK_LEVEL_DATA       pStockLevel;
        COM_DATA                        *pData;

        try
        {
                pData = (COM_DATA*)txn_in.parray->pvData;
                pStockLevel = m_pTxn->BuffAddr_StockLevel();

                memcpy(pStockLevel, &pData->u.StockLevel,
sizeof(STOCK_LEVEL_DATA));

                m_pTxn->StockLevel();

                VariantInit(txn_out);
                txn_out->vt = VT_SAFEARRAY;
                txn_out->parray = SafeArrayCreateVector( VT_UI1,

txn_in.parray->rgsabound->cElements,

txn_in.parray->rgsabound->cElements);
                pData = (COM_DATA*)txn_out->parray->pvData;

                memcpy( &pData->u.StockLevel, pStockLevel,
sizeof(STOCK_LEVEL_DATA));

                pData->retval = ERR_SUCCESS;
                pData->error = 0;
                return S_OK;
        }
        catch (CBaseErr *e)
        {
                // check for lost database connection; if yes, component is
toast
                if ( ((e->ErrorType() == ERR_TYPE_DBLIB) &&
(e->ErrorNum() == 10005)) ||
                        ((e->ErrorType() == ERR_TYPE_ODBC)
&& (e->ErrorNum() == 10054)) )
                        m_bCanBePooled = FALSE;

                pData->retval = e->ErrorType();
                pData->error = e->ErrorNum();
                delete e;
                return E_FAIL;
        }
        catch (...)
        {
```

```
                        WriteMessageToEventLog(TEXT("Unhandled
exception."));
                        pData->retval = ERR_TYPE_LOGIC;
                        pData->error = 0;
                        m_bCanBePooled = FALSE;
                        return E_FAIL;
                }
}

HRESULT CTPCC_Common::OrderStatus(VARIANT txn_in, VARIANT*
txn_out)
{
        PORDER_STATUS_DATA      pOrderStatus;
        COM_DATA                                *pData;
        try
        {
                pData = (COM_DATA*)txn_in.parray->pvData;
                pOrderStatus = m_pTxn->BuffAddr_OrderStatus();

                memcpy(pOrderStatus, &pData->u.OrderStatus,
sizeof(ORDER_STATUS_DATA));

                m_pTxn->OrderStatus();

                VariantInit(txn_out);
                txn_out->vt = VT_SAFEARRAY;
                txn_out->parray = SafeArrayCreateVector( VT_UI1,

txn_in.parray->rgsabound->cElements,

txn_in.parray->rgsabound->cElements);
                pData = (COM_DATA*)txn_out->parray->pvData;

                memcpy( &pData->u.OrderStatus, pOrderStatus,
sizeof(ORDER_STATUS_DATA));

                pData->retval = ERR_SUCCESS;
                pData->error = 0;
                return S_OK;
        }
        catch (CBaseErr *e)
        {
                // check for lost database connection; if yes, component is
toast
                if ( ((e->ErrorType() == ERR_TYPE_DBLIB) &&
(e->ErrorNum() == 10005)) ||
                                ((e->ErrorType() == ERR_TYPE_ODBC)
&& (e->ErrorNum() == 10054)) )
                                m_bCanBePooled = FALSE;

                pData->retval = e->ErrorType();
                pData->error = e->ErrorNum();
                delete e;
                return E_FAIL;
        }
        catch (...)
        {
                WriteMessageToEventLog(TEXT("Unhandled
exception."));
                pData->retval = ERR_TYPE_LOGIC;
                pData->error = 0;
                m_bCanBePooled = FALSE;
                return E_FAIL;
        }
}
```

Tpcc_com_all.def

```
; tpcc_com_all.def : Declares the module parameters.

LIBRARY      "tpcc_com_all.dll"

EXPORTS
        DllCanUnloadNow     @1 PRIVATE
        DllGetClassObject   @2 PRIVATE
        DllRegisterServer   @3 PRIVATE
        DllUnregisterServer   @4 PRIVATE
```

Tpcc_com_all.dsp

```
# Microsoft Developer Studio Project File - Name="tpcc_com_all" - Package
Owner=<4>
# Microsoft Developer Studio Generated Build File, Format Version 6.00
# ** DO NOT EDIT **

# TARGTYPE "Win32 (x86) Dynamic-Link Library" 0x0102

CFG=tpcc_com_all - Win32 Debug
!MESSAGE This is not a valid makefile. To build this project using NMAKE,
!MESSAGE use the Export Makefile command and run
!MESSAGE
!MESSAGE NMAKE /f "tpcc_com_all.mak".
!MESSAGE
!MESSAGE You can specify a configuration when running NMAKE
!MESSAGE by defining the macro CFG on the command line. For example:
!MESSAGE
!MESSAGE NMAKE /f "tpcc_com_all.mak" CFG="tpcc_com_all - Win32
Debug"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "tpcc_com_all - Win32 Release" (based on "Win32 (x86)
Dynamic-Link Library")
!MESSAGE "tpcc_com_all - Win32 Debug" (based on "Win32 (x86)
Dynamic-Link Library")
!MESSAGE

# Begin Project
# PROP AllowPerConfigDependencies 0
# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CPP=cl.exe
MTL=midl.exe
RSC=rc.exe

!IF  "$(CFG)" == "tpcc_com_all - Win32 Release"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir "Release"
# PROP BASE Intermediate_Dir "Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MT /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD CPP /nologo /MT /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "NDEBUG" /mktyplib203 /o "NUL" /win32
# ADD MTL /nologo /D "NDEBUG" /mktyplib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "NDEBUG"
```

```
# ADD RSC /l 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /dll /machine:I386
# ADD LINK32 ..\db_dblib_dll\bin\tpcc_dblib.lib
..\db_odbc_dll\bin\tpcc_odbc.lib kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /dll /machine:I386

!ELSEIF  "$(CFG)" == "tpcc_com_all - Win32 Debug"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "Debug"
# PROP BASE Intermediate_Dir "Debug"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MTd /W3 /Gm /GX /Zi /Od /D "WIN32" /D
"_DEBUG" /D "_WINDOWS" /YX /FD /c
# ADD CPP /nologo /MTd /W3 /Gm /GX /ZI /Od /D "WIN32" /D "_DEBUG"
/D "_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "_DEBUG" /mktyplib203 /o "NUL" /win32
# ADD MTL /nologo /D "_DEBUG" /mktyplib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "_DEBUG"
# ADD RSC /l 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /dll /debug /machine:I386
/pdbtype:sept
# ADD LINK32 ..\db_dblib_dll\bin\tpcc_dblib.lib
..\db_odbc_dll\bin\tpcc_odbc.lib kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /dll /debug /machine:I386
/pdbtype:sept

!ENDIF

# Begin Target

# Name "tpcc_com_all - Win32 Release"
# Name "tpcc_com_all - Win32 Debug"
# Begin Group "Source"

# PROP Default_Filter "*.cpp, *.c"
# Begin Source File

SOURCE=.\src\tpcc_com_all.cpp
# SUBTRACT CPP /YX
# End Source File
# Begin Source File

SOURCE=.\src\tpcc_com_all.def
# End Source File
# Begin Source File

SOURCE=.\src\tpcc_com_all.idl

!IF  "$(CFG)" == "tpcc_com_all - Win32 Release"

# PROP Ignore_Default_Tool 1
# Begin Custom Build - Performing MIDL step
InputPath=.\src\tpcc_com_all.idl

BuildCmds= \
            midl /Oicf /h "tpcc_com_all.h" /iid "tpcc_com_all_i.c"
".\src\tpcc_com_all.idl"   /out ".\src"

".\src\tpcc_com_all.tlb" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\tpcc_com_all.h" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\tpcc_com_all_i.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)
# End Custom Build

!ELSEIF  "$(CFG)" == "tpcc_com_all - Win32 Debug"

# PROP Ignore_Default_Tool 1
# Begin Custom Build - Performing MIDL step
InputPath=.\src\tpcc_com_all.idl

BuildCmds= \
            midl /Oicf /h "tpcc_com_all.h" /iid "tpcc_com_all_i.c"
".\src\tpcc_com_all.idl"   /out ".\src"

".\src\tpcc_com_all.tlb" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\tpcc_com_all.h" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\tpcc_com_all_i.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)
# End Custom Build

!ENDIF

# End Source File
# End Group
# Begin Group "Header"

# PROP Default_Filter "*.h"
# Begin Source File

SOURCE=.\src\Methods.h
# End Source File
# Begin Source File

SOURCE=.\src\resource.h
# End Source File
# End Group
# Begin Source File

SOURCE=.\src\tpcc_com_all.rc
# End Source File
# End Target
# End Project
```

Tpcc_com_all.h

```
#pragma warning( disable: 4049 )  /* more than 64k source lines */

/* this ALWAYS GENERATED file contains the definitions for the interfaces
*/


 /* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:14 2001
 */
/* Compiler settings for .\src\tpcc_com_all.idl:
    Oicf (OptLev=i2), W1, Zp8, env=Win32 (32b run), ms_ext, c_ext
    error checks: allocation ref bounds_check enum stub_data
    VC __declspec() decoration level:
         __declspec(uuid()), __declspec(selectany), __declspec(novtable)
         DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )


/* verify that the <rpcndr.h> version is high enough to compile this file*/
#ifndef __REQUIRED_RPCNDR_H_VERSION__
#define __REQUIRED_RPCNDR_H_VERSION__ 440
#endif

#include "rpc.h"
#include "rpcndr.h"

#ifndef __tpcc_com_all_h__
#define __tpcc_com_all_h__

/* Forward Declarations */

#ifndef __TPCC_FWD_DEFINED__
#define __TPCC_FWD_DEFINED__

#ifdef __cplusplus
typedef class TPCC TPCC;
#else
typedef struct TPCC TPCC;
#endif /* __cplusplus */

#endif      /* __TPCC_FWD_DEFINED__ */


#ifndef __NewOrder_FWD_DEFINED__
#define __NewOrder_FWD_DEFINED__

#ifdef __cplusplus
typedef class NewOrder NewOrder;
#else
typedef struct NewOrder NewOrder;
#endif /* __cplusplus */

#endif      /* __NewOrder_FWD_DEFINED__ */


#ifndef __OrderStatus_FWD_DEFINED__
#define __OrderStatus_FWD_DEFINED__

#ifdef __cplusplus
typedef class OrderStatus OrderStatus;
#else
typedef struct OrderStatus OrderStatus;
#endif /* __cplusplus */

#endif      /* __OrderStatus_FWD_DEFINED__ */

#ifndef __Payment_FWD_DEFINED__
#define __Payment_FWD_DEFINED__

#ifdef __cplusplus
typedef class Payment Payment;
#else
typedef struct Payment Payment;
#endif /* __cplusplus */

#endif      /* __Payment_FWD_DEFINED__ */


#ifndef __StockLevel_FWD_DEFINED__
#define __StockLevel_FWD_DEFINED__

#ifdef __cplusplus
typedef class StockLevel StockLevel;
#else
typedef struct StockLevel StockLevel;
#endif /* __cplusplus */

#endif      /* __StockLevel_FWD_DEFINED__ */


/* header files for imported files */
#include "oaidl.h"
#include "ocidl.h"
#include "tpcc_com_ps.h"

#ifdef __cplusplus
extern "C"{
#endif

void __RPC_FAR * __RPC_USER MIDL_user_allocate(size_t);
void __RPC_USER MIDL_user_free( void __RPC_FAR * );

/* interface __MIDL_itf_tpcc_com_all_0000 */
/* [local] */


extern RPC_IF_HANDLE __MIDL_itf_tpcc_com_all_0000_v0_0_c_ifspec;
extern RPC_IF_HANDLE __MIDL_itf_tpcc_com_all_0000_v0_0_s_ifspec;


#ifndef __TPCCLib_LIBRARY_DEFINED__
#define __TPCCLib_LIBRARY_DEFINED__

/* library TPCCLib */
/* [helpstring][version][uuid] */


EXTERN_C const IID LIBID_TPCCLib;

EXTERN_C const CLSID CLSID_TPCC;

#ifdef __cplusplus

class DECLSPEC_UUID("122A3128-2520-11D3-BA71-00C04FBFE08B")
TPCC;
#endif

EXTERN_C const CLSID CLSID_NewOrder;

#ifdef __cplusplus

class DECLSPEC_UUID("975BAABF-84A7-11D2-BA47-00C04FBFE08B")
NewOrder;
#endif
```

```
EXTERN_C const CLSID CLSID_OrderStatus;

#ifdef __cplusplus

class DECLSPEC_UUID("266836AD-A50D-11D2-BA4E-00C04FBFE08B")
OrderStatus;
#endif

EXTERN_C const CLSID CLSID_Payment;

#ifdef __cplusplus

class DECLSPEC_UUID("CD02F7EF-A4FA-11D2-BA4E-00C04FBFE08B")
Payment;
#endif

EXTERN_C const CLSID CLSID_StockLevel;

#ifdef __cplusplus

class DECLSPEC_UUID("2668369E-A50D-11D2-BA4E-00C04FBFE08B")
StockLevel;
#endif
#endif /* __TPCCLib_LIBRARY_DEFINED__ */

/* Additional Prototypes for ALL interfaces */

/* end of Additional Prototypes */

#ifdef __cplusplus
}
#endif

#endif
```

Tpcc_com_all.idl

```
/*          FILE:                   TPCC.IDL
 *                                  Microsoft TPC-C Kit Ver.
4.20.000
 *                                  Copyright Microsoft, 1999
 *          All Rights Reserved
 *
 *                                  not yet audited
 *
 *          PURPOSE:                IDL source for TPCC.dll.  This file is
processed by the MIDL tool to
 *                                  produce the type library
(TPCC.tlb) and marshalling code.
 *
 *  Change history:
 *                      4.20.000 - first version
 */

interface TPCC;
interface NewOrder;
interface OrderStatus;
interface Payment;
interface StockLevel;


import "oaidl.idl";
import "ocidl.idl";
import "..\tpcc_com_ps\src\tpcc_com_ps.idl";

[
        uuid(122A3117-2520-11D3-BA71-00C04FBFE08B),
        version(1.0),
        helpstring("TPC-C 1.0 Type Library")
]
library TPCCLib
{
        importlib("stdole32.tlb");
        importlib("stdole2.tlb");

        [
                uuid(122A3128-2520-11D3-BA71-00C04FBFE08B),
                helpstring("All Txns Class")
        ]
        coclass TPCC
        {
                [default] interface ITPCC;
        };


        [
                uuid(975BAABF-84A7-11D2-BA47-00C04FBFE08B),
                helpstring("NewOrder Class")
        ]
        coclass NewOrder
        {
                [default] interface ITPCC;
        };


        [
                uuid(266836AD-A50D-11D2-BA4E-00C04FBFE08B),
                helpstring("OrderStatus Class")
        ]
        coclass OrderStatus
        {
                [default] interface ITPCC;
        };


        [
                uuid(CD02F7EF-A4FA-11D2-BA4E-00C04FBFE08B),
                helpstring("Payment Class")
        ]
        coclass Payment
        {
                [default] interface ITPCC;
        };


        [
                uuid(2668369E-A50D-11D2-BA4E-00C04FBFE08B),
                helpstring("StockLevel Class")
        ]
        coclass StockLevel
        {
                [default] interface ITPCC;
        };

};
```

Tpcc_com_all.rc

```
//Microsoft Developer Studio generated resource script.
//
#include "resource.h"

#define APSTUDIO_READONLY_SYMBOLS
```

```
//////////////////////////////////////////////////////////////////////////////
//
// Generated from the TEXTINCLUDE 2 resource.
//
#include "winres.h"

//////////////////////////////////////////////////////////////////////////////
#undef APSTUDIO_READONLY_SYMBOLS

//////////////////////////////////////////////////////////////////////////////
// English (U.S.) resources

#if !defined(AFX_RESOURCE_DLL) || defined(AFX_TARG_ENU)
#ifdef _WIN32
LANGUAGE LANG_ENGLISH, SUBLANG_ENGLISH_US
#pragma code_page(1252)
#endif //_WIN32

#ifdef APSTUDIO_INVOKED
//////////////////////////////////////////////////////////////////////////////
//
// TEXTINCLUDE
//

1 TEXTINCLUDE DISCARDABLE
BEGIN
   "resource.h\0"
END

2 TEXTINCLUDE DISCARDABLE
BEGIN
   "#include ""winres.h""\r\n"
   "\0"
END

3 TEXTINCLUDE DISCARDABLE
BEGIN
   "1 TYPELIB ""tpcc_com_all.tlb""\r\n"
   "\0"
END

#endif    // APSTUDIO_INVOKED


#ifndef _MAC
//////////////////////////////////////////////////////////////////////////////
//
// Version
//

VS_VERSION_INFO VERSIONINFO
 FILEVERSION 1,0,0,1
 PRODUCTVERSION 1,0,0,1
 FILEFLAGSMASK 0x3fL
#ifdef _DEBUG
 FILEFLAGS 0x1L
#else
 FILEFLAGS 0x0L
#endif
 FILEOS 0x4L
 FILETYPE 0x2L
 FILESUBTYPE 0x0L
BEGIN
   BLOCK "StringFileInfo"
   BEGIN
      BLOCK "040904B0"
      BEGIN
         VALUE "CompanyName", "\0"
         VALUE "FileDescription", "tpcc_com_all Module\0"
         VALUE "FileVersion", "1, 0, 0, 1\0"
         VALUE "InternalName", "TPCCNEWORDER\0"
         VALUE "LegalCopyright", "Copyright 1997\0"
         VALUE "OriginalFilename", "tpcc_com_all.DLL\0"
         VALUE "ProductName", "tpcc_com_all Module\0"
         VALUE "ProductVersion", "1, 0, 0, 1\0"
         VALUE "OLESelfRegister", "\0"
      END
   END
   BLOCK "VarFileInfo"
   BEGIN
      VALUE "Translation", 0x409, 1200
   END
END

#endif    // !_MAC

//////////////////////////////////////////////////////////////////////////////
//
// REGISTRY
//

IDR_TPCC              REGISTRY DISCARDABLE    "tpcc_com_all.rgs"
IDR_NEWORDER          REGISTRY DISCARDABLE    "tpcc_com_no.rgs"
IDR_ORDERSTATUS       REGISTRY DISCARDABLE
"tpcc_com_os.rgs"
IDR_PAYMENT           REGISTRY DISCARDABLE    "tpcc_com_pay.rgs"
IDR_STOCKLEVEL        REGISTRY DISCARDABLE    "tpcc_com_sl.rgs"

//////////////////////////////////////////////////////////////////////////////
//
// String Table
//

STRINGTABLE DISCARDABLE
BEGIN
   IDS_PROJNAME          "tpcc_com_all"
END

#endif    // English (U.S.) resources
//////////////////////////////////////////////////////////////////////////////

#ifndef APSTUDIO_INVOKED
//////////////////////////////////////////////////////////////////////////////
//
// Generated from the TEXTINCLUDE 3 resource.
//
1 TYPELIB "tpcc_com_all.tlb"

//////////////////////////////////////////////////////////////////////////////
#endif    // not APSTUDIO_INVOKED
```

Tpcc_com_all.rgs

```
HKCR
{
            TPCC.AllTxns.1 = s 'All Txns Class'
            {
                        CLSID = s
'{122A3128-2520-11D3-BA71-00C04FBFE08B}'
            }
            TPCC.AllTxns = s 'TPCC Class'
            {
                        CurVer = s 'TPCC.AllTxns.1'
            }
            NoRemove CLSID
```

```
        {
                ForceRemove
{122A3128-2520-11D3-BA71-00C04FBFE08B} = s 'TPCC Class'
                {
                        ProgID = s 'TPCC.AllTxns.1'
                        VersionIndependentProgID = s
'TPCC.AllTxns'
                        InprocServer32 = s '%MODULE%'
                        {
                                val ThreadingModel = s 'Both'
                        }
                }
        }
}
```

Tpcc_com_all_i.c

```
#pragma warning( disable: 4049 )  /* more than 64k source lines */

/* this ALWAYS GENERATED file contains the IIDs and CLSIDs */

/* link this file in with the server and any clients */

 /* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:14 2001
 */
/* Compiler settings for .\src\tpcc_com_all.idl:
    Oicf (OptLev=i2), W1, Zp8, env=Win32 (32b run), ms_ext, c_ext
    error checks: allocation ref bounds_check enum stub_data
    VC __declspec() decoration level:
        __declspec(uuid()), __declspec(selectany), __declspec(novtable)
        DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#if !defined(_M_IA64) && !defined(_M_AXP64)

#ifdef __cplusplus
extern "C"{
#endif


#include <rpc.h>
#include <rpcndr.h>

#ifdef _MIDL_USE_GUIDDEF_

#ifndef INITGUID
#define INITGUID
#include <guiddef.h>
#undef INITGUID
#else
#include <guiddef.h>
#endif

#define MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8) \
        DEFINE_GUID(name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8)

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

typedef struct _IID
{
    unsigned long x;
    unsigned short s1;
    unsigned short s2;
    unsigned char  c[8];
} IID;

#endif // __IID_DEFINED__

#ifndef CLSID_DEFINED
#define CLSID_DEFINED
typedef IID CLSID;
#endif // CLSID_DEFINED

#define MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8) \
        const type name = {l,w1,w2,{b1,b2,b3,b4,b5,b6,b7,b8}}

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
LIBID_TPCCLib,0x122A3117,0x2520,0x11D3,0xBA,0x71,0x00,0xC0,0x4F,0
xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_TPCC,0x122A3128,0x2520,0x11D3,0xBA,0x71,0x00,0xC0,0x4F,0xB
F,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_NewOrder,0x975BAABF,0x84A7,0x11D2,0xBA,0x47,0x00,0xC0,0x4
F,0xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_OrderStatus,0x266836AD,0xA50D,0x11D2,0xBA,0x4E,0x00,0xC0,0x
4F,0xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_Payment,0xCD02F7EF,0xA4FA,0x11D2,0xBA,0x4E,0x00,0xC0,0x4F
,0xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_StockLevel,0x2668369E,0xA50D,0x11D2,0xBA,0x4E,0x00,0xC0,0x4
F,0xBF,0xE0,0x8B);

#undef MIDL_DEFINE_GUID

#ifdef __cplusplus
}
#endif

#endif /* !defined(_M_IA64) && !defined(_M_AXP64)*/

#pragma warning( disable: 4049 )  /* more than 64k source lines */

/* this ALWAYS GENERATED file contains the IIDs and CLSIDs */

/* link this file in with the server and any clients */


 /* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:14 2001
 */
/* Compiler settings for .\src\tpcc_com_all.idl:
    Oicf (OptLev=i2), W1, Zp8, env=Win64 (32b run,appending), ms_ext, c_ext,
robust
    error checks: allocation ref bounds_check enum stub_data
    VC __declspec() decoration level:
```

```
    __declspec(uuid()), __declspec(selectany), __declspec(novtable)
    DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#if defined(_M_IA64) || defined(_M_AXP64)

#ifdef __cplusplus
extern "C"{
#endif


#include <rpc.h>
#include <rpcndr.h>

#ifdef _MIDL_USE_GUIDDEF_

#ifndef INITGUID
#define INITGUID
#include <guiddef.h>
#undef INITGUID
#else
#include <guiddef.h>
#endif

#define MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8) \
    DEFINE_GUID(name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8)

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

typedef struct _IID
{
   unsigned long x;
   unsigned short s1;
   unsigned short s2;
   unsigned char  c[8];
} IID;

#endif // __IID_DEFINED__

#ifndef CLSID_DEFINED
#define CLSID_DEFINED
typedef IID CLSID;
#endif // CLSID_DEFINED

#define MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8) \
    const type name = {l,w1,w2,{b1,b2,b3,b4,b5,b6,b7,b8}}

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
LIBID_TPCCLib,0x122A3117,0x2520,0x11D3,0xBA,0x71,0x00,0xC0,0x4F,0
xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_TPCC,0x122A3128,0x2520,0x11D3,0xBA,0x71,0x00,0xC0,0x4F,0xB
F,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_NewOrder,0x975BAABF,0x84A7,0x11D2,0xBA,0x47,0x00,0xC0,0x4
F,0xBF,0xE0,0x8B);

MIDL_DEFINE_GUID(CLSID,
CLSID_OrderStatus,0x266836AD,0xA50D,0x11D2,0xBA,0x4E,0x00,0xC0,0x
4F,0xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_Payment,0xCD02F7EF,0xA4FA,0x11D2,0xBA,0x4E,0x00,0xC0,0x4F
,0xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_StockLevel,0x2668369E,0xA50D,0x11D2,0xBA,0x4E,0x00,0xC0,0x4
F,0xBF,0xE0,0x8B);

#undef MIDL_DEFINE_GUID

#ifdef __cplusplus
}
#endif

#endif /* defined(_M_IA64) || defined(_M_AXP64)*/
```

Tpcc_com_all_resource.h

```
//{{NO_DEPENDENCIES}}
// Microsoft Developer Studio generated include file.
// Used by tpcc_com_all.rc
//
#define IDS_PROJNAME                100
#define IDR_TPCC                    101
#define IDR_NEWORDER                102
#define IDR_ORDERSTATUS             103
#define IDR_PAYMENT                 104
#define IDR_STOCKLEVEL              105

// Next default values for new objects
//
#ifdef APSTUDIO_INVOKED
#ifndef APSTUDIO_READONLY_SYMBOLS
#define _APS_NEXT_RESOURCE_VALUE        202
#define _APS_NEXT_COMMAND_VALUE         32768
#define _APS_NEXT_CONTROL_VALUE         201
#define _APS_NEXT_SYMED_VALUE           106
#endif
#endif
```

Tpcc_com_no.rgs

```
HKCR
{
            TPCC.NewOrder.1 = s 'NewOrder Class'
            {
                        CLSID = s
'{975BAABF-84A7-11D2-BA47-00C04FBFE08B}'
            }
            TPCC.NewOrder = s 'NewOrder Class'
            {
                        CurVer = s 'TPCC.NewOrder.1'
            }
            NoRemove CLSID
            {
                        ForceRemove
{975BAABF-84A7-11D2-BA47-00C04FBFE08B} = s 'NewOrder Class'
                        {
                                    ProgID = s 'TPCC.NewOrder.1'
```

```
                        VersionIndependentProgID = s
'TPCC.NewOrder'
                        InprocServer32 = s '%MODULE%'
                        {
                                val ThreadingModel = s 'Both'
                        }
                }
        }
}
```

Tpcc_com_os.rgs

```
HKCR
{
        TPCC.OrderStatus.1 = s 'OrderStatus Class'
        {
                CLSID = s
'{266836AD-A50D-11D2-BA4E-00C04FBFE08B}'
        }
        TPCC.OrderStatus = s 'OrderStatus Class'
        {
                CurVer = s 'TPCC.OrderStatus.1'
        }
        NoRemove CLSID
        {
                ForceRemove
{266836AD-A50D-11D2-BA4E-00C04FBFE08B} = s 'OrderStatus Class'
                {
                        ProgID = s 'TPCC.OrderStatus.1'
                        VersionIndependentProgID = s
'TPCC.OrderStatus'
                        InprocServer32 = s '%MODULE%'
                        {
                                val ThreadingModel = s 'Both'
                        }
                }
        }
}
```

Tpcc_com_pay.rgs

```
HKCR
{
        TPCC.Payment.1 = s 'Payment Class'
        {
                CLSID = s
'{CD02F7EF-A4FA-11D2-BA4E-00C04FBFE08B}'
        }
        TPCC.Payment = s 'Payment Class'
        {
                CurVer = s 'TPCC.Payment.1'
        }
        NoRemove CLSID
        {
                ForceRemove
{CD02F7EF-A4FA-11D2-BA4E-00C04FBFE08B} = s 'Payment Class'
                {
                        ProgID = s 'TPCC.Payment.1'
                        VersionIndependentProgID = s
'TPCC.Payment'
                        InprocServer32 = s '%MODULE%'
                        {
                                val ThreadingModel = s 'Both'
                        }
                }
        }
}
```

Tpcc_com_ps.def

```
LIBRARY      "tpcc_com_ps"

DESCRIPTION  'Proxy/Stub DLL'

EXPORTS
        DllGetClassObject       @1      PRIVATE
        DllCanUnloadNow         @2      PRIVATE
        GetProxyDllInfo         @3      PRIVATE
        DllRegisterServer               @4      PRIVATE
        DllUnregisterServer             @5      PRIVATE
```

Tpcc_com_ps.dsp

```
# Microsoft Developer Studio Project File - Name="tpcc_com_ps" - Package
Owner=<4>
# Microsoft Developer Studio Generated Build File, Format Version 6.00
# ** DO NOT EDIT **

# TARGTYPE "Win32 (x86) Application" 0x0101

CFG=tpcc_com_ps - Win32 Debug
!MESSAGE This is not a valid makefile. To build this project using NMAKE,
!MESSAGE use the Export Makefile command and run
!MESSAGE
!MESSAGE NMAKE /f "tpcc_com_ps.mak".
!MESSAGE
!MESSAGE You can specify a configuration when running NMAKE
!MESSAGE by defining the macro CFG on the command line. For example:
!MESSAGE
!MESSAGE NMAKE /f "tpcc_com_ps.mak" CFG="tpcc_com_ps - Win32
Debug"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "tpcc_com_ps - Win32 Release" (based on "Win32 (x86)
Application")
!MESSAGE "tpcc_com_ps - Win32 Debug" (based on "Win32 (x86)
Application")
!MESSAGE

# Begin Project
# PROP AllowPerConfigDependencies 0
# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CPP=cl.exe
MTL=midl.exe
RSC=rc.exe

!IF  "$(CFG)" == "tpcc_com_ps - Win32 Release"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir "Release"
# PROP BASE Intermediate_Dir "Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
```

```
# ADD BASE CPP /nologo /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD CPP /nologo /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
_WIN32_WINNT=0x0400 /D "REGISTER_PROXY_DLL" /FD /c
# SUBTRACT CPP /YX
# ADD BASE MTL /nologo /D "NDEBUG" /mktyplib203 /o "NUL" /win32
# ADD MTL /nologo /D "NDEBUG" /mktyplib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "NDEBUG"
# ADD RSC /l 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /machine:I386
# ADD LINK32 kernel32.lib rpcndr.lib rpcns4.lib rpcrt4.lib oleaut32.lib
uuid.lib /nologo /entry:"DllMain" /subsystem:windows /dll /pdb:none
/machine:I386 /def:".\src\tpcc_com_ps.def"
# Begin Custom Build - Copying tpcc_com_ps.h
InputPath=.\bin\tpcc_com_ps.dll
SOURCE="$(InputPath)"

"..\tpcc_com_all\src\tpcc_com_ps.h" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
        copy    .\src\tpcc_com_ps.h    ..\tpcc_com_all\src\

# End Custom Build

!ELSEIF  "$(CFG)" == "tpcc_com_ps - Win32 Debug"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "Debug"
# PROP BASE Intermediate_Dir "Debug"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /W3 /Gm /GX /Zi /Od /D "WIN32" /D "_DEBUG"
/D "_WINDOWS" /YX /FD /c
# ADD CPP /nologo /ZI /Od /D "WIN32" /D "_DEBUG" /D
_WIN32_WINNT=0x0400 /D "REGISTER_PROXY_DLL" /FD /c
# ADD BASE MTL /nologo /D "_DEBUG" /mktyplib203 /o "NUL" /win32
# ADD MTL /nologo /D "_DEBUG" /mktyplib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "_DEBUG"
# ADD RSC /l 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /debug /machine:I386 /pdbtype:sept
# ADD LINK32 kernel32.lib rpcndr.lib rpcns4.lib rpcrt4.lib oleaut32.lib
uuid.lib /nologo /entry:"DllMain" /dll /debug /machine:IX86
/def:".\src\tpcc_com_ps.def" /pdbtype:sept
# SUBTRACT LINK32 /pdb:none
# Begin Custom Build - Copying tpcc_com_ps.h
InputPath=.\bin\tpcc_com_ps.dll
SOURCE="$(InputPath)"

"..\tpcc_com_all\src\tpcc_com_ps.h" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
        copy    .\src\tpcc_com_ps.h    ..\tpcc_com_all\src\

# End Custom Build

!ENDIF

# Begin Target

# Name "tpcc_com_ps - Win32 Release"
# Name "tpcc_com_ps - Win32 Debug"
# Begin Group "Source"

# PROP Default_Filter ""
# Begin Source File

SOURCE=.\src\dlldata.c
# End Source File
# Begin Source File

SOURCE=.\src\tpcc_com_ps.def
# PROP Exclude_From_Build 1
# End Source File
# Begin Source File

SOURCE=.\src\tpcc_com_ps.idl

!IF  "$(CFG)" == "tpcc_com_ps - Win32 Release"

# PROP Ignore_Default_Tool 1
# Begin Custom Build
InputPath=.\src\tpcc_com_ps.idl

BuildCmds= \
        midl /Oicf /h "tpcc_com_ps.h" /iid "tpcc_com_ps_i.c"
".\src\tpcc_com_ps.idl"    /out ".\src"

".\src\tpcc_com_ps.h" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\tpcc_com_ps_i.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\dlldata.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\tpcc_com_ps_p.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)
# End Custom Build

!ELSEIF  "$(CFG)" == "tpcc_com_ps - Win32 Debug"

# PROP Ignore_Default_Tool 1
# Begin Custom Build
InputPath=.\src\tpcc_com_ps.idl

BuildCmds= \
        midl /Oicf /h "tpcc_com_ps.h" /iid "tpcc_com_ps_i.c"
".\src\tpcc_com_ps.idl"    /out ".\src"

".\src\tpcc_com_ps.h" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\tpcc_com_ps_i.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\dlldata.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\tpcc_com_ps_p.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)
# End Custom Build
```

```
!ENDIF

# End Source File
# Begin Source File

SOURCE=.\src\tpcc_com_ps_i.c
# End Source File
# Begin Source File

SOURCE=.\src\tpcc_com_ps_p.c
# End Source File
# End Group
# End Target
# End Project
```

Tpcc_com_ps.h

```
#pragma warning( disable: 4049 )  /* more than 64k source lines */

/* this ALWAYS GENERATED file contains the definitions for the interfaces
*/

 /* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:08 2001
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf (OptLev=i2), W1, Zp8, env=Win32 (32b run), ms_ext, c_ext
    error checks: allocation ref bounds_check enum stub_data
    VC __declspec() decoration level:
        __declspec(uuid()), __declspec(selectany), __declspec(novtable)
        DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )


/* verify that the <rpcndr.h> version is high enough to compile this file*/
#ifndef __REQUIRED_RPCNDR_H_VERSION__
#define __REQUIRED_RPCNDR_H_VERSION__ 440
#endif

#include "rpc.h"
#include "rpcndr.h"

#ifndef __RPCNDR_H_VERSION__
#error this stub requires an updated version of <rpcndr.h>
#endif // __RPCNDR_H_VERSION__

#ifndef COM_NO_WINDOWS_H
#include "windows.h"
#include "ole2.h"
#endif /*COM_NO_WINDOWS_H*/

#ifndef __tpcc_com_ps_h__
#define __tpcc_com_ps_h__

/* Forward Declarations */

#ifndef __ITPCC_FWD_DEFINED__
#define __ITPCC_FWD_DEFINED__
typedef interface ITPCC ITPCC;
#endif       /* __ITPCC_FWD_DEFINED__ */


/* header files for imported files */
#include "oaidl.h"
#include "ocidl.h"

#ifdef __cplusplus
extern "C"{
#endif

void __RPC_FAR * __RPC_USER MIDL_user_allocate(size_t);
void __RPC_USER MIDL_user_free( void __RPC_FAR * );

/* interface __MIDL_itf_tpcc_com_ps_0000 */
/* [local] */


extern RPC_IF_HANDLE __MIDL_itf_tpcc_com_ps_0000_v0_0_c_ifspec;
extern RPC_IF_HANDLE __MIDL_itf_tpcc_com_ps_0000_v0_0_s_ifspec;

#ifndef __ITPCC_INTERFACE_DEFINED__
#define __ITPCC_INTERFACE_DEFINED__

/* interface ITPCC */
/* [unique][helpstring][uuid][oleautomation][object] */


EXTERN_C const IID IID_ITPCC;

#if defined(__cplusplus) && !defined(CINTERFACE)

    MIDL_INTERFACE("FEEE6AA2-84B1-11d2-BA47-00C04FBFE08B")
    ITPCC : public IUnknown
    {
    public:
        virtual HRESULT __stdcall NewOrder(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT __RPC_FAR *txn_out) = 0;

        virtual HRESULT __stdcall Payment(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT __RPC_FAR *txn_out) = 0;

        virtual HRESULT __stdcall Delivery(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT __RPC_FAR *txn_out) = 0;

        virtual HRESULT __stdcall StockLevel(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT __RPC_FAR *txn_out) = 0;

        virtual HRESULT __stdcall OrderStatus(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT __RPC_FAR *txn_out) = 0;

        virtual HRESULT __stdcall CallSetComplete( void) = 0;

    };

#else       /* C style interface */

    typedef struct ITPCCVtbl
    {
        BEGIN_INTERFACE

        HRESULT ( STDMETHODCALLTYPE __RPC_FAR *QueryInterface )(
            ITPCC __RPC_FAR * This,
            /* [in] */ REFIID riid,
            /* [iid_is][out] */ void __RPC_FAR *__RPC_FAR *ppvObject);

        ULONG ( STDMETHODCALLTYPE __RPC_FAR *AddRef )(
            ITPCC __RPC_FAR * This);
```

```
    ULONG ( STDMETHODCALLTYPE __RPC_FAR *Release )(
        ITPCC __RPC_FAR * This);

    HRESULT ( __stdcall __RPC_FAR *NewOrder )(
        ITPCC __RPC_FAR * This,
        /* [in] */ VARIANT txn_in,
        /* [out] */ VARIANT __RPC_FAR *txn_out);

    HRESULT ( __stdcall __RPC_FAR *Payment )(
        ITPCC __RPC_FAR * This,
        /* [in] */ VARIANT txn_in,
        /* [out] */ VARIANT __RPC_FAR *txn_out);

    HRESULT ( __stdcall __RPC_FAR *Delivery )(
        ITPCC __RPC_FAR * This,
        /* [in] */ VARIANT txn_in,
        /* [out] */ VARIANT __RPC_FAR *txn_out);

    HRESULT ( __stdcall __RPC_FAR *StockLevel )(
        ITPCC __RPC_FAR * This,
        /* [in] */ VARIANT txn_in,
        /* [out] */ VARIANT __RPC_FAR *txn_out);

    HRESULT ( __stdcall __RPC_FAR *OrderStatus )(
        ITPCC __RPC_FAR * This,
        /* [in] */ VARIANT txn_in,
        /* [out] */ VARIANT __RPC_FAR *txn_out);

    HRESULT ( __stdcall __RPC_FAR *CallSetComplete )(
        ITPCC __RPC_FAR * This);

    END_INTERFACE
  } ITPCCVtbl;

  interface ITPCC
  {
    CONST_VTBL struct ITPCCVtbl __RPC_FAR *lpVtbl;
  };

#ifdef COBJMACROS


#define ITPCC_QueryInterface(This,riid,ppvObject)     \
  (This)->lpVtbl -> QueryInterface(This,riid,ppvObject)

#define ITPCC_AddRef(This)    \
  (This)->lpVtbl -> AddRef(This)

#define ITPCC_Release(This)    \
  (This)->lpVtbl -> Release(This)


#define ITPCC_NewOrder(This,txn_in,txn_out)          \
  (This)->lpVtbl -> NewOrder(This,txn_in,txn_out)

#define ITPCC_Payment(This,txn_in,txn_out)           \
  (This)->lpVtbl -> Payment(This,txn_in,txn_out)

#define ITPCC_Delivery(This,txn_in,txn_out)          \
  (This)->lpVtbl -> Delivery(This,txn_in,txn_out)

#define ITPCC_StockLevel(This,txn_in,txn_out)        \
  (This)->lpVtbl -> StockLevel(This,txn_in,txn_out)

#define ITPCC_OrderStatus(This,txn_in,txn_out)       \
  (This)->lpVtbl -> OrderStatus(This,txn_in,txn_out)

#define ITPCC_CallSetComplete(This)      \
  (This)->lpVtbl -> CallSetComplete(This)

#endif /* COBJMACROS */


#endif      /* C style interface */

HRESULT __stdcall ITPCC_NewOrder_Proxy(
  ITPCC __RPC_FAR * This,
  /* [in] */ VARIANT txn_in,
  /* [out] */ VARIANT __RPC_FAR *txn_out);


void __RPC_STUB ITPCC_NewOrder_Stub(
  IRpcStubBuffer *This,
  IRpcChannelBuffer *_pRpcChannelBuffer,
  PRPC_MESSAGE _pRpcMessage,
  DWORD *_pdwStubPhase);


HRESULT __stdcall ITPCC_Payment_Proxy(
  ITPCC __RPC_FAR * This,
  /* [in] */ VARIANT txn_in,
  /* [out] */ VARIANT __RPC_FAR *txn_out);


void __RPC_STUB ITPCC_Payment_Stub(
  IRpcStubBuffer *This,
  IRpcChannelBuffer *_pRpcChannelBuffer,
  PRPC_MESSAGE _pRpcMessage,
  DWORD *_pdwStubPhase);


HRESULT __stdcall ITPCC_Delivery_Proxy(
  ITPCC __RPC_FAR * This,
  /* [in] */ VARIANT txn_in,
  /* [out] */ VARIANT __RPC_FAR *txn_out);


void __RPC_STUB ITPCC_Delivery_Stub(
  IRpcStubBuffer *This,
  IRpcChannelBuffer *_pRpcChannelBuffer,
  PRPC_MESSAGE _pRpcMessage,
  DWORD *_pdwStubPhase);


HRESULT __stdcall ITPCC_StockLevel_Proxy(
  ITPCC __RPC_FAR * This,
  /* [in] */ VARIANT txn_in,
  /* [out] */ VARIANT __RPC_FAR *txn_out);


void __RPC_STUB ITPCC_StockLevel_Stub(
  IRpcStubBuffer *This,
  IRpcChannelBuffer *_pRpcChannelBuffer,
  PRPC_MESSAGE _pRpcMessage,
  DWORD *_pdwStubPhase);


HRESULT __stdcall ITPCC_OrderStatus_Proxy(
  ITPCC __RPC_FAR * This,
  /* [in] */ VARIANT txn_in,
  /* [out] */ VARIANT __RPC_FAR *txn_out);


void __RPC_STUB ITPCC_OrderStatus_Stub(
  IRpcStubBuffer *This,
  IRpcChannelBuffer *_pRpcChannelBuffer,
```

```
    PRPC_MESSAGE _pRpcMessage,
    DWORD *_pdwStubPhase);


HRESULT __stdcall ITPCC_CallSetComplete_Proxy(
    ITPCC __RPC_FAR * This);

void __RPC_STUB ITPCC_CallSetComplete_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *_pRpcChannelBuffer,
    PRPC_MESSAGE _pRpcMessage,
    DWORD *_pdwStubPhase);

#endif      /* __ITPCC_INTERFACE_DEFINED__ */


/* Additional Prototypes for ALL interfaces */

unsigned long             __RPC_USER  VARIANT_UserSize(     unsigned long
__RPC_FAR *, unsigned long            , VARIANT __RPC_FAR * );
unsigned char __RPC_FAR * __RPC_USER  VARIANT_UserMarshal(
unsigned long __RPC_FAR *, unsigned char __RPC_FAR *, VARIANT
__RPC_FAR * );
unsigned char __RPC_FAR * __RPC_USER
VARIANT_UserUnmarshal(unsigned long __RPC_FAR *, unsigned char
__RPC_FAR *, VARIANT __RPC_FAR * );
void                      __RPC_USER  VARIANT_UserFree(     unsigned long
__RPC_FAR *, VARIANT __RPC_FAR * );

/* end of Additional Prototypes */

#ifdef __cplusplus
}
#endif

#endif
```

Tpcc_com_ps.idl

```
/*            FILE:                   ITPCC.IDL
 *                                          Microsoft TPC-C Kit Ver.
4.20.000
 *                                          Copyright Microsoft, 1999
 *            All Rights Reserved
 *
 *                                          not yet audited
 *
 *            PURPOSE:                Defines the interface used by TPCC. This
interface can be implemented by C++ components.
 *
 *  Change history:
 *                      4.20.000 - first version
 */

// Forward declare all types defined
interface ITPCC;
import "oaidl.idl";
import "ocidl.idl";

            [
                        object,
                        oleautomation,
                        uuid(FEEE6AA2-84B1-11d2-BA47-00C04FBFE08B),
                        helpstring("ITPCC Interface"),
                        pointer_default(unique)
            ]
            interface ITPCC : IUnknown
            {
      HRESULT _stdcall NewOrder
                                                                  (
                                                                  [in]
VARIANT  txn_in,
                                                                  [out]
VARIANT *txn_out
                                                                  );

      HRESULT _stdcall Payment
                                                                  (
                                                                  [in]
VARIANT txn_in,
                                                                  [out]
VARIANT *txn_out
                                                                  );

      HRESULT _stdcall Delivery
                                                                  (
                                                                  [in]
VARIANT txn_in,
                                                                  [out]
VARIANT *txn_out
                                                                  );

      HRESULT _stdcall StockLevel
                                                                  (
                                                                  [in]
VARIANT txn_in,
                                                                  [out]
VARIANT *txn_out
                                                                  );

      HRESULT _stdcall OrderStatus
                                                                  (
                                                                  [in]
VARIANT txn_in,
                                                                  [out]
VARIANT *txn_out
                                                                  );

      HRESULT _stdcall CallSetComplete
                                                                  (
                                                                  );

   };         // interface ITPCC
```

Tpcc_com_ps_i.c

```
#pragma warning( disable: 4049 )  /* more than 64k source lines */

/* this ALWAYS GENERATED file contains the IIDs and CLSIDs */

/* link this file in with the server and any clients */


 /* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:08 2001
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf (OptLev=i2), W1, Zp8, env=Win32 (32b run), ms_ext, c_ext
    error checks: allocation ref bounds_check enum stub_data
    VC __declspec() decoration level:
         __declspec(uuid()), __declspec(selectany), __declspec(novtable)
         DECLSPEC_UUID(), MIDL_INTERFACE()
*/
```

```
//@@MIDL_FILE_HEADING(  )

#if !defined(_M_IA64) && !defined(_M_AXP64)

#ifdef __cplusplus
extern "C"{
#endif

#include <rpc.h>
#include <rpcndr.h>

#ifdef _MIDL_USE_GUIDDEF_

#ifndef INITGUID
#define INITGUID
#include <guiddef.h>
#undef INITGUID
#else
#include <guiddef.h>
#endif

#define MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8) \
        DEFINE_GUID(name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8)

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

typedef struct _IID
{
    unsigned long x;
    unsigned short s1;
    unsigned short s2;
    unsigned char  c[8];
} IID;

#endif // __IID_DEFINED__

#ifndef CLSID_DEFINED
#define CLSID_DEFINED
typedef IID CLSID;
#endif // CLSID_DEFINED

#define MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8) \
        const type name = {l,w1,w2,{b1,b2,b3,b4,b5,b6,b7,b8}}

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
IID_ITPCC,0xFEEE6AA2,0x84B1,0x11d2,0xBA,0x47,0x00,0xC0,0x4F,0xBF,
0xE0,0x8B);

#undef MIDL_DEFINE_GUID

#ifdef __cplusplus
}
#endif


#endif /* !defined(_M_IA64) && !defined(_M_AXP64)*/


#pragma warning( disable: 4049 )  /* more than 64k source lines */

/* this ALWAYS GENERATED file contains the IIDs and CLSIDs */

/* link this file in with the server and any clients */
```

```
 /* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:08 2001
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf (OptLev=i2), W1, Zp8, env=Win64 (32b run,appending), ms_ext, c_ext,
robust
    error checks: allocation ref bounds_check enum stub_data
    VC __declspec() decoration level:
         __declspec(uuid()), __declspec(selectany), __declspec(novtable)
         DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#if defined(_M_IA64) || defined(_M_AXP64)

#ifdef __cplusplus
extern "C"{
#endif


#include <rpc.h>
#include <rpcndr.h>

#ifdef _MIDL_USE_GUIDDEF_

#ifndef INITGUID
#define INITGUID
#include <guiddef.h>
#undef INITGUID
#else
#include <guiddef.h>
#endif

#define MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8) \
        DEFINE_GUID(name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8)

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

typedef struct _IID
{
    unsigned long x;
    unsigned short s1;
    unsigned short s2;
    unsigned char  c[8];
} IID;

#endif // __IID_DEFINED__

#ifndef CLSID_DEFINED
#define CLSID_DEFINED
typedef IID CLSID;
#endif // CLSID_DEFINED

#define MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8) \
        const type name = {l,w1,w2,{b1,b2,b3,b4,b5,b6,b7,b8}}

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
IID_ITPCC,0xFEEE6AA2,0x84B1,0x11d2,0xBA,0x47,0x00,0xC0,0x4F,0xBF,
0xE0,0x8B);

#undef MIDL_DEFINE_GUID
```

```
#ifdef __cplusplus
}
#endif

#endif /* defined(_M_IA64) || defined(_M_AXP64)*/
```

Tpcc_com_ps_p.c

```
#pragma warning( disable: 4049 )  /* more than 64k source lines */

/* this ALWAYS GENERATED file contains the proxy stub code */

 /* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:08 2001
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf (OptLev=i2), W1, Zp8, env=Win32 (32b run), ms_ext, c_ext
    error checks: allocation ref bounds_check enum stub_data
    VC __declspec() decoration level:
         __declspec(uuid()), __declspec(selectany), __declspec(novtable)
         DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#if !defined(_M_IA64) && !defined(_M_AXP64)
#define USE_STUBLESS_PROXY


/* verify that the <rpcproxy.h> version is high enough to compile this file*/
#ifndef __REDQ_RPCPROXY_H_VERSION__
#define __REQUIRED_RPCPROXY_H_VERSION__ 440
#endif


#include "rpcproxy.h"
#ifndef __RPCPROXY_H_VERSION__
#error this stub requires an updated version of <rpcproxy.h>
#endif // __RPCPROXY_H_VERSION__


#include "tpcc_com_ps.h"

#define TYPE_FORMAT_STRING_SIZE   997
#define PROC_FORMAT_STRING_SIZE   193
#define TRANSMIT_AS_TABLE_SIZE    0
#define WIRE_MARSHAL_TABLE_SIZE   1

typedef struct _MIDL_TYPE_FORMAT_STRING
    {
    short          Pad;
    unsigned char  Format[ TYPE_FORMAT_STRING_SIZE ];
    } MIDL_TYPE_FORMAT_STRING;

typedef struct _MIDL_PROC_FORMAT_STRING
    {
    short          Pad;
    unsigned char  Format[ PROC_FORMAT_STRING_SIZE ];
    } MIDL_PROC_FORMAT_STRING;


extern const MIDL_TYPE_FORMAT_STRING __MIDL_TypeFormatString;
extern const MIDL_PROC_FORMAT_STRING __MIDL_ProcFormatString;


/* Standard interface: __MIDL_itf_tpcc_com_ps_0000, ver. 0.0,
GUID={0x00000000,0x0000,0x0000,{0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00}} */


/* Object interface: IUnknown, ver. 0.0,

GUID={0x00000000,0x0000,0x0000,{0xC0,0x00,0x00,0x00,0x00,0x00,0x00,0x46}} */


/* Object interface: ITPCC, ver. 0.0,

GUID={0xFEEE6AA2,0x84B1,0x11d2,{0xBA,0x47,0x00,0xC0,0x4F,0xBF,0xE0,0x8B}} */


extern const MIDL_STUB_DESC Object_StubDesc;


extern const MIDL_SERVER_INFO ITPCC_ServerInfo;

#pragma code_seg(".orpc")
static const unsigned short ITPCC_FormatStringOffsetTable[] =
    {
    0,
    34,
    68,
    102,
    136,
    170
    };

static const MIDL_SERVER_INFO ITPCC_ServerInfo =
    {
    &Object_StubDesc,
    0,
    __MIDL_ProcFormatString.Format,
    &ITPCC_FormatStringOffsetTable[-3],
    0,
    0,
    0,
    0
    };

static const MIDL_STUBLESS_PROXY_INFO ITPCC_ProxyInfo =
    {
    &Object_StubDesc,
    __MIDL_ProcFormatString.Format,
    &ITPCC_FormatStringOffsetTable[-3],
    0,
    0,
    0
    };

CINTERFACE_PROXY_VTABLE(9) _ITPCCProxyVtbl =
{
    &ITPCC_ProxyInfo,
    &IID_ITPCC,
    IUnknown_QueryInterface_Proxy,
    IUnknown_AddRef_Proxy,
    IUnknown_Release_Proxy ,
    (void *)-1 /* ITPCC::NewOrder */ ,
    (void *)-1 /* ITPCC::Payment */ ,
    (void *)-1 /* ITPCC::Delivery */ ,
    (void *)-1 /* ITPCC::StockLevel */ ,
    (void *)-1 /* ITPCC::OrderStatus */ ,
    (void *)-1 /* ITPCC::CallSetComplete */
```

```
};

const CInterfaceStubVtbl _ITPCCStubVtbl =
{
    &IID_ITPCC,
    &ITPCC_ServerInfo,
    9,
    0, /* pure interpreted */
    CStdStubBuffer_METHODS
};

extern const USER_MARSHAL_ROUTINE_QUADRUPLE
UserMarshalRoutines[ WIRE_MARSHAL_TABLE_SIZE ];

static const MIDL_STUB_DESC Object_StubDesc =
    {
    0,
    NdrOleAllocate,
    NdrOleFree,
    0,
    0,
    0,
    0,
    0,
    __MIDL_TypeFormatString.Format,
    1, /* -error bounds_check flag */
    0x20000, /* Ndr library version */
    0,
    0x5030118, /* MIDL Version 5.3.280 */
    0,
    UserMarshalRoutines,
    0,  /* notify & notify_flag routine table */
    0x1, /* MIDL flag */
    0,  /* Reserved3 */
    0,  /* Reserved4 */
    0   /* Reserved5 */
    };

#pragma data_seg(".rdata")

static const USER_MARSHAL_ROUTINE_QUADRUPLE
UserMarshalRoutines[ WIRE_MARSHAL_TABLE_SIZE ] =
        {

            {
            VARIANT_UserSize
            ,VARIANT_UserMarshal
            ,VARIANT_UserUnmarshal
            ,VARIANT_UserFree
            }

        };


#if !defined(__RPC_WIN32__)
#error  Invalid build platform for this stub.
#endif

#if !(TARGET_IS_NT40_OR_LATER)
#error You need a Windows NT 4.0 or later to run this stub because it uses
these features:
#error   -Oif or -Oicf, [wire_marshal] or [user_marshal] attribute.
#error However, your C/C++ compilation flags indicate you intend to run this
app on earlier systems.
#error This app will die there with the RPC_X_WRONG_STUB_VERSION
error.
#endif

static const MIDL_PROC_FORMAT_STRING __MIDL_ProcFormatString =
    {
        0,
        {

            /* Procedure NewOrder */

                                    0x33,               /*
FC_AUTO_HANDLE */
                                    0x6c,               /* Old Flags:  object,
Oi2 */
/*  2 */    NdrFcLong( 0x0 ),   /* 0 */
/*  6 */    NdrFcShort( 0x3 ),  /* 3 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/*  8 */    NdrFcShort( 0x1c ), /* x86 Stack size/offset = 28 */
#else
                                    NdrFcShort( 0x20 ), /*  MIPS Stack
size/offset = 32 */
#endif
#else
                                    NdrFcShort( 0x20 ), /* PPC Stack size/offset
= 32 */
#endif
#else
                                    NdrFcShort( 0x28 ), /* Alpha Stack
size/offset = 40 */
#endif
/* 10 */    NdrFcShort( 0x0 ),  /* 0 */
/* 12 */    NdrFcShort( 0x8 ),  /* 8 */
/* 14 */    0x7,                /* Oi2 Flags:  srv must size, clt must size, has
return, */
                                    0x3,                /* 3 */

            /* Parameter txn_in */

/* 16 */    NdrFcShort( 0x8b ), /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 18 */    NdrFcShort( 0x4 ),  /* x86 Stack size/offset = 4 */
#else
                                    NdrFcShort( 0x8 ),  /*  MIPS Stack
size/offset = 8 */
#endif
#else
                                    NdrFcShort( 0x8 ),  /* PPC Stack size/offset
= 8 */
#endif
#else
                                    NdrFcShort( 0x8 ),  /* Alpha Stack
size/offset = 8 */
#endif
/* 20 */    NdrFcShort( 0x3c8 ), /* Type Offset=968 */

            /* Parameter txn_out */

/* 22 */    NdrFcShort( 0x4113 ),           /* Flags:  must size, must free, out,
simple ref, srv alloc size=16 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 24 */    NdrFcShort( 0x14 ), /* x86 Stack size/offset = 20 */
#else
                                    NdrFcShort( 0x18 ), /*  MIPS Stack
size/offset = 24 */
```

```
#endif
#else
                                NdrFcShort( 0x18 ),   /* PPC Stack size/offset
= 24 */
#endif
#else
                                NdrFcShort( 0x18 ),   /* Alpha Stack
size/offset = 24 */
#endif
/* 26 */    NdrFcShort( 0x3da ), /* Type Offset=986 */

            /* Return value */

/* 28 */    NdrFcShort( 0x70 ),   /* Flags:  out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 30 */    NdrFcShort( 0x18 ),   /* x86 Stack size/offset = 24 */
#else
                                NdrFcShort( 0x1c ),   /*  MIPS Stack
size/offset = 28 */
#endif
#else
                                NdrFcShort( 0x1c ),   /* PPC Stack size/offset
= 28 */
#endif
#else
                                NdrFcShort( 0x20 ),   /* Alpha Stack
size/offset = 32 */
#endif
/* 32 */    0x8,                  /* FC_LONG */
                                0x0,                  /* 0 */

            /* Procedure Payment */

/* 34 */    0x33,                 /* FC_AUTO_HANDLE */
                                0x6c,                 /* Old Flags:  object,
Oi2 */
/* 36 */    NdrFcLong( 0x0 ),     /* 0 */
/* 40 */    NdrFcShort( 0x4 ),    /* 4 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 42 */    NdrFcShort( 0x1c ),   /* x86 Stack size/offset = 28 */
#else
                                NdrFcShort( 0x20 ),   /*  MIPS Stack
size/offset = 32 */
#endif
#else
                                NdrFcShort( 0x20 ),   /* PPC Stack size/offset
= 32 */
#endif
#else
                                NdrFcShort( 0x28 ),   /* Alpha Stack
size/offset = 40 */
#endif
/* 44 */    NdrFcShort( 0x0 ),    /* 0 */
/* 46 */    NdrFcShort( 0x8 ),    /* 8 */
/* 48 */    0x7,                  /* Oi2 Flags:  srv must size, clt must size, has
return, */
                                0x3,                  /* 3 */

            /* Parameter txn_in */

/* 50 */    NdrFcShort( 0x8b ),   /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 52 */    NdrFcShort( 0x4 ),    /* x86 Stack size/offset = 4 */
#else
                                NdrFcShort( 0x8 ),    /*  MIPS Stack
size/offset = 8 */
#endif
#else
                                NdrFcShort( 0x8 ),    /* PPC Stack size/offset
= 8 */
#endif
#else
                                NdrFcShort( 0x8 ),    /* Alpha Stack
size/offset = 8 */
#endif
/* 54 */    NdrFcShort( 0x3c8 ), /* Type Offset=968 */

            /* Parameter txn_out */

/* 56 */    NdrFcShort( 0x4113 ),             /* Flags:  must size, must free, out,
simple ref, srv alloc size=16 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 58 */    NdrFcShort( 0x14 ),   /* x86 Stack size/offset = 20 */
#else
                                NdrFcShort( 0x18 ),   /*  MIPS Stack
size/offset = 24 */
#endif
#else
                                NdrFcShort( 0x18 ),   /* PPC Stack size/offset
= 24 */
#endif
#else
                                NdrFcShort( 0x18 ),   /* Alpha Stack
size/offset = 24 */
#endif
/* 60 */    NdrFcShort( 0x3da ), /* Type Offset=986 */

            /* Return value */

/* 62 */    NdrFcShort( 0x70 ),   /* Flags:  out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 64 */    NdrFcShort( 0x18 ),   /* x86 Stack size/offset = 24 */
#else
                                NdrFcShort( 0x1c ),   /*  MIPS Stack
size/offset = 28 */
#endif
#else
                                NdrFcShort( 0x1c ),   /* PPC Stack size/offset
= 28 */
#endif
#else
                                NdrFcShort( 0x20 ),   /* Alpha Stack
size/offset = 32 */
#endif
/* 66 */    0x8,                  /* FC_LONG */
                                0x0,                  /* 0 */

            /* Procedure Delivery */

/* 68 */    0x33,                 /* FC_AUTO_HANDLE */
                                0x6c,                 /* Old Flags:  object,
Oi2 */
/* 70 */    NdrFcLong( 0x0 ),     /* 0 */
/* 74 */    NdrFcShort( 0x5 ),    /* 5 */
#ifndef _ALPHA_
#ifndef _PPC_
```

```
#if !defined(_MIPS_)
/* 76 */    NdrFcShort( 0x1c ),   /* x86 Stack size/offset = 28 */
#else
                                  NdrFcShort( 0x20 ),   /*  MIPS Stack
size/offset = 32 */
#endif
#else
                                  NdrFcShort( 0x20 ),   /* PPC Stack size/offset
= 32 */
#endif
#else
                                  NdrFcShort( 0x28 ),   /* Alpha Stack
size/offset = 40 */
#endif
/* 78 */    NdrFcShort( 0x0 ),    /* 0 */
/* 80 */    NdrFcShort( 0x8 ),    /* 8 */
/* 82 */    0x7,                  /* Oi2 Flags:  srv must size, clt must size, has
return, */
                                  0x3,                  /* 3 */

            /* Parameter txn_in */

/* 84 */    NdrFcShort( 0x8b ),   /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 86 */    NdrFcShort( 0x4 ),    /* x86 Stack size/offset = 4 */
#else
                                  NdrFcShort( 0x8 ),    /*  MIPS Stack
size/offset = 8 */
#endif
#else
                                  NdrFcShort( 0x8 ),    /* PPC Stack size/offset
= 8 */
#endif
#else
                                  NdrFcShort( 0x8 ),    /* Alpha Stack
size/offset = 8 */
#endif
/* 88 */    NdrFcShort( 0x3c8 ),  /* Type Offset=968 */

            /* Parameter txn_out */

/* 90 */    NdrFcShort( 0x4113 ),             /* Flags:  must size, must free, out,
simple ref, srv alloc size=16 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 92 */    NdrFcShort( 0x14 ),   /* x86 Stack size/offset = 20 */
#else
                                  NdrFcShort( 0x18 ),   /*  MIPS Stack
size/offset = 24 */
#endif
#else
                                  NdrFcShort( 0x18 ),   /* PPC Stack size/offset
= 24 */
#endif
#else
                                  NdrFcShort( 0x18 ),   /* Alpha Stack
size/offset = 24 */
#endif
/* 94 */    NdrFcShort( 0x3da ),  /* Type Offset=986 */

            /* Return value */

/* 96 */    NdrFcShort( 0x70 ),   /* Flags:  out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 98 */    NdrFcShort( 0x18 ),   /* x86 Stack size/offset = 24 */
#else
                                  NdrFcShort( 0x1c ),   /*  MIPS Stack
size/offset = 28 */
#endif
#else
                                  NdrFcShort( 0x1c ),   /* PPC Stack size/offset
= 28 */
#endif
#else
                                  NdrFcShort( 0x20 ),   /* Alpha Stack
size/offset = 32 */
#endif
/* 100 */   0x8,                  /* FC_LONG */
                                  0x0,                  /* 0 */

            /* Procedure StockLevel */

/* 102 */   0x33,                 /* FC_AUTO_HANDLE */
                                  0x6c,                 /* Old Flags:  object,
Oi2 */
/* 104 */   NdrFcLong( 0x0 ),     /* 0 */
/* 108 */   NdrFcShort( 0x6 ),    /* 6 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 110 */   NdrFcShort( 0x1c ),   /* x86 Stack size/offset = 28 */
#else
                                  NdrFcShort( 0x20 ),   /*  MIPS Stack
size/offset = 32 */
#endif
#else
                                  NdrFcShort( 0x20 ),   /* PPC Stack size/offset
= 32 */
#endif
#else
                                  NdrFcShort( 0x28 ),   /* Alpha Stack
size/offset = 40 */
#endif
/* 112 */   NdrFcShort( 0x0 ),    /* 0 */
/* 114 */   NdrFcShort( 0x8 ),    /* 8 */
/* 116 */   0x7,                  /* Oi2 Flags:  srv must size, clt must size, has
return, */
                                  0x3,                  /* 3 */

            /* Parameter txn_in */

/* 118 */   NdrFcShort( 0x8b ),   /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 120 */   NdrFcShort( 0x4 ),    /* x86 Stack size/offset = 4 */
#else
                                  NdrFcShort( 0x8 ),    /*  MIPS Stack
size/offset = 8 */
#endif
#else
                                  NdrFcShort( 0x8 ),    /* PPC Stack size/offset
= 8 */
#endif
#else
                                  NdrFcShort( 0x8 ),    /* Alpha Stack
size/offset = 8 */
#endif
/* 122 */   NdrFcShort( 0x3c8 ),  /* Type Offset=968 */

            /* Parameter txn_out */
```

```
/* 124 */   NdrFcShort( 0x4113 ),           /* Flags:  must size, must free, out,
simple ref, srv alloc size=16 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 126 */   NdrFcShort( 0x14 ),   /* x86 Stack size/offset = 20 */
#else
                                  NdrFcShort( 0x18 ),   /*  MIPS Stack
size/offset = 24 */
#endif
#else
                                  NdrFcShort( 0x18 ),   /* PPC Stack size/offset
= 24 */
#endif
#else
                                  NdrFcShort( 0x18 ),   /* Alpha Stack
size/offset = 24 */
#endif
/* 128 */   NdrFcShort( 0x3da ), /* Type Offset=986 */

            /* Return value */

/* 130 */   NdrFcShort( 0x70 ),   /* Flags:  out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 132 */   NdrFcShort( 0x18 ),   /* x86 Stack size/offset = 24 */
#else
                                  NdrFcShort( 0x1c ),   /*  MIPS Stack
size/offset = 28 */
#endif
#else
                                  NdrFcShort( 0x1c ),   /* PPC Stack size/offset
= 28 */
#endif
#else
                                  NdrFcShort( 0x20 ),   /* Alpha Stack
size/offset = 32 */
#endif
/* 134 */   0x8,                  /* FC_LONG */
                                  0x0,                  /* 0 */

            /* Procedure OrderStatus */

/* 136 */   0x33,                 /* FC_AUTO_HANDLE */
                                  0x6c,                 /* Old Flags:  object,
Oi2 */
/* 138 */   NdrFcLong( 0x0 ),     /* 0 */
/* 142 */   NdrFcShort( 0x7 ),    /* 7 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 144 */   NdrFcShort( 0x1c ),   /* x86 Stack size/offset = 28 */
#else
                                  NdrFcShort( 0x20 ),   /*  MIPS Stack
size/offset = 32 */
#endif
#else
                                  NdrFcShort( 0x20 ),   /* PPC Stack size/offset
= 32 */
#endif
#else
                                  NdrFcShort( 0x28 ),   /* Alpha Stack
size/offset = 40 */
#endif
/* 146 */   NdrFcShort( 0x0 ),    /* 0 */
/* 148 */   NdrFcShort( 0x8 ),    /* 8 */
/* 150 */   0x7,                  /* Oi2 Flags:  srv must size, clt must size, has
return, */
                                  0x3,                  /* 3 */

            /* Parameter txn_in */

/* 152 */   NdrFcShort( 0x8b ),   /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 154 */   NdrFcShort( 0x4 ),    /* x86 Stack size/offset = 4 */
#else
                                  NdrFcShort( 0x8 ),    /*  MIPS Stack
size/offset = 8 */
#endif
#else
                                  NdrFcShort( 0x8 ),    /* PPC Stack size/offset
= 8 */
#endif
#else
                                  NdrFcShort( 0x8 ),    /* Alpha Stack
size/offset = 8 */
#endif
/* 156 */   NdrFcShort( 0x3c8 ), /* Type Offset=968 */

            /* Parameter txn_out */

/* 158 */   NdrFcShort( 0x4113 ),           /* Flags:  must size, must free, out,
simple ref, srv alloc size=16 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 160 */   NdrFcShort( 0x14 ),   /* x86 Stack size/offset = 20 */
#else
                                  NdrFcShort( 0x18 ),   /*  MIPS Stack
size/offset = 24 */
#endif
#else
                                  NdrFcShort( 0x18 ),   /* PPC Stack size/offset
= 24 */
#endif
#else
                                  NdrFcShort( 0x18 ),   /* Alpha Stack
size/offset = 24 */
#endif
/* 162 */   NdrFcShort( 0x3da ), /* Type Offset=986 */

            /* Return value */

/* 164 */   NdrFcShort( 0x70 ),   /* Flags:  out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 166 */   NdrFcShort( 0x18 ),   /* x86 Stack size/offset = 24 */
#else
                                  NdrFcShort( 0x1c ),   /*  MIPS Stack
size/offset = 28 */
#endif
#else
                                  NdrFcShort( 0x1c ),   /* PPC Stack size/offset
= 28 */
#endif
#else
                                  NdrFcShort( 0x20 ),   /* Alpha Stack
size/offset = 32 */
#endif
/* 168 */   0x8,                  /* FC_LONG */
                                  0x0,                  /* 0 */
```

```
            /* Procedure CallSetComplete */

/* 170 */   0x33,                   /* FC_AUTO_HANDLE */
                                    0x6c,                   /* Old Flags:  object,
Oi2 */
/* 172 */   NdrFcLong( 0x0 ),       /* 0 */
/* 176 */   NdrFcShort( 0x8 ),      /* 8 */
#ifndef _ALPHA_
/* 178 */   NdrFcShort( 0x8 ),      /* x86, MIPS, PPC Stack size/offset = 8 */
#else
                                    NdrFcShort( 0x10 ),     /* Alpha Stack
size/offset = 16 */
#endif
/* 180 */   NdrFcShort( 0x0 ),      /* 0 */
/* 182 */   NdrFcShort( 0x8 ),      /* 8 */
/* 184 */   0x4,                    /* Oi2 Flags:  has return, */
                                    0x1,                    /* 1 */

            /* Return value */

/* 186 */   NdrFcShort( 0x70 ),     /* Flags:  out, return, base type, */
#ifndef _ALPHA_
/* 188 */   NdrFcShort( 0x4 ),      /* x86, MIPS, PPC Stack size/offset = 4 */
#else
                                    NdrFcShort( 0x8 ),      /* Alpha Stack
size/offset = 8 */
#endif
/* 190 */   0x8,                    /* FC_LONG */
                                    0x0,                    /* 0 */

                                    0x0
        }
    };

static const MIDL_TYPE_FORMAT_STRING __MIDL_TypeFormatString =
    {
        0,
        {
                                    NdrFcShort( 0x0 ),      /* 0 */
/*  2 */
                                    0x12, 0x0, /* FC_UP */
/*  4 */    NdrFcShort( 0x3b0 ), /* Offset= 944 (948) */
/*  6 */
                                    0x2b,                   /*
FC_NON_ENCAPSULATED_UNION */
                                    0x9,                    /* FC_ULONG */
/*  8 */    0x7,                    /* Corr desc: FC_USHORT */
                                    0x0,                    /*  */
/* 10 */    NdrFcShort( 0xfff8 ), /* -8 */
/* 12 */    NdrFcShort( 0x2 ),      /* Offset= 2 (14) */
/* 14 */    NdrFcShort( 0x10 ),     /* 16 */
/* 16 */    NdrFcShort( 0x2b ),     /* 43 */
/* 18 */    NdrFcLong( 0x3 ),       /* 3 */
/* 22 */    NdrFcShort( 0x8008 ),               /* Simple arm type: FC_LONG */
/* 24 */    NdrFcLong( 0x11 ),      /* 17 */
/* 28 */    NdrFcShort( 0x8001 ),               /* Simple arm type: FC_BYTE */
/* 30 */    NdrFcLong( 0x2 ),       /* 2 */
/* 34 */    NdrFcShort( 0x8006 ),               /* Simple arm type: FC_SHORT */
/* 36 */    NdrFcLong( 0x4 ),       /* 4 */
/* 40 */    NdrFcShort( 0x800a ),               /* Simple arm type: FC_FLOAT */
/* 42 */    NdrFcLong( 0x5 ),       /* 5 */
/* 46 */    NdrFcShort( 0x800c ),               /* Simple arm type: FC_DOUBLE
*/
/* 48 */    NdrFcLong( 0xb ),       /* 11 */
/* 52 */    NdrFcShort( 0x8006 ),               /* Simple arm type: FC_SHORT */
/* 54 */    NdrFcLong( 0xa ),       /* 10 */
/* 58 */    NdrFcShort( 0x8008 ),               /* Simple arm type: FC_LONG */
/* 60 */    NdrFcLong( 0x6 ),       /* 6 */
/* 64 */    NdrFcShort( 0xd6 ),     /* Offset= 214 (278) */
/* 66 */    NdrFcLong( 0x7 ),       /* 7 */
/* 70 */    NdrFcShort( 0x800c ),               /* Simple arm type: FC_DOUBLE
*/
/* 72 */    NdrFcLong( 0x8 ),       /* 8 */
/* 76 */    NdrFcShort( 0xd0 ),     /* Offset= 208 (284) */
/* 78 */    NdrFcLong( 0xd ),       /* 13 */
/* 82 */    NdrFcShort( 0xe2 ),     /* Offset= 226 (308) */
/* 84 */    NdrFcLong( 0x9 ),       /* 9 */
/* 88 */    NdrFcShort( 0xee ),     /* Offset= 238 (326) */
/* 90 */    NdrFcLong( 0x2000 ),                /* 8192 */
/* 94 */    NdrFcShort( 0xfa ),     /* Offset= 250 (344) */
/* 96 */    NdrFcLong( 0x24 ),      /* 36 */
/* 100 */   NdrFcShort( 0x308 ),  /* Offset= 776 (876) */
/* 102 */   NdrFcLong( 0x4024 ),                /* 16420 */
/* 106 */   NdrFcShort( 0x302 ),  /* Offset= 770 (876) */
/* 108 */   NdrFcLong( 0x4011 ),                /* 16401 */
/* 112 */   NdrFcShort( 0x300 ),  /* Offset= 768 (880) */
/* 114 */   NdrFcLong( 0x4002 ),                /* 16386 */
/* 118 */   NdrFcShort( 0x2fe ),  /* Offset= 766 (884) */
/* 120 */   NdrFcLong( 0x4003 ),                /* 16387 */
/* 124 */   NdrFcShort( 0x2fc ),  /* Offset= 764 (888) */
/* 126 */   NdrFcLong( 0x4004 ),                /* 16388 */
/* 130 */   NdrFcShort( 0x2fa ),  /* Offset= 762 (892) */
/* 132 */   NdrFcLong( 0x4005 ),                /* 16389 */
/* 136 */   NdrFcShort( 0x2f8 ),  /* Offset= 760 (896) */
/* 138 */   NdrFcLong( 0x400b ),                /* 16395 */
/* 142 */   NdrFcShort( 0x2e6 ),  /* Offset= 742 (884) */
/* 144 */   NdrFcLong( 0x400a ),                /* 16394 */
/* 148 */   NdrFcShort( 0x2e4 ),  /* Offset= 740 (888) */
/* 150 */   NdrFcLong( 0x4006 ),                /* 16390 */
/* 154 */   NdrFcShort( 0x2ea ),  /* Offset= 746 (900) */
/* 156 */   NdrFcLong( 0x4007 ),                /* 16391 */
/* 160 */   NdrFcShort( 0x2e0 ),  /* Offset= 736 (896) */
/* 162 */   NdrFcLong( 0x4008 ),                /* 16392 */
/* 166 */   NdrFcShort( 0x2e2 ),  /* Offset= 738 (904) */
/* 168 */   NdrFcLong( 0x400d ),                /* 16397 */
/* 172 */   NdrFcShort( 0x2e0 ),  /* Offset= 736 (908) */
/* 174 */   NdrFcLong( 0x4009 ),                /* 16393 */
/* 178 */   NdrFcShort( 0x2de ),  /* Offset= 734 (912) */
/* 180 */   NdrFcLong( 0x6000 ),                /* 24576 */
/* 184 */   NdrFcShort( 0x2dc ),  /* Offset= 732 (916) */
/* 186 */   NdrFcLong( 0x400c ),                /* 16396 */
/* 190 */   NdrFcShort( 0x2da ),  /* Offset= 730 (920) */
/* 192 */   NdrFcLong( 0x10 ),      /* 16 */
/* 196 */   NdrFcShort( 0x8002 ),               /* Simple arm type: FC_CHAR */
/* 198 */   NdrFcLong( 0x12 ),      /* 18 */
/* 202 */   NdrFcShort( 0x8006 ),               /* Simple arm type: FC_SHORT */
/* 204 */   NdrFcLong( 0x13 ),      /* 19 */
/* 208 */   NdrFcShort( 0x8008 ),               /* Simple arm type: FC_LONG */
/* 210 */   NdrFcLong( 0x16 ),      /* 22 */
/* 214 */   NdrFcShort( 0x8008 ),               /* Simple arm type: FC_LONG */
/* 216 */   NdrFcLong( 0x17 ),      /* 23 */
/* 220 */   NdrFcShort( 0x8008 ),               /* Simple arm type: FC_LONG */
/* 222 */   NdrFcLong( 0xe ),       /* 14 */
/* 226 */   NdrFcShort( 0x2be ),  /* Offset= 702 (928) */
/* 228 */   NdrFcLong( 0x400e ),                /* 16398 */
/* 232 */   NdrFcShort( 0x2c4 ),  /* Offset= 708 (940) */
/* 234 */   NdrFcLong( 0x4010 ),                /* 16400 */
/* 238 */   NdrFcShort( 0x2c2 ),  /* Offset= 706 (944) */
/* 240 */   NdrFcLong( 0x4012 ),                /* 16402 */
/* 244 */   NdrFcShort( 0x280 ),  /* Offset= 640 (884) */
/* 246 */   NdrFcLong( 0x4013 ),                /* 16403 */
/* 250 */   NdrFcShort( 0x27e ),  /* Offset= 638 (888) */
/* 252 */   NdrFcLong( 0x4016 ),                /* 16406 */
/* 256 */   NdrFcShort( 0x278 ),  /* Offset= 632 (888) */
/* 258 */   NdrFcLong( 0x4017 ),                /* 16407 */
```

```
/* 262 */   NdrFcShort( 0x272 ), /* Offset= 626 (888) */
/* 264 */   NdrFcLong( 0x0 ),    /* 0 */
/* 268 */   NdrFcShort( 0x0 ),   /* Offset= 0 (268) */
/* 270 */   NdrFcLong( 0x1 ),    /* 1 */
/* 274 */   NdrFcShort( 0x0 ),   /* Offset= 0 (274) */
/* 276 */   NdrFcShort( 0xffffffff ),           /* Offset= -1 (275) */
/* 278 */
                                 0x15,                  /* FC_STRUCT */
                                 0x7,                   /* 7 */
/* 280 */   NdrFcShort( 0x8 ),   /* 8 */
/* 282 */   0xb,                 /* FC_HYPER */
                                 0x5b,                  /* FC_END */
/* 284 */
                                 0x12, 0x0, /* FC_UP */
/* 286 */   NdrFcShort( 0xc ),   /* Offset= 12 (298) */
/* 288 */
                                 0x1b,                  /* FC_CARRAY */
                                 0x1,                   /* 1 */
/* 290 */   NdrFcShort( 0x2 ),   /* 2 */
/* 292 */   0x9,                 /* Corr desc: FC_ULONG */
                                 0x0,                   /*  */
/* 294 */   NdrFcShort( 0xfffc ), /* -4 */
/* 296 */   0x6,                 /* FC_SHORT */
                                 0x5b,                  /* FC_END */
/* 298 */
                                 0x17,                  /* FC_CSTRUCT */
                                 0x3,                   /* 3 */
/* 300 */   NdrFcShort( 0x8 ),   /* 8 */
/* 302 */   NdrFcShort( 0xfffffff2 ),           /* Offset= -14 (288) */
/* 304 */   0x8,                 /* FC_LONG */
                                 0x8,                   /* FC_LONG */
/* 306 */   0x5c,                /* FC_PAD */
                                 0x5b,                  /* FC_END */
/* 308 */
                                 0x2f,                  /* FC_IP */
                                 0x5a,                  /*
FC_CONSTANT_IID */
/* 310 */   NdrFcLong( 0x0 ),    /* 0 */
/* 314 */   NdrFcShort( 0x0 ),   /* 0 */
/* 316 */   NdrFcShort( 0x0 ),   /* 0 */
/* 318 */   0xc0,                /* 192 */
                                 0x0,                   /* 0 */
/* 320 */   0x0,                 /* 0 */
                                 0x0,                   /* 0 */
/* 322 */   0x0,                 /* 0 */
                                 0x0,                   /* 0 */
/* 324 */   0x0,                 /* 0 */
                                 0x46,                  /* 70 */
/* 326 */
                                 0x2f,                  /* FC_IP */
                                 0x5a,                  /*
FC_CONSTANT_IID */
/* 328 */   NdrFcLong( 0x20400 ),           /* 132096 */
/* 332 */   NdrFcShort( 0x0 ),   /* 0 */
/* 334 */   NdrFcShort( 0x0 ),   /* 0 */
/* 336 */   0xc0,                /* 192 */
                                 0x0,                   /* 0 */
/* 338 */   0x0,                 /* 0 */
                                 0x0,                   /* 0 */
/* 340 */   0x0,                 /* 0 */
                                 0x0,                   /* 0 */
/* 342 */   0x0,                 /* 0 */
                                 0x46,                  /* 70 */
/* 344 */
                                 0x12, 0x10,            /* FC_UP
[pointer_deref] */
/* 346 */   NdrFcShort( 0x2 ),   /* Offset= 2 (348) */
/* 348 */
                                 0x12, 0x0, /* FC_UP */
/* 350 */   NdrFcShort( 0x1fc ), /* Offset= 508 (858) */
/* 352 */
                                 0x2a,                  /*
FC_ENCAPSULATED_UNION */
                                 0x49,                  /* 73 */
/* 354 */   NdrFcShort( 0x18 ),  /* 24 */
/* 356 */   NdrFcShort( 0xa ),   /* 10 */
/* 358 */   NdrFcLong( 0x8 ),    /* 8 */
/* 362 */   NdrFcShort( 0x58 ),  /* Offset= 88 (450) */
/* 364 */   NdrFcLong( 0xd ),    /* 13 */
/* 368 */   NdrFcShort( 0x78 ),  /* Offset= 120 (488) */
/* 370 */   NdrFcLong( 0x9 ),    /* 9 */
/* 374 */   NdrFcShort( 0x94 ),  /* Offset= 148 (522) */
/* 376 */   NdrFcLong( 0xc ),    /* 12 */
/* 380 */   NdrFcShort( 0xbc ),  /* Offset= 188 (568) */
/* 382 */   NdrFcLong( 0x24 ),   /* 36 */
/* 386 */   NdrFcShort( 0x114 ), /* Offset= 276 (662) */
/* 388 */   NdrFcLong( 0x800d ),            /* 32781 */
/* 392 */   NdrFcShort( 0x130 ), /* Offset= 304 (696) */
/* 394 */   NdrFcLong( 0x10 ),   /* 16 */
/* 398 */   NdrFcShort( 0x148 ), /* Offset= 328 (726) */
/* 400 */   NdrFcLong( 0x2 ),    /* 2 */
/* 404 */   NdrFcShort( 0x160 ), /* Offset= 352 (756) */
/* 406 */   NdrFcLong( 0x3 ),    /* 3 */
/* 410 */   NdrFcShort( 0x178 ), /* Offset= 376 (786) */
/* 412 */   NdrFcLong( 0x14 ),   /* 20 */
/* 416 */   NdrFcShort( 0x190 ), /* Offset= 400 (816) */
/* 418 */   NdrFcShort( 0xffffffff ),           /* Offset= -1 (417) */
/* 420 */
                                 0x1b,                  /* FC_CARRAY */
                                 0x3,                   /* 3 */
/* 422 */   NdrFcShort( 0x4 ),   /* 4 */
/* 424 */   0x19,                /* Corr desc:  field pointer, FC_ULONG */
                                 0x0,                   /*  */
/* 426 */   NdrFcShort( 0x0 ),   /* 0 */
/* 428 */
                                 0x4b,                  /* FC_PP */
                                 0x5c,                  /* FC_PAD */
/* 430 */
                                 0x48,                  /*
FC_VARIABLE_REPEAT */
                                 0x49,                  /*
FC_FIXED_OFFSET */
/* 432 */   NdrFcShort( 0x4 ),   /* 4 */
/* 434 */   NdrFcShort( 0x0 ),   /* 0 */
/* 436 */   NdrFcShort( 0x1 ),   /* 1 */
/* 438 */   NdrFcShort( 0x0 ),   /* 0 */
/* 440 */   NdrFcShort( 0x0 ),   /* 0 */
/* 442 */   0x12, 0x0, /* FC_UP */
/* 444 */   NdrFcShort( 0xffffff6e ),           /* Offset= -146 (298) */
/* 446 */
                                 0x5b,                  /* FC_END */


                                 0x8,                   /* FC_LONG */
/* 448 */   0x5c,                /* FC_PAD */
                                 0x5b,                  /* FC_END */
/* 450 */
                                 0x16,                  /* FC_PSTRUCT */
                                 0x3,                   /* 3 */
/* 452 */   NdrFcShort( 0x8 ),   /* 8 */
/* 454 */
                                 0x4b,                  /* FC_PP */
                                 0x5c,                  /* FC_PAD */
/* 456 */
                                 0x46,                  /* FC_NO_REPEAT */
                                 0x5c,                  /* FC_PAD */
/* 458 */   NdrFcShort( 0x4 ),   /* 4 */
```

```
/* 460 */   NdrFcShort( 0x4 ),      /* 4 */
/* 462 */   0x11, 0x0, /* FC_RP */
/* 464 */   NdrFcShort( 0xffffffd4 ),           /* Offset= -44 (420) */
/* 466 */
                                    0x5b,                   /* FC_END */

                                    0x8,                    /* FC_LONG */
/* 468 */   0x8,                    /* FC_LONG */
                                    0x5b,                   /* FC_END */
/* 470 */
                                    0x21,                   /*
FC_BOGUS_ARRAY */
                                    0x3,                    /* 3 */
/* 472 */   NdrFcShort( 0x0 ),      /* 0 */
/* 474 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 476 */   NdrFcShort( 0x0 ),      /* 0 */
/* 478 */   NdrFcLong( 0xffffffff ),            /* -1 */
/* 482 */   0x4c,                   /* FC_EMBEDDED_COMPLEX */
                                    0x0,                    /* 0 */
/* 484 */   NdrFcShort( 0xffffff50 ),           /* Offset= -176 (308) */
/* 486 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 488 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 490 */   NdrFcShort( 0x8 ),      /* 8 */
/* 492 */   NdrFcShort( 0x0 ),      /* 0 */
/* 494 */   NdrFcShort( 0x6 ),      /* Offset= 6 (500) */
/* 496 */   0x8,                    /* FC_LONG */
                                    0x36,                   /* FC_POINTER */
/* 498 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 500 */
                                    0x11, 0x0, /* FC_RP */
/* 502 */   NdrFcShort( 0xfffffe0 ),            /* Offset= -32 (470) */
/* 504 */
                                    0x21,                   /*
FC_BOGUS_ARRAY */
                                    0x3,                    /* 3 */
/* 506 */   NdrFcShort( 0x0 ),      /* 0 */
/* 508 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 510 */   NdrFcShort( 0x0 ),      /* 0 */
/* 512 */   NdrFcLong( 0xffffffff ),            /* -1 */
/* 516 */   0x4c,                   /* FC_EMBEDDED_COMPLEX */
                                    0x0,                    /* 0 */
/* 518 */   NdrFcShort( 0xffffff40 ),           /* Offset= -192 (326) */
/* 520 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 522 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 524 */   NdrFcShort( 0x8 ),      /* 8 */
/* 526 */   NdrFcShort( 0x0 ),      /* 0 */
/* 528 */   NdrFcShort( 0x6 ),      /* Offset= 6 (534) */
/* 530 */   0x8,                    /* FC_LONG */
                                    0x36,                   /* FC_POINTER */
/* 532 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 534 */
                                    0x11, 0x0, /* FC_RP */
/* 536 */   NdrFcShort( 0xfffffe0 ),            /* Offset= -32 (504) */
/* 538 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x3,                    /* 3 */
/* 540 */   NdrFcShort( 0x4 ),      /* 4 */
/* 542 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 544 */   NdrFcShort( 0x0 ),      /* 0 */
/* 546 */
                                    0x4b,                   /* FC_PP */
                                    0x5c,                   /* FC_PAD */
/* 548 */
                                    0x48,                   /*
FC_VARIABLE_REPEAT */
                                    0x49,                   /*
FC_FIXED_OFFSET */
/* 550 */   NdrFcShort( 0x4 ),      /* 4 */
/* 552 */   NdrFcShort( 0x0 ),      /* 0 */
/* 554 */   NdrFcShort( 0x1 ),      /* 1 */
/* 556 */   NdrFcShort( 0x0 ),      /* 0 */
/* 558 */   NdrFcShort( 0x0 ),      /* 0 */
/* 560 */   0x12, 0x0, /* FC_UP */
/* 562 */   NdrFcShort( 0x182 ), /* Offset= 386 (948) */
/* 564 */
                                    0x5b,                   /* FC_END */

                                    0x8,                    /* FC_LONG */
/* 566 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 568 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 570 */   NdrFcShort( 0x8 ),      /* 8 */
/* 572 */   NdrFcShort( 0x0 ),      /* 0 */
/* 574 */   NdrFcShort( 0x6 ),      /* Offset= 6 (580) */
/* 576 */   0x8,                    /* FC_LONG */
                                    0x36,                   /* FC_POINTER */
/* 578 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 580 */
                                    0x11, 0x0, /* FC_RP */
/* 582 */   NdrFcShort( 0xffffffd4 ),           /* Offset= -44 (538) */
/* 584 */
                                    0x2f,                   /* FC_IP */
                                    0x5a,                   /*
FC_CONSTANT_IID */
/* 586 */   NdrFcLong( 0x2f ),      /* 47 */
/* 590 */   NdrFcShort( 0x0 ),      /* 0 */
/* 592 */   NdrFcShort( 0x0 ),      /* 0 */
/* 594 */   0xc0,                   /* 192 */
                                    0x0,                    /* 0 */
/* 596 */   0x0,                    /* 0 */
                                    0x0,                    /* 0 */
/* 598 */   0x0,                    /* 0 */
                                    0x0,                    /* 0 */
/* 600 */   0x0,                    /* 0 */
                                    0x46,                   /* 70 */
/* 602 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x0,                    /* 0 */
/* 604 */   NdrFcShort( 0x1 ),      /* 1 */
/* 606 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 608 */   NdrFcShort( 0x4 ),      /* 4 */
/* 610 */   0x1,                    /* FC_BYTE */
                                    0x5b,                   /* FC_END */
/* 612 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 614 */   NdrFcShort( 0x10 ),     /* 16 */
```

```
/* 616 */   NdrFcShort( 0x0 ),      /* 0 */
/* 618 */   NdrFcShort( 0xa ),      /* Offset= 10 (628) */
/* 620 */   0x8,                    /* FC_LONG */
                                    0x8,                    /* FC_LONG */
/* 622 */   0x4c,                   /* FC_EMBEDDED_COMPLEX */
                                    0x0,                    /* 0 */
/* 624 */   NdrFcShort( 0xffffffd8 ),           /* Offset= -40 (584) */
/* 626 */   0x36,                   /* FC_POINTER */
                                    0x5b,                   /* FC_END */
/* 628 */
                                    0x12, 0x0, /* FC_UP */
/* 630 */   NdrFcShort( 0xfffffffe4 ),          /* Offset= -28 (602) */
/* 632 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x3,                    /* 3 */
/* 634 */   NdrFcShort( 0x4 ),      /* 4 */
/* 636 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 638 */   NdrFcShort( 0x0 ),      /* 0 */
/* 640 */
                                    0x4b,                   /* FC_PP */
                                    0x5c,                   /* FC_PAD */
/* 642 */
                                    0x48,                   /*
FC_VARIABLE_REPEAT */
                                    0x49,                   /*
FC_FIXED_OFFSET */
/* 644 */   NdrFcShort( 0x4 ),      /* 4 */
/* 646 */   NdrFcShort( 0x0 ),      /* 0 */
/* 648 */   NdrFcShort( 0x1 ),      /* 1 */
/* 650 */   NdrFcShort( 0x0 ),      /* 0 */
/* 652 */   NdrFcShort( 0x0 ),      /* 0 */
/* 654 */   0x12, 0x0, /* FC_UP */
/* 656 */   NdrFcShort( 0xffffffd4 ),           /* Offset= -44 (612) */
/* 658 */
                                    0x5b,                   /* FC_END */

                                    0x8,                    /* FC_LONG */
/* 660 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 662 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 664 */   NdrFcShort( 0x8 ),      /* 8 */
/* 666 */   NdrFcShort( 0x0 ),      /* 0 */
/* 668 */   NdrFcShort( 0x6 ),      /* Offset= 6 (674) */
/* 670 */   0x8,                    /* FC_LONG */
                                    0x36,                   /* FC_POINTER */
/* 672 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 674 */
                                    0x11, 0x0, /* FC_RP */
/* 676 */   NdrFcShort( 0xffffffd4 ),           /* Offset= -44 (632) */
/* 678 */
                                    0x1d,                   /* FC_SMFARRAY */
                                    0x0,                    /* 0 */
/* 680 */   NdrFcShort( 0x8 ),      /* 8 */
/* 682 */   0x1,                    /* FC_BYTE */
                                    0x5b,                   /* FC_END */
/* 684 */
                                    0x15,                   /* FC_STRUCT */
                                    0x3,                    /* 3 */
/* 686 */   NdrFcShort( 0x10 ),     /* 16 */
/* 688 */   0x8,                    /* FC_LONG */
                                    0x6,                    /* FC_SHORT */
/* 690 */   0x6,                    /* FC_SHORT */
                                    0x4c,                   /*
FC_EMBEDDED_COMPLEX */
/* 692 */   0x0,                    /* 0 */
                                    NdrFcShort( 0xffffffff1 ),          /* Offset=
-15 (678) */
                                    0x5b,                   /* FC_END */
/* 696 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 698 */   NdrFcShort( 0x18 ),     /* 24 */
/* 700 */   NdrFcShort( 0x0 ),      /* 0 */
/* 702 */   NdrFcShort( 0xa ),      /* Offset= 10 (712) */
/* 704 */   0x8,                    /* FC_LONG */
                                    0x36,                   /* FC_POINTER */
/* 706 */   0x4c,                   /* FC_EMBEDDED_COMPLEX */
                                    0x0,                    /* 0 */
/* 708 */   NdrFcShort( 0xffffffe8 ),           /* Offset= -24 (684) */
/* 710 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 712 */
                                    0x11, 0x0, /* FC_RP */
/* 714 */   NdrFcShort( 0xffffff0c ),           /* Offset= -244 (470) */
/* 716 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x0,                    /* 0 */
/* 718 */   NdrFcShort( 0x1 ),      /* 1 */
/* 720 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 722 */   NdrFcShort( 0x0 ),      /* 0 */
/* 724 */   0x1,                    /* FC_BYTE */
                                    0x5b,                   /* FC_END */
/* 726 */
                                    0x16,                   /* FC_PSTRUCT */
                                    0x3,                    /* 3 */
/* 728 */   NdrFcShort( 0x8 ),      /* 8 */
/* 730 */
                                    0x4b,                   /* FC_PP */
                                    0x5c,                   /* FC_PAD */
/* 732 */
                                    0x46,                   /* FC_NO_REPEAT */
                                    0x5c,                   /* FC_PAD */
/* 734 */   NdrFcShort( 0x4 ),      /* 4 */
/* 736 */   NdrFcShort( 0x4 ),      /* 4 */
/* 738 */   0x12, 0x0, /* FC_UP */
/* 740 */   NdrFcShort( 0xffffffe8 ),           /* Offset= -24 (716) */
/* 742 */
                                    0x5b,                   /* FC_END */

                                    0x8,                    /* FC_LONG */
/* 744 */   0x8,                    /* FC_LONG */
                                    0x5b,                   /* FC_END */
/* 746 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x1,                    /* 1 */
/* 748 */   NdrFcShort( 0x2 ),      /* 2 */
/* 750 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 752 */   NdrFcShort( 0x0 ),      /* 0 */
/* 754 */   0x6,                    /* FC_SHORT */
                                    0x5b,                   /* FC_END */
/* 756 */
                                    0x16,                   /* FC_PSTRUCT */
                                    0x3,                    /* 3 */
/* 758 */   NdrFcShort( 0x8 ),      /* 8 */
/* 760 */
                                    0x4b,                   /* FC_PP */
                                    0x5c,                   /* FC_PAD */
```

```
/* 762 */
                                0x46,                   /* FC_NO_REPEAT */
                                0x5c,                   /* FC_PAD */
/* 764 */   NdrFcShort( 0x4 ),  /* 4 */
/* 766 */   NdrFcShort( 0x4 ),  /* 4 */
/* 768 */   0x12, 0x0, /* FC_UP */
/* 770 */   NdrFcShort( 0xffffffe8 ),           /* Offset= -24 (746) */
/* 772 */
                                0x5b,                   /* FC_END */

                                0x8,                    /* FC_LONG */
/* 774 */   0x8,                /* FC_LONG */
                                0x5b,                   /* FC_END */
/* 776 */
                                0x1b,                   /* FC_CARRAY */
                                0x3,                    /* 3 */
/* 778 */   NdrFcShort( 0x4 ),  /* 4 */
/* 780 */   0x19,               /* Corr desc:  field pointer, FC_ULONG */
                                0x0,                    /*  */
/* 782 */   NdrFcShort( 0x0 ),  /* 0 */
/* 784 */   0x8,                /* FC_LONG */
                                0x5b,                   /* FC_END */
/* 786 */
                                0x16,                   /* FC_PSTRUCT */
                                0x3,                    /* 3 */
/* 788 */   NdrFcShort( 0x8 ),  /* 8 */
/* 790 */
                                0x4b,                   /* FC_PP */
                                0x5c,                   /* FC_PAD */
/* 792 */
                                0x46,                   /* FC_NO_REPEAT */
                                0x5c,                   /* FC_PAD */
/* 794 */   NdrFcShort( 0x4 ),  /* 4 */
/* 796 */   NdrFcShort( 0x4 ),  /* 4 */
/* 798 */   0x12, 0x0, /* FC_UP */
/* 800 */   NdrFcShort( 0xffffffe8 ),           /* Offset= -24 (776) */
/* 802 */
                                0x5b,                   /* FC_END */

                                0x8,                    /* FC_LONG */
/* 804 */   0x8,                /* FC_LONG */
                                0x5b,                   /* FC_END */
/* 806 */
                                0x1b,                   /* FC_CARRAY */
                                0x7,                    /* 7 */
/* 808 */   NdrFcShort( 0x8 ),  /* 8 */
/* 810 */   0x19,               /* Corr desc:  field pointer, FC_ULONG */
                                0x0,                    /*  */
/* 812 */   NdrFcShort( 0x0 ),  /* 0 */
/* 814 */   0xb,                /* FC_HYPER */
                                0x5b,                   /* FC_END */
/* 816 */
                                0x16,                   /* FC_PSTRUCT */
                                0x3,                    /* 3 */
/* 818 */   NdrFcShort( 0x8 ),  /* 8 */
/* 820 */
                                0x4b,                   /* FC_PP */
                                0x5c,                   /* FC_PAD */
/* 822 */
                                0x46,                   /* FC_NO_REPEAT */
                                0x5c,                   /* FC_PAD */
/* 824 */   NdrFcShort( 0x4 ),  /* 4 */
/* 826 */   NdrFcShort( 0x4 ),  /* 4 */
/* 828 */   0x12, 0x0, /* FC_UP */
/* 830 */   NdrFcShort( 0xffffffe8 ),           /* Offset= -24 (806) */
/* 832 */
                                0x5b,                   /* FC_END */

                                0x8,                    /* FC_LONG */
/* 834 */   0x8,                /* FC_LONG */
                                0x5b,                   /* FC_END */
/* 836 */
                                0x15,                   /* FC_STRUCT */
                                0x3,                    /* 3 */
/* 838 */   NdrFcShort( 0x8 ),  /* 8 */
/* 840 */   0x8,                /* FC_LONG */
                                0x8,                    /* FC_LONG */
/* 842 */   0x5c,               /* FC_PAD */
                                0x5b,                   /* FC_END */
/* 844 */
                                0x1b,                   /* FC_CARRAY */
                                0x3,                    /* 3 */
/* 846 */   NdrFcShort( 0x8 ),  /* 8 */
/* 848 */   0x7,                /* Corr desc: FC_USHORT */
                                0x0,                    /*  */
/* 850 */   NdrFcShort( 0xffd8 ),/* -40 */
/* 852 */   0x4c,               /* FC_EMBEDDED_COMPLEX */
                                0x0,                    /* 0 */
/* 854 */   NdrFcShort( 0xffffffee ),           /* Offset= -18 (836) */
/* 856 */   0x5c,               /* FC_PAD */
                                0x5b,                   /* FC_END */
/* 858 */
                                0x1a,                   /*
FC_BOGUS_STRUCT */
                                0x3,                    /* 3 */
/* 860 */   NdrFcShort( 0x28 ), /* 40 */
/* 862 */   NdrFcShort( 0xffffffee ),           /* Offset= -18 (844) */
/* 864 */   NdrFcShort( 0x0 ),  /* Offset= 0 (864) */
/* 866 */   0x6,                /* FC_SHORT */
                                0x6,                    /* FC_SHORT */
/* 868 */   0x38,               /* FC_ALIGNM4 */
                                0x8,                    /* FC_LONG */
/* 870 */   0x8,                /* FC_LONG */
                                0x4c,                   /*
FC_EMBEDDED_COMPLEX */
/* 872 */   0x0,                /* 0 */
                                NdrFcShort( 0xfffffdf7 ),           /* Offset=
-521 (352) */
                                0x5b,                   /* FC_END */
/* 876 */
                                0x12, 0x0, /* FC_UP */
/* 878 */   NdrFcShort( 0xfffffef6 ),           /* Offset= -266 (612) */
/* 880 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 882 */   0x1,                /* FC_BYTE */
                                0x5c,                   /* FC_PAD */
/* 884 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 886 */   0x6,                /* FC_SHORT */
                                0x5c,                   /* FC_PAD */
/* 888 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 890 */   0x8,                /* FC_LONG */
                                0x5c,                   /* FC_PAD */
/* 892 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 894 */   0xa,                /* FC_FLOAT */
                                0x5c,                   /* FC_PAD */
/* 896 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 898 */   0xc,                /* FC_DOUBLE */
                                0x5c,                   /* FC_PAD */
/* 900 */
                                0x12, 0x0, /* FC_UP */
/* 902 */   NdrFcShort( 0xfffffd90 ),           /* Offset= -624 (278) */
/* 904 */
```

```
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 906 */   NdrFcShort( 0xfffffd92 ),           /* Offset= -622 (284) */
/* 908 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 910 */   NdrFcShort( 0xfffffda6 ),           /* Offset= -602 (308) */
/* 912 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 914 */   NdrFcShort( 0xfffffdb4 ),           /* Offset= -588 (326) */
/* 916 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 918 */   NdrFcShort( 0xfffffdc2 ),           /* Offset= -574 (344) */
/* 920 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 922 */   NdrFcShort( 0x2 ),      /* Offset= 2 (924) */
/* 924 */
                                0x12, 0x0, /* FC_UP */
/* 926 */   NdrFcShort( 0x16 ),     /* Offset= 22 (948) */
/* 928 */
                                0x15,                   /* FC_STRUCT */
                                0x7,                    /* 7 */
/* 930 */   NdrFcShort( 0x10 ),     /* 16 */
/* 932 */   0x6,                    /* FC_SHORT */
                                0x1,                    /* FC_BYTE */
/* 934 */   0x1,                    /* FC_BYTE */
                                0x38,                   /* FC_ALIGNM4 */
/* 936 */   0x8,                    /* FC_LONG */
                                0x39,                   /* FC_ALIGNM8 */
/* 938 */   0xb,                    /* FC_HYPER */
                                0x5b,                   /* FC_END */
/* 940 */
                                0x12, 0x0, /* FC_UP */
/* 942 */   NdrFcShort( 0xfffffff2 ),           /* Offset= -14 (928) */
/* 944 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 946 */   0x2,                    /* FC_CHAR */
                                0x5c,                   /* FC_PAD */
/* 948 */
                                0x1a,                   /*
FC_BOGUS_STRUCT */
                                0x7,                    /* 7 */
/* 950 */   NdrFcShort( 0x20 ),     /* 32 */
/* 952 */   NdrFcShort( 0x0 ),      /* 0 */
/* 954 */   NdrFcShort( 0x0 ),      /* Offset= 0 (954) */
/* 956 */   0x8,                    /* FC_LONG */
                                0x8,                    /* FC_LONG */
/* 958 */   0x6,                    /* FC_SHORT */
                                0x6,                    /* FC_SHORT */
/* 960 */   0x6,                    /* FC_SHORT */
                                0x6,                    /* FC_SHORT */
/* 962 */   0x4c,                   /* FC_EMBEDDED_COMPLEX */
                                0x0,                    /* 0 */
/* 964 */   NdrFcShort( 0xfffffc42 ),           /* Offset= -958 (6) */
/* 966 */   0x5c,                   /* FC_PAD */
                                0x5b,                   /* FC_END */
/* 968 */   0xb4,                   /* FC_USER_MARSHAL */
                                0x83,                   /* 131 */
/* 970 */   NdrFcShort( 0x0 ),      /* 0 */
/* 972 */   NdrFcShort( 0x10 ),     /* 16 */
/* 974 */   NdrFcShort( 0x0 ),      /* 0 */
/* 976 */   NdrFcShort( 0xfffffc32 ),           /* Offset= -974 (2) */
/* 978 */
                                0x11, 0x4, /* FC_RP [alloced_on_stack] */
/* 980 */   NdrFcShort( 0x6 ),      /* Offset= 6 (986) */
/* 982 */
                                0x13, 0x0, /* FC_OP */
/* 984 */   NdrFcShort( 0xfffffdc ),            /* Offset= -36 (948) */
/* 986 */   0xb4,                   /* FC_USER_MARSHAL */
                                0x83,                   /* 131 */
/* 988 */   NdrFcShort( 0x0 ),      /* 0 */
/* 990 */   NdrFcShort( 0x10 ),     /* 16 */
/* 992 */   NdrFcShort( 0x0 ),      /* 0 */
/* 994 */   NdrFcShort( 0xfffffff4 ),           /* Offset= -12 (982) */

                                0x0
        }
    };

const CInterfaceProxyVtbl * _tpcc_com_ps_ProxyVtblList[] =
{
    ( CInterfaceProxyVtbl *) &_ITPCCProxyVtbl,
    0
};

const CInterfaceStubVtbl * _tpcc_com_ps_StubVtblList[] =
{
    ( CInterfaceStubVtbl *) &_ITPCCStubVtbl,
    0
};

PCInterfaceName const _tpcc_com_ps_InterfaceNamesList[] =
{
    "ITPCC",
    0
};


#define _tpcc_com_ps_CHECK_IID(n)       IID_GENERIC_CHECK_IID(
_tpcc_com_ps, pIID, n)

int __stdcall _tpcc_com_ps_IID_Lookup( const IID * pIID, int * pIndex )
{

    if(!_tpcc_com_ps_CHECK_IID(0))
        {
        *pIndex = 0;
        return 1;
        }

    return 0;
}

const ExtendedProxyFileInfo tpcc_com_ps_ProxyFileInfo =
{
    (PCInterfaceProxyVtblList *) & _tpcc_com_ps_ProxyVtblList,
    (PCInterfaceStubVtblList *) & _tpcc_com_ps_StubVtblList,
    (const PCInterfaceName * ) & _tpcc_com_ps_InterfaceNamesList,
    0, // no delegation
    & _tpcc_com_ps_IID_Lookup,
    1,
    2,
    0, /* table of [async_uuid] interfaces */
    0, /* Filler1 */
    0, /* Filler2 */
    0  /* Filler3 */
};


#endif /* !defined(_M_IA64) && !defined(_M_AXP64)*/


#pragma warning( disable: 4049 )  /* more than 64k source lines */
```

```
/* this ALWAYS GENERATED file contains the proxy stub code */


 /* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:08 2001
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf (OptLev=i2), W1, Zp8, env=Win64 (32b run,appending), ms_ext, c_ext,
robust
    error checks: allocation ref bounds_check enum stub_data
    VC __declspec() decoration level:
         __declspec(uuid()), __declspec(selectany), __declspec(novtable)
         DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#if defined(_M_IA64) || defined(_M_AXP64)
#define USE_STUBLESS_PROXY


/* verify that the <rpcproxy.h> version is high enough to compile this file*/
#ifndef __REDQ_RPCPROXY_H_VERSION__
#define __REQUIRED_RPCPROXY_H_VERSION__ 475
#endif


#include "rpcproxy.h"
#ifndef __RPCPROXY_H_VERSION__
#error this stub requires an updated version of <rpcproxy.h>
#endif // __RPCPROXY_H_VERSION__


#include "tpcc_com_ps.h"

#define TYPE_FORMAT_STRING_SIZE   979
#define PROC_FORMAT_STRING_SIZE   253
#define TRANSMIT_AS_TABLE_SIZE    0
#define WIRE_MARSHAL_TABLE_SIZE   1

typedef struct _MIDL_TYPE_FORMAT_STRING
    {
    short          Pad;
    unsigned char  Format[ TYPE_FORMAT_STRING_SIZE ];
    } MIDL_TYPE_FORMAT_STRING;

typedef struct _MIDL_PROC_FORMAT_STRING
    {
    short          Pad;
    unsigned char  Format[ PROC_FORMAT_STRING_SIZE ];
    } MIDL_PROC_FORMAT_STRING;


extern const MIDL_TYPE_FORMAT_STRING __MIDL_TypeFormatString;
extern const MIDL_PROC_FORMAT_STRING __MIDL_ProcFormatString;


/* Standard interface: __MIDL_itf_tpcc_com_ps_0000, ver. 0.0,

GUID={0x00000000,0x0000,0x0000,{0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0
x00}} */


/* Object interface: IUnknown, ver. 0.0,

GUID={0x00000000,0x0000,0x0000,{0xC0,0x00,0x00,0x00,0x00,0x00,0x00,
0x46}} */


/* Object interface: ITPCC, ver. 0.0,

GUID={0xFEEE6AA2,0x84B1,0x11d2,{0xBA,0x47,0x00,0xC0,0x4F,0xBF,0x
E0,0x8B}} */


extern const MIDL_STUB_DESC Object_StubDesc;


extern const MIDL_SERVER_INFO ITPCC_ServerInfo;

#pragma code_seg(".orpc")
static const unsigned short ITPCC_FormatStringOffsetTable[] =
    {
    0,
    44,
    88,
    132,
    176,
    220
    };

static const MIDL_SERVER_INFO ITPCC_ServerInfo =
    {
    &Object_StubDesc,
    0,
    __MIDL_ProcFormatString.Format,
    &ITPCC_FormatStringOffsetTable[-3],
    0,
    0,
    0,
    0
    };

static const MIDL_STUBLESS_PROXY_INFO ITPCC_ProxyInfo =
    {
    &Object_StubDesc,
    __MIDL_ProcFormatString.Format,
    &ITPCC_FormatStringOffsetTable[-3],
    0,
    0,
    0
    };

CINTERFACE_PROXY_VTABLE(9) _ITPCCProxyVtbl =
{
    &ITPCC_ProxyInfo,
    &IID_ITPCC,
    IUnknown_QueryInterface_Proxy,
    IUnknown_AddRef_Proxy,
    IUnknown_Release_Proxy ,
    (void *)-1 /* ITPCC::NewOrder */ ,
    (void *)-1 /* ITPCC::Payment */ ,
    (void *)-1 /* ITPCC::Delivery */ ,
    (void *)-1 /* ITPCC::StockLevel */ ,
    (void *)-1 /* ITPCC::OrderStatus */ ,
    (void *)-1 /* ITPCC::CallSetComplete */
};

const CInterfaceStubVtbl _ITPCCStubVtbl =
{
    &IID_ITPCC,
    &ITPCC_ServerInfo,
    9,
    0, /* pure interpreted */
    CStdStubBuffer_METHODS
};
```

```
extern const USER_MARSHAL_ROUTINE_QUADRUPLE
UserMarshalRoutines[ WIRE_MARSHAL_TABLE_SIZE ];

static const MIDL_STUB_DESC Object_StubDesc =
    {
    0,
    NdrOleAllocate,
    NdrOleFree,
    0,
    0,
    0,
    0,
    0,
    __MIDL_TypeFormatString.Format,
    1, /* -error bounds_check flag */
    0x50002, /* Ndr library version */
    0,
    0x5030118, /* MIDL Version 5.3.280 */
    0,
    UserMarshalRoutines,
    0,  /* notify & notify_flag routine table */
    0x1, /* MIDL flag */
    0,  /* Reserved3 */
    0,  /* Reserved4 */
    0   /* Reserved5 */
    };

#pragma data_seg(".rdata")

static const USER_MARSHAL_ROUTINE_QUADRUPLE
UserMarshalRoutines[ WIRE_MARSHAL_TABLE_SIZE ] =
        {

            {
            VARIANT_UserSize
            ,VARIANT_UserMarshal
            ,VARIANT_UserUnmarshal
            ,VARIANT_UserFree
            }

        };


#if !defined(__RPC_WIN64__)
#error  Invalid build platform for this stub.
#endif

static const MIDL_PROC_FORMAT_STRING __MIDL_ProcFormatString =
    {
        0,
        {

                /* Procedure NewOrder */

                                        0x33,               /*
FC_AUTO_HANDLE */
                                        0x6c,               /* Old Flags:  object,
Oi2 */
/*  2 */    NdrFcLong( 0x0 ),   /* 0 */
/*  6 */    NdrFcShort( 0x3 ),  /* 3 */
#ifndef _ALPHA_
/*  8 */    NdrFcShort( 0x38 ), /* ia64 Stack size/offset = 56 */
#else
                                        NdrFcShort( 0x30 ), /* axp64 Stack
size/offset = 48 */
#endif
/* 10 */    NdrFcShort( 0x0 ),  /* 0 */
/* 12 */    NdrFcShort( 0x8 ),  /* 8 */
/* 14 */    0x47,               /* Oi2 Flags:  srv must size, clt must size, has
return, has ext, */
                                        0x3,                /* 3 */
/* 16 */    0xa,                /* 10 */
                                        0x7,                /* Ext Flags:  new corr
desc, clt corr check, srv corr check, */
/* 18 */    NdrFcShort( 0x20 ), /* 32 */
/* 20 */    NdrFcShort( 0x20 ), /* 32 */
/* 22 */    NdrFcShort( 0x0 ),  /* 0 */
/* 24 */    NdrFcShort( 0x0 ),  /* 0 */

                /* Parameter txn_in */

/* 26 */    NdrFcShort( 0x8b ), /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
/* 28 */    NdrFcShort( 0x10 ), /* ia64 Stack size/offset = 16 */
#else
                                        NdrFcShort( 0x8 ),  /* axp64 Stack
size/offset = 8 */
#endif
/* 30 */    NdrFcShort( 0x3b6 ), /* Type Offset=950 */

                /* Parameter txn_out */

/* 32 */    NdrFcShort( 0x6113 ),           /* Flags:  must size, must free, out,
simple ref, srv alloc size=24 */
#ifndef _ALPHA_
/* 34 */    NdrFcShort( 0x28 ), /* ia64 Stack size/offset = 40 */
#else
                                        NdrFcShort( 0x20 ), /* axp64 Stack
size/offset = 32 */
#endif
/* 36 */    NdrFcShort( 0x3c8 ), /* Type Offset=968 */

                /* Return value */

/* 38 */    NdrFcShort( 0x70 ), /* Flags:  out, return, base type, */
#ifndef _ALPHA_
/* 40 */    NdrFcShort( 0x30 ), /* ia64 Stack size/offset = 48 */
#else
                                        NdrFcShort( 0x28 ), /* axp64 Stack
size/offset = 40 */
#endif
/* 42 */    0x8,                /* FC_LONG */
                                        0x0,                /* 0 */

                /* Procedure Payment */

/* 44 */    0x33,               /* FC_AUTO_HANDLE */
                                        0x6c,               /* Old Flags:  object,
Oi2 */
/* 46 */    NdrFcLong( 0x0 ),   /* 0 */
/* 50 */    NdrFcShort( 0x4 ),  /* 4 */
#ifndef _ALPHA_
/* 52 */    NdrFcShort( 0x38 ), /* ia64 Stack size/offset = 56 */
#else
                                        NdrFcShort( 0x30 ), /* axp64 Stack
size/offset = 48 */
#endif
/* 54 */    NdrFcShort( 0x0 ),  /* 0 */
/* 56 */    NdrFcShort( 0x8 ),  /* 8 */
/* 58 */    0x47,               /* Oi2 Flags:  srv must size, clt must size, has
return, has ext, */
                                        0x3,                /* 3 */
/* 60 */    0xa,                /* 10 */
                                        0x7,                /* Ext Flags:  new corr
desc, clt corr check, srv corr check, */
```

```
/* 62 */    NdrFcShort( 0x20 ),   /* 32 */
/* 64 */    NdrFcShort( 0x20 ),   /* 32 */
/* 66 */    NdrFcShort( 0x0 ),    /* 0 */
/* 68 */    NdrFcShort( 0x0 ),    /* 0 */

            /* Parameter txn_in */

/* 70 */    NdrFcShort( 0x8b ),   /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
/* 72 */    NdrFcShort( 0x10 ),   /* ia64 Stack size/offset = 16 */
#else
                                  NdrFcShort( 0x8 ),    /* axp64 Stack
size/offset = 8 */
#endif
/* 74 */    NdrFcShort( 0x3b6 ), /* Type Offset=950 */

            /* Parameter txn_out */

/* 76 */    NdrFcShort( 0x6113 ),             /* Flags:  must size, must free, out,
simple ref, srv alloc size=24 */
#ifndef _ALPHA_
/* 78 */    NdrFcShort( 0x28 ),   /* ia64 Stack size/offset = 40 */
#else
                                  NdrFcShort( 0x20 ),   /* axp64 Stack
size/offset = 32 */
#endif
/* 80 */    NdrFcShort( 0x3c8 ), /* Type Offset=968 */

            /* Return value */

/* 82 */    NdrFcShort( 0x70 ),   /* Flags:  out, return, base type, */
#ifndef _ALPHA_
/* 84 */    NdrFcShort( 0x30 ),   /* ia64 Stack size/offset = 48 */
#else
                                  NdrFcShort( 0x28 ),   /* axp64 Stack
size/offset = 40 */
#endif
/* 86 */    0x8,                  /* FC_LONG */
                                  0x0,                  /* 0 */

            /* Procedure Delivery */

/* 88 */    0x33,                 /* FC_AUTO_HANDLE */
                                  0x6c,                 /* Old Flags:  object,
Oi2 */
/* 90 */    NdrFcLong( 0x0 ),     /* 0 */
/* 94 */    NdrFcShort( 0x5 ),    /* 5 */
#ifndef _ALPHA_
/* 96 */    NdrFcShort( 0x38 ),   /* ia64 Stack size/offset = 56 */
#else
                                  NdrFcShort( 0x30 ),   /* axp64 Stack
size/offset = 48 */
#endif
/* 98 */    NdrFcShort( 0x0 ),    /* 0 */
/* 100 */   NdrFcShort( 0x8 ),    /* 8 */
/* 102 */   0x47,                 /* Oi2 Flags:  srv must size, clt must size, has
return, has ext, */
                                  0x3,                  /* 3 */
/* 104 */   0xa,                  /* 10 */
                                  0x7,                  /* Ext Flags:  new corr
desc, clt corr check, srv corr check, */
/* 106 */   NdrFcShort( 0x20 ),   /* 32 */
/* 108 */   NdrFcShort( 0x20 ),   /* 32 */
/* 110 */   NdrFcShort( 0x0 ),    /* 0 */
/* 112 */   NdrFcShort( 0x0 ),    /* 0 */

            /* Parameter txn_in */

/* 114 */   NdrFcShort( 0x8b ),   /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
/* 116 */   NdrFcShort( 0x10 ),   /* ia64 Stack size/offset = 16 */
#else
                                  NdrFcShort( 0x8 ),    /* axp64 Stack
size/offset = 8 */
#endif
/* 118 */   NdrFcShort( 0x3b6 ), /* Type Offset=950 */

            /* Parameter txn_out */

/* 120 */   NdrFcShort( 0x6113 ),             /* Flags:  must size, must free, out,
simple ref, srv alloc size=24 */
#ifndef _ALPHA_
/* 122 */   NdrFcShort( 0x28 ),   /* ia64 Stack size/offset = 40 */
#else
                                  NdrFcShort( 0x20 ),   /* axp64 Stack
size/offset = 32 */
#endif
/* 124 */   NdrFcShort( 0x3c8 ), /* Type Offset=968 */

            /* Return value */

/* 126 */   NdrFcShort( 0x70 ),   /* Flags:  out, return, base type, */
#ifndef _ALPHA_
/* 128 */   NdrFcShort( 0x30 ),   /* ia64 Stack size/offset = 48 */
#else
                                  NdrFcShort( 0x28 ),   /* axp64 Stack
size/offset = 40 */
#endif
/* 130 */   0x8,                  /* FC_LONG */
                                  0x0,                  /* 0 */

            /* Procedure StockLevel */

/* 132 */   0x33,                 /* FC_AUTO_HANDLE */
                                  0x6c,                 /* Old Flags:  object,
Oi2 */
/* 134 */   NdrFcLong( 0x0 ),     /* 0 */
/* 138 */   NdrFcShort( 0x6 ),    /* 6 */
#ifndef _ALPHA_
/* 140 */   NdrFcShort( 0x38 ),   /* ia64 Stack size/offset = 56 */
#else
                                  NdrFcShort( 0x30 ),   /* axp64 Stack
size/offset = 48 */
#endif
/* 142 */   NdrFcShort( 0x0 ),    /* 0 */
/* 144 */   NdrFcShort( 0x8 ),    /* 8 */
/* 146 */   0x47,                 /* Oi2 Flags:  srv must size, clt must size, has
return, has ext, */
                                  0x3,                  /* 3 */
/* 148 */   0xa,                  /* 10 */
                                  0x7,                  /* Ext Flags:  new corr
desc, clt corr check, srv corr check, */
/* 150 */   NdrFcShort( 0x20 ),   /* 32 */
/* 152 */   NdrFcShort( 0x20 ),   /* 32 */
/* 154 */   NdrFcShort( 0x0 ),    /* 0 */
/* 156 */   NdrFcShort( 0x0 ),    /* 0 */

            /* Parameter txn_in */

/* 158 */   NdrFcShort( 0x8b ),   /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
/* 160 */   NdrFcShort( 0x10 ),   /* ia64 Stack size/offset = 16 */
#else
                                  NdrFcShort( 0x8 ),    /* axp64 Stack
size/offset = 8 */
#endif
```

```
/* 162 */   NdrFcShort( 0x3b6 ), /* Type Offset=950 */

            /* Parameter txn_out */

/* 164 */   NdrFcShort( 0x6113 ),               /* Flags:  must size, must free, out,
simple ref, srv alloc size=24 */
#ifndef _ALPHA_
/* 166 */   NdrFcShort( 0x28 ),  /* ia64 Stack size/offset = 40 */
#else
                                 NdrFcShort( 0x20 ),   /* axp64 Stack
size/offset = 32 */
#endif
/* 168 */   NdrFcShort( 0x3c8 ), /* Type Offset=968 */

            /* Return value */

/* 170 */   NdrFcShort( 0x70 ),  /* Flags:  out, return, base type, */
#ifndef _ALPHA_
/* 172 */   NdrFcShort( 0x30 ),  /* ia64 Stack size/offset = 48 */
#else
                                 NdrFcShort( 0x28 ),   /* axp64 Stack
size/offset = 40 */
#endif
/* 174 */   0x8,                 /* FC_LONG */
                                 0x0,                  /* 0 */

            /* Procedure OrderStatus */

/* 176 */   0x33,                /* FC_AUTO_HANDLE */
                                 0x6c,                 /* Old Flags:  object,
Oi2 */
/* 178 */   NdrFcLong( 0x0 ),    /* 0 */
/* 182 */   NdrFcShort( 0x7 ),   /* 7 */
#ifndef _ALPHA_
/* 184 */   NdrFcShort( 0x38 ),  /* ia64 Stack size/offset = 56 */
#else
                                 NdrFcShort( 0x30 ),   /* axp64 Stack
size/offset = 48 */
#endif
/* 186 */   NdrFcShort( 0x0 ),   /* 0 */
/* 188 */   NdrFcShort( 0x8 ),   /* 8 */
/* 190 */   0x47,                /* Oi2 Flags:  srv must size, clt must size, has
return, has ext, */
                                 0x3,                  /* 3 */
/* 192 */   0xa,                 /* 10 */
                                 0x7,                  /* Ext Flags:  new corr
desc, clt corr check, srv corr check, */
/* 194 */   NdrFcShort( 0x20 ),  /* 32 */
/* 196 */   NdrFcShort( 0x20 ),  /* 32 */
/* 198 */   NdrFcShort( 0x0 ),   /* 0 */
/* 200 */   NdrFcShort( 0x0 ),   /* 0 */

            /* Parameter txn_in */

/* 202 */   NdrFcShort( 0x8b ),  /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
/* 204 */   NdrFcShort( 0x10 ),  /* ia64 Stack size/offset = 16 */
#else
                                 NdrFcShort( 0x8 ),    /* axp64 Stack
size/offset = 8 */
#endif
/* 206 */   NdrFcShort( 0x3b6 ), /* Type Offset=950 */

            /* Parameter txn_out */

/* 208 */   NdrFcShort( 0x6113 ),               /* Flags:  must size, must free, out,
simple ref, srv alloc size=24 */
#ifndef _ALPHA_
/* 210 */   NdrFcShort( 0x28 ),  /* ia64 Stack size/offset = 40 */
#else
                                 NdrFcShort( 0x20 ),   /* axp64 Stack
size/offset = 32 */
#endif
/* 212 */   NdrFcShort( 0x3c8 ), /* Type Offset=968 */

            /* Return value */

/* 214 */   NdrFcShort( 0x70 ),  /* Flags:  out, return, base type, */
#ifndef _ALPHA_
/* 216 */   NdrFcShort( 0x30 ),  /* ia64 Stack size/offset = 48 */
#else
                                 NdrFcShort( 0x28 ),   /* axp64 Stack
size/offset = 40 */
#endif
/* 218 */   0x8,                 /* FC_LONG */
                                 0x0,                  /* 0 */

            /* Procedure CallSetComplete */

/* 220 */   0x33,                /* FC_AUTO_HANDLE */
                                 0x6c,                 /* Old Flags:  object,
Oi2 */
/* 222 */   NdrFcLong( 0x0 ),    /* 0 */
/* 226 */   NdrFcShort( 0x8 ),   /* 8 */
/* 228 */   NdrFcShort( 0x10 ),  /* ia64, axp64 Stack size/offset = 16 */
/* 230 */   NdrFcShort( 0x0 ),   /* 0 */
/* 232 */   NdrFcShort( 0x8 ),   /* 8 */
/* 234 */   0x44,                /* Oi2 Flags:  has return, has ext, */
                                 0x1,                  /* 1 */
/* 236 */   0xa,                 /* 10 */
                                 0x1,                  /* Ext Flags:  new corr
desc, */
/* 238 */   NdrFcShort( 0x0 ),   /* 0 */
/* 240 */   NdrFcShort( 0x0 ),   /* 0 */
/* 242 */   NdrFcShort( 0x0 ),   /* 0 */
/* 244 */   NdrFcShort( 0x0 ),   /* 0 */

            /* Return value */

/* 246 */   NdrFcShort( 0x70 ),  /* Flags:  out, return, base type, */
/* 248 */   NdrFcShort( 0x8 ),   /* ia64, axp64 Stack size/offset = 8 */
/* 250 */   0x8,                 /* FC_LONG */
                                 0x0,                  /* 0 */

                                 0x0
    }
  };

static const MIDL_TYPE_FORMAT_STRING __MIDL_TypeFormatString =
  {
    0,
    {
                                 NdrFcShort( 0x0 ),    /* 0 */
/*  2 */
                                 0x12, 0x0, /* FC_UP */
/*  4 */     NdrFcShort( 0x39e ), /* Offset= 926 (930) */
/*  6 */
                                 0x2b,                 /*
FC_NON_ENCAPSULATED_UNION */
                                 0x9,                  /* FC_ULONG */
/*  8 */     0x7,                 /* Corr desc: FC_USHORT */
                                 0x0,                  /*  */
/* 10 */     NdrFcShort( 0xfff8 ), /* -8 */
/* 12 */     NdrFcShort( 0x1 ),   /* Corr flags:  early, */
/* 14 */     NdrFcShort( 0x2 ),   /* Offset= 2 (16) */
/* 16 */     NdrFcShort( 0x10 ),  /* 16 */
```

```
/* 18 */    NdrFcShort( 0x2b ),   /* 43 */
/* 20 */    NdrFcLong( 0x3 ),     /* 3 */
/* 24 */    NdrFcShort( 0x8008 ),             /* Simple arm type: FC_LONG */
/* 26 */    NdrFcLong( 0x11 ),    /* 17 */
/* 30 */    NdrFcShort( 0x8001 ),             /* Simple arm type: FC_BYTE */
/* 32 */    NdrFcLong( 0x2 ),     /* 2 */
/* 36 */    NdrFcShort( 0x8006 ),             /* Simple arm type: FC_SHORT */
/* 38 */    NdrFcLong( 0x4 ),     /* 4 */
/* 42 */    NdrFcShort( 0x800a ),             /* Simple arm type: FC_FLOAT */
/* 44 */    NdrFcLong( 0x5 ),     /* 5 */
/* 48 */    NdrFcShort( 0x800c ),             /* Simple arm type: FC_DOUBLE
*/
/* 50 */    NdrFcLong( 0xb ),     /* 11 */
/* 54 */    NdrFcShort( 0x8006 ),             /* Simple arm type: FC_SHORT */
/* 56 */    NdrFcLong( 0xa ),     /* 10 */
/* 60 */    NdrFcShort( 0x8008 ),             /* Simple arm type: FC_LONG */
/* 62 */    NdrFcLong( 0x6 ),     /* 6 */
/* 66 */    NdrFcShort( 0xd6 ),   /* Offset= 214 (280) */
/* 68 */    NdrFcLong( 0x7 ),     /* 7 */
/* 72 */    NdrFcShort( 0x800c ),             /* Simple arm type: FC_DOUBLE
*/
/* 74 */    NdrFcLong( 0x8 ),     /* 8 */
/* 78 */    NdrFcShort( 0xd0 ),   /* Offset= 208 (286) */
/* 80 */    NdrFcLong( 0xd ),     /* 13 */
/* 84 */    NdrFcShort( 0xe4 ),   /* Offset= 228 (312) */
/* 86 */    NdrFcLong( 0x9 ),     /* 9 */
/* 90 */    NdrFcShort( 0xf0 ),   /* Offset= 240 (330) */
/* 92 */    NdrFcLong( 0x2000 ),              /* 8192 */
/* 96 */    NdrFcShort( 0xfc ),   /* Offset= 252 (348) */
/* 98 */    NdrFcLong( 0x24 ),    /* 36 */
/* 102 */   NdrFcShort( 0x2f4 ),  /* Offset= 756 (858) */
/* 104 */   NdrFcLong( 0x4024 ),              /* 16420 */
/* 108 */   NdrFcShort( 0x2ee ),  /* Offset= 750 (858) */
/* 110 */   NdrFcLong( 0x4011 ),              /* 16401 */
/* 114 */   NdrFcShort( 0x2ec ),  /* Offset= 748 (862) */
/* 116 */   NdrFcLong( 0x4002 ),              /* 16386 */
/* 120 */   NdrFcShort( 0x2ea ),  /* Offset= 746 (866) */
/* 122 */   NdrFcLong( 0x4003 ),              /* 16387 */
/* 126 */   NdrFcShort( 0x2e8 ),  /* Offset= 744 (870) */
/* 128 */   NdrFcLong( 0x4004 ),              /* 16388 */
/* 132 */   NdrFcShort( 0x2e6 ),  /* Offset= 742 (874) */
/* 134 */   NdrFcLong( 0x4005 ),              /* 16389 */
/* 138 */   NdrFcShort( 0x2e4 ),  /* Offset= 740 (878) */
/* 140 */   NdrFcLong( 0x400b ),              /* 16395 */
/* 144 */   NdrFcShort( 0x2d2 ),  /* Offset= 722 (866) */
/* 146 */   NdrFcLong( 0x400a ),              /* 16394 */
/* 150 */   NdrFcShort( 0x2d0 ),  /* Offset= 720 (870) */
/* 152 */   NdrFcLong( 0x4006 ),              /* 16390 */
/* 156 */   NdrFcShort( 0x2d6 ),  /* Offset= 726 (882) */
/* 158 */   NdrFcLong( 0x4007 ),              /* 16391 */
/* 162 */   NdrFcShort( 0x2cc ),  /* Offset= 716 (878) */
/* 164 */   NdrFcLong( 0x4008 ),              /* 16392 */
/* 168 */   NdrFcShort( 0x2ce ),  /* Offset= 718 (886) */
/* 170 */   NdrFcLong( 0x400d ),              /* 16397 */
/* 174 */   NdrFcShort( 0x2cc ),  /* Offset= 716 (890) */
/* 176 */   NdrFcLong( 0x4009 ),              /* 16393 */
/* 180 */   NdrFcShort( 0x2ca ),  /* Offset= 714 (894) */
/* 182 */   NdrFcLong( 0x6000 ),              /* 24576 */
/* 186 */   NdrFcShort( 0x2c8 ),  /* Offset= 712 (898) */
/* 188 */   NdrFcLong( 0x400c ),              /* 16396 */
/* 192 */   NdrFcShort( 0x2c6 ),  /* Offset= 710 (902) */
/* 194 */   NdrFcLong( 0x10 ),    /* 16 */
/* 198 */   NdrFcShort( 0x8002 ),             /* Simple arm type: FC_CHAR */
/* 200 */   NdrFcLong( 0x12 ),    /* 18 */
/* 204 */   NdrFcShort( 0x8006 ),             /* Simple arm type: FC_SHORT */
/* 206 */   NdrFcLong( 0x13 ),    /* 19 */
/* 210 */   NdrFcShort( 0x8008 ),             /* Simple arm type: FC_LONG */
/* 212 */   NdrFcLong( 0x16 ),    /* 22 */
/* 216 */   NdrFcShort( 0x8008 ),             /* Simple arm type: FC_LONG */
/* 218 */   NdrFcLong( 0x17 ),    /* 23 */
/* 222 */   NdrFcShort( 0x8008 ),             /* Simple arm type: FC_LONG */
/* 224 */   NdrFcLong( 0xe ),     /* 14 */
/* 228 */   NdrFcShort( 0x2aa ),  /* Offset= 682 (910) */
/* 230 */   NdrFcLong( 0x400e ),              /* 16398 */
/* 234 */   NdrFcShort( 0x2b0 ),  /* Offset= 688 (922) */
/* 236 */   NdrFcLong( 0x4010 ),              /* 16400 */
/* 240 */   NdrFcShort( 0x2ae ),  /* Offset= 686 (926) */
/* 242 */   NdrFcLong( 0x4012 ),              /* 16402 */
/* 246 */   NdrFcShort( 0x26c ),  /* Offset= 620 (866) */
/* 248 */   NdrFcLong( 0x4013 ),              /* 16403 */
/* 252 */   NdrFcShort( 0x26a ),  /* Offset= 618 (870) */
/* 254 */   NdrFcLong( 0x4016 ),              /* 16406 */
/* 258 */   NdrFcShort( 0x264 ),  /* Offset= 612 (870) */
/* 260 */   NdrFcLong( 0x4017 ),              /* 16407 */
/* 264 */   NdrFcShort( 0x25e ),  /* Offset= 606 (870) */
/* 266 */   NdrFcLong( 0x0 ),     /* 0 */
/* 270 */   NdrFcShort( 0x0 ),    /* Offset= 0 (270) */
/* 272 */   NdrFcLong( 0x1 ),     /* 1 */
/* 276 */   NdrFcShort( 0x0 ),    /* Offset= 0 (276) */
/* 278 */   NdrFcShort( 0xffffffff ),         /* Offset= -1 (277) */
/* 280 */
                                  0x15,                 /* FC_STRUCT */
                                  0x7,                  /* 7 */
/* 282 */   NdrFcShort( 0x8 ),    /* 8 */
/* 284 */   0xb,                  /* FC_HYPER */
                                  0x5b,                 /* FC_END */
/* 286 */
                                  0x12, 0x0, /* FC_UP */
/* 288 */   NdrFcShort( 0xe ),    /* Offset= 14 (302) */
/* 290 */
                                  0x1b,                 /* FC_CARRAY */
                                  0x1,                  /* 1 */
/* 292 */   NdrFcShort( 0x2 ),    /* 2 */
/* 294 */   0x9,                  /* Corr desc: FC_ULONG */
                                  0x0,                  /*  */
/* 296 */   NdrFcShort( 0xfffc ), /* -4 */
/* 298 */   NdrFcShort( 0x1 ),    /* Corr flags:  early, */
/* 300 */   0x6,                  /* FC_SHORT */
                                  0x5b,                 /* FC_END */
/* 302 */
                                  0x17,                 /* FC_CSTRUCT */
                                  0x3,                  /* 3 */
/* 304 */   NdrFcShort( 0x8 ),    /* 8 */
/* 306 */   NdrFcShort( 0xfffffff0 ),         /* Offset= -16 (290) */
/* 308 */   0x8,                  /* FC_LONG */
                                  0x8,                  /* FC_LONG */
/* 310 */   0x5c,                 /* FC_PAD */
                                  0x5b,                 /* FC_END */
/* 312 */
                                  0x2f,                 /* FC_IP */
                                  0x5a,                 /*
FC_CONSTANT_IID */
/* 314 */   NdrFcLong( 0x0 ),     /* 0 */
/* 318 */   NdrFcShort( 0x0 ),    /* 0 */
/* 320 */   NdrFcShort( 0x0 ),    /* 0 */
/* 322 */   0xc0,                 /* 192 */
                                  0x0,                  /* 0 */
/* 324 */   0x0,                  /* 0 */
                                  0x0,                  /* 0 */
/* 326 */   0x0,                  /* 0 */
                                  0x0,                  /* 0 */
/* 328 */   0x0,                  /* 0 */
                                  0x46,                 /* 70 */
/* 330 */
                                  0x2f,                 /* FC_IP */
```

```
                                0x5a,                   /*
FC_CONSTANT_IID */
/* 332 */   NdrFcLong( 0x20400 ),           /* 132096 */
/* 336 */   NdrFcShort( 0x0 ),      /* 0 */
/* 338 */   NdrFcShort( 0x0 ),      /* 0 */
/* 340 */   0xc0,                   /* 192 */
                                0x0,                    /* 0 */
/* 342 */   0x0,                    /* 0 */
                                0x0,                    /* 0 */
/* 344 */   0x0,                    /* 0 */
                                0x0,                    /* 0 */
/* 346 */   0x0,                    /* 0 */
                                0x46,                   /* 70 */
/* 348 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 350 */   NdrFcShort( 0x2 ),      /* Offset= 2 (352) */
/* 352 */
                                0x12, 0x0, /* FC_UP */
/* 354 */   NdrFcShort( 0x1e6 ), /* Offset= 486 (840) */
/* 356 */
                                0x2a,                   /*
FC_ENCAPSULATED_UNION */
                                0x89,                   /* 137 */
/* 358 */   NdrFcShort( 0x20 ),     /* 32 */
/* 360 */   NdrFcShort( 0xa ),      /* 10 */
/* 362 */   NdrFcLong( 0x8 ),       /* 8 */
/* 366 */   NdrFcShort( 0x50 ),     /* Offset= 80 (446) */
/* 368 */   NdrFcLong( 0xd ),       /* 13 */
/* 372 */   NdrFcShort( 0x70 ),     /* Offset= 112 (484) */
/* 374 */   NdrFcLong( 0x9 ),       /* 9 */
/* 378 */   NdrFcShort( 0x90 ),     /* Offset= 144 (522) */
/* 380 */   NdrFcLong( 0xc ),       /* 12 */
/* 384 */   NdrFcShort( 0xb0 ),     /* Offset= 176 (560) */
/* 386 */   NdrFcLong( 0x24 ),      /* 36 */
/* 390 */   NdrFcShort( 0x104 ),    /* Offset= 260 (650) */
/* 392 */   NdrFcLong( 0x800d ),            /* 32781 */
/* 396 */   NdrFcShort( 0x120 ),    /* Offset= 288 (684) */
/* 398 */   NdrFcLong( 0x10 ),      /* 16 */
/* 402 */   NdrFcShort( 0x13a ),    /* Offset= 314 (716) */
/* 404 */   NdrFcLong( 0x2 ),       /* 2 */
/* 408 */   NdrFcShort( 0x150 ),    /* Offset= 336 (744) */
/* 410 */   NdrFcLong( 0x3 ),       /* 3 */
/* 414 */   NdrFcShort( 0x166 ),    /* Offset= 358 (772) */
/* 416 */   NdrFcLong( 0x14 ),      /* 20 */
/* 420 */   NdrFcShort( 0x17c ),    /* Offset= 380 (800) */
/* 422 */   NdrFcShort( 0xffffffff ),           /* Offset= -1 (421) */
/* 424 */
                                0x21,                   /*
FC_BOGUS_ARRAY */
                                0x3,                    /* 3 */
/* 426 */   NdrFcShort( 0x0 ),      /* 0 */
/* 428 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                0x0,                    /*  */
/* 430 */   NdrFcShort( 0x0 ),      /* 0 */
/* 432 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 434 */   NdrFcLong( 0xffffffff ),            /* -1 */
/* 438 */   NdrFcShort( 0x0 ),      /* Corr flags:  */
/* 440 */
                                0x12, 0x0, /* FC_UP */
/* 442 */   NdrFcShort( 0xffffff74 ),           /* Offset= -140 (302) */
/* 444 */   0x5c,                   /* FC_PAD */
                                0x5b,                   /* FC_END */
/* 446 */
                                0x1a,                   /*
FC_BOGUS_STRUCT */
                                0x3,                    /* 3 */
/* 448 */   NdrFcShort( 0x10 ),     /* 16 */
/* 450 */   NdrFcShort( 0x0 ),      /* 0 */
/* 452 */   NdrFcShort( 0x6 ),      /* Offset= 6 (458) */
/* 454 */   0x8,                    /* FC_LONG */
                                0x39,                   /* FC_ALIGNM8 */
/* 456 */   0x36,                   /* FC_POINTER */
                                0x5b,                   /* FC_END */
/* 458 */
                                0x11, 0x0, /* FC_RP */
/* 460 */   NdrFcShort( 0xffffffdc ),           /* Offset= -36 (424) */
/* 462 */
                                0x21,                   /*
FC_BOGUS_ARRAY */
                                0x3,                    /* 3 */
/* 464 */   NdrFcShort( 0x0 ),      /* 0 */
/* 466 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                0x0,                    /*  */
/* 468 */   NdrFcShort( 0x0 ),      /* 0 */
/* 470 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 472 */   NdrFcLong( 0xffffffff ),            /* -1 */
/* 476 */   NdrFcShort( 0x0 ),      /* Corr flags:  */
/* 478 */   0x4c,                   /* FC_EMBEDDED_COMPLEX */
                                0x0,                    /* 0 */
/* 480 */   NdrFcShort( 0xffffff58 ),           /* Offset= -168 (312) */
/* 482 */   0x5c,                   /* FC_PAD */
                                0x5b,                   /* FC_END */
/* 484 */
                                0x1a,                   /*
FC_BOGUS_STRUCT */
                                0x3,                    /* 3 */
/* 486 */   NdrFcShort( 0x10 ),     /* 16 */
/* 488 */   NdrFcShort( 0x0 ),      /* 0 */
/* 490 */   NdrFcShort( 0x6 ),      /* Offset= 6 (496) */
/* 492 */   0x8,                    /* FC_LONG */
                                0x39,                   /* FC_ALIGNM8 */
/* 494 */   0x36,                   /* FC_POINTER */
                                0x5b,                   /* FC_END */
/* 496 */
                                0x11, 0x0, /* FC_RP */
/* 498 */   NdrFcShort( 0xffffffdc ),           /* Offset= -36 (462) */
/* 500 */
                                0x21,                   /*
FC_BOGUS_ARRAY */
                                0x3,                    /* 3 */
/* 502 */   NdrFcShort( 0x0 ),      /* 0 */
/* 504 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                0x0,                    /*  */
/* 506 */   NdrFcShort( 0x0 ),      /* 0 */
/* 508 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 510 */   NdrFcLong( 0xffffffff ),            /* -1 */
/* 514 */   NdrFcShort( 0x0 ),      /* Corr flags:  */
/* 516 */   0x4c,                   /* FC_EMBEDDED_COMPLEX */
                                0x0,                    /* 0 */
/* 518 */   NdrFcShort( 0xffffff44 ),           /* Offset= -188 (330) */
/* 520 */   0x5c,                   /* FC_PAD */
                                0x5b,                   /* FC_END */
/* 522 */
                                0x1a,                   /*
FC_BOGUS_STRUCT */
                                0x3,                    /* 3 */
/* 524 */   NdrFcShort( 0x10 ),     /* 16 */
/* 526 */   NdrFcShort( 0x0 ),      /* 0 */
/* 528 */   NdrFcShort( 0x6 ),      /* Offset= 6 (534) */
/* 530 */   0x8,                    /* FC_LONG */
                                0x39,                   /* FC_ALIGNM8 */
/* 532 */   0x36,                   /* FC_POINTER */
                                0x5b,                   /* FC_END */
/* 534 */
                                0x11, 0x0, /* FC_RP */
```

```
/* 536 */   NdrFcShort( 0xffffffdc ),           /* Offset= -36 (500) */
/* 538 */
                                0x21,                       /*
FC_BOGUS_ARRAY */
                                0x3,                        /* 3 */
/* 540 */   NdrFcShort( 0x0 ),      /* 0 */
/* 542 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                0x0,                        /*  */
/* 544 */   NdrFcShort( 0x0 ),      /* 0 */
/* 546 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 548 */   NdrFcLong( 0xffffffff ),            /* -1 */
/* 552 */   NdrFcShort( 0x0 ),      /* Corr flags:  */
/* 554 */
                                0x12, 0x0, /* FC_UP */
/* 556 */   NdrFcShort( 0x176 ), /* Offset= 374 (930) */
/* 558 */   0x5c,                   /* FC_PAD */
                                0x5b,                       /* FC_END */
/* 560 */
                                0x1a,                       /*
FC_BOGUS_STRUCT */
                                0x3,                        /* 3 */
/* 562 */   NdrFcShort( 0x10 ),     /* 16 */
/* 564 */   NdrFcShort( 0x0 ),      /* 0 */
/* 566 */   NdrFcShort( 0x6 ),      /* Offset= 6 (572) */
/* 568 */   0x8,                    /* FC_LONG */
                                0x39,                       /* FC_ALIGNM8 */
/* 570 */   0x36,                   /* FC_POINTER */
                                0x5b,                       /* FC_END */
/* 572 */
                                0x11, 0x0, /* FC_RP */
/* 574 */   NdrFcShort( 0xffffffdc ),           /* Offset= -36 (538) */
/* 576 */
                                0x2f,                       /* FC_IP */
                                0x5a,                       /*
FC_CONSTANT_IID */
/* 578 */   NdrFcLong( 0x2f ),      /* 47 */
/* 582 */   NdrFcShort( 0x0 ),      /* 0 */
/* 584 */   NdrFcShort( 0x0 ),      /* 0 */
/* 586 */   0xc0,                   /* 192 */
                                0x0,                        /* 0 */
/* 588 */   0x0,                    /* 0 */
                                0x0,                        /* 0 */
/* 590 */   0x0,                    /* 0 */
                                0x0,                        /* 0 */
/* 592 */   0x0,                    /* 0 */
                                0x46,                       /* 70 */
/* 594 */
                                0x1b,                       /* FC_CARRAY */
                                0x0,                        /* 0 */
/* 596 */   NdrFcShort( 0x1 ),      /* 1 */
/* 598 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                0x0,                        /*  */
/* 600 */   NdrFcShort( 0x4 ),      /* 4 */
/* 602 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 604 */   0x1,                    /* FC_BYTE */
                                0x5b,                       /* FC_END */
/* 606 */
                                0x1a,                       /*
FC_BOGUS_STRUCT */
                                0x3,                        /* 3 */
/* 608 */   NdrFcShort( 0x18 ),     /* 24 */
/* 610 */   NdrFcShort( 0x0 ),      /* 0 */
/* 612 */   NdrFcShort( 0xc ),      /* Offset= 12 (624) */
/* 614 */   0x8,                    /* FC_LONG */
                                0x8,                        /* FC_LONG */
/* 616 */   0x4c,                   /* FC_EMBEDDED_COMPLEX */
                                0x0,                        /* 0 */
/* 618 */   NdrFcShort( 0xffffffd6 ),           /* Offset= -42 (576) */
/* 620 */   0x39,                   /* FC_ALIGNM8 */
                                0x36,                       /* FC_POINTER */
/* 622 */   0x5c,                   /* FC_PAD */
                                0x5b,                       /* FC_END */
/* 624 */
                                0x12, 0x0, /* FC_UP */
/* 626 */   NdrFcShort( 0xfffffffe0 ),          /* Offset= -32 (594) */
/* 628 */
                                0x21,                       /*
FC_BOGUS_ARRAY */
                                0x3,                        /* 3 */
/* 630 */   NdrFcShort( 0x0 ),      /* 0 */
/* 632 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                0x0,                        /*  */
/* 634 */   NdrFcShort( 0x0 ),      /* 0 */
/* 636 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 638 */   NdrFcLong( 0xffffffff ),            /* -1 */
/* 642 */   NdrFcShort( 0x0 ),      /* Corr flags:  */
/* 644 */
                                0x12, 0x0, /* FC_UP */
/* 646 */   NdrFcShort( 0xffffffd8 ),           /* Offset= -40 (606) */
/* 648 */   0x5c,                   /* FC_PAD */
                                0x5b,                       /* FC_END */
/* 650 */
                                0x1a,                       /*
FC_BOGUS_STRUCT */
                                0x3,                        /* 3 */
/* 652 */   NdrFcShort( 0x10 ),     /* 16 */
/* 654 */   NdrFcShort( 0x0 ),      /* 0 */
/* 656 */   NdrFcShort( 0x6 ),      /* Offset= 6 (662) */
/* 658 */   0x8,                    /* FC_LONG */
                                0x39,                       /* FC_ALIGNM8 */
/* 660 */   0x36,                   /* FC_POINTER */
                                0x5b,                       /* FC_END */
/* 662 */
                                0x11, 0x0, /* FC_RP */
/* 664 */   NdrFcShort( 0xffffffdc ),           /* Offset= -36 (628) */
/* 666 */
                                0x1d,                       /* FC_SMFARRAY */
                                0x0,                        /* 0 */
/* 668 */   NdrFcShort( 0x8 ),      /* 8 */
/* 670 */   0x1,                    /* FC_BYTE */
                                0x5b,                       /* FC_END */
/* 672 */
                                0x15,                       /* FC_STRUCT */
                                0x3,                        /* 3 */
/* 674 */   NdrFcShort( 0x10 ),     /* 16 */
/* 676 */   0x8,                    /* FC_LONG */
                                0x6,                        /* FC_SHORT */
/* 678 */   0x6,                    /* FC_SHORT */
                                0x4c,                       /*
FC_EMBEDDED_COMPLEX */
/* 680 */   0x0,                    /* 0 */
                                NdrFcShort( 0xfffffff1 ),           /* Offset=
-15 (666) */
                                0x5b,                       /* FC_END */
/* 684 */
                                0x1a,                       /*
FC_BOGUS_STRUCT */
                                0x3,                        /* 3 */
/* 686 */   NdrFcShort( 0x20 ),     /* 32 */
/* 688 */   NdrFcShort( 0x0 ),      /* 0 */
/* 690 */   NdrFcShort( 0xa ),      /* Offset= 10 (700) */
/* 692 */   0x8,                    /* FC_LONG */
                                0x39,                       /* FC_ALIGNM8 */
/* 694 */   0x36,                   /* FC_POINTER */
                                0x4c,                       /*
FC_EMBEDDED_COMPLEX */
```

```
/* 696 */   0x0,                    /* 0 */
                                    NdrFcShort( 0xfffffff7 ),           /* Offset=
-25 (672) */
                                    0x5b,                   /* FC_END */
/* 700 */
                                    0x11, 0x0, /* FC_RP */
/* 702 */   NdrFcShort( 0xffffff10 ),           /* Offset= -240 (462) */
/* 704 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x0,                    /* 0 */
/* 706 */   NdrFcShort( 0x1 ),      /* 1 */
/* 708 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 710 */   NdrFcShort( 0x0 ),      /* 0 */
/* 712 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 714 */   0x1,                    /* FC_BYTE */
                                    0x5b,                   /* FC_END */
/* 716 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 718 */   NdrFcShort( 0x10 ),     /* 16 */
/* 720 */   NdrFcShort( 0x0 ),      /* 0 */
/* 722 */   NdrFcShort( 0x6 ),      /* Offset= 6 (728) */
/* 724 */   0x8,                    /* FC_LONG */
                                    0x39,                   /* FC_ALIGNM8 */
/* 726 */   0x36,                   /* FC_POINTER */
                                    0x5b,                   /* FC_END */
/* 728 */
                                    0x12, 0x0, /* FC_UP */
/* 730 */   NdrFcShort( 0xfffffffe6 ),          /* Offset= -26 (704) */
/* 732 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x1,                    /* 1 */
/* 734 */   NdrFcShort( 0x2 ),      /* 2 */
/* 736 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 738 */   NdrFcShort( 0x0 ),      /* 0 */
/* 740 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 742 */   0x6,                    /* FC_SHORT */
                                    0x5b,                   /* FC_END */
/* 744 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 746 */   NdrFcShort( 0x10 ),     /* 16 */
/* 748 */   NdrFcShort( 0x0 ),      /* 0 */
/* 750 */   NdrFcShort( 0x6 ),      /* Offset= 6 (756) */
/* 752 */   0x8,                    /* FC_LONG */
                                    0x39,                   /* FC_ALIGNM8 */
/* 754 */   0x36,                   /* FC_POINTER */
                                    0x5b,                   /* FC_END */
/* 756 */
                                    0x12, 0x0, /* FC_UP */
/* 758 */   NdrFcShort( 0xfffffffe6 ),          /* Offset= -26 (732) */
/* 760 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x3,                    /* 3 */
/* 762 */   NdrFcShort( 0x4 ),      /* 4 */
/* 764 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 766 */   NdrFcShort( 0x0 ),      /* 0 */
/* 768 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 770 */   0x8,                    /* FC_LONG */
                                    0x5b,                   /* FC_END */
/* 772 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 774 */   NdrFcShort( 0x10 ),     /* 16 */
/* 776 */   NdrFcShort( 0x0 ),      /* 0 */
/* 778 */   NdrFcShort( 0x6 ),      /* Offset= 6 (784) */
/* 780 */   0x8,                    /* FC_LONG */
                                    0x39,                   /* FC_ALIGNM8 */
/* 782 */   0x36,                   /* FC_POINTER */
                                    0x5b,                   /* FC_END */
/* 784 */
                                    0x12, 0x0, /* FC_UP */
/* 786 */   NdrFcShort( 0xfffffffe6 ),          /* Offset= -26 (760) */
/* 788 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x7,                    /* 7 */
/* 790 */   NdrFcShort( 0x8 ),      /* 8 */
/* 792 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 794 */   NdrFcShort( 0x0 ),      /* 0 */
/* 796 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 798 */   0xb,                    /* FC_HYPER */
                                    0x5b,                   /* FC_END */
/* 800 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 802 */   NdrFcShort( 0x10 ),     /* 16 */
/* 804 */   NdrFcShort( 0x0 ),      /* 0 */
/* 806 */   NdrFcShort( 0x6 ),      /* Offset= 6 (812) */
/* 808 */   0x8,                    /* FC_LONG */
                                    0x39,                   /* FC_ALIGNM8 */
/* 810 */   0x36,                   /* FC_POINTER */
                                    0x5b,                   /* FC_END */
/* 812 */
                                    0x12, 0x0, /* FC_UP */
/* 814 */   NdrFcShort( 0xfffffffe6 ),          /* Offset= -26 (788) */
/* 816 */
                                    0x15,                   /* FC_STRUCT */
                                    0x3,                    /* 3 */
/* 818 */   NdrFcShort( 0x8 ),      /* 8 */
/* 820 */   0x8,                    /* FC_LONG */
                                    0x8,                    /* FC_LONG */
/* 822 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 824 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x3,                    /* 3 */
/* 826 */   NdrFcShort( 0x8 ),      /* 8 */
/* 828 */   0x7,                    /* Corr desc: FC_USHORT */
                                    0x0,                    /*  */
/* 830 */   NdrFcShort( 0xffc8 ),   /* -56 */
/* 832 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 834 */   0x4c,                   /* FC_EMBEDDED_COMPLEX */
                                    0x0,                    /* 0 */
/* 836 */   NdrFcShort( 0xffffffec ),           /* Offset= -20 (816) */
/* 838 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 840 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 842 */   NdrFcShort( 0x38 ),     /* 56 */
/* 844 */   NdrFcShort( 0xffffffec ),           /* Offset= -20 (824) */
/* 846 */   NdrFcShort( 0x0 ),      /* Offset= 0 (846) */
/* 848 */   0x6,                    /* FC_SHORT */
                                    0x6,                    /* FC_SHORT */
/* 850 */   0x38,                   /* FC_ALIGNM4 */
                                    0x8,                    /* FC_LONG */
/* 852 */   0x8,                    /* FC_LONG */
```

```
                                0x4c,                   /*
FC_EMBEDDED_COMPLEX */
/* 854 */   0x4,                 /* 4 */
                                NdrFcShort( 0xfffffe0d ),           /* Offset=
-499 (356) */
                                0x5b,                   /* FC_END */
/* 858 */
                                0x12, 0x0, /* FC_UP */
/* 860 */   NdrFcShort( 0xffffff02 ),           /* Offset= -254 (606) */
/* 862 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 864 */   0x1,                 /* FC_BYTE */
                                0x5c,                   /* FC_PAD */
/* 866 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 868 */   0x6,                 /* FC_SHORT */
                                0x5c,                   /* FC_PAD */
/* 870 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 872 */   0x8,                 /* FC_LONG */
                                0x5c,                   /* FC_PAD */
/* 874 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 876 */   0xa,                 /* FC_FLOAT */
                                0x5c,                   /* FC_PAD */
/* 878 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 880 */   0xc,                 /* FC_DOUBLE */
                                0x5c,                   /* FC_PAD */
/* 882 */
                                0x12, 0x0, /* FC_UP */
/* 884 */   NdrFcShort( 0xfffffda4 ),           /* Offset= -604 (280) */
/* 886 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 888 */   NdrFcShort( 0xfffffda6 ),           /* Offset= -602 (286) */
/* 890 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 892 */   NdrFcShort( 0xfffffdbc ),           /* Offset= -580 (312) */
/* 894 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 896 */   NdrFcShort( 0xfffffdca ),           /* Offset= -566 (330) */
/* 898 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 900 */   NdrFcShort( 0xfffffdd8 ),           /* Offset= -552 (348) */
/* 902 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 904 */   NdrFcShort( 0x2 ),   /* Offset= 2 (906) */
/* 906 */
                                0x12, 0x0, /* FC_UP */
/* 908 */   NdrFcShort( 0x16 ),  /* Offset= 22 (930) */
/* 910 */
                                0x15,                   /* FC_STRUCT */
                                0x7,                    /* 7 */
/* 912 */   NdrFcShort( 0x10 ),  /* 16 */
/* 914 */   0x6,                 /* FC_SHORT */
                                0x1,                    /* FC_BYTE */
/* 916 */   0x1,                 /* FC_BYTE */
                                0x38,                   /* FC_ALIGNM4 */
/* 918 */   0x8,                 /* FC_LONG */
                                0x39,                   /* FC_ALIGNM8 */
/* 920 */   0xb,                 /* FC_HYPER */
                                0x5b,                   /* FC_END */
/* 922 */
                                0x12, 0x0, /* FC_UP */
/* 924 */   NdrFcShort( 0xfffffff2 ),           /* Offset= -14 (910) */
/* 926 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 928 */   0x2,                 /* FC_CHAR */
                                0x5c,                   /* FC_PAD */
/* 930 */
                                0x1a,                   /*
FC_BOGUS_STRUCT */
                                0x7,                    /* 7 */
/* 932 */   NdrFcShort( 0x20 ),  /* 32 */
/* 934 */   NdrFcShort( 0x0 ),   /* 0 */
/* 936 */   NdrFcShort( 0x0 ),   /* Offset= 0 (936) */
/* 938 */   0x8,                 /* FC_LONG */
                                0x8,                    /* FC_LONG */
/* 940 */   0x6,                 /* FC_SHORT */
                                0x6,                    /* FC_SHORT */
/* 942 */   0x6,                 /* FC_SHORT */
                                0x6,                    /* FC_SHORT */
/* 944 */   0x4c,                /* FC_EMBEDDED_COMPLEX */
                                0x0,                    /* 0 */
/* 946 */   NdrFcShort( 0xffffc54 ),            /* Offset= -940 (6) */
/* 948 */   0x5c,                /* FC_PAD */
                                0x5b,                   /* FC_END */
/* 950 */   0xb4,                /* FC_USER_MARSHAL */
                                0x83,                   /* 131 */
/* 952 */   NdrFcShort( 0x0 ),   /* 0 */
/* 954 */   NdrFcShort( 0x18 ),  /* 24 */
/* 956 */   NdrFcShort( 0x0 ),   /* 0 */
/* 958 */   NdrFcShort( 0xfffffc44 ),           /* Offset= -956 (2) */
/* 960 */
                                0x11, 0x4, /* FC_RP [alloced_on_stack] */
/* 962 */   NdrFcShort( 0x6 ),   /* Offset= 6 (968) */
/* 964 */
                                0x13, 0x0, /* FC_OP */
/* 966 */   NdrFcShort( 0xffffffdc ),           /* Offset= -36 (930) */
/* 968 */   0xb4,                /* FC_USER_MARSHAL */
                                0x83,                   /* 131 */
/* 970 */   NdrFcShort( 0x0 ),   /* 0 */
/* 972 */   NdrFcShort( 0x18 ),  /* 24 */
/* 974 */   NdrFcShort( 0x0 ),   /* 0 */
/* 976 */   NdrFcShort( 0xfffffff4 ),           /* Offset= -12 (964) */

                                0x0
    }
  };

const CInterfaceProxyVtbl * _tpcc_com_ps_ProxyVtblList[] =
{
  ( CInterfaceProxyVtbl *) &_ITPCCProxyVtbl,
  0
};

const CInterfaceStubVtbl * _tpcc_com_ps_StubVtblList[] =
{
  ( CInterfaceStubVtbl *) &_ITPCCStubVtbl,
  0
};

PCInterfaceName const _tpcc_com_ps_InterfaceNamesList[] =
{
  "ITPCC",
  0
};


#define _tpcc_com_ps_CHECK_IID(n)       IID_GENERIC_CHECK_IID(
_tpcc_com_ps, pIID, n)
```

```
int __stdcall _tpcc_com_ps_IID_Lookup( const IID * pIID, int * pIndex )
{

   if(!_tpcc_com_ps_CHECK_IID(0))
      {
      *pIndex = 0;
      return 1;
      }

   return 0;
}

const ExtendedProxyFileInfo tpcc_com_ps_ProxyFileInfo =
{
   (PCInterfaceProxyVtblList *) & _tpcc_com_ps_ProxyVtblList,
   (PCInterfaceStubVtblList *) & _tpcc_com_ps_StubVtblList,
   (const PCInterfaceName * ) & _tpcc_com_ps_InterfaceNamesList,
   0, // no delegation
   & _tpcc_com_ps_IID_Lookup,
   1,
   2,
   0, /* table of [async_uuid] interfaces */
   0, /* Filler1 */
   0, /* Filler2 */
   0  /* Filler3 */
};


#endif /* defined(_M_IA64) || defined(_M_AXP64)*/
```

Tpcc_com_sl.rgs

```
HKCR
{
            TPCC.StockLevel.1 = s 'StockLevel Class'
            {
                        CLSID = s
'{2668369E-A50D-11D2-BA4E-00C04FBFE08B}'
            }
            TPCC.StockLevel = s 'StockLevel Class'
            {
                        CurVer = s 'TPCC.StockLevel.1'
            }
            NoRemove CLSID
            {
                        ForceRemove
{2668369E-A50D-11D2-BA4E-00C04FBFE08B} = s 'StockLevel Class'
                        {
                                    ProgID = s 'TPCC.StockLevel.1'
                                    VersionIndependentProgID = s
'TPCC.StockLevel'
                                    InprocServer32 = s '%MODULE%'
                                    {
                                                val ThreadingModel = s 'Both'
                                    }
                        }
            }
}
```

tpcc_odbc.cpp

```
/*          FILE:                   TPCC_ODBC.CPP
 *                                          Microsoft TPC-C Kit Ver.
4.20.000
 *                                                      Copyright Microsoft, 1999
 *          All Rights Reserved
 *
 *                                                      Version 4.10.000 audited by
Richard Gimarc, Performance Metrics, 3/17/99
 *
 *          PURPOSE:            Implements ODBC calls for TPC-C txns.
 *          Contact:    Charles Levine (clevine@microsoft.com)
 *
 *  Change history:
 *                      4.20.000 - updated rev number to match kit
 *                      4.10.001 - not deleting error class in catch handler on
deadlock retry;
 *                                                      not a functional bug, but a
memory leak
 */

#include <windows.h>
#include <stdio.h>
#include <assert.h>

#define DBNTWIN32
#include <sqltypes.h>
#include <sql.h>
#include <sqlext.h>
#include <odbcss.h>

#ifdef ICECAP
#include <icapexp.h>
#endif

// need to declare functions for export
#define DllDecl  __declspec( dllexport )

#include "..\..\common\src\error.h"
#include "..\..\common\src\trans.h"
#include "..\..\common\src\txn_base.h"
#include "tpcc_odbc.h"

// version string; must match return value from tpcc_version stored proc
const char  sVersion[] = "4.10.000";

const iMaxRetries = 10;                         // how many retries on deadlock

const int iErrOleDbProvider = 7312;
const char sErrTimeoutExpired[] = "Timeout expired";

static SQLHENV henv = SQL_NULL_HENV;
// ODBC environment handle

BOOL APIENTRY DllMain(HMODULE hModule, DWORD
ul_reason_for_call, LPVOID lpReserved)
{
            switch( ul_reason_for_call )
            {
                        case DLL_PROCESS_ATTACH:
                                    DisableThreadLibraryCalls(hModule);
                                    if (
SQLAllocHandleStd(SQL_HANDLE_ENV, SQL_NULL_HANDLE, &henv)
!= SQL_SUCCESS )
                                                return FALSE;
                                    break;

                        case DLL_PROCESS_DETACH:
                                    if (henv != NULL)
                                                SQLFreeEnv(henv);
                                    break;
```

```
                default:
                        /* nothing */;
        }
        return TRUE;
}

/* FUNCTION: CTPCC_ODBC_ERR::ErrorText
 *
 */

char* CTPCC_ODBC_ERR::ErrorText(void)
{
        int i;

        static SERRORMSG errorMsgs[] =
        {
                { ERR_WRONG_SP_VERSION,
"Wrong version of stored procs on database server"      },
                { ERR_INVALID_CUST,
"Invalid Customer id,name."
        },
                { ERR_NO_SUCH_ORDER,            "No orders
found for customer."
},
                { ERR_RETRIED_TRANS,            "Retries
before transaction succeeded."                  },
                { 0,
""
                                                }
        };

        static char szNotFound[] = "Unknown error number.";

        for(i=0; errorMsgs[i].szMsg[0]; i++)
        {
                if ( m_errno == errorMsgs[i].iError )
                        break;
        }
        if ( !errorMsgs[i].szMsg[0] )
                return szNotFound;
        else
                return errorMsgs[i].szMsg;
}

// wrapper routine for class constructor
__declspec(dllexport) CTPCC_ODBC* CTPCC_ODBC_new(
        LPCSTR szServer,                // name of SQL server
        LPCSTR szUser,                          // user name for login
        LPCSTR szPassword,              // password for login
        LPCSTR szHost,                          // not used
        LPCSTR szDatabase )             // name of database to use
{
        return new CTPCC_ODBC( szServer, szUser, szPassword, szHost,
szDatabase );
}


CTPCC_ODBC::CTPCC_ODBC (
        LPCSTR szServer,                                // name of
SQL server
        LPCSTR szUser,                                          //
user name for login
        LPCSTR szPassword,                              // password
for login
        LPCSTR szHost,                                          //
not used
        LPCSTR szDatabase                               // name of
database to use
        )
{
        RETCODE                 rc;

        // initialization
        m_hdbc = SQL_NULL_HDBC;
        m_hstmt = SQL_NULL_HSTMT;

        m_hstmtNewOrder = SQL_NULL_HSTMT;
        m_hstmtPayment = SQL_NULL_HSTMT;
        m_hstmtDelivery = SQL_NULL_HSTMT;
        m_hstmtOrderStatus = SQL_NULL_HSTMT;
        m_hstmtStockLevel = SQL_NULL_HSTMT;

        m_descNewOrderCols1 = SQL_NULL_HDESC;
        m_descNewOrderCols2 = SQL_NULL_HDESC;
        m_descOrderStatusCols1 = SQL_NULL_HDESC;
        m_descOrderStatusCols2 = SQL_NULL_HDESC;


        if ( SQLAllocHandle(SQL_HANDLE_DBC, henv, &m_hdbc) !=
SQL_SUCCESS )
                ThrowError(CODBCERR::eAllocHandle);

        if ( SQLSetConnectOption(m_hdbc, SQL_PACKET_SIZE, 4096) !=
SQL_SUCCESS )
                ThrowError(CODBCERR::eConnOption);

        {
                char                    szConnectStr[256];
                char                    szOutStr[1024];
                SQLSMALLINT             iOutStrLen;

                sprintf( szConnectStr, "DRIVER=SQL
Server;SERVER=%s;UID=%s;PWD=%s;DATABASE=%s",
                        szServer, szUser, szPassword, szDatabase );

                rc = SQLDriverConnect(m_hdbc, NULL,
(SQLCHAR*)szConnectStr, sizeof(szConnectStr),
                        (SQLCHAR*)szOutStr, sizeof(szOutStr),
&iOutStrLen, SQL_DRIVER_NOPROMPT );

                if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)
                        ThrowError(CODBCERR::eConnect);
        }

        if (SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc, &m_hstmt)
!= SQL_SUCCESS)
                ThrowError(CODBCERR::eAllocHandle);

        {
                char                    buffer[128];

                // set some options affecting connection behavior
                strcpy(buffer, "set nocount on set XACT_ABORT ON");
                rc = SQLExecDirect(m_hstmt, (unsigned char *)buffer,
SQL_NTS);
                if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)
                        ThrowError(CODBCERR::eExecDirect);

                // verify that version of stored procs on server is correct
                char db_sp_version[10];
                strcpy(buffer, "{call tpcc_version}");
                rc = SQLExecDirect(m_hstmt, (unsigned char *)buffer,
SQL_NTS);
```

```
                        if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)
                                ThrowError(CODBCERR::eExecDirect);
                        if ( SQLBindCol(m_hstmt, 1, SQL_C_CHAR,
&db_sp_version, sizeof(db_sp_version), NULL) != SQL_SUCCESS )
                                ThrowError(CODBCERR::eBindCol);
                        if ( SQLFetch(m_hstmt) == SQL_ERROR )
                                ThrowError(CODBCERR::eFetch);
                        if (strcmp(db_sp_version,sVersion))
                                throw new CTPCC_ODBC_ERR(
CTPCC_ODBC_ERR::ERR_WRONG_SP_VERSION );

                        SQLFreeHandle(SQL_HANDLE_STMT, m_hstmt);
        }

        // Bind parameters for each of the transactions
        InitNewOrderParams();
        InitPaymentParams();
        InitOrderStatusParams();
        InitDeliveryParams();
        InitStockLevelParams();
}

CTPCC_ODBC::~CTPCC_ODBC( void )
{
        // note: descriptors are automatically released when the connection is
dropped
        SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtNewOrder);
        SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtPayment);
        SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtDelivery);
        SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtOrderStatus);
        SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtStockLevel);

        SQLDisconnect(m_hdbc);
        SQLFreeHandle(SQL_HANDLE_DBC, m_hdbc);
}

void CTPCC_ODBC::ThrowError( CODBCERR::ACTION eAction )
{
        RETCODE                 rc;
        SDWORD          lNativeError;
        char            szState[6];
        char            szMsg[SQL_MAX_MESSAGE_LENGTH];
        char
szTmp[6*SQL_MAX_MESSAGE_LENGTH];
        CODBCERR   *pODBCErr;                   // not
allocated until needed (maybe never)

        pODBCErr = new CODBCERR();

        pODBCErr->m_NativeError = 0;
        pODBCErr->m_eAction = eAction;
        pODBCErr->m_bDeadLock = FALSE;

        szTmp[0] = 0;
        while (TRUE)
        {
                rc = SQLError(henv, m_hdbc, m_hstmt, (BYTE
*)&szState, &lNativeError,
                                                (BYTE *)&szMsg,
sizeof(szMsg), NULL);
                if (rc == SQL_NO_DATA)
                        break;

                // check for deadlock
                if (lNativeError == 1205 || (lNativeError ==
iErrOleDbProvider &&
                        strstr(szMsg, sErrTimeoutExpired) != NULL))
                        pODBCErr->m_bDeadLock = TRUE;

                // capture the (first) database error
                if (pODBCErr->m_NativeError == 0 && lNativeError !=
0)
                        pODBCErr->m_NativeError = lNativeError;

                // quit if there isn't enough room to concatenate error text
                if ( (strlen(szMsg) + 2) > (sizeof(szTmp) - strlen(szTmp))
)
                        break;

                // include line break after first error msg
                if (szTmp[0] != 0)
                        strcat( szTmp, "\n");
                strcat( szTmp, szMsg );
        }

        if (pODBCErr->m_odbcerrstr != NULL)
        {
                delete [] pODBCErr->m_odbcerrstr;
                pODBCErr->m_odbcerrstr = NULL;
        }

        if (strlen(szTmp) > 0)
        {
                pODBCErr->m_odbcerrstr = new char[ strlen(szTmp)+1
];
                strcpy( pODBCErr->m_odbcerrstr, szTmp );
        }

        SQLFreeStmt(m_hstmt, SQL_CLOSE);
        throw pODBCErr;
}

void CTPCC_ODBC::InitStockLevelParams()
{
        if (   SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc,
&m_hstmtStockLevel) != SQL_SUCCESS )
                ThrowError(CODBCERR::eAllocHandle);

        m_hstmt = m_hstmtStockLevel;

        int i = 0;
        if (   SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SSHORT, SQL_SMALLINT, 0, 0, &m_txn.StockLevel.w_id, 0,
NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.StockLevel.d_id, 0, NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT, 0, 0,
&m_txn.StockLevel.threshold, 0, NULL) != SQL_SUCCESS
                )
                ThrowError(CODBCERR::eBindParam);

        if ( SQLBindCol(m_hstmt, 1, SQL_C_SLONG,
&m_txn.StockLevel.low_stock, 0, NULL) != SQL_SUCCESS )
                ThrowError(CODBCERR::eBindCol);
}

void CTPCC_ODBC::StockLevel()
{
        RETCODE                 rc;
        int                     iTryCount = 0;

        m_hstmt = m_hstmtStockLevel;
```

```
	while (TRUE)
	{
		try
		{
			rc = SQLExecDirectW(m_hstmt,
(SQLWCHAR*)L"{call tpcc_stocklevel(?,?,?)}", SQL_NTS);
			if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)

ThrowError(CODBCERR::eExecDirect);

			if ( SQLFetch(m_hstmt) == SQL_ERROR )

ThrowError(CODBCERR::eFetch);

			SQLFreeStmt(m_hstmt, SQL_CLOSE);

			m_txn.StockLevel.exec_status_code = eOK;
			break;
		}
		catch (CODBCERR *e)
		{
			if ((!e->m_bDeadLock) || (++iTryCount >
iMaxRetries))
				throw;

			// hit deadlock; backoff for increasingly longer
period
			delete e;
			Sleep(10 * iTryCount);
		}
	}

//	if (iTryCount)
//		throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

void CTPCC_ODBC::InitNewOrderParams()
{
	if (   SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc,
&m_hstmtNewOrder) != SQL_SUCCESS
		|| SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descNewOrderCols1) != SQL_SUCCESS
		|| SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descNewOrderCols2) != SQL_SUCCESS
		)
		ThrowError(CODBCERR::eAllocHandle);

	m_hstmt = m_hstmtNewOrder;

	if ( SQLSetStmtAttrW( m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descNewOrderCols1, SQL_IS_POINTER ) != SQL_SUCCESS )
		ThrowError(CODBCERR::eSetStmtAttr);

	int i = 0;
	if (   SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SSHORT, SQL_SMALLINT, 0, 0, &m_txn.NewOrder.w_id, 0,
NULL) != SQL_SUCCESS
		|| SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.NewOrder.d_id, 0, NULL) != SQL_SUCCESS
		|| SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.NewOrder.c_id, 0, NULL) != SQL_SUCCESS
		|| SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.NewOrder.o_ol_cnt, 0, NULL) != SQL_SUCCESS
		|| SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.NewOrder.o_all_local, 0, NULL) != SQL_SUCCESS
		)
		ThrowError(CODBCERR::eBindParam);

	for (int j=0; j<MAX_OL_NEW_ORDER_ITEMS; j++)
	{
		if (   SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.NewOrder.OL[j].ol_i_id, 0, NULL) != SQL_SUCCESS
			|| SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT, 0, 0,
&m_txn.NewOrder.OL[j].ol_supply_w_id, 0, NULL) != SQL_SUCCESS
			|| SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT, 0, 0,
&m_txn.NewOrder.OL[j].ol_quantity, 0, NULL) != SQL_SUCCESS
			)
			ThrowError(CODBCERR::eBindParam);
	}

	// set the bind offset pointer
	if ( SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_ROW_BIND_OFFSET_PTR, &m_BindOffset,
SQL_IS_POINTER ) != SQL_SUCCESS )
		ThrowError(CODBCERR::eSetStmtAttr);

	i = 0;
	if (   SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.NewOrder.OL[0].ol_i_name,
sizeof(m_txn.NewOrder.OL[0].ol_i_name), NULL) != SQL_SUCCESS
		|| SQLBindCol(m_hstmt, ++i, SQL_C_SSHORT,
&m_txn.NewOrder.OL[0].ol_stock, 0, NULL) != SQL_SUCCESS
		|| SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.NewOrder.OL[0].ol_brand_generic,
sizeof(m_txn.NewOrder.OL[0].ol_brand_generic), NULL) != SQL_SUCCESS
		|| SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.NewOrder.OL[0].ol_i_price, 0, NULL) != SQL_SUCCESS
		|| SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.NewOrder.OL[0].ol_amount, 0, NULL) != SQL_SUCCESS
		)
		ThrowError(CODBCERR::eBindCol);

	// associate the column bindings for the second result set
	if ( SQLSetStmtAttrW( m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descNewOrderCols2, SQL_IS_POINTER ) != SQL_SUCCESS )
		ThrowError(CODBCERR::eSetStmtAttr);

	i = 0;
	if (   SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.NewOrder.w_tax, 0, NULL) != SQL_SUCCESS
		|| SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.NewOrder.d_tax, 0, NULL) != SQL_SUCCESS
		|| SQLBindCol(m_hstmt, ++i, SQL_C_SLONG,
&m_txn.NewOrder.o_id, 0, NULL) != SQL_SUCCESS
		|| SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.NewOrder.c_last, sizeof(m_txn.NewOrder.c_last), NULL) !=
SQL_SUCCESS
		|| SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.NewOrder.c_discount, 0, NULL) != SQL_SUCCESS
		|| SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.NewOrder.c_credit, sizeof(m_txn.NewOrder.c_credit), NULL) !=
SQL_SUCCESS
```

```
                    || SQLBindCol(m_hstmt, ++i,
SQL_C_TYPE_TIMESTAMP, &m_txn.NewOrder.o_entry_d, 0, NULL) !=
SQL_SUCCESS
                    || SQLBindCol(m_hstmt, ++i, SQL_C_SLONG,
&m_no_commit_flag, 0, NULL) != SQL_SUCCESS
            )
                    ThrowError(CODBCERR::eBindCol);
}

void CTPCC_ODBC::NewOrder()
{
        int                                             i;
        RETCODE                                         rc;
        int                                             iTryCount =
0;

                    // 0         1         2

                    // 012345678901234567890123456789
        wchar_t                                 szSqlTemplate[] =
L"{call tpcc_neworder(?,?,?,?,?,"

                     L"?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,"

                     L"?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,"

                     L"?,?,?,?,?,?,?,?,?,?,?,?,?,?,?)}";

        m_hstmt = m_hstmtNewOrder;

        // associate the parameter and column bindings for this transaction
        if ( SQLSetStmtAttrW( m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descNewOrderCols1, SQL_IS_POINTER ) != SQL_SUCCESS )
                    ThrowError(CODBCERR::eSetStmtAttr);

        // clip statement buffer based on number of parameters
        // fixed part is 29 chars and variable part is 6 chars per line item
        i = 29 + m_txn.NewOrder.o_ol_cnt*6;
        wcscpy( &szSqlTemplate[i], L")}" );

        // check whether any order lines are for a remote warehouse
        m_txn.NewOrder.o_all_local = 1;
        for (i = 0; i < m_txn.NewOrder.o_ol_cnt; i++)
        {
                    if (m_txn.NewOrder.OL[i].ol_supply_w_id !=
m_txn.NewOrder.w_id)
                    {
                            m_txn.NewOrder.o_all_local = 0;  // at least
one remote warehouse
                            break;
                    }
        }

        while (TRUE)
        {
                    try
                    {
                            m_BindOffset = 0;
                            rc = SQLExecDirectW(m_hstmt,
(SQLWCHAR*)szSqlTemplate, SQL_NTS);
                            if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)

ThrowError(CODBCERR::eExecDirect);

                            // Get order line results
                            m_txn.NewOrder.total_amount = 0;
                            for (i = 0; i<m_txn.NewOrder.o_ol_cnt; i++)
                            {
                                    // set the bind offset value...
                                    m_BindOffset = i *
sizeof(m_txn.NewOrder.OL[0]);

                                    if ( SQLFetch(m_hstmt) ==
SQL_ERROR)

ThrowError(CODBCERR::eFetch);

                                    // move to the next resultset
                                    if ( SQLMoreResults(m_hstmt) ==
SQL_ERROR )

ThrowError(CODBCERR::eMoreResults);

                                    m_txn.NewOrder.total_amount +=
m_txn.NewOrder.OL[i].ol_amount;
                            }

                            // associate the column bindings for the
second result set
                            if ( SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_APP_ROW_DESC, m_descNewOrderCols2, SQL_IS_POINTER
) != SQL_SUCCESS )

ThrowError(CODBCERR::eSetStmtAttr);

                            if ( SQLFetch(m_hstmt) == SQL_ERROR)

ThrowError(CODBCERR::eFetch);

                            SQLFreeStmt(m_hstmt, SQL_CLOSE);

                            if (m_no_commit_flag == 1)
                            {
                                    m_txn.NewOrder.total_amount *=
((1 + m_txn.NewOrder.w_tax + m_txn.NewOrder.d_tax) * (1 -
m_txn.NewOrder.c_discount));

m_txn.NewOrder.exec_status_code = eOK;
                            }
                            else

m_txn.NewOrder.exec_status_code = eInvalidItem;

                            break;
                    }
                    catch (CODBCERR *e)
                    {
                            if ((!e->m_bDeadLock) || (++iTryCount >
iMaxRetries))
                                    throw;

                            // hit deadlock; backoff for increasingly longer
period
                            delete e;
                            Sleep(10 * iTryCount);
                    }
        }

//          if (iTryCount)
//                  throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

void CTPCC_ODBC::InitPaymentParams()
```

```
{
        if (   SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc,
&m_hstmtPayment) != SQL_SUCCESS )
                ThrowError(CODBCERR::eAllocHandle);

        m_hstmt = m_hstmtPayment;

        int i = 0;
        if (   SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SSHORT, SQL_SMALLINT, 0, 0, &m_txn.Payment.w_id, 0, NULL)
!= SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT, 0, 0,
&m_txn.Payment.c_w_id, 0, NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_DOUBLE, SQL_NUMERIC, 6, 2,
&m_txn.Payment.h_amount, 0, NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.Payment.d_id, 0, NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.Payment.c_d_id, 0, NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.Payment.c_id, 0, NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_CHAR, SQL_CHAR,
sizeof(m_txn.Payment.c_last), 0, &m_txn.Payment.c_last,
sizeof(m_txn.Payment.c_last), NULL) != SQL_SUCCESS
                )
                ThrowError(CODBCERR::eBindParam);

        i = 0;
        if (   SQLBindCol(m_hstmt, ++i, SQL_C_SLONG,
&m_txn.Payment.c_id,                    0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_last,                  sizeof(m_txn.Payment.c_last),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i,
SQL_C_TYPE_TIMESTAMP, &m_txn.Payment.h_date,
0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_street_1,      sizeof(m_txn.Payment.w_street_1), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_street_2,      sizeof(m_txn.Payment.w_street_2), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_city,                  sizeof(m_txn.Payment.w_city),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_state,                 sizeof(m_txn.Payment.w_state),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_zip,                   sizeof(m_txn.Payment.w_zip),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_street_1,      sizeof(m_txn.Payment.d_street_1), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_street_2,      sizeof(m_txn.Payment.d_street_2), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_city,                  sizeof(m_txn.Payment.d_city),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_state,                 sizeof(m_txn.Payment.d_state),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_zip,                   sizeof(m_txn.Payment.d_zip),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_first,                 sizeof(m_txn.Payment.c_first),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_middle,        sizeof(m_txn.Payment.c_middle), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_street_1,      sizeof(m_txn.Payment.c_street_1), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_street_2,      sizeof(m_txn.Payment.c_street_2), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_city,                  sizeof(m_txn.Payment.c_city),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_state,                 sizeof(m_txn.Payment.c_state),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_zip,                   sizeof(m_txn.Payment.c_zip),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_phone,                 sizeof(m_txn.Payment.c_phone),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i,
SQL_C_TYPE_TIMESTAMP, &m_txn.Payment.c_since,
0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_credit,        sizeof(m_txn.Payment.c_credit), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.Payment.c_credit_lim,0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.Payment.c_discount,      0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.Payment.c_balance,       0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_data,                  sizeof(m_txn.Payment.c_data),
NULL) != SQL_SUCCESS
                )
                ThrowError(CODBCERR::eBindCol);
}

void CTPCC_ODBC::Payment()
{
        RETCODE                         rc;
        int                             iTryCount = 0;

        m_hstmt = m_hstmtPayment;

        if (m_txn.Payment.c_id != 0)
                m_txn.Payment.c_last[0] = 0;

        while (TRUE)
        {
                try
                {
                        rc = SQLExecDirectW(m_hstmt,
(SQLWCHAR*)L"{call tpcc_payment(?,?,?,?,?,?,?)}", SQL_NTS);
                        if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)
```

```
ThrowError(CODBCERR::eExecDirect);

                                if ( SQLFetch(m_hstmt) == SQL_ERROR)
ThrowError(CODBCERR::eFetch);

                                SQLFreeStmt(m_hstmt, SQL_CLOSE);

                                if (m_txn.Payment.c_id == 0)
                                        throw new CTPCC_ODBC_ERR(
CTPCC_ODBC_ERR::ERR_INVALID_CUST );
                                else
                                        m_txn.Payment.exec_status_code
= eOK;

                                break;
                        }
                        catch (CODBCERR *e)
                        {
                                if ((!e->m_bDeadLock) || (++iTryCount >
iMaxRetries))
                                        throw;

                                // hit deadlock; backoff for increasingly longer
period
                                delete e;
                                Sleep(10 * iTryCount);
                        }
                }

//              if (iTryCount)
//                      throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

void CTPCC_ODBC::InitOrderStatusParams()
{
                if (   SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc,
&m_hstmtOrderStatus) != SQL_SUCCESS
                        || SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descOrderStatusCols1) != SQL_SUCCESS
                        || SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descOrderStatusCols2) != SQL_SUCCESS
                        )
                        ThrowError(CODBCERR::eAllocHandle);

                m_hstmt = m_hstmtOrderStatus;

                if (   SQLSetStmtAttrW( m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descOrderStatusCols1, SQL_IS_POINTER ) != SQL_SUCCESS )
                        ThrowError(CODBCERR::eSetStmtAttr);

                int i = 0;
                if (   SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SSHORT, SQL_SMALLINT, 0, 0, &m_txn.OrderStatus.w_id, 0,
NULL) != SQL_SUCCESS
                        || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.OrderStatus.d_id, 0, NULL) != SQL_SUCCESS
                        || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.OrderStatus.c_id, 0, NULL) != SQL_SUCCESS
                        || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_CHAR, SQL_CHAR,
sizeof(m_txn.OrderStatus.c_last), 0, &m_txn.OrderStatus.c_last,
sizeof(m_txn.OrderStatus.c_last), NULL) != SQL_SUCCESS
                        )
                        ThrowError(CODBCERR::eBindParam);

                // configure block cursor
                if (   SQLSetStmtAttrW(m_hstmt,
SQL_ATTR_ROW_BIND_TYPE,
(SQLPOINTER)sizeof(m_txn.OrderStatus.OL[0]), 0) != SQL_SUCCESS
                        || SQLSetStmtAttrW(m_hstmt,
SQL_ATTR_ROWS_FETCHED_PTR, &m_RowsFetched, 0) !=
SQL_SUCCESS
                        )
                        ThrowError(CODBCERR::eSetStmtAttr);

                i = 0;
                if (   SQLBindCol(m_hstmt, ++i, SQL_C_SSHORT,
&m_txn.OrderStatus.OL[0].ol_supply_w_id, 0, NULL) != SQL_SUCCESS
                        || SQLBindCol(m_hstmt, ++i, SQL_C_SLONG,
&m_txn.OrderStatus.OL[0].ol_i_id, 0, NULL) != SQL_SUCCESS
                        || SQLBindCol(m_hstmt, ++i, SQL_C_SSHORT,
&m_txn.OrderStatus.OL[0].ol_quantity, 0, NULL) != SQL_SUCCESS
                        || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.OrderStatus.OL[0].ol_amount, 0, NULL) != SQL_SUCCESS
                        || SQLBindCol(m_hstmt, ++i,
SQL_C_TYPE_TIMESTAMP, &m_txn.OrderStatus.OL[0].ol_delivery_d, 0,
NULL) != SQL_SUCCESS
                        )
                        ThrowError(CODBCERR::eBindCol);


                if ( SQLSetStmtAttrW( m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descOrderStatusCols2, SQL_IS_POINTER ) != SQL_SUCCESS )
                        ThrowError(CODBCERR::eSetStmtAttr);

                i = 0;
                if (   SQLBindCol(m_hstmt, ++i, SQL_C_SLONG,
&m_txn.OrderStatus.c_id, 0, NULL) != SQL_SUCCESS
                        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.OrderStatus.c_last, sizeof(m_txn.OrderStatus.c_last), NULL) !=
SQL_SUCCESS
                        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.OrderStatus.c_first, sizeof(m_txn.OrderStatus.c_first), NULL) !=
SQL_SUCCESS
                        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.OrderStatus.c_middle, sizeof(m_txn.OrderStatus.c_middle), NULL) !=
SQL_SUCCESS
                        || SQLBindCol(m_hstmt, ++i,
SQL_C_TYPE_TIMESTAMP, &m_txn.OrderStatus.o_entry_d, 0, NULL) !=
SQL_SUCCESS
                        || SQLBindCol(m_hstmt, ++i, SQL_C_SSHORT,
&m_txn.OrderStatus.o_carrier_id, 0, NULL) != SQL_SUCCESS
                        || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.OrderStatus.c_balance, 0, NULL) != SQL_SUCCESS
                        || SQLBindCol(m_hstmt, ++i, SQL_C_SLONG,
&m_txn.OrderStatus.o_id, 0, NULL) != SQL_SUCCESS
                        )
                        ThrowError(CODBCERR::eBindCol);
}

void CTPCC_ODBC::OrderStatus()
{
                int
iTryCount = 0;
                RETCODE
rc;

                m_hstmt = m_hstmtOrderStatus;
```

```
		if ( SQLSetStmtAttrW( m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descOrderStatusCols1, SQL_IS_POINTER ) != SQL_SUCCESS )
			ThrowError(CODBCERR::eSetStmtAttr);

		if (m_txn.OrderStatus.c_id != 0)
			m_txn.OrderStatus.c_last[0] = 0;

		while (TRUE)
		{
			try
			{
				// configure block cursor
				if ( SQLSetStmtAttrW(m_hstmt,
SQL_ATTR_ROW_ARRAY_SIZE, (SQLPOINTER)1, 0) != SQL_SUCCESS )

ThrowError(CODBCERR::eSetStmtAttr);

				rc = SQLExecDirectW(m_hstmt,
(SQLWCHAR*)L"{call tpcc_orderstatus(?,?,?,?)}", SQL_NTS);
				if ( ((rc == SQL_SUCCESS_WITH_INFO)
&& (m_RowsFetched != 0)) || (rc == SQL_ERROR) )

ThrowError(CODBCERR::eExecDirect);

				// configure block cursor
				if ( SQLSetStmtAttrW(m_hstmt,
SQL_ATTR_ROW_ARRAY_SIZE,
(SQLPOINTER)MAX_OL_ORDER_STATUS_ITEMS, 0) != SQL_SUCCESS
)

ThrowError(CODBCERR::eSetStmtAttr);

				rc = SQLFetchScroll( m_hstmt,
SQL_FETCH_NEXT, 0 );
				if ( ((rc == SQL_SUCCESS_WITH_INFO)
&& (m_RowsFetched != 0)) || (rc == SQL_ERROR) )

ThrowError(CODBCERR::eFetchScroll);

				m_txn.OrderStatus.o_ol_cnt =
(short)m_RowsFetched;

				if (m_txn.OrderStatus.o_ol_cnt != 0)
				{
					if ( SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_APP_ROW_DESC, m_descOrderStatusCols2,
SQL_IS_POINTER ) != SQL_SUCCESS )

ThrowError(CODBCERR::eSetStmtAttr);

					if ( SQLMoreResults(m_hstmt) ==
SQL_ERROR )

ThrowError(CODBCERR::eMoreResults);

					if ( (rc = SQLFetch(m_hstmt)) ==
SQL_ERROR)

ThrowError(CODBCERR::eFetch);
				}

				SQLFreeStmt(m_hstmt, SQL_CLOSE);

				if (m_txn.OrderStatus.o_ol_cnt == 0)
					throw new CTPCC_ODBC_ERR(
CTPCC_ODBC_ERR::ERR_NO_SUCH_ORDER );
				else if (m_txn.OrderStatus.c_id == 0 &&
m_txn.OrderStatus.c_last[0] == 0)
					throw new CTPCC_ODBC_ERR(
CTPCC_ODBC_ERR::ERR_INVALID_CUST );
				else

m_txn.OrderStatus.exec_status_code = eOK;

				break;
			}
			catch (CODBCERR *e)
			{
				if ((!e->m_bDeadLock) || (++iTryCount >
iMaxRetries))
					throw;

				// hit deadlock; backoff for increasingly longer
period
				delete e;
				Sleep(10 * iTryCount);
			}
		}

//		if (iTryCount)
//			throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

void CTPCC_ODBC::InitDeliveryParams()
{
		if (   SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc,
&m_hstmtDelivery) != SQL_SUCCESS )
			ThrowError(CODBCERR::eAllocHandle);

		m_hstmt = m_hstmtDelivery;

		int i = 0;
		if (   SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SSHORT, SQL_SMALLINT, 0, 0, &m_txn.Delivery.w_id, 0, NULL)
!= SQL_SUCCESS
			|| SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT, 0, 0,
&m_txn.Delivery.o_carrier_id, 0, NULL) != SQL_SUCCESS
			)
			ThrowError(CODBCERR::eBindParam);

		for (i=0;i<10;i++)
		{
			if ( SQLBindCol(m_hstmt, (UWORD)(i+1),
SQL_C_SLONG, &m_txn.Delivery.o_id[i], 0, NULL) != SQL_SUCCESS )
				ThrowError(CODBCERR::eBindCol);
		}
}

void CTPCC_ODBC::Delivery()
{
		RETCODE				rc;
		int				iTryCount = 0;

		m_hstmt = m_hstmtDelivery;

		while (TRUE)
		{
			try
			{
				rc = SQLExecDirectW(m_hstmt,
(SQLWCHAR*)L"{call tpcc_delivery(?,?)}", SQL_NTS);
				if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)
```

```
ThrowError(CODBCERR::eExecDirect);

                                        if ( SQLFetch(m_hstmt) == SQL_ERROR )
ThrowError(CODBCERR::eFetch);

                                        SQLFreeStmt(m_hstmt, SQL_CLOSE);
                                        m_txn.Delivery.exec_status_code = eOK;
                                        break;
                                }
                                catch (CODBCERR *e)
                                {
                                        if ((!e->m_bDeadLock) || (++iTryCount >
iMaxRetries))
                                                throw;

                                        // hit deadlock; backoff for increasingly longer
period
                                        delete e;
                                        Sleep(10 * iTryCount);
                                }
                        }

//                      if (iTryCount)
//                              throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_RETRIED_TRANS,
iTryCount);
}
```

tpcc_odbc.h

```
/*              FILE:                   TPCC_ODBC.H
 *                                              Microsoft TPC-C Kit Ver.
4.20.000
 *                                              Copyright Microsoft, 1999
 *              All Rights Reserved
 *
 *                                              Version 4.10.000 audited by
Richard Gimarc, Performance Metrics, 3/17/99
 *
 *              PURPOSE:                Header file for TPC-C txn class
implementation.
 *
 *  Change history:
 *                      4.20.000 - updated rev number to match kit
 */
#pragma once

// need to declare functions for import, unless define has already been created
// by the DLL's .cpp module for export.
#ifndef DllDecl
#define DllDecl  __declspec( dllimport )
#endif

class CODBCERR : public CBaseErr
{
        public:
                enum ACTION
                {
                        eNone,
                        eUnknown,
                        eAllocConn,                             //
error from SQLAllocConnect
                        eAllocHandle,                   // error from
SQLAllocHandle
                        eConnOption,                    // error from
SQLSetConnectOption
                        eConnect,                       // error from
SQLConnect
                        eAllocStmt,                             //
error from SQLAllocStmt
                        eExecDirect,                    // error from
SQLExecDirect
                        eBindParam,                             //
error from SQLBindParameter
                        eBindCol,                       // error from
SQLBindCol
                        eFetch,                                 //
error from SQLFetch
                        eFetchScroll,                   // error from
SQLFetchScroll
                        eMoreResults,                   // error from
SQLMoreResults
                        ePrepare,                       // error from
SQLPrepare
                        eExecute,                       // error from
SQLExecute
                        eSetEnvAttr,                    // error from
SQLSetEnvAttr
                        eSetStmtAttr                    // error from
SQLSetStmtAttr
                };

                CODBCERR(void)
                {
                        m_eAction = eNone;
                        m_NativeError = 0;
                        m_bDeadLock = FALSE;
                        m_odbcerrstr = NULL;
                };

                ~CODBCERR()
                {
                        if (m_odbcerrstr != NULL)
                                delete [] m_odbcerrstr;
                };

                ACTION  m_eAction;
                int             m_NativeError;
                BOOL    m_bDeadLock;
                char   *m_odbcerrstr;

                int ErrorType() {return ERR_TYPE_ODBC;};
                int ErrorNum() {return m_NativeError;};
                char *ErrorText() {return m_odbcerrstr;};

};

class CTPCC_ODBC_ERR : public CBaseErr
{
        public:
                enum TPCC_ODBC_ERRS
                {
                        ERR_WRONG_SP_VERSION = 1,               //
"Wrong version of stored procs on database server"
                        ERR_INVALID_CUST,
// "Invalid Customer id,name."
                        ERR_NO_SUCH_ORDER,
// "No orders found for customer."
                        ERR_RETRIED_TRANS,
// "Retries before transaction succeeded."
                };
```

```
                CTPCC_ODBC_ERR( int iErr ) { m_errno = iErr;
m_iTryCount = 0; };

                CTPCC_ODBC_ERR( int iErr, int iTryCount ) {
m_errno = iErr; m_iTryCount = iTryCount; };

                int             m_errno;
                int             m_iTryCount;

                int ErrorType() {return ERR_TYPE_TPCC_ODBC;};
                int ErrorNum() {return m_errno;};

                char *ErrorText();
};

class DllDecl CTPCC_ODBC : public CTPCC_BASE
{
        private:
                // declare variables and private functions here...
                BOOL            m_bDeadlock;            //
transaction was selected as deadlock victim
                int                     m_MaxRetries;
// retry count on deadlock

                SQLHENV                 m_henv;
        // ODBC environment handle
                SQLHDBC                 m_hdbc;
                SQLHSTMT        m_hstmt;                //
the current hstmt

                SQLHSTMT        m_hstmtNewOrder;
                SQLHSTMT        m_hstmtPayment;
                SQLHSTMT        m_hstmtDelivery;
                SQLHSTMT        m_hstmtOrderStatus;
                SQLHSTMT        m_hstmtStockLevel;

                SQLHDESC        m_descNewOrderCols1;
                SQLHDESC        m_descNewOrderCols2;
                SQLHDESC        m_descOrderStatusCols1;
                SQLHDESC        m_descOrderStatusCols2;

                // new-order specific fields
                SQLUINTEGER     m_BindOffset;
                SQLUINTEGER     m_RowsFetched;
                int                     m_no_commit_flag;

                void ThrowError( CODBCERR::ACTION eAction );

                void InitNewOrderParams();
                void InitPaymentParams();
                void InitDeliveryParams();
                void InitStockLevelParams();
                void InitOrderStatusParams();

                union
                {
                        NEW_ORDER_DATA
NewOrder;
                        PAYMENT_DATA            Payment;
                        DELIVERY_DATA           Delivery;
                        STOCK_LEVEL_DATA        StockLevel;
                        ORDER_STATUS_DATA       OrderStatus;
                } m_txn;

        public:
                CTPCC_ODBC(LPCSTR szServer, LPCSTR szUser,
LPCSTR szPassword, LPCSTR szHost, LPCSTR szDatabase);
                ~CTPCC_ODBC(void);
                inline PNEW_ORDER_DATA
BuffAddr_NewOrder()             { return &m_txn.NewOrder;   };
                inline PPAYMENT_DATA
BuffAddr_Payment()              { return &m_txn.Payment;    };
                inline PDELIVERY_DATA
BuffAddr_Delivery()             { return &m_txn.Delivery;   };
                inline PSTOCK_LEVEL_DATA BuffAddr_StockLevel()
{ return &m_txn.StockLevel;  };
                inline PORDER_STATUS_DATA
BuffAddr_OrderStatus()          { return &m_txn.OrderStatus; };

                void NewOrder           ();
                void Payment            ();
                void Delivery           ();
                void StockLevel         ();
                void OrderStatus        ();

};

// wrapper routine for class constructor
extern "C" DllDecl CTPCC_ODBC* CTPCC_ODBC_new
                ( LPCSTR szServer, LPCSTR szUser, LPCSTR szPassword,
LPCSTR szHost, LPCSTR szDatabase );

typedef CTPCC_ODBC* (TYPE_CTPCC_ODBC)(LPCSTR, LPCSTR,
LPCSTR, LPCSTR, LPCSTR);
```

trans.h

```
/*          FILE:               TRANS.H
 *                                      Microsoft TPC-C Kit Ver.
4.20.000
 *                                      Copyright Microsoft, 1999
 *          All Rights Reserved
 *
 *                                      Version 4.10.000 audited by
Richard Gimarc, Performance Metrics, 3/17/99
 *
 *          PURPOSE:            Header file for TPC-C structure templates.
 *
 *  Change history:
 *                      4.20.000 - updated rev number to match kit
 */
#pragma once

// String length constants
#define SERVER_NAME_LEN         20
#define DATABASE_NAME_LEN       20
#define USER_NAME_LEN           20
#define PASSWORD_LEN            20
#define TABLE_NAME_LEN          20
#define I_DATA_LEN              50
#define I_NAME_LEN              24
#define BRAND_LEN               1
#define LAST_NAME_LEN           16
#define W_NAME_LEN              10
#define ADDRESS_LEN             20
#define STATE_LEN               2
#define ZIP_LEN                 9
#define S_DIST_LEN              24
#define S_DATA_LEN              50
#define D_NAME_LEN              10
#define FIRST_NAME_LEN          16
#define MIDDLE_NAME_LEN         2
```

```
#define PHONE_LEN               16
#define DATETIME_LEN            30
#define CREDIT_LEN              2
#define C_DATA_LEN              250
#define H_DATA_LEN              24
#define DIST_INFO_LEN           24
#define MAX_OL_NEW_ORDER_ITEMS  15
#define MAX_OL_ORDER_STATUS_ITEMS 15
#define STATUS_LEN              25
#define OL_DIST_INFO_LEN        24

// TIMESTAMP_STRUCT is provided by the ODBC header file sqltypes.h, but is not available
// when compiling with dblib, so redefined here.  Note: we are using the symbol "__SQLTYPES"
// (declared in sqltypes.h) as a way to determine if TIMESTAMP_STRUCT has been declared.
#ifndef __SQLTYPES
        typedef struct
        {
                short                   /* SQLSMALLINT */   year;
                unsigned short          /* SQLUSMALLINT */  month;
                unsigned short          /* SQLUSMALLINT */  day;
                unsigned short          /* SQLUSMALLINT */  hour;
                unsigned short          /* SQLUSMALLINT */  minute;
                unsigned short          /* SQLUSMALLINT */  second;
                unsigned long           /* SQLUINTEGER */   fraction;
        } TIMESTAMP_STRUCT;
#endif

// possible values for exec_status_code after transaction completes
enum EXEC_STATUS
{
        eOK,                    // 0    "Transaction commited."
        eInvalidItem,           // 1    "Item number is not valid."
        eDeliveryFailed         // 2    "Delivery Post Failed."
};

// transaction structures
typedef struct
{
        // input params
        short                   ol_supply_w_id;
        long                    ol_i_id;
        short                   ol_quantity;

        // output params
        char                    ol_i_name[I_NAME_LEN+1];
        char                    ol_brand_generic[BRAND_LEN+1];
        double                  ol_i_price;
        double                  ol_amount;
        short                   ol_stock;
} OL_NEW_ORDER_DATA;

typedef struct
{
        // input params
        short           w_id;
        short           d_id;
        long            c_id;
        short           o_ol_cnt;

        // output params
        EXEC_STATUS                     exec_status_code;
        char            c_last[LAST_NAME_LEN+1];
        char            c_credit[CREDIT_LEN+1];
        double          c_discount;
        double          w_tax;
        double          d_tax;
        long                    o_id;
        short                   o_commit_flag;
        TIMESTAMP_STRUCT        o_entry_d;
        short           o_all_local;
        double          total_amount;
        OL_NEW_ORDER_DATA       OL[MAX_OL_NEW_ORDER_ITEMS];
} NEW_ORDER_DATA, *PNEW_ORDER_DATA;

typedef struct
{       // input params
        short                   w_id;
        short                   d_id;
        long                    c_id;
        short                   c_d_id;
        short                   c_w_id;
        double                  h_amount;
        char            c_last[LAST_NAME_LEN+1];

        // output params
        EXEC_STATUS                     exec_status_code;
        TIMESTAMP_STRUCT        h_date;
        char                    w_street_1[ADDRESS_LEN+1];
        char                    w_street_2[ADDRESS_LEN+1];
        char                    w_city[ADDRESS_LEN+1];
        char                    w_state[STATE_LEN+1];
        char                    w_zip[ZIP_LEN+1];
        char                    d_street_1[ADDRESS_LEN+1];
        char                    d_street_2[ADDRESS_LEN+1];
        char                    d_city[ADDRESS_LEN+1];
        char                    d_state[STATE_LEN+1];
        char                    d_zip[ZIP_LEN+1];
        char                    c_first[FIRST_NAME_LEN+1];
        char                    c_middle[MIDDLE_NAME_LEN + 1];
        char                    c_street_1[ADDRESS_LEN+1];
        char                    c_street_2[ADDRESS_LEN+1];
        char                    c_city[ADDRESS_LEN+1];
        char                    c_state[STATE_LEN+1];
        char                    c_zip[ZIP_LEN+1];
        char                    c_phone[PHONE_LEN+1];
        TIMESTAMP_STRUCT        c_since;
        char                    c_credit[CREDIT_LEN+1];
        double                  c_credit_lim;
        double                  c_discount;
        double                  c_balance;
        char                    c_data[200+1];
} PAYMENT_DATA, *PPAYMENT_DATA;

typedef struct
{
        long                    ol_i_id;
        short                   ol_supply_w_id;
        short                   ol_quantity;
        double                  ol_amount;
        TIMESTAMP_STRUCT        ol_delivery_d;
} OL_ORDER_STATUS_DATA;
```

```
typedef struct
{       // input params
        short           w_id;
        short           d_id;
        long            c_id;
        char            c_last[LAST_NAME_LEN+1];

        // output params
        EXEC_STATUS                             exec_status_code;
        char            c_first[FIRST_NAME_LEN+1];
        char            c_middle[MIDDLE_NAME_LEN+1];
        double           c_balance;
        long            o_id;
        TIMESTAMP_STRUCT        o_entry_d;
        short           o_carrier_id;
        OL_ORDER_STATUS_DATA
OL[MAX_OL_ORDER_STATUS_ITEMS];
        short           o_ol_cnt;
} ORDER_STATUS_DATA, *PORDER_STATUS_DATA;


typedef struct
{       // input params
        short                   w_id;
        short                   o_carrier_id;

        // output params
        EXEC_STATUS                             exec_status_code;
        SYSTEMTIME                      queue_time;
        long                                    o_id[10];               //
id's of delivered orders for districts 1 to 10
} DELIVERY_DATA, *PDELIVERY_DATA;

//This structure is used for posting delivery transactions and for writing them to
the delivery server.
typedef struct _DELIVERY_TRANSACTION
{
        SYSTEMTIME      queue;                          //time
delivery transaction queued
        short                   w_id;                           //delivery
warehouse
        short                   o_carrier_id;           //carrier id
} DELIVERY_TRANSACTION;

typedef struct
{       // input params
        short                                   w_id;
        short                                   d_id;
        short                                   threshold;

        // output params
        EXEC_STATUS                             exec_status_code;
        long                                    low_stock;
} STOCK_LEVEL_DATA, *PSTOCK_LEVEL_DATA;
```

txn_base.h

```
/*      FILE:                   TXN_BASE.H
 *                                      Microsoft TPC-C Kit Ver.
4.20.000
 *                                      Copyright Microsoft, 1999
 *      All Rights Reserved
 *
 *                                      Version 4.10.000 audited by
Richard Gimarc, Performance Metrics, 3/17/99
 *      PURPOSE:        Header file for TPC-C txn class
implementation.
 *
 *  Change history:
 *                      4.20.000 - updated rev number to match kit
 */

#pragma once

// need to declare functions for import, unless define has already been created
// by the DLL's .cpp module for export.
#ifndef DllDecl
#define DllDecl  __declspec( dllimport )
#endif

class DllDecl CTPCC_BASE
{
        public:
                CTPCC_BASE(void) {};
                virtual ~CTPCC_BASE(void) {};

                virtual PNEW_ORDER_DATA
BuffAddr_NewOrder()                     = 0;
                virtual PPAYMENT_DATA
BuffAddr_Payment()              = 0;
                virtual PDELIVERY_DATA
BuffAddr_Delivery()             = 0;
                virtual PSTOCK_LEVEL_DATA
BuffAddr_StockLevel()           = 0;
                virtual PORDER_STATUS_DATA
BuffAddr_OrderStatus()          = 0;

                virtual void NewOrder                   () = 0;
                virtual void Payment            () = 0;
                virtual void Delivery           () = 0;
                virtual void StockLevel                 () = 0;
                virtual void OrderStatus        () = 0;
};
```

txnlog.h

```
/*      FILE:                   TXNLOG.H
 *                                      Microsoft TPC-C Kit Ver.
4.10.000
 *                                      not yet audited
 *
 *      PURPOSE:        Header file for txn log class
 *                                      Copyright Microsoft, 1999
 *      All Rights Reserved
 *
 */

#pragma once

  typedef struct _TXN_NEWORDER
        {
    BYTE        OL_Count;       //range 0 to 31
    BYTE        OL_Remote_Count;    //range 0 to 31
    WORD        c_id;
    int         o_id;
        } TXN_NEWORDER;

  typedef struct _TXN_PAYMENT
        {
    BYTE        CustByName;
    BYTE        IsRemote;
        } TXN_PAYMENT;
```

```
typedef struct _TXN_ORDERSTATUS
        {
                BYTE    CustByName;
        } TXN_ORDERSTATUS;

        typedef union _TXN_DETAILS
        {
                TXN_NEWORDER   NewOrder;
                TXN_PAYMENT            Payment;
                TXN_ORDERSTATUS        OrderStatus;
        } TXN_DETAILS;


        // Common header for all records in txn log.  The TxnType field is
        // a switch which identifies the particular variant.
        #define TXN_REC_TYPE_CONTROL            1       //

        #define TXN_REC_TYPE_TPCC                       2
// replaces TRANSACTION_TYPE_TPCC
        #define TXN_REC_TYPE_TPCC_DELIV_DEF     3

        typedef struct _TXN_RECORD_HEADER
        {
                JULIAN_TIME     TxnStartT0;             //
start of txn
                BYTE    TxnType;                        // one of
TXN_REC_TYPE_*
                BYTE    TxnSubType;                     //
depends on TxnType
        } TXN_RECORD_HEADER, *PTXN_RECORD_HEADER;


        typedef struct _TXN_RECORD_CONTROL
        {
                // common header; must exactly match
TXN_RECORD_HEADER
                JULIAN_TIME     TxnStartT0;             //
start of txn
                BYTE    TxnType;                        // =
TXN_REC_TYPE_CONTROL
                BYTE    TxnSubType;                     //
depends on TxnType
                // end of common header

                DWORD   Len;                            //
number of bytes after this field
        } TXN_RECORD_CONTROL, *PTXN_RECORD_CONTROL;


        // TPC-C Txn Record Layout:
        //
  //'TxnStartT0' is a Julian timestamp corresponding to the moment the
  //txn is sent to the SUT, i.e., beginning of response time.  Deltas
  //are in milliseconds.  Note that if RTDelay > 0, then the txn was
  //delayed by this amount.  The delay occurs at the beginning of the
  //response time.  So if RTDelay > 0, then the txn was actually sent
  //at TxnStartT0 + RTDelay.
  //
  //Graphically:
  //
  //  time -->
  //
  //    |--- Menu  ---|-- Keying  --|-- Response --|--- Think  --|
  //     <- DeltaT1 -> <- DeltaT2 -> <- DeltaT4  -> <- DeltaT3 ->
  //                    ^
  //                    ^ TxnStartT0
  //

  //RTDelay is the amount of response time delay included in DeltaT4.
  //RTDelay is recorded per txn because this value can be changed on
  //the fly, and so may vary from txn to txn.
  //
  //TxnStatus is the txn completion code.  It is used to indicate errors.
  //For example, in the New Order txn, 1% of txns abort.  TxnStatus will
  //reflect this.

        typedef struct _TXN_RECORD_TPCC
        {
                // common header; must exactly match
TXN_RECORD_HEADER
                JULIAN_TIME     TxnStartT0;             //
start of txn
                BYTE    TxnType;                        // =
TXN_REC_TYPE_TPCC
                BYTE    TxnSubType;                     //
depends on TxnType
                // end of common header

                int     DeltaT1;                // menu time (ms)
                int     DeltaT2;                // keying time (ms)
                int     DeltaT3;                // think time (ms)
                int     DeltaT4;                // response time (ms)
                int     RTDelay;                // response time delay
(ms)
                int             TxnError;       // error code
providing more detail for TxnStatus
                int             w_id;           //
warehouse ID
                BYTE    d_id;                   // assigned
district ID for this thread
                BYTE    d_id_ThisTxn;   // district ID chosen for
this particular
                BYTE    TxnStatus;      // completion status for
txn to indicate errors
                BYTE    reserved;       // for word alignment
                TXN_DETAILS     TxnDetails;     //
        } TXN_RECORD_TPCC, *PTXN_RECORD_TPCC;

        // TPC-C Deferred Delivery Txn Record Layout:
        //
  //Incorporating delivery transaction information into the above
        //structure would increase the size of TXN_DETAILS from 8 to 42
bytes.
  //Hence, we store delivery transaction details in a separate structure.
  //
        typedef struct _TXN_RECORD_TPCC_DELIV_DEF
        {
                // common header; must exactly match
TXN_RECORD_HEADER
                JULIAN_TIME     TxnStartT0;             //
start of txn
                BYTE    TxnType;                        // =
TXN_REC_TYPE_TPCC_DELIV_DEF
                BYTE    TxnSubType;                     //
= 0
                // end of common header

                int     DeltaT4;                // response time (ms)
                int             DeltaTxnExec;   // execution
time (ms)
                int             w_id;           //
warehouse ID
                BYTE    TxnStatus;      // completion status for
txn to indicate errors
                BYTE    reserved;       // for word alignment
                short   o_carrier_id;   // carrier id
```

```
                long        o_id[10];           // returned delivery
transaction ids
        } TXN_RECORD_TPCC_DELIV_DEF,
*PTXN_RECORD_TPCC_DELIV_DEF;



#define         TXN_LOG_VERSION                 2
#define         TXN_DATA_START          4096    // offset in
log file where log records start
#define         TXN_LOG_EYE_CATCHER     "BC"    // signature
bytes at the start of log file


        ////////////////////////////////////////////////////////////////////////
        // The transaction log has a header as the first 4K block.
        //
        typedef struct _TXN_LOG_HEADER
        {
                char                    EyeCatcher[2];      //
signature bytes; should always be "BC"
                int                             LogVersion;
        // set to TXN_LOG_VERSION
                JULIAN_TIME             BeginTxnTS;
// timestamp of first (lowest) txn start
                JULIAN_TIME             EndTxnTS;
// timestamp of last (highest) txn completion time
                int                             iRecCount;
        // number of records in log file
                BOOL                    bLogSorted;
                int                             iFileSize;
// file size in bytes

                // the record map provides a fast way to get close to a
particular timestamp in a sorted log file.
//              struct
//              {
//                      JULIAN_TIME             TS;
        // timestamp of record
//                      int
iPos;           // byte position in file
//              }
RecMap[RecMapSize];
//#define         RecMapSize                              200

        } TXN_LOG_HEADER, *PTXN_LOG_HEADER;

        /* Header of the sorted pointers blocks in Temp file (in merging). */
        typedef struct BLOCK_HEADER {
                long        BlockPos;
                __int64 CurPos;
                DWORD   BytesRead;
                int             nRecords;
                BYTE        *offset;    /* offset of pointers to records in
the log file */
        } BLOCK_HEADER, *PBLOCK_HEADER;



#define     READ_BUFFER_SIZE            64*1024
#define     WRITE_BUFFER_SIZE            8*1024

#define     NUM_READ_BUFFERS            1
#define     NUM_WRITE_BUFFERS           2
#define     MAX_NUM_BUFFERS                     2

// flags passed in to the constructor
#define     TXN_LOG_WRITE       0x01
#define     TXN_LOG_READ        0x02
#define     TXN_LOG_SORTED      0x04
#define TXN_LOG_CRASHOPEN       0x08            // if set,
invalid headers will be tolerated; used for recovery

#define     TXN_LOG_OS_ERROR    1
#define     TXN_LOG_NOT_SORTED  2

#define SKIP_CTRL_RECS          1

class CTxnLog
{
        private:
                DWORD           iBufferSize;
//buffer allocated size
                DWORD           iBytesFreeInBuffer;
//total bytes available for use in buffer
                int                             iNumBuffers;
        //buffers in use
                int                             iActiveBuffer;
        //indicates which buffer is active: 0 or 1
                int                             iIoBuffer;
        //buffer for any pending IO operation
//              int                             iFilePointer;
        //position in file.
                LARGE_INTEGER   lFilePointer;
//position in file.
                int                             iNextRec;
        //when reading, ordinal value of next record

                // A "save point" is remembered each time
GetNextRecord is called with a start time specified.
                // The next time it is called, if start time is after the save
point, we start scanning from the
                // save point.  This is particularly useful in
FindBestInterval, where the log is scanned repeatedly.
                JULIAN_TIME             SavePtTime;
//              int
iSavePtFilePointer;
                LARGE_INTEGER   lSavePtFilePointer;
                int
iSavePtNextRec;

                JULIAN_TIME     lastTS;
        //when writing sorted output, used to verify records are sorted
                BOOL            bWrite;
        //writing log file
                BOOL            bCrashOpen;
        // tolerate bad headers and consistency checks

                BOOL                            bLogSorted;
        // is log file sorted?  applies to both input and output
                JULIAN_TIME             BeginTxnTS;
        // timestamp of first (lowest) txn start
                JULIAN_TIME             EndTxnTS;
        // timestamp of last (highest) txn completion time
                int                             iRecCount;
                // number of records in log file

                BYTE            *pCurrent;
//ptr to current buffer
                BYTE
*pBuffer[MAX_NUM_BUFFERS];

                PTXN_RECORD_HEADER      *TxnArray;
//transaction record pointer array for sort

                DWORD           dwError;
```

```
                HANDLE          hTxnFile;
//handle to log file
                HANDLE          hMapFile;
//map file used when sorting the log
                HANDLE          hIoComplete;
//event to signify that there are no pending IOs
                HANDLE          hLogFileIo;
        //event to signal the IO thread to write the inactive buffer

                Spinlock    Spin;
//spin lock to protect the txn log file buffers

                FILE                                    *tmpFile;
//temp file for merging sorted pieces
                PBLOCK_HEADER           tmpHeaders;
//sorted pointers block header
                BYTE
**recPointers;          //record pointer buffers for each sorted block
                PTXN_RECORD_HEADER      *recBuffers;
//record buffers for each sorted block
                int             *PointersRead;
        //# of pointers processed in each block
                BOOL      *BlockAvailable;
//whether to check a particular block for jmin

                int             nBlocks;
                int             jmin;
                //index (block-wise) of the lowest timestamp record
                int             iAvgRecordLen;
        //average record length

                int             iSortedReturnedCount;
//keeps track of the # of sorted records returned through GetSortedRecord()


                int Write(BYTE *ptr, DWORD Size);
                static void LogFileIO(CTxnLog *);

                void LoadBuffers(int j);
//used in sort/merge to load record buffers

        public:

                CTxnLog::CTxnLog(LPCTSTR szFileName, DWORD
dwOpts);
                ~CTxnLog(void);

                int WriteToLog(PTXN_RECORD_TPCC pTxnRcrd);
                int WriteToLog(PTXN_RECORD_TPCC_DELIV_DEF
pTxnRcrd);
                int WriteToLog(PTXN_RECORD_CONTROL
pCtrlRec);
                int WriteToLog(PTXN_RECORD_HEADER pCtrlRec);

                int WriteCtrlRecToLog(BYTE SubType, LPTSTR lpStr,
DWORD dwLen);

                void CloseTransactionLogFile(void);

                PTXN_RECORD_HEADER GetNextRecord(BOOL
bSkipCtrlRecs = FALSE);
                PTXN_RECORD_HEADER
GetNextRecord(JULIAN_TIME SeekTimeT0, BOOL bSkipCtrlRecs =
FALSE);

                int Sort(void);
                PTXN_RECORD_HEADER GetSortedRecord();
                inline BOOL IsSorted(void) { return bLogSorted; };
                inline JULIAN_TIME BeginTS(void) { return
BeginTxnTS; };
                inline JULIAN_TIME EndTS(void) { return EndTxnTS;
};
                inline int RecordCount(void) { return iRecCount; };
};

class CTXNLOG_ERR : public CBaseErr
{
        public:
                enum CTXNLOG_ERRS
                {
                        ERR_BAD_FILE_FORMAT,            //
"File format is invalid."
                        ERR_UNKNOWN_LOG_VERSION,        //
"Log file version is unknown."
                        ERR_BROKEN_LOG_FILE,            //
"Log file is broken."
                        ERR_LOG_NOT_SORTED,
// "Log file is not sorted"
                        ERR_INVALID_TIME_SEQ,           //
"Internal Error: Record Time Sequence invalid."
                };

                CTXNLOG_ERR(int iErr) : CBaseErr(iErr) {};

                int ErrorType() {return ERR_TYPE_TXNLOG;};

                char *ErrorText()
                {
                        static char *szMsgs[] = {
                                "File format is invalid.",
                                "Log file version is unknown.",
                                "Log file is broken.",
                                "Log file is not sorted",
                                "Internal Error: Record Time
Sequence invalid.",
                                ""
                        };

                        for(int i = 0; szMsgs[i][0]; i++)
                        {
                                if ( m_idMsg == i )
                                        break;
                        }

                        return(szMsgs[i][0] ? szMsgs[i] :
ERR_UNKNOWN);
                };
};
```

webclnt.dsp

```
# Microsoft Developer Studio Project File - Name="webclnt" - Package
Owner=<4>
# Microsoft Developer Studio Generated Build File, Format Version 5.00
# ** DO NOT EDIT **

# TARGTYPE "Win32 (x86) Application" 0x0101

CFG=webclnt - Win32 Release
!MESSAGE This is not a valid makefile. To build this project using NMAKE,
!MESSAGE use the Export Makefile command and run
!MESSAGE
!MESSAGE NMAKE /f "Webclnt.mak".
!MESSAGE
```

```
!MESSAGE You can specify a configuration when running NMAKE
!MESSAGE by defining the macro CFG on the command line. For example:
!MESSAGE
!MESSAGE NMAKE /f "Webclnt.mak" CFG="webclnt - Win32 Release"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "webclnt - Win32 Release" (based on "Win32 (x86) Application")
!MESSAGE "webclnt - Win32 Debug" (based on "Win32 (x86) Application")
!MESSAGE

# Begin Project
# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CPP=cl.exe
MTL=midl.exe
RSC=rc.exe

!IF  "$(CFG)" == "webclnt - Win32 Release"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir ".\Release"
# PROP BASE Intermediate_Dir ".\Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\Release"
# PROP Intermediate_Dir ".\Release"
# PROP Target_Dir ""
# ADD BASE CPP /nologo /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /c
# ADD CPP /nologo /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "NDEBUG" /win32
# ADD MTL /nologo /D "NDEBUG" /mktyplib203 /win32
# ADD BASE RSC /l 0x409 /d "NDEBUG"
# ADD RSC /l 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /machine:I386
# ADD LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib odbccp32.lib
/nologo /subsystem:windows /machine:I386

!ELSEIF  "$(CFG)" == "webclnt - Win32 Debug"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir ".\Debug"
# PROP BASE Intermediate_Dir ".\Debug"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\Debug"
# PROP Intermediate_Dir ".\Debug"
# PROP Target_Dir ""
# ADD BASE CPP /nologo /W3 /Gm /GX /Zi /Od /D "WIN32" /D "_DEBUG"
/D "_WINDOWS" /YX /c
# ADD CPP /nologo /W3 /Gm /GX /Zi /Od /D "WIN32" /D "_DEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "_DEBUG" /win32
# ADD MTL /nologo /D "_DEBUG" /mktyplib203 /win32
# ADD BASE RSC /l 0x409 /d "_DEBUG"
# ADD RSC /l 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /debug /machine:I386
# ADD LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib odbccp32.lib
/nologo /subsystem:windows /debug /machine:I386

!ENDIF

# Begin Target

# Name "webclnt - Win32 Release"
# Name "webclnt - Win32 Debug"
# End Target
# End Project
```

Stored Procedures

neword.sql

```
--  File:    NEWORD.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.42
--           Copyright Microsoft, 2002
--  Purpose:  Creates new order transaction stored procedure
--
--              Interface Level: 4.10.000

use tpcc
go

if exists ( select name from sysobjects where name = 'tpcc_neworder' )
              drop procedure tpcc_neworder
go

create proc tpcc_neworder
                                                    @w_id          int,
                                                    @d_id          tinyint,
                                                    @c_id          int,
                                                    @o_ol_cnt      tinyint,
                                                    @o_all_local   tinyint,
                                                    @i_id1  int = 0,
@s_w_id1  int = 0, @ol_qty1  smallint = 0,
                                                    @i_id2  int = 0,
@s_w_id2  int = 0, @ol_qty2  smallint = 0,
                                                    @i_id3  int = 0,
@s_w_id3  int = 0, @ol_qty3  smallint = 0,
                                                    @i_id4  int = 0,
@s_w_id4  int = 0, @ol_qty4  smallint = 0,
                                                    @i_id5  int = 0,
@s_w_id5  int = 0, @ol_qty5  smallint = 0,
                                                    @i_id6  int = 0,
@s_w_id6  int = 0, @ol_qty6  smallint = 0,
                                                    @i_id7  int = 0,
@s_w_id7  int = 0, @ol_qty7  smallint = 0,
                                                    @i_id8  int = 0,
@s_w_id8  int = 0, @ol_qty8  smallint = 0,
                                                    @i_id9  int = 0,
@s_w_id9  int = 0, @ol_qty9  smallint = 0,
                                                    @i_id10 int = 0,
@s_w_id10 int = 0, @ol_qty10 smallint = 0,
```

```
                                                @i_id11 int = 0,
@s_w_id11 int = 0, @ol_qty11 smallint = 0,
                                                @i_id12 int = 0,
@s_w_id12 int = 0, @ol_qty12 smallint = 0,
                                                @i_id13 int = 0,
@s_w_id13 int = 0, @ol_qty13 smallint = 0,
                                                @i_id14 int = 0,
@s_w_id14 int = 0, @ol_qty14 smallint = 0,
                                                @i_id15 int = 0,
@s_w_id15 int = 0, @ol_qty15 smallint = 0


as
declare     @w_tax          numeric(4,4),
        @d_tax          numeric(4,4),
        @c_last         char(16),
        @c_credit       char(2),
        @c_discount     numeric(4,4),
        @i_price        numeric(5,2),
        @i_name         char(24),
        @i_data         char(50),
        @o_entry_d      datetime,
        @remote_flag    int,
        @s_quantity     smallint,
        @s_data         char(50),
        @s_dist         char(24),
                @li_no          int,
                @o_id                   int,
                @commit_flag    tinyint,
        @li_id          int,
        @li_s_w_id      int,
        @li_qty         smallint,
                @ol_number              int,
                @c_id_local             int

begin

begin transaction n

-- get district tax and next availible order id and update
-- plus initialize local variables

                update      district
                set         @d_tax      = d_tax,
                            @o_id       = d_next_o_id,
                            d_next_o_id  = d_next_o_id + 1,
                            @o_entry_d   = getdate(),
                            @li_no      = 0,
                            @commit_flag = 1
                where       d_w_id      = @w_id and
                            d_id        = @d_id

-- process orderlines

                while (@li_no < @o_ol_cnt)
                begin

                        select @li_no = @li_no + 1

-- set i_id, s_w_id, and qty for this lineitem

                        select      @li_id = case @li_no
                                                when 1 then @i_id1
                                                when 2 then @i_id2
                                                when 3 then @i_id3
                                                when 4 then @i_id4
                                                when 5 then @i_id5
                                                when 6 then @i_id6
                                                when 7 then @i_id7
                                                when 8 then @i_id8
                                                when 9 then @i_id9
                                                when 10 then @i_id10
                                                when 11 then @i_id11
                                                when 12 then @i_id12
                                                when 13 then @i_id13
                                                when 14 then @i_id14
                                                when 15 then @i_id15
                                                end,

                                    @li_s_w_id = case @li_no
                                                when 1 then @s_w_id1
                                                when 2 then @s_w_id2
                                                when 3 then @s_w_id3
                                                when 4 then @s_w_id4
                                                when 5 then @s_w_id5
                                                when 6 then @s_w_id6
                                                when 7 then @s_w_id7
                                                when 8 then @s_w_id8
                                                when 9 then @s_w_id9
                                                when 10 then @s_w_id10
                                                when 11 then @s_w_id11
                                                when 12 then @s_w_id12
                                                when 13 then @s_w_id13
                                                when 14 then @s_w_id14
                                                when 15 then @s_w_id15
                                                end,

                                    @li_qty = case  @li_no
                                                when 1 then @ol_qty1
                                                when 2 then @ol_qty2
                                                when 3 then @ol_qty3
                                                when 4 then @ol_qty4
                                                when 5 then @ol_qty5
                                                when 6 then @ol_qty6
                                                when 7 then @ol_qty7
                                                when 8 then @ol_qty8
                                                when 9 then @ol_qty9
                                                when 10 then @ol_qty10
                                                when 11 then @ol_qty11
                                                when 12 then @ol_qty12
                                                when 13 then @ol_qty13
                                                when 14 then @ol_qty14
                                                when 15 then @ol_qty15
                                                end

-- get item data (no one updates item)

                        select      @i_price = i_price,
                                    @i_name  = i_name,
                                    @i_data  = i_data
                        from        item (tablock repeatableread)
                        where       i_id = @li_id

-- update stock values

                        update      stock
                        set         s_ytd               = s_ytd + @li_qty,
                                    @s_quantity         = s_quantity   =
s_quantity - @li_qty +
                                                                    case
when (s_quantity - @li_qty < 10) then 91 else 0 end,
                                    s_order_cnt         = s_order_cnt + 1,
                                    s_remote_cnt        = s_remote_cnt + case
when (@li_s_w_id = @w_id) then 0 else 1 end,
                                    @s_data             = s_data,
                                    @s_dist             = case @d_id
```

```
                                        when 1  then
s_dist_01
                                        when 2  then
s_dist_02
                                        when 3  then
s_dist_03
                                        when 4  then
s_dist_04
                                        when 5  then
s_dist_05
                                        when 6  then
s_dist_06
                                        when 7  then
s_dist_07
                                        when 8  then
s_dist_08
                                        when 9  then
s_dist_09
                                        when 10 then
s_dist_10
                                        end
                where   s_i_id          = @li_id and
                        s_w_id          = @li_s_w_id

--  if there actually is a stock (and item) with these ids, go to work

                if (@@rowcount > 0)
                begin

--  insert order_line data (using data from item and stock)

                        insert into order_line values(@o_id,
                                                        @d_id,
                                                        @w_id,
                                                        @li_no,
                                                        @li_id,

@li_s_w_id,
                                                        'dec 31,
1899',
                                                        @li_qty,
                                                        @i_price
* @li_qty,
                                                        @s_dist)


--  send line-item data to client

                        select  @i_name,
                                @s_quantity,
                                b_g = case when (
(patindex('%ORIGINAL%',@i_data) > 0) and

(patindex('%ORIGINAL%',@s_data) > 0) )
                                    then 'B' else 'G' end,
                                @i_price,
                                @i_price * @li_qty

                end
                else
                begin

--  no item (or stock) found - triggers rollback condition

                        select ",0,",0,0
                        select @commit_flag = 0

                end
        end

--  get customer last name, discount, and credit rating

        select  @c_last     = c_last,
                @c_discount = c_discount,
                @c_credit   = c_credit,
                @c_id_local = c_id
        from    customer (repeatableread)
        where   c_id                = @c_id and
                c_w_id              = @w_id and
                c_d_id              = @d_id

--  insert fresh row into orders table

        insert into orders values (     @o_id,
                                        @d_id,
                                        @w_id,
                                        @c_id_local,
                                        @o_entry_d,
                                        0,
                                        @o_ol_cnt,
                                        @o_all_local)

--  insert corresponding row into new-order table

        insert into new_order values (  @o_id,
                                        @d_id,
                                        @w_id)

--  select warehouse tax

        select  @w_tax  = w_tax
        from    warehouse (repeatableread)
        where   w_id    = @w_id

        if (@commit_flag = 1)

                commit transaction n
        else

--  all that work for nuthin!!!

                rollback transaction n

--  return order data to client

        select  @w_tax,
                @d_tax,
                @o_id,
                @c_last,
                @c_discount,
                @c_credit,
                @o_entry_d,
                @commit_flag

end

go
```

payment.sql

```
-- File:    PAYMENT.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.42
--          Copyright Microsoft, 2002
-- Purpose:  Creates payment transaction stored procedure
--
--             Interface Level: 4.10.000

use tpcc
go

if exists (select name from sysobjects where name = 'tpcc_payment' )
            drop procedure tpcc_payment
go

create proc tpcc_payment            @w_id          int,
                                    @c_w_id        int,
                                    @h_amount      numeric(6,2),
                                    @d_id          tinyint,
                                    @c_d_id        tinyint,
                                    @c_id          int,
                                    @c_last        char(16) = ''


as
declare  @w_street_1     char(20),
       @w_street_2     char(20),
       @w_city         char(20),
       @w_state        char(2),
       @w_zip          char(9),
       @w_name         char(10),
       @d_street_1     char(20),
       @d_street_2     char(20),
       @d_city         char(20),
       @d_state        char(2),
       @d_zip          char(9),
       @d_name         char(10),
       @c_first        char(16),
       @c_middle       char(2),
       @c_street_1     char(20),
       @c_street_2     char(20),
       @c_city         char(20),
       @c_state        char(2),
       @c_zip          char(9),
       @c_phone        char(16),
       @c_since        datetime,
       @c_credit       char(2),
       @c_credit_lim   numeric(12,2),
       @c_balance      numeric(12,2),
       @c_discount     numeric(4,4),
       @data           char(500),
       @c_data         char(500),
       @datetime       datetime,
       @w_ytd          numeric(12,2),
       @d_ytd          numeric(12,2),
       @cnt            smallint,
       @val            smallint,
       @screen_data     char(200),
             @d_id_local              tinyint,
             @w_id_local              int,
             @c_id_local              int

select @screen_data = ''

begin tran p

-- get payment date

             select        @datetime = getdate()

             if (@c_id = 0)
             begin

-- get customer id and info using last name

                          select       @cnt        = count(*)
                          from         customer (repeatableread)
                          where        c_last       = @c_last and
                                       c_w_id       = @c_w_id and
                                       c_d_id       = @c_d_id


                          select       @val = (@cnt + 1) / 2
                          set          rowcount @val

                          select       @c_id       = c_id
                          from         customer (repeatableread)
                          where        c_last       = @c_last and
                                       c_w_id       = @c_w_id and
                                       c_d_id       = @c_d_id
                          order        by c_last, c_first

                          set          rowcount 0
             end

-- get customer info and update balances

             update       customer
             set          @c_balance              = c_balance              = c_balance
- @h_amount,
                          c_payment_cnt           = c_payment_cnt + 1,
                          c_ytd_payment           = c_ytd_payment + @h_amount,
                          @c_first    = c_first,
                          @c_middle               = c_middle,
                          @c_last                 = c_last,
                          @c_street_1             = c_street_1,
                          @c_street_2             = c_street_2,
                          @c_city                 = c_city,
                          @c_state    = c_state,
                          @c_zip                  = c_zip,
                          @c_phone = c_phone,
                          @c_credit = c_credit,
                          @c_credit_lim           = c_credit_lim,
                          @c_discount             = c_discount,
                          @c_since  = c_since,
                          @data                   = c_data,
                          @c_id_local             = c_id
             where        c_id                    = @c_id and
                          c_w_id                  = @c_w_id and
                          c_d_id                  = @c_d_id

-- if customer has bad credit get some more info

             if (@c_credit = 'BC')
             begin

--           compute new info

                          select @c_data          = convert(char(5),@c_id) +
                                                    convert(char(4),@c_d_id) +
                                                    convert(char(5),@c_w_id) +
                                                    convert(char(4),@d_id) +
                                                    convert(char(5),@w_id) +
                                                    convert(char(19),@h_amount) +
                                                    substring(@data, 1, 458)
```

```
-- update customer info

                update  customer
                set     c_data      = @c_data

                where   c_id        = @c_id and
                        c_w_id      = @c_w_id and
                        c_d_id      = @c_d_id

                select  @screen_data = substring (@c_data,1,200)

        end

-- get district data and update year-to-date

        update  district
        set     d_ytd               = d_ytd + @h_amount,
                @d_street_1         = d_street_1,
                @d_street_2         = d_street_2,
                @d_city             = d_city,
                @d_state   = d_state,
                @d_zip              = d_zip,
                @d_name             = d_name,
                @d_id_local         = d_id
        where   d_w_id              = @w_id and
                d_id                = @d_id

-- get warehouse data and update year-to-date

        update  warehouse
        set     w_ytd               = w_ytd + @h_amount,
                @w_street_1         = w_street_1,
                @w_street_2         = w_street_2,
                @w_city             = w_city,
                @w_state  = w_state,
                @w_zip              = w_zip,
                @w_name             = w_name,
                @w_id_local         = w_id
        where   w_id                = @w_id

-- create history record

        insert into history values (    @c_id_local,
                                        @c_d_id,
                                        @c_w_id,

                                        @d_id_local,
                                        @w_id_local,
                                        @datetime,
                                        @h_amount,
                                        @w_name + '    ' +
@d_name)
commit tran p

-- return data to client

select  @c_id,
        @c_last,
        @datetime,
        @w_street_1,
        @w_street_2,
        @w_city,
        @w_state,
        @w_zip,
        @d_street_1,
        @d_street_2,
        @d_city,
        @d_state,
        @d_zip,
        @c_first,
        @c_middle,
        @c_street_1,
        @c_street_2,
        @c_city,
        @c_state,
        @c_zip,
        @c_phone,
        @c_since,
        @c_credit,
        @c_credit_lim,
        @c_discount,
        @c_balance,
        @screen_data

go
```

ordstat.sql

```
-- File:    ORDSTAT.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.42
--          Copyright Microsoft, 2002
-- Purpose:  Creates order status transaction stored procedure
--
--           Interface Level: 4.10.000

use tpcc
go

if exists ( select name from sysobjects where name = 'tpcc_orderstatus' )
            drop procedure   tpcc_orderstatus
go

create proc tpcc_orderstatus    @w_id   int,
                                @d_id   tinyint,

                                @c_id   int,
                                @c_last char(16) = ''

as

declare @c_balance          numeric(12,2),
      @c_first              char(16),
      @c_middle             char(2),
      @o_id                 int,
      @o_entry_d            datetime,
      @o_carrier_id         smallint,
      @cnt                  smallint

begin tran o

if (@c_id = 0)
            begin

-- get customer id and info using last name

                select  @cnt        = (count(*)+1)/2
                from    customer (repeatableread)
                where   c_last      = @c_last and
                        c_w_id      = @w_id and
                        c_d_id      = @d_id

                set     rowcount @cnt

                select  @c_id               = c_id,
                        @c_balance          = c_balance,
                          @c_first = c_first,
```

```
                        @c_last  = c_last,
                        @c_middle           = c_middle
                from    customer (repeatableread)
                where   c_last              = @c_last and
                        c_w_id              = @w_id and
                        c_d_id              = @d_id
                order   by c_w_id, c_d_id, c_last, c_first

                set     rowcount 0
        end

        else

        begin

-- get customer info if by id

                select  @c_balance          = c_balance,
                        @c_first    = c_first,
                        @c_middle           = c_middle,
                        @c_last             = c_last
                from    customer (repeatableread)
                where   c_id                = @c_id and
                        c_d_id              = @d_id and
                        c_w_id              = @w_id

                select  @cnt        = @@rowcount

        end

-- if no such customer

        if (@cnt = 0)
        begin
                raiserror('Customer not found',18,1)
                goto custnotfound
        end

-- get order info

        select  @o_id               = o_id,
                @o_entry_d          = o_entry_d,
                @o_carrier_id       = o_carrier_id
        from    orders (serializable)
        where   o_c_id              = @c_id and
                o_d_id              = @d_id and
                o_w_id              = @w_id
        order   by o_id asc

-- select order lines for the current order

        select  ol_supply_w_id,
                ol_i_id,
                ol_quantity,
                ol_amount,
                ol_delivery_d
        from    order_line (repeatableread)
        where   ol_o_id = @o_id and
                ol_d_id = @d_id and
                ol_w_id = @w_id

custnotfound:

commit tran o

-- return data to client

select  @c_id,
        @c_last,
        @c_first,
        @c_middle,
        @o_entry_d,
        @o_carrier_id,
        @c_balance,
        @o_id

Go
```

delivery.sql

```
-- File:    DELIVERY.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.42
--          Copyright Microsoft, 2002
-- Purpose:  Creates delivery transaction stored procedure
--
--              Interface Level: 4.10.000

use tpcc
go

if exists (select name from sysobjects where name = 'tpcc_delivery' )
        drop procedure tpcc_delivery
go

create proc tpcc_delivery       @w_id       int,

                                                @o_carrier_id   smallint
as

declare @d_id       tinyint,
    @o_id           int,
    @c_id           int,
    @total          numeric(12,2),
    @oid1           int,
    @oid2           int,
    @oid3           int,
    @oid4           int,
    @oid5           int,
    @oid6           int,
    @oid7           int,
    @oid8           int,
    @oid9           int,
    @oid10          int

select @d_id = 0

begin tran d

        while (@d_id < 10)
        begin

            select @d_id  = @d_id + 1,
                           @total = 0,
                           @o_id  = 0

                select  top 1
                        @o_id       = no_o_id
                from    new_order (serializable updlock)
                where   no_w_id    = @w_id and
                        no_d_id    = @d_id
                order   by no_o_id asc

            if (@@rowcount <> 0)
                begin
```

```
-- claim the order for this district

                    delete    new_order
                    where     no_w_id   = @w_id and
                              no_d_id   = @d_id and
                              no_o_id   = @o_id

-- set carrier_id on this order (and get customer id)

                    update    orders
                    set       o_carrier_id        =
@o_carrier_id,
                              @c_id               = o_c_id
                    where     o_w_id              = @w_id
and
                              o_d_id              = @d_id
and
                              o_id                = @o_id

-- set date in all lineitems for this order (and sum amounts)

                    update    order_line
                    set       ol_delivery_d       = getdate(),
                              @total              = @total +
ol_amount
                    where     ol_w_id             = @w_id
and
                              ol_d_id             = @d_id
and
                              ol_o_id             = @o_id

-- accummulate lineitem amounts for this order into customer

                    update    customer
                    set       c_balance  = c_balance + @total,
                              c_delivery_cnt      =
c_delivery_cnt + 1
                    where     c_w_id              = @w_id
and
                              c_d_id              = @d_id
and
                              c_id                = @c_id

                end

        select @oid1 = case @d_id when  1  then @o_id else @oid1 end,
      @oid2 = case @d_id when  2  then @o_id else @oid2 end,
      @oid3 = case @d_id when  3  then @o_id else @oid3 end,
      @oid4 = case @d_id when  4  then @o_id else @oid4 end,
      @oid5 = case @d_id when  5  then @o_id else @oid5 end,
      @oid6 = case @d_id when  6  then @o_id else @oid6 end,
      @oid7 = case @d_id when  7  then @o_id else @oid7 end,
      @oid8 = case @d_id when  8  then @o_id else @oid8 end,
      @oid9 = case @d_id when  9  then @o_id else @oid9 end,
      @oid10 = case @d_id when 10 then @o_id else @oid10 end

  end

commit tran d

-- return delivery data to client

select @oid1,
    @oid2,
    @oid3,
    @oid4,
    @oid5,
    @oid6,
    @oid7,
    @oid8,
    @oid9,
    @oid10

Go
```

Stocklev.sql

```
-- File:    STOCKLEV.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.42
--          Copyright Microsoft, 2002
-- Purpose:  Creates stock level transaction stored procedure
--
--           Interface Level: 4.10.000

use tpcc
go

if exists (select name from sysobjects where name = 'tpcc_stocklevel' )
            drop procedure tpcc_stocklevel
go

create proc tpcc_stocklevel      @w_id              int,
                                      @d_id              tinyint,
                                      @threshhold        smallint
as

declare     @o_id_low int,
            @o_id_high int

select      @o_id_low          = (d_next_o_id - 20),
            @o_id_high         = (d_next_o_id - 1)
from        district
where       d_w_id             = @w_id and
            d_id               = @d_id

select      count(distinct(s_i_id))
from        stock, order_line
where       ol_w_id            =  @w_id and
            ol_d_id            =  @d_id and
            ol_o_id              between @o_id_low and
                                 @o_id_high and
            s_w_id             =  ol_w_id and
            s_i_id             =  ol_i_id and
            s_quantity <  @threshhold

go
```

version.sql

```
-- File:    VERSION.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Returns version level of TPC-C stored procs
-- Note:     Always update the return value of this proc for
--          any interface changes or 'must have' bug fixes.
--
-- The value returned by this SP defines the 'interface level',
-- which must match between the stored procs and the client code.
-- The interface level may be down rev from the current kit.  This
-- indicates that the interface hasn't changed since that version.

use tpcc
go
```

```
if exists ( select name from sysobjects where name = 'tpcc_version' )
        drop procedure tpcc_version
go

create proc tpcc_version
as
declare     @version   char(8)

begin
        select @version = '4.10.000'
        select @version as 'Version'
end

go
```

Appendix B: Database Design

Database Build

createdb.sql

```
-- File:    CREATEDB.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates tpcc database and backup files


use master
go

--          Create temporary table for timing

if exists ( select name from sysobjects where name = 'tpcc_timer' )
            drop table tpcc_timer
go

create table tpcc_timer
(
            start_date                                  char(30),
            end_date                                    char(30)
)

insert      into tpcc_timer values (0,0)
go

--          Store starting time

update      tpcc_timer
set         start_date  = (select convert(char(30), getdate(),9))
go

-- create main database files

CREATE DATABASE tpcc
ON PRIMARY
(           NAME                = MSSQL_tpcc_root,
            FILENAME            = 'F:\MSSQL_tpcc_root.mdf',
            SIZE                = 8MB,
            FILEGROWTH          = 0),
FILEGROUP           MSSQL_misc_fg
(           NAME                = MSSQL_misc1,
            FILENAME            = 'C:\mp\m1\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc2,
            FILENAME            = 'C:\mp\m2\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc3,
            FILENAME            = 'C:\mp\m3\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc4,
            FILENAME            = 'C:\mp\m4\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc5,
            FILENAME            = 'C:\mp\m5\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc6,
            FILENAME            = 'C:\mp\m6\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc7,
            FILENAME            = 'C:\mp\m7\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc8,
            FILENAME            = 'C:\mp\m8\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc9,
            FILENAME            = 'C:\mp\m9\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc10,
            FILENAME            = 'C:\mp\m10\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc11,
            FILENAME            = 'C:\mp\m11\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc12,
            FILENAME            = 'C:\mp\m12\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc13,
            FILENAME            = 'C:\mp\m13\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc14,
            FILENAME            = 'C:\mp\m14\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc15,
            FILENAME            = 'C:\mp\m15\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc16,
            FILENAME            = 'C:\mp\m16\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc17,
            FILENAME            = 'C:\mp\m17\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc18,
            FILENAME            = 'C:\mp\m18\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc19,
            FILENAME            = 'C:\mp\m19\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc20,
            FILENAME            = 'C:\mp\m20\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc21,
            FILENAME            = 'C:\mp\m21\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc22,
            FILENAME            = 'C:\mp\m22\',
            SIZE                = 13000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc23,
```

```
        FILENAME        = 'C:\mp\m23\',
        SIZE            = 13000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_misc24,
        FILENAME        = 'C:\mp\m24\',
        SIZE            = 13000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_misc25,
        FILENAME        = 'C:\mp\m25\',
        SIZE            = 13000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_misc26,
        FILENAME        = 'C:\mp\m26\',
        SIZE            = 13000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_misc27,
        FILENAME        = 'C:\mp\m27\',
        SIZE            = 13000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_misc28,
        FILENAME        = 'C:\mp\m28\',
        SIZE            = 13000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_misc29,
        FILENAME        = 'C:\mp\m29\',
        SIZE            = 13000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_misc30,
        FILENAME        = 'C:\mp\m30\',
        SIZE            = 13000MB,
        FILEGROWTH      = 0),
FILEGROUP       MSSQL_cs_fg
(       NAME            = MSSQL_cs1,
        FILENAME        = 'c:\mp\c1\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs2,
        FILENAME        = 'c:\mp\c2\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs3,
        FILENAME        = 'c:\mp\c3\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs4,
        FILENAME        = 'c:\mp\c4\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs5,
        FILENAME        = 'c:\mp\c5\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs6,
        FILENAME        = 'c:\mp\c6\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs7,
        FILENAME        = 'c:\mp\c7\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs8,
        FILENAME        = 'c:\mp\c8\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs9,
        FILENAME        = 'c:\mp\c9\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs10,
        FILENAME        = 'c:\mp\c10\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs11,
        FILENAME        = 'c:\mp\c11\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs12,
        FILENAME        = 'c:\mp\c12\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs13,
        FILENAME        = 'c:\mp\c13\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs14,
        FILENAME        = 'c:\mp\c14\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs15,
        FILENAME        = 'c:\mp\c15\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs16,
        FILENAME        = 'c:\mp\c16\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs17,
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        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs18,
        FILENAME        = 'c:\mp\c18\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs19,
        FILENAME        = 'c:\mp\c19\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs20,
        FILENAME        = 'c:\mp\c20\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs21,
        FILENAME        = 'c:\mp\c21\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs22,
        FILENAME        = 'c:\mp\c22\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs23,
        FILENAME        = 'c:\mp\c23\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs24,
        FILENAME        = 'c:\mp\c24\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs25,
        FILENAME        = 'c:\mp\c25\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs26,
        FILENAME        = 'c:\mp\c26\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
```

```
(       NAME            = MSSQL_cs27,
        FILENAME        = 'c:\mp\c27\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs28,
        FILENAME        = 'c:\mp\c28\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs29,
        FILENAME        = 'c:\mp\c29\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_cs30,
        FILENAME        = 'c:\mp\c30\',
        SIZE            = 23000MB,
        FILEGROWTH      = 0)
LOG ON
(       NAME            = MSSQL_tpcc_log,
        FILENAME        = 'E:',
        SIZE            = 320000MB,
        FILEGROWTH      = 0)
COLLATE Latin1_General_BIN
go

-- Store ending time
update  tpcc_timer
set     end_date   = (select convert(char(30), getdate(),9))
go

select 'Elapsed time (in seconds): ', datediff(second,(select start_date from
tpcc_timer),(select end_date from tpcc_timer))

--      remove temporary table

if exists ( select name from sysobjects where name = 'tpcc_timer' )
        drop table tpcc_timer
Go
```

dbop1.sql

```
-- File:    DBOPT1.SQL
--       Microsoft TPC-C Benchmark Kit Ver. 4.41
--       Copyright Microsoft, 2001
-- Purpose:  Sets database options for data load


use master
go

exec sp_dboption tpcc,'select into/bulkcopy',true
exec sp_dboption tpcc,'trunc. log on chkpt.',true
exec sp_dboption tpcc,'torn page detection',false
go

use tpcc
go

checkpoint
go
```

dbopt2.sql

```
-- File:    DBOPT2.SQL
--       Microsoft TPC-C Benchmark Kit Ver. 4.41
--       Copyright Microsoft, 2001
-- Purpose:  Resets database options after data load

exec sp_dboption tpcc,'select into/bulkcopy',false
exec sp_dboption tpcc,'trunc. log on chkpt.',false
exec sp_dboption tpcc,'torn page detection',false
GO

USE tpcc
GO

CHECKPOINT
GO

sp_configure 'allow updates',1
GO

RECONFIGURE WITH OVERRIDE
GO

DECLARE         @msg            varchar(50)

--                              --
--      OPTIONS FOR SQL SERVER 2000     --
-- Set option values for user-defined indexes --
--                              --

SET     @msg    = ' '
PRINT   @msg
SET     @msg    = 'Setting SQL Server indexoptions'
PRINT   @msg
SET     @msg    = ' '
PRINT   @msg

EXEC sp_indexoption     'customer', 'DisAllowPageLocks', TRUE
EXEC sp_indexoption     'district',  'DisAllowPageLocks', TRUE
EXEC sp_indexoption     'warehouse',        'DisAllowPageLocks',
TRUE
EXEC sp_indexoption     'stock',    'DisAllowPageLocks', TRUE
EXEC sp_indexoption     'order_line',       'DisAllowRowLocks',
TRUE
EXEC sp_indexoption     'orders',   'DisAllowRowLocks', TRUE
EXEC sp_indexoption     'new_order',        'DisAllowRowLocks',
TRUE
EXEC sp_indexoption     'item',             'DisAllowRowLocks',
TRUE
EXEC sp_indexoption     'item',             'DisAllowPageLocks',
TRUE
GO

Print ' '
Print '******************'
Print 'Pre-specified Locking Hierarchy:'
Print '        Lockflag = 0 ==> No pre-specified hierarchy'
Print '   Lockflag = 1 ==> Lock at Page-level then Table-level'
Print '   Lockflag = 2 ==> Lock at Row-level then Table-level'
Print '   Lockflag = 3 ==> Lock at Table-level'
Print ' '

SELECT  name,lockflags
FROM    sysindexes
WHERE   object_id('warehouse')          = id OR
        object_id('district')   = id OR
        object_id('customer')   = id OR
        object_id('stock')      = id OR
        object_id('orders')     = id OR
        object_id('order_line')= id OR
        object_id('history')    = id OR
        object_id('new_order')          = id OR
        object_id('item')       = id
ORDER   BY lockflags asc
```

```
GO

sp_configure 'allow updates',0
GO

RECONFIGURE WITH OVERRIDE
GO

EXEC sp_dboption tpcc,          'auto update statistics',FALSE
EXEC sp_dboption tpcc,          'auto create statistics', FALSE
GO

EXEC sp_tableoption 'district',    'pintable',true
EXEC sp_tableoption 'warehouse',          'pintable',true
EXEC sp_tableoption 'new_order',          'pintable',true
EXEC sp_tableoption 'item',               'pintable',true
GO
```

delwh.sql

```
use tpcc
go
delete from warehouse where w_id > 11296
go
select count(*) from warehouse
go
select * from warehouse where w_id > 11296
go
print ' '
select convert(char(30), getdate(),9)
print ' '
go
```

idxcuscl.sql

```
-- File:    IDXCUSCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates clustered index on customer table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where name = 'customer_c1' )
            drop index customer.customer_c1

create unique clustered index customer_c1 on customer(c_w_id, c_d_id, c_id)
            on MSSQL_cs_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

idxcusnc.sql

```
-- File:    IDXCUSNC.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates non-clustered index on customer table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where  name = 'customer_nc1' )
            drop index customer.customer_nc1

create unique nonclustered index customer_nc1 on customer(c_w_id, c_d_id,
c_last, c_first, c_id)
            on MSSQL_cs_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

idxdiscl.sql

```
-- File:    IDXDISCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates clustered index on district table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where name = 'district_c1' )
            drop index district.district_c1

create unique clustered index  district_c1 on district(d_w_id, d_id)
            with fillfactor=100 on MSSQL_misc_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

idxhiscl.sql

```
-- File:    IDXHISCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates clustered index on history table
--
-- CAUTION:  ****************************************
-- CAUTION:  This index is only beneficial for systems
-- CAUTION:  with 8 or more processors.
```

```
-- CAUTION:  It may negatively impact performance on
-- CAUTION:  on systems with less than 8 processors.
-- CAUTION:  ****************************************


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where  name = 'history_c1' )
            drop index history.history_c1

create unique clustered index history_c1 on history(h_c_w_id, h_date,
h_c_d_id, h_c_id, h_amount)
            on MSSQL_misc_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

idxitmcl.sql

```
-- File:    IDXITMCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates clustered index on item table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where  name = 'item_c1' )
            drop index item.item_c1

create unique clustered index item_c1 on item(i_id)
            on MSSQL_misc_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

idxnodcl.sql

```
-- File:    IDXNODCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates clustered index on new_order table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where  name = 'new_order_c1' )
            drop index new_order.new_order_c1

create unique clustered index new_order_c1 on new_order(no_w_id, no_d_id,
no_o_id)
            on MSSQL_misc_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

idxodlcl.sql

```
-- File:    IDXODLCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates clustered index on order_line table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where  name = 'order_line_c1' )
            drop index order_line.order_line_c1

create unique clustered index order_line_c1 on order_line(ol_w_id, ol_d_id,
ol_o_id, ol_number)
            on MSSQL_misc_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

idxordcl.sql

```
-- File:    IDXORDCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates clustered index on orders table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where  name = 'orders_c1' )
            drop index orders.orders_c1
```

```
create unique clustered index orders_c1 on orders(o_w_id, o_d_id, o_id)
        on MSSQL_misc_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

idxordnc.sql

```
-- File:    IDXORDNC.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates non-clustered index on orders table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where  name = 'orders_nc1' )
        drop index orders.orders_nc1

create index orders_nc1 on orders(o_w_id, o_d_id, o_c_id, o_id)
        on MSSQL_misc_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

Go
```

idxstkcl.sql

```
-- File:    IDXSTKCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates clustered index on stock table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where  name = 'stock_c1' )
        drop index stock.stock_c1

create unique clustered index stock_c1 on stock(s_i_id, s_w_id)
        on MSSQL_cs_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

idxwarcl.sql

```
-- File:    IDXWARCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates clustered index on warehouse table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where name = 'warehouse_c1' )
        drop index warehouse.warehouse_c1

create unique clustered index warehouse_c1 on warehouse(w_id)
        with fillfactor=100 on MSSQL_misc_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

RunSQLcfg.sql

```
-- File:    RUNSQLCFG.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  This script file is used to set runtime server configuration
parameters
--

exec sp_configure "show advanced option", 1
go

reconfigure with override
go

/* change this value to approximately the number of connected users */
exec sp_configure "max worker threads",255

/* increase priority of user threads */
exec sp_configure "priority boost",1

/* disable automatic checkpointing */
exec sp_configure "recovery interval",32767

/* change to a mask appropriate for the number of processors on the server */
exec sp_configure "affinity mask",0xf

/* enable fibers */
exec sp_configure "lightweight pooling",1

go

reconfigure with override
go
```

sqlshutdown.sql

```
-- File:    SQLSHUTDOWN.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41

--          Copyright Microsoft, 2001
-- Purpose:  Checkpoints tpcc database and issues a shutdown
--

use tpcc
go
checkpoint
go
shutdown
go
```

tables.sql

```
-- File:    TABLES.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.42
--          Copyright Microsoft, 2002
-- Purpose:  Creates TPC-C tables

SET ANSI_NULL_DFLT_OFF ON
go

use tpcc
go

--
-- Remove all existing TPC-C tables
--

if exists ( select name from sysobjects where name = 'warehouse' )
            drop table warehouse
go
if exists ( select name from sysobjects where name = 'district' )
            drop table district
go
if exists ( select name from sysobjects where name = 'customer' )
            drop table customer
go
if exists ( select name from sysobjects where name = 'history' )
            drop table history
go
if exists ( select name from sysobjects where name = 'new_order' )
            drop table new_order
go
if exists ( select name from sysobjects where name = 'orders' )
            drop table orders
go
if exists ( select name from sysobjects where name = 'order_line' )
            drop table order_line
go
if exists ( select name from sysobjects where name = 'item' )
            drop table item
go
if exists ( select name from sysobjects where name = 'stock' )
            drop table stock
go

--
-- Create new tables
--

create table warehouse
(
            w_id                    int,
            w_name                  char(10),
            w_street_1              char(20),
            w_street_2              char(20),
            w_city                  char(20),
            w_state                 char(2),
            w_zip                   char(9),
            w_tax                   numeric(4,4),
            w_ytd                   numeric(12,2)
) on MSSQL_misc_fg
go

create table district
(
            d_id                    tinyint,
            d_w_id                  int,
            d_name                  char(10),
            d_street_1              char(20),
            d_street_2              char(20),
            d_city                  char(20),
            d_state                 char(2),
            d_zip                   char(9),
            d_tax                   numeric(4,4),
            d_ytd                   numeric(12,2),
            d_next_o_id             int
) on MSSQL_misc_fg
go

create table customer
(
            c_id                    int,
            c_d_id                  tinyint,
            c_w_id                  int,
            c_first                 char(16),
            c_middle                char(2),
            c_last                  char(16),
            c_street_1              char(20),
            c_street_2              char(20),
            c_city                  char(20),
            c_state                 char(2),
            c_zip                   char(9),
            c_phone                 char(16),
            c_since                 datetime,
            c_credit                char(2),
            c_credit_lim            numeric(12,2),
            c_discount              numeric(4,4),
            c_balance               numeric(12,2),
            c_ytd_payment           numeric(12,2),
            c_payment_cnt           smallint,
            c_delivery_cnt          smallint,
            c_data                  char(500)
) on MSSQL_cs_fg
go

create table history
(
            h_c_id                  int,
            h_c_d_id                tinyint,
            h_c_w_id                int,
            h_d_id                  tinyint,
            h_w_id                  int,
            h_date                  datetime,
            h_amount                numeric(6,2),
            h_data                  char(24)
) on MSSQL_misc_fg
go
```

```
create table new_order
(
        no_o_id                         int,
        no_d_id                         tinyint,
        no_w_id                         int
) on MSSQL_misc_fg
go

create table orders
(
        o_id                            int,
        o_d_id                          tinyint,
        o_w_id                          int,
        o_c_id                          int,
        o_entry_d               datetime,
        o_carrier_id                    tinyint,
        o_ol_cnt                tinyint,
        o_all_local             tinyint
) on MSSQL_misc_fg
go

create table order_line
(
        ol_o_id                         int,
        ol_d_id                         tinyint,
        ol_w_id                         int,
        ol_number               tinyint,
        ol_i_id                         int,
        ol_supply_w_id                  int,
        ol_delivery_d                   datetime,
        ol_quantity                     smallint,
        ol_amount               numeric(6,2),
        ol_dist_info                    char(24)
) on MSSQL_misc_fg
go

create table item
(
        i_id                            int,
        i_im_id                         int,
        i_name                          char(24),
        i_price                         numeric(5,2),
        i_data                          char(50)
) on MSSQL_misc_fg
go

create table stock
(
        s_i_id                          int,
        s_w_id                          int,
        s_quantity              smallint,
        s_dist_01               char(24),
        s_dist_02               char(24),
        s_dist_03               char(24),
        s_dist_04               char(24),
        s_dist_05               char(24),
        s_dist_06               char(24),
        s_dist_07               char(24),
        s_dist_08               char(24),
        s_dist_09               char(24),
        s_dist_10               char(24),
        s_ytd                           int,
        s_order_cnt                     smallint,
        s_remote_cnt                    smallint,
        s_data                          char(50)
) on MSSQL_cs_fg
go
```

Load Source Code

getargs.c

```
//              File:                   GETARGS.C
//                                              Microsoft TPC-C Kit Ver. 4.41
//                                              Copyright Microsoft, 1996, 1997,
1998, 1999, 2000, 2001
//              Purpose:    Source file for command line processing


// Includes
#include "tpcc.h"

//=================================================
==============
//
// Function name: GetArgsLoader
//
//=================================================
==============

void GetArgsLoader(int argc, char **argv, TPCCLDR_ARGS *pargs)
{
   int                  i;
   char     *ptr;

#ifdef DEBUG
   printf("[%ld]DBG: Entering GetArgsLoader()\n", (int)
GetCurrentThreadId());
#endif

   /* init args struct with some useful values */
   pargs->server                = SERVER;
   pargs->user                  = USER;
   pargs->password                      = PASSWORD;
   pargs->database                      = DATABASE;
   pargs->batch                 = BATCH;
   pargs->num_warehouses                = UNDEF;
        pargs->tables_all                       = TRUE;
        pargs->table_item                       = FALSE;
        pargs->table_warehouse                  = FALSE;
        pargs->table_customer                   = FALSE;
        pargs->table_orders                     = FALSE;
        pargs->loader_res_file                  =
LOADER_RES_FILE;
        pargs->log_path                                 =
LOG_PATH;
        pargs->pack_size                = DEFLDPACKSIZE;
        pargs->starting_warehouse       =
DEF_STARTING_WAREHOUSE;
        pargs->build_index                      = BUILD_INDEX;
        pargs->index_order                      = INDEX_ORDER;
        pargs->index_script_path        = INDEX_SCRIPT_PATH;
        pargs->scale_down                       = SCALE_DOWN;

   /* check for zero command line args */
   if ( argc == 1 )
                GetArgsLoaderUsage();

   for (i = 1; i < argc; ++i)
   {
                if (argv[i][0] != '-' && argv[i][0] != '/')
                {
                printf("\nUnrecognized command");
                GetArgsLoaderUsage();
                exit(1);
```

```
                }

                ptr = argv[i];

                switch (ptr[1])
                {
                case '?':    /* Fall throught */
                                GetArgsLoaderUsage();
                                break;

                case 'D':
                                pargs->database = ptr+2;
                                break;

                case 'P':
                                pargs->password = ptr+2;
                                break;

                case 'S':
                                pargs->server = ptr+2;
                                break;

                case 'U':
                                pargs->user = ptr+2;
                                break;

                case 'b':
                                pargs->batch = atol(ptr+2);
                                break;

                case 'W':
                                pargs->num_warehouses =
atol(ptr+2);
                                break;

                case 's':
                                pargs->starting_warehouse =
atol(ptr+2);
                                break;

                case 't':
                                {
                                        pargs->tables_all =
FALSE;
                                        if (strcmp(ptr+2,"item")
== 0)
pargs->table_item = TRUE;
                                        else if
(strcmp(ptr+2,"warehouse") == 0)
pargs->table_warehouse = TRUE;
                                        else if
(strcmp(ptr+2,"customer") == 0)
pargs->table_customer = TRUE;
                                        else if
(strcmp(ptr+2,"orders") == 0)
pargs->table_orders = TRUE;
                                        else
                                        {
                                        printf("\nUnrecognized
command");
                                        GetArgsLoaderUsage();
                                        exit(1);
                                        }
                                                break;
                                        }
                                case 'f':
                                        pargs->loader_res_file = ptr+2;
                                        break;

                                case 'L':
                                        pargs->log_path = ptr+2;
                                        break;

                                case 'p':
                                        pargs->pack_size = atol(ptr+2);
                                        break;

                                case 'i':
                                        pargs->build_index = atol(ptr+2);
                                        break;

                                case 'o':
                                        pargs->index_order = atol(ptr+2);
                                        break;

                                case 'c':
                                        pargs->scale_down = atol(ptr+2);
                                        break;

                        case 'd':
                                        pargs->index_script_path = ptr+2;
                                        break;

                                default:
                                GetArgsLoaderUsage();
                                exit(-1);
                                break;
                        }
        }

        /* check for required args */
        if (pargs->num_warehouses == UNDEF )
        {
                        printf("Number of Warehouses is required\n");
                        exit(-2);
        }

        return;
}


//=============================================================
==============
//
// Function name: GetArgsLoaderUsage
//
//=============================================================
==============

void GetArgsLoaderUsage()
{

#ifdef DEBUG
        printf("[%ld]DBG: Entering GetArgsLoaderUsage()\n", (int)
GetCurrentThreadId());
#endif


        printf("TPCCLDR:\n\n");
                printf("Parameter                                Default\n");
```

```
            printf("-------------------------------------------------------------\n");
   printf("-W Number of Warehouses to Load                Required \n");
   printf("-S Server                                  %s\n", SERVER);
   printf("-U Username                                 %s\n", USER);
   printf("-P Password                                 %s\n", PASSWORD);
   printf("-D Database                                 %s\n", DATABASE);
            printf("-b Batch Size                              %ld\n", (long)
BATCH);
            printf("-p TDS packet size                         %ld\n", (long)
DEFLDPACKSIZE);
            printf("-f Loader Results Output Filename          %s\n",
LOADER_RES_FILE);
            printf("-s Starting Warehouse                      %ld\n", (long)
DEF_STARTING_WAREHOUSE);
            printf("-i Build Option (data = 0, data and index = 1)       %ld\n",
(long) BUILD_INDEX);
            printf("-o Cluster Index Build Order (before = 1, after = 0)  %ld\n",
(long) INDEX_ORDER);
            printf("-c Build Scaled Database (normal = 0, tiny = 1)      %ld\n",
(long) SCALE_DOWN);
            printf("-d Index Script Path                       %s\n",
INDEX_SCRIPT_PATH);
            printf("-t Table to Load                           all tables \n");
   printf("   [item|warehouse|customer|orders]\n");
   printf("   Notes: \n");
   printf("     - the '-t' parameter may be included multiple times to \n");
   printf("       specify multiple tables to be loaded \n");
   printf("     - 'item' loads ITEM table \n");
   printf("     - 'warehouse' loads WAREHOUSE, DISTRICT, and STOCK
tables \n");
   printf("     - 'customer' loads CUSTOMER and HISTORY tables \n");
   printf("     - 'orders' load NEW-ORDER, ORDERS, ORDER-LINE tables
\n");

            printf("\nNote:  Command line switches are case sensitive.\n");

   exit(0);
}
```

random.c

```
//          File:                   RANDOM.C
//                                          Microsoft TPC-C Kit Ver. 4.41
//                                          Copyright Microsoft, 1996, 1997,
1998, 1999, 2000, 2001
//          Purpose:    Random number generation routines for database loader


// Includes
#include "tpcc.h"
#include "math.h"

// Defines
#define A          16807
#define M      2147483647
#define Q        127773     /* M div A */
#define R          2836     /* M mod A */
#define Thread          __declspec(thread)

// Globals
long        Thread Seed = 0;      /* thread local seed */

/*************************************************************
**************
*                                                            *
* random -                                                   *
*      Implements a GOOD pseudo random number generator.  This generator
*
*      will/should? run the complete period before repeating.          *
*                                                            *
* Copied from:                                               *
*      Random Numbers Generators: Good Ones Are Hard to Find.          *
*      Communications of the ACM - October 1988 Volume 31 Number 10
*
*                                                            *
* Machine Dependencies:                                      *
*      long must be 2 ^ 31 - 1 or greater.                   *
*                                                            *
*************************************************************
*************/

/*************************************************************
**************
* seed - load the Seed value used in irand and drand.  Should be used before  *
*      first call to irand or drand.                         *
*************************************************************
*************/

void seed(long val)
{

#ifdef DEBUG
   printf("[%ld]DBG: Entering seed()...\n", (int) GetCurrentThreadId());
            printf("Old Seed %ld New Seed %ld\n",Seed, val);
#endif

   if ( val < 0 )
               val = abs(val);

   Seed = val;

}


/*************************************************************
*************
*                                                            *
* irand - returns a 32 bit integer pseudo random number with a period of    *
*      1 to 2 ^ 32 - 1.                                      *
*                                                            *
* parameters:                                                *
*      none.                                                 *
*                                                            *
* returns:                                                   *
*      32 bit integer - defined as long ( see above ).       *
*                                                            *
* side effects:                                              *
*      seed get recomputed.                                  *
*************************************************************
************/

long irand()
{
   register long    s;     /* copy of seed */
   register long    test;  /* test flag */
   register long    hi;    /* tmp value for speed */
   register long    lo;    /* tmp value for speed */

#ifdef DEBUG
   printf("[%ld]DBG: Entering irand()...\n", (int) GetCurrentThreadId());
#endif

   s = Seed;
   hi = s / Q;
   lo = s % Q;
```

```
   test = A * lo - R * hi;
   if ( test > 0 )
                        Seed = test;
   else
                        Seed = test + M;

   return( Seed );
}


/*************************************************************
**************
*                                                           *
* drand - returns a double pseudo random number between 0.0 and 1.0.       *
*       See irand.                                          *
*************************************************************
*************/
double drand()
{

#ifdef DEBUG
   printf("[%ld]DBG: Entering drand()...\n", (int) GetCurrentThreadId());
#endif

   return( (double)irand() / 2147483647.0);
}


//=========================================================
===============
// Function   : RandomNumber
//
// Description:
//=========================================================
===============
long RandomNumber(long lower, long upper)
{
   long rand_num;

#ifdef DEBUG
   printf("[%ld]DBG: Entering RandomNumber()...\n", (int)
GetCurrentThreadId());
#endif

            if ( upper == lower )   /* pgd 08-13-96 perf enhancement */
                        return lower;

            upper++;

   if ( upper <= lower )
                        rand_num = upper;
   else
                        rand_num = lower + irand() % (upper - lower); /* pgd
08-13-96 perf enhancement */


#ifdef DEBUG
   printf("[%ld]DBG: RandomNumber between %ld & %ld ==> %ld\n",
                                                (int) GetCurrentThreadId(), lower,
upper, rand_num);
#endif


   return rand_num;
}


#if 0

//Orginal code pgd 08/13/96

long RandomNumber(long lower,
                                                long upper)
{
   long rand_num;

#ifdef DEBUG
   printf("[%ld]DBG: Entering RandomNumber()...\n", (int)
GetCurrentThreadId());
#endif

            upper++;

   if ((upper <= lower))
                        rand_num = upper;
   else
                        rand_num = lower + irand() % ((upper > lower) ? upper -
lower : upper);


#ifdef DEBUG
   printf("[%ld]DBG: RandomNumber between %ld & %ld ==> %ld\n",
                                                (int) GetCurrentThreadId(), lower,
upper, rand_num);
#endif


   return rand_num;
}
#endif

//=========================================================
===============
// Function   : NURand
//
// Description:
//=========================================================
===============
long NURand(int iConst,
            long x,
            long y,
            long C)
{
   long rand_num;

#ifdef DEBUG
   printf("[%ld]DBG: Entering NURand()...\n", (int) GetCurrentThreadId());
#endif

   rand_num = (((RandomNumber(0,iConst) | RandomNumber(x,y)) + C) %
(y-x+1))+x;

#ifdef DEBUG
   printf("[%ld]DBG: NURand: num = %d\n", (int) GetCurrentThreadId(),
rand_num);
#endif

   return rand_num;
}
```

strings.c

```
//          File:                   STRINGS.C
//                                              Microsoft TPC-C Kit Ver. 4.41
//                                              Copyright Microsoft, 1996, 1997,
1998, 1999, 2000, 2001
//          Purpose:    Source file for database loader string functions
```

```
// Includes
#include "tpcc.h"
#include <string.h>
#include <ctype.h>

//=============================================================
//
// Function name: MakeAddress
//
//=============================================================

void MakeAddress(char *street_1,
                                        char *street_2,
                                        char *city,
                                        char *state,
                                        char *zip)
{

#ifdef DEBUG
   printf("[%ld]DBG: Entering MakeAddress()\n", (int) GetCurrentThreadId());
#endif

   MakeAlphaString (10, 20, ADDRESS_LEN, street_1);
   MakeAlphaString (10, 20, ADDRESS_LEN, street_2);
   MakeAlphaString (10, 20, ADDRESS_LEN, city);
   MakeAlphaString ( 2,  2, STATE_LEN, state);
   MakeZipNumberString( 9,  9, ZIP_LEN, zip);

#ifdef DEBUG
   printf("[%ld]DBG: MakeAddress: street_1: %s, street_2: %s, city: %s, state:
%s, zip: %s\n",
                        (int) GetCurrentThreadId(), street_1, street_2,
city, state, zip);
#endif

   return;

}


//=============================================================
//
// Function name: LastName
//
//=============================================================

void LastName(int  num,
                        char *name)
{
   static char *n[] =
   {
                "BAR" , "OUGHT", "ABLE" , "PRI"  , "PRES",
                "ESE" , "ANTI" , "CALLY", "ATION", "EING"
   };

#ifdef DEBUG
   printf("[%ld]DBG: Entering LastName()\n", (int) GetCurrentThreadId());
#endif

   if ((num >= 0) && (num < 1000))
   {
                strcpy(name, n[(num/100)%10]);
                strcat(name, n[(num/10)%10]);
                strcat(name, n[(num/1)%10]);

                if (strlen(name) < LAST_NAME_LEN)
                {
                        PaddString(LAST_NAME_LEN, name);
                }

   }
   else
   {
                printf("\nError in LastName()... num <%ld> out of range
(0,999)\n", num);
                exit(-1);
   }


#ifdef DEBUG
   printf("[%ld]DBG: LastName: num = [%d] ==> [%d][%d][%d]\n",
                        (int) GetCurrentThreadId(), num, num/100,
(num/10)%10, num%10);
        printf("[%ld]DBG: LastName: String = %s\n", (int)
GetCurrentThreadId(), name);
#endif

   return;

}


//=============================================================
//
// Function name: MakeAlphaString
//
//=============================================================

//philipdu 08/13/96 Changed MakeAlphaString to use A-Z, a-z, and 0-9 in
//accordance with spec see below:
//The spec says:
//4.3.2.2     The notation random a-string [x .. y]
//(respectively, n-string [x .. y]) represents a string of random alphanumeric
//(respectively, numeric) characters of a random length of minimum x,
maximum y,
//and mean (y+x)/2. Alphanumerics are A..Z, a..z, and 0..9.  The only other
//requirement is that the character set used "must be able to represent a
minimum
//of 128 different characters".  We are using 8-bit chars, so this is a non issue.
//It is completely unreasonable to stuff non-printing chars into the text fields.
//-CLevine 08/13/96

int MakeAlphaString( int  x, int  y, int  z, char *str)
{
        int             len;
        int             i;
   char    cc = 'a';
        static  char chArray[] =
"0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstu
vwxyz";
        static  int     chArrayMax = 61;

#ifdef DEBUG
   printf("[%ld]DBG: Entering MakeAlphaString()\n", (int)
GetCurrentThreadId());
#endif

        len= RandomNumber(x, y);
```

```
        for (i=0; i<len; i++)
        {
                cc = chArray[RandomNumber(0, chArrayMax)];
    str[i] = cc;
  }
        //if ( len < z )
        //      memset(str+len, ' ', z - len);
        str[len] = 0;

  return len;
}


//=============================================================
==============
//
// Function name: MakeOriginalAlphaString
//
//=============================================================
==============

int MakeOriginalAlphaString(int  x,
                                                        int  y,

int  z,
                                                        char *str,
                                                    int  percent)
{
  int           len;
  int           val;
  int           start;

#ifdef DEBUG
  printf("[%ld]DBG: Entering MakeOriginalAlphaString()\n", (int)
GetCurrentThreadId());
#endif

  // verify prercentage is valid
  if ((percent < 0) || (percent > 100))
  {
                printf("MakeOrigianlAlphaString: Invalid percentage:
%d\n", percent);
                exit(-1);
  }

  // verify string is at least 8 chars in length
  if ((x + y) <= 8)
  {
                printf("MakeOriginalAlphaString: string length must be
>= 8\n");
                exit(-1);
  }

  // Make Alpha String
  len = MakeAlphaString(x,y, z, str);

  val = RandomNumber(1,100);
  if (val <= percent)
  {
                start = RandomNumber(0, len - 8);
                strncpy(str + start, "ORIGINAL", 8);
  }


#ifdef DEBUG
  printf("[%ld]DBG: MakeOriginalAlphaString: : %s\n",
                        (int) GetCurrentThreadId(), str);
#endif

  return strlen(str);
}


//=============================================================
==============
//
// Function name: MakeNumberString
//
//=============================================================
==============
int MakeNumberString(int  x, int  y, int  z, char *str)
{
        char tmp[16];

        //MakeNumberString is always called MakeZipNumberString(16,
16, 16, string)

        memset(str, '0', 16);
        itoa(RandomNumber(0, 99999999), tmp, 10);
        memcpy(str, tmp, strlen(tmp));

        itoa(RandomNumber(0, 99999999), tmp, 10);
        memcpy(str+8, tmp, strlen(tmp));

        str[16] = 0;

  return 16;
}


//=============================================================
==============
//
// Function name: MakeZipNumberString
//
//=============================================================
==============
int MakeZipNumberString(int  x, int  y, int  z, char *str)
{
        char tmp[16];

        //MakeZipNumberString is always called MakeZipNumberString(9,
9, 9, string)

        strcpy(str, "000011111");

        itoa(RandomNumber(0, 9999), tmp, 10);
        memcpy(str, tmp, strlen(tmp));

  return 9;
}


//=============================================================
==============
//
// Function name: InitString
//
//=============================================================
==============
void InitString(char *str, int len)
{
#ifdef DEBUG
  printf("[%ld]DBG: Entering InitString()\n", (int) GetCurrentThreadId());
#endif
```

```
        memset(str, ' ', len);
    str[len] = 0;
}


//================================================================
// Function name: InitAddress
//
// Description:
//
//================================================================

void InitAddress(char *street_1, char *street_2, char *city, char *state, char
*zip)
{
        memset(street_1, ' ', ADDRESS_LEN+1);
        memset(street_2, ' ', ADDRESS_LEN+1);
        memset(city, ' ', ADDRESS_LEN+1);

    street_1[ADDRESS_LEN+1] = 0;
    street_2[ADDRESS_LEN+1] = 0;
    city[ADDRESS_LEN+1]     = 0;

        memset(state, ' ', STATE_LEN+1);
    state[STATE_LEN+1] = 0;

        memset(zip, ' ', ZIP_LEN+1);
    zip[ZIP_LEN+1] = 0;
}


//================================================================
//
// Function name: PaddString
//
//================================================================

void PaddString(int max, char *name)
{
        int             len;

        len = strlen(name);
        if ( len < max )
                memset(name+len, ' ', max - len);
        name[max] = 0;

        return;
}
```

time.c

```
//      File:           TIME.C
//                                      Microsoft TPC-C Kit Ver. 4.41
//                                      Copyright Microsoft, 1996, 1997,
1998, 1999, 2000, 2001
//      Purpose:    Source file for time functions


// Includes
#include "tpcc.h"

// Globals
static long start_sec;


//================================================================
//
// Function name: TimeNow
//
//================================================================

long TimeNow()
{
  long          time_now;
  struct    _timeb el_time;

#ifdef DEBUG
   printf("[%ld]DBG: Entering TimeNow()\n", (int) GetCurrentThreadId());
#endif

  _ftime(&el_time);

  time_now = ((el_time.time - start_sec) * 1000) + el_time.millitm;

  return time_now;
}
```

tpcc.h

```
//      File:           TPCC.H
//                                      Microsoft TPC-C Kit Ver. 4.41
//                                      Copyright Microsoft, 1996, 1997,
1998, 1999, 2000, 2001
//      Purpose:    Header file for TPC-C database loader


// Build number of TPC Benchmark Kit
#define TPCKIT_VER      "4.41"

// General headers
#include <windows.h>
#include <winbase.h>
#include <stdlib.h>
#include <stdio.h>
#include <process.h>
#include <stddef.h>
#include <stdarg.h>
#include <string.h>
#include <time.h>
#include <sys\timeb.h>
#include <sys\types.h>

// ODBC headers
#include <sql.h>
#include <sqlext.h>
#include <odbcss.h>

// General constants
#define MILLI           1000
#define FALSE                   0
#define TRUE                    1
#define UNDEF                           -1
#define MINPRINTASCII           32
#define MAXPRINTASCII           126

// Default environment constants
#define SERVER                  ""
#define DATABASE                "tpcc"
```

```
#define USER                                    "sa"
#define PASSWORD                                ""

// Default loader arguments
#define BATCH                                   10000
#define DEFLDPACKSIZE                                   32768
#define LOADER_RES_FILE
"C:\\MSTPCC.440\\SETUP\\logs\\load.out"
#define LOG_PATH                        "C:\\MSTPCC.440\\SETUP\\LOGS\\";
#define LOADER_NURAND_C                                 123
#define DEF_STARTING_WAREHOUSE                  1
#define BUILD_INDEX                                                     1
// build both data and indexes
#define INDEX_ORDER                                                     1
// build indexes before load
#define SCALE_DOWN                                                      0
  // build a normal scale database
#define INDEX_SCRIPT_PATH "scripts"

typedef struct
{
   char                                 *server;
   char                                 *database;
   char                                 *user;
   char                                 *password;
        BOOL                                    tables_all;
// set if loading all tables
        BOOL                                    table_item;
// set if loading ITEM table specifically
        BOOL                                    table_warehouse;        //
set if loading WAREHOUSE, DISTRICT, and STOCK
        BOOL                                    table_customer;
// set if loading CUSTOMER and HISTORY
        BOOL                                    table_orders;
// set if loading NEW-ORDER, ORDERS, ORDER-LINE
   long                                 num_warehouses;
   long                                 batch;
   long                                 verbose;
        long                                    pack_size;
        char                                    *loader_res_file;
        char                                    *log_path;
        char                                    *synch_servername;
        long                                    case_sensitivity;
        long                                    starting_warehouse;
        long                                    build_index;
        long                                    index_order;
        long                                    scale_down;
        char                                    *index_script_path;
} TPCCLDR_ARGS;

// String length constants
        #define SERVER_NAME_LEN         20
        #define DATABASE_NAME_LEN       20
        #define USER_NAME_LEN           20
        #define PASSWORD_LEN            20
        #define TABLE_NAME_LEN          20
        #define I_DATA_LEN              50
        #define I_NAME_LEN              24
        #define BRAND_LEN               1
        #define LAST_NAME_LEN           16
        #define W_NAME_LEN              10
        #define ADDRESS_LEN             20
        #define STATE_LEN               2
        #define ZIP_LEN                 9
        #define S_DIST_LEN              24
        #define S_DATA_LEN              50
        #define D_NAME_LEN              10
        #define FIRST_NAME_LEN          16
        #define MIDDLE_NAME_LEN         2
        #define PHONE_LEN               16
        #define CREDIT_LEN              2
        #define C_DATA_LEN              500
        #define H_DATA_LEN              24
        #define DIST_INFO_LEN           24
        #define MAX_OL_NEW_ORDER_ITEMS  15
        #define MAX_OL_ORDER_STATUS_ITEMS 15
        #define STATUS_LEN              25
        #define OL_DIST_INFO_LEN                24
        #define C_SINCE_LEN
23
        #define H_DATE_LEN
23
        #define OL_DELIVERY_D_LEN                               23
        #define O_ENTRY_D_LEN           23


// Functions in random.c
void    seed();
long    irand();
double  drand();
void    WUCreate();
short   WURand();
long    RandomNumber(long lower, long upper);

// Functions in getargs.c;
void    GetArgsLoader();
void    GetArgsLoaderUsage();

// Functions in time.c
long    TimeNow();

// Functions in strings.c
void    MakeAddress();
void    LastName();
int     MakeAlphaString();
int     MakeOriginalAlphaString();
int     MakeNumberString();
int     MakeZipNumberString();
void    InitString();
void    InitAddress();
void    PaddString();
```

tpccldr.c

```
//      File:           TPCCLDR.C
//                              Microsoft TPC-C Kit Ver. 4.41
//                              Copyright Microsoft, 1996, 1997,
1998, 1999, 2000, 2001
//      Purpose:  Source file for TPC-C database loader


// Includes
#include "tpcc.h"
#include "search.h"

// Defines
#define MAXITEMS        100000
#define MAXITEMS_SCALE_DOWN             100
#define CUSTOMERS_PER_DISTRICT  3000
#define CUSTOMERS_SCALE_DOWN    30
#define DISTRICT_PER_WAREHOUSE  10
#define ORDERS_PER_DISTRICT     3000
#define ORDERS_SCALE_DOWN       30
#define MAX_CUSTOMER_THREADS    2
#define MAX_ORDER_THREADS       3
```

```
#define MAX_MAIN_THREADS       4

// Functions declarations

void HandleErrorDBC (SQLHDBC  hdbc1);

void CheckDataBase();

long NURand();
void LoadItem();
void LoadWarehouse();

void Stock();
void District();

void LoadCustomer();
void CustomerBufInit();
void CustomerBufLoad();
void LoadCustomerTable();
void LoadHistoryTable();

void LoadOrders();
void OrdersBufInit();
void OrdersBufLoad();
void LoadOrdersTable();
void LoadNewOrderTable();
void LoadOrderLineTable();
void GetPermutation();
void CheckForCommit();
void OpenConnections();
void BuildIndex();
void FormatDate ();

// Shared memory structures

typedef struct
{
   long             ol;
   long             ol_i_id;
   short            ol_supply_w_id;
   short            ol_quantity;
   double            ol_amount;
   char             ol_dist_info[DIST_INFO_LEN+1];
            char
ol_delivery_d[OL_DELIVERY_D_LEN+1];
} ORDER_LINE_STRUCT;

typedef struct
{
   long             o_id;
   short            o_d_id;
   short            o_w_id;
   long             o_c_id;
   short            o_carrier_id;
   short            o_ol_cnt;
   short            o_all_local;
            ORDER_LINE_STRUCT   o_ol[15];
} ORDERS_STRUCT;

typedef struct
{
   long                                    c_id;
   short                                   c_d_id;
   short                                   c_w_id;
            char
c_first[FIRST_NAME_LEN+1];
   char
c_middle[MIDDLE_NAME_LEN+1];
   char                                    c_last[LAST_NAME_LEN+1];
   char                                    c_street_1[ADDRESS_LEN+1];
   char                                    c_street_2[ADDRESS_LEN+1];
   char                                    c_city[ADDRESS_LEN+1];
   char                                    c_state[STATE_LEN+1];
   char                                    c_zip[ZIP_LEN+1];
   char                                    c_phone[PHONE_LEN+1];
   char                                    c_credit[CREDIT_LEN+1];
   double                                  c_credit_lim;
   double                                  c_discount;
//  fix to avoid ODBC float to numeric conversion problem.
//  double                                  c_balance;
            char                                    c_balance[6];

   double                                  c_ytd_payment;
            short                                   c_payment_cnt;
            short                                   c_delivery_cnt;
            char
c_data[C_DATA_LEN+1];
            double                                  h_amount;
   char                                    h_data[H_DATA_LEN+1];
} CUSTOMER_STRUCT;

typedef struct
{
            char
c_last[LAST_NAME_LEN+1];
            char
c_first[FIRST_NAME_LEN+1];
   long                                    c_id;
} CUSTOMER_SORT_STRUCT;

typedef struct
{
   long              time_start;
} LOADER_TIME_STRUCT;


// Global variables

char        szLastError[300];

HENV        henv;

HDBC        v_hdbc;                                                    //
for SQL Server version verification
HDBC        i_hdbc1;                                                   // for ITEM
table
HDBC        w_hdbc1;                                                   // for
WAREHOUSE, DISTRICT, STOCK
HDBC        c_hdbc1;                                                   // for
CUSTOMER
HDBC        c_hdbc2;                                                   // for
HISTORY
HDBC        o_hdbc1;                                                   // for
ORDERS
HDBC        o_hdbc2;                                                   // for
NEW-ORDER
HDBC        o_hdbc3;                                                   // for
ORDER-LINE

HSTMT       v_hstmt;                                                   // for SQL
Server version verification
HSTMT       i_hstmt1;
HSTMT       w_hstmt1;
HSTMT       c_hstmt1, c_hstmt2;
HSTMT       o_hstmt1, o_hstmt2, o_hstmt3;
```

```
ORDERS_STRUCT   orders_buf[ORDERS_PER_DISTRICT];
CUSTOMER_STRUCT customer_buf[CUSTOMERS_PER_DISTRICT];
long          orders_rows_loaded;
long          new_order_rows_loaded;
long          order_line_rows_loaded;
long          history_rows_loaded;
long          customer_rows_loaded;
long          stock_rows_loaded;
long          district_rows_loaded;
long          item_rows_loaded;
long          warehouse_rows_loaded;
long          main_time_start;
long          main_time_end;
long                                max_items;
long                                customers_per_district;
long                                orders_per_district;
long                                first_new_order;
long                                last_new_order;

TPCCLDR_ARGS    *aptr, args;

//============================================================
==============
//
// Function name: main
//
//============================================================
==============

int main(int  argc, char **argv)
{

            DWORD          dwThreadID[MAX_MAIN_THREADS];
            HANDLE         hThread[MAX_MAIN_THREADS];
            FILE          *fLoader;
            char           buffer[255];
            int                                             i;

            for (i=0; i<MAX_MAIN_THREADS; i++)
                        hThread[i] = NULL;

   printf("\n*************************************************");
            printf("\n*                                       *");
            printf("\n*  Microsoft SQL Server                 *");
            printf("\n*                                       *");
            printf("\n*  TPC-C BENCHMARK KIT:  Database loader        *");
            printf("\n*  Version %s                          *", TPCKIT_VER);
            printf("\n*                                       *");

printf("\n*************************************************\n\n");

   // process command line arguments

   aptr = &args;
   GetArgsLoader(argc, argv, aptr);


            // verify database and tables exist before attempting to load
            //CheckDataBase();


            printf("Build interface is ODBC.\n");

            if (aptr->build_index == 0)
                        printf("Data load only - no index creation.\n");
            else
                        printf("Data load and index creation.\n");

            if (aptr->index_order == 0)
                        printf("Clustered indexes will be created after bulk
load.\n");
            else
                        printf("Clustered indexes will be created before bulk
load.\n");

            // set database scale values
            if (aptr->scale_down == 1)
            {
                        printf("*** Scaled Down Database ***\n");
                        max_items = MAXITEMS_SCALE_DOWN;
                        customers_per_district =
CUSTOMERS_SCALE_DOWN;
                        orders_per_district = ORDERS_SCALE_DOWN;
                        first_new_order = 0;
                        last_new_order  = 30;
            }
            else
            {
                        max_items = MAXITEMS;
                        customers_per_district =
CUSTOMERS_PER_DISTRICT;
                        orders_per_district = ORDERS_PER_DISTRICT;
                        first_new_order = 2100;
                        last_new_order  = 3000;
            }


            // open connections to SQL Server

            OpenConnections();

            // open file for loader results
            fLoader = fopen(aptr->loader_res_file, "w");



   if (fLoader == NULL)
            {
                        printf("Error, loader result file open failed.");
                        exit(-1);
            }

   // start loading data

   sprintf(buffer,"TPC-C load started for %ld
warehouses.\n",aptr->num_warehouses);

            printf("%s",buffer);
            fprintf(fLoader,"%s",buffer);

            main_time_start = (TimeNow() / MILLI);

            // start parallel load threads


            if (aptr->tables_all || aptr->table_item)
            {
                        fprintf(fLoader, "\nStarting loader threads for: item\n");

                        hThread[0] = CreateThread(NULL,

 0,

 (LPTHREAD_START_ROUTINE) LoadItem,

 NULL,
```

```
0,
&dwThreadID[0]);
                        if (hThread[0] == NULL)
                        {
                                printf("Error, failed in creating creating thread
= 0.\n");
                                exit(-1);
                        }
                }
                if (aptr->tables_all || aptr->table_warehouse)
                {
                        fprintf(fLoader, "Starting loader threads for:
warehouse\n");
                        hThread[1] = CreateThread(NULL,
0,
(LPTHREAD_START_ROUTINE) LoadWarehouse,
NULL,
0,
&dwThreadID[1]);
                        if (hThread[1] == NULL)
                        {
                                printf("Error, failed in creating creating thread
= 1.\n");
                                exit(-1);
                        }
                }
                if (aptr->tables_all || aptr->table_customer)
                {
                        fprintf(fLoader, "Starting loader threads for:
customer\n");
                        hThread[2] = CreateThread(NULL,
0,
(LPTHREAD_START_ROUTINE) LoadCustomer,
NULL,
0,
&dwThreadID[2]);
                        if (hThread[2] == NULL)
                        {
                                printf("Error, failed in creating creating main
thread = 2.\n");
                                exit(-1);
                        }
                }
                if (aptr->tables_all || aptr->table_orders)
                {
                        fprintf(fLoader, "Starting loader threads for: orders\n");
                        hThread[3] = CreateThread(NULL,
0,
(LPTHREAD_START_ROUTINE) LoadOrders,
NULL,
0,
&dwThreadID[3]);
                        if (hThread[3] == NULL)
                        {
                                printf("Error, failed in creating creating main
thread = 3.\n");
                                exit(-1);
                        }
                }
                // Wait for threads to finish...
                for (i=0; i<MAX_MAIN_THREADS; i++)
                {
                        if (hThread[i] != NULL)
                        {
                                WaitForSingleObject( hThread[i], INFINITE
);
                                CloseHandle(hThread[i]);
                                hThread[i] = NULL;
                        }
                }
                main_time_end = (TimeNow() / MILLI);
  sprintf(buffer,"\nTPC-C load completed successfully in %ld minutes.\n",
                                (main_time_end - main_time_start)/60);
                printf("%s",buffer);
                fprintf(fLoader, "%s", buffer);
                fclose(fLoader);
                SQLFreeEnv(henv);
  exit(0);
                return 0;
}

//=============================================================
==============
//
// Function name: LoadItem
//
//=============================================================
==============

void LoadItem()
{
  long          i_id;
        long            i_im_id;
  char          i_name[I_NAME_LEN+1];
  double        i_price;
  char          i_data[I_DATA_LEN+1];
        char            name[20];
        long            time_start;
        RETCODE                 rc;
        DBINT           rcint;
```

```
	char		bcphint[128];
	char		err_log_path[256];

	// Seed with unique number
	seed(1);

	printf("Loading item table...\n");

	// if build index before load
	if ((aptr->build_index == 1) && (aptr->index_order == 1))
		BuildIndex("idxitmcl");

	InitString(i_name, I_NAME_LEN+1);
	InitString(i_data, I_DATA_LEN+1);

	sprintf(name, "%s..%s", aptr->database, "item");

	//rc = bcp_init(i_hdbc1, name, NULL, "logs\\item.err", DB_IN);
	strcpy(err_log_path,aptr->log_path);
	strcat(err_log_path,"item.err");
	rc = bcp_init(i_hdbc1, name, NULL, err_log_path , DB_IN);
	if (rc != SUCCEED)
		HandleErrorDBC(i_hdbc1);

	if ((aptr->build_index == 1) && (aptr->index_order == 1))
	{
		sprintf(bcphint, "tablock, order (i_id),
ROWS_PER_BATCH = 100000");
		rc = bcp_control(i_hdbc1, BCPHINTS, (void*) bcphint);
		if (rc != SUCCEED)
			HandleErrorDBC(i_hdbc1);
	}

	rc = bcp_bind(i_hdbc1, (BYTE *) &i_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 1);
	if (rc != SUCCEED)
		HandleErrorDBC(i_hdbc1);

	rc = bcp_bind(i_hdbc1, (BYTE *) &i_im_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, 2);
	if (rc != SUCCEED)
		HandleErrorDBC(i_hdbc1);

	rc = bcp_bind(i_hdbc1, (BYTE *) i_name, 0, I_NAME_LEN,
NULL, 0, 0, 3);
	if (rc != SUCCEED)
		HandleErrorDBC(i_hdbc1);

	rc = bcp_bind(i_hdbc1, (BYTE *) &i_price, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 4);
	if (rc != SUCCEED)
		HandleErrorDBC(i_hdbc1);

	rc = bcp_bind(i_hdbc1, (BYTE *) i_data, 0, I_DATA_LEN, NULL,
0, 0, 5);
	if (rc != SUCCEED)
		HandleErrorDBC(i_hdbc1);

	time_start = (TimeNow() / MILLI);

	item_rows_loaded = 0;

	for (i_id = 1; i_id <= max_items; i_id++)
	{
		i_im_id = RandomNumber(1L, 10000L);

		MakeAlphaString(14, 24, I_NAME_LEN, i_name);

		i_price = ((float) RandomNumber(100L, 10000L))/100.0;

		MakeOriginalAlphaString(26, 50, I_DATA_LEN, i_data,
10);

		rc = bcp_sendrow(i_hdbc1);
		if (rc != SUCCEED)
			HandleErrorDBC(i_hdbc1);

		item_rows_loaded++;
		CheckForCommit(i_hdbc1, i_hstmt1, item_rows_loaded,
"item", &time_start);
	}

	rcint = bcp_done(i_hdbc1);
	if (rcint < 0)
		HandleErrorDBC(i_hdbc1);

	printf("Finished loading item table.\n");

	SQLFreeStmt(i_hstmt1, SQL_DROP);
	SQLDisconnect(i_hdbc1);
	SQLFreeConnect(i_hdbc1);

	// if build index after load
	if ((aptr->build_index == 1) && (aptr->index_order == 0))
		BuildIndex("idxitmcl");

}


//=========================================================
=====================
//
// Function   : LoadWarehouse
//
// Loads WAREHOUSE table and loads Stock and District as Warehouses are
created
//
//=========================================================
=====================

void LoadWarehouse()
{
  short	w_id;
  char	w_name[W_NAME_LEN+1];
  char	w_street_1[ADDRESS_LEN+1];
  char	w_street_2[ADDRESS_LEN+1];
  char	w_city[ADDRESS_LEN+1];
  char	w_state[STATE_LEN+1];
  char	w_zip[ZIP_LEN+1];
  double	w_tax;
  double	w_ytd;
	char		name[20];
	long		time_start;
	RETCODE		rc;
	DBINT		rcint;
	char		bcphint[128];
	char		err_log_path[256];

	// Seed with unique number
	seed(2);

	printf("Loading warehouse table...\n");

	// if build index before load...
	if ((aptr->build_index == 1) && (aptr->index_order == 1))
		BuildIndex("idxwarcl");
```

```
	InitString(w_name, W_NAME_LEN+1);
	InitAddress(w_street_1, w_street_2, w_city, w_state, w_zip);

	sprintf(name, "%s..%s", aptr->database, "warehouse");

	//rc = bcp_init(w_hdbc1, name, NULL, "logs\\whouse.err", DB_IN);

	strcpy(err_log_path,aptr->log_path);
	strcat(err_log_path,"whouse.err");
	rc = bcp_init(w_hdbc1, name, NULL, err_log_path, DB_IN);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	if ((aptr->build_index == 1) && (aptr->index_order == 1))
	{
		sprintf(bcphint, "tablock, order (w_id),
ROWS_PER_BATCH = %d", aptr->num_warehouses);
		rc = bcp_control(w_hdbc1, BCPHINTS, (void*)
bcphint);
		if (rc != SUCCEED)
			HandleErrorDBC(w_hdbc1);
	}

	rc = bcp_bind(w_hdbc1, (BYTE *) &w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 1);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) w_name, 0, W_NAME_LEN,
NULL, 0, 0, 2);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) w_street_1, 0, ADDRESS_LEN,
NULL, 0, 0, 3);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) w_street_2, 0, ADDRESS_LEN,
NULL, 0, 0, 4);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) w_city, 0, ADDRESS_LEN,
NULL, 0, 0, 5);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) w_state, 0, STATE_LEN,
NULL, 0, 0, 6);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) w_zip, 0, ZIP_LEN, NULL, 0, 0,
7);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) &w_tax, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 8);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) &w_ytd, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 9);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	time_start = (TimeNow() / MILLI);

	warehouse_rows_loaded = 0;

	for (w_id = (short)aptr->starting_warehouse; w_id <=
aptr->num_warehouses; w_id++)
	{
		MakeAlphaString(6,10, W_NAME_LEN, w_name);

		MakeAddress(w_street_1, w_street_2, w_city, w_state,
w_zip);

		w_tax = ((float) RandomNumber(0L,2000L))/10000.00;

		w_ytd = 300000.00;

		rc = bcp_sendrow(w_hdbc1);
		if (rc != SUCCEED)
			HandleErrorDBC(w_hdbc1);

		warehouse_rows_loaded++;
		CheckForCommit(w_hdbc1, i_hstmt1,
warehouse_rows_loaded, "warehouse", &time_start);
	}

	rcint = bcp_done(w_hdbc1);
	if (rcint < 0)
		HandleErrorDBC(w_hdbc1);

	printf("Finished loading warehouse table.\n");

	// if build index after load...
	if ((aptr->build_index == 1) && (aptr->index_order == 0))
		BuildIndex("idxwarcl");

	stock_rows_loaded = 0;
	district_rows_loaded = 0;

	District();
	Stock();

}


//=============================================================
==============
//
// Function   : District
//
//=============================================================
==============

void District()
{
  short    d_id;
  short    d_w_id;
  char     d_name[D_NAME_LEN+1];
  char     d_street_1[ADDRESS_LEN+1];
  char     d_street_2[ADDRESS_LEN+1];
  char     d_city[ADDRESS_LEN+1];
  char     d_state[STATE_LEN+1];
  char     d_zip[ZIP_LEN+1];
  double   d_tax;
  double   d_ytd;
	char	name[20];
  long     d_next_o_id;
	long	time_start;
```

```
	int			w_id;
	RETCODE		rc;
	DBINT	rcint;
	char	bcphint[128];
	char	err_log_path[256];

	// Seed with unique number
	seed(4);

	printf("Loading district table...\n");

	// build index before load
	if ((aptr->build_index == 1) && (aptr->index_order == 1))
		BuildIndex("idxdiscl");

	InitString(d_name, D_NAME_LEN+1);
	InitAddress(d_street_1, d_street_2, d_city, d_state, d_zip);
	sprintf(name, "%s..%s", aptr->database, "district");

	//rc = bcp_init(w_hdbc1, name, NULL, "logs\\district.err", DB_IN);
	strcpy(err_log_path,aptr->log_path);
	strcat(err_log_path,"district.err");
	rc = bcp_init(w_hdbc1, name, NULL, err_log_path, DB_IN);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	if ((aptr->build_index == 1) && (aptr->index_order == 1))
	{
		sprintf(bcphint, "tablock, order (d_w_id, d_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 10));
		rc = bcp_control(w_hdbc1, BCPHINTS, (void*)
bcphint);
		if (rc != SUCCEED)
			HandleErrorDBC(w_hdbc1);
	}

	rc = bcp_bind(w_hdbc1, (BYTE *) &d_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 1);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) &d_w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 2);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) d_name, 0, D_NAME_LEN,
NULL, 0, 0, 3);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) d_street_1, 0, ADDRESS_LEN,
NULL, 0, 0, 4);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) d_street_2, 0, ADDRESS_LEN,
NULL, 0, 0, 5);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) d_city, 0, ADDRESS_LEN,
NULL, 0, 0, 6);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) d_state, 0, STATE_LEN, NULL,
0, 0, 7);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) d_zip, 0, ZIP_LEN, NULL, 0, 0,
8);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) &d_tax, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 9);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) &d_ytd, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 10);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) &d_next_o_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, 11);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	d_ytd  = 30000.0;

	d_next_o_id = orders_per_district+1;

	time_start = (TimeNow() / MILLI);

	for (w_id = aptr->starting_warehouse; w_id <=
aptr->num_warehouses; w_id++)
	{
		d_w_id = w_id;

		for (d_id = 1; d_id <= DISTRICT_PER_WAREHOUSE;
d_id++)
		{
			MakeAlphaString(6,10,D_NAME_LEN,
d_name);

			MakeAddress(d_street_1, d_street_2, d_city,
d_state, d_zip);

			d_tax = ((float)
RandomNumber(0L,2000L))/10000.00;

			rc = bcp_sendrow(w_hdbc1);
			if (rc != SUCCEED)
				HandleErrorDBC(w_hdbc1);

			district_rows_loaded++;
			CheckForCommit(w_hdbc1, w_hstmt1,
district_rows_loaded, "district", &time_start);
		}
  }

	rcint = bcp_done(w_hdbc1);
	if (rcint < 0)
		HandleErrorDBC(w_hdbc1);

	printf("Finished loading district table.\n");

	// if build index after load...
	if ((aptr->build_index == 1) && (aptr->index_order == 0))
		BuildIndex("idxdiscl");

  return;
}
```

```
//==============================================================
==============
//
// Function   : Stock
//
//==============================================================
==============

void Stock()
{
   long     s_i_id;
   short    s_w_id;
   short    s_quantity;
   char     s_dist_01[S_DIST_LEN+1];
   char     s_dist_02[S_DIST_LEN+1];
   char     s_dist_03[S_DIST_LEN+1];
   char     s_dist_04[S_DIST_LEN+1];
   char     s_dist_05[S_DIST_LEN+1];
   char     s_dist_06[S_DIST_LEN+1];
   char     s_dist_07[S_DIST_LEN+1];
   char     s_dist_08[S_DIST_LEN+1];
   char     s_dist_09[S_DIST_LEN+1];
   char     s_dist_10[S_DIST_LEN+1];
   long     s_ytd;
   short    s_order_cnt;
   short    s_remote_cnt;
   char     s_data[S_DATA_LEN+1];
   short    len;
            char        name[20];
            long        time_start;
            RETCODE             rc;
            DBINT       rcint;
            char        bcphint[128];
            char        err_log_path[256];

            // Seed with unique number
            seed(3);

            // if build index before load...
            if ((aptr->build_index == 1) && (aptr->index_order == 1))
                        BuildIndex("idxstkcl");

            sprintf(name, "%s..%s", aptr->database, "stock");

            //rc = bcp_init(w_hdbc1, name, NULL, "logs\\stock.err", DB_IN);
            strcpy(err_log_path,aptr->log_path);
            strcat(err_log_path,"stock.err");
            rc = bcp_init(w_hdbc1, name, NULL, err_log_path, DB_IN);
            if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

            if ((aptr->build_index == 1) && (aptr->index_order == 1))
            {
                        sprintf(bcphint, "tablock, order (s_i_id, s_w_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 100000));
                        rc = bcp_control(w_hdbc1, BCPHINTS, (void*)
bcphint);
                        if (rc != SUCCEED)
                                    HandleErrorDBC(w_hdbc1);
            }

            rc = bcp_bind(w_hdbc1, (BYTE *) &s_i_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, 1);
            if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

            bcp_bind(w_hdbc1, (BYTE *) &s_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 2);
            if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

            rc = bcp_bind(w_hdbc1, (BYTE *) &s_quantity, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 3);
            if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

            rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_01, 0, S_DIST_LEN,
NULL, 0, 0, 4);
            if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

            rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_02, 0, S_DIST_LEN,
NULL, 0, 0, 5);
            if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

            rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_03, 0, S_DIST_LEN,
NULL, 0, 0, 6);
            if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

            rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_04, 0, S_DIST_LEN,
NULL, 0, 0, 7);
            if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

            rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_05, 0, S_DIST_LEN,
NULL, 0, 0, 8);
            if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

            rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_06, 0, S_DIST_LEN,
NULL, 0, 0, 9);
            if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

            rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_07, 0, S_DIST_LEN,
NULL, 0, 0, 10);
            if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

            rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_08, 0, S_DIST_LEN,
NULL, 0, 0, 11);
            if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

            rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_09, 0, S_DIST_LEN,
NULL, 0, 0, 12);
            if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

            rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_10, 0, S_DIST_LEN,
NULL, 0, 0, 13);
            if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

            rc = bcp_bind(w_hdbc1, (BYTE *) &s_ytd, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, 14);
            if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

            rc = bcp_bind(w_hdbc1, (BYTE *) &s_order_cnt, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 15);
            if (rc != SUCCEED)
```

```
                HandleErrorDBC(w_hdbc1);

        rc = bcp_bind(w_hdbc1, (BYTE *) &s_remote_cnt, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 16);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);

        rc = bcp_bind(w_hdbc1, (BYTE *) s_data, 0, S_DATA_LEN,
NULL, 0, 0, 17);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);

        s_ytd = s_order_cnt = s_remote_cnt = 0;

        time_start = (TimeNow() / MILLI);

        printf("...Loading stock table\n");

        for (s_i_id=1; s_i_id <= max_items; s_i_id++)
        {

                for (s_w_id = (short)aptr->starting_warehouse; s_w_id
<= aptr->num_warehouses; s_w_id++)
                {

                        s_quantity =
(short)RandomNumber(10L,100L);
                        len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_01);
                        len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_02);
                        len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_03);
                        len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_04);
                        len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_05);
                        len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_06);
                        len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_07);
                        len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_08);
                        len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_09);
                        len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_10);

                        len = MakeOriginalAlphaString(26,50,
S_DATA_LEN, s_data,10);

                        rc = bcp_sendrow(w_hdbc1);
                        if (rc != SUCCEED)
                                HandleErrorDBC(w_hdbc1);

                        stock_rows_loaded++;
                        CheckForCommit(w_hdbc1, w_hstmt1,
stock_rows_loaded, "stock", &time_start);

                }
        }

        rcint = bcp_done(w_hdbc1);
        if (rcint < 0)
                HandleErrorDBC(w_hdbc1);

        printf("Finished loading stock table.\n");

        SQLFreeStmt(w_hstmt1, SQL_DROP);
        SQLDisconnect(w_hdbc1);
        SQLFreeConnect(w_hdbc1);

        // if build index after load...
        if ((aptr->build_index == 1) && (aptr->index_order == 0))
                BuildIndex("idxstkcl");

        return;
}


//=================================================
==============
//
// Function   : LoadCustomer
//
//=================================================
==============

void LoadCustomer()
{
        LOADER_TIME_STRUCT      customer_time_start;
        LOADER_TIME_STRUCT      history_time_start;
        short                   w_id;
  short         d_id;
        DWORD
dwThreadID[MAX_CUSTOMER_THREADS];
        HANDLE
hThread[MAX_CUSTOMER_THREADS];
        char                    name[20];
        RETCODE
rc;
        DBINT                                           rcint;
        char
bcphint[128];
        char                                            cmd[256];
        int
num_procs;
        char
err_log_path_cust[256];
        char
err_log_path_hist[256];
        // SQLRETURN                                    rc_1;
        // SQLSMALLINT                                  recnum,
MsgLen;
        // SQLCHAR
SqlState[6], Msg[SQL_MAX_MESSAGE_LENGTH];
        // SQLINTEGER                                   NativeError;

        // Seed with unique number
        seed(5);

        printf("Loading customer and history tables...\n");

        // if build index before load...
        if ((aptr->build_index == 1) && (aptr->index_order == 1))
        {
                BuildIndex("idxcuscl");
                // check the number of processors on this system
                // if 8 or more processors, then build index on History.
                // if less than 8 processors, do not build the index
                num_procs = atoi(getenv(
"NUMBER_OF_PROCESSORS" ));
                if ( num_procs >= 8 )
                        BuildIndex("idxhiscl");
        }
```

```
	// Initialize bulk copy
	sprintf(name, "%s..%s", aptr->database, "customer");

	//rc = bcp_init(c_hdbc1, name, NULL, "logs\\customer.err",
DB_IN);
	strcpy(err_log_path_cust,aptr->log_path);
	strcat(err_log_path_cust,"customer.err");
	rc = bcp_init(c_hdbc1, name, NULL, err_log_path_cust, DB_IN);
	if (rc != SUCCEED)
		HandleErrorDBC(c_hdbc1);

	if ((aptr->build_index == 1) && (aptr->index_order == 1))
	{
		sprintf(bcphint, "tablock, order (c_w_id, c_d_id, c_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 30000));
		rc = bcp_control(c_hdbc1, BCPHINTS, (void*) bcphint);

		if (rc != SUCCEED)
			HandleErrorDBC(c_hdbc1);
	}

	sprintf(name, "%s..%s", aptr->database, "history");

	rc = bcp_init(c_hdbc2, name, NULL, "logs\\history.err", DB_IN);
	strcpy(err_log_path_hist,aptr->log_path);
	strcat(err_log_path_hist,"history.err");
	rc = bcp_init(c_hdbc2, name, NULL, err_log_path_hist, DB_IN);
	if (rc != SUCCEED)
		HandleErrorDBC(c_hdbc2);

	sprintf(bcphint, "tablock");
	rc = bcp_control(c_hdbc2, BCPHINTS, (void*) bcphint);
	if (rc != SUCCEED)
		HandleErrorDBC(c_hdbc2);

	customer_rows_loaded    = 0;
	history_rows_loaded     = 0;

	CustomerBufInit();

	customer_time_start.time_start = (TimeNow() / MILLI);
	history_time_start.time_start = (TimeNow() / MILLI);

	for (w_id = (short)aptr->starting_warehouse; w_id <=
aptr->num_warehouses; w_id++)
	{
		for (d_id = 1; d_id <= DISTRICT_PER_WAREHOUSE;
d_id++)
		{

			CustomerBufLoad(d_id, w_id);

			// Start parallel loading threads here...

			// Start customer table thread

			printf("...Loading customer table for: d_id =
%d, w_id = %d\n", d_id, w_id);

			hThread[0] = CreateThread(NULL,

	0,

	(LPTHREAD_START_ROUTINE) LoadCustomerTable,

	&customer_time_start,

	0,

	&dwThreadID[0]);

			if (hThread[0] == NULL)
			{
				printf("Error, failed in creating
creating thread = 0.\n");
				exit(-1);
			}

			// Start History table thread

			printf("...Loading history table for: d_id = %d,
w_id = %d\n", d_id, w_id);

			hThread[1] = CreateThread(NULL,

	0,

	(LPTHREAD_START_ROUTINE) LoadHistoryTable,

	&history_time_start,

	0,

	&dwThreadID[1]);

			if (hThread[1] == NULL)
			{
				printf("Error, failed in creating
creating thread = 1.\n");
				exit(-1);
			}

			WaitForSingleObject( hThread[0], INFINITE
);
			WaitForSingleObject( hThread[1], INFINITE
);

			if (CloseHandle(hThread[0]) == FALSE)
			{
				printf("Error, failed in closing
customer thread handle with errno: %d\n", GetLastError());
			}

			if (CloseHandle(hThread[1]) == FALSE)
			{
				printf("Error, failed in closing
history thread handle with errno: %d\n", GetLastError());
			}


		}

	}

	// flush the bulk connection
	rcint = bcp_done(c_hdbc1);
	if (rcint < 0)
		HandleErrorDBC(c_hdbc1);

	rcint = bcp_done(c_hdbc2);
	if (rcint < 0)
		HandleErrorDBC(c_hdbc2);

	printf("Finished loading customer table.\n");

	// if build index after load...
```

```
	if ((aptr->build_index == 1) && (aptr->index_order == 0))
	{
		BuildIndex("idxcuscl");
		// check the number of processors on this system
		// if 8 or more processors, then build index on History.
		// if less than 8 processors, do not build the index
		num_procs = atoi(getenv(
"NUMBER_OF_PROCESSORS" ));
		if (num_procs >= 8)
			BuildIndex("idxhiscl");
	}

	// build non-clustered index
	if (aptr->build_index == 1)
		BuildIndex("idxcusnc");

	// Output the NURAND used for the loader into C_FIRST for C_ID
= 1,
	// C_W_ID = 1, and C_D_ID = 1
	//sprintf(cmd, "osql -S%s -U%s -P%s -d%s -e -Q\"update customer
set c_first = 'C_LOAD = %d' where c_id = 1 and c_w_id = 1 and c_d_id = 1\" >
logs\\nurand_load.log",
	sprintf(cmd, "osql -S%s -U%s -P%s -d%s -e -Q\"update customer set
c_first = 'C_LOAD = %d' where c_id = 1 and c_w_id = 1 and c_d_id = 1\" >
%snurand_load.log",
					aptr->server,
					aptr->user,
					aptr->password,
					aptr->database,
					LOADER_NURAND_C,
					aptr->log_path);

	system(cmd);

	SQLFreeStmt(c_hstmt1, SQL_DROP);
	SQLDisconnect(c_hdbc1);
	SQLFreeConnect(c_hdbc1);

	SQLFreeStmt(c_hstmt2, SQL_DROP);
	SQLDisconnect(c_hdbc2);
	SQLFreeConnect(c_hdbc2);


  return;

}


//=============================================================
==============
//
// Function   : CustomerBufInit
//
//=============================================================
==============

void CustomerBufInit()
{
	int	i;

	for (i=0;i<customers_per_district;i++)
	{
		customer_buf[i].c_id = 0;
		customer_buf[i].c_d_id = 0;
		customer_buf[i].c_w_id = 0;

		strcpy(customer_buf[i].c_first,"");
		strcpy(customer_buf[i].c_middle,"");
		strcpy(customer_buf[i].c_last,"");
		strcpy(customer_buf[i].c_street_1,"");
		strcpy(customer_buf[i].c_street_2,"");
		strcpy(customer_buf[i].c_city,"");
		strcpy(customer_buf[i].c_state,"");
		strcpy(customer_buf[i].c_zip,"");
		strcpy(customer_buf[i].c_phone,"");
		strcpy(customer_buf[i].c_credit,"");

		customer_buf[i].c_credit_lim = 0;
		customer_buf[i].c_discount = (float) 0;

		//  fix to avoid ODBC float to numeric conversion
problem.
		//		customer_buf[i].c_balance = 0;
		strcpy(customer_buf[i].c_balance,"");

		customer_buf[i].c_ytd_payment = 0;
		customer_buf[i].c_payment_cnt = 0;
		customer_buf[i].c_delivery_cnt = 0;

		strcpy(customer_buf[i].c_data,"");

		customer_buf[i].h_amount = 0;

		strcpy(customer_buf[i].h_data,"");

	}


}


//=============================================================
==============
//
// Function   : CustomerBufLoad
//
// Fills shared buffer for HISTORY and CUSTOMER
//=============================================================
==============

void CustomerBufLoad(int d_id, int w_id)
{
	long					i;
  CUSTOMER_SORT_STRUCT	c[CUSTOMERS_PER_DISTRICT];


	for (i=0;i<customers_per_district;i++)
	{
		if (i < 1000)
			LastName(i, c[i].c_last);
		else

LastName(NURand(255,0,999,LOADER_NURAND_C), c[i].c_last);

		MakeAlphaString(8,16,FIRST_NAME_LEN,
c[i].c_first);

		c[i].c_id = i+1;

	}

	printf("...Loading customer buffer for: d_id = %d, w_id = %d\n",
			d_id, w_id);

	for (i=0;i<customers_per_district;i++)
	{
```

```
                        customer_buf[i].c_d_id = d_id;
                        customer_buf[i].c_w_id = w_id;
                        customer_buf[i].h_amount = 10.0;

                        customer_buf[i].c_ytd_payment  = 10.0;

                        customer_buf[i].c_payment_cnt  = 1;
                        customer_buf[i].c_delivery_cnt = 0;

                        // Generate CUSTOMER and HISTORY data

                        customer_buf[i].c_id = c[i].c_id;

                        strcpy(customer_buf[i].c_first, c[i].c_first);
                        strcpy(customer_buf[i].c_last, c[i].c_last);

                        customer_buf[i].c_middle[0] = 'O';
                        customer_buf[i].c_middle[1] = 'E';

                        MakeAddress(customer_buf[i].c_street_1,
                                        customer_buf[i].c_street_2,
                                        customer_buf[i].c_city,
                                        customer_buf[i].c_state,
                                        customer_buf[i].c_zip);

                        MakeNumberString(16, 16, PHONE_LEN,
customer_buf[i].c_phone);

                        if (RandomNumber(1L, 100L) > 10)
                                customer_buf[i].c_credit[0] = 'G';
                        else
                                customer_buf[i].c_credit[0] = 'B';
                        customer_buf[i].c_credit[1] = 'C';

                        customer_buf[i].c_credit_lim = 50000.0;
                        customer_buf[i].c_discount = ((float)
RandomNumber(0L, 5000L)) / 10000.0;

                        //  fix to avoid ODBC float to numeric conversion
problem.
                        //  customer_buf[i].c_balance = -10.0;
                        strcpy(customer_buf[i].c_balance,"-10.0");

                        MakeAlphaString(300, 500, C_DATA_LEN,
customer_buf[i].c_data);

                        // Generate HISTORY data
                        MakeAlphaString(12, 24, H_DATA_LEN,
customer_buf[i].h_data);

                }
}

//=============================================================
===============
//
// Function   : LoadCustomerTable
//
//=============================================================
===============

void LoadCustomerTable(LOADER_TIME_STRUCT *customer_time_start)
{
                int             i;
   long         c_id;
   short        c_d_id;
   short        c_w_id;
   char         c_first[FIRST_NAME_LEN+1];
   char         c_middle[MIDDLE_NAME_LEN+1];
   char         c_last[LAST_NAME_LEN+1];
   char         c_street_1[ADDRESS_LEN+1];
   char         c_street_2[ADDRESS_LEN+1];
   char         c_city[ADDRESS_LEN+1];
   char         c_state[STATE_LEN+1];
   char         c_zip[ZIP_LEN+1];
   char         c_phone[PHONE_LEN+1];
   char         c_credit[CREDIT_LEN+1];
   double       c_credit_lim;
   double       c_discount;

                //  fix to avoid ODBC float to numeric conversion problem.
                //  double              c_balance;
                char                    c_balance[6];

   double       c_ytd_payment;
   short        c_payment_cnt;
   short        c_delivery_cnt;
   char         c_data[C_DATA_LEN+1];
                char                    c_since[C_SINCE_LEN+1];
                RETCODE                         rc;

   rc = bcp_bind(c_hdbc1, (BYTE *) &c_id, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT4, 1);
                if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) &c_d_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 2);
                if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

                rc = bcp_bind(c_hdbc1, (BYTE *) &c_w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 3);
                if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_first, 0, FIRST_NAME_LEN, NULL, 0,
0, 4);
                if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_middle, 0,
MIDDLE_NAME_LEN,NULL, 0, 0, 5);
                if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_last, 0, LAST_NAME_LEN, NULL, 0,
0, 6);
                if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_street_1, 0, ADDRESS_LEN, NULL, 0,
0, 7);
                if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_street_2, 0, ADDRESS_LEN,
NULL,0,0, 8);
                if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_city, 0, ADDRESS_LEN, NULL, 0, 0,
9);
                if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);
```

```
   rc = bcp_bind(c_hdbc1, (BYTE *) c_state, 0, STATE_LEN, NULL, 0, 0, 10);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_zip, 0, ZIP_LEN, NULL, 0, 0, 11);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_phone, 0, PHONE_LEN, NULL, 0, 0,
12);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

            rc = bcp_bind(c_hdbc1, (BYTE *) &c_since, 0, C_SINCE_LEN,
NULL, 0, SQLCHARACTER, 13);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_credit, 0, CREDIT_LEN, NULL, 0, 0,
14);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) &c_credit_lim, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 15);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) &c_discount, 0, SQL_VARLEN_DATA,
NULL, 0, SQLFLT8, 16);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);



            //  fix to avoid ODBC float to numeric conversion problem.

   //  rc = bcp_bind(c_hdbc1, (BYTE *) &c_balance, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 17);
            //  if (rc != SUCCEED)
            //              HandleErrorDBC(c_hdbc1);
   rc = bcp_bind(c_hdbc1, (BYTE *) c_balance, 0, 5, NULL, 0,
SQLCHARACTER, 17);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);



   rc = bcp_bind(c_hdbc1, (BYTE *) &c_ytd_payment, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 18);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) &c_payment_cnt, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 19);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) &c_delivery_cnt,0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 20);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_data, 0, 500, NULL, 0, 0, 21);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   for (i = 0; i < customers_per_district; i++)
   {
                        c_id = customer_buf[i].c_id;
                        c_d_id = customer_buf[i].c_d_id;
                        c_w_id = customer_buf[i].c_w_id;

                        strcpy(c_first, customer_buf[i].c_first);
                        strcpy(c_middle, customer_buf[i].c_middle);
                        strcpy(c_last, customer_buf[i].c_last);
                        strcpy(c_street_1, customer_buf[i].c_street_1);
                        strcpy(c_street_2, customer_buf[i].c_street_2);
                        strcpy(c_city, customer_buf[i].c_city);
                        strcpy(c_state, customer_buf[i].c_state);
                        strcpy(c_zip, customer_buf[i].c_zip);
                        strcpy(c_phone, customer_buf[i].c_phone);
                        strcpy(c_credit, customer_buf[i].c_credit);

                        FormatDate(&c_since);


                        c_credit_lim = customer_buf[i].c_credit_lim;
                        c_discount = customer_buf[i].c_discount;

                        //  fix to avoid ODBC float to numeric conversion
problem.
                        //  c_balance = customer_buf[i].c_balance;
                        strcpy(c_balance, customer_buf[i].c_balance);

                        c_ytd_payment = customer_buf[i].c_ytd_payment;
                        c_payment_cnt = customer_buf[i].c_payment_cnt;
                        c_delivery_cnt = customer_buf[i].c_delivery_cnt;

                        strcpy(c_data, customer_buf[i].c_data);

                        // Send data to server
                        rc = bcp_sendrow(c_hdbc1);
                        if (rc != SUCCEED)
                                    HandleErrorDBC(c_hdbc1);

                        customer_rows_loaded++;
                        CheckForCommit(c_hdbc1, c_hstmt1,
customer_rows_loaded, "customer", &customer_time_start->time_start);
   }

}


//=============================================================
==============
//
// Function   : LoadHistoryTable
//
//=============================================================
==============

void LoadHistoryTable(LOADER_TIME_STRUCT *history_time_start)
{
            int        i;
   long       c_id;
   short      c_d_id;
   short      c_w_id;
            double     h_amount;
   char       h_data[H_DATA_LEN+1];
            char                  h_date[H_DATE_LEN+1];
            RETCODE                        rc;

   rc = bcp_bind(c_hdbc2, (BYTE *) &c_id, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT4, 1);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc2);
```

```
   rc = bcp_bind(c_hdbc2, (BYTE *) &c_d_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 2);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc2);

   rc = bcp_bind(c_hdbc2, (BYTE *) &c_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 3);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc2);

   rc = bcp_bind(c_hdbc2, (BYTE *) &c_d_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 4);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc2);

   rc = bcp_bind(c_hdbc2, (BYTE *) &c_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 5);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc2);

            rc = bcp_bind(c_hdbc2, (BYTE *) &h_date, 0, H_DATE_LEN,
NULL, 0, SQLCHARACTER, 6);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc2);

   rc = bcp_bind(c_hdbc2, (BYTE *) &h_amount, 0, SQL_VARLEN_DATA,
NULL, 0, SQLFLT8, 7);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc2);

   rc = bcp_bind(c_hdbc2, (BYTE *) h_data, 0, H_DATA_LEN, NULL, 0, 0,
8);
            if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc2);

   for (i = 0; i < customers_per_district; i++)
   {
                        c_id = customer_buf[i].c_id;
                        c_d_id = customer_buf[i].c_d_id;
                        c_w_id = customer_buf[i].c_w_id;
                        h_amount = customer_buf[i].h_amount;
                        strcpy(h_data, customer_buf[i].h_data);

                        FormatDate(&h_date);

                        // send to server
                        rc = bcp_sendrow(c_hdbc2);
                        if (rc != SUCCEED)
                                    HandleErrorDBC(c_hdbc2);

                        history_rows_loaded++;
                        CheckForCommit(c_hdbc2, c_hstmt2,
history_rows_loaded, "history", &history_time_start->time_start);
   }

}


//=============================================================
=====-===============
//
// Function   : LoadOrders
//
//=============================================================
====================

void LoadOrders()
{
            LOADER_TIME_STRUCT      orders_time_start;
            LOADER_TIME_STRUCT      new_order_time_start;
            LOADER_TIME_STRUCT      order_line_time_start;
            short                   w_id;
  short             d_id;
            DWORD
dwThreadID[MAX_ORDER_THREADS];
            HANDLE
hThread[MAX_ORDER_THREADS];
            char                    name[20];
            RETCODE
rc;
            char
bcphint[128];
            char
err_log_path_ord[256];
            char
err_log_path_nord[256];
            char
err_log_path_ordl[256];

            // seed with unique number
            seed(6);

            printf("Loading orders...\n");

            // if build index before load...
            if ((aptr->build_index == 1) && (aptr->index_order == 1))
            {
                        BuildIndex("idxordcl");
                        BuildIndex("idxnodcl");
                        BuildIndex("idxodlcl");
            }

            // initialize bulk copy
            sprintf(name, "%s..%s", aptr->database, "orders");

            rc = bcp_init(o_hdbc1, name, NULL, "logs\\orders.err", DB_IN);
            strcpy(err_log_path_ord,aptr->log_path);
            strcat(err_log_path_ord,"orders.err");
            rc = bcp_init(o_hdbc1, name, NULL, err_log_path_ord, DB_IN);
            if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc1);

            if ((aptr->build_index == 1) && (aptr->index_order == 1))
            {
                        sprintf(bcphint, "tablock, order (o_w_id, o_d_id, o_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 30000));
                        rc = bcp_control(o_hdbc1, BCPHINTS, (void*) bcphint);

                        if (rc != SUCCEED)
                                    HandleErrorDBC(o_hdbc1);
            }

            sprintf(name, "%s..%s", aptr->database, "new_order");

            rc = bcp_init(o_hdbc2, name, NULL, "logs\\neword.err", DB_IN);
            strcpy(err_log_path_nord,aptr->log_path);
            strcat(err_log_path_nord,"neword.err");
            rc = bcp_init(o_hdbc2, name, NULL, err_log_path_nord, DB_IN);
            if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc2);

            if ((aptr->build_index == 1) && (aptr->index_order == 1))
            {
                        sprintf(bcphint, "tablock, order (no_w_id, no_d_id,
no_o_id), ROWS_PER_BATCH = %u", (aptr->num_warehouses * 9000));
```

```
                rc = bcp_control(o_hdbc2, BCPHINTS, (void*) bcphint);

                if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc2);
        }

        sprintf(name, "%s..%s", aptr->database, "order_line");

        rc = bcp_init(o_hdbc3, name, NULL, "logs\\ordline.err", DB_IN);
        strcpy(err_log_path_ordl,aptr->log_path);
        strcat(err_log_path_ordl,"ordline.err");
        rc = bcp_init(o_hdbc3, name, NULL, err_log_path_ordl, DB_IN);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc3);

  if ((aptr->build_index == 1) && (aptr->index_order == 1))
        {
                sprintf(bcphint, "tablock, order (ol_w_id, ol_d_id,
ol_o_id, ol_number), ROWS_PER_BATCH = %u", (aptr->num_warehouses *
300000));
                rc = bcp_control(o_hdbc3, BCPHINTS, (void*) bcphint);

                if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);
        }

        orders_rows_loaded      = 0;
        new_order_rows_loaded   = 0;
        order_line_rows_loaded  = 0;

        OrdersBufInit();

        orders_time_start.time_start = (TimeNow() / MILLI);
        new_order_time_start.time_start = (TimeNow() / MILLI);
        order_line_time_start.time_start = (TimeNow() / MILLI);

        for (w_id = (short)aptr->starting_warehouse; w_id <=
aptr->num_warehouses; w_id++)
        {
                for (d_id = 1; d_id <= DISTRICT_PER_WAREHOUSE;
d_id++)
                {

                        OrdersBufLoad(d_id, w_id);

                        // start parallel loading threads here...

                        // start Orders table thread

                        printf("...Loading Order Table for: d_id = %d,
w_id = %d\n", d_id, w_id);

                        hThread[0] = CreateThread(NULL,

         0,

         (LPTHREAD_START_ROUTINE) LoadOrdersTable,

         &orders_time_start,

         0,

         &dwThreadID[0]);

                        if (hThread[0] == NULL)
                        {
                                printf("Error, failed in creating
creating thread = 0.\n");
                                exit(-1);
                        }

                        // start NewOrder table thread

                        printf("...Loading New-Order Table for: d_id
= %d, w_id = %d\n", d_id, w_id);

                        hThread[1] = CreateThread(NULL,

         0,

         (LPTHREAD_START_ROUTINE) LoadNewOrderTable,

         &new_order_time_start,

         0,

         &dwThreadID[1]);

                        if (hThread[1] == NULL)
                        {
                                printf("Error, failed in creating
creating thread = 1.\n");
                                exit(-1);
                        }

                        // start Order-Line table thread

                        printf("...Loading Order-Line Table for: d_id
= %d, w_id = %d\n", d_id, w_id);

                        hThread[2] = CreateThread(NULL,

         0,

         (LPTHREAD_START_ROUTINE) LoadOrderLineTable,

         &order_line_time_start,

         0,

         &dwThreadID[2]);

                        if (hThread[2] == NULL)
                        {
                                printf("Error, failed in creating
creating thread = 2.\n");
                                exit(-1);
                        }

                        WaitForSingleObject( hThread[0], INFINITE
);
                        WaitForSingleObject( hThread[1], INFINITE
);
                        WaitForSingleObject( hThread[2], INFINITE
);

                        if (CloseHandle(hThread[0]) == FALSE)
                        {
                                printf("Error, failed in closing
Orders thread handle with errno: %d\n", GetLastError());
                        }

                        if (CloseHandle(hThread[1]) == FALSE)
                        {
                                printf("Error, failed in closing
NewOrder thread handle with errno: %d\n", GetLastError());
```

```
                                        }

                                        if (CloseHandle(hThread[2]) == FALSE)
                                        {
                                                printf("Error, failed in closing
OrderLine thread handle with errno: %d\n", GetLastError());
                                        }

                        }
                }

                printf("Finished loading orders.\n");


        return;
}


//=============================================================
==============
//
// Function   : OrdersBufInit
//
// Clears shared buffer for ORDERS, NEWORDER, and ORDERLINE
//
//=============================================================
==============

void OrdersBufInit()
{
        int     i;
        int                     j;

        for (i=0;i<orders_per_district;i++)
        {
                orders_buf[i].o_id = 0;
                orders_buf[i].o_d_id = 0;
                orders_buf[i].o_w_id = 0;
                orders_buf[i].o_c_id = 0;
                orders_buf[i].o_carrier_id = 0;
                orders_buf[i].o_ol_cnt = 0;
                orders_buf[i].o_all_local = 0;

                for (j=0;j<=14;j++)
                {
                        orders_buf[i].o_ol[j].ol = 0;
                        orders_buf[i].o_ol[j].ol_i_id = 0;

                        orders_buf[i].o_ol[j].ol_supply_w_id = 0;
                        orders_buf[i].o_ol[j].ol_quantity = 0;
                        orders_buf[i].o_ol[j].ol_amount = 0;
                        strcpy(orders_buf[i].o_ol[j].ol_dist_info,"");
                }
        }


}


//=============================================================
==============
//
// Function   : OrdersBufLoad
//
// Fills shared buffer for ORDERS, NEWORDER, and ORDERLINE
//
//=============================================================
==============

void OrdersBufLoad(int d_id, int w_id)
{

        int     cust[ORDERS_PER_DISTRICT+1];
        long    o_id;
        short   ol;

        printf("...Loading Order Buffer for: d_id = %d, w_id = %d\n",
                        d_id, w_id);

        GetPermutation(cust, orders_per_district);

        for (o_id=0;o_id<orders_per_district;o_id++)
        {

                // Generate ORDER and NEW-ORDER data

                orders_buf[o_id].o_d_id = d_id;
                orders_buf[o_id].o_w_id = w_id;
                orders_buf[o_id].o_id = o_id+1;
                orders_buf[o_id].o_c_id = cust[o_id+1];
                orders_buf[o_id].o_ol_cnt = (short)RandomNumber(5L,
15L);

                if (o_id < first_new_order)
                {
                        orders_buf[o_id].o_carrier_id =
(short)RandomNumber(1L, 10L);
                        orders_buf[o_id].o_all_local  = 1;
                }
                else
                {
                        orders_buf[o_id].o_carrier_id = 0;
                        orders_buf[o_id].o_all_local  = 1;
                }

                for (ol=0; ol<orders_buf[o_id].o_ol_cnt; ol++)
                {

                        orders_buf[o_id].o_ol[ol].ol = ol+1;
                        orders_buf[o_id].o_ol[ol].ol_i_id =
RandomNumber(1L, max_items);
                        orders_buf[o_id].o_ol[ol].ol_supply_w_id =
w_id;
                        orders_buf[o_id].o_ol[ol].ol_quantity = 5;
                        MakeAlphaString(24, 24,
OL_DIST_INFO_LEN, &orders_buf[o_id].o_ol[ol].ol_dist_info);

                        // Generate ORDER-LINE data
                        if (o_id < first_new_order)
                        {


orders_buf[o_id].o_ol[ol].ol_amount = 0;
                                                // Added to insure ol_delivery_d
set properly during load


FormatDate(&orders_buf[o_id].o_ol[ol].ol_delivery_d);

                        }
                        else
                        {

orders_buf[o_id].o_ol[ol].ol_amount = RandomNumber(1,999999)/100.0;
```

```
                                        // Added to insure ol_delivery_d
set properly during load

                                        // odbc datetime format

strcpy(orders_buf[o_id].o_ol[ol].ol_delivery_d,"1899-12-31 00:00:00.000");

                                }
                        }
                }
}


//=============================================================
==============
//
// Function   : LoadOrdersTable
//
//=============================================================
==============

void LoadOrdersTable(LOADER_TIME_STRUCT *orders_time_start)
{
        int     i;
   long     o_id;
        short   o_d_id;
        short   o_w_id;
   long     o_c_id;
   short    o_carrier_id;
   short    o_ol_cnt;
   short    o_all_local;
        char            o_entry_d[O_ENTRY_D_LEN+1];
        RETCODE                 rc;
        DBINT           rcint;

        // bind ORDER data
   rc = bcp_bind(o_hdbc1, (BYTE *) &o_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 1);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc1);

   rc = bcp_bind(o_hdbc1, (BYTE *) &o_d_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 2);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc1);

   rc = bcp_bind(o_hdbc1, (BYTE *) &o_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 3);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc1);

   rc = bcp_bind(o_hdbc1, (BYTE *) &o_c_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 4);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc1);

        rc = bcp_bind(o_hdbc1, (BYTE *) &o_entry_d, 0,
O_ENTRY_D_LEN, NULL, 0, SQLCHARACTER, 5);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc1);

   rc = bcp_bind(o_hdbc1, (BYTE *) &o_carrier_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 6);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc1);

   rc = bcp_bind(o_hdbc1, (BYTE *) &o_ol_cnt, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 7);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc1);

   rc = bcp_bind(o_hdbc1, (BYTE *) &o_all_local, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 8);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc1);

   for (i = 0; i < orders_per_district; i++)
   {
                o_id        = orders_buf[i].o_id;
                o_d_id      = orders_buf[i].o_d_id;
                o_w_id      = orders_buf[i].o_w_id;
                o_c_id      = orders_buf[i].o_c_id;
                o_carrier_id = orders_buf[i].o_carrier_id;
                o_ol_cnt    = orders_buf[i].o_ol_cnt;
                o_all_local  = orders_buf[i].o_all_local;

                FormatDate(&o_entry_d);

                // send data to server
                rc = bcp_sendrow(o_hdbc1);
                if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc1);

                orders_rows_loaded++;
                CheckForCommit(o_hdbc1, o_hstmt1,
orders_rows_loaded, "orders", &orders_time_start->time_start);
   }

        // rcint = bcp_batch(o_hdbc1);
        // if (rcint < 0)
        //      HandleErrorDBC(o_hdbc1);

        if ((o_w_id == aptr->num_warehouses) && (o_d_id == 10))
        {
                rcint = bcp_done(o_hdbc1);
                if (rcint < 0)
                        HandleErrorDBC(o_hdbc1);

                SQLFreeStmt(o_hstmt1, SQL_DROP);
                SQLDisconnect(o_hdbc1);
                SQLFreeConnect(o_hdbc1);

                // if build index after load...
                if ((aptr->build_index == 1) && (aptr->index_order ==
0))
                        BuildIndex("idxordcl");

                // build non-clustered index
                if (aptr->build_index == 1)
                        BuildIndex("idxordnc");
        }

}


//=============================================================
==============
//
// Function   : LoadNewOrderTable
//
//=============================================================
==============

void LoadNewOrderTable(LOADER_TIME_STRUCT *new_order_time_start)
{
   int     i;
```

```
   long       o_id;
   short      o_d_id;
   short      o_w_id;
              RETCODE                   rc;
              DBINT             rcint;

              // Bind NEW-ORDER data

   rc = bcp_bind(o_hdbc2, (BYTE *) &o_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 1);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc2);

   rc = bcp_bind(o_hdbc2, (BYTE *) &o_d_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 2);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc2);

   rc = bcp_bind(o_hdbc2, (BYTE *) &o_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 3);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc2);

              for (i = first_new_order; i < last_new_order; i++)
              {
                        o_id    = orders_buf[i].o_id;
                        o_d_id  = orders_buf[i].o_d_id;
                        o_w_id  = orders_buf[i].o_w_id;

                        rc = bcp_sendrow(o_hdbc2);
                        if (rc != SUCCEED)
                                  HandleErrorDBC(o_hdbc2);

                        new_order_rows_loaded++;
                        CheckForCommit(o_hdbc2, o_hstmt2,
new_order_rows_loaded, "new_order", &new_order_time_start->time_start);
              }

              // rcint = bcp_batch(o_hdbc2);
              // if (rcint < 0)
              //           HandleErrorDBC(o_hdbc2);

              if ((o_w_id == aptr->num_warehouses) && (o_d_id == 10))
              {
                        rcint = bcp_done(o_hdbc2);
                        if (rcint < 0)
                                  HandleErrorDBC(o_hdbc2);

                        SQLFreeStmt(o_hstmt2, SQL_DROP);
                        SQLDisconnect(o_hdbc2);
                        SQLFreeConnect(o_hdbc2);

                        // if build index after load...
                        if ((aptr->build_index == 1) && (aptr->index_order ==
0))
                                  BuildIndex("idxnodcl");

              }

}


//=============================================================
==============
//
// Function   : LoadOrderLineTable
//
//=============================================================
==============

void LoadOrderLineTable(LOADER_TIME_STRUCT *order_line_time_start)
{
              int       i,j;
   long       o_id;
              short     o_d_id;
              short     o_w_id;
   long       ol;
              long      ol_i_id;
   short      ol_supply_w_id;
   short      ol_quantity;
   double     ol_amount;
   char       ol_dist_info[DIST_INFO_LEN+1];
              char                  ol_delivery_d[OL_DELIVERY_D_LEN+1];
              RETCODE                   rc;
              DBINT             rcint;

              // bind ORDER-LINE data
   rc = bcp_bind(o_hdbc3, (BYTE *) &o_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 1);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

   rc = bcp_bind(o_hdbc3, (BYTE *) &o_d_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 2);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

   rc = bcp_bind(o_hdbc3, (BYTE *) &o_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 3);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

   rc = bcp_bind(o_hdbc3, (BYTE *) &ol, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT4, 4);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

   rc = bcp_bind(o_hdbc3, (BYTE *) &ol_i_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 5);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

   rc = bcp_bind(o_hdbc3, (BYTE *) &ol_supply_w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 6);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

              rc = bcp_bind(o_hdbc3, (BYTE *) &ol_delivery_d, 0,
OL_DELIVERY_D_LEN, NULL, 0, SQLCHARACTER, 7);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

   rc = bcp_bind(o_hdbc3, (BYTE *) &ol_quantity, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 8);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

   rc = bcp_bind(o_hdbc3, (BYTE *) &ol_amount, 0, SQL_VARLEN_DATA,
NULL, 0, SQLFLT8, 9);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

   rc = bcp_bind(o_hdbc3, (BYTE *) ol_dist_info, 0, DIST_INFO_LEN,
NULL, 0, 0, 10);
              if (rc != SUCCEED)
```

```
                        HandleErrorDBC(o_hdbc3);

        for (i = 0; i < orders_per_district; i++)
  {
                        o_id    = orders_buf[i].o_id;
                        o_d_id  = orders_buf[i].o_d_id;
                        o_w_id  = orders_buf[i].o_w_id;

                        for (j=0; j < orders_buf[i].o_ol_cnt; j++)
                        {
                                ol          = orders_buf[i].o_ol[j].ol;
                                ol_i_id     = orders_buf[i].o_ol[j].ol_i_id;
                                ol_supply_w_id =
orders_buf[i].o_ol[j].ol_supply_w_id;
                                ol_quantity    =
orders_buf[i].o_ol[j].ol_quantity;
                                ol_amount      =
orders_buf[i].o_ol[j].ol_amount;

strcpy(ol_delivery_d,orders_buf[i].o_ol[j].ol_delivery_d);


strcpy(ol_dist_info,orders_buf[i].o_ol[j].ol_dist_info);

                                rc = bcp_sendrow(o_hdbc3);
                                if (rc != SUCCEED)
                                        HandleErrorDBC(o_hdbc3);

                                order_line_rows_loaded++;
                                CheckForCommit(o_hdbc3, o_hstmt3,
order_line_rows_loaded, "order_line", &order_line_time_start->time_start);
                        }

        }

        // rcint = bcp_batch(o_hdbc3);
        // if (rcint < 0)
        //      HandleErrorDBC(o_hdbc3);

        if ((o_w_id == aptr->num_warehouses) && (o_d_id == 10))
        {
                rcint = bcp_done(o_hdbc3);
                if (rcint < 0)
                        HandleErrorDBC(o_hdbc3);

                SQLFreeStmt(o_hstmt3, SQL_DROP);
                SQLDisconnect(o_hdbc3);
                SQLFreeConnect(o_hdbc3);

                // if build index after load...
                if ((aptr->build_index == 1) && (aptr->index_order ==
0))
                        BuildIndex("idxodlcl");

        }

}


//==============================================================
==============
//
// Function   : GetPermutation
//
//==============================================================
==============

void GetPermutation(int perm[], int n)
{
        int i, r, t;

        for (i=1;i<=n;i++)
                perm[i] = i;

        for (i=1;i<=n;i++)
        {
                r = RandomNumber(i,n);
                t = perm[i];
                perm[i] = perm[r];
                perm[r] = t;
        }

}


//==============================================================
==============
//
// Function   : CheckForCommit
//
//==============================================================
==============

void CheckForCommit(HDBC hdbc,
                                                HSTMT hstmt,
                                        int rows_loaded,
                                                char *table_name,
                                        long *time_start)
{

   long     time_end, time_diff;
        // DBINT   rcint;

   if ( !(rows_loaded % aptr->batch) )
   {

                // rcint = bcp_batch(hdbc);
                // if (rcint < 0)
                //      HandleErrorDBC(hdbc);

                time_end = (TimeNow() / MILLI);
                time_diff = time_end - *time_start;


                printf("-> Loaded %ld rows into %s in %ld sec - Total =
%d (%.2f rps)\n",
                        aptr->batch,
                        table_name,
                                time_diff,
                        rows_loaded,
                                (float) aptr->batch / (time_diff ?
time_diff : 1L));

                *time_start = time_end;
   }

   return;
}


//==============================================================
==============
//
// Function   : OpenConnections
//
//==============================================================
==============
```

```
void OpenConnections()
{

	RETCODE	rc;

	char			szDriverString[300];
	char			szDriverStringOut[1024];
	SQLSMALLINT		cbDriverStringOut;


	SQLAllocHandle(SQL_HANDLE_ENV, SQL_NULL_HANDLE,
&henv );

	SQLSetEnvAttr(henv, SQL_ATTR_ODBC_VERSION,
(void*)SQL_OV_ODBC3, 0 );

	SQLAllocHandle(SQL_HANDLE_DBC, henv , &i_hdbc1);
	SQLAllocHandle(SQL_HANDLE_DBC, henv , &w_hdbc1);
	SQLAllocHandle(SQL_HANDLE_DBC, henv , &c_hdbc1);
	SQLAllocHandle(SQL_HANDLE_DBC, henv , &c_hdbc2);
	SQLAllocHandle(SQL_HANDLE_DBC, henv , &o_hdbc1);
	SQLAllocHandle(SQL_HANDLE_DBC, henv , &o_hdbc2);
	SQLAllocHandle(SQL_HANDLE_DBC, henv , &o_hdbc3);

	SQLSetConnectAttr(i_hdbc1, SQL_COPT_SS_BCP, (void
*)SQL_BCP_ON, SQL_IS_INTEGER );
	SQLSetConnectAttr(w_hdbc1, SQL_COPT_SS_BCP, (void
*)SQL_BCP_ON, SQL_IS_INTEGER );
	SQLSetConnectAttr(c_hdbc1, SQL_COPT_SS_BCP, (void
*)SQL_BCP_ON, SQL_IS_INTEGER );
	SQLSetConnectAttr(c_hdbc2, SQL_COPT_SS_BCP, (void
*)SQL_BCP_ON, SQL_IS_INTEGER );
	SQLSetConnectAttr(o_hdbc1, SQL_COPT_SS_BCP, (void
*)SQL_BCP_ON, SQL_IS_INTEGER );
	SQLSetConnectAttr(o_hdbc2, SQL_COPT_SS_BCP, (void
*)SQL_BCP_ON, SQL_IS_INTEGER );
	SQLSetConnectAttr(o_hdbc3, SQL_COPT_SS_BCP, (void
*)SQL_BCP_ON, SQL_IS_INTEGER );

	// Open connections to SQL Server

	// Connection 1

	sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

aptr->server,
aptr->user,

aptr->password,

aptr->database );

	rc = SQLSetConnectOption (i_hdbc1, SQL_PACKET_SIZE,
aptr->pack_size);
	if (rc != SUCCEED)
		HandleErrorDBC(i_hdbc1);

	rc = SQLDriverConnect ( i_hdbc1,
NULL,

(SQLCHAR*)&szDriverString[0] ,
SQL_NTS,

(SQLCHAR*)&szDriverStringOut[0],

sizeof(szDriverStringOut),

&cbDriverStringOut,

SQL_DRIVER_NOPROMPT );
	if (rc != SUCCEED)
		HandleErrorDBC(i_hdbc1);

	// Connection 2

	sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

aptr->server,
aptr->user,

aptr->password,

aptr->database );

	rc = SQLSetConnectOption (w_hdbc1, SQL_PACKET_SIZE,
aptr->pack_size);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = SQLDriverConnect ( w_hdbc1,

NULL,

(SQLCHAR*)&szDriverString[0] ,

SQL_NTS,

(SQLCHAR*)&szDriverStringOut[0],

sizeof(szDriverStringOut),

&cbDriverStringOut,

SQL_DRIVER_NOPROMPT );
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	// Connection 3

	sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

aptr->server,
aptr->user,

aptr->password,

aptr->database );

	rc = SQLSetConnectOption (c_hdbc1, SQL_PACKET_SIZE,
aptr->pack_size);
	if (rc != SUCCEED)
		HandleErrorDBC(c_hdbc1);

	rc = SQLDriverConnect ( c_hdbc1,

NULL,

(SQLCHAR*)&szDriverString[0] ,

SQL_NTS,

(SQLCHAR*)&szDriverStringOut[0],
```

```
sizeof(szDriverStringOut),

&cbDriverStringOut,

SQL_DRIVER_NOPROMPT );
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc1);

        // Connection 4

        sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

aptr->server,
                                                        aptr->user,

aptr->password,

aptr->database );

        rc = SQLSetConnectOption (c_hdbc2, SQL_PACKET_SIZE,
aptr->pack_size);
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc2);

        rc = SQLDriverConnect ( c_hdbc2,

NULL,

(SQLCHAR*)&szDriverString[0] ,

SQL_NTS,

(SQLCHAR*)&szDriverStringOut[0],

sizeof(szDriverStringOut),

&cbDriverStringOut,

SQL_DRIVER_NOPROMPT );
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc2);

        // Connection 5

        sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

aptr->server,
                                                        aptr->user,

aptr->password,

aptr->database );

        rc = SQLSetConnectOption (o_hdbc1, SQL_PACKET_SIZE,
aptr->pack_size);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc1);

        rc = SQLDriverConnect ( o_hdbc1,

NULL,

(SQLCHAR*)&szDriverString[0] ,

SQL_NTS,

(SQLCHAR*)&szDriverStringOut[0],

sizeof(szDriverStringOut),

&cbDriverStringOut,

SQL_DRIVER_NOPROMPT );
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc1);

        // Connection 6

        sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

aptr->server,
                                                        aptr->user,

aptr->password,

aptr->database );

        rc = SQLSetConnectOption (o_hdbc2, SQL_PACKET_SIZE,
aptr->pack_size);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc2);

        rc = SQLDriverConnect ( o_hdbc2,

NULL,

(SQLCHAR*)&szDriverString[0] ,

SQL_NTS,

(SQLCHAR*)&szDriverStringOut[0],

sizeof(szDriverStringOut),

&cbDriverStringOut,

SQL_DRIVER_NOPROMPT );
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc2);

        // Connection 7

        sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

aptr->server,
                                                        aptr->user,

aptr->password,

aptr->database );

        rc = SQLSetConnectOption (o_hdbc3, SQL_PACKET_SIZE,
aptr->pack_size);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc3);

        rc = SQLDriverConnect ( o_hdbc3,

NULL,

(SQLCHAR*)&szDriverString[0] ,
```

```
SQL_NTS,

(SQLCHAR*)&szDriverStringOut[0],

sizeof(szDriverStringOut),

&cbDriverStringOut,

SQL_DRIVER_NOPROMPT );
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc3);

}

//=============================================================
===============
//
// Function name: BuildIndex
//
//=============================================================
===============

void BuildIndex(char  *index_script)
{
        char        cmd[256];

        printf("Starting index creation:  %s\n",index_script);

        sprintf(cmd, "osql -S%s -U%s -P%s -e -i%s\\%s.sql > %s%s.log",
                                        aptr->server,
                                        aptr->user,
                                        aptr->password,
                                        aptr->index_script_path,
                                        index_script,
                                        aptr->log_path,
                                        index_script);

        system(cmd);

        printf("Finished index creation:  %s\n",index_script);
}


void HandleErrorDBC (SQLHDBC  hdbc1)
{

        SQLCHAR                 SqlState[6],
Msg[SQL_MAX_MESSAGE_LENGTH];
        SQLINTEGER  NativeError;
        SQLSMALLINT i, MsgLen;
        SQLRETURN   rc2;
        char            timebuf[128];
        char            datebuf[128];
        char            err_log_path[256];
        FILE            *fp1;

        i = 1;
        while (( rc2 = SQLGetDiagRec(SQL_HANDLE_DBC , hdbc1, i,
SqlState , &NativeError,
                                        Msg, sizeof(Msg) , &MsgLen ))
!= SQL_NO_DATA )
        {
                sprintf( szLastError , "%s" ,  Msg );

                _strtime(timebuf);
                _strdate(datebuf);

                printf( "[%s : %s] %s\n" , datebuf, timebuf, szLastError);

                strcpy(err_log_path,aptr->log_path);
                strcat(err_log_path,"tpccldr.err");
                fp1 = fopen(err_log_path,"w");
                //fp1 = fopen("logs\\tpccldr.err","w");
                if (fp1 == NULL)
                        printf("ERROR:  Unable to open errorlog
file.\n");
                else
                {
                        fprintf(fp1, "[%s : %s] %s\n" , datebuf,
timebuf, szLastError);
                        fclose(fp1);
                }

                i++;

        }
}

void HandleErrorSTMT (HSTMT  hstmt1)
{

        SQLCHAR                 SqlState[6],
Msg[SQL_MAX_MESSAGE_LENGTH];
        SQLINTEGER  NativeError;
        SQLSMALLINT i, MsgLen;
        SQLRETURN   rc2;
        char            timebuf[128];
        char            datebuf[128];
        char            err_log_path[256];
        FILE            *fp1;

        i = 1;
        while (( rc2 = SQLGetDiagRec(SQL_HANDLE_STMT , hstmt1, i,
SqlState , &NativeError,
                                        Msg, sizeof(Msg) , &MsgLen ))
!= SQL_NO_DATA )
        {

                sprintf( szLastError , "%s" ,  Msg );

                _strtime(timebuf);
                _strdate(datebuf);

                printf( "[%s : %s] %s\n" , datebuf, timebuf, szLastError);

                strcpy(err_log_path,aptr->log_path);
                strcat(err_log_path,"tpccldr.err");
                fp1 = fopen(err_log_path,"w");
                //fp1 = fopen("logs\\tpccldr.err","w");
                if (fp1 == NULL)
                        printf("ERROR:  Unable to open errorlog
file.\n");
                else
                {
                        fprintf(fp1, "[%s : %s] %s\n" , datebuf,
timebuf, szLastError);
                        fclose(fp1);
                }

                i++;

        }
}
```

```
void FormatDate ( char* szTimeCOutput )
{

	struct tm when;
	time_t now;

	time( &now );
	when  = *localtime( &now );

	mktime( &when );

	// odbc datetime format
	strftime( szTimeCOutput , 30 , "%Y-%m-%d %H:%M:%S.000",
&when );

	return;

}

//============================================================
==============
//
// Function   : CheckDataBase
//
//============================================================
==============

void CheckDataBase()
{

	RETCODE	rc;

	char			szDriverString[300];
	char			szDriverStringOut[1024];
	char			TablesBitMap[9] =
{"000000000"};
	int				i, ExitFlag;

	SQLSMALLINT		cbDriverStringOut;
	SQLCHAR			TabName[10];
	SQLINTEGER		TabNameInd, TabCount,
TabCountInd;


	ExitFlag = 0;

	SQLAllocHandle(SQL_HANDLE_ENV, SQL_NULL_HANDLE,
&henv );

	SQLSetEnvAttr(henv, SQL_ATTR_ODBC_VERSION,
(void*)SQL_OV_ODBC3, 0 );

	SQLAllocHandle(SQL_HANDLE_DBC, henv , &v_hdbc);

	SQLSetConnectAttr(v_hdbc, SQL_COPT_SS_BCP, (void
*)SQL_BCP_ON, SQL_IS_INTEGER );

	// Open connection to SQL Server

	sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

aptr->server,
aptr->user,

aptr->password,
aptr->database );

	rc = SQLSetConnectAttr( v_hdbc, SQL_ATTR_PACKET_SIZE,
(SQLPOINTER)aptr->pack_size, SQL_IS_UINTEGER );
	if (rc != SQL_SUCCESS)
		HandleErrorDBC(v_hdbc);

	rc = SQLDriverConnect ( v_hdbc,
NULL,

(SQLCHAR*)&szDriverString[0] ,
SQL_NTS,

(SQLCHAR*)&szDriverStringOut[0],

sizeof(szDriverStringOut),

&cbDriverStringOut,

SQL_DRIVER_NOPROMPT );

	// if the rc is SQL_ERROR, the the TPCC database probably does
not exist
	if (rc == SQL_ERROR)
	{
		printf("The database TPCC does not appear to exist!\n");
		printf("\nCheck LOGS\\ directory for database creation
errors.\n");

		// cleanup database connections and handles
		SQLFreeHandle(SQL_HANDLE_STMT, v_hstmt);
		SQLDisconnect(v_hdbc);
		SQLFreeHandle(SQL_HANDLE_DBC, v_hdbc);

		// since there is not a database, exit back to SETUP.CMD
		exit(1);
	}

	if ( SQLAllocHandle(SQL_HANDLE_STMT, v_hdbc , &v_hstmt)
!= SQL_SUCCESS )
		HandleErrorDBC(v_hdbc);

	if ( SQLBindCol(v_hstmt, 1, SQL_C_ULONG, &TabCount, 0,
&TabCountInd) != SQL_SUCCESS )
		HandleErrorSTMT(v_hstmt);

	// count the number of user tables from sysobjects
	rc = SQLExecDirect(v_hstmt, "select count(*) from sysobjects
where xtype = \'U\'", SQL_NTS);
	if ((rc != SQL_SUCCESS) && (rc !=
SQL_SUCCESS_WITH_INFO))
		HandleErrorSTMT(v_hstmt);

	if ( SQLFetch(v_hstmt) != SQL_SUCCESS )
		HandleErrorSTMT(v_hstmt);

	// if the number of tables is less than 9, select all the user tables in
TPCC
	if (TabCount != 9)
	{
		SQLFreeHandle(SQL_HANDLE_STMT, v_hstmt);

		SQLAllocHandle(SQL_HANDLE_STMT, v_hdbc ,
&v_hstmt);

		if ( SQLBindCol(v_hstmt, 1, SQL_C_CHAR,
&TabName, sizeof(TabName), &TabNameInd) != SQL_SUCCESS )
```

```
                        HandleErrorSTMT(v_hstmt);

                // select the list of user tables into a result set
                rc = SQLExecDirect(v_hstmt, "select * from sysobjects
where xtype = \'U\'", SQL_NTS);
                if ((rc != SQL_SUCCESS) && (rc !=
SQL_SUCCESS_WITH_INFO))
                        HandleErrorSTMT(v_hstmt);

                // go through the result set and set the bitmap for each
found table
                // set the bitmap to '1' if the table name is found

                while ((rc = SQLFetch(v_hstmt)) != SQL_NO_DATA)
                {
                        switch( TabName[0] )
                        {
                        case 'w':
                                TablesBitMap[0] = '1';
                                break;
                        case 'd':
                                TablesBitMap[1] = '1';
                                break;
                        case 'c':
                                TablesBitMap[2] = '1';
                                break;
                        case 'h':
                                TablesBitMap[3] = '1';
                                break;
                        case 'n':
                                TablesBitMap[4] = '1';
                                break;
                        case 'o':
                                if (TabName[5] = 's')
                                        TablesBitMap[5] = '1';
                                if (TabName[5] = '_')
                                        TablesBitMap[6] = '1';
                                break;
                        case 'i':
                                TablesBitMap[7] = '1';
                                break;
                        case 's':
                                TablesBitMap[8] = '1';
                                break;
                        }
                }

                // a '0' ExitFlag means do NOT exit the loader early, a '1'
means exit the loader early
                ExitFlag = 0;

                // interate through the bitmap to display which table(s) is
actually missing
                for (i = 0; i <= 8; i++)
                {
                        switch(i)
                        {
                        case 0:
                                if (TablesBitMap[i] == '0')
                                {
                                        printf("The Warehouse
table is missing or damaged.\n");
                                        ExitFlag = 1;
                                }
                                break;
                        case 1:
                                if (TablesBitMap[i] == '0')
                                {
                                        printf("The District
table is missing or damaged.\n");
                                        ExitFlag = 1;
                                }
                                break;
                        case 2:
                                if (TablesBitMap[i] == '0')
                                {
                                        printf("The Customer
table is missing or damaged.\n");
                                        ExitFlag = 1;
                                }
                                break;
                        case 3:
                                if (TablesBitMap[i] == '0')
                                {
                                        printf("The History
table is missing or damaged.\n");
                                        ExitFlag = 1;
                                }
                                break;
                        case 4:
                                if (TablesBitMap[i] == '0')
                                {
                                        printf("The New_Order
table is missing or damaged.\n");
                                        ExitFlag = 1;
                                }
                                break;
                        case 5:
                                if (TablesBitMap[i] == '0')
                                {
                                        printf("The Orders table
is missing or damaged.\n");
                                        ExitFlag = 1;
                                }
                                break;
                        case 6:
                                if (TablesBitMap[i] == '0')
                                {
                                        printf("The Order_Line
table is missing or damaged.\n");
                                        ExitFlag = 1;
                                }
                                break;
                        case 7:
                                if (TablesBitMap[i] == '0')
                                {
                                        printf("The Item table is
missing or damaged.\n");
                                        ExitFlag = 1;
                                }
                                break;
                        case 8:
                                if (TablesBitMap[i] == '0')
                                {
                                        printf("The Stock table
is missing or damaged.\n");
                                        ExitFlag = 1;
                                }
                                break;
                        }
                }

                // if one or more tables are missing, display message and
exit the loader
                if (ExitFlag = 1)
                {
```

```
                                printf("\nExiting TPC-C Loader!\n");
                                printf("\nCheck LOGS\\ directory for
database\n");
                                printf("or table creation errors.\n");

                                // cleanup database connections and handles
                                SQLFreeHandle(SQL_HANDLE_STMT,
v_hstmt);
                                SQLDisconnect(v_hdbc);
                                SQLFreeHandle(SQL_HANDLE_DBC,
v_hdbc);

                                exit(1);
                        }
                }

                // cleanup database connections and handles
                SQLFreeHandle(SQL_HANDLE_STMT, v_hstmt);
                SQLDisconnect(v_hdbc);
                SQLFreeHandle(SQL_HANDLE_DBC, v_hdbc);

                return;
}
```

tpccldr.mak

```
# Microsoft Developer Studio Generated NMAKE File, Format Version 4.10
# ** DO NOT EDIT **

# TARGTYPE "Win32 (x86) Console Application" 0x0103

!IF "$(CFG)" == ""
CFG=tpccldr - Win32 Debug
!MESSAGE No configuration specified.  Defaulting to tpccldr - Win32 Debug.
!ENDIF

!IF "$(CFG)" != "tpccldr - Win32 Release" && "$(CFG)" !=\
 "tpccldr - Win32 Debug"
!MESSAGE Invalid configuration "$(CFG)" specified.
!MESSAGE You can specify a configuration when running NMAKE on this
makefile
!MESSAGE by defining the macro CFG on the command line.  For example:
!MESSAGE
!MESSAGE NMAKE /f "tpccldr.mak" CFG="tpccldr - Win32 Debug"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "tpccldr - Win32 Release" (based on "Win32 (x86) Console
Application")
!MESSAGE "tpccldr - Win32 Debug" (based on "Win32 (x86) Console
Application")
!MESSAGE
!ERROR An invalid configuration is specified.
!ENDIF

!IF "$(OS)" == "Windows_NT"
NULL=
!ELSE
NULL=nul
!ENDIF
################################################################
################
# Begin Project
# PROP Target_Last_Scanned "tpccldr - Win32 Debug"
RSC=rc.exe
CPP=cl.exe
!IF  "$(CFG)" == "tpccldr - Win32 Release"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir "Release"
# PROP BASE Intermediate_Dir "Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir "bin"
# PROP Intermediate_Dir "objects"
# PROP Target_Dir ""
OUTDIR=.\bin
INTDIR=.\objects

ALL : "$(OUTDIR)\tpccldr.exe"

CLEAN :
                -@erase "$(INTDIR)\getargs.obj"
                -@erase "$(INTDIR)\random.obj"
                -@erase "$(INTDIR)\strings.obj"
                -@erase "$(INTDIR)\time.obj"
                -@erase "$(INTDIR)\tpccldr.obj"
                -@erase "$(OUTDIR)\tpccldr.exe"

"$(OUTDIR)" :
   if not exist "$(OUTDIR)/$(NULL)" mkdir "$(OUTDIR)"

"$(INTDIR)" :
   if not exist "$(INTDIR)/$(NULL)" mkdir "$(INTDIR)"

# ADD BASE CPP /nologo /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_CONSOLE" /YX /c
# ADD CPP /nologo /MT /W3 /GX /O2 /I "c:\mssql\dblib\include" /D
"NDEBUG" /D "WIN32" /D "_CONSOLE" /D "DBNTWIN32" /c
# SUBTRACT CPP /YX
CPP_PROJ=/nologo /MT /W3 /GX /O2 /I "c:\mssql\dblib\include" /D
"NDEBUG" /D\
 "WIN32" /D "_CONSOLE" /D "DBNTWIN32" /Fo"$(INTDIR)/" /c
CPP_OBJS=.\objects/
CPP_SBRS=.\.
# ADD BASE RSC /l 0x409 /d "NDEBUG"
# ADD RSC /l 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
BSC32_FLAGS=/nologo /o"$(OUTDIR)/tpccldr.bsc"
BSC32_SBRS= \

LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:console /machine:I386
# ADD LINK32 c:\mssql\dblib\lib\ntwdblib.lib kernel32.lib user32.lib gdi32.lib
winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib
uuid.lib odbc32.lib odbccp32.lib /nologo /subsystem:console /pdb:none
/machine:I386
LINK32_FLAGS=c:\mssql\dblib\lib\ntwdblib.lib kernel32.lib user32.lib
gdi32.lib\
 winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib\
 uuid.lib odbc32.lib odbccp32.lib /nologo /subsystem:console /pdb:none\
 /machine:I386 /out:"$(OUTDIR)/tpccldr.exe"
LINK32_OBJS= \
                "$(INTDIR)\getargs.obj" \
                "$(INTDIR)\random.obj" \
                "$(INTDIR)\strings.obj" \
                "$(INTDIR)\time.obj" \
                "$(INTDIR)\tpccldr.obj"
```

```
"$(OUTDIR)\tpccldr.exe" : "$(OUTDIR)" $(DEF_FILE) $(LINK32_OBJS)
    $(LINK32) @<<
  $(LINK32_FLAGS) $(LINK32_OBJS)
<<

!ELSEIF  "$(CFG)" == "tpccldr - Win32 Debug"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "Debug"
# PROP BASE Intermediate_Dir "Debug"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir "bin"
# PROP Intermediate_Dir "objects"
# PROP Target_Dir ""
OUTDIR=.\bin
INTDIR=.\objects

ALL : "$(OUTDIR)\tpccldr.exe"

CLEAN :
        -@erase "$(INTDIR)\getargs.obj"
        -@erase "$(INTDIR)\random.obj"
        -@erase "$(INTDIR)\strings.obj"
        -@erase "$(INTDIR)\time.obj"
        -@erase "$(INTDIR)\tpccldr.obj"
        -@erase "$(INTDIR)\vc40.idb"
        -@erase "$(INTDIR)\vc40.pdb"
        -@erase "$(OUTDIR)\tpccldr.exe"

"$(OUTDIR)" :
    if not exist "$(OUTDIR)/$(NULL)" mkdir "$(OUTDIR)"

"$(INTDIR)" :
    if not exist "$(INTDIR)/$(NULL)" mkdir "$(INTDIR)"

# ADD BASE CPP /nologo /W3 /Gm /GX /Zi /Od /D "WIN32" /D "_DEBUG"
/D "_CONSOLE" /YX /c
# ADD CPP /nologo /MTd /W3 /Gm /GX /Zi /Od /I "c:\mssql\dblib\include" /D
"_DEBUG" /D "WIN32" /D "_CONSOLE" /D "DBNTWIN32" /c
# SUBTRACT CPP /YX
CPP_PROJ=/nologo /MTd /W3 /Gm /GX /Zi /Od /I "c:\mssql\dblib\include" /D\
 "_DEBUG" /D "WIN32" /D "_CONSOLE" /D "DBNTWIN32"
/Fo"$(INTDIR)/"\
 /Fd"$(INTDIR)/" /c
CPP_OBJS=.\objects/
CPP_SBRS=.\.
# ADD BASE RSC /l 0x409 /d "_DEBUG"
# ADD RSC /l 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
BSC32_FLAGS=/nologo /o"$(OUTDIR)/tpccldr.bsc"
BSC32_SBRS= \

LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:console /debug /machine:I386
# ADD LINK32 c:\mssql\dblib\lib\ntwdblib.lib kernel32.lib user32.lib gdi32.lib
winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib
uuid.lib odbc32.lib odbccp32.lib /nologo /subsystem:console /pdb:none /debug
/machine:I386
LINK32_FLAGS=c:\mssql\dblib\lib\ntwdblib.lib kernel32.lib user32.lib
gdi32.lib\
 winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib\
 uuid.lib odbc32.lib odbccp32.lib /nologo /subsystem:console /pdb:none /debug\
 /machine:I386 /out:"$(OUTDIR)/tpccldr.exe"
LINK32_OBJS= \
        "$(INTDIR)\getargs.obj" \
        "$(INTDIR)\random.obj" \
        "$(INTDIR)\strings.obj" \
        "$(INTDIR)\time.obj" \
        "$(INTDIR)\tpccldr.obj"

"$(OUTDIR)\tpccldr.exe" : "$(OUTDIR)" $(DEF_FILE) $(LINK32_OBJS)
    $(LINK32) @<<
  $(LINK32_FLAGS) $(LINK32_OBJS)
<<

!ENDIF

.c{$(CPP_OBJS)}.obj:
   $(CPP) $(CPP_PROJ) $<

.cpp{$(CPP_OBJS)}.obj:
   $(CPP) $(CPP_PROJ) $<

.cxx{$(CPP_OBJS)}.obj:
   $(CPP) $(CPP_PROJ) $<

.c{$(CPP_SBRS)}.sbr:
   $(CPP) $(CPP_PROJ) $<

.cpp{$(CPP_SBRS)}.sbr:
   $(CPP) $(CPP_PROJ) $<

.cxx{$(CPP_SBRS)}.sbr:
   $(CPP) $(CPP_PROJ) $<

################################################################
###############
# Begin Target

# Name "tpccldr - Win32 Release"
# Name "tpccldr - Win32 Debug"

!IF  "$(CFG)" == "tpccldr - Win32 Release"

!ELSEIF  "$(CFG)" == "tpccldr - Win32 Debug"

!ENDIF

################################################################
###############
# Begin Source File

SOURCE=.\src\random.c
DEP_CPP_RANDO=\
        ".\src\tpcc.h"\
        "\mssql\dblib\include\sqldb.h"\
        "\mssql\dblib\include\sqlfront.h"\


"$(INTDIR)\random.obj" : $(SOURCE) $(DEP_CPP_RANDO) "$(INTDIR)"
   $(CPP) $(CPP_PROJ) $(SOURCE)


# End Source File
################################################################
###############
# Begin Source File
```

```
SOURCE=.\src\strings.c
DEP_CPP_STRIN=\
        ".\src\tpcc.h"\
        "\mssql\dblib\include\sqldb.h"\
        "\mssql\dblib\include\sqlfront.h"\


"$(INTDIR)\strings.obj" : $(SOURCE) $(DEP_CPP_STRIN) "$(INTDIR)"
  $(CPP) $(CPP_PROJ) $(SOURCE)


# End Source File
################################################################
###############
# Begin Source File

SOURCE=.\src\time.c
DEP_CPP_TIME_=\
        ".\src\tpcc.h"\
        "\mssql\dblib\include\sqldb.h"\
        "\mssql\dblib\include\sqlfront.h"\


"$(INTDIR)\time.obj" : $(SOURCE) $(DEP_CPP_TIME_) "$(INTDIR)"
  $(CPP) $(CPP_PROJ) $(SOURCE)


# End Source File
################################################################
###############
# Begin Source File

SOURCE=.\src\tpccldr.c
DEP_CPP_TPCCL=\
        ".\src\tpcc.h"\
        "\mssql\dblib\include\sqldb.h"\
        "\mssql\dblib\include\sqlfront.h"\


"$(INTDIR)\tpccldr.obj" : $(SOURCE) $(DEP_CPP_TPCCL) "$(INTDIR)"
  $(CPP) $(CPP_PROJ) $(SOURCE)


# End Source File
################################################################
###############
# Begin Source File

SOURCE=.\src\getargs.c
DEP_CPP_GETAR=\
        ".\src\tpcc.h"\
        "\mssql\dblib\include\sqldb.h"\
        "\mssql\dblib\include\sqlfront.h"\


"$(INTDIR)\getargs.obj" : $(SOURCE) $(DEP_CPP_GETAR) "$(INTDIR)"
  $(CPP) $(CPP_PROJ) $(SOURCE)


# End Source File
# End Target
# End Project
################################################################
###############
```

VerifyTpccLoad.sql

```
-- File:    VERIFYTPCCLOAD.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Performs series of TPCC database checks to verify
--               that database load completed correctly

print       " "
select      convert(char(30), getdate(),9)
print       " "

use tpcc
go

--          ************************************
--
--          Check rows per table from SYSINDEXES
--
--          ************************************

print       'WAREHOUSE TABLE'

select      rows
from        sysindexes
where       id          = object_id("warehouse")
go

print       'DISTRICT TABLE = (10 * No of warehouses)'

select      rows
from        sysindexes
where       id          =object_id("district")
go

print       'ITEM TABLE = 100,000'

select      rows
from        sysindexes
where       id          =object_id("item")
go

print       'CUSTOMER TABLE = (30,000 * No of warehouses)'

select      rows
from        sysindexes
where       id          =object_id("customer")
go

print 'ORDERS TABLE = (30,000 * No of warehouses)'

select      rows
from        sysindexes
where       id          =object_id("orders")
go

print       'HISTORY TABLE = (30,000 * No of warehouses)'

select      rows
from        sysindexes
where       id          =object_id("history")
go

print       'STOCK TABLE = (100,000 * No of warehouses)'

select      rows
from        sysindexes
where       id          =object_id("stock")
go
```

```
print        'ORDER_LINE TABLE = (300,000 * No of warehouses + some
change)'

select  count_big(*)
from    order_line
go

print        'NEW_ORDER TABLE = (9000 * No of warehouses)'

select       rows
from         sysindexes
where        id          =object_id("new_order")
go

--           *************
--
--           Check indices
--
--           *************

print '**************Index Check****************'

use tpcc
go

sp_helpindex          customer
go

sp_helpindex          stock
go

sp_helpindex          district
go

sp_helpindex          item
go

sp_helpindex          new_order
go

sp_helpindex          orders
go

sp_helpindex          order_line
go

sp_helpindex          warehouse
go
```

version.sql

```
-- File:    VERSION.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Extracts current version of SQL Server


use master
go

SELECT   CONVERT(char(20), SERVERPROPERTY('ProductVersion'))
go

SELECT   CONVERT(char(20), SERVERPROPERTY('ProductLevel'))
go

SELECT   CONVERT(char(30), getdate(),9)
go
```

Appendix C: Tunable Parameters

Microsoft SQL Server 2000 Configuration Parameters

```
1> 2> 3> 4> 5> 6> 7> 8> 9> 10> 11>
--  File:     VERSION.SQL
--            Microsoft TPC-C Benchmark Kit Ver. 4.22
--            Copyright Microsoft, 2001
--  Purpose:  Returns SQL Server version string



print " "
select convert(char(30), getdate(),9)
print " "

 ------------------------------
 Feb  8 2005  3:51:40:020PM

(1 row affected)

1> 2> 3>
select @@version



 ------------------------------------------------------------------------------
              ------------------------------------------------------------------------
              ------------------------------------------------------------------------
              ----------------------------------
 Microsoft SQL Server  2000 - 8.00.859 (Intel X86)
              Sep 18 2003 12:53:45
              Cop
              yright (c) 1988-2003 Microsoft Corporation
              Enterprise Edition on Windo
              ws NT 5.2 (Build 3790: Service Pack 1, v.1289)



(1 row affected)
1> 2>
1> 2> 3> 4> 5> 6> 7> 8> 9> 10>
--  File:     CONFIG.SQL
--            Microsoft TPC-C Benchmark Kit Ver. 4.22
--            Copyright Microsoft, 2001
--  Purpose:  Collects SQL Server configuration parameters


print " "
select convert(char(30), getdate(),9)
print " "

 ------------------------------
 Feb  8 2005  3:51:41:787PM

(1 row affected)

1> 2> 3> DBCC execution completed. If DBCC printed error messages, contact
your system administrator.
Configuration option 'show advanced options' changed from 1 to 1. Run the
RECONFIGURE statement to install.

sp_configure "show advanced",1
1> 2> reconfigure with override
1> 2> sp_configure
 name                                 minimum     maximum
config_value run_value
 ------------------------------------------------------------------------------- ----------- -----------
------------ -----------
 affinity mask                        -2147483648  2147483647
   255         255
 allow updates                                0           1           0
 0
 awe enabled                                  0           1           1
 1
 c2 audit mode                                0           1           0
 0
 cost threshold for parallelism                           0       32767
5           5
 Cross DB Ownership Chaining                              0           1
 0           0
 cursor threshold                            -1  2147483647
-1          -1
 default full-text language                               0  2147483647
1033        1033
 default language                             0        9999           0
     0
 fill factor (%)                              0         100           0
 0
 index create memory (KB)                               704  2147483647
        0           0
 lightweight pooling                                      0           1           1
    1
 locks                                     5000  2147483647           0
      0
 max degree of parallelism                                0          32           1
        1
 max server memory (MB)                                   4  2147483647
    61780       61780
 max text repl size (B)                                   0  2147483647
65536       65536
 max worker threads                                      32       32767
536         536
 media retention                              0         365           0
    0
 min memory per query (KB)                              512  2147483647
       1024        1024
 min server memory (MB)                                   0  2147483647
       0           0
 nested triggers                              0           1           1
1
 network packet size (B)                                512       65536
4096        4096
 open objects                                 0  2147483647           0
        0
 priority boost                               0           1           1
1
 query governor cost limit                                0  2147483647
    0           0
 query wait (s)                              -1  2147483647          -1
        -1
 recovery interval (min)                                  0       32767
112         112
 remote access                                0           1           1
 1
 remote login timeout (s)                                 0  2147483647
  0           0
 remote proc trans                            0           1           0
  0
 remote query timeout (s)                                 0  2147483647
    0           0
```

```
scan for startup procs                          0       1       0
  0
set working set size                            0       1       0
  0
show advanced options                           0       1       1
      1
two digit year cutoff                        1753       9999
2049       2049
user connections                                0   32767       0
      0
user options                                    0   32767       0
  0

1>
```

Microsoft Windows Server 2003 Enterprise Edition

Changes to the SUT

Changes made to the default installation of Windows Server 2003 Enterprise Edition on the SUT

All services were left in their default setup, except the following services were disabled:

- Auto Update
- Computer Browser
- Error Reporting
- Print Spooler
- DHCP Client
- Windows Time
- Help And Support
- MSSQLSERVER

Control Panel - System - Advanced - Performance Options - Visual Effects - Adjust for best performance
Then turn on "show window contents while dragging"

c:\boot.ini:
added /Execute /PAE /MAXMEM=65536
removed /NoExecute=OptIn

gpedit.msc - Computer Configuration - Windows Settings - Security Settings - Local Policies - User Rights Assignments - policy 'Lock pages in memory' added group 'Administrators'

Enabled VIA protocol for SQL Server

Microsoft SQL Server Startup Parameters

C:\Program Files\Microsoft SQL Server\MSSQL\Binn\sqlservr -c -x -t3502 -T3428

where:

-c Start SQL Server independent of the Service Control Manager
-x Disable the keeping of CPU timeand cache hit ratio statistics
-t3502 writes a message to the SQL Server Errorlog showing the beginning and ending time of each checkpoint
-T3428 allows for faster recovery of corrupt database

Registry:

Added DWORD value to HKLM\SYSTEM\CurrentControlSet\Services\tcpip\Parameters
"MaxUserPort" 0x9c40

Added DWORD value to HKLM\SYSTEM\CurrentControlSet\Services\lanmanserver\parameters
"Size" 3

Added DWORD value to HKLM\SYSTEM\CurrentControlSet\Services\Disk
"TimeOutValue" 0x78

```
Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qldirect]
"ERRORCONTROL"=dword:00000001
"TYPE"=dword:00000001
"GROUP"="qldirect"
"START"=dword:00000002

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qldirect\P
arameters]
"SRBLISTSIZE"=dword:00000064
"FLAGS"=dword:00000000
"MAXPATHSPERDEVICE"=dword:00000010
"INSPECTIONINTERVAL"=dword:00000258
"OPTIMIZATION"=dword:00000000
"MAXRETRIESPERPATH"=dword:00000003
"MAXRETRIESPERIO"=dword:00000031
"PerCpuData"=dword:00000001

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qldirect\E
num]
"0"="Root\\LEGACY_QLDIRECT\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001

Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika]
"start"=dword:00000002
"type"=dword:00000001
"Tag"=dword:00000001
"group"="MVIA"
"ErrorControl"=dword:00000001

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Ad
apters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Ad
apters\210000E08B092F5A]
"IPAddress"=hex(7):31,00,39,00,32,00,2e,00,31,00,36,00,38,00,2e,00,31,00,32,
00,\
  30,00,2e,00,31,00,00,00,00,00
"VIDeviceNumber"=dword:00000000

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Par
ameters]
"HostFile"=hex(7):43,00,3a,00,5c,00,57,00,49,00,4e,00,44,00,4f,00,57,00,53,00
,\
  5c,00,73,00,79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,64,00,72,00,69,\
  00,76,00,65,00,72,00,73,00,5c,00,65,00,74,00,63,00,5c,00,76,00,69,00,68,00,\
  6f,00,73,00,74,00,73,00,00,00,00,00
```

```
"SupportPrototypeCards"=dword:00000001
"SendDescQuota"=dword:00000008
"RecvDescQuota"=dword:00000008
"MaxRegisterMBytes"=dword:00000200
"MaxCQs"=dword:00000400
"MaxPTags"=dword:00000800
"MaxRegisterRegions"=dword:00001000
"MaxCQEntries"=dword:00002000
"MaxRegisterRdmaMBytes"=dword:00000200
"MaxTransferSize"=dword:00010000
"MaxVIs"=dword:00000400
"IuBuffers"=dword:00000100

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Enum]
"0"="Root\\LEGACY_QLVIKA\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001

Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\I/O System]
"CountOperations"=dword:00000000

Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management]
"ClearPageFileAtShutdown"=dword:00000000
"DisablePagingExecutive"=dword:00000001
"LargeSystemCache"=dword:00000000
"NonPagedPoolQuota"=dword:00000000
"NonPagedPoolSize"=dword:00000000
"PagedPoolQuota"=dword:00000000
"PagedPoolSize"=dword:00000000
"SecondLevelDataCache"=dword:00000000
"SystemPages"=dword:000c3000
"PagingFiles"=hex(7):63,00,3a,00,5c,00,70,00,61,00,67,00,65,00,66,00,69,00,6c,\
  00,65,00,2e,00,73,00,79,00,73,00,20,00,32,00,30,00,34,00,36,00,20,00,34,00,\
  30,00,39,00,32,00,00,00,00,00
"PhysicalAddressExtension"=dword:00000001
"WriteWatch"=dword:00000001
"SessionViewSize"=dword:00000030
"SessionPoolSize"=dword:00000004
"DontVerifyRandomDrivers"=dword:00000001

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management\PrefetchParameters]
"VideoInitTime"=dword:00001954
"EnablePrefetcher"=dword:00000002
"AppLaunchMaxNumPages"=dword:00000fa0
"AppLaunchMaxNumSections"=dword:000000aa
"AppLaunchTimerPeriod"=hex:80,69,67,ff,ff,ff,ff,ff
"BootMaxNumPages"=dword:0001f400
"BootMaxNumSections"=dword:00000ff0
"BootTimerPeriod"=hex:00,f2,d8,f8,ff,ff,ff,ff
"MaxNumActiveTraces"=dword:00000008
"MaxNumSavedTraces"=dword:00000008
"RootDirPath"="Prefetch"
"HostingAppList"="DLLHOST.EXE,MMC.EXE,RUNDLL32.EXE"
```

SUT System Information Report

System Information report written at: 02/08/05 15:29:02

System Name: IBMSERV2

```
[System Summary]
Item         Value
OS Name      Microsoft(R) Windows(R) Server 2003, Enterprise Edition
Version      5.2.3790 Service Pack 1, v.1289 Build 3790
OS Manufacturer      Microsoft Corporation
Activation Status    Activation Pending (6 days remaining)
System Name          IBMSERV2
System Manufacturer  IBM
System Model         eserver xSeries 366-[TPCCZX4]-
System Type          X86-based PC
Processor  x86 Family 15 Model 4 Stepping 1 GenuineIntel ~3669 Mhz
Processor  x86 Family 15 Model 4 Stepping 1 GenuineIntel ~3669 Mhz
Processor  x86 Family 15 Model 4 Stepping 1 GenuineIntel ~3669 Mhz
Processor  x86 Family 15 Model 4 Stepping 1 GenuineIntel ~3669 Mhz
Processor  x86 Family 15 Model 4 Stepping 1 GenuineIntel ~3669 Mhz
Processor  x86 Family 15 Model 4 Stepping 1 GenuineIntel ~3669 Mhz
Processor  x86 Family 15 Model 4 Stepping 1 GenuineIntel ~3669 Mhz
Processor  x86 Family 15 Model 4 Stepping 1 GenuineIntel ~3669 Mhz
BIOS Version/Date    IBM -[ZUE118AUS-1.00]-, 1/28/2005
SMBIOS Version       2.3
Windows Directory    C:\WINDOWS
System Directory     C:\WINDOWS\system32
Boot Device          \Device\HarddiskVolume93
Locale       United States
Hardware Abstraction Layer       Version = "5.2.3790.1289
(srv03_sp1_rc1.041202-1618)"
User NameIBMSERV2\Administrator
Time ZoneEastern Standard Time
Total Physical Memory            63,486.92 MB
Available Physical Memory        1.29 GB
Total Virtual Memory3.43 GB
Available Virtual Memory         3.30 GB
Page File Space      2.00 GB
Page File    C:\pagefile.sys
[Hardware Resources]
[Conflicts/Sharing]
Resource   Device
Memory Address 0xF0500000-0xF05FFFFF PCI bus
Memory Address 0xF0500000-0xF05FFFFF PCI standard PCI-to-PCI bridge
I/O Port 0x00000000-0x00001FFF       PCI bus
I/O Port 0x00000000-0x00001FFF       Direct memory access controller
Memory Address 0xF0800000-0xF08FFFFF PCI bus
Memory Address 0xF0800000-0xF08FFFFF PCI standard PCI-to-PCI bridge
I/O Port 0x00002600-0x000027FF       PCI bus
I/O Port 0x00002600-0x000027FF       QLogic Fibre Channel Adapter
IRQ 20     NEC PCI to USB Open Host Controller
IRQ 20     NEC PCI to USB Open Host Controller
IRQ 20     Standard Enhanced PCI to USB Host Controller
I/O Port 0x00002200-0x000023FF       PCI bus
I/O Port 0x00002200-0x000023FF       QLogic Fibre Channel Adapter
I/O Port 0x00002000-0x000021FF       PCI bus
I/O Port 0x00002000-0x000021FF       QLogic Fibre Channel Adapter
Memory Address 0xF0200000-0xF02FFFFF PCI bus
Memory Address 0xF0200000-0xF02FFFFF Broadcom NetXtreme Gigabit
Ethernet
I/O Port 0x00002400-0x000025FF       PCI bus
I/O Port 0x00002400-0x000025FF       QLogic Fibre Channel Adapter
Memory Address 0xE0000000-0xEFFFFFFF         PCI bus
Memory Address 0xE0000000-0xEFFFFFFF         RADEON 7000M (on
board)
Memory Address 0xA0000-0xBFFFF       PCI bus
Memory Address 0xA0000-0xBFFFF       RADEON 7000M (on board)
Memory Address 0xF0100000-0xF01FFFFF PCI bus
Memory Address 0xF0100000-0xF01FFFFF RADEON 7000M (on board)
[DMA]
Resource   Device     Status
Channel 4  Direct memory access controller  OK
```

[Forced Hardware]
Device PNP Device ID
[I/O]
Resource Device Status
0x00000000-0x00001FFF PCI bus OK
0x00000000-0x00001FFF Direct memory access controller OK
0x00001800-0x000018FF RADEON 7000M (on board) OK
0x000003B0-0x000003BB RADEON 7000M (on board) OK
0x000003C0-0x000003DF RADEON 7000M (on board) OK
0x00000700-0x0000070F Standard Dual Channel PCI IDE Controller OK
0x000001F0-0x000001F7 Primary IDE Channel OK
0x000003F6-0x000003F6 Primary IDE Channel OK
0x00000170-0x00000177 Secondary IDE Channel OK
0x00000376-0x00000376 Secondary IDE Channel OK
0x00000A79-0x00000A79 ISAPNP Read Data Port OK
0x00000279-0x00000279 ISAPNP Read Data Port OK
0x00000274-0x00000277 ISAPNP Read Data Port OK
0x00000060-0x00000060 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard OK
0x00000064-0x00000064 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard OK
0x000003F8-0x000003FF Communications Port (COM1) OK
0x000002F8-0x000002FF Communications Port (COM2) OK
0x00000020-0x00000021 Advanced programmable interrupt controller OK
0x000000A0-0x000000A1 Advanced programmable interrupt controller OK
0x00000080-0x0000008F Direct memory access controller OK
0x000000C0-0x000000DF Direct memory access controller OK
0x00000040-0x00000043 System timer OK
0x00000070-0x00000073 System CMOS/real time clock OK
0x00000061-0x00000061 System speaker OK
0x000000F0-0x000000FF Numeric data processor OK
0x0000002E-0x0000002F Motherboard resources OK
0x0000004E-0x0000004F Motherboard resources OK
0x00000052-0x00000053 Motherboard resources OK
0x00000092-0x00000092 Motherboard resources OK
0x00000094-0x0000009F Motherboard resources OK
0x000000A8-0x000000A9 Motherboard resources OK
0x00000400-0x0000047F Motherboard resources OK
0x00000480-0x000004FF Motherboard resources OK
0x00000500-0x0000055F Motherboard resources OK
0x00000600-0x00000600 Motherboard resources OK
0x00000800-0x00000803 Motherboard resources OK
0x00000C00-0x00000CDF Motherboard resources OK
0x00000F50-0x00000F5F Motherboard resources OK
0x00002000-0x000021FF PCI bus OK
0x00002000-0x000021FF QLogic Fibre Channel Adapter OK
0x00002200-0x000023FF PCI bus OK
0x00002200-0x000023FF QLogic Fibre Channel Adapter OK
0x00002400-0x000025FF PCI bus OK
0x00002400-0x000025FF QLogic Fibre Channel Adapter OK
0x00002600-0x000027FF PCI bus OK
0x00002600-0x000027FF QLogic Fibre Channel Adapter OK
[IRQs]
Resource Device Status
IRQ 9 Microsoft ACPI-Compliant System OK
IRQ 16 RADEON 7000M (on board) OK
IRQ 20 NEC PCI to USB Open Host Controller OK
IRQ 20 NEC PCI to USB Open Host Controller OK
IRQ 20 Standard Enhanced PCI to USB Host Controller OK
IRQ 14 Primary IDE Channel OK
IRQ 1 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard OK
IRQ 12 PS/2 Compatible Mouse OK
IRQ 4 Communications Port (COM1) OK
IRQ 3 Communications Port (COM2) OK
IRQ 0 System timer OK
IRQ 8 System CMOS/real time clock OK
IRQ 13 Numeric data processor OK
IRQ 24 Broadcom NetXtreme Gigabit Ethernet OK
IRQ 28 Broadcom NetXtreme Gigabit Ethernet #2 OK
IRQ 18 QLogic Fibre Channel Adapter OK
IRQ 19 QLogic Fibre Channel Adapter OK
IRQ 59 IBM ServeRAID 6M Controller OK
IRQ 60 QLogic Fibre Channel Adapter OK
IRQ 61 QLogic Fibre Channel Adapter OK
IRQ 62 IBM ServeRAID 6M Controller OK
[Memory]
Resource Device Status
0xA0000-0xBFFFF PCI bus OK
0xA0000-0xBFFFF RADEON 7000M (on board) OK
0xE0000000-0xEFFFFFFF PCI bus OK
0xE0000000-0xEFFFFFFF RADEON 7000M (on board) OK
0xF0100000-0xF01FFFFF PCI bus OK
0xF0100000-0xF01FFFFF RADEON 7000M (on board) OK
0xF0110000-0xF0110FFF NEC PCI to USB Open Host Controller OK
0xF0111000-0xF0111FFF NEC PCI to USB Open Host Controller OK
0xF0112000-0xF01120FF Standard Enhanced PCI to USB Host Controller OK
0x0400-0x04FF System board OK
0x100000-0x7FFFFFFF Memory Module OK
0xF0200000-0xF02FFFFF PCI bus OK
0xF0200000-0xF02FFFFF Broadcom NetXtreme Gigabit Ethernet OK
0xF0210000-0xF021FFFF Broadcom NetXtreme Gigabit Ethernet #2 OK
0xF0300000-0xF03FFFFF PCI bus OK
0xF0320000-0xF0320FFF QLogic Fibre Channel Adapter OK
0xF0400000-0xF04FFFFF PCI bus OK
0xF0420000-0xF0420FFF QLogic Fibre Channel Adapter OK
0xF0500000-0xF05FFFFF PCI bus OK
0xF0500000-0xF05FFFFF PCI standard PCI-to-PCI bridge OK
0xF0580000-0xF0580FFF IBM ServeRAID 6M Controller OK
0xF0600000-0xF06FFFFF PCI bus OK
0xF0620000-0xF0620FFF QLogic Fibre Channel Adapter OK
0xF0700000-0xF07FFFFF PCI bus OK
0xF0720000-0xF0720FFF QLogic Fibre Channel Adapter OK
0xF0800000-0xF08FFFFF PCI bus OK
0xF0800000-0xF08FFFFF PCI standard PCI-to-PCI bridge OK
0xF0880000-0xF0880FFF IBM ServeRAID 6M Controller OK
[Components]
[Multimedia]
[Audio Codecs]
CODEC Manufacturer Description Status File Version Size Creation Date
c:\windows\system32\msaud32.acm Microsoft Corporation Windows Media Audio Codec OK
C:\WINDOWS\system32\MSAUD32.ACM 8.00.00.4487 288.00 KB (294,912 bytes) 12/3/2004 7:00 AM
c:\windows\system32\sl_anet.acm Sipro Lab Telecom Inc. Sipro Lab Telecom Audio Codec OK
C:\WINDOWS\system32\SL_ANET.ACM 3.02 84.00 KB (86,016 bytes) 12/3/2004 7:00 AM
c:\windows\system32\imaadp32.acm Microsoft Corporation OK C:\WINDOWS\system32\IMAADP32.ACM 5.2.3790.0 (srv03_rtm.030324-2048) 15.50 KB (15,872 bytes) 12/3/2004 7:00 AM
c:\windows\system32\msadp32.acm Microsoft Corporation OK C:\WINDOWS\system32\MSADP32.ACM 5.2.3790.0 (srv03_rtm.030324-2048) 14.50 KB (14,848 bytes) 12/3/2004 7:00 AM

c:\windows\system32\msg711.acm Microsoft Corporation
OK C:\WINDOWS\system32\MSG711.ACM 5.2.3790.0
(srv03_rtm.030324-2048) 10.00 KB (10,240 bytes) 12/3/2004
7:00 AM
c:\windows\system32\msgsm32.acm Microsoft Corporation
OK C:\WINDOWS\system32\MSGSM32.ACM 5.2.3790.0
(srv03_rtm.030324-2048) 20.50 KB (20,992 bytes) 12/3/2004
7:00 AM
c:\windows\system32\tssoft32.acm DSP GROUP, INC.
OK C:\WINDOWS\system32\TSSOFT32.ACM 1.01 9.50 KB
(9,728 bytes) 12/3/2004 7:00 AM
c:\windows\system32\l3codeca.acm Fraunhofer Institut Integrierte
Schaltungen IIS Fraunhofer IIS MPEG Layer-3 Codec OK
C:\WINDOWS\system32\L3CODECA.ACM 1, 9, 0, 0305
284.00 KB (290,816 bytes) 12/3/2004 7:00 AM
c:\windows\system32\msg723.acm Microsoft Corporation
OK C:\WINDOWS\system32\MSG723.ACM 5.2.3790.1289
120.00 KB (122,880 bytes) 1/31/2005 10:22 AM
[Video Codecs]
CODEC Manufacturer Description Status File
Version Size Creation Date
c:\windows\system32\iyuv_32.dll Microsoft Corporation
OK C:\WINDOWS\system32\IYUV_32.DLL 5.2.3790.1289
(srv03_sp1_rc1.041202-1618) 46.50 KB (47,616 bytes) 12/2/2004
2:53 PM
c:\windows\system32\msh261.drv Microsoft Corporation
OK C:\WINDOWS\system32\MSH261.DRV 5.2.3790.1289
184.00 KB (188,416 bytes) 1/31/2005 10:22 AM
c:\windows\system32\tsbyuv.dll Microsoft Corporation
OK C:\WINDOWS\system32\TSBYUV.DLL 5.2.3790.0
(srv03_rtm.030324-2048) 8.00 KB (8,192 bytes) 3/24/2003 8:50 PM
c:\windows\system32\msvidc32.dll Microsoft Corporation
OK C:\WINDOWS\system32\MSVIDC32.DLL 5.2.3790.0
(srv03_rtm.030324-2048) 26.50 KB (27,136 bytes) 12/3/2004
7:00 AM
c:\windows\system32\msrle32.dll Microsoft Corporation
OK C:\WINDOWS\system32\MSRLE32.DLL 5.2.3790.0
(srv03_rtm.030324-2048) 10.50 KB (10,752 bytes) 12/3/2004
7:00 AM
c:\windows\system32\msh263.drv Microsoft Corporation
OK C:\WINDOWS\system32\MSH263.DRV 5.2.3790.1289
288.00 KB (294,912 bytes) 12/2/2004 2:55 PM
c:\windows\system32\msyuv.dll Microsoft Corporation
OK C:\WINDOWS\system32\MSYUV.DLL 5.2.3790.0
(srv03_rtm.030324-2048) 16.50 KB (16,896 bytes) 3/24/2003
8:49 PM
[CD-ROM]
Item Value
Drive Z:
Description CD-ROM Drive
Media Loaded No
Media Type CD-ROM
Name MATSHITA DVD-ROM SR-8178
Manufacturer (Standard CD-ROM drives)
Status OK
Transfer Rate Not Available
SCSI Target ID 0
PNP Device ID
IDE\CDROMMATSHITA_DVD-ROM_SR-8178_____PJ22____
\5&A8D2D22&0&0.0.0
Driver c:\windows\system32\drivers\cdrom.sys (5.2.3790.1289
(srv03_sp1_rc1.041202-1618), 51.00 KB (52,224 bytes), 12/3/2004 7:00 AM)
[Sound Device]
Item Value
[Display]
Item Value
Name RADEON 7000M (on board)
PNP Device ID
PCI\VEN_1002&DEV_5159&SUBSYS_02C81014&REV_00\3&267A616A&
0&08
Adapter Type RADEON 7000 (0x5159), ATI Technologies Inc.
compatible
Adapter Description RADEON 7000M (on board)
Adapter RAM 16.00 MB (16,777,216 bytes)
Installed Drivers ati2dvag.dll
Driver Version 5.2.3790.2
INF File oem3.inf (ati2mtag_RV100 section)
Color Planes 1
Color Table Entries 4294967296
Resolution 1024 x 768 x 75 hertz
Bits/Pixel 32
Memory Address 0xE0000000-0xEFFFFFFF
I/O Port 0x00001800-0x000018FF
Memory Address 0xF0100000-0xF01FFFFF
IRQ Channel IRQ 16
I/O Port 0x000003B0-0x000003BB
I/O Port 0x000003C0-0x000003DF
Memory Address 0xA0000-0xBFFFF
Driver c:\windows\system32\drivers\ati2mtag.sys (6.14.10.6422, 654.00
KB (669,696 bytes), 1/31/2005 5:07 AM)
[Infrared]
Item Value
[Input]
[Keyboard]
Item Value
Description Standard 101/102-Key or Microsoft Natural PS/2
Keyboard
Name Enhanced (101- or 102-key)
Layout 00000409
PNP Device ID ACPI\PNP0303\4&13245C1&0
Number of Function Keys 12
I/O Port 0x00000060-0x00000060
I/O Port 0x00000064-0x00000064
IRQ Channel IRQ 1
Driver c:\windows\system32\drivers\i8042prt.sys (5.2.3790.1289
(srv03_sp1_rc1.041202-1618), 54.50 KB (55,808 bytes), 12/3/2004 7:00 AM)
[Pointing Device]
Item Value
Hardware Type PS/2 Compatible Mouse
Number of Buttons 2
Status OK
PNP Device ID ACPI\PNP0F13\4&13245C1&0
Power Management Supported No
Double Click Threshold 6
Handedness Right Handed Operation
IRQ Channel IRQ 12
Driver c:\windows\system32\drivers\i8042prt.sys (5.2.3790.1289
(srv03_sp1_rc1.041202-1618), 54.50 KB (55,808 bytes), 12/3/2004 7:00 AM)
[Modem]
Item Value
[Network]
[Adapter]
Item Value
Name [00000001] RAS Async Adapter
Adapter Type Not Available
Product Type RAS Async Adapter
Installed Yes
PNP Device ID Not Available
Last Reset 2/8/2005 12:16 PM
Index 1
Service Name AsyncMac
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No

DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available
Name [00000002] WAN Miniport (L2TP)
Adapter Type Not Available
Product Type WAN Miniport (L2TP)
Installed Yes
PNP Device ID ROOT\MS_L2TPMINIPORT\0000
Last Reset 2/8/2005 12:16 PM
Index 2
Service Name Rasl2tp
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available
Driver c:\windows\system32\drivers\rasl2tp.sys (5.2.3790.1289 (srv03_sp1_rc1.041202-1618), 66.00 KB (67,584 bytes), 12/3/2004 7:00 AM)
Name [00000003] WAN Miniport (PPTP)
Adapter Type Wide Area Network (WAN)
Product Type WAN Miniport (PPTP)
Installed Yes
PNP Device ID ROOT\MS_PPTPMINIPORT\0000
Last Reset 2/8/2005 12:16 PM
Index 3
Service Name PptpMiniport
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 50:50:54:50:30:30
Driver c:\windows\system32\drivers\raspptp.sys (5.2.3790.1289 (srv03_sp1_rc1.041202-1618), 61.00 KB (62,464 bytes), 12/3/2004 7:00 AM)
Name [00000004] WAN Miniport (PPPOE)
Adapter Type Wide Area Network (WAN)
Product Type WAN Miniport (PPPOE)
Installed Yes
PNP Device ID ROOT\MS_PPPOEMINIPORT\0000
Last Reset 2/8/2005 12:16 PM
Index 4
Service Name RasPppoe
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 33:50:6F:45:30:30
Driver c:\windows\system32\drivers\raspppoe.sys (5.2.3790.1289 (srv03_sp1_rc1.041202-1618), 40.00 KB (40,960 bytes), 12/3/2004 7:00 AM)
Name [00000005] Direct Parallel
Adapter Type Not Available
Product Type Direct Parallel
Installed Yes
PNP Device ID ROOT\MS_PTIMINIPORT\0000
Last Reset 2/8/2005 12:16 PM
Index 5
Service Name Raspti
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available
Driver c:\windows\system32\drivers\raspti.sys (5.2.3790.1289 (srv03_sp1_rc1.041202-1618), 19.50 KB (19,968 bytes), 12/3/2004 7:00 AM)
Name [00000006] WAN Miniport (IP)
Adapter Type Not Available
Product Type WAN Miniport (IP)
Installed Yes
PNP Device ID ROOT\MS_NDISWANIP\0000
Last Reset 2/8/2005 12:16 PM
Index 6
Service Name NdisWan
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available
Driver c:\windows\system32\drivers\ndiswan.sys (5.2.3790.1289 (srv03_sp1_rc1.041202-1618), 91.00 KB (93,184 bytes), 12/3/2004 7:00 AM)
Name [00000007] Broadcom NetXtreme Gigabit Ethernet
Adapter Type Ethernet 802.3
Product Type Broadcom NetXtreme Gigabit Ethernet
Installed Yes
PNP Device ID PCI\VEN_14E4&DEV_1648&SUBSYS_02E71014&REV_10\3&13C0B0C5&0&08
Last Reset 2/8/2005 12:16 PM
Index 7
Service Name b57w2k
IP Address 192.168.122.200
IP Subnet 255.255.255.0
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:0D:60:98:00:3A
Memory Address 0xF0200000-0xF02FFFFF
IRQ Channel IRQ 24
Driver c:\windows\system32\drivers\b57xp32.sys (7.80.0.0 built by: WinDDK, 185.88 KB (190,336 bytes), 1/31/2005 10:44 AM)
Name [00000008] Broadcom NetXtreme Gigabit Ethernet
Adapter Type Ethernet 802.3
Product Type Broadcom NetXtreme Gigabit Ethernet
Installed Yes
PNP Device ID PCI\VEN_14E4&DEV_1648&SUBSYS_02E71014&REV_10\3&13C0B0C5&0&09
Last Reset 2/8/2005 12:16 PM
Index 8
Service Name b57w2k
IP Address 0.0.0.0
IP Subnet 0.0.0.0
Default IP Gateway Not Available
DHCP Enabled Yes
DHCP Server
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:0D:60:98:00:3B
Memory Address 0xF0210000-0xF021FFFF
IRQ Channel IRQ 28

Driver c:\windows\system32\drivers\b57xp32.sys (7.80.0.0 built by: WinDDK, 185.88 KB (190,336 bytes), 1/31/2005 10:44 AM)
[Protocol]
Item Value
Name MSAFD Tcpip [TCP/IP]
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 16 bytes
Maximum Message Size 0 bytes
Message Oriented No
Minimum Address Size 16 bytes
Pseudo Stream Oriented No
Supports Broadcasting No
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data Yes
Supports Graceful Closing Yes
Supports Guaranteed Bandwidth No
Supports Multicasting No
Name MSAFD Tcpip [UDP/IP]
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 16 bytes
Maximum Message Size 63.93 KB (65,467 bytes)
Message Oriented Yes
Minimum Address Size 16 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting Yes
Name RSVP UDP Service Provider
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 16 bytes
Maximum Message Size 63.93 KB (65,467 bytes)
Message Oriented Yes
Minimum Address Size 16 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption Yes
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting Yes
Name RSVP TCP Service Provider
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 16 bytes
Maximum Message Size 0 bytes
Message Oriented No
Minimum Address Size 16 bytes
Pseudo Stream Oriented No
Supports Broadcasting No
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption Yes
Supports Expedited Data Yes
Supports Graceful Closing Yes
Supports Guaranteed Bandwidth No
Supports Multicasting No
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{0D3A2483-35C3-493C-AF93-DDE9AF1E3FA8}] SEQPACKET 3
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting No
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{0D3A2483-35C3-493C-AF93-DDE9AF1E3FA8}] DATAGRAM 3
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{C23EF6BE-2BE9-44DC-BCB7-CA81089579D3}] SEQPACKET 0
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting No
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{C23EF6BE-2BE9-44DC-BCB7-CA81089579D3}] DATAGRAM 0
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 20 bytes

Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{AD23D525-7339-427C-8250-84F3F6AD4B53}]
SEQPACKET 1
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting No
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{AD23D525-7339-427C-8250-84F3F6AD4B53}]
DATAGRAM 1
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{C5C8E24A-9BA6-4E66-B8AE-53AC7D860A8B}]
SEQPACKET 2
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting No
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{C5C8E24A-9BA6-4E66-B8AE-53AC7D860A8B}]
DATAGRAM 2
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No
[WinSock]
Item Value
File c:\windows\system32\winsock.dll
Size 2.80 KB (2,864 bytes)
Version 3.10
File c:\windows\system32\wsock32.dll
Size 22.00 KB (22,528 bytes)
Version 5.2.3790.0 (srv03_rtm.030324-2048)
[Ports]
[Serial]
Item Value
Name Communications Port (COM1)
Status OK
PNP Device ID ACPI\PNP0501\1
Maximum Input Buffer Size 0
Maximum Output Buffer Size No
Settable Baud Rate Yes
Settable Data Bits Yes
Settable Flow Control Yes
Settable Parity Yes
Settable Parity Check Yes
Settable Stop Bits Yes
Settable RLSD Yes
Supports RLSD Yes
Supports 16 Bit Mode No
Supports Special Characters No
Baud Rate 9600
Bits/Byte 8
Stop Bits 1
Parity None
Busy No
Abort Read/Write on Error No
Binary Mode Enabled Yes
Continue XMit on XOff No
CTS Outflow Control No
Discard NULL Bytes No
DSR Outflow Control 0
DSR Sensitivity 0
DTR Flow Control Type Enable
EOF Character 0
Error Replace Character 0
Error Replacement Enabled No
Event Character 0
Parity Check Enabled No
RTS Flow Control Type Enable
XOff Character 19
XOffXMit Threshold 512
XOn Character 17

XOnXMit Threshold 2048
XOnXOff InFlow Control 0
XOnXOff OutFlow Control 0
I/O Port 0x000003F8-0x000003FF
IRQ Channel IRQ 4
Driver c:\windows\system32\drivers\serial.sys (5.2.3790.1289 (srv03_sp1_rc1.041202-1618), 64.00 KB (65,536 bytes), 12/3/2004 7:00 AM)
Name Communications Port (COM2)
Status OK
PNP Device ID ACPI\PNP0501\2
Maximum Input Buffer Size 0
Maximum Output Buffer Size No
Settable Baud Rate Yes
Settable Data Bits Yes
Settable Flow Control Yes
Settable Parity Yes
Settable Parity Check Yes
Settable Stop Bits Yes
Settable RLSD Yes
Supports RLSD Yes
Supports 16 Bit Mode No
Supports Special Characters No
Baud Rate 9600
Bits/Byte 8
Stop Bits 1
Parity None
Busy No
Abort Read/Write on Error No
Binary Mode Enabled Yes
Continue XMit on XOff No
CTS Outflow Control No
Discard NULL Bytes No
DSR Outflow Control 0
DSR Sensitivity 0
DTR Flow Control Type Enable
EOF Character 0
Error Replace Character 0
Error Replacement Enabled No
Event Character 0
Parity Check Enabled No
RTS Flow Control Type Enable
XOff Character 19
XOffXMit Threshold 512
XOn Character 17
XOnXMit Threshold 2048
XOnXOff InFlow Control 0
XOnXOff OutFlow Control 0
I/O Port 0x000002F8-0x000002FF
IRQ Channel IRQ 3
Driver c:\windows\system32\drivers\serial.sys (5.2.3790.1289 (srv03_sp1_rc1.041202-1618), 64.00 KB (65,536 bytes), 12/3/2004 7:00 AM)
[Parallel]
Item Value
[Storage]
[Drives]
Item Value
Drive C:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 33.90 GB (36,401,041,408 bytes)
Free Space 27.79 GB (29,840,412,672 bytes)
Volume Name C_DRIVE
Volume Serial Number 1026EEAE
Drive E:
Description Local Fixed Disk
Compressed Not Available
File System Not Available
Size Not Available
Free Space Not Available
Volume Name Not Available
Volume Serial Number Not Available
Drive F:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 165.07 GB (177,247,072,256 bytes)
Free Space 162.26 GB (174,230,618,112 bytes)
Volume Name F_SCSI
Volume Serial Number D832A422
Drive G:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 430.98 GB (462,762,442,752 bytes)
Free Space 211.44 GB (227,035,815,936 bytes)
Volume Name G_DRIVE
Volume Serial Number A08D4A92
Drive H:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 430.98 GB (462,762,442,752 bytes)
Free Space 211.44 GB (227,035,881,472 bytes)
Volume Name H_DRIVE
Volume Serial Number 8CA81365
Drive I:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 430.98 GB (462,762,442,752 bytes)
Free Space 211.44 GB (227,035,881,472 bytes)
Volume Name I_DRIVE
Volume Serial Number 2CB7A83F
Drive J:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 430.98 GB (462,762,442,752 bytes)
Free Space 211.44 GB (227,035,881,472 bytes)
Volume Name J_DRIVE
Volume Serial Number 24F3AE4A
Drive K:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 430.98 GB (462,762,442,752 bytes)
Free Space 211.44 GB (227,035,815,936 bytes)
Volume Name K_DRIVE
Volume Serial Number 6403AE51
Drive L:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 430.98 GB (462,762,442,752 bytes)
Free Space 209.89 GB (225,363,345,408 bytes)
Volume Name L_DRIVE
Volume Serial Number D4130C26
Drive M:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 430.98 GB (462,762,442,752 bytes)
Free Space 211.44 GB (227,035,881,472 bytes)
Volume Name M_DRIVE
Volume Serial Number 74226EF5

Drive N:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 430.98 GB (462,762,442,752 bytes)
Free Space 211.44 GB (227,035,881,472 bytes)
Volume Name N_DRIVE
Volume Serial Number FC323105
Drive O:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 430.98 GB (462,762,442,752 bytes)
Free Space 211.09 GB (226,652,495,872 bytes)
Volume Name O_DRIVE
Volume Serial Number 044275FC
Drive P:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 430.98 GB (462,762,442,752 bytes)
Free Space 211.09 GB (226,652,495,872 bytes)
Volume Name P_DRIVE
Volume Serial Number 685235C7
Drive Q:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 430.98 GB (462,762,442,752 bytes)
Free Space 211.09 GB (226,652,495,872 bytes)
Volume Name Q_DRIVE
Volume Serial Number 6461EBE4
Drive R:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 430.98 GB (462,762,442,752 bytes)
Free Space 211.09 GB (226,652,495,872 bytes)
Volume Name R_DRIVE
Volume Serial Number 987174A7
Drive S:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 430.98 GB (462,762,442,752 bytes)
Free Space 211.09 GB (226,652,495,872 bytes)
Volume Name S_DRIVE
Volume Serial Number A0A0DC2F
Drive T:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 430.98 GB (462,762,442,752 bytes)
Free Space 211.09 GB (226,652,495,872 bytes)
Volume Name T_DRIVE
Volume Serial Number D0BA089D
Drive U:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 430.98 GB (462,762,442,752 bytes)
Free Space 211.09 GB (226,652,495,872 bytes)
Volume Name U_DRIVE
Volume Serial Number 04CA6A5D
Drive V:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 430.98 GB (462,762,442,752 bytes)
Free Space 211.09 GB (226,652,495,872 bytes)
Volume Name V_DRIVE
Volume Serial Number 60DBB387
Drive W:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 430.98 GB (462,762,442,752 bytes)
Free Space 430.91 GB (462,680,727,552 bytes)
Volume Name W_DRIVE
Volume Serial Number 48E1E918
Drive X:
Description Network Connection
Provider Name \\fsserv\edrive
Drive Z:
Description CD-ROM Disc
[Disks]
Item Value
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 5
SCSI Target ID 0
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #20, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 1
SCSI Port 5
SCSI Target ID 0
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #21, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 2

SCSI Port 5
SCSI Target ID 0
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #22, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 3
SCSI Port 5
SCSI Target ID 0
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #23, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 4
SCSI Port 5
SCSI Target ID 0
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #24, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 5
SCSI Port 5
SCSI Target ID 1
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #25, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 6
SCSI Port 5
SCSI Target ID 1
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #26, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 7
SCSI Port 5
SCSI Target ID 1
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #27, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 8
SCSI Port 5
SCSI Target ID 1
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #28, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes

Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 9
SCSI Port 5
SCSI Target ID 1
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #29, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 5
SCSI Port 4
SCSI Target ID 0
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #10, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 6
SCSI Port 4
SCSI Target ID 0
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #11, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 7
SCSI Port 4
SCSI Target ID 0
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #12, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 8
SCSI Port 4
SCSI Target ID 0
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #13, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 9
SCSI Port 4
SCSI Target ID 0
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #14, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 4
SCSI Target ID 1
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #15, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive

Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 1
SCSI Port 4
SCSI Target ID 1
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #16, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 2
SCSI Port 4
SCSI Target ID 1
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #17, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 3
SCSI Port 4
SCSI Target ID 1
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #18, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 4
SCSI Port 4
SCSI Target ID 1
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #19, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 5
SCSI Port 2
SCSI Target ID 0
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #0, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 6
SCSI Port 2
SCSI Target ID 0
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #1, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 7
SCSI Port 2
SCSI Target ID 0
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255

Partition Disk #2, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes

Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 8
SCSI Port 2
SCSI Target ID 0
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #3, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 9
SCSI Port 2
SCSI Target ID 0
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #4, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 2
SCSI Target ID 1
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #5, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 1
SCSI Port 2
SCSI Target ID 1
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #6, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 2
SCSI Port 2
SCSI Target ID 1
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #7, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 3
SCSI Port 2
SCSI Target ID 1
Sectors/Track 63
Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #8, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM 1742-900 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 3
SCSI Bus 0
SCSI Logical Unit 4
SCSI Port 2
SCSI Target ID 1
Sectors/Track 63

Size 467.61 GB (502,095,767,040 bytes)
Total Cylinders 61,043
Total Sectors 980,655,795
Total Tracks 15,565,965
Tracks/Cylinder 255
Partition Disk #9, Partition #0
Partition Size 467.12 GB (501,569,349,120 bytes)
Partition Starting Offset 8,225,280 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM ServeRAID SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 2
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 6
SCSI Target ID 0
Sectors/Track 32
Size 478.56 GB (513,846,280,192 bytes)
Total Cylinders 245,021
Total Sectors 1,003,606,016
Total Tracks 31,362,688
Tracks/Cylinder 128
Partition Disk #30, Partition #0
Partition Size 478.06 GB (513,317,797,888 bytes)
Partition Starting Offset 2,097,152 bytes
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM ServeRAID SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 7
SCSI Target ID 0
Sectors/Track 32
Size 33.90 GB (36,400,267,264 bytes)
Total Cylinders 17,357
Total Sectors 71,094,272
Total Tracks 2,221,696
Tracks/Cylinder 128
Partition Disk #31, Partition #0
Partition Size 33.90 GB (36,401,041,920 bytes)
Partition Starting Offset 7,680 bytes
[SCSI]
Item Value
Name QLogic Fibre Channel Adapter
Manufacturer QLogic
Status OK
PNP Device ID
PCI\VEN_1077&DEV_2312&SUBSYS_01001077&REV_02\3&1070020&0&08
I/O Port 0x00002000-0x000021FF
Memory Address 0xF0320000-0xF0320FFF
IRQ Channel IRQ 18
Driver c:\windows\system32\drivers\ql2300.sys (8.2.3.66 (w32 VI), 460.08 KB (471,118 bytes), 1/31/2005 2:07 PM)
Name QLogic Fibre Channel Adapter
Manufacturer QLogic
Status OK
PNP Device ID
PCI\VEN_1077&DEV_2312&SUBSYS_01001077&REV_02\3&29E81982&0&08
I/O Port 0x00002200-0x000023FF
Memory Address 0xF0420000-0xF0420FFF
IRQ Channel IRQ 19
Driver c:\windows\system32\drivers\ql2300.sys (8.2.3.66 (w32 VI), 460.08 KB (471,118 bytes), 1/31/2005 2:07 PM)
Name IBM ServeRAID 6M Controller
Manufacturer IBM Corporation
Status OK
PNP Device ID
PCI\VEN_9005&DEV_0250&SUBSYS_02791014&REV_02\4&564B7B1&0&4008
Memory Address 0xF0580000-0xF0580FFF
IRQ Channel IRQ 59
Driver c:\windows\system32\drivers\nfrd6m.sys (6.06.08 built by: WinDDK, 29.50 KB (30,208 bytes), 1/7/2005 1:06 PM)
me QLogic Fibre Channel Adapter
Manufacturer QLogic
Status OK
PNP Device ID
PCI\VEN_1077&DEV_2312&SUBSYS_01001077&REV_02\3&474B838&0&08
I/O Port 0x00002400-0x000025FF
Memory Address 0xF0620000-0xF0620FFF
IRQ Channel IRQ 60
Driver c:\windows\system32\drivers\ql2300.sys (8.2.3.66 (w32 VI), 460.08 KB (471,118 bytes), 1/31/2005 2:07 PM)
Name QLogic Fibre Channel Adapter
Manufacturer QLogic
Status OK
PNP Device ID
PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\3&E44F86D&0&08
I/O Port 0x00002600-0x000027FF
Memory Address 0xF0720000-0xF0720FFF
IRQ Channel IRQ 61
Driver c:\windows\system32\drivers\ql2300.sys (8.2.3.66 (w32 VI), 460.08 KB (471,118 bytes), 1/31/2005 2:07 PM)
Name IBM ServeRAID 6M Controller
Manufacturer IBM Corporation
Status OK
PNP Device ID
PCI\VEN_9005&DEV_0250&SUBSYS_02791014&REV_02\4&29C8B970&0&4008
Memory Address 0xF0880000-0xF0880FFF
IRQ Channel IRQ 62
Driver c:\windows\system32\drivers\nfrd6m.sys (6.06.08 built by: WinDDK, 29.50 KB (30,208 bytes), 1/7/2005 1:06 PM)
[IDE]
Item Value
Name Standard Dual Channel PCI IDE Controller
Manufacturer (Standard IDE ATA/ATAPI controllers)
Status OK
PNP Device ID
PCI\VEN_1166&DEV_0213&SUBSYS_02121166&REV_A0\3&267A616A&0&79
I/O Port 0x00000700-0x0000070F
Driver c:\windows\system32\drivers\pciide.sys (5.2.3790.0 (srv03_rtm.030324-2048), 5.50 KB (5,632 bytes), 12/3/2004 7:00 AM)
Name Primary IDE Channel
Manufacturer (Standard IDE ATA/ATAPI controllers)
Status OK
PNP Device ID PCIIDE\IDECHANNEL\4&101988B2&0&0
I/O Port 0x000001F0-0x000001F7
I/O Port 0x000003F6-0x000003F6
IRQ Channel IRQ 14
Driver c:\windows\system32\drivers\atapi.sys (5.2.3790.1289 (srv03_sp1_rc1.041202-1618), 93.50 KB (95,744 bytes), 12/3/2004 7:00 AM)
Name Secondary IDE Channel
Manufacturer (Standard IDE ATA/ATAPI controllers)

Status OK
PNP Device ID PCIIDE\IDECHANNEL\4&101988B2&0&1
I/O Port 0x00000170-0x00000177
I/O Port 0x00000376-0x00000376
Driver c:\windows\system32\drivers\atapi.sys (5.2.3790.1289 (srv03_sp1_rc1.041202-1618), 93.50 KB (95,744 bytes), 12/3/2004 7:00 AM)
[Printing]
Name Driver Port Name Server Name
[Problem Devices]
Device PNP Device ID Error Code
[USB]
Device PNP Device ID
NEC PCI to USB Open Host Controller PCI\VEN_1033&DEV_0035&SUBSYS_00351033&REV_43\3&267A616A&0&18
NEC PCI to USB Open Host Controller PCI\VEN_1033&DEV_0035&SUBSYS_00351033&REV_43\3&267A616A&0&19
Standard Enhanced PCI to USB Host Controller PCI\VEN_1033&DEV_00E0&SUBSYS_00E01033&REV_04\3&267A616A&0&1A

[Software Environment]
[System Drivers]
Name Description File Type Started Start Mode State Status Error Control Accept Pause Accept Stop

aacmgt AACmgt c:\windows\system32\drivers\aacmgt.sys Kernel Driver Yes Boot Running OK Normal No Yes

abiosdsk Abiosdsk Not Available Kernel Driver No Disabled Stopped OK Ignore No No

acpi Microsoft ACPI Driver c:\windows\system32\drivers\acpi.sys Kernel Driver Yes Boot Running OK Normal No Yes

acpiec ACPIEC c:\windows\system32\drivers\acpiec.sys Kernel Driver No Disabled Stopped OK Normal No No

adpu160m adpu160m Not Available Kernel Driver No Disabled Stopped OK Normal No No

adpu320 adpu320 Not Available Kernel Driver No Disabled Stopped OK Normal No No

afcnt afcnt Not Available Kernel Driver No Disabled Stopped OK Normal No No

afd AFD c:\windows\system32\drivers\afd.sys Kernel Driver Yes System Running OK Normal No Yes

aic78u2 aic78u2 Not Available Kernel Driver No Disabled Stopped OK Normal No No

aic78xx aic78xx Not Available Kernel Driver No Disabled Stopped OK Normal No No

aliide AliIde Not Available Kernel Driver No Disabled Stopped OK Normal No No

amdide AmdIde Not Available Kernel Driver No Disabled Stopped OK Normal No No

arc arc Not Available Kernel Driver No Disabled Stopped OK Normal No No

asyncmac RAS Asynchronous Media Driver c:\windows\system32\drivers\asyncmac.sys Kernel Driver No Manual Stopped OK Normal No No

atapi Standard IDE/ESDI Hard Disk Controller c:\windows\system32\drivers\atapi.sys Kernel Driver Yes Boot Running OK Normal No Yes

atdisk Atdisk Not Available Kernel Driver No Disabled Stopped OK Ignore No No

ati2mtag ati2mtag c:\windows\system32\drivers\ati2mtag.sys Kernel Driver Yes Manual Running OK Ignore No Yes

atmarpc ATM ARP Client Protocol c:\windows\system32\drivers\atmarpc.sys Kernel Driver No Manual Stopped OK Normal No No

audstub Audio Stub Driver c:\windows\system32\drivers\audstub.sys Kernel Driver Yes Manual Running OK Normal No Yes

b57w2k Broadcom NetXtreme Gigabit Ethernet c:\windows\system32\drivers\b57xp32.sys Kernel Driver Yes Manual Running OK Normal No Yes

beep Beep c:\windows\system32\drivers\beep.sys Kernel Driver Yes System Running OK Normal No Yes

cbidf2k cbidf2k c:\windows\system32\drivers\cbidf2k.sys Kernel Driver No Disabled Stopped OK Normal No No

cd20xrnt cd20xrnt Not Available Kernel Driver No Disabled Stopped OK Normal No No

cdfs Cdfs c:\windows\system32\drivers\cdfs.sys File System Driver Yes Disabled Running OK Normal No Yes

cdrom CD-ROM Driver c:\windows\system32\drivers\cdrom.sys Kernel Driver Yes System Running OK Normal No Yes

changer Changer Not Available Kernel Driver No System Stopped OK Ignore No No

clusdisk Cluster Disk Driver c:\windows\system32\drivers\clusdisk.sys Kernel Driver No Disabled Stopped OK Normal No No

cmdide CmdIde Not Available Kernel Driver No Disabled Stopped OK Normal No No

cpqarray Cpqarray Not Available Kernel Driver No Disabled Stopped OK Normal No No

cpqarry2 cpqarry2 Not Available Kernel Driver No Disabled Stopped OK Normal No No

cpqcissm cpqcissm Not Available Kernel Driver No Disabled Stopped OK Normal No No

cpqfcalm cpqfcalm Not Available Kernel Driver No
Disabled Stopped OK Normal No No

crcdisk CRC Disk Filter Driver
c:\windows\system32\drivers\crcdisk.sys Kernel Driver Yes
Boot Running OK Normal No Yes

dac960nt dac960nt Not Available Kernel Driver No
Disabled Stopped OK Normal No No

dellcerc dellcerc Not Available Kernel Driver No
Disabled Stopped OK Normal No No

dfsdriver DfsDriver c:\windows\system32\drivers\dfs.sys File System
Driver Yes Boot Running OK Normal No
Yes

disk Disk Driver c:\windows\system32\drivers\disk.sys
Kernel Driver Yes Boot Running OK Normal
No Yes

dmboot dmboot c:\windows\system32\drivers\dmboot.sys Kernel
Driver No Disabled Stopped OK Normal No
No

dmio Logical Disk Manager Driver
c:\windows\system32\drivers\dmio.sys Kernel Driver Yes
Boot Running OK Normal No Yes

dmload dmload c:\windows\system32\drivers\dmload.sys Kernel
Driver Yes Boot Running OK Normal No
Yes

dpti2o dpti2o Not Available Kernel Driver No
Disabled Stopped OK Normal No No

elxstor elxstor Not Available Kernel Driver No
Disabled Stopped OK Normal No No

em em \??\c:\windows\system32\drivers\em.sys Kernel
Driver No Manual Stopped OK Normal No
No

fastfat Fastfat c:\windows\system32\drivers\fastfat.sys File System
Driver No Disabled Stopped OK Normal No
No

fdc Fdc c:\windows\system32\drivers\fdc.sys Kernel
Driver No System Stopped OK Ignore No
No

fips Fips c:\windows\system32\drivers\fips.sys Kernel
Driver Yes System Running OK Normal No
Yes

flpydisk Flpydisk c:\windows\system32\drivers\flpydisk.sys Kernel
Driver No System Stopped OK Ignore No
No

fltmgr FltMgr c:\windows\system32\drivers\fltmgr.sys File System
Driver Yes Boot Running OK Normal No
Yes

ftdisk Volume Manager Driver
c:\windows\system32\drivers\ftdisk.sys Kernel Driver Yes
Boot Running OK Normal No Yes

gpc Generic Packet Classifier
c:\windows\system32\drivers\msgpc.sys Kernel Driver Yes
Manual Running OK Normal No Yes

hpcisss hpcisss Not Available Kernel Driver No
Disabled Stopped OK Normal No No

hpn hpn Not Available Kernel Driver No
Disabled Stopped OK Normal No No

hpt3xx hpt3xx Not Available Kernel Driver No
Disabled Stopped OK Normal No No

http HTTP c:\windows\system32\drivers\http.sys Kernel
Driver No Manual Stopped OK Normal No
No

i2omgmt i2omgmt Not Available Kernel Driver No
System Stopped OK Normal No No

i2omp i2omp Not Available Kernel Driver No
Disabled Stopped OK Normal No No

i8042prt i8042 Keyboard and PS/2 Mouse Port Driver
c:\windows\system32\drivers\i8042prt.sys Kernel Driver Yes
System Running OK Normal No Yes

ibmhpa IBMHPA c:\windows\system32\drivers\ibmhpa.sys Kernel
Driver Yes Manual Running OK Normal No
Yes

iirsp iirsp Not Available Kernel Driver No
Disabled Stopped OK Normal No No

imapi CD-Burning Filter Driver
c:\windows\system32\drivers\imapi.sys Kernel Driver No
System Stopped OK Normal No No

intelide IntelIde Not Available Kernel Driver No
Disabled Stopped OK Normal No No

intelppm Intel Processor Driver c:\windows\system32\drivers\intelppm.sys
Kernel Driver Yes Manual Running OK Normal
No Yes

ip6fw IPv6 Windows Firewall Driver
c:\windows\system32\drivers\ip6fw.sys Kernel Driver No
Manual Stopped OK Normal No No

ipfilterdriver IP Traffic Filter Driver
c:\windows\system32\drivers\ipfltdrv.sys Kernel Driver No
Manual Stopped OK Normal No No

ipinip IP in IP Tunnel Driverc:\windows\system32\drivers\ipinip.sys
Kernel Driver No Manual Stopped OK Normal
No No

ipnat IP Network Address Translator
c:\windows\system32\drivers\ipnat.sys Kernel Driver No
Manual Stopped OK Normal No No

ipsec IPSEC driver c:\windows\system32\drivers\ipsec.sys
Kernel Driver Yes System Running OK Normal
No Yes

ipsraidn ipsraidn Not Available Kernel Driver No
Disabled Stopped OK Normal No No

isapnp PnP ISA/EISA Bus Driver
c:\windows\system32\drivers\isapnp.sys Kernel Driver Yes
Boot Running OK Critical No Yes

kbdclass Keyboard Class Driver
c:\windows\system32\drivers\kbdclass.sys Kernel Driver Yes
System Running OK Normal No Yes

ksecdd KSecDD c:\windows\system32\drivers\ksecdd.sys Kernel
Driver Yes Boot Running OK Normal No
Yes

lp6nds35 lp6nds35 Not Available Kernel Driver No
Disabled Stopped OK Normal No No

mnmdd mnmdd c:\windows\system32\drivers\mnmdd.sys Kernel
Driver Yes System Running OK Ignore No
Yes

modem Modem c:\windows\system32\drivers\modem.sys Kernel
Driver No Manual Stopped OK Ignore No
No

mouclass Mouse Class Driver c:\windows\system32\drivers\mouclass.sys
Kernel Driver Yes System Running OK Normal
No Yes

mountmgr Mount Point Manager c:\windows\system32\drivers\mountmgr.sys
Kernel Driver Yes Boot Running OK Normal
No Yes

mraid35x mraid35x Not Available Kernel Driver No
Disabled Stopped OK Normal No No

mrxdav WebDav Client Redirector
c:\windows\system32\drivers\mrxdav.sys File System Driver No
Manual Stopped OK Normal No No

mrxsmb MRXSMB c:\windows\system32\drivers\mrxsmb.sys File System
Driver Yes System Running OK Normal No
Yes

msfs Msfs c:\windows\system32\drivers\msfs.sys File System
Driver Yes System Running OK Normal No
Yes

mssmbios Microsoft System Management BIOS Driver
c:\windows\system32\drivers\mssmbios.sys Kernel Driver Yes
Manual Running OK Normal No Yes

mup Mup c:\windows\system32\drivers\mup.sys File System
Driver Yes Boot Running OK Normal No
Yes

ndis NDIS System Driver c:\windows\system32\drivers\ndis.sys
Kernel Driver Yes Boot Running OK Normal
No Yes

ndistapi Remote Access NDIS TAPI Driver
c:\windows\system32\drivers\ndistapi.sys Kernel Driver Yes
Manual Running OK Normal No Yes

ndisuio NDIS Usermode I/O Protocol
c:\windows\system32\drivers\ndisuio.sys Kernel Driver No
Manual Stopped OK Normal No No

ndiswan Remote Access NDIS WAN Driver
c:\windows\system32\drivers\ndiswan.sys Kernel Driver Yes
Manual Running OK Normal No Yes

ndproxy NDIS Proxy c:\windows\system32\drivers\ndproxy.sys
Kernel Driver Yes Manual Running OK Normal
No Yes

netbios NetBIOS Interface c:\windows\system32\drivers\netbios.sys
File System Driver Yes System Running OK Normal
No Yes

netbt NetBios over Tcpip c:\windows\system32\drivers\netbt.sys
Kernel Driver Yes System Running OK Normal
No Yes

nfrd6m IBM ServeRAID 6M Device Driver
c:\windows\system32\drivers\nfrd6m.sys Kernel Driver Yes
Boot Running OK Normal No Yes

nfrd6mpf IBM ServeRAID 6M Performance Driver
c:\windows\system32\drivers\nfrd6mpf.sys Kernel Driver Yes
Boot Running OK Normal No Yes

nfrd960 nfrd960 c:\windows\system32\drivers\nfrd960.sys Kernel
Driver Yes Boot Running OK Normal No
Yes

npfs Npfs c:\windows\system32\drivers\npfs.sys File System
Driver Yes System Running OK Normal No
Yes

ntfs Ntfs c:\windows\system32\drivers\ntfs.sys File System
Driver Yes Disabled Running OK Normal No
Yes

null Null c:\windows\system32\drivers\null.sys Kernel
Driver Yes System Running OK Normal No
Yes

parport Parport c:\windows\system32\drivers\parport.sys Kernel
Driver No Manual Stopped OK Ignore No
No

partmgr Partition Manager c:\windows\system32\drivers\partmgr.sys
Kernel Driver Yes Boot Running OK Normal
No Yes

pci PCI Bus Driver c:\windows\system32\drivers\pci.sys
Kernel Driver Yes Boot Running OK Critical
No Yes

pciide PCIIde c:\windows\system32\drivers\pciide.sys Kernel
Driver Yes Boot Running OK Normal No
Yes

pcmcia Pcmcia c:\windows\system32\drivers\pcmcia.sys Kernel
Driver No Disabled Stopped OK Normal No
No

pdcomp PDCOMP Not Available Kernel Driver No
Manual Stopped OK Ignore No No

pdframe PDFRAME Not Available Kernel Driver
No Manual Stopped OK Ignore No No

pdreli PDRELI Not Available Kernel Driver No
Manual Stopped OK Ignore No No

pdrframe PDRFRAME Not Available Kernel Driver
No Manual Stopped OK Ignore No No

perc2 perc2 Not Available Kernel Driver No
Disabled Stopped OK Normal No No

perc2hib perc2hib Not Available Kernel Driver No
Disabled Stopped OK Normal No No

pnpmem Microsoft Memory Module Driver
c:\windows\system32\drivers\pnpmem.sys Kernel Driver Yes
Manual Running OK Normal No Yes

pptpminiport WAN Miniport (PPTP)
c:\windows\system32\drivers\raspptp.sys Kernel Driver Yes
Manual Running OK Normal No Yes

ptilink Direct Parallel Link Driver
c:\windows\system32\drivers\ptilink.sys Kernel Driver Yes
Manual Running OK Normal No Yes

ql1080 ql1080 Not Available Kernel Driver No
Disabled Stopped OK Normal No No

ql10wnt Ql10wnt Not Available Kernel Driver No
Disabled Stopped OK Normal No No

ql12160 ql12160 Not Available Kernel Driver No
Disabled Stopped OK Normal No No

ql1240 ql1240 Not Available Kernel Driver No
Disabled Stopped OK Normal No No

ql1280 ql1280 Not Available Kernel Driver No
Disabled Stopped OK Normal No No

ql2100 ql2100 Not Available Kernel Driver No
Disabled Stopped OK Normal No No

ql2200 ql2200 Not Available Kernel Driver No
Disabled Stopped OK Normal No No

ql2300 ql2300 c:\windows\system32\drivers\ql2300.sys Kernel
Driver Yes Boot Running OK Normal No
Yes

qldirect qldirect c:\windows\system32\drivers\qldirect.sys Kernel
Driver Yes Auto Running OK Normal No
Yes

qlvika qlvika c:\windows\system32\drivers\qlvika.sys Kernel
Driver Yes Auto Running OK Normal No
Yes

rasacd Remote Access Auto Connection Driver
c:\windows\system32\drivers\rasacd.sys Kernel Driver Yes
System Running OK Normal No Yes

rasl2tp WAN Miniport (L2TP)
c:\windows\system32\drivers\rasl2tp.sys Kernel Driver Yes
Manual Running OK Normal No Yes

raspppoe Remote Access PPPOE Driver
c:\windows\system32\drivers\raspppoe.sys Kernel Driver Yes
Manual Running OK Normal No Yes

raspti Direct Parallel c:\windows\system32\drivers\raspti.sys
Kernel Driver Yes Manual Running OK Normal
No Yes

rdbss Rdbss c:\windows\system32\drivers\rdbss.sys File System
Driver Yes System Running OK Normal No
Yes

rdpcdd RDPCDD c:\windows\system32\drivers\rdpcdd.sys Kernel
Driver Yes System Running OK Ignore No
Yes

rdpdr Terminal Server Device Redirector Driver
c:\windows\system32\drivers\rdpdr.sys Kernel Driver Yes
Manual Running OK Normal No Yes

rdpwd RDPWD c:\windows\system32\drivers\rdpwd.sys Kernel
Driver No Manual Stopped OK Ignore No
No

redbook Digital CD Audio Playback Filter Driver
c:\windows\system32\drivers\redbook.sys Kernel Driver Yes
System Running OK Normal No Yes

secdrv Secdrv c:\windows\system32\drivers\secdrv.sys Kernel
Driver No Manual Stopped OK Normal No
No

serenum Serenum Filter Driver c:\windows\system32\drivers\serenum.sys
Kernel Driver Yes Manual Running OK Normal
No Yes

serial Serial port driver c:\windows\system32\drivers\serial.sys
Kernel Driver Yes System Running OK Ignore
No Yes

sfloppy High-Capacity Floppy Disk Drive
c:\windows\system32\drivers\sfloppy.sys Kernel Driver No
Manual Stopped OK Normal No No

simbad Simbad Not Available Kernel Driver No
Disabled Stopped OK Normal No No

srv Srv c:\windows\system32\drivers\srv.sys File System
Driver Yes Manual Running OK Normal No
Yes

swenum Software Bus Driver c:\windows\system32\drivers\swenum.sys
Kernel Driver Yes Manual Running OK Normal
No Yes

symc810 symc810 Not Available Kernel Driver No
Disabled Stopped OK Normal No No

symc8xx symc8xx Not Available Kernel Driver No
Disabled Stopped OK Normal No No

symmpi symmpi Not Available Kernel Driver No
Disabled Stopped OK Normal No No

sym_hi sym_hi Not Available Kernel Driver No
Disabled Stopped OK Normal No No

sym_u3 sym_u3 Not Available Kernel Driver No
Disabled Stopped OK Normal No No

tcpip TCP/IP Protocol Driver
c:\windows\system32\drivers\tcpip.sys Kernel Driver Yes
System Running OK Normal No Yes

tdpipe TDPIPE c:\windows\system32\drivers\tdpipe.sys Kernel
Driver No Manual Stopped OK Ignore No
No

tdtcp TDTCP c:\windows\system32\drivers\tdtcp.sys Kernel
Driver No Manual Stopped OK Ignore No
No

termdd Terminal Device Driver
c:\windows\system32\drivers\termdd.sys Kernel Driver Yes
System Running OK Normal No Yes

toside TosIde Not Available Kernel Driver No
Disabled Stopped OK Normal No No

udfs Udfs c:\windows\system32\drivers\udfs.sys File System
Driver No Disabled Stopped OK Normal No
No

ultra ultra Not Available Kernel Driver No
Disabled Stopped OK Normal No No

update Microcode Update Driver
c:\windows\system32\drivers\update.sys Kernel Driver Yes
Manual Running OK Normal No Yes

usbehci Microsoft USB 2.0 Enhanced Host Controller Miniport Driver
c:\windows\system32\drivers\usbehci.sys Kernel Driver Yes
Manual Running OK Normal No Yes

usbhub USB2 Enabled Hub c:\windows\system32\drivers\usbhub.sys
Kernel Driver Yes Manual Running OK Normal
No Yes

usbohci Microsoft USB Open Host Controller Miniport Driver
c:\windows\system32\drivers\usbohci.sys Kernel Driver Yes
Manual Running OK Normal No Yes

usbstor USB Mass Storage Driver
c:\windows\system32\drivers\usbstor.sys Kernel Driver No
Manual Stopped OK Normal No No

vgasave VGA Display Controller.
c:\windows\system32\drivers\vga.sys Kernel Driver Yes
System Running OK Ignore No Yes

viaide ViaIde Not Available Kernel Driver No
Disabled Stopped OK Normal No No

volsnap Storage volumes c:\windows\system32\drivers\volsnap.sys
Kernel Driver Yes Boot Running OK Normal
No Yes

wanarp Remote Access IP ARP Driver
c:\windows\system32\drivers\wanarp.sys Kernel Driver Yes
Manual Running OK Normal No Yes

wdica WDICA Not Available Kernel Driver No
Manual Stopped OK Ignore No No

wlbs Network Load Balancing
c:\windows\system32\drivers\wlbs.sys Kernel Driver No
Manual Stopped OK Normal No No

[Signed Drivers]
Device Name Signed Device Class Driver Version
Driver Date Manufacturer INF Name Driver Name
Device ID

Microsoft System Management BIOS Driver Yes SYSTEM
5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf
Not Available ROOT\SYSTEM\0002

Microcode Update Device Yes SYSTEM 5.2.3790.1289
10/1/2002 (Standard system devices) machine.inf Not
Available ROOT\SYSTEM\0001

Plug and Play Software Device Enumerator Yes SYSTEM
5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf
Not Available ROOT\SYSTEM\0000

Terminal Server Mouse Driver Yes SYSTEM 5.2.3790.1289
10/1/2002 (Standard system devices) machine.inf Not
Available ROOT\RDP_MOU\0000

Terminal Server Keyboard Driver Yes SYSTEM
5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf
Not Available ROOT\RDP_KBD\0000

Terminal Server Device Redirector Yes SYSTEM
5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf
Not Available ROOT\RDPDR\0000

Direct Parallel Yes NET 5.2.3790.1289 10/1/2002
Microsoft netrasa.inf Not Available ROOT\MS_PTIMINIPORT\0000

WAN Miniport (PPTP) Yes NET 5.2.3790.1289
10/1/2002 Microsoft netrasa.inf Not Available
ROOT\MS_PPTPMINIPORT\0000

WAN Miniport (PPPOE) Yes NET 5.2.3790.1289
10/1/2002 Microsoft netrasa.inf Not Available
ROOT\MS_PPPOEMINIPORT\0000

WAN Miniport (IP) Yes NET 5.2.3790.1289 10/1/2002
Microsoft netrasa.inf Not Available ROOT\MS_NDISWANIP\0000

WAN Miniport (L2TP) Yes NET 5.2.3790.1289
10/1/2002 Microsoft netrasa.inf Not Available
ROOT\MS_L2TPMINIPORT\0000

Video Codecs Yes MEDIA 5.2.3790.0 10/1/2002 (Standard
system devices) wave.inf Not Available
ROOT\MEDIA\MS_MMVID

Legacy Video Capture Devices Yes MEDIA 5.2.3790.0 10/1/2002
(Standard system devices) wave.inf Not Available
ROOT\MEDIA\MS_MMVCD

Media Control Devices Yes MEDIA 5.2.3790.0 10/1/2002
(Standard system devices) wave.inf Not Available
ROOT\MEDIA\MS_MMMCI

Legacy Audio Drivers Yes MEDIA 5.2.3790.0 10/1/2002 (Standard
system devices) wave.inf Not Available
ROOT\MEDIA\MS_MMDRV

Audio Codecs Yes MEDIA 5.2.3790.0 10/1/2002 (Standard
system devices) wave.inf Not Available
ROOT\MEDIA\MS_MMACM

Remote Access IP ARP Driver Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_WANARP\0000

volsnap Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_VOLSNAP\0000

VGA Display Controller. Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_VGASAVE\0000

TCP/IP Protocol Driver Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_TCPIP\0000

RDPCDD Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_RDPCDD\0000

Remote Access Auto Connection Driver Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_RASACD\0000

qlvika Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_QLVIKA\0000

qldirect Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_QLDIRECT\0000

Partition Manager Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_PARTMGR\0000

Null Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_NULL\0000

nfrd960 Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_NFRD960\0000

NetBios over Tcpip Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_NETBT\0000

NDProxy Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_NDPROXY\0000

NDIS Usermode I/O Protocol Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_NDISUIO\0000

Remote Access NDIS TAPI Driver Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_NDISTAPI\0000

NDIS System Driver Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_NDIS\0000

mountmgr Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_MOUNTMGR\0000

mnmdd Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_MNMDD\0000

ksecdd Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_KSECDD\0000

IPSEC driver Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_IPSEC\0000

IP Network Address Translator Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_IPNAT\0000

Generic Packet Classifier Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_GPC\0000

Fips Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_FIPS\0000

em Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_EM\0000

dmload Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_DMLOAD\0000

dmboot Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_DMBOOT\0000

CRC Disk Filter Driver Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_CRCDISK\0000

Beep Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_BEEP\0000

AFD Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_AFD\0000

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATUREFAAC4D00OFFSET1E00LENGTH879ABD200

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C32OFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C32OFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C32OFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C36OFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C36OFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C36OFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C2AOFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C2AOFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C2AOFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C2EOFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C2EOFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C2EOFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C22OFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C22OFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C22OFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C26OFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C26OFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C26OFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C1AOFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C1AOFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C1AOFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C1EOFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C1EOFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C1EOFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C12OFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C12OFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C12OFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C17OFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C17OFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C17OFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATUREE8749F00OFFSET4E3F804000LENGTH2944BFC000

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATUREE8749F00OFFSET204000LENGTH4E3F5FC000

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C0BOFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C0BOFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C0BOFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C0FOFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C0FOFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C0FOFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE920984FFOFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE920984FFOFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE920984FFOFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C07OFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C07OFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C07OFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C7BOFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C7BOFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C7BOFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C7FOFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C7FOFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C7FOFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C73OFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C73OFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C73OFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C77OFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C77OFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C77OFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C6BOFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C6BOFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C6BOFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C6FOFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C6FOFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C6FOFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C63OFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C63OFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C63OFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C67OFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C67OFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C67OFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C5BOFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C5BOFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C5BOFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C5FOFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C5FOFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C5FOFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C53OFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C53OFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C53OFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C57OFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C57OFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C57OFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C4BOFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C4BOFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C4BOFFSET7E0000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C4FOFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C4FOFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C4FOFFSET7E000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C43OFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C43OFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C43OFFSET7E000LENGTH5BCD4EA00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C47OFFSET9098FDC00LENGTH6BBECA8C00

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C47OFFSET5BD536800LENGTH34C3BF600

Generic volume Yes VOLUME 5.2.3790.1289 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE95E04C47OFFSET7E000LENGTH5BCD4EA00

Volume Manager Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available ROOT\FTDISK\0000

Logical Disk Manager Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available ROOT\DMIO\0000

IBM Dummy Device Yes SYSTEM 5.2.3790.1289 10/1/2002 IBM scsidev.inf Not Available SCSI\BRIDGE&VEN_IBM&PROD_DUMMY_DEVICE&REV_6.06\5&804C5&0&300

SCSI Processor Device Yes SYSTEM 5.2.3790.1289 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP400___S320&REV_D110\5&804C5&0&1F0

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&804C5&0&000

IBM ServeRAID 6M Controller Yes SCSIADAPTER 6.6.8.0 1/14/2004 IBM Corporation oem1.inf Not Available PCI\VEN_9005&DEV_0250&SUBSYS_02791014&REV_02\4&29C8B970&0&4008

PCI standard PCI-to-PCI bridge Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_01A7&SUBSYS_00000000&REV_02\3&20FEA912&0&08

PCI standard host CPU bridge Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_01\3&20FEA912&0&00

PCI bus Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\7

QLOGIC PSEUDO LUN No SYSTEM 8.2.3.66 2/20/2004 QLogic Corp oem5.inf Not Available SCSI\PROCESSOR&VEN_QLOGIC&PROD_PSEUDO_LUN&REV_\4&2A5EB3DE&0&07F0

QLogic Fibre Channel Adapter No SCSIADAPTER 8.2.3.66 2/20/2004 QLogic oem4.inf Not Available PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\3&E44F86D&0&08

PCI standard host CPU bridge Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_01\3&E44F86D&0&00

PCI bus Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\6

QLOGIC PSEUDO LUN No SYSTEM 8.2.3.66 2/20/2004 QLogic Corp oem5.inf Not Available SCSI\PROCESSOR&VEN_QLOGIC&PROD_PSEUDO_LUN&REV_\4&1D1C1BB3&0&07F0

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&1D1C1BB3&0&019

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&1D1C1BB3&0&018

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&1D1C1BB3&0&017

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&1D1C1BB3&0&016

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available

SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&1D1C1BB3&0&015

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&1D1C1BB3&0&004

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&1D1C1BB3&0&003

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&1D1C1BB3&0&002

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&1D1C1BB3&0&001

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&1D1C1BB3&0&000

QLogic Fibre Channel Adapter No SCSIADAPTER 8.2.3.66 2/20/2004 QLogic oem4.inf Not Available PCI\VEN_1077&DEV_2312&SUBSYS_01001077&REV_02\3&474B838&0&08

PCI standard host CPU bridge Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_01\3&474B838&0&00

PCI bus Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\5

IBM Dummy Device Yes SYSTEM 5.2.3790.1289 10/1/2002 IBM scsidev.inf Not Available SCSI\BRIDGE&VEN_IBM&PROD_DUMMY_DEVICE&REV_6.06\5&3404AEC4&0&300

SCSI Processor Device Yes SYSTEM 5.2.3790.1289 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP400___S320&REV_D110\5&3404AEC4&0&2F0

SCSI Processor Device Yes SYSTEM 5.2.3790.1289 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP400___S320&REV_D110\5&3404AEC4&0&1F0

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&3404AEC4&0&000

IBM ServeRAID 6M Controller Yes SCSIADAPTER 6.6.8.0 1/14/2004 IBM Corporation oem1.inf Not Available PCI\VEN_9005&DEV_0250&SUBSYS_02791014&REV_02\4&564B7B1&0&4008

PCI standard PCI-to-PCI bridge Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_01A7&SUBSYS_00000000&REV_02\3&172E68DD&0&08

PCI standard host CPU bridge Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_01\3&172E68DD&0&00

PCI bus Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\4

QLOGIC PSEUDO LUN No SYSTEM 8.2.3.66 2/20/2004 QLogic Corp oem5.inf Not Available SCSI\PROCESSOR&VEN_QLOGIC&PROD_PSEUDO_LUN&REV_\4&232FAFE&0&07F0

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&232FAFE&0&014

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&232FAFE&0&013

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&232FAFE&0&012

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&232FAFE&0&011

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&232FAFE&0&010

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&232FAFE&0&009

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&232FAFE&0&008

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&232FAFE&0&007

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&232FAFE&0&006

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&232FAFE&0&005

QLogic Fibre Channel Adapter No SCSIADAPTER 8.2.3.66 2/20/2004 QLogic oem4.inf Not Available PCI\VEN_1077&DEV_2312&SUBSYS_01001077&REV_02\3&29E81982&0&08

PCI standard host CPU bridge Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not

Available
PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_01\3&29E81982&0&00

PCI bus Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available
ACPI\PNP0A03\3

QLOGIC PSEUDO LUN No SYSTEM 8.2.3.66 2/20/2004 QLogic Corp oem5.inf Not Available
SCSI\PROCESSOR&VEN_QLOGIC&PROD_PSEUDO_LUN&REV_\4&3B4E3515&0&07F0

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&3B4E3515&0&014

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&3B4E3515&0&013

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&3B4E3515&0&012

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&3B4E3515&0&011

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&3B4E3515&0&010

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&3B4E3515&0&009

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&3B4E3515&0&008

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&3B4E3515&0&007

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&3B4E3515&0&006

Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&3B4E3515&0&005

QLogic Fibre Channel Adapter No SCSIADAPTER 8.2.3.66 2/20/2004 QLogic oem4.inf Not Available
PCI\VEN_1077&DEV_2312&SUBSYS_01001077&REV_02\3&1070020&0&08

PCI standard host CPU bridge Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available
PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_01\3&1070020&0&00

PCI bus Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available
ACPI\PNP0A03\2

Broadcom NetXtreme Gigabit Ethernet Yes NET 7.80.0.0 6/19/2004 Broadcom oem0.inf Not Available
PCI\VEN_14E4&DEV_1648&SUBSYS_02E71014&REV_10\3&13C0B0C5&0&09

Broadcom NetXtreme Gigabit Ethernet Yes NET 7.80.0.0 6/19/2004 Broadcom oem0.inf Not Available
PCI\VEN_14E4&DEV_1648&SUBSYS_02E71014&REV_10\3&13C0B0C5&0&08

PCI standard host CPU bridge Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available
PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_01\3&13C0B0C5&0&00

PCI bus Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available
ACPI\PNP0A03\1

Memory Module Yes MEMORY 5.2.3790.1289 10/1/2002 Microsoft memory.inf Not Available ACPI\PNP0C80\0

Intel Processor Yes PROCESSOR 5.2.3790.1289 10/1/2002 Intel cpu.inf Not Available
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_4_7

Intel Processor Yes PROCESSOR 5.2.3790.1289 10/1/2002 Intel cpu.inf Not Available
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_4_6

Intel Processor Yes PROCESSOR 5.2.3790.1289 10/1/2002 Intel cpu.inf Not Available
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_4_5

Intel Processor Yes PROCESSOR 5.2.3790.1289 10/1/2002 Intel cpu.inf Not Available
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_4_4

Intel Processor Yes PROCESSOR 5.2.3790.1289 10/1/2002 Intel cpu.inf Not Available
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_4_3

Intel Processor Yes PROCESSOR 5.2.3790.1289 10/1/2002 Intel cpu.inf Not Available
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_4_2

Intel Processor Yes PROCESSOR 5.2.3790.1289 10/1/2002 Intel cpu.inf Not Available
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_4_1

Intel Processor Yes PROCESSOR 5.2.3790.1289 10/1/2002 Intel cpu.inf Not Available
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_4_0

ACPI Fixed Feature Button Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\FIXEDBUTTON\2&DABA3FF&0

System board Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0C01\1

IBM Active PCI Device Yes SYSTEM 5.1.1.1 2/7/2003 IBM Corporation oem2.inf Not Available ACPI\IBM37D4\2&DABA3FF&0

Motherboard resources Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0C02\3

Numeric data processor Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0C04\4&13245C1&0

System speaker Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0800\4&13245C1&0

System CMOS/real time clock Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0B00\4&13245C1&0

System timer Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0100\4&13245C1&0

Direct memory access controller Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0200\4&13245C1&0

Advanced programmable interrupt controller Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0003\4&13245C1&0

Communications Port Yes PORTS 5.2.3790.0 10/1/2002 (Standard port types) msports.inf Not Available ACPI\PNP0501\2

Communications Port Yes PORTS 5.2.3790.0 10/1/2002 (Standard port types) msports.inf Not Available ACPI\PNP0501\1

PS/2 Compatible Mouse Yes MOUSE 5.2.3790.1289 10/1/2002 Microsoft msmouse.inf Not Available ACPI\PNP0F13\4&13245C1&0

Standard 101/102-Key or Microsoft Natural PS/2 Keyboard Yes KEYBOARD 5.2.3790.0 10/1/2002 (Standard keyboards) keyboard.inf Not Available ACPI\PNP0303\4&13245C1&0

ISAPNP Read Data Port Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available ISAPNP\READDATAPORT\0

Serverworks Champion CSB6 - SouthBridge 6 LPC Yes SYSTEM 5.2.3790.1289 10/1/2002 ServerWorks (RCC) machine.inf Not Available PCI\VEN_1166&DEV_0227&SUBSYS_00000000&REV_00\3&267A616A&0&7B

Secondary IDE Channel Yes HDC 5.2.3790.1289 10/1/2002 (Standard IDE ATA/ATAPI controllers) mshdc.inf Not Available PCIIDE\IDECHANNEL\4&101988B2&0&1

CD-ROM Drive Yes CDROM 5.2.3790.0 10/1/2002 (Standard CD-ROM drives) cdrom.inf Not Available IDE\CDROMMATSHITA_DVD-ROM_SR-8178_____PJ22____\5&A8D2D22&0&0.0.0

Primary IDE Channel Yes HDC 5.2.3790.1289 10/1/2002 (Standard IDE ATA/ATAPI controllers) mshdc.inf Not Available PCIIDE\IDECHANNEL\4&101988B2&0&0

Standard Dual Channel PCI IDE Controller Yes HDC 5.2.3790.1289 10/1/2002 (Standard IDE ATA/ATAPI controllers) mshdc.inf Not Available PCI\VEN_1166&DEV_0213&SUBSYS_02121166&REV_A0\3&267A616A&0&79

ServerWorks Champion CSB6 - SouthBridge 6 Yes SYSTEM 5.2.3790.1289 10/1/2002 ServerWorks (RCC) machine.inf Not Available PCI\VEN_1166&DEV_0203&SUBSYS_00000000&REV_A0\3&267A616A&0&78

USB Root Hub Yes USB 5.2.3790.1289 10/1/2002 (Standard USB Host Controller) usbport.inf Not Available USB\ROOT_HUB20\4&2B778F81&0

Standard Enhanced PCI to USB Host Controller Yes USB 5.2.3790.1289 10/1/2002 (Standard USB Host Controller) usbport.inf Not Available PCI\VEN_1033&DEV_00E0&SUBSYS_00E01033&REV_04\3&267A616A&0&1A

USB Root Hub Yes USB 5.2.3790.1289 10/1/2002 (Standard USB Host Controller) usbport.inf Not Available USB\ROOT_HUB\4&2DDBD7B&0

NEC PCI to USB Open Host Controller Yes USB 5.2.3790.1289 10/1/2002 NEC usbport.inf Not Available PCI\VEN_1033&DEV_0035&SUBSYS_00351033&REV_43\3&267A616A&0&19

USB Root Hub Yes USB 5.2.3790.1289 10/1/2002 (Standard USB Host Controller) usbport.inf Not Available USB\ROOT_HUB\4&15976E20&0

NEC PCI to USB Open Host Controller Yes USB 5.2.3790.1289 10/1/2002 NEC usbport.inf Not Available PCI\VEN_1033&DEV_0035&SUBSYS_00351033&REV_43\3&267A616A&0&18

Default Monitor Yes MONITOR 5.1.2001.0 6/6/2001 (Standard monitor types) monitor.inf Not Available DISPLAY\DEFAULT_MONITOR\4&36FA8DD8&0&10000000&00&01

Default Monitor Yes MONITOR 5.1.2001.0 6/6/2001 (Standard monitor types) monitor.inf Not Available DISPLAY\DEFAULT_MONITOR\4&36FA8DD8&0&10000001&00&01

Plug and Play Monitor Yes MONITOR 5.1.2001.0 6/6/2001 (Standard monitor types) monitor.inf Not Available DISPLAY\IBM029A\4&36FA8DD8&0&10000082&00&01

RADEON 7000M (on board) Yes DISPLAY 6.14.10.6422 1/20/2004 ATI Technologies Inc. oem3.inf Not Available PCI\VEN_1002&DEV_5159&SUBSYS_02C81014&REV_00\3&267A616A&0&08

PCI standard host CPU bridge Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available

PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_01\3&267A616A&0&00

PCI bus Yes SYSTEM 5.2.3790.1289 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\0

Microsoft ACPI-Compliant System Yes SYSTEM 5.2.3790.0 10/1/2002 Microsoft acpi.inf Not Available ACPI_HAL\PNP0C08\0

ACPI Multiprocessor PC Yes COMPUTER 5.2.3790.1289 10/1/2002 (Standard computers) hal.inf Not Available ROOT\ACPI_HAL\0000

Not Available Not Available Not Available Not Available Not Available Not Available Not Available Not Available HTREE\ROOT\0

[Environment Variables]
Variable Value User Name

ClusterLog C:\WINDOWS\Cluster\cluster.log <SYSTEM>

ComSpec %SystemRoot%\system32\cmd.exe <SYSTEM>

FP_NO_HOST_CHECK NO <SYSTEM>

NUMBER_OF_PROCESSORS 8 <SYSTEM>

OS Windows_NT <SYSTEM>

Path %SystemRoot%\system32;%SystemRoot%;%SystemRoot%\System32\Wbem;c:\tools;c:\tools\util;c:\batfiles;C:\Program Files\Microsoft SQL Server\80\Tools\BINN <SYSTEM>

PATHEXT .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH <SYSTEM>

PROCESSOR_ARCHITECTURE x86 <SYSTEM>

PROCESSOR_IDENTIFIER x86 Family 15 Model 4 Stepping 1, GenuineIntel <SYSTEM>

PROCESSOR_LEVEL 15 <SYSTEM>

PROCESSOR_REVISION 0401 <SYSTEM>

TEMP %SystemRoot%\TEMP <SYSTEM>

TMP %SystemRoot%\TEMP <SYSTEM>

windir %SystemRoot% <SYSTEM>

TEMP %USERPROFILE%\Local Settings\Temp NT AUTHORITY\SYSTEM

TMP %USERPROFILE%\Local Settings\Temp NT AUTHORITY\SYSTEM

TEMP %USERPROFILE%\Local Settings\Temp NT AUTHORITY\LOCAL SERVICE

TMP %USERPROFILE%\Local Settings\Temp NT AUTHORITY\LOCAL SERVICE

TEMP %USERPROFILE%\Local Settings\Temp NT AUTHORITY\NETWORK SERVICE

TMP %USERPROFILE%\Local Settings\Temp NT AUTHORITY\NETWORK SERVICE

TEMP %USERPROFILE%\Local Settings\Temp IBMSERV2\Administrator

TMP %USERPROFILE%\Local Settings\Temp IBMSERV2\Administrator

[Print Jobs]

Document Size Owner Notify Status Time Submitted Start Time Until Time Elapsed Time Pages Printed Job ID Priority Parameters Driver Print Processor Host Print Queue Data Type Name

[Network Connections]
Local Name Remote Name Type Status User Name

x: \\fsserv\edrive Disk Persistent Connection IBMSERV2\Administrator

[Running Tasks]

Name Path Process ID Priority Min Working Set Max Working Set Start Time Version Size File Date

system idle process Not Available 0 0 Not Available Not Available Not Available Not Available Not Available

system Not Available 4 8 0 1413120 Not Available Not Available Not Available Not Available

smss.exe Not Available 1680 11 204800 1413120 2/8/2005 12:19 PM Not Available Not Available Not Available

csrss.exe Not Available 1820 13 Not Available Not Available 2/8/2005 12:19 PM Not Available Not Available Not Available

winlogon.exe c:\windows\system32\winlogon.exe 204 13 204800 1413120 2/8/2005 12:20 PM 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 492.50 KB (504,320 bytes) 12/3/2004 7:00 AM

services.exe c:\windows\system32\services.exe 328 9 204800 1413120 2/8/2005 12:20 PM 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 107.00 KB (109,568 bytes) 12/3/2004 7:00 AM

lsass.exe c:\windows\system32\lsass.exe 368 9 204800 1413120 2/8/2005 12:20 PM 5.2.3790.0 (srv03_rtm.030324-2048) 13.00 KB (13,312 bytes) 12/3/2004 7:00 AM

svchost.exe c:\windows\system32\svchost.exe 556 8 204800 1413120 2/8/2005 12:20 PM 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 14.50 KB (14,848 bytes) 12/3/2004 7:00 AM

svchost.exe Not Available 668 8 Not Available Not Available 2/8/2005 12:20 PM Not Available Not Available Not Available

svchost.exe Not Available 752 8 Not Available Not Available 2/8/2005 12:20 PM Not Available Not Available Not Available

svchost.exe Not Available 772 8 Not Available Not Available 2/8/2005 12:20 PM Not Available Not Available Not Available

svchost.exe c:\windows\system32\svchost.exe 804 8 204800 1413120 2/8/2005 12:20 PM 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 14.50 KB (14,848 bytes) 12/3/2004 7:00 AM

msdtc.exe Not Available 1104 8 Not Available Not Available 2/8/2005 12:20 PM Not Available Not Available Not Available

ibmhpasv.exe c:\windows\system32\ibmhpasv.exe 1240 8 204800 1413120 2/8/2005 12:20 PM 5.1.1.1 14.50 KB (14,848 bytes) 2/7/2003 10:55 PM

svchost.exe Not Available 1380 8 Not Available Not Available 2/8/2005 12:20 PM Not Available Not Available Not Available

svchost.exe c:\windows\system32\svchost.exe 1800 8 204800 1413120 2/8/2005 12:20 PM 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 14.50 KB (14,848 bytes) 12/3/2004 7:00 AM

explorer.exe c:\windows\explorer.exe 576 8 204800 1413120 2/8/2005 12:20 PM 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 1.00 MB (1,050,112 bytes) 12/3/2004 7:00 AM

wmiprvse.exe Not Available 868 8 Not Available Not Available 2/8/2005 12:20 PM Not Available Not Available Not Available

wpabaln.exe c:\windows\system32\wpabaln.exe 464 8 204800 1413120 2/8/2005 12:22 PM 5.2.3790.0 (srv03_rtm.030324-2048) 31.00 KB (31,744 bytes) 12/3/2004 7:00 AM

helpctr.exe c:\windows\pchealth\helpctr\binaries\helpctr.exe 1780 8 204800 1413120 2/8/2005 3:25 PM 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 777.50 KB (796,160 bytes) 1/31/2005 10:22 AM

wmiprvse.exe Not Available 852 8 Not Available Not Available 2/8/2005 3:25 PM Not Available Not Available Not Available

helpsvc.exe c:\windows\pchealth\helpctr\binaries\helpsvc.exe 712 8 204800 1413120 2/8/2005 3:25 PM 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 744.00 KB (761,856 bytes) 1/31/2005 10:22 AM

[Loaded Modules]

Name Version Size File Date Manufacturer Path

winlogon 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 492.50 KB (504,320 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\winlogon.exe

ntdll 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 746.50 KB (764,416 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\ntdll.dll

kernel32 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 1,012.50 KB (1,036,800 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\kernel32.dll

advapi32 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 600.00 KB (614,400 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\advapi32.dll

rpcrt4 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 623.50 KB (638,464 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\rpcrt4.dll

crypt32 5.131.3790.1289 (srv03_sp1_rc1.041202-1618) 582.00 KB (595,968 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\crypt32.dll

msasn1 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 56.00 KB (57,344 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\msasn1.dll

msvcrt 7.0.3790.1289 (srv03_sp1_rc1.041202-1618) 341.00 KB (349,184 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\msvcrt.dll

user32 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 573.00 KB (586,752 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\user32.dll

gdi32 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 272.00 KB (278,528 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\gdi32.dll

nddeapi 5.2.3790.0 (srv03_rtm.030324-2048) 16.00 KB (16,384 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\nddeapi.dll

profmap 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 22.50 KB (23,040 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\profmap.dll

netapi32 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 341.50 KB (349,696 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\netapi32.dll

userenv 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 770.50 KB (788,992 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\userenv.dll

psapi 5.2.3790.0 (srv03_rtm.030324-2048) 21.50 KB (22,016 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\psapi.dll

regapi 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 54.00 KB (55,296 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\regapi.dll

secur32 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 64.00 KB (65,536 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\secur32.dll

setupapi 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 1.03 MB (1,079,808 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\setupapi.dll

version 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 18.00 KB (18,432 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\version.dll

winsta 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 53.50 KB (54,784 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\winsta.dll

ws2_32 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 81.00 KB (82,944 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\ws2_32.dll

ws2help 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 19.50 KB (19,968 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\ws2help.dll

msgina 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 1.16 MB (1,211,392 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\msgina.dll

shsvcs 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 131.50 KB (134,656 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\shsvcs.dll

shlwapi 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 314.00 KB (321,536 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\shlwapi.dll

sfc 5.2.3790.0 (srv03_rtm.030324-2048) 4.50 KB (4,608 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\sfc.dll

sfc_os 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 138.00 KB (141,312 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\sfc_os.dll

wintrust 5.131.3790.1289 (srv03_sp1_rc1.041202-1618) 162.50 KB (166,400 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\wintrust.dll

imagehlp 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 145.50 KB (148,992 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\imagehlp.dll

ole32 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 1.19 MB (1,247,232 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\ole32.dll

comctl32 6.0 (srv03_sp1_rc1.041202-1618) 1.00 MB (1,050,624 bytes) 1/31/2005 5:02 AM Microsoft Corporation c:\windows\winsxs\x86_microsoft.windows.common-controls_6595b64144ccf1df_6.0.3790.1289_x-ww_77f4310d\comctl32.dll

winscard 5.2.3790.0 (srv03_rtm.030324-2048) 98.50 KB (100,864 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\winscard.dll

wtsapi32 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 18.00 KB (18,432 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\wtsapi32.dll

sxs 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 743.50 KB (761,344 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\sxs.dll

winmm 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 173.00 KB (177,152 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\winmm.dll

shell32 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 7.99 MB (8,373,760 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\shell32.dll

wldap32 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 153.50 KB (157,184 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\wldap32.dll

rsaenh 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 183.48 KB (187,880 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\rsaenh.dll

cscdll 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 99.00 KB (101,376 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\cscdll.dll

dimsntfy 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 19.00 KB (19,456 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\dimsntfy.dll

wlnotify 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 94.00 KB (96,256 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\wlnotify.dll

mpr 5.2.3790.0 (srv03_rtm.030324-2048) 56.00 KB (57,344 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\mpr.dll

oleaut32 5.2.3790.1289 542.00 KB (555,008 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\oleaut32.dll

winspool 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 146.50 KB (150,016 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\winspool.drv

comctl32 5.82 (srv03_sp1_rc1.041202-1618) 585.00 KB (599,040 bytes) 1/31/2005 5:02 AM Microsoft Corporation c:\windows\winsxs\x86_microsoft.windows.common-controls_6595b64144ccf1df_5.82.3790.1289_x-ww_187feb88\comctl32.dll

uxtheme 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 201.00 KB (205,824 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\uxtheme.dll

samlib 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 45.50 KB (46,592 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\samlib.dll

cscui 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 319.50 KB (327,168 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\cscui.dll

mprapi 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 87.50 KB (89,600 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\mprapi.dll

activeds 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 194.00 KB (198,656 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\activeds.dll

adsldpc 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 146.00 KB (149,504 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\adsldpc.dll

credui 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 162.00 KB (165,888 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\credui.dll

atl 3.05.2283 83.00 KB (84,992 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\atl.dll

rtutils 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 33.50 KB (34,304 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\rtutils.dll

drprov 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 13.00 KB (13,312 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\drprov.dll

ntlanman 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 43.50 KB (44,544 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\ntlanman.dll

netui0 5.2.3790.0 (srv03_rtm.030324-2048) 75.50 KB (77,312 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\netui0.dll

netui1 5.2.3790.0 (srv03_rtm.030324-2048) 184.00 KB (188,416 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\netui1.dll

davclnt 5.2.3790.0 (srv03_rtm.030324-2048) 23.50 KB (24,064 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\davclnt.dll

mprui 5.2.3790.0 (srv03_rtm.030324-2048) 49.00 KB (50,176 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\mprui.dll

netui2 5.2.3790.0 (srv03_rtm.030324-2048) 309.50 KB (316,928 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\netui2.dll

comdlg32 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 274.50 KB (281,088 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\comdlg32.dll

netmsg 5.2.3790.0 (srv03_rtm.030324-2048) 178.00 KB (182,272 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\netmsg.dll

clbcatq 2001.12.4720.1289 (srv03_sp1_rc1.041202-1618) 503.00 KB (515,072 bytes) 1/31/2005 10:20 AM Microsoft Corporation c:\windows\system32\clbcatq.dll

comres 2001.12.4720.0 (srv03_rtm.030324-2048) 778.00 KB (796,672 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\comres.dll

ntmarta 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 120.50 KB (123,392 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\ntmarta.dll

xpsp2res 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 2.76 MB (2,897,920 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\xpsp2res.dll

wbemprox 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 20.50 KB (20,992 bytes) 1/31/2005 10:19 AM Microsoft Corporation c:\windows\system32\wbem\wbemprox.dll

wbemcomn 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 221.50 KB (226,816 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\wbem\wbemcomn.dll

wbemsvc 5.2.3790.0 (srv03_rtm.030324-2048) 42.50 KB (43,520 bytes) 1/31/2005 10:20 AM Microsoft Corporation c:\windows\system32\wbem\wbemsvc.dll

fastprox 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 471.00 KB (482,304 bytes) 1/31/2005 10:19 AM Microsoft Corporation c:\windows\system32\wbem\fastprox.dll

msvcp60 6.05.2144.0 388.00 KB (397,312 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\msvcp60.dll

ntdsapi 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 71.00 KB (72,704 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\ntdsapi.dll

dnsapi 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 153.50 KB (157,184 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\dnsapi.dll

services 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 107.00 KB (109,568 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\services.exe

ncobjapi 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 36.00 KB (36,864 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\ncobjapi.dll

scesrv 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 326.50 KB (334,336 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\scesrv.dll

authz 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 65.50 KB (67,072 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\authz.dll

umpnpmgr 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 125.50 KB (128,512 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\umpnpmgr.dll

eventlog 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 67.00 KB (68,608 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\eventlog.dll

lsass 5.2.3790.0 (srv03_rtm.030324-2048) 13.00 KB (13,312 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\lsass.exe

lsasrv 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 801.00 KB (820,224 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\lsasrv.dll

samsrv 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 449.50 KB (460,288 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\samsrv.dll

cryptdll 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 32.50 KB (33,280 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\cryptdll.dll

msprivs 5.2.3790.0 (srv03_rtm.030324-2048) 46.50 KB (47,616 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\msprivs.dll

kerberos 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 340.50 KB (348,672 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\kerberos.dll

msv1_0 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 140.00 KB (143,360 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\msv1_0.dll

iphlpapi 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 92.50 KB (94,720 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\iphlpapi.dll

netlogon 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 409.00 KB (418,816 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\netlogon.dll

w32time 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 220.50 KB (225,792 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\w32time.dll

schannel 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 141.00 KB (144,384 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\schannel.dll

wdigest 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 74.00 KB (75,776 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\wdigest.dll

rassfm 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 22.50 KB (23,040 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\rassfm.dll

kdcsvc 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 213.50 KB (218,624 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\kdcsvc.dll

ntdsa 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 1.57 MB (1,642,496 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\ntdsa.dll

esent 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 1,022.00 KB (1,046,528 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\esent.dll

ntdsatq 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 29.50 KB (30,208 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\ntdsatq.dll

mswsock 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 249.00 KB (254,976 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\mswsock.dll

scecli 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 186.50 KB (190,976 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\scecli.dll

ws03res 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 774.50 KB (793,088 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\ws03res.dll

ipsecsvc 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 180.50 KB (184,832 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\ipsecsvc.dll

oakley 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 328.00 KB (335,872 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\oakley.dll

winipsec 5.2.3790.0 (srv03_rtm.030324-2048) 34.50 KB (35,328 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\winipsec.dll

pstorsvc 5.2.3790.0 (srv03_rtm.030324-2048) 24.00 KB (24,576 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\pstorsvc.dll

psbase 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 84.50 KB (86,528 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\psbase.dll

hnetcfg 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 344.50 KB (352,768 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\hnetcfg.dll

wshtcpip 5.2.3790.0 (srv03_rtm.030324-2048) 18.00 KB (18,432 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\wshtcpip.dll

dssenh 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 139.48 KB (142,824 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\dssenh.dll

wlbsctrl 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 82.00 KB (83,968 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\wlbsctrl.dll

svchost 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 14.50 KB (14,848 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\svchost.exe

rpcss 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 405.50 KB (415,232 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\rpcss.dll

schedsvc 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 197.50 KB (202,240 bytes) 1/31/2005 10:22 AM Microsoft Corporation c:\windows\system32\schedsvc.dll

msidle 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 6.50 KB (6,656 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\msidle.dll

wkssvc 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 129.00 KB (132,096 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\wkssvc.dll

wiarpc 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 32.50 KB (33,280 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\wiarpc.dll

aelupsvc 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 26.00 KB (26,624 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\aelupsvc.dll

apphelp 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 146.00 KB (149,504 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\apphelp.dll

cryptsvc 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 55.50 KB (56,832 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\cryptsvc.dll

certcli 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 227.00 KB (232,448 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\certcli.dll

vssapi 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 548.00 KB (561,152 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\vssapi.dll

dmserver 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 24.50 KB (25,088 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\dmserver.dll

es 2001.12.4720.1289 (srv03_sp1_rc1.041202-1618) 233.00 KB (238,592 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\es.dll

srvsvc 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 93.00 KB (95,232 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\srvsvc.dll

seclogon 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 17.50 KB (17,920 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\seclogon.dll

sens 5.2.3790.0 (srv03_rtm.030324-2048) 35.50 KB (36,352 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\sens.dll

trkwks 5.2.3790.0 (srv03_rtm.030324-2048) 85.00 KB (87,040 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\trkwks.dll

wmisvc 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 140.00 KB (143,360 bytes) 1/31/2005 10:19 AM Microsoft Corporation c:\windows\system32\wbem\wmisvc.dll

comsvcs 2001.12.4720.1289 (srv03_sp1_rc1.041202-1618) 1.19 MB (1,249,792 bytes) 1/31/2005 10:20 AM Microsoft Corporation c:\windows\system32\comsvcs.dll

netman 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 258.50 KB (264,704 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\netman.dll

netshell 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 1.73 MB (1,812,992 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\netshell.dll

clusapi 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 59.00 KB (60,416 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\clusapi.dll

rasapi32 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 239.50 KB (245,248 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\rasapi32.dll

rasman 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 59.50 KB (60,928 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\rasman.dll

tapi32 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 179.50 KB (183,808 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\tapi32.dll

wininet 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 653.00 KB (668,672 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\wininet.dll

wzcsapi 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 51.00 KB (52,224 bytes) 12/2/2004 3:18 PM Microsoft Corporation c:\windows\system32\wzcsapi.dll

wzcsvc 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 364.00 KB (372,736 bytes) 12/2/2004 3:18 PM Microsoft Corporation c:\windows\system32\wzcsvc.dll

wmi 5.2.3790.0 (srv03_rtm.030324-2048) 6.50 KB (6,656 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\wmi.dll

dhcpcsvc 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 113.00 KB (115,712 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\dhcpcsvc.dll

wbemcore 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 496.50 KB (508,416 bytes) 1/31/2005 10:19 AM Microsoft Corporation c:\windows\system32\wbem\wbemcore.dll

esscli 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 250.00 KB (256,000 bytes) 1/31/2005 10:19 AM Microsoft Corporation c:\windows\system32\wbem\esscli.dll

wmiutils 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 93.00 KB (95,232 bytes) 1/31/2005 10:19 AM Microsoft Corporation c:\windows\system32\wbem\wmiutils.dll

repdrvfs 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 172.50 KB (176,640 bytes) 1/31/2005 10:19 AM Microsoft Corporation c:\windows\system32\wbem\repdrvfs.dll

wmiprvsd 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 403.50 KB (413,184 bytes) 1/31/2005 10:19 AM Microsoft Corporation c:\windows\system32\wbem\wmiprvsd.dll

wbemess 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 271.00 KB (277,504 bytes) 1/31/2005 10:19 AM Microsoft Corporation c:\windows\system32\wbem\wbemess.dll

ncprov 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 46.50 KB (47,616 bytes) 1/31/2005 10:19 AM Microsoft Corporation c:\windows\system32\wbem\ncprov.dll

rasdlg 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 663.00 KB (678,912 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\rasdlg.dll

rasadhlp 5.2.3790.0 (srv03_rtm.030324-2048) 6.50 KB (6,656 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\rasadhlp.dll

pchsvc 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 39.00 KB (39,936 bytes) 1/31/2005 10:22 AM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\pchsvc.dll

wbemcons 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 45.50 KB (46,592 bytes) 1/31/2005 10:19 AM Microsoft Corporation c:\windows\system32\wbem\wbemcons.dll

netcfgx 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 763.00 KB (781,312 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\netcfgx.dll

ibmhpasv 5.1.1.1 14.50 KB (14,848 bytes) 2/7/2003 10:55 PM IBM Corporation c:\windows\system32\ibmhpasv.exe

termsrv 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 238.00 KB (243,712 bytes) 1/31/2005 10:20 AM Microsoft Corporation c:\windows\system32\termsrv.dll

icaapi 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 11.50 KB (11,776 bytes) 1/31/2005 10:20 AM Microsoft Corporation c:\windows\system32\icaapi.dll

mstlsapi 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 116.00 KB (118,784 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\mstlsapi.dll

explorer 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 1.00 MB (1,050,112 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\explorer.exe

browseui 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 1,008.50 KB (1,032,704 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\browseui.dll

shdocvw 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 1.43 MB (1,502,720 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\shdocvw.dll

cryptui 5.131.3790.1289 (srv03_sp1_rc1.041202-1618) 496.50 KB (508,416 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\cryptui.dll

themeui 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 377.50 KB (386,560 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\themeui.dll

msimg32 5.2.3790.0 (srv03_rtm.030324-2048) 4.50 KB (4,608 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\msimg32.dll

linkinfo 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 19.00 KB (19,456 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\linkinfo.dll

ntshrui 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 139.50 KB (142,848 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\ntshrui.dll

webcheck 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 272.50 KB (279,040 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\webcheck.dll

wsock32 5.2.3790.0 (srv03_rtm.030324-2048) 22.00 KB (22,528 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\wsock32.dll

stobject 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 120.00 KB (122,880 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\stobject.dll

batmeter 6.00.3790.0 (srv03_rtm.030324-2048) 28.50 KB (29,184 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\batmeter.dll

powrprof 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 16.50 KB (16,896 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\powrprof.dll

urlmon 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 670.00 KB (686,080 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\urlmon.dll

browselc 6.00.3790.0 (srv03_rtm.030324-2048) 62.00 KB (63,488 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\browselc.dll

mlang 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 577.50 KB (591,360 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\mlang.dll

shdoclc 6.00.3790.0 (srv03_rtm.030324-2048) 588.50 KB (602,624 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\shdoclc.dll

zipfldr 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 333.50 KB (341,504 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\zipfldr.dll

mydocs 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 90.00 KB (92,160 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\mydocs.dll

actxprxy 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 96.50 KB (98,816 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\actxprxy.dll

wpabaln 5.2.3790.0 (srv03_rtm.030324-2048) 31.00 KB (31,744 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\wpabaln.exe

helpctr 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 777.50 KB (796,160 bytes) 1/31/2005 10:22 AM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\helpctr.exe

hcappres 5.2.3790.0 (srv03_rtm.030324-2048) 6.50 KB (6,656 bytes) 1/31/2005 10:22 AM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\hcappres.dll

itss 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 133.50 KB (136,704 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\itss.dll

msxml3 8.70.1006.0 1.05 MB (1,099,776 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\msxml3.dll

pchshell 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 103.50 KB (105,984 bytes) 1/31/2005 10:22 AM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\pchshell.dll

mshtml 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 2.96 MB (3,102,720 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\mshtml.dll

msls31 3.10.349.0 141.50 KB (144,896 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\msls31.dll

msimtf 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 156.00 KB (159,744 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\msimtf.dll

msctf 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 301.50 KB (308,736 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\msctf.dll

jscript 5.6.0.8827 448.00 KB (458,752 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\jscript.dll

imm32 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 107.50 KB (110,080 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\imm32.dll

mshtmled 6.00.3790.1289 (srv03_sp1_rc1.041202-1618) 454.50 KB (465,408 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\mshtmled.dll

vbscript 5.6.0.8827 388.00 KB (397,312 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\vbscript.dll

msinfo 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 375.00 KB (384,000 bytes) 1/31/2005 10:22 AM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\msinfo.dll

mfc42u 6.05.8063.0 1.11 MB (1,162,240 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\mfc42u.dll

oledlg 1.0 (srv03_rtm.030324-2048) 116.00 KB (118,784 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\oledlg.dll

odbc32 3.526.1289.0 (srv03_sp1_rc1.041202-1618) 240.00 KB (245,760 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\odbc32.dll

odbcint 3.526.1289.0 (srv03_sp1_rc1.041202-1618) 92.00 KB (94,208 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\odbcint.dll

riched32 5.2.3790.0 (srv03_rtm.030324-2048) 3.50 KB (3,584 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\riched32.dll

riched20 5.31.23.1223 438.50 KB (449,024 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\riched20.dll

audiodev 5.2.3790.3658 (srv03_sp1_rc1.041202-1618) 470.00 KB (481,280 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\audiodev.dll

wmvcore 10.00.00.3658 (srv03_sp1_rc1.041202-1618) 2.21 MB (2,314,240 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\wmvcore.dll

wmasf 10.00.00.3658 (srv03_sp1_rc1.041202-1618) 220.50 KB (225,792 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\wmasf.dll

helpsvc 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 744.00 KB (761,856 bytes) 1/31/2005 10:22 AM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\helpsvc.exe

cryptnet 5.131.3790.1289 (srv03_sp1_rc1.041202-1618) 62.00 KB (63,488 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\cryptnet.dll

sensapi 5.2.3790.0 (srv03_rtm.030324-2048) 6.00 KB (6,144 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\sensapi.dll

winhttp 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 352.00 KB (360,448 bytes) 1/31/2005 5:02 AM Microsoft Corporation c:\windows\winsxs\x86_microsoft.windows.winhttp_6595b64144ccf1df_5.1.3790.1289_x-ww_7125b339\winhttp.dll

wshqos 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 23.50 KB (24,064 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\wshqos.dll

winrnr 5.2.3790.0 (srv03_rtm.030324-2048) 15.00 KB (15,360 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\winrnr.dll

cabinet 5.2.3790.1289 (srv03_sp1_rc1.041202-1618) 81.50 KB (83,456 bytes) 12/3/2004 7:00 AM Microsoft Corporation c:\windows\system32\cabinet.dll

[Services]

Display Name Name State Start Mode Service Type Path Error Control Start Name Tag ID

Application Experience Lookup Service AeLookupSvc Running Auto Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Alerter Alerter Stopped Disabled Share Process c:\windows\system32\svchost.exe -k localservice Normal NT AUTHORITY\LocalService 0

Application Layer Gateway Service ALG Stopped Manual Own Process c:\windows\system32\alg.exe Normal NT AUTHORITY\LocalService 0

Application Management AppMgmt Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Windows Audio AudioSrv Stopped Disabled Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Background Intelligent Transfer Service BITS Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Computer Browser Browser Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Indexing Service CiSvc Stopped Disabled Share Process c:\windows\system32\cisvc.exe Normal LocalSystem 0

ClipBook ClipSrv Stopped Disabled Own Process c:\windows\system32\clipsrv.exe Normal LocalSystem 0

COM+ System Application COMSysApp Stopped Manual Own Process c:\windows\system32\dllhost.exe /processid:{02d4b3f1-fd88-11d1-960d-00805fc79235} Normal LocalSystem 0

Cryptographic Services CryptSvc Running Auto Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

DCOM Server Process Launcher DcomLaunch Running Auto Share Process c:\windows\system32\svchost.exe -k dcomlaunch Normal LocalSystem 0

Distributed File System Dfs Stopped Manual Own Process c:\windows\system32\dfssvc.exe Normal LocalSystem 0

DHCP Client Dhcp Running Manual Share Process c:\windows\system32\svchost.exe -k networkservice Normal NT AUTHORITY\NetworkService 0

Logical Disk Manager Administrative Service dmadmin Stopped Manual Share Process c:\windows\system32\dmadmin.exe /com Normal LocalSystem 0

Logical Disk Managerdmserver Running Auto Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

DNS Client Dnscache Running Auto Share Process c:\windows\system32\svchost.exe -k networkservice Normal NT AUTHORITY\NetworkService 0

Error Reporting Service ERSvc Stopped Manual Share Process c:\windows\system32\svchost.exe -k winerr Ignore LocalSystem 0

Event Log Eventlog Running Auto Share Process c:\windows\system32\services.exe Normal LocalSystem 0

COM+ Event System EventSystem Running Auto Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Help and Support helpsvc Running Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Human Interface Device Access HidServ Stopped Disabled Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

HTTP SSLHTTPFilter Stopped Manual Share Process c:\windows\system32\lsass.exe Normal LocalSystem 0

IBM Active PCI Alert Service IBMHPS Running Auto Own Process c:\windows\system32\ibmhpasv.exe Normal LocalSystem 0

IMAPI CD-Burning COM Service ImapiService Stopped Disabled Own Process c:\windows\system32\imapi.exe Normal LocalSystem 0

Intersite Messaging IsmServ Stopped Disabled Own Process c:\windows\system32\ismserv.exe Normal LocalSystem 0

Kerberos Key Distribution Center kdc Stopped Disabled Share Process c:\windows\system32\lsass.exe Normal LocalSystem 0

Server lanmanserver Running Auto Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Workstation lanmanworkstation Running Auto Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

License Logging LicenseService Stopped Disabled Own Process c:\windows\system32\llssrv.exe Normal NT AUTHORITY\NetworkService 0

TCP/IP NetBIOS Helper LmHosts Running Auto Share Process c:\windows\system32\svchost.exe -k localservice Normal NT AUTHORITY\LocalService 0

Messenger Messenger Stopped Disabled Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

NetMeeting Remote Desktop Sharing mnmsrvc Stopped Disabled Own Process c:\windows\system32\mnmsrvc.exe Normal LocalSystem 0

Distributed Transaction Coordinator MSDTC Running Auto Own Process c:\windows\system32\msdtc.exe Normal NT AUTHORITY\NetworkService 0

Windows Installer MSIServer Stopped Manual Share Process c:\windows\system32\msiexec.exe /v Normal LocalSystem 0

MSSQLSERVER MSSQLSERVER Stopped Manual Own Process c:\progra~1\micros~1\mssql\binn\sqlservr.exe Normal LocalSystem 0

MSSQLServerADHelper MSSQLServerADHelper Stopped Manual Own Process c:\program files\microsoft sql server\80\tools\binn\sqladhlp.exe Normal LocalSystem 0

Network DDE NetDDE Stopped Disabled Share Process c:\windows\system32\netdde.exe Normal LocalSystem 0

Network DDE DSDM NetDDEdsdm Stopped Disabled Share Process c:\windows\system32\netdde.exe Normal LocalSystem 0

Net Logon Netlogon Stopped Manual Share Process c:\windows\system32\lsass.exe Normal LocalSystem 0

Network Connections Netman Running Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Network Location Awareness (NLA) Nla Running Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

File Replication NtFrs Stopped Manual Own Process c:\windows\system32\ntfrs.exe Ignore LocalSystem 0

NT LM Security Support Provider NtLmSsp Stopped Manual Share Process c:\windows\system32\lsass.exe Normal LocalSystem 0

Removable Storage NtmsSvc Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Plug and Play PlugPlay Running Auto Share Process c:\windows\system32\services.exe Normal LocalSystem 0

IPSEC Services PolicyAgent Running Auto Share Process c:\windows\system32\lsass.exe Normal LocalSystem 0

Protected Storage ProtectedStorage Running Auto Share Process c:\windows\system32\lsass.exe Normal LocalSystem 0

Remote Access Auto Connection Manager RasAuto Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Remote Access Connection Manager RasMan Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Remote Desktop Help Session Manager RDSessMgr Stopped Manual Own Process c:\windows\system32\sessmgr.exe Normal LocalSystem 0

Routing and Remote Access RemoteAccess Stopped Disabled Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Remote Registry RemoteRegistry Running Auto Share Process c:\windows\system32\svchost.exe -k regsvc Normal NT AUTHORITY\LocalService 0

Remote Procedure Call (RPC) Locator RpcLocator Stopped Manual Own Process c:\windows\system32\locator.exe Normal NT AUTHORITY\NetworkService 0

Remote Procedure Call (RPC) RpcSs Running Auto Share Process c:\windows\system32\svchost.exe -k rpcss Normal NT AUTHORITY\NetworkService 0

Resultant Set of Policy Provider RSoPProv Stopped Manual Share Process c:\windows\system32\rsopprov.exe Normal LocalSystem 0

Special Administration Console Helper sacsvr Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Security Accounts Manager SamSs Running Auto Share Process c:\windows\system32\lsass.exe Normal LocalSystem 0

Smart Card SCardSvr Stopped Manual Share Process c:\windows\system32\scardsvr.exe Ignore NT AUTHORITY\LocalService 0

Task Scheduler Schedule Running Auto Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Secondary Logon seclogon Running Auto Share Process c:\windows\system32\svchost.exe -k netsvcs Ignore LocalSystem 0

System Event Notification SENS Running Auto Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Windows Firewall/Internet Connection Sharing (ICS) SharedAccess Stopped Disabled Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Shell Hardware Detection ShellHWDetection Running Auto Share Process c:\windows\system32\svchost.exe -k netsvcs Ignore LocalSystem 0

Print Spooler Spooler Stopped Manual Own Process c:\windows\system32\spoolsv.exe Normal LocalSystem 0

SQLSERVERAGENT SQLSERVERAGENT Stopped Manual Own Process c:\progra~1\micros~1\mssql\binn\sqlagent.exe Normal LocalSystem 0

Windows Image Acquisition (WIA) stisvc Stopped Disabled Share Process c:\windows\system32\svchost.exe -k imgsvc Normal NT AUTHORITY\LocalService 0

Microsoft Software Shadow Copy Provider swprv Stopped Manual Own Process c:\windows\system32\svchost.exe -k swprv Normal LocalSystem 0

Performance Logs and Alerts SysmonLog Stopped Auto Own Process c:\windows\system32\smlogsvc.exe Normal NT Authority\NetworkService 0

Telephony TapiSrv Stopped Manual Share Process c:\windows\system32\svchost.exe -k tapisrv Normal LocalSystem 0

Terminal Services TermService Running Manual Share Process c:\windows\system32\svchost.exe -k termsvcs Normal LocalSystem 0

Themes Themes Stopped Disabled Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Telnet TlntSvr Stopped Disabled Own Process c:\windows\system32\tlntsvr.exe Normal NT AUTHORITY\LocalService 0

Distributed Link Tracking Server TrkSvr Stopped Disabled Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Distributed Link Tracking Client TrkWks Running Auto Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Terminal Services Session Directory Tssdis Stopped Disabled Own Process c:\windows\system32\tssdis.exe Normal LocalSystem 0

Windows User Mode Driver Framework UMWdf Stopped Manual Own Process c:\windows\system32\wdfmgr.exe Normal NT AUTHORITY\LocalService 0

Uninterruptible Power Supply UPS Stopped Manual Own Process c:\windows\system32\ups.exe Normal NT AUTHORITY\LocalService 0

Virtual Disk Service vds Stopped Manual Own Process c:\windows\system32\vds.exe Normal LocalSystem 0

Volume Shadow Copy VSS Stopped Manual Own Process c:\windows\system32\vssvc.exe Normal LocalSystem 0

Windows Time W32Time Stopped Manual Share Process c:\windows\system32\svchost.exe -k localservice Normal NT AUTHORITY\LocalService 0

WebClient WebClient Stopped Disabled Share Process c:\windows\system32\svchost.exe -k localservice Normal NT AUTHORITY\LocalService 0

WinHTTP Web Proxy Auto-Discovery Service WinHttpAutoProxySvc Running Manual Share Process c:\windows\system32\svchost.exe -k localservice Normal NT AUTHORITY\LocalService 0

Windows Management Instrumentation winmgmt Running Auto Share Process c:\windows\system32\svchost.exe -k netsvcs Ignore LocalSystem 0

Portable Media Serial Number Service WmdmPmSN Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Windows Management Instrumentation Driver Extensions Wmi Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

WMI Performance Adapter WmiApSrv Stopped Manual Own Process c:\windows\system32\wbem\wmiapsrv.exe Normal LocalSystem 0

Automatic Updates wuauserv Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Wireless Configuration WZCSVC Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Network Provisioning Service xmlprov Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

[Program Groups]
Group Name Name User Name
Accessories Default User:Accessories Default User
Accessories\Accessibility Default User:Accessories\Accessibility Default User

Accessories\Entertainment Default User:Accessories\Entertainment Default User
Startup Default User:Startup Default User
Accessories All Users:Accessories All Users
Accessories\Accessibility All Users:Accessories\Accessibility All Users
Accessories\Communications All Users:Accessories\Communications All Users
Accessories\Entertainment All Users:Accessories\Entertainment All Users
Accessories\System Tools All Users:Accessories\System Tools All Users
Administrative Tools All Users:Administrative Tools All Users
Microsoft SQL Server All Users:Microsoft SQL Server All Users
ServeRAID Manager All Users:ServeRAID Manager All Users
Startup All Users:Startup All Users
Accessories NT AUTHORITY\SYSTEM:Accessories NT AUTHORITY\SYSTEM
Accessories\Accessibility NT AUTHORITY\SYSTEM:Accessories\Accessibility NT AUTHORITY\SYSTEM
Accessories\Entertainment NT AUTHORITY\SYSTEM:Accessories\Entertainment NT AUTHORITY\SYSTEM
Startup NT AUTHORITY\SYSTEM:Startup NT AUTHORITY\SYSTEM
Accessories IBMSERV2\Administrator:Accessories IBMSERV2\Administrator
Accessories\Accessibility IBMSERV2\Administrator:Accessories\Accessibility IBMSERV2\Administrator
Accessories\Entertainment IBMSERV2\Administrator:Accessories\Entertainment IBMSERV2\Administrator
QLogic Corporation IBMSERV2\Administrator:QLogic Corporation IBMSERV2\Administrator
QLogic Corporation\SANblade Control VIX IBMSERV2\Administrator:QLogic Corporation\SANblade Control VIX IBMSERV2\Administrator
Startup IBMSERV2\Administrator:Startup IBMSERV2\Administrator

[Startup Programs]

Program	Command	User Name	Location
desktop	desktop.ini	NT AUTHORITY\SYSTEM	Startup
desktop	desktop.ini	IBMSERV2\Administrator	Startup
desktop	desktop.ini	.DEFAULT	Startup
desktop	desktop.ini	All Users	Common Startup

[OLE Registration]

Object	Local Server
Sound (OLE2)	sndrec32.exe
Media Clip	mplay32.exe
Video Clip	mplay32.exe /avi
MIDI Sequence	mplay32.exe /mid
Sound	Not Available
Media Clip	Not Available
WordPad Document	"%programfiles%\windows nt\accessories\wordpad.exe"
Windows Media Services DRM Storage object	Not Available
Bitmap Image	mspaint.exe

[Windows Error Reporting]

Time	Type	Details

[Internet Settings]
[Internet Explorer]
[Following are sub-categories of this main category]
[Summary]

Item	Value
Version	6.0.3790.1289
Build	63790.1289
Application Path	C:\Program Files\Internet Explorer
Language	English (United States)
Active Printer	Not Available
Cipher Strength	128-bit
Content Advisor	Disabled
IEAK Install	No

[File Versions]

File	Version	Size	Date	Path	Company
actxprxy.dll	6.0.3790.1289	97 KB	12/3/2004 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
advpack.dll	6.0.3790.1289	98 KB	12/3/2004 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
asctrls.ocx	6.0.3790.0	90 KB	12/3/2004 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
browselc.dll	6.0.3790.0	62 KB	12/3/2004 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
browseui.dll	6.0.3790.1289	1,009 KB	12/3/2004 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
cdfview.dll	6.0.3790.1289	148 KB	12/3/2004 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
comctl32.dll	5.82.3790.1289	585 KB	12/3/2004 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
dxtrans.dll	6.3.3790.1289	205 KB	12/3/2004 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
dxtmsft.dll	6.3.3790.1289	355 KB	12/3/2004 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
iecont.dll	<File Missing>	Not Available	Not Available	Not Available	Not Available
iecontlc.dll	<File Missing>	Not Available	Not Available	Not Available	Not Available
iedkcs32.dll	16.0.3790.1289	324 KB	12/3/2004 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
iepeers.dll	6.0.3790.1289	247 KB	12/3/2004 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
iesetup.dll	6.0.3790.1289	61 KB	12/3/2004 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
ieuinit.inf	Not Available	24 KB	12/3/2004 7:00:00 AM	C:\WINDOWS\system32	Not Available
iexplore.exe	6.0.3790.1289	92 KB	12/3/2004 7:00:00 AM	C:\Program Files\Internet Explorer	Microsoft Corporation
imgutil.dll	6.0.3790.1289	39 KB	12/3/2004 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
inetcpl.cpl	6.0.3790.1289	358 KB	12/3/2004 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
inetcplc.dll	6.0.3790.0	109 KB	12/3/2004 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
inseng.dll	6.0.3790.1289	94 KB	12/3/2004 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
mlang.dll	6.0.3790.1289	578 KB	12/3/2004 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation

msencode.dll 2002.10.4.0 112 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 :Æ<W éðòw˜5=W

mshta.exe 6.0.3790.1289 30 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

mshtml.dll 6.0.3790.1289 3,030 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

mshtml.tlb 6.0.3790.1289 1,320 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

mshtmled.dll 6.0.3790.1289 455 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

mshtmler.dll 6.0.3790.1289 56 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

msident.dll 6.0.3790.1289 51 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

msidntld.dll 6.0.3790.0 15 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

msieftp.dll 6.0.3790.1289 244 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

msrating.dll 6.0.3790.1289 144 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

mstime.dll 6.0.3790.1289 523 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

occache.dll 6.0.3790.1289 94 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

proctexe.ocx 6.3.3790.1289 83 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Intel Corporation

sendmail.dll 6.0.3790.1289 56 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

shdoclc.dll 6.0.3790.0 589 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

shdocvw.dll 6.0.3790.1289 1,468 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

shfolder.dll 6.0.3790.1289 25 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

shlwapi.dll 6.0.3790.1289 314 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

tdc.ocx 1.3.0.3130 58 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

url.dll 6.0.3790.1289 37 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

urlmon.dll 6.0.3790.1289 670 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

webcheck.dll 6.0.3790.1289 273 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

wininet.dll 6.0.3790.1289 653 KB 12/3/2004 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

[Connectivity]
Item Value
Connection Preference Never dial
LAN Settings
AutoConfigProxy wininet.dll
AutoProxyDetectMode Disabled
AutoConfigURL
Proxy Disabled
ProxyServer 192.168.122.250:6588
ProxyOverride <local>
[Cache]
[Following are sub-categories of this main category]
[Summary]
Item Value
Page Refresh Type Automatic
Temporary Internet Files Folder C:\Documents and Settings\Administrator\Local Settings\Temporary Internet Files
Total Disk Space Not Available
Available Disk Space Not Available
Maximum Cache Size Not Available
Available Cache Size Not Available
[List of Objects]
Program File Status CodeBase
No cached object information available
[Content]
[Following are sub-categories of this main category]
[Summary]
Item Value
Content Advisor Disabled
[Personal Certificates]
Issued To Issued By Validity Signature Algorithm
No personal certificate information available
[Other People Certificates]
Issued To Issued By Validity Signature Algorithm
No other people certificate information available
[Publishers]
Name
No publisher information available
[Security]
Zone Security Level
My Computer Custom
Local intranet Custom
Trusted sites Custom
Internet High
Restricted sites Custom

ServeRAID-6M Disk Controller Configuration Parameters

February 8, 2005 3:57:58 PM EST
Configuration summary

Server name.....ibmserv2
ServeRAID Manager agent.....6.10.26 (1253)
ServeRAID Manager console.....6.10.26 (1253)
Number of controllers.....2
Operating system.....Windows 2003

Configuration information for controller 1

Controller type.....ServeRAID-6M
SCSI backend type.....AIC-7902
SCSI backend revision.....16
Controller FRU.....02R0998

Battery FRU.....02R0986
Serial number.....80B8F59A
Part number.....02R0988
Physical slot.....3
BIOS version.....7.10.18
Firmware version.....7.10.18
Device driver version.....6.06.08
Battery-backup cache.....Installed
Battery temperature.....Normal
Battery charge level.....100 %
Battery-backup cache size.....256 MB
Read-ahead cache mode.....Adaptive
Stripe-unit size.....64 KB
Rebuild rate.....High
Hot-swap rebuild.....Enabled
Copy back.....Enabled
Data scrubbing.....Enabled
Auto-synchronization.....Enabled
Clustering.....Disabled
Unattended mode.....Disabled
BIOS-compatibility mapping.....Limited
Number of arrays.....1
Number of logical drives.....1
Number of hot-spare drives.....0
Number of ready drives.....0

Spanned array 1

Array identifier.....1
Array size.....980084 MB
Free space.....0 MB
Number of logical drives.....1
Number of physical drives.....14

Arrays in spanned array 1

Array identifier.....A
Array size.....140012 MB
Stripe order (channel/device)...2/0 1/14
Number of physical drives.....2

Array identifier.....B
Array size.....140012 MB
Stripe order (channel/device)...2/1 1/13
Number of physical drives.....2

Array identifier.....C
Array size.....140012 MB
Stripe order (channel/device)...2/2 1/12
Number of physical drives.....2

Array identifier.....D
Array size.....140012 MB
Stripe order (channel/device)...2/3 1/11
Number of physical drives.....2

Array identifier.....E
Array size.....140012 MB
Stripe order (channel/device)...2/4 1/10
Number of physical drives.....2

Array identifier.....F
Array size.....140012 MB
Stripe order (channel/device)...2/5 1/9
Number of physical drives.....2

Array identifier.....G
Array size.....140012 MB
Stripe order (channel/device)...2/6 1/8
Number of physical drives.....2

Physical drives in array A

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HFE0
Firmware level.....B85D
Channel.....2
SCSI ID.....0
Size.....70006 MB
State.....Online
Array letter.....A
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HLC9
Firmware level.....B85D
Channel.....1
SCSI ID.....14
Size.....70006 MB
State.....Online
Array letter.....A
PFA error.....No

Physical drives in array B

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HHVT
Firmware level.....B85D
Channel.....2
SCSI ID.....1
Size.....70006 MB
State.....Online
Array letter.....B
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1CB1Z
Firmware level.....B85D
Channel.....1
SCSI ID.....13
Size.....70006 MB
State.....Online
Array letter.....B
PFA error.....No

Physical drives in array C

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737

Serial number.....3HW1HDZC
Firmware level.....B85D
Channel.....2
SCSI ID.....2
Size.....70006 MB
State.....Online
Array letter.....C
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HLP5
Firmware level.....B85D
Channel.....1
SCSI ID.....12
Size.....70006 MB
State.....Online
Array letter.....C
PFA error.....No

Physical drives in array D

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HMEH
Firmware level.....B85D
Channel.....2
SCSI ID.....3
Size.....70006 MB
State.....Online
Array letter.....D
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HXXW
Firmware level.....B85D
Channel.....1
SCSI ID.....11
Size.....70006 MB
State.....Online
Array letter.....D
PFA error.....No

Physical drives in array E

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HLD4
Firmware level.....B85D
Channel.....2
SCSI ID.....4
Size.....70006 MB
State.....Online
Array letter.....E
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1GYFZ
Firmware level.....B85D
Channel.....1
SCSI ID.....10
Size.....70006 MB
State.....Online
Array letter.....E
PFA error.....No

Physical drives in array F

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HMM1
Firmware level.....B85D
Channel.....2
SCSI ID.....5
Size.....70006 MB
State.....Online
Array letter.....F
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HMWV
Firmware level.....B85D
Channel.....1
SCSI ID.....9
Size.....70006 MB
State.....Online
Array letter.....F
PFA error.....No

Physical drives in array G

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HFPM
Firmware level.....B85D
Channel.....2
SCSI ID.....6
Size.....70006 MB
State.....Online
Array letter.....G
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HFQJ
Firmware level.....B85D
Channel.....1
SCSI ID.....8
Size.....70006 MB
State.....Online
Array letter.....G

PFA error.....No

Logical drives in spanned array 1

Logical drive.....1
Spanned array number 1
State.....Okay
RAID level.....10
Data space.....490042 MB
Parity space.....490042 MB
Date created.....01/14/2005
Write-cache mode.....Write through
Merge-group number.....207
Merge-group state.....Non-shared

SCSI channel 1

Number of drives.....7
SCSI transfer speed.....Optimal
SCSI initiator ID.....7

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HFQJ
Firmware level.....B85D
Channel.....1
SCSI ID.....8
Size.....70006 MB
State.....Online
Array letter.....G
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HMWV
Firmware level.....B85D
Channel.....1
SCSI ID.....9
Size.....70006 MB
State.....Online
Array letter.....F
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1GYFZ
Firmware level.....B85D
Channel.....1
SCSI ID.....10
Size.....70006 MB
State.....Online
Array letter.....E
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HXXW
Firmware level.....B85D
Channel.....1
SCSI ID.....11
Size.....70006 MB
State.....Online
Array letter.....D
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HLP5
Firmware level.....B85D
Channel.....1
SCSI ID.....12
Size.....70006 MB
State.....Online
Array letter.....C
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1CB1Z
Firmware level.....B85D
Channel.....1
SCSI ID.....13
Size.....70006 MB
State.....Online
Array letter.....B
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HLC9
Firmware level.....B85D
Channel.....1
SCSI ID.....14
Size.....70006 MB
State.....Online
Array letter.....A
PFA error.....No

Type.....Enclosure
Vendor.....IBM
Product or model number.....EXP400
Serial number.....23M0148
Firmware level.....D110
FRU type.....MIDPLANE
FRU vendor.....IBM
FRU date of manufacture.....07/2003
FRU part number.....59P4865
FRU serial number.....1379223
FRU type.....CARD
FRU vendor.....IBM
FRU date of manufacture.....07/2003
FRU part number.....59P4866
FRU serial number.....1R043379224
FRU type.....Power
FRU vendor.....IBM
FRU date of manufacture.....07/2003
FRU part number.....71P8146
FRU serial number.....1R045379227
FRU type.....Power
FRU vendor.....IBM

FRU date of manufacture.....07/2003
FRU part number.....71P8146
FRU serial number.....1R045379228
FRU type.....CARD
FRU vendor.....IBM
FRU date of manufacture.....07/2003
FRU part number.....59P4869
FRU serial number.....1R044379226
FRU type.....CARD
FRU vendor.....IBM
FRU date of manufacture.....07/2003
FRU part number.....59P4866
FRU serial number.....1R043379224
Channel.....1
SCSI ID.....15
Enclosure ID.....0
Enclosure status.....Okay
Fan 1 status.....Okay
Fan 2 status.....Okay
Power supply 1 status.....Okay
Power supply 2 status.....Okay
Temperature status.....Normal

SCSI channel 2

Number of drives.....7
SCSI transfer speed.....Optimal
SCSI initiator ID.....7

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HFE0
Firmware level.....B85D
Channel.....2
SCSI ID.....0
Size.....70006 MB
State.....Online
Array letter.....A
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HHVT
Firmware level.....B85D
Channel.....2
SCSI ID.....1
Size.....70006 MB
State.....Online
Array letter.....B
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HDZC
Firmware level.....B85D
Channel.....2
SCSI ID.....2
Size.....70006 MB
State.....Online
Array letter.....C
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HMEH
Firmware level.....B85D
Channel.....2
SCSI ID.....3
Size.....70006 MB
State.....Online
Array letter.....D
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HLD4
Firmware level.....B85D
Channel.....2
SCSI ID.....4
Size.....70006 MB
State.....Online
Array letter.....E
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HMM1
Firmware level.....B85D
Channel.....2
SCSI ID.....5
Size.....70006 MB
State.....Online
Array letter.....F
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST373453
FRU part number.....32P0737
Serial number.....3HW1HFPM
Firmware level.....B85D
Channel.....2
SCSI ID.....6
Size.....70006 MB
State.....Online
Array letter.....G
PFA error.....No

Type.....Enclosure
Vendor.....IBM
Product or model number.....EXP400
Serial number.....23M0148
Firmware level.....D110
FRU type.....MIDPLANE
FRU vendor.....IBM
FRU date of manufacture.....07/2003
FRU part number.....59P4865
FRU serial number.....1379223
FRU type.....CARD
FRU vendor.....IBM
FRU date of manufacture.....08/2003
FRU part number.....59P4866
FRU serial number.....1R04338E206
FRU type.....Power

FRU vendor.....IBM
FRU date of manufacture.....07/2003
FRU part number.....71P8146
FRU serial number.....1R045379227
FRU type.....Power
FRU vendor.....IBM
FRU date of manufacture.....07/2003
FRU part number.....71P8146
FRU serial number.....1R045379228
FRU type.....CARD
FRU vendor.....IBM
FRU date of manufacture.....07/2003
FRU part number.....59P4869
FRU serial number.....1R044379226
FRU type.....CARD
FRU vendor.....IBM
FRU date of manufacture.....08/2003
FRU part number.....59P4866
FRU serial number.....1R04338E206
Channel.....2
SCSI ID.....15
Enclosure ID.....0
Enclosure status.....Okay
Fan 1 status.....Okay
Fan 2 status.....Okay
Power supply 1 status.....Okay
Power supply 2 status.....Okay
Temperature status.....Normal

End of the configuration information for controller 1

Configuration information for controller 2

Controller type.....ServeRAID-6M
SCSI backend type.....AIC-7902
SCSI backend revision.....3
Controller FRU.....02R0985
Battery FRU.....02R0986
Serial number.....60B738F4
Part number.....32P0033
Physical slot.....6
BIOS version.....7.10.18
Firmware version.....7.10.18
Device driver version.....6.06.08
Battery-backup cache.....Installed
Battery temperature.....Normal
Battery charge level.....100 %
Battery-backup cache size.....128 MB
Read-ahead cache mode.....Adaptive
Stripe-unit size.....8 KB
Rebuild rate.....High
Hot-swap rebuild.....Enabled
Copy back.....Enabled
Data scrubbing.....Enabled
Auto-synchronization.....Enabled
Clustering.....Disabled
Unattended mode.....Disabled
BIOS-compatibility mapping.....Limited
Number of arrays.....1
Number of logical drives.....1
Number of hot-spare drives.....0
Number of ready drives.....0

Array A

Array identifier.....A
Array size.....34715 MB
Free space.....0 MB
Number of logical drives.....1
Stripe order (channel/device)...1/0
Number of physical drives.....1

Logical drives in array A

Logical drive.....1
Array letter.....A
State.....Okay
RAID level.....0
Data space.....34715 MB
Parity space.....0 MB
Date created.....01/28/2005
Write-cache mode.....Write back

Physical drives in array A

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST336753
FRU part number.....32P0736
Serial number.....3HX0PHBY
Firmware level.....B85B
Channel.....1
SCSI ID.....0
Size.....34715 MB
State.....Online
Array letter.....A
PFA error.....No

SCSI channel 1

Number of drives.....2
SCSI transfer speed.....Optimal
SCSI initiator ID.....7

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....ST336753
FRU part number.....32P0736
Serial number.....3HX0PHBY
Firmware level.....B85B
Channel.....1
SCSI ID.....0
Size.....34715 MB
State.....Online
Array letter.....A
PFA error.....No

Type.....Hard disk drive
Vendor.....IBM-ESXS
Product or model number.....IC35L018
FRU part number.....06P5369
Serial number.....VLZD1869
Channel.....1
SCSI ID.....3
Size.....17357 MB
State.....Defunct
PFA error.....No

Type.....Enclosure
Vendor.....IBM
Product or model number.....EXP400
Serial number.....23M0157

Firmware level.....D110
FRU type.....MIDPLANE
FRU vendor.....IBM
FRU date of manufacture.....08/2003
FRU part number.....59P4865
FRU serial number.....138E156
FRU type.....CARD
FRU vendor.....IBM
FRU date of manufacture.....08/2003
FRU part number.....59P4866
FRU serial number.....1R04338E121
FRU type.....Power
FRU vendor.....IBM
FRU date of manufacture.....08/2003
FRU part number.....14J0665
FRU serial number.....1R04538E331
FRU type.....Power
FRU vendor.....IBM
FRU date of manufacture.....08/2003
FRU part number.....14J0665
FRU serial number.....1R04538E332
FRU type.....CARD
FRU vendor.....IBM
FRU date of manufacture.....08/2003
FRU part number.....59P4869
FRU serial number.....1R04438E354
Channel.....1
SCSI ID.....15
Enclosure ID.....0
Enclosure status.....Okay
Fan 1 status.....Okay
Fan 2 status.....Okay
Power supply 1 status.....Okay
Power supply 2 status.....Okay
Temperature status.....Normal

SCSI channel 2

Number of drives.....0
SCSI transfer speed.....Ultra160 SCSI
SCSI initiator ID.....7

End of the configuration information for controller 2

DS4500 Disk Subsystem Configuration

PROFILE FOR STORAGE SUBSYSTEM: Rack_1 (2/8/05 4:39:22 PM)

SUMMARY---
Number of controllers: 2
Number of arrays: 10
Total number of logical drives (includes an access logical drive): 11 of 2048 used
Number of standard logical drives: 10
Number of access logical drives: 1
Number of drives: 140
Supported drive types: Fibre (140)
Total hot spare drives: 0
Standby: 0
In use: 0
Access logical drive: None mapped
Default host type: Windows 2000/Server 2003 Non-Clustered (Host type index 2)
Current configuration
Firmware version: 06.10.06.00
NVSRAM version: N1742F900R910V02
Pending configuration
Staged firmware download supported?: Yes
Firmware version: None
NVSRAM version: None
Transferred on: None
NVSRAM configured for batteries?: Yes
Start cache flushing at (in percentage): 80
Stop cache flushing at (in percentage): 80
Cache block size (in KB): 4
Media scan frequency (in days): Disabled
Failover alert delay (in minutes): 5
Feature enable identifier: 383339303400353537353905400824 13
Storage Subsystem worldwide name (ID): 600A0B80001363C30000000041659740

ARRAYS---
Number of arrays: 10

Array 1 (RAID 0)
Status: Online
Drive type: Fibre Channel
Enclosure loss protection: No
Current owner: Controller in slot A
Associated logical drives and free capacities:
RACK1LUN0 (467.619 GB)
Associated drives (in piece order):
Drive at Enclosure 0, Slot 1
Drive at Enclosure 0, Slot 2
Drive at Enclosure 0, Slot 3
Drive at Enclosure 0, Slot 4
Drive at Enclosure 0, Slot 5
Drive at Enclosure 0, Slot 6
Drive at Enclosure 0, Slot 7
Drive at Enclosure 0, Slot 8
Drive at Enclosure 0, Slot 9
Drive at Enclosure 0, Slot 10
Drive at Enclosure 0, Slot 11
Drive at Enclosure 0, Slot 12
Drive at Enclosure 0, Slot 13
Drive at Enclosure 0, Slot 14
Array 2 (RAID 0)
Status: Online
Drive type: Fibre Channel
Enclosure loss protection: No
Current owner: Controller in slot A
Associated logical drives and free capacities:
RACK1LUN1 (467.619 GB)
Associated drives (in piece order):
Drive at Enclosure 1, Slot 1
Drive at Enclosure 1, Slot 2
Drive at Enclosure 1, Slot 3
Drive at Enclosure 1, Slot 4
Drive at Enclosure 1, Slot 5
Drive at Enclosure 1, Slot 6
Drive at Enclosure 1, Slot 7
Drive at Enclosure 1, Slot 8
Drive at Enclosure 1, Slot 9
Drive at Enclosure 1, Slot 10
Drive at Enclosure 1, Slot 11
Drive at Enclosure 1, Slot 12
Drive at Enclosure 1, Slot 13
Drive at Enclosure 1, Slot 14
Array 3 (RAID 0)
Status: Online
Drive type: Fibre Channel
Enclosure loss protection: No
Current owner: Controller in slot A

Associated logical drives and free capacities:
RACK1LUN2 (467.619 GB)
Associated drives (in piece order):
Drive at Enclosure 2, Slot 1
Drive at Enclosure 2, Slot 2
Drive at Enclosure 2, Slot 3
Drive at Enclosure 2, Slot 4
Drive at Enclosure 2, Slot 5
Drive at Enclosure 2, Slot 6
Drive at Enclosure 2, Slot 7
Drive at Enclosure 2, Slot 8
Drive at Enclosure 2, Slot 9
Drive at Enclosure 2, Slot 10
Drive at Enclosure 2, Slot 11
Drive at Enclosure 2, Slot 12
Drive at Enclosure 2, Slot 13
Drive at Enclosure 2, Slot 14
Array 4 (RAID 0)
Status: Online
Drive type: Fibre Channel
Enclosure loss protection: No
Current owner: Controller in slot A
Associated logical drives and free capacities:
RACK1LUN3 (467.619 GB)
Associated drives (in piece order):
Drive at Enclosure 3, Slot 1
Drive at Enclosure 3, Slot 2
Drive at Enclosure 3, Slot 3
Drive at Enclosure 3, Slot 4
Drive at Enclosure 3, Slot 5
Drive at Enclosure 3, Slot 6
Drive at Enclosure 3, Slot 7
Drive at Enclosure 3, Slot 8
Drive at Enclosure 3, Slot 9
Drive at Enclosure 3, Slot 10
Drive at Enclosure 3, Slot 11
Drive at Enclosure 3, Slot 12
Drive at Enclosure 3, Slot 13
Drive at Enclosure 3, Slot 14
Array 5 (RAID 0)
Status: Online
Drive type: Fibre Channel
Enclosure loss protection: No
Current owner: Controller in slot A
Associated logical drives and free capacities:
RACK1LUN4 (467.619 GB)
Associated drives (in piece order):
Drive at Enclosure 4, Slot 1
Drive at Enclosure 4, Slot 2
Drive at Enclosure 4, Slot 3
Drive at Enclosure 4, Slot 4
Drive at Enclosure 4, Slot 5
Drive at Enclosure 4, Slot 6
Drive at Enclosure 4, Slot 7
Drive at Enclosure 4, Slot 8
Drive at Enclosure 4, Slot 9
Drive at Enclosure 4, Slot 10
Drive at Enclosure 4, Slot 11
Drive at Enclosure 4, Slot 12
Drive at Enclosure 4, Slot 13
Drive at Enclosure 4, Slot 14
Array 6 (RAID 0)
Status: Online
Drive type: Fibre Channel
Enclosure loss protection: No
Current owner: Controller in slot B
Associated logical drives and free capacities:
RACK1LUN5 (467.619 GB)
Associated drives (in piece order):
Drive at Enclosure 10, Slot 1
Drive at Enclosure 10, Slot 2
Drive at Enclosure 10, Slot 3
Drive at Enclosure 10, Slot 4
Drive at Enclosure 10, Slot 5
Drive at Enclosure 10, Slot 6
Drive at Enclosure 10, Slot 7
Drive at Enclosure 10, Slot 8
Drive at Enclosure 10, Slot 9
Drive at Enclosure 10, Slot 10
Drive at Enclosure 10, Slot 11
Drive at Enclosure 10, Slot 12
Drive at Enclosure 10, Slot 13
Drive at Enclosure 10, Slot 14
Array 7 (RAID 0)
Status: Online
Drive type: Fibre Channel
Enclosure loss protection: No
Current owner: Controller in slot B
Associated logical drives and free capacities:
RACK1LUN6 (467.619 GB)
Associated drives (in piece order):
Drive at Enclosure 11, Slot 1
Drive at Enclosure 11, Slot 2
Drive at Enclosure 11, Slot 3
Drive at Enclosure 11, Slot 4
Drive at Enclosure 11, Slot 5
Drive at Enclosure 11, Slot 6
Drive at Enclosure 11, Slot 7
Drive at Enclosure 11, Slot 8
Drive at Enclosure 11, Slot 9
Drive at Enclosure 11, Slot 10
Drive at Enclosure 11, Slot 11
Drive at Enclosure 11, Slot 12
Drive at Enclosure 11, Slot 13
Drive at Enclosure 11, Slot 14
Array 8 (RAID 0)
Status: Online
Drive type: Fibre Channel
Enclosure loss protection: No
Current owner: Controller in slot B
Associated logical drives and free capacities:
RACK1LUN7 (467.619 GB)
Associated drives (in piece order):
Drive at Enclosure 12, Slot 1
Drive at Enclosure 12, Slot 2
Drive at Enclosure 12, Slot 3
Drive at Enclosure 12, Slot 4
Drive at Enclosure 12, Slot 5
Drive at Enclosure 12, Slot 6
Drive at Enclosure 12, Slot 7
Drive at Enclosure 12, Slot 8
Drive at Enclosure 12, Slot 9
Drive at Enclosure 12, Slot 10
Drive at Enclosure 12, Slot 11
Drive at Enclosure 12, Slot 12
Drive at Enclosure 12, Slot 13
Drive at Enclosure 12, Slot 14
Array 9 (RAID 0)
Status: Online
Drive type: Fibre Channel
Enclosure loss protection: No
Current owner: Controller in slot B
Associated logical drives and free capacities:
RACK1LUN8 (467.619 GB)
Associated drives (in piece order):
Drive at Enclosure 13, Slot 1

```
      Drive at Enclosure 13, Slot 2
      Drive at Enclosure 13, Slot 3
      Drive at Enclosure 13, Slot 4
      Drive at Enclosure 13, Slot 5
      Drive at Enclosure 13, Slot 6
      Drive at Enclosure 13, Slot 7
      Drive at Enclosure 13, Slot 8
      Drive at Enclosure 13, Slot 9
      Drive at Enclosure 13, Slot 10
      Drive at Enclosure 13, Slot 11
      Drive at Enclosure 13, Slot 12
      Drive at Enclosure 13, Slot 13
      Drive at Enclosure 13, Slot 14
  Array 10 (RAID 0)
    Status: Online
    Drive type: Fibre Channel
    Enclosure loss protection: No
    Current owner: Controller in slot B
    Associated logical drives and free capacities:
      RACK1LUN9 (467.619 GB)
    Associated drives (in piece order):
      Drive at Enclosure 14, Slot 1
      Drive at Enclosure 14, Slot 2
      Drive at Enclosure 14, Slot 3
      Drive at Enclosure 14, Slot 4
      Drive at Enclosure 14, Slot 5
      Drive at Enclosure 14, Slot 6
      Drive at Enclosure 14, Slot 7
      Drive at Enclosure 14, Slot 8
      Drive at Enclosure 14, Slot 9
      Drive at Enclosure 14, Slot 10
      Drive at Enclosure 14, Slot 11
      Drive at Enclosure 14, Slot 12
      Drive at Enclosure 14, Slot 13
      Drive at Enclosure 14, Slot 14

STANDARD LOGICAL DRIVES------------------------------

SUMMARY
  Number of standard logical drives: 10
  See other Logical Drives sub-tabs for premium feature information.

  NAME      STATUS   CAPACITY    RAID LEVEL  ARRAY
  RACK1LUN0  Optimal  467.619 GB  0         1
  RACK1LUN1  Optimal  467.619 GB  0         2
  RACK1LUN2  Optimal  467.619 GB  0         3
  RACK1LUN3  Optimal  467.619 GB  0         4
  RACK1LUN4  Optimal  467.619 GB  0         5
  RACK1LUN5  Optimal  467.619 GB  0         6
  RACK1LUN6  Optimal  467.619 GB  0         7
  RACK1LUN7  Optimal  467.619 GB  0         8
  RACK1LUN8  Optimal  467.619 GB  0         9
  RACK1LUN9  Optimal  467.619 GB  0         10

DETAILS
  Logical Drive name: RACK1LUN0
    Logical Drive ID: 60:0a:0b:80:00:13:63:c3:00:00:00:03:41:65:59:c0
    Subsystem ID (SSID): 0
    Status: Optimal
    Drive type: Fibre Channel
    Enclosure loss protection: No
    Preferred owner: Controller in slot A
    Current owner: Controller in slot A
    Capacity: 467.619 GB
    RAID level: 0
    Segment size: 64 KB
    Modification priority: High
    Associated array: 1
    Read cache: Enabled
    Write cache: Disabled
    Write cache without batteries: Disabled
    Write cache with mirroring: Disabled
    Flush write cache after (in seconds): 10.00
    Cache read ahead multiplier: 1
    Enable background media scan: Disabled
    Media scan with redundancy check: Disabled

  Logical Drive name: RACK1LUN1
    Logical Drive ID: 60:0a:0b:80:00:13:63:c3:00:00:00:05:41:65:5a:04
    Subsystem ID (SSID): 1
    Status: Optimal
    Drive type: Fibre Channel
    Enclosure loss protection: No
    Preferred owner: Controller in slot A
    Current owner: Controller in slot A
    Capacity: 467.619 GB
    RAID level: 0
    Segment size: 64 KB
    Modification priority: High
    Associated array: 2
    Read cache: Enabled
    Write cache: Disabled
    Write cache without batteries: Disabled
    Write cache with mirroring: Disabled
    Flush write cache after (in seconds): 10.00
    Cache read ahead multiplier: 1
    Enable background media scan: Disabled
    Media scan with redundancy check: Disabled

  Logical Drive name: RACK1LUN2
    Logical Drive ID: 60:0a:0b:80:00:13:63:c3:00:00:00:07:41:65:5a:34
    Subsystem ID (SSID): 2
    Status: Optimal
    Drive type: Fibre Channel
    Enclosure loss protection: No
    Preferred owner: Controller in slot A
    Current owner: Controller in slot A
    Capacity: 467.619 GB
    RAID level: 0
    Segment size: 64 KB
    Modification priority: High
    Associated array: 3
    Read cache: Enabled
    Write cache: Disabled
    Write cache without batteries: Disabled
    Write cache with mirroring: Disabled
    Flush write cache after (in seconds): 10.00
    Cache read ahead multiplier: 1
    Enable background media scan: Disabled
    Media scan with redundancy check: Disabled

  Logical Drive name: RACK1LUN3
    Logical Drive ID: 60:0a:0b:80:00:13:63:c3:00:00:00:09:41:65:5a:6a
    Subsystem ID (SSID): 3
    Status: Optimal
    Drive type: Fibre Channel
    Enclosure loss protection: No
    Preferred owner: Controller in slot A
    Current owner: Controller in slot A
    Capacity: 467.619 GB
    RAID level: 0
    Segment size: 64 KB
    Modification priority: High
    Associated array: 4
    Read cache: Enabled
    Write cache: Disabled
```

Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK1LUN4
Logical Drive ID: 60:0a:0b:80:00:13:63:c3:00:00:00:0b:41:65:5a:c6
Subsystem ID (SSID): 4
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot A
Current owner: Controller in slot A
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 5
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK1LUN5
Logical Drive ID: 60:0a:0b:80:00:12:a4:b8:00:00:00:00:41:65:5a:c9
Subsystem ID (SSID): 5
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot B
Current owner: Controller in slot B
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 6
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK1LUN6
Logical Drive ID: 60:0a:0b:80:00:12:a4:b8:00:00:00:02:41:65:5a:f9
Subsystem ID (SSID): 6
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot B
Current owner: Controller in slot B
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 7
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK1LUN7
Logical Drive ID: 60:0a:0b:80:00:12:a4:b8:00:00:00:04:41:65:5b:23
Subsystem ID (SSID): 7
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot B
Current owner: Controller in slot B
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 8
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK1LUN8
Logical Drive ID: 60:0a:0b:80:00:12:a4:b8:00:00:00:06:41:65:5b:4f
Subsystem ID (SSID): 8
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot B
Current owner: Controller in slot B
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 9
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK1LUN9
Logical Drive ID: 60:0a:0b:80:00:12:a4:b8:00:00:00:08:41:65:5b:7b
Subsystem ID (SSID): 9
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot B
Current owner: Controller in slot B
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 10
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1

Enable background media scan: Disabled
Media scan with redundancy check: Disabled

MISSING LOGICAL DRIVES----------
Number of missing logical drives: 0

DRIVES----------

SUMMARY
Number of drives: 140
Supported drive types: Fibre (140)

BASIC:

TRAY, SLOT	STATUS	CAPACITY	CURRENT DATA RATE	PRODUCT ID	FIRMWARE VERSION
0, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
0, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
0, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
0, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
0, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
0, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
0, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
0, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
0, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
0, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
0, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
0, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
0, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
0, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
1, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
1, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
1, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
1, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
1, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
1, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
1, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
1, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
1, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
1, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
1, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
1, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
1, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
1, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
2, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
2, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
2, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
2, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
2, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
2, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
2, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
2, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
2, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
2, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
2, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
2, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
2, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
2, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
3, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
3, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
3, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
3, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
3, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
3, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
3, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
3, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
3, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
3, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
3, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
3, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
3, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
3, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
4, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
4, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
4, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954

4, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
4, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
4, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
4, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
4, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
4, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
4, 10	Optimal	33.902 GB	2 Gbps	ST336732FC	F B947
4, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
4, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
4, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
4, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
10, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
10, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
10, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
10, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
10, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
10, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
10, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
10, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
10, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
10, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
10, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
10, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
10, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
10, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
11, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
11, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
11, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
11, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
11, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
11, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
11, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
11, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
11, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
11, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
11, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
11, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
11, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
11, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
12, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
12, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
12, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
12, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
12, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
12, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
12, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
12, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
12, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
12, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
12, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
12, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
12, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
12, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
13, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
13, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
13, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
13, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
13, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
13, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
13, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
13, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
13, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
13, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
13, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
13, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
13, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
13, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
14, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954

14, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954
14, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954
14, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954
14, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954
14, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954
14, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954
14, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954
14, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954
14, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954
14, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954
14, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954
14, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954
14, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954

DRIVE CHANNELS:

TRAY, SLOT	PREFERRED CHANNEL	REDUNDANT CHANNEL
0, 1	2	1
0, 2	1	2
0, 3	2	1
0, 4	1	2
0, 5	2	1
0, 6	1	2
0, 7	2	1
0, 8	1	2
0, 9	2	1
0, 10	1	2
0, 11	2	1
0, 12	1	2
0, 13	2	1
0, 14	1	2
1, 1	2	1
1, 2	1	2
1, 3	2	1
1, 4	1	2
1, 5	2	1
1, 6	1	2
1, 7	2	1
1, 8	1	2
1, 9	2	1
1, 10	1	2
1, 11	2	1
1, 12	1	2
1, 13	2	1
1, 14	1	2
2, 1	2	1
2, 2	1	2
2, 3	2	1
2, 4	1	2
2, 5	2	1
2, 6	1	2
2, 7	2	1
2, 8	1	2
2, 9	2	1
2, 10	1	2
2, 11	2	1
2, 12	1	2
2, 13	2	1
2, 14	1	2
3, 1	2	1
3, 2	1	2
3, 3	2	1
3, 4	1	2
3, 5	2	1
3, 6	1	2
3, 7	2	1
3, 8	1	2
3, 9	2	1
3, 10	1	2
3, 11	2	1
3, 12	1	2
3, 13	2	1
3, 14	1	2
4, 1	2	1
4, 2	1	2
4, 3	2	1
4, 4	1	2
4, 5	2	1
4, 6	1	2
4, 7	2	1
4, 8	1	2
4, 9	2	1
4, 10	1	2
4, 11	2	1
4, 12	1	2
4, 13	2	1
4, 14	1	2
10, 1	4	3
10, 2	3	4
10, 3	4	3
10, 4	3	4
10, 5	4	3
10, 6	3	4
10, 7	4	3
10, 8	3	4
10, 9	4	3
10, 10	3	4
10, 11	4	3
10, 12	3	4
10, 13	4	3
10, 14	3	4
11, 1	4	3
11, 2	3	4
11, 3	4	3
11, 4	3	4
11, 5	4	3
11, 6	3	4
11, 7	4	3
11, 8	3	4
11, 9	4	3
11, 10	3	4
11, 11	4	3
11, 12	3	4
11, 13	4	3
11, 14	3	4
12, 1	4	3
12, 2	3	4
12, 3	4	3
12, 4	3	4
12, 5	4	3
12, 6	3	4
12, 7	4	3
12, 8	3	4

```
12, 9     4          3
12, 10    3          4
12, 11    4          3
12, 12    3          4
12, 13    4          3
12, 14    3          4
13, 1     4          3
13, 2     3          4
13, 3     4          3
13, 4     3          4
13, 5     4          3
13, 6     3          4
13, 7     4          3
13, 8     3          4
13, 9     4          3
13, 10    3          4
13, 11    4          3
13, 12    3          4
13, 13    4          3
13, 14    3          4
14, 1     4          3
14, 2     3          4
14, 3     4          3
14, 4     3          4
14, 5     4          3
14, 6     3          4
14, 7     4          3
14, 8     3          4
14, 9     4          3
14, 10    3          4
14, 11    4          3
14, 12    3          4
14, 13    4          3
14, 14    3          4


HOT SPARE COVERAGE:
  The following arrays are not protected: 6, 4, 5, 7, 2, 10, 1, 3, 8, 9

  Total hot spare drives: 0
    Standby: 0
    In use: 0

DETAILS
  Drive at Enclosure 0, Slot 1
    Drive port: 1, Channel: 2, ID: 0/0xEF
    Drive port: 2, Channel: 1, ID: 0/0xEF
    Drive path redundancy: OK
    Status: Optimal
    Raw capacity: 33.902 GB
    Usable capacity: 33.402 GB
    Current data rate: 2 Gbps
    Product ID: ST336753FC    F
    Firmware version: B954
    Serial number: 3HX0HRQQ00007340X5HR
    Vendor: IBM-ESXS
    Date of manufacture: April 5, 2003
    World-wide name: 20:00:00:04:cf:f9:e8:f8
    Drive type: Fibre Channel
    Speed: 15015 RPM
    Mode: Assigned
    Associated array: 1

  Drive at Enclosure 0, Slot 2
    Drive port: 1, Channel: 1, ID: 1/0xE8
    Drive port: 2, Channel: 2, ID: 1/0xE8
    Drive path redundancy: OK
    Status: Optimal
    Raw capacity: 33.902 GB
    Usable capacity: 33.402 GB
    Current data rate: 2 Gbps
    Product ID: ST336753FC    F
    Firmware version: B954
    Serial number: 3HX0HMT500007339TYYJ
    Vendor: IBM-ESXS
    Date of manufacture: April 6, 2003
    World-wide name: 20:00:00:04:cf:ff:03:36
    Drive type: Fibre Channel
    Speed: 15015 RPM
    Mode: Assigned
    Associated array: 1

  Drive at Enclosure 0, Slot 3
    Drive port: 1, Channel: 2, ID: 2/0xE4
    Drive port: 2, Channel: 1, ID: 2/0xE4
    Drive path redundancy: OK
    Status: Optimal
    Raw capacity: 33.902 GB
    Usable capacity: 33.402 GB
    Current data rate: 2 Gbps
    Product ID: ST336753FC    F
    Firmware version: B954
    Serial number: 3HX0K785000073405FTK
    Vendor: IBM-ESXS
    Date of manufacture: April 5, 2003
    World-wide name: 20:00:00:04:cf:f9:e4:c0
    Drive type: Fibre Channel
    Speed: 15015 RPM
    Mode: Assigned
    Associated array: 1

  Drive at Enclosure 0, Slot 4
    Drive port: 1, Channel: 1, ID: 3/0xE2
    Drive port: 2, Channel: 2, ID: 3/0xE2
    Drive path redundancy: OK
    Status: Optimal
    Raw capacity: 33.902 GB
    Usable capacity: 33.402 GB
    Current data rate: 2 Gbps
    Product ID: ST336753FC    F
    Firmware version: B954
    Serial number: 3HX0K2T100007339SNY4
    Vendor: IBM-ESXS
    Date of manufacture: April 5, 2003
    World-wide name: 20:00:00:04:cf:ff:02:b5
    Drive type: Fibre Channel
    Speed: 15015 RPM
    Mode: Assigned
    Associated array: 1

  Drive at Enclosure 0, Slot 5
    Drive port: 1, Channel: 2, ID: 4/0xE1
    Drive port: 2, Channel: 1, ID: 4/0xE1
    Drive path redundancy: OK
    Status: Optimal
    Raw capacity: 33.902 GB
    Usable capacity: 33.402 GB
    Current data rate: 2 Gbps
    Product ID: ST336753FC    F
    Firmware version: B954
    Serial number: 3HX0JPPJ000073392E3P
    Vendor: IBM-ESXS
    Date of manufacture: April 5, 2003
    World-wide name: 20:00:00:04:cf:ff:02:a8
    Drive type: Fibre Channel
    Speed: 15015 RPM
```

Mode: Assigned
Associated array: 1

Drive at Enclosure 0, Slot 6
Drive port: 1, Channel: 1, ID: 5/0xE0
Drive port: 2, Channel: 2, ID: 5/0xE0
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KCTZ000073405G1W
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0c:fb
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 0, Slot 7
Drive port: 1, Channel: 2, ID: 6/0xDC
Drive port: 2, Channel: 1, ID: 6/0xDC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K0S100007339RGS4
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:08:1f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 0, Slot 8
Drive port: 1, Channel: 1, ID: 7/0xDA
Drive port: 2, Channel: 2, ID: 7/0xDA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KCLQ00007340WVPE
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:53
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 0, Slot 9
Drive port: 1, Channel: 2, ID: 80/0x55
Drive port: 2, Channel: 1, ID: 80/0x55
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JY300000734058C3
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:87
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 0, Slot 10
Drive port: 1, Channel: 1, ID: 96/0x3A
Drive port: 2, Channel: 2, ID: 96/0x3A
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K5QP00007340X5FR
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:30
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 0, Slot 11
Drive port: 1, Channel: 2, ID: 64/0x72
Drive port: 2, Channel: 1, ID: 64/0x72
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JXRJ000073409KRS
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:11
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 0, Slot 12
Drive port: 1, Channel: 1, ID: 72/0x67
Drive port: 2, Channel: 2, ID: 72/0x67
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JYAP0000734058K6
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:57
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 0, Slot 13
Drive port: 1, Channel: 2, ID: 88/0x4B
Drive port: 2, Channel: 1, ID: 88/0x4B
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JZSB0000734058CF
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:7e
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 0, Slot 14
Drive port: 1, Channel: 1, ID: 104/0x2E
Drive port: 2, Channel: 2, ID: 104/0x2E
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KBLY000073410HMK
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:12:93
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 1, Slot 1
Drive port: 1, Channel: 2, ID: 8/0xD9
Drive port: 2, Channel: 1, ID: 8/0xD9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HPEX000073392DT8
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:f9:fb:1f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 1, Slot 2
Drive port: 1, Channel: 1, ID: 9/0xD6
Drive port: 2, Channel: 2, ID: 9/0xD6
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HSZN000073405G6Z
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:f9:e5:c4
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 1, Slot 3
Drive port: 1, Channel: 2, ID: 10/0xD5
Drive port: 2, Channel: 1, ID: 10/0xD5
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KCG6000073410J6T
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:12:7b
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 1, Slot 4
Drive port: 1, Channel: 1, ID: 11/0xD4
Drive port: 2, Channel: 2, ID: 11/0xD4
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K7Q9000073405G31
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ed:3f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 1, Slot 5
Drive port: 1, Channel: 2, ID: 12/0xD3
Drive port: 2, Channel: 1, ID: 12/0xD3
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HLY500007340WVKB
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ed:74
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 1, Slot 6
Drive port: 1, Channel: 1, ID: 13/0xD2
Drive port: 2, Channel: 2, ID: 13/0xD2

Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K2B2000073405A6W
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0e:37
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 1, Slot 7
Drive port: 1, Channel: 2, ID: 14/0xD1
Drive port: 2, Channel: 1, ID: 14/0xD1
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JZM1000073405A8Q
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0a:25
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 1, Slot 8
Drive port: 1, Channel: 1, ID: 15/0xCE
Drive port: 2, Channel: 2, ID: 15/0xCE
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K88C000073392DZ6
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e3:4a
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 1, Slot 9
Drive port: 1, Channel: 2, ID: 81/0x54
Drive port: 2, Channel: 1, ID: 81/0x54
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT6100007339SNTB
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:02:46
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 1, Slot 10
Drive port: 1, Channel: 1, ID: 97/0x39
Drive port: 2, Channel: 2, ID: 97/0x39
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K6VS00007340WVLE
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ed:3a
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 1, Slot 11
Drive port: 1, Channel: 2, ID: 65/0x71
Drive port: 2, Channel: 1, ID: 65/0x71
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KCPW0000734058CG
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:25
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 1, Slot 12
Drive port: 1, Channel: 1, ID: 73/0x66
Drive port: 2, Channel: 2, ID: 73/0x66
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JZDG000073405A9Z
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0a:32
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 1, Slot 13
Drive port: 1, Channel: 2, ID: 89/0x4A
Drive port: 2, Channel: 1, ID: 89/0x4A
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB

Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KCL5000073405FGJ
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:5d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 1, Slot 14
Drive port: 1, Channel: 1, ID: 105/0x2D
Drive port: 2, Channel: 2, ID: 105/0x2D
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HQ5P000073393FLA
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:04:e2
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 2, Slot 1
Drive port: 1, Channel: 2, ID: 16/0xCD
Drive port: 2, Channel: 1, ID: 16/0xCD
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JZD300007339PQPY
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0a:13
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 2, Slot 2
Drive port: 1, Channel: 1, ID: 17/0xCC
Drive port: 2, Channel: 2, ID: 17/0xCC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JZK900007339TYQE
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0a:15
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 2, Slot 3
Drive port: 1, Channel: 2, ID: 18/0xCB
Drive port: 2, Channel: 1, ID: 18/0xCB
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K7SK000073405G3V
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ed:4a
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 2, Slot 4
Drive port: 1, Channel: 1, ID: 19/0xCA
Drive port: 2, Channel: 2, ID: 19/0xCA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JYAL00007340X57P
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:4d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 2, Slot 5
Drive port: 1, Channel: 2, ID: 20/0xC9
Drive port: 2, Channel: 1, ID: 20/0xC9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KCSR000073409K3X
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:09
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 2, Slot 6
Drive port: 1, Channel: 1, ID: 21/0xC7
Drive port: 2, Channel: 2, ID: 21/0xC7
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F

Firmware version: B954
Serial number: 3HX0KD5T000073410HMB
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:12:90
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 2, Slot 7
Drive port: 1, Channel: 2, ID: 22/0xC6
Drive port: 2, Channel: 1, ID: 22/0xC6
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT1E000073392E0T
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e2:cd
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 2, Slot 8
Drive port: 1, Channel: 1, ID: 23/0xC5
Drive port: 2, Channel: 2, ID: 23/0xC5
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K79G00007340X4RD
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e5:c6
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 2, Slot 9
Drive port: 1, Channel: 2, ID: 82/0x53
Drive port: 2, Channel: 1, ID: 82/0x53
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K2JQ00007339TYUG
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:02:6b
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 2, Slot 10
Drive port: 1, Channel: 1, ID: 98/0x36
Drive port: 2, Channel: 2, ID: 98/0x36
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K20V00007339LXKL
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:ce
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 2, Slot 11
Drive port: 1, Channel: 2, ID: 66/0x6E
Drive port: 2, Channel: 1, ID: 66/0x6E
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JRQ4000073409KFX
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:04:e3
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 2, Slot 12
Drive port: 1, Channel: 1, ID: 74/0x65
Drive port: 2, Channel: 2, ID: 74/0x65
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JQV000007339EGAZ
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:af
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 2, Slot 13
Drive port: 1, Channel: 2, ID: 90/0x49
Drive port: 2, Channel: 1, ID: 90/0x49
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JPFQ00007340X4Z5
Vendor: IBM-ESXS

Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:fb:a9
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 2, Slot 14
Drive port: 1, Channel: 1, ID: 106/0x2C
Drive port: 2, Channel: 2, ID: 106/0x2C
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K16800007339SP6X
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:a9
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 3, Slot 1
Drive port: 1, Channel: 2, ID: 24/0xC3
Drive port: 2, Channel: 1, ID: 24/0xC3
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K88H000073405G7B
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e5:2d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 3, Slot 2
Drive port: 1, Channel: 1, ID: 25/0xBC
Drive port: 2, Channel: 2, ID: 25/0xBC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JT7N000073405G4K
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:07:e3
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 3, Slot 3
Drive port: 1, Channel: 2, ID: 26/0xBA
Drive port: 2, Channel: 1, ID: 26/0xBA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K7V4000073405G32
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ed:00
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 3, Slot 4
Drive port: 1, Channel: 1, ID: 27/0xB9
Drive port: 2, Channel: 2, ID: 27/0xB9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HQGM000073409K32
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:fc:03
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 3, Slot 5
Drive port: 1, Channel: 2, ID: 28/0xB6
Drive port: 2, Channel: 1, ID: 28/0xB6
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JLGC0000734059ND
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e6:ea
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 3, Slot 6
Drive port: 1, Channel: 1, ID: 29/0xB5
Drive port: 2, Channel: 2, ID: 29/0xB5
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K6NK000073405A8D
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:07:d2
Drive type: Fibre Channel

Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 3, Slot 7
Drive port: 1, Channel: 2, ID: 30/0xB4
Drive port: 2, Channel: 1, ID: 30/0xB4
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRNN00007340X5JM
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e8:ac
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 3, Slot 8
Drive port: 1, Channel: 1, ID: 31/0xB3
Drive port: 2, Channel: 2, ID: 31/0xB3
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRG00000734059NM
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e7:0e
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 3, Slot 9
Drive port: 1, Channel: 2, ID: 83/0x52
Drive port: 2, Channel: 1, ID: 83/0x52
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT8B0000734059NU
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e7:43
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 3, Slot 10
Drive port: 1, Channel: 1, ID: 99/0x35
Drive port: 2, Channel: 2, ID: 99/0x35
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT0A000073392DUW
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e3:b4
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 3, Slot 11
Drive port: 1, Channel: 2, ID: 67/0x6D
Drive port: 2, Channel: 1, ID: 67/0x6D
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K09M000073405A81
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:07:e1
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 3, Slot 12
Drive port: 1, Channel: 1, ID: 75/0x63
Drive port: 2, Channel: 2, ID: 75/0x63
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KD1R000073405FHZ
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:11:c9
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 3, Slot 13
Drive port: 1, Channel: 2, ID: 91/0x47
Drive port: 2, Channel: 1, ID: 91/0x47
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HLLP00007340GUVB
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:13:49
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 3, Slot 14
Drive port: 1, Channel: 1, ID: 107/0x2B
Drive port: 2, Channel: 2, ID: 107/0x2B
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K7F100007339TYYU
Vendor: IBM-ESXS
Date of manufacture: April 4, 2003
World-wide name: 20:00:00:04:cf:f9:e6:33
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 4, Slot 1
Drive port: 1, Channel: 2, ID: 32/0xB2
Drive port: 2, Channel: 1, ID: 32/0xB2
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRJP00007339TYNP
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:a7
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 4, Slot 2
Drive port: 1, Channel: 1, ID: 33/0xB1
Drive port: 2, Channel: 2, ID: 33/0xB1
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K0TW000073393FXQ
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0e:7b
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 4, Slot 3
Drive port: 1, Channel: 2, ID: 34/0xAE
Drive port: 2, Channel: 1, ID: 34/0xAE
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT05000073405FS1
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e6:2d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 4, Slot 4
Drive port: 1, Channel: 1, ID: 35/0xAD
Drive port: 2, Channel: 2, ID: 35/0xAD
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HM3A000073409KM6
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:dc:87
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 4, Slot 5
Drive port: 1, Channel: 2, ID: 36/0xAC
Drive port: 2, Channel: 1, ID: 36/0xAC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HKB9000073393FPW
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:f9:fb:18
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 4, Slot 6
Drive port: 1, Channel: 1, ID: 37/0xAB
Drive port: 2, Channel: 2, ID: 37/0xAB
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0J900000073392DWT
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e3:b0
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 4, Slot 7
Drive port: 1, Channel: 2, ID: 38/0xAA

Drive port: 2, Channel: 1, ID: 38/0xAA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT5P00007340X567
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e8:9c
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 4, Slot 8
Drive port: 1, Channel: 1, ID: 39/0xA9
Drive port: 2, Channel: 2, ID: 39/0xA9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT4J000073405FRV
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e6:09
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 4, Slot 9
Drive port: 1, Channel: 2, ID: 84/0x51
Drive port: 2, Channel: 1, ID: 84/0x51
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K78C00007339RGJL
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e5:1e
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 4, Slot 10
Drive port: 1, Channel: 1, ID: 100/0x34
Drive port: 2, Channel: 2, ID: 100/0x34
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336732FC F
Firmware version: B947
Serial number: 3ET0YGRW000072443UZB
Vendor: IBM-ESXS
Date of manufacture: May 15, 2002
World-wide name: 20:00:00:04:cf:5f:53:14
Drive type: Fibre Channel
Speed: 14996 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 4, Slot 11
Drive port: 1, Channel: 2, ID: 68/0x6C
Drive port: 2, Channel: 1, ID: 68/0x6C
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0H7EB00007339N0TD
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:82
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 4, Slot 12
Drive port: 1, Channel: 1, ID: 76/0x5C
Drive port: 2, Channel: 2, ID: 76/0x5C
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HZPE000073411NJR
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:13:b5
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 4, Slot 13
Drive port: 1, Channel: 2, ID: 92/0x46
Drive port: 2, Channel: 1, ID: 92/0x46
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT630000734058FQ
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e5:ff
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 4, Slot 14
Drive port: 1, Channel: 1, ID: 108/0x2A
Drive port: 2, Channel: 2, ID: 108/0x2A
Drive path redundancy: OK
Status: Optimal

Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KD0C00007340WW1S
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:11:cd
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 10, Slot 1
Drive port: 1, Channel: 4, ID: 0/0xEF
Drive port: 2, Channel: 3, ID: 0/0xEF
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT4F0000734058KQ
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e6:fc
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 10, Slot 2
Drive port: 1, Channel: 3, ID: 1/0xE8
Drive port: 2, Channel: 4, ID: 1/0xE8
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KBTQ000073405FUP
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:12:ce
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 10, Slot 3
Drive port: 1, Channel: 4, ID: 2/0xE4
Drive port: 2, Channel: 3, ID: 2/0xE4
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0H3RG00007339TYTY
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:02:74
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 10, Slot 4
Drive port: 1, Channel: 3, ID: 3/0xE2
Drive port: 2, Channel: 4, ID: 3/0xE2
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KBLV00007340GUF4
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:12:db
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 10, Slot 5
Drive port: 1, Channel: 4, ID: 4/0xE1
Drive port: 2, Channel: 3, ID: 4/0xE1
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K45900007339TYRV
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:02:55
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 10, Slot 6
Drive port: 1, Channel: 3, ID: 5/0xE0
Drive port: 2, Channel: 4, ID: 5/0xE0
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRTV000073405FRL
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:13:09
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 10, Slot 7
Drive port: 1, Channel: 4, ID: 6/0xDC
Drive port: 2, Channel: 3, ID: 6/0xDC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps

Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX22Z5E00007433LD7E
Vendor: IBM-ESXS
Date of manufacture: February 13, 2004
World-wide name: 20:00:00:0c:50:af:8e:01
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 10, Slot 8
Drive port: 1, Channel: 3, ID: 7/0xDA
Drive port: 2, Channel: 4, ID: 7/0xDA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K8F5000073405FS5
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:12:a5
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 10, Slot 9
Drive port: 1, Channel: 4, ID: 80/0x55
Drive port: 2, Channel: 3, ID: 80/0x55
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KBJS000073405FVE
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:12:66
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 10, Slot 10
Drive port: 1, Channel: 3, ID: 96/0x3A
Drive port: 2, Channel: 4, ID: 96/0x3A
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HM0Z00007339TY8W
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:eb:b1
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 10, Slot 11
Drive port: 1, Channel: 4, ID: 64/0x72
Drive port: 2, Channel: 3, ID: 64/0x72
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KBSW000073405FS4
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:12:7d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 10, Slot 12
Drive port: 1, Channel: 3, ID: 72/0x67
Drive port: 2, Channel: 4, ID: 72/0x67
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K07Q00007339TYZU
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:02:3f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 10, Slot 13
Drive port: 1, Channel: 4, ID: 88/0x4B
Drive port: 2, Channel: 3, ID: 88/0x4B
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRLK00007340X5AX
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e8:77
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 10, Slot 14
Drive port: 1, Channel: 3, ID: 104/0x2E
Drive port: 2, Channel: 4, ID: 104/0x2E
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K1BN00007339TYUN

Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:02:5b
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 11, Slot 1
Drive port: 1, Channel: 4, ID: 8/0xD9
Drive port: 2, Channel: 3, ID: 8/0xD9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HSYC00007339RGGC
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e1:f6
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 11, Slot 2
Drive port: 1, Channel: 3, ID: 9/0xD6
Drive port: 2, Channel: 4, ID: 9/0xD6
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HSR700007339RGPH
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e1:96
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 11, Slot 3
Drive port: 1, Channel: 4, ID: 10/0xD5
Drive port: 2, Channel: 3, ID: 10/0xD5
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HM6B000073409KGT
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:db:d3
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 11, Slot 4
Drive port: 1, Channel: 3, ID: 11/0xD4
Drive port: 2, Channel: 4, ID: 11/0xD4
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K85E00007339RGMP
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e1:d8
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 11, Slot 5
Drive port: 1, Channel: 4, ID: 12/0xD3
Drive port: 2, Channel: 3, ID: 12/0xD3
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K78K00007340X4ZH
Vendor: IBM-ESXS
Date of manufacture: April 4, 2003
World-wide name: 20:00:00:04:cf:f9:e5:8c
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 11, Slot 6
Drive port: 1, Channel: 3, ID: 13/0xD2
Drive port: 2, Channel: 4, ID: 13/0xD2
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K86E00007339RGQJ
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e1:b4
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 11, Slot 7
Drive port: 1, Channel: 4, ID: 14/0xD1
Drive port: 2, Channel: 3, ID: 14/0xD1
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HSYT00007339RGJU
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e1:cb

Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 11, Slot 8
Drive port: 1, Channel: 3, ID: 15/0xCE
Drive port: 2, Channel: 4, ID: 15/0xCE
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HSXF000073392DTN
Vendor: IBM-ESXS
Date of manufacture: April 4, 2003
World-wide name: 20:00:00:04:cf:f9:e8:61
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 11, Slot 9
Drive port: 1, Channel: 4, ID: 81/0x54
Drive port: 2, Channel: 3, ID: 81/0x54
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT8600007340X5AS
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e7:5a
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 11, Slot 10
Drive port: 1, Channel: 3, ID: 97/0x39
Drive port: 2, Channel: 4, ID: 97/0x39
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT1D00007339TYN5
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e8:80
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 11, Slot 11
Drive port: 1, Channel: 4, ID: 65/0x71
Drive port: 2, Channel: 3, ID: 65/0x71
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRPJ0000734058G1
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e7:bf
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 11, Slot 12
Drive port: 1, Channel: 3, ID: 73/0x66
Drive port: 2, Channel: 4, ID: 73/0x66
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT490000734058CT
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e7:ab
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 11, Slot 13
Drive port: 1, Channel: 4, ID: 89/0x4A
Drive port: 2, Channel: 3, ID: 89/0x4A
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HNRH00007339TYMJ
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e8:27
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 11, Slot 14
Drive port: 1, Channel: 3, ID: 105/0x2D
Drive port: 2, Channel: 4, ID: 105/0x2D
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRGX00007340WW07
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:ff
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned

Associated array: 7

Drive at Enclosure 12, Slot 1
Drive port: 1, Channel: 4, ID: 16/0xCD
Drive port: 2, Channel: 3, ID: 16/0xCD
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JE4K000073392D9J
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:f9:fc:19
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 12, Slot 2
Drive port: 1, Channel: 3, ID: 17/0xCC
Drive port: 2, Channel: 4, ID: 17/0xCC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JZJV00007339GMRQ
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:08:40
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 12, Slot 3
Drive port: 1, Channel: 4, ID: 18/0xCB
Drive port: 2, Channel: 3, ID: 18/0xCB
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K0SH00007339TYS3
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:08:42
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 12, Slot 4
Drive port: 1, Channel: 3, ID: 19/0xCA
Drive port: 2, Channel: 4, ID: 19/0xCA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JKTE000073405G6W
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e5:73
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 12, Slot 5
Drive port: 1, Channel: 4, ID: 20/0xC9
Drive port: 2, Channel: 3, ID: 20/0xC9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K1BT00007339TYS5
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:02:6e
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 12, Slot 6
Drive port: 1, Channel: 3, ID: 21/0xC7
Drive port: 2, Channel: 4, ID: 21/0xC7
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRN3000073392E0B
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ea:6f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 12, Slot 7
Drive port: 1, Channel: 4, ID: 22/0xC6
Drive port: 2, Channel: 3, ID: 22/0xC6
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K5TY00007339TYUV
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:02:72
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 12, Slot 8

Drive port: 1, Channel: 3, ID: 23/0xC5
Drive port: 2, Channel: 4, ID: 23/0xC5
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0TQBD00007346FB5T
Vendor: IBM-ESXS
Date of manufacture: May 17, 2003
World-wide name: 20:00:00:0c:50:20:a1:b4
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 12, Slot 9
Drive port: 1, Channel: 4, ID: 82/0x53
Drive port: 2, Channel: 3, ID: 82/0x53
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRG80000734058JG
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e7:6a
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 12, Slot 10
Drive port: 1, Channel: 3, ID: 98/0x36
Drive port: 2, Channel: 4, ID: 98/0x36
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRFP00007340X5BG
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e8:ab
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 12, Slot 11
Drive port: 1, Channel: 4, ID: 66/0x6E
Drive port: 2, Channel: 3, ID: 66/0x6E
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0J1G300007339GMRV
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:f9:fb:29
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 12, Slot 12
Drive port: 1, Channel: 3, ID: 74/0x65
Drive port: 2, Channel: 4, ID: 74/0x65
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT2M0000734058JX
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e6:c3
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 12, Slot 13
Drive port: 1, Channel: 4, ID: 90/0x49
Drive port: 2, Channel: 3, ID: 90/0x49
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K2HR00007340X4ZP
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:03:62
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 12, Slot 14
Drive port: 1, Channel: 3, ID: 106/0x2C
Drive port: 2, Channel: 4, ID: 106/0x2C
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JRTS00007339TYCA
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e5:d9
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 13, Slot 1
Drive port: 1, Channel: 4, ID: 24/0xC3
Drive port: 2, Channel: 3, ID: 24/0xC3
Drive path redundancy: OK

Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HMZR00007339SP49
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:b0
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 13, Slot 2
Drive port: 1, Channel: 3, ID: 25/0xBC
Drive port: 2, Channel: 4, ID: 25/0xBC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JSAQ000073392DCV
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:f6
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 13, Slot 3
Drive port: 1, Channel: 4, ID: 26/0xBA
Drive port: 2, Channel: 3, ID: 26/0xBA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K1MB00007338JX9B
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:a7
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 13, Slot 4
Drive port: 1, Channel: 3, ID: 27/0xB9
Drive port: 2, Channel: 4, ID: 27/0xB9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K2EA00007339RGEB
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:47
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 13, Slot 5
Drive port: 1, Channel: 4, ID: 28/0xB6
Drive port: 2, Channel: 3, ID: 28/0xB6
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HH9B00007340WW09
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:f8
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 13, Slot 6
Drive port: 1, Channel: 3, ID: 29/0xB5
Drive port: 2, Channel: 4, ID: 29/0xB5
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JTRB00007339SPDE
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:85
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 13, Slot 7
Drive port: 1, Channel: 4, ID: 30/0xB4
Drive port: 2, Channel: 3, ID: 30/0xB4
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K1F400007338K1B3
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:12
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 13, Slot 8
Drive port: 1, Channel: 3, ID: 31/0xB3
Drive port: 2, Channel: 4, ID: 31/0xB3
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB

Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JLL200007339RG6H
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:7e
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 13, Slot 9
Drive port: 1, Channel: 4, ID: 83/0x52
Drive port: 2, Channel: 3, ID: 83/0x52
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HSRV00007339TYRR
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:05:4c
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 13, Slot 10
Drive port: 1, Channel: 3, ID: 99/0x35
Drive port: 2, Channel: 4, ID: 99/0x35
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HN6D00007339GMHP
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:92
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 13, Slot 11
Drive port: 1, Channel: 4, ID: 67/0x6D
Drive port: 2, Channel: 3, ID: 67/0x6D
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K7SH00007339SPCH
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:d4
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 13, Slot 12
Drive port: 1, Channel: 3, ID: 75/0x63
Drive port: 2, Channel: 4, ID: 75/0x63
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K82K00007339FG72
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:dc
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 13, Slot 13
Drive port: 1, Channel: 4, ID: 91/0x47
Drive port: 2, Channel: 3, ID: 91/0x47
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K6SP00007340WW2N
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:f5
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 13, Slot 14
Drive port: 1, Channel: 3, ID: 107/0x2B
Drive port: 2, Channel: 4, ID: 107/0x2B
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0H44J00007340WW3U
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:bd
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 14, Slot 1
Drive port: 1, Channel: 4, ID: 32/0xB2
Drive port: 2, Channel: 3, ID: 32/0xB2
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954

Serial number: 3HX0H41N00007339SNQW
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e3:72
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 14, Slot 2
Drive port: 1, Channel: 3, ID: 33/0xB1
Drive port: 2, Channel: 4, ID: 33/0xB1
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K7S3000073405G3R
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ed:2d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 14, Slot 3
Drive port: 1, Channel: 4, ID: 34/0xAE
Drive port: 2, Channel: 3, ID: 34/0xAE
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K70P000073405G36
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ed:2b
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 14, Slot 4
Drive port: 1, Channel: 3, ID: 35/0xAD
Drive port: 2, Channel: 4, ID: 35/0xAD
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JLV6000073405A9D
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:07:e2
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 14, Slot 5
Drive port: 1, Channel: 4, ID: 36/0xAC
Drive port: 2, Channel: 3, ID: 36/0xAC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JSWG00007338W96D
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:f9:ca
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 14, Slot 6
Drive port: 1, Channel: 3, ID: 37/0xAB
Drive port: 2, Channel: 4, ID: 37/0xAB
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRHX000073405G54
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e7:f5
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 14, Slot 7
Drive port: 1, Channel: 4, ID: 38/0xAA
Drive port: 2, Channel: 3, ID: 38/0xAA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JYX3000073405A44
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:70
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 14, Slot 8
Drive port: 1, Channel: 3, ID: 39/0xA9
Drive port: 2, Channel: 4, ID: 39/0xA9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JPGL00007339GMK8
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003

World-wide name: 20:00:00:04:cf:ff:02:cb
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 14, Slot 9
Drive port: 1, Channel: 4, ID: 84/0x51
Drive port: 2, Channel: 3, ID: 84/0x51
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HLY600007340X50U
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:db:d1
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 14, Slot 10
Drive port: 1, Channel: 3, ID: 100/0x34
Drive port: 2, Channel: 4, ID: 100/0x34
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JAA200007340WEWF
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0e:28
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 14, Slot 11
Drive port: 1, Channel: 4, ID: 68/0x6C
Drive port: 2, Channel: 3, ID: 68/0x6C
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KBFX000073410J7B
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:14:69
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 14, Slot 12
Drive port: 1, Channel: 3, ID: 76/0x5C
Drive port: 2, Channel: 4, ID: 76/0x5C
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K2RZ00007339LJ8H
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:90
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 14, Slot 13
Drive port: 1, Channel: 4, ID: 92/0x46
Drive port: 2, Channel: 3, ID: 92/0x46
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K6H500007340GTVD
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:f6:00
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 14, Slot 14
Drive port: 1, Channel: 3, ID: 108/0x2A
Drive port: 2, Channel: 4, ID: 108/0x2A
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KBSV00007340GUZK
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:13:3b
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

PROFILE FOR STORAGE SUBSYSTEM: Rack_2 (2/8/05 4:26:33 PM)

SUMMARY----------
Number of controllers: 2
Number of arrays: 10
Total number of logical drives (includes an access logical drive): 11 of 2048 used
Number of standard logical drives: 10
Number of access logical drives: 1
Number of drives: 140
Supported drive types: Fibre (140)
Total hot spare drives: 0
Standby: 0
In use: 0
Access logical drive: None mapped

```
  Default host type: Windows 2000/Server 2003 Non-Clustered (Host type
index 2)
  Current configuration
    Firmware version: 06.10.06.00
    NVSRAM version: N1742F900R910V02
  Pending configuration
    Staged firmware download supported?: Yes
    Firmware version: None
    NVSRAM version: None
    Transferred on: None
  NVSRAM configured for batteries?: Yes
  Start cache flushing at (in percentage): 80
  Stop cache flushing at (in percentage): 80
  Cache block size (in KB): 4
  Media scan frequency (in days): Disabled
  Failover alert delay (in minutes): 5
  Feature enable identifier: 3638353834003638353232004162 6C23
  Storage Subsystem worldwide name (ID):
600A0B800013622B000000004166D04C

ARRAYS------------------------------
  Number of arrays: 10

  Array 1 (RAID 0)
    Status: Online
    Drive type: Fibre Channel
    Enclosure loss protection: No
    Current owner: Controller in slot A
    Associated logical drives and free capacities:
      RACK2LUN0 (467.619 GB)
    Associated drives (in piece order):
      Drive at Enclosure 20, Slot 1
      Drive at Enclosure 20, Slot 2
      Drive at Enclosure 20, Slot 3
      Drive at Enclosure 20, Slot 4
      Drive at Enclosure 20, Slot 5
      Drive at Enclosure 20, Slot 6
      Drive at Enclosure 20, Slot 7
      Drive at Enclosure 20, Slot 8
      Drive at Enclosure 20, Slot 9
      Drive at Enclosure 20, Slot 10
      Drive at Enclosure 20, Slot 11
      Drive at Enclosure 20, Slot 12
      Drive at Enclosure 20, Slot 13
      Drive at Enclosure 20, Slot 14
  Array 2 (RAID 0)
    Status: Online
    Drive type: Fibre Channel
    Enclosure loss protection: No
    Current owner: Controller in slot A
    Associated logical drives and free capacities:
      RACK2LUN1 (467.619 GB)
    Associated drives (in piece order):
      Drive at Enclosure 21, Slot 1
      Drive at Enclosure 21, Slot 2
      Drive at Enclosure 21, Slot 3
      Drive at Enclosure 21, Slot 4
      Drive at Enclosure 21, Slot 5
      Drive at Enclosure 21, Slot 6
      Drive at Enclosure 21, Slot 7
      Drive at Enclosure 21, Slot 8
      Drive at Enclosure 21, Slot 9
      Drive at Enclosure 21, Slot 10
      Drive at Enclosure 21, Slot 11
      Drive at Enclosure 21, Slot 12
      Drive at Enclosure 21, Slot 13
      Drive at Enclosure 21, Slot 14
  Array 3 (RAID 0)
    Status: Online
    Drive type: Fibre Channel
    Enclosure loss protection: No
    Current owner: Controller in slot A
    Associated logical drives and free capacities:
      RACK2LUN2 (467.619 GB)
    Associated drives (in piece order):
      Drive at Enclosure 22, Slot 1
      Drive at Enclosure 22, Slot 2
      Drive at Enclosure 22, Slot 3
      Drive at Enclosure 22, Slot 4
      Drive at Enclosure 22, Slot 5
      Drive at Enclosure 22, Slot 6
      Drive at Enclosure 22, Slot 7
      Drive at Enclosure 22, Slot 8
      Drive at Enclosure 22, Slot 9
      Drive at Enclosure 22, Slot 10
      Drive at Enclosure 22, Slot 11
      Drive at Enclosure 22, Slot 12
      Drive at Enclosure 22, Slot 13
      Drive at Enclosure 22, Slot 14
  Array 4 (RAID 0)
    Status: Online
    Drive type: Fibre Channel
    Enclosure loss protection: No
    Current owner: Controller in slot A
    Associated logical drives and free capacities:
      RACK2LUN3 (467.619 GB)
    Associated drives (in piece order):
      Drive at Enclosure 23, Slot 1
      Drive at Enclosure 23, Slot 2
      Drive at Enclosure 23, Slot 3
      Drive at Enclosure 23, Slot 4
      Drive at Enclosure 23, Slot 5
      Drive at Enclosure 23, Slot 6
      Drive at Enclosure 23, Slot 7
      Drive at Enclosure 23, Slot 8
      Drive at Enclosure 23, Slot 9
      Drive at Enclosure 23, Slot 10
      Drive at Enclosure 23, Slot 11
      Drive at Enclosure 23, Slot 12
      Drive at Enclosure 23, Slot 13
      Drive at Enclosure 23, Slot 14
  Array 5 (RAID 0)
    Status: Online
    Drive type: Fibre Channel
    Enclosure loss protection: No
    Current owner: Controller in slot A
    Associated logical drives and free capacities:
      RACK2LUN4 (467.619 GB)
    Associated drives (in piece order):
      Drive at Enclosure 24, Slot 1
      Drive at Enclosure 24, Slot 2
      Drive at Enclosure 24, Slot 3
      Drive at Enclosure 24, Slot 4
      Drive at Enclosure 24, Slot 5
      Drive at Enclosure 24, Slot 6
      Drive at Enclosure 24, Slot 7
      Drive at Enclosure 24, Slot 8
      Drive at Enclosure 24, Slot 9
      Drive at Enclosure 24, Slot 10
      Drive at Enclosure 24, Slot 11
      Drive at Enclosure 24, Slot 12
      Drive at Enclosure 24, Slot 13
      Drive at Enclosure 24, Slot 14
  Array 6 (RAID 0)
    Status: Online
    Drive type: Fibre Channel
```

```
    Enclosure loss protection: No
    Current owner: Controller in slot B
    Associated logical drives and free capacities:
      RACK2LUN5 (467.619 GB)
    Associated drives (in piece order):
      Drive at Enclosure 30, Slot 1
      Drive at Enclosure 30, Slot 2
      Drive at Enclosure 30, Slot 3
      Drive at Enclosure 30, Slot 4
      Drive at Enclosure 30, Slot 5
      Drive at Enclosure 30, Slot 6
      Drive at Enclosure 30, Slot 7
      Drive at Enclosure 30, Slot 8
      Drive at Enclosure 30, Slot 9
      Drive at Enclosure 30, Slot 10
      Drive at Enclosure 30, Slot 11
      Drive at Enclosure 30, Slot 12
      Drive at Enclosure 30, Slot 13
      Drive at Enclosure 30, Slot 14
  Array 7 (RAID 0)
    Status: Online
    Drive type: Fibre Channel
    Enclosure loss protection: No
    Current owner: Controller in slot B
    Associated logical drives and free capacities:
      RACK2LUN6 (467.619 GB)
    Associated drives (in piece order):
      Drive at Enclosure 31, Slot 1
      Drive at Enclosure 31, Slot 2
      Drive at Enclosure 31, Slot 3
      Drive at Enclosure 31, Slot 4
      Drive at Enclosure 31, Slot 5
      Drive at Enclosure 31, Slot 6
      Drive at Enclosure 31, Slot 7
      Drive at Enclosure 31, Slot 8
      Drive at Enclosure 31, Slot 9
      Drive at Enclosure 31, Slot 10
      Drive at Enclosure 31, Slot 11
      Drive at Enclosure 31, Slot 12
      Drive at Enclosure 31, Slot 13
      Drive at Enclosure 31, Slot 14
  Array 8 (RAID 0)
    Status: Online
    Drive type: Fibre Channel
    Enclosure loss protection: No
    Current owner: Controller in slot B
    Associated logical drives and free capacities:
      RACK2LUN7 (467.619 GB)
    Associated drives (in piece order):
      Drive at Enclosure 32, Slot 1
      Drive at Enclosure 32, Slot 2
      Drive at Enclosure 32, Slot 3
      Drive at Enclosure 32, Slot 4
      Drive at Enclosure 32, Slot 5
      Drive at Enclosure 32, Slot 6
      Drive at Enclosure 32, Slot 7
      Drive at Enclosure 32, Slot 8
      Drive at Enclosure 32, Slot 9
      Drive at Enclosure 32, Slot 10
      Drive at Enclosure 32, Slot 11
      Drive at Enclosure 32, Slot 12
      Drive at Enclosure 32, Slot 13
      Drive at Enclosure 32, Slot 14
  Array 9 (RAID 0)
    Status: Online
    Drive type: Fibre Channel
    Enclosure loss protection: No
    Current owner: Controller in slot B
    Associated logical drives and free capacities:
      RACK2LUN8 (467.619 GB)
    Associated drives (in piece order):
      Drive at Enclosure 33, Slot 1
      Drive at Enclosure 33, Slot 2
      Drive at Enclosure 33, Slot 3
      Drive at Enclosure 33, Slot 4
      Drive at Enclosure 33, Slot 5
      Drive at Enclosure 33, Slot 6
      Drive at Enclosure 33, Slot 7
      Drive at Enclosure 33, Slot 8
      Drive at Enclosure 33, Slot 9
      Drive at Enclosure 33, Slot 10
      Drive at Enclosure 33, Slot 11
      Drive at Enclosure 33, Slot 12
      Drive at Enclosure 33, Slot 13
      Drive at Enclosure 33, Slot 14
  Array 10 (RAID 0)
    Status: Online
    Drive type: Fibre Channel
    Enclosure loss protection: No
    Current owner: Controller in slot B
    Associated logical drives and free capacities:
      RACK2LUN9 (467.619 GB)
    Associated drives (in piece order):
      Drive at Enclosure 34, Slot 1
      Drive at Enclosure 34, Slot 2
      Drive at Enclosure 34, Slot 3
      Drive at Enclosure 34, Slot 4
      Drive at Enclosure 34, Slot 5
      Drive at Enclosure 34, Slot 6
      Drive at Enclosure 34, Slot 7
      Drive at Enclosure 34, Slot 8
      Drive at Enclosure 34, Slot 9
      Drive at Enclosure 34, Slot 10
      Drive at Enclosure 34, Slot 11
      Drive at Enclosure 34, Slot 12
      Drive at Enclosure 34, Slot 13
      Drive at Enclosure 34, Slot 14

STANDARD LOGICAL DRIVES------------------------------

SUMMARY
  Number of standard logical drives: 10
  See other Logical Drives sub-tabs for premium feature information.

  NAME      STATUS   CAPACITY    RAID LEVEL  ARRAY
  RACK2LUN0  Optimal  467.619 GB  0         1
  RACK2LUN1  Optimal  467.619 GB  0         2
  RACK2LUN2  Optimal  467.619 GB  0         3
  RACK2LUN3  Optimal  467.619 GB  0         4
  RACK2LUN4  Optimal  467.619 GB  0         5
  RACK2LUN5  Optimal  467.619 GB  0         6
  RACK2LUN6  Optimal  467.619 GB  0         7
  RACK2LUN7  Optimal  467.619 GB  0         8
  RACK2LUN8  Optimal  467.619 GB  0         9
  RACK2LUN9  Optimal  467.619 GB  0         10

DETAILS
  Logical Drive name: RACK2LUN0
    Logical Drive ID: 60:0a:0b:80:00:13:62:2b:00:00:00:00:41:66:8d:94
    Subsystem ID (SSID): 0
    Status: Optimal
    Drive type: Fibre Channel
    Enclosure loss protection: No
    Preferred owner: Controller in slot A
    Current owner: Controller in slot A
    Capacity: 467.619 GB
```

RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 1
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK2LUN1
Logical Drive ID: 60:0a:0b:80:00:13:62:2b:00:00:00:02:41:66:8e:7e
Subsystem ID (SSID): 1
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot A
Current owner: Controller in slot A
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 2
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK2LUN2
Logical Drive ID: 60:0a:0b:80:00:13:62:2b:00:00:00:04:41:66:8e:b0
Subsystem ID (SSID): 2
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot A
Current owner: Controller in slot A
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 3
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK2LUN3
Logical Drive ID: 60:0a:0b:80:00:13:62:2b:00:00:00:06:41:66:8e:e0
Subsystem ID (SSID): 3
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot A
Current owner: Controller in slot A
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 4
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK2LUN4
Logical Drive ID: 60:0a:0b:80:00:13:62:2b:00:00:00:08:41:66:8f:08
Subsystem ID (SSID): 4
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot A
Current owner: Controller in slot A
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 5
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK2LUN5
Logical Drive ID: 60:0a:0b:80:00:13:63:c6:00:00:00:00:41:66:9b:ab
Subsystem ID (SSID): 5
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot B
Current owner: Controller in slot B
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 6
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK2LUN6
Logical Drive ID: 60:0a:0b:80:00:13:63:c6:00:00:00:02:41:66:9c:1f
Subsystem ID (SSID): 6
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot B
Current owner: Controller in slot B
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 7

Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK2LUN7
Logical Drive ID: 60:0a:0b:80:00:13:63:c6:00:00:00:04:41:66:9c:55
Subsystem ID (SSID): 7
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot B
Current owner: Controller in slot B
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 8
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK2LUN8
Logical Drive ID: 60:0a:0b:80:00:13:63:c6:00:00:00:06:41:66:9c:bd
Subsystem ID (SSID): 8
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot B
Current owner: Controller in slot B
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 9
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK2LUN9
Logical Drive ID: 60:0a:0b:80:00:13:63:c6:00:00:00:08:41:66:9d:9f
Subsystem ID (SSID): 9
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot B
Current owner: Controller in slot B
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 10
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

MISSING LOGICAL DRIVES----------
Number of missing logical drives: 0

DRIVES----------

SUMMARY
Number of drives: 140
Supported drive types: Fibre (140)

BASIC:

TRAY, SLOT	STATUS	CAPACITY	CURRENT DATA RATE	PRODUCT ID	FIRMWARE VERSION
20, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
20, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
20, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
20, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
20, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
20, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
20, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
20, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
20, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
20, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
20, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
20, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
20, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
20, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
21, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
21, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
21, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
21, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
21, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
21, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
21, 7	Optimal	33.902 GB	2 Gbps	ST336732FC	F B949
21, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
21, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954

21, 10	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
21, 11	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
21, 12	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
21, 13	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
21, 14	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
22, 1	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
22, 2	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
22, 3	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
22, 4	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
22, 5	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
22, 6	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
22, 7	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
22, 8	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
22, 9	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
22, 10	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
22, 11	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
22, 12	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
22, 13	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
22, 14	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
23, 1	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
23, 2	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
23, 3	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
23, 4	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
23, 5	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
23, 6	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
23, 7	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
23, 8	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
23, 9	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
23, 10	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
23, 11	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
23, 12	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
23, 13	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
23, 14	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
24, 1	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
24, 2	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
24, 3	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
24, 4	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
24, 5	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
24, 6	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
24, 7	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
24, 8	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
24, 9	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
24, 10	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
24, 11	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
24, 12	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
24, 13	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
24, 14	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
30, 1	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
30, 2	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
30, 3	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
30, 4	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
30, 5	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
30, 6	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
30, 7	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
30, 8	Optimal	33.902 GB	2 Gbps	ST336732FC F B949
30, 9	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
30, 10	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
30, 11	Optimal	33.902 GB	2 Gbps	ST336732FC F B949
30, 12	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
30, 13	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
30, 14	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
31, 1	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
31, 2	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
31, 3	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
31, 4	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
31, 5	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
31, 6	Optimal	33.902 GB	2 Gbps	ST336753FC F B954
31, 7	Optimal	33.902 GB	2 Gbps	ST336753FC F B954

31, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
31, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
31, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
31, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
31, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
31, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
31, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
32, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
32, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
32, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
32, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
32, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
32, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
32, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
32, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
32, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
32, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
32, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
32, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
32, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
32, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
33, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
33, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
33, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
33, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
33, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
33, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
33, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
33, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
33, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
33, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
33, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
33, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
33, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
33, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
34, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
34, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
34, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
34, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
34, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
34, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
34, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
34, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
34, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
34, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
34, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
34, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
34, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
34, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954

DRIVE CHANNELS:

TRAY, SLOT	PREFERRED CHANNEL	REDUNDANT CHANNEL
20, 1	2	1
20, 2	1	2
20, 3	2	1
20, 4	1	2
20, 5	2	1
20, 6	1	2
20, 7	2	1
20, 8	1	2
20, 9	2	1
20, 10	1	2
20, 11	2	1
20, 12	1	2
20, 13	2	1
20, 14	1	2
21, 1	2	1
21, 2	1	2
21, 3	2	1
21, 4	1	2
21, 5	2	1
21, 6	1	2
21, 7	2	1
21, 8	1	2
21, 9	2	1
21, 10	1	2
21, 11	2	1
21, 12	1	2
21, 13	2	1
21, 14	1	2
22, 1	2	1
22, 2	1	2
22, 3	2	1
22, 4	1	2
22, 5	2	1
22, 6	1	2

22, 7 2 1
22, 8 1 2
22, 9 2 1
22, 10 1 2
22, 11 2 1
22, 12 1 2
22, 13 2 1
22, 14 1 2
23, 1 2 1
23, 2 1 2
23, 3 2 1
23, 4 1 2
23, 5 2 1
23, 6 1 2
23, 7 2 1
23, 8 1 2
23, 9 2 1
23, 10 1 2
23, 11 2 1
23, 12 1 2
23, 13 2 1
23, 14 1 2
24, 1 2 1
24, 2 1 2
24, 3 2 1
24, 4 1 2
24, 5 2 1
24, 6 1 2
24, 7 2 1
24, 8 1 2
24, 9 2 1
24, 10 1 2
24, 11 2 1
24, 12 1 2
24, 13 2 1
24, 14 1 2
30, 1 4 3
30, 2 3 4
30, 3 4 3
30, 4 3 4
30, 5 4 3
30, 6 3 4
30, 7 4 3
30, 8 3 4
30, 9 4 3
30, 10 3 4
30, 11 4 3
30, 12 3 4
30, 13 4 3
30, 14 3 4
31, 1 4 3
31, 2 3 4
31, 3 4 3
31, 4 3 4
31, 5 4 3
31, 6 3 4
31, 7 4 3
31, 8 3 4
31, 9 4 3
31, 10 3 4
31, 11 4 3
31, 12 3 4
31, 13 4 3
31, 14 3 4
32, 1 4 3
32, 2 3 4
32, 3 4 3
32, 4 3 4
32, 5 4 3
32, 6 3 4
32, 7 4 3
32, 8 3 4
32, 9 4 3
32, 10 3 4
32, 11 4 3
32, 12 3 4
32, 13 4 3
32, 14 3 4
33, 1 4 3
33, 2 3 4
33, 3 4 3
33, 4 3 4
33, 5 4 3
33, 6 3 4
33, 7 4 3
33, 8 3 4
33, 9 4 3
33, 10 3 4
33, 11 4 3
33, 12 3 4
33, 13 4 3
33, 14 3 4
34, 1 4 3
34, 2 3 4
34, 3 4 3
34, 4 3 4
34, 5 4 3
34, 6 3 4
34, 7 4 3
34, 8 3 4
34, 9 4 3
34, 10 3 4
34, 11 4 3
34, 12 3 4
34, 13 4 3
34, 14 3 4

HOT SPARE COVERAGE:
The following arrays are not protected: 3, 9, 2, 10, 4, 6, 8, 1, 7, 5

Total hot spare drives: 0
Standby: 0
In use: 0

DETAILS
Drive at Enclosure 20, Slot 1
Drive port: 1, Channel: 2, ID: 0/0xEF
Drive port: 2, Channel: 1, ID: 0/0xEF
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1BER8000074081RRY
Vendor: IBM-ESXS
Date of manufacture: August 27, 2003
World-wide name: 20:00:00:0c:50:58:1f:67
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 20, Slot 2
Drive port: 1, Channel: 1, ID: 1/0xE8

Drive port: 2, Channel: 2, ID: 1/0xE8
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1D45M000074101GQ9
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:c9:c8
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 20, Slot 3
Drive port: 1, Channel: 2, ID: 2/0xE4
Drive port: 2, Channel: 1, ID: 2/0xE4
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1D5DC00007410G5JL
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:d1:5c
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 20, Slot 4
Drive port: 1, Channel: 1, ID: 3/0xE2
Drive port: 2, Channel: 2, ID: 3/0xE2
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1C6G200007410170G
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:d1:4d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 20, Slot 5
Drive port: 1, Channel: 2, ID: 4/0xE1
Drive port: 2, Channel: 1, ID: 4/0xE1
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1D45D000074101GPQ
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:c9:cf
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 20, Slot 6
Drive port: 1, Channel: 1, ID: 5/0xE0
Drive port: 2, Channel: 2, ID: 5/0xE0
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1BS6P000074101GBT
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:cf:25
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 20, Slot 7
Drive port: 1, Channel: 2, ID: 6/0xDC
Drive port: 2, Channel: 1, ID: 6/0xDC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1CK8V000074095U9Y
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:d1:3f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 20, Slot 8
Drive port: 1, Channel: 1, ID: 7/0xDA
Drive port: 2, Channel: 2, ID: 7/0xDA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1CMGT00007409NVXT
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:cf:0a
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 20, Slot 9
Drive port: 1, Channel: 2, ID: 80/0x55
Drive port: 2, Channel: 1, ID: 80/0x55
Drive path redundancy: OK
Status: Optimal

Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1C93A000074097QMK
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:d1:59
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 20, Slot 10
Drive port: 1, Channel: 1, ID: 96/0x3A
Drive port: 2, Channel: 2, ID: 96/0x3A
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1D62000007410WSH4
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:c9:63
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 20, Slot 11
Drive port: 1, Channel: 2, ID: 64/0x72
Drive port: 2, Channel: 1, ID: 64/0x72
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1CP9Q00007410252J
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:d0:b7
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 20, Slot 12
Drive port: 1, Channel: 1, ID: 72/0x67
Drive port: 2, Channel: 2, ID: 72/0x67
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1CQRF000074101GEK
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:d0:26
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 20, Slot 13
Drive port: 1, Channel: 2, ID: 88/0x4B
Drive port: 2, Channel: 1, ID: 88/0x4B
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1D6CY00007410WSG7
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:c9:54
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 20, Slot 14
Drive port: 1, Channel: 1, ID: 104/0x2E
Drive port: 2, Channel: 2, ID: 104/0x2E
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1D4Y100007410WSGQ
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:c9:48
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 21, Slot 1
Drive port: 1, Channel: 2, ID: 8/0xD9
Drive port: 2, Channel: 1, ID: 8/0xD9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1D4LE00007410GL7L
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:c9:aa
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 21, Slot 2
Drive port: 1, Channel: 1, ID: 9/0xD6
Drive port: 2, Channel: 2, ID: 9/0xD6
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps

Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1D4KC00007408F08A
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:ca:e9
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 21, Slot 3
Drive port: 1, Channel: 2, ID: 10/0xD5
Drive port: 2, Channel: 1, ID: 10/0xD5
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1D6DJ00007410WSGZ
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:c9:50
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 21, Slot 4
Drive port: 1, Channel: 1, ID: 11/0xD4
Drive port: 2, Channel: 2, ID: 11/0xD4
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1CV7700007410TJB5
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:ce:d6
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 21, Slot 5
Drive port: 1, Channel: 2, ID: 12/0xD3
Drive port: 2, Channel: 1, ID: 12/0xD3
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1BTKL00007409B15A
Vendor: IBM-ESXS
Date of manufacture: August 29, 2003
World-wide name: 20:00:00:0c:50:58:35:c4
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 21, Slot 6
Drive port: 1, Channel: 1, ID: 13/0xD2
Drive port: 2, Channel: 2, ID: 13/0xD2
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1BJRD000074081SG1
Vendor: IBM-ESXS
Date of manufacture: August 27, 2003
World-wide name: 20:00:00:0c:50:58:1f:73
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 21, Slot 7
Drive port: 1, Channel: 2, ID: 14/0xD1
Drive port: 2, Channel: 1, ID: 14/0xD1
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336732FC F
Firmware version: B949
Serial number: 3ET0Z0JH000073214C18
Vendor: IBM-ESXS
Date of manufacture: February 23, 2003
World-wide name: 20:00:00:04:cf:c0:92:ae
Drive type: Fibre Channel
Speed: 14996 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 21, Slot 8
Drive port: 1, Channel: 1, ID: 15/0xCE
Drive port: 2, Channel: 2, ID: 15/0xCE
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1CW8J0000741025AB
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:d0:c3
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 21, Slot 9
Drive port: 1, Channel: 2, ID: 81/0x54
Drive port: 2, Channel: 1, ID: 81/0x54
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1CTYX000074101G51

Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:cf:44
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 21, Slot 10
Drive port: 1, Channel: 1, ID: 97/0x39
Drive port: 2, Channel: 2, ID: 97/0x39
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1D5N8000074097HC3
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:d1:63
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 21, Slot 11
Drive port: 1, Channel: 2, ID: 65/0x71
Drive port: 2, Channel: 1, ID: 65/0x71
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1C4YG0000741016P8
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:cd:64
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 21, Slot 12
Drive port: 1, Channel: 1, ID: 73/0x66
Drive port: 2, Channel: 2, ID: 73/0x66
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1CY1X000074095UEY
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:d1:32
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 21, Slot 13
Drive port: 1, Channel: 2, ID: 89/0x4A
Drive port: 2, Channel: 1, ID: 89/0x4A
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1C84R000074101T4M
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:d0:cf
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 21, Slot 14
Drive port: 1, Channel: 1, ID: 105/0x2D
Drive port: 2, Channel: 2, ID: 105/0x2D
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1CP7J000074101694
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:d1:1d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 22, Slot 1
Drive port: 1, Channel: 2, ID: 16/0xCD
Drive port: 2, Channel: 1, ID: 16/0xCD
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1D47F00007410WSG3
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:c9:68
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 22, Slot 2
Drive port: 1, Channel: 1, ID: 17/0xCC
Drive port: 2, Channel: 2, ID: 17/0xCC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1DJ100000741016MG
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:cf:81

Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 22, Slot 3
Drive port: 1, Channel: 2, ID: 18/0xCB
Drive port: 2, Channel: 1, ID: 18/0xCB
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1D6CM00007410WSJX
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:c9:5f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 22, Slot 4
Drive port: 1, Channel: 1, ID: 19/0xCA
Drive port: 2, Channel: 2, ID: 19/0xCA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1BTHN000074093Y0L
Vendor: IBM-ESXS
Date of manufacture: August 29, 2003
World-wide name: 20:00:00:0c:50:58:3a:97
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 22, Slot 5
Drive port: 1, Channel: 2, ID: 20/0xC9
Drive port: 2, Channel: 1, ID: 20/0xC9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1BW5Z000074099BY1
Vendor: IBM-ESXS
Date of manufacture: August 29, 2003
World-wide name: 20:00:00:0c:50:58:3c:79
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 22, Slot 6
Drive port: 1, Channel: 1, ID: 21/0xC7
Drive port: 2, Channel: 2, ID: 21/0xC7
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1BW1J00007408EYW6
Vendor: IBM-ESXS
Date of manufacture: August 27, 2003
World-wide name: 20:00:00:0c:50:58:1f:74
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 22, Slot 7
Drive port: 1, Channel: 2, ID: 22/0xC6
Drive port: 2, Channel: 1, ID: 22/0xC6
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1BWBR000074082AQ8
Vendor: IBM-ESXS
Date of manufacture: August 27, 2003
World-wide name: 20:00:00:0c:50:58:1f:6a
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 22, Slot 8
Drive port: 1, Channel: 1, ID: 23/0xC5
Drive port: 2, Channel: 2, ID: 23/0xC5
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1DJ3L00007410TJ82
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:d0:07
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 22, Slot 9
Drive port: 1, Channel: 2, ID: 82/0x53
Drive port: 2, Channel: 1, ID: 82/0x53
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1D5DJ00007410WSGC
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:c9:7d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned

Associated array: 3

Drive at Enclosure 22, Slot 10
Drive port: 1, Channel: 1, ID: 98/0x36
Drive port: 2, Channel: 2, ID: 98/0x36
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1D5Z0000074101GA4
Vendor: IBM-ESXS
Date of manufacture: September 2, 2003
World-wide name: 20:00:00:0c:50:58:bd:a7
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 22, Slot 11
Drive port: 1, Channel: 2, ID: 66/0x6E
Drive port: 2, Channel: 1, ID: 66/0x6E
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX33QJP00007517B1R9
Vendor: IBM-ESXS
Date of manufacture: October 25, 2004
World-wide name: 20:00:00:11:c6:23:90:c5
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 22, Slot 12
Drive port: 1, Channel: 1, ID: 74/0x65
Drive port: 2, Channel: 2, ID: 74/0x65
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1BS6H000074101GD6
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:cf:31
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 22, Slot 13
Drive port: 1, Channel: 2, ID: 90/0x49
Drive port: 2, Channel: 1, ID: 90/0x49
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1BW5L000074099BSB
Vendor: IBM-ESXS
Date of manufacture: August 29, 2003
World-wide name: 20:00:00:0c:50:58:37:05
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 22, Slot 14
Drive port: 1, Channel: 1, ID: 106/0x2C
Drive port: 2, Channel: 2, ID: 106/0x2C
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1CQJM0000741016SN
Vendor: IBM-ESXS
Date of manufacture: September 2, 2003
World-wide name: 20:00:00:0c:50:58:ba:eb
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 23, Slot 1
Drive port: 1, Channel: 2, ID: 24/0xC3
Drive port: 2, Channel: 1, ID: 24/0xC3
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1C95A000074101TLQ
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:cf:11
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 23, Slot 2
Drive port: 1, Channel: 1, ID: 25/0xBC
Drive port: 2, Channel: 2, ID: 25/0xBC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1CKN500007410WRW2
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:d1:47
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 23, Slot 3

Drive port: 1, Channel: 2, ID: 26/0xBA
Drive port: 2, Channel: 1, ID: 26/0xBA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1BMNH0000740805K6
Vendor: IBM-ESXS
Date of manufacture: August 27, 2003
World-wide name: 20:00:00:0c:50:58:1f:78
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 23, Slot 4
Drive port: 1, Channel: 1, ID: 27/0xB9
Drive port: 2, Channel: 2, ID: 27/0xB9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1CCVY0000740829GQ
Vendor: IBM-ESXS
Date of manufacture: August 27, 2003
World-wide name: 20:00:00:0c:50:58:25:18
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 23, Slot 5
Drive port: 1, Channel: 2, ID: 28/0xB6
Drive port: 2, Channel: 1, ID: 28/0xB6
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1BTKT000074095UCU
Vendor: IBM-ESXS
Date of manufacture: August 29, 2003
World-wide name: 20:00:00:0c:50:58:37:23
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 23, Slot 6
Drive port: 1, Channel: 1, ID: 29/0xB5
Drive port: 2, Channel: 2, ID: 29/0xB5
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1BT45000074078Q0U
Vendor: IBM-ESXS
Date of manufacture: August 27, 2003
World-wide name: 20:00:00:0c:50:58:1f:54
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 23, Slot 7
Drive port: 1, Channel: 2, ID: 30/0xB4
Drive port: 2, Channel: 1, ID: 30/0xB4
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1CRYB0000741016BU
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:d1:49
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 23, Slot 8
Drive port: 1, Channel: 1, ID: 31/0xB3
Drive port: 2, Channel: 2, ID: 31/0xB3
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1DHEG00007410WS90
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:d1:67
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 23, Slot 9
Drive port: 1, Channel: 2, ID: 83/0x52
Drive port: 2, Channel: 1, ID: 83/0x52
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1CNWQ000074097QR7
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:d1:27
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 23, Slot 10
Drive port: 1, Channel: 1, ID: 99/0x35
Drive port: 2, Channel: 2, ID: 99/0x35
Drive path redundancy: OK

Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1BTHW000074099R19
Vendor: IBM-ESXS
Date of manufacture: August 29, 2003
World-wide name: 20:00:00:0c:50:58:35:d8
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 23, Slot 11
Drive port: 1, Channel: 2, ID: 67/0x6D
Drive port: 2, Channel: 1, ID: 67/0x6D
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1BHS600007408EUJN
Vendor: IBM-ESXS
Date of manufacture: August 27, 2003
World-wide name: 20:00:00:0c:50:58:1f:24
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 23, Slot 12
Drive port: 1, Channel: 1, ID: 75/0x63
Drive port: 2, Channel: 2, ID: 75/0x63
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1BXTZ0000740820FM
Vendor: IBM-ESXS
Date of manufacture: August 27, 2003
World-wide name: 20:00:00:0c:50:58:19:86
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 23, Slot 13
Drive port: 1, Channel: 2, ID: 91/0x47
Drive port: 2, Channel: 1, ID: 91/0x47
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1D5WA000074099BUY
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:c9:e2
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 23, Slot 14
Drive port: 1, Channel: 1, ID: 107/0x2B
Drive port: 2, Channel: 2, ID: 107/0x2B
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1BTHA000074099QYP
Vendor: IBM-ESXS
Date of manufacture: August 29, 2003
World-wide name: 20:00:00:0c:50:58:35:7b
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 24, Slot 1
Drive port: 1, Channel: 2, ID: 32/0xB2
Drive port: 2, Channel: 1, ID: 32/0xB2
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0GZGS00007339SNXH
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:03:26
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 24, Slot 2
Drive port: 1, Channel: 1, ID: 33/0xB1
Drive port: 2, Channel: 2, ID: 33/0xB1
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K0PX00007339TYUJ
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:02:52
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 24, Slot 3
Drive port: 1, Channel: 2, ID: 34/0xAE
Drive port: 2, Channel: 1, ID: 34/0xAE
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB

Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT9800007340X53M
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e8:ef
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 24, Slot 4
Drive port: 1, Channel: 1, ID: 35/0xAD
Drive port: 2, Channel: 2, ID: 35/0xAD
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K2YH00007339SPDB
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:ad
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 24, Slot 5
Drive port: 1, Channel: 2, ID: 36/0xAC
Drive port: 2, Channel: 1, ID: 36/0xAC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JK1100007340X5B8
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e9:3f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 24, Slot 6
Drive port: 1, Channel: 1, ID: 37/0xAB
Drive port: 2, Channel: 2, ID: 37/0xAB
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HHY900007339PQPX
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:fb:23
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 24, Slot 7
Drive port: 1, Channel: 2, ID: 38/0xAA
Drive port: 2, Channel: 1, ID: 38/0xAA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K41900002308CHW3
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:fa:10
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 24, Slot 8
Drive port: 1, Channel: 1, ID: 39/0xA9
Drive port: 2, Channel: 2, ID: 39/0xA9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K2M300007339TYRT
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:02:79
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 24, Slot 9
Drive port: 1, Channel: 2, ID: 84/0x51
Drive port: 2, Channel: 1, ID: 84/0x51
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K2V500007339TYKC
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:b4
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 24, Slot 10
Drive port: 1, Channel: 1, ID: 100/0x34
Drive port: 2, Channel: 2, ID: 100/0x34
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954

Serial number: 3HX24CCL00007434RHUZ
Vendor: IBM-ESXS
Date of manufacture: February 27, 2004
World-wide name: 20:00:00:0c:50:b6:64:1f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 24, Slot 11
Drive port: 1, Channel: 2, ID: 68/0x6C
Drive port: 2, Channel: 1, ID: 68/0x6C
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0H36R00007340X4VZ
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:03:5d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 24, Slot 12
Drive port: 1, Channel: 1, ID: 76/0x5C
Drive port: 2, Channel: 2, ID: 76/0x5C
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K7LR00007326VUYP
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:02:2e
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 24, Slot 13
Drive port: 1, Channel: 2, ID: 92/0x46
Drive port: 2, Channel: 1, ID: 92/0x46
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JRZK000073392DMC
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:1d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 24, Slot 14
Drive port: 1, Channel: 1, ID: 108/0x2A
Drive port: 2, Channel: 2, ID: 108/0x2A
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K0BH00007339TYTU
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:03:38
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 30, Slot 1
Drive port: 1, Channel: 4, ID: 0/0xEF
Drive port: 2, Channel: 3, ID: 0/0xEF
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX12LZE00007341R76M
Vendor: IBM-ESXS
Date of manufacture: November 16, 2003
World-wide name: 20:00:00:04:cf:f4:15:a8
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 30, Slot 2
Drive port: 1, Channel: 3, ID: 1/0xE8
Drive port: 2, Channel: 4, ID: 1/0xE8
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0QAS800007343DD78
Vendor: IBM-ESXS
Date of manufacture: November 23, 2003
World-wide name: 20:00:00:04:cf:f4:17:1a
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 30, Slot 3
Drive port: 1, Channel: 4, ID: 2/0xE4
Drive port: 2, Channel: 3, ID: 2/0xE4
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0YY7Y00007349AF62
Vendor: IBM-ESXS
Date of manufacture: November 23, 2003

World-wide name: 20:00:00:04:cf:f4:17:1d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 30, Slot 4
Drive port: 1, Channel: 3, ID: 3/0xE2
Drive port: 2, Channel: 4, ID: 3/0xE2
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0FBYB00002319A8ML
Vendor: IBM-ESXS
Date of manufacture: November 23, 2003
World-wide name: 20:00:00:04:cf:f4:17:52
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 30, Slot 5
Drive port: 1, Channel: 4, ID: 4/0xE1
Drive port: 2, Channel: 3, ID: 4/0xE1
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1CRF1000074101GTK
Vendor: IBM-ESXS
Date of manufacture: September 3, 2003
World-wide name: 20:00:00:0c:50:58:c6:12
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 30, Slot 6
Drive port: 1, Channel: 3, ID: 5/0xE0
Drive port: 2, Channel: 4, ID: 5/0xE0
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0QYXH000073435D5F
Vendor: IBM-ESXS
Date of manufacture: May 3, 2003
World-wide name: 20:00:00:0c:50:17:8a:45
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 30, Slot 7
Drive port: 1, Channel: 4, ID: 6/0xDC
Drive port: 2, Channel: 3, ID: 6/0xDC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX16JXC0000740330AP
Vendor: IBM-ESXS
Date of manufacture: July 18, 2003
World-wide name: 20:00:00:0c:50:48:e7:ab
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 30, Slot 8
Drive port: 1, Channel: 3, ID: 7/0xDA
Drive port: 2, Channel: 4, ID: 7/0xDA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336732FC F
Firmware version: B949
Serial number: 3ET0EHKL000072439TMK
Vendor: IBM-ESXS
Date of manufacture: February 23, 2003
World-wide name: 20:00:00:04:cf:5f:64:be
Drive type: Fibre Channel
Speed: 14996 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 30, Slot 9
Drive port: 1, Channel: 4, ID: 80/0x55
Drive port: 2, Channel: 3, ID: 80/0x55
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX10W1S00007351S4NG
Vendor: IBM-ESXS
Date of manufacture: November 16, 2003
World-wide name: 20:00:00:04:cf:f4:15:83
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 30, Slot 10
Drive port: 1, Channel: 3, ID: 96/0x3A
Drive port: 2, Channel: 4, ID: 96/0x3A
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX1B4QZ000073368HKZ
Vendor: IBM-ESXS
Date of manufacture: November 16, 2003
World-wide name: 20:00:00:04:cf:f4:15:e8
Drive type: Fibre Channel
Speed: 15015 RPM

Mode: Assigned
Associated array: 6

Drive at Enclosure 30, Slot 11
Drive port: 1, Channel: 4, ID: 64/0x72
Drive port: 2, Channel: 3, ID: 64/0x72
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336732FC F
Firmware version: B949
Serial number: 3ET08W5X000072269B19
Vendor: IBM-ESXS
Date of manufacture: February 23, 2003
World-wide name: 20:00:00:04:cf:5f:53:01
Drive type: Fibre Channel
Speed: 14996 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 30, Slot 12
Drive port: 1, Channel: 3, ID: 72/0x67
Drive port: 2, Channel: 4, ID: 72/0x67
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HENN00007339LWS1
Vendor: IBM-ESXS
Date of manufacture: March 31, 2003
World-wide name: 20:00:00:04:cf:f9:36:fa
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 30, Slot 13
Drive port: 1, Channel: 4, ID: 88/0x4B
Drive port: 2, Channel: 3, ID: 88/0x4B
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT5H000073405FTA
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e6:0b
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 30, Slot 14
Drive port: 1, Channel: 3, ID: 104/0x2E
Drive port: 2, Channel: 4, ID: 104/0x2E
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0RGSE00008305U12F
Vendor: IBM-ESXS
Date of manufacture: May 17, 2003
World-wide name: 20:00:00:0c:50:20:a1:dc
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 31, Slot 1
Drive port: 1, Channel: 4, ID: 8/0xD9
Drive port: 2, Channel: 3, ID: 8/0xD9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HNDN00008305DEPR
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:da:ce
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 31, Slot 2
Drive port: 1, Channel: 3, ID: 9/0xD6
Drive port: 2, Channel: 4, ID: 9/0xD6
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT3Y0000734059QN
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e7:67
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 31, Slot 3
Drive port: 1, Channel: 4, ID: 10/0xD5
Drive port: 2, Channel: 3, ID: 10/0xD5
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JYBF00007340WVJW
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:5e
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 31, Slot 4
Drive port: 1, Channel: 3, ID: 11/0xD4
Drive port: 2, Channel: 4, ID: 11/0xD4
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K24J00007339N0Q8
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:f9:fb:17
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 31, Slot 5
Drive port: 1, Channel: 4, ID: 12/0xD3
Drive port: 2, Channel: 3, ID: 12/0xD3
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT6N0000734059XT
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e6:8f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 31, Slot 6
Drive port: 1, Channel: 3, ID: 13/0xD2
Drive port: 2, Channel: 4, ID: 13/0xD2
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K8AM000073405G6H
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e5:31
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 31, Slot 7
Drive port: 1, Channel: 4, ID: 14/0xD1
Drive port: 2, Channel: 3, ID: 14/0xD1
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K8AL000073392DSE
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e3:3e
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 31, Slot 8
Drive port: 1, Channel: 3, ID: 15/0xCE
Drive port: 2, Channel: 4, ID: 15/0xCE
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JZY400007340GTTL
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:59
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 31, Slot 9
Drive port: 1, Channel: 4, ID: 81/0x54
Drive port: 2, Channel: 3, ID: 81/0x54
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HKZ900007339TYG7
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:f9:fc:31
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 31, Slot 10
Drive port: 1, Channel: 3, ID: 97/0x39
Drive port: 2, Channel: 4, ID: 97/0x39
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT350000734058JA
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e6:b1
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 31, Slot 11
Drive port: 1, Channel: 4, ID: 65/0x71
Drive port: 2, Channel: 3, ID: 65/0x71

Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K79S0000734059ZR
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:68
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 31, Slot 12
Drive port: 1, Channel: 3, ID: 73/0x66
Drive port: 2, Channel: 4, ID: 73/0x66
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KBGW000073405FVN
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:12:69
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 31, Slot 13
Drive port: 1, Channel: 4, ID: 89/0x4A
Drive port: 2, Channel: 3, ID: 89/0x4A
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HMQ500007340WVLR
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ec:75
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 31, Slot 14
Drive port: 1, Channel: 3, ID: 105/0x2D
Drive port: 2, Channel: 4, ID: 105/0x2D
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0TATJ00007345LF5P
Vendor: IBM-ESXS
Date of manufacture: May 14, 2003
World-wide name: 20:00:00:0c:50:20:4d:b5
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 32, Slot 1
Drive port: 1, Channel: 4, ID: 16/0xCD
Drive port: 2, Channel: 3, ID: 16/0xCD
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JY2D000073405A24
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:67
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 32, Slot 2
Drive port: 1, Channel: 3, ID: 17/0xCC
Drive port: 2, Channel: 4, ID: 17/0xCC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JZC1000073405A9N
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0a:23
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 32, Slot 3
Drive port: 1, Channel: 4, ID: 18/0xCB
Drive port: 2, Channel: 3, ID: 18/0xCB
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JXM6000073405FXZ
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:21
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 32, Slot 4
Drive port: 1, Channel: 3, ID: 19/0xCA
Drive port: 2, Channel: 4, ID: 19/0xCA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB

Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K661000073405A9G
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:08:0f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 32, Slot 5
Drive port: 1, Channel: 4, ID: 20/0xC9
Drive port: 2, Channel: 3, ID: 20/0xC9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K02L000073405A7M
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:07:db
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 32, Slot 6
Drive port: 1, Channel: 3, ID: 21/0xC7
Drive port: 2, Channel: 4, ID: 21/0xC7
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K7JV00007340WVFD
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e9:70
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 32, Slot 7
Drive port: 1, Channel: 4, ID: 22/0xC6
Drive port: 2, Channel: 3, ID: 22/0xC6
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HHJQ000073409K23
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:fb:5d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 32, Slot 8
Drive port: 1, Channel: 3, ID: 23/0xC5
Drive port: 2, Channel: 4, ID: 23/0xC5
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0GVBZ00007340X51P
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:fb:68
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 32, Slot 9
Drive port: 1, Channel: 4, ID: 82/0x53
Drive port: 2, Channel: 3, ID: 82/0x53
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JS4W00007340X5HL
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e9:67
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 32, Slot 10
Drive port: 1, Channel: 3, ID: 98/0x36
Drive port: 2, Channel: 4, ID: 98/0x36
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JBX300007339GMTD
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:07:af
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 32, Slot 11
Drive port: 1, Channel: 4, ID: 66/0x6E
Drive port: 2, Channel: 3, ID: 66/0x6E
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F

Firmware version: B954
Serial number: 3HX0JZT9000073410J41
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:12:cf
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 32, Slot 12
Drive port: 1, Channel: 3, ID: 74/0x65
Drive port: 2, Channel: 4, ID: 74/0x65
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K0NS000073405A65
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0e:78
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 32, Slot 13
Drive port: 1, Channel: 4, ID: 90/0x49
Drive port: 2, Channel: 3, ID: 90/0x49
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K872000073388BME
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:b7
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 32, Slot 14
Drive port: 1, Channel: 3, ID: 106/0x2C
Drive port: 2, Channel: 4, ID: 106/0x2C
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HV61000073410J3L
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:14:5b
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 33, Slot 1
Drive port: 1, Channel: 4, ID: 24/0xC3
Drive port: 2, Channel: 3, ID: 24/0xC3
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K7KM0000734059MJ
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e7:1e
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 33, Slot 2
Drive port: 1, Channel: 3, ID: 25/0xBC
Drive port: 2, Channel: 4, ID: 25/0xBC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KCP6000073409KB4
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:3e
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 33, Slot 3
Drive port: 1, Channel: 4, ID: 26/0xBA
Drive port: 2, Channel: 3, ID: 26/0xBA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K21G00007339SP58
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:b2
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 33, Slot 4
Drive port: 1, Channel: 3, ID: 27/0xB9
Drive port: 2, Channel: 4, ID: 27/0xB9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HMP400007340WVLC
Vendor: IBM-ESXS

Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ec:b4
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 33, Slot 5
Drive port: 1, Channel: 4, ID: 28/0xB6
Drive port: 2, Channel: 3, ID: 28/0xB6
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K6DF000073405A8E
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0a:16
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 33, Slot 6
Drive port: 1, Channel: 3, ID: 29/0xB5
Drive port: 2, Channel: 4, ID: 29/0xB5
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JY5600007340YESS
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:2c
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 33, Slot 7
Drive port: 1, Channel: 4, ID: 30/0xB4
Drive port: 2, Channel: 3, ID: 30/0xB4
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HMR1000073405A8P
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:07:b6
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 33, Slot 8
Drive port: 1, Channel: 3, ID: 31/0xB3
Drive port: 2, Channel: 4, ID: 31/0xB3
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KCV900007340GTVR
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:48
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 33, Slot 9
Drive port: 1, Channel: 4, ID: 83/0x52
Drive port: 2, Channel: 3, ID: 83/0x52
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K4RE00007339RGRR
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:45
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 33, Slot 10
Drive port: 1, Channel: 3, ID: 99/0x35
Drive port: 2, Channel: 4, ID: 99/0x35
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRGT00007340WVFG
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e8:eb
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 33, Slot 11
Drive port: 1, Channel: 4, ID: 67/0x6D
Drive port: 2, Channel: 3, ID: 67/0x6D
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KCMN00007340WW9D
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:66
Drive type: Fibre Channel

Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 33, Slot 12
Drive port: 1, Channel: 3, ID: 75/0x63
Drive port: 2, Channel: 4, ID: 75/0x63
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0H56400007339TYB1
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:d6
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 33, Slot 13
Drive port: 1, Channel: 4, ID: 91/0x47
Drive port: 2, Channel: 3, ID: 91/0x47
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KBPA000073410HSR
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:12:d7
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 33, Slot 14
Drive port: 1, Channel: 3, ID: 107/0x2B
Drive port: 2, Channel: 4, ID: 107/0x2B
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JY1V00007340WVNB
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:49
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 34, Slot 1
Drive port: 1, Channel: 4, ID: 32/0xB2
Drive port: 2, Channel: 3, ID: 32/0xB2
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JN4H000073405A8B
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:07:c6
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 34, Slot 2
Drive port: 1, Channel: 3, ID: 33/0xB1
Drive port: 2, Channel: 4, ID: 33/0xB1
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KBZ8000073392DKG
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:18:c9
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 34, Slot 3
Drive port: 1, Channel: 4, ID: 34/0xAE
Drive port: 2, Channel: 3, ID: 34/0xAE
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0H0C500007339SPC1
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:aa
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 34, Slot 4
Drive port: 1, Channel: 3, ID: 35/0xAD
Drive port: 2, Channel: 4, ID: 35/0xAD
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JXQ2000073410J5C
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:14:39
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 34, Slot 5
Drive port: 1, Channel: 4, ID: 36/0xAC
Drive port: 2, Channel: 3, ID: 36/0xAC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HLFR00007340WVEV
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:1a:62
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 34, Slot 6
Drive port: 1, Channel: 3, ID: 37/0xAB
Drive port: 2, Channel: 4, ID: 37/0xAB
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JT9300007339TYNU
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:a2
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 34, Slot 7
Drive port: 1, Channel: 4, ID: 38/0xAA
Drive port: 2, Channel: 3, ID: 38/0xAA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HHA4????????????
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:1b:40
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 34, Slot 8
Drive port: 1, Channel: 3, ID: 39/0xA9
Drive port: 2, Channel: 4, ID: 39/0xA9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HJ78000073386V20
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:05
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 34, Slot 9
Drive port: 1, Channel: 4, ID: 84/0x51
Drive port: 2, Channel: 3, ID: 84/0x51
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT4B0000734059N5
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e7:e6
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 34, Slot 10
Drive port: 1, Channel: 3, ID: 100/0x34
Drive port: 2, Channel: 4, ID: 100/0x34
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JAAA000073386VFN
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:f9:fc:34
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 34, Slot 11
Drive port: 1, Channel: 4, ID: 68/0x6C
Drive port: 2, Channel: 3, ID: 68/0x6C
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRFY0000734058KA
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e7:20
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 34, Slot 12
Drive port: 1, Channel: 3, ID: 76/0x5C

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    Drive port: 2, Channel: 4, ID: 76/0x5C
    Drive path redundancy: OK
    Status: Optimal
    Raw capacity: 33.902 GB
    Usable capacity: 33.402 GB
    Current data rate: 2 Gbps
    Product ID: ST336753FC    F
    Firmware version: B954
    Serial number: 3HX0K2T300007340WEWD
    Vendor: IBM-ESXS
    Date of manufacture: April 5, 2003
    World-wide name: 20:00:00:04:cf:ff:03:14
    Drive type: Fibre Channel
    Speed: 15015 RPM
    Mode: Assigned
    Associated array: 10

  Drive at Enclosure 34, Slot 13
    Drive port: 1, Channel: 4, ID: 92/0x46
    Drive port: 2, Channel: 3, ID: 92/0x46
    Drive path redundancy: OK
    Status: Optimal
    Raw capacity: 33.902 GB
    Usable capacity: 33.402 GB
    Current data rate: 2 Gbps
    Product ID: ST336753FC    F
    Firmware version: B954
    Serial number: 3HX0HPHH0000734058JE
    Vendor: IBM-ESXS
    Date of manufacture: April 5, 2003
    World-wide name: 20:00:00:04:cf:f9:fb:79
    Drive type: Fibre Channel
    Speed: 15015 RPM
    Mode: Assigned
    Associated array: 10

  Drive at Enclosure 34, Slot 14
    Drive port: 1, Channel: 3, ID: 108/0x2A
    Drive port: 2, Channel: 4, ID: 108/0x2A
    Drive path redundancy: OK
    Status: Optimal
    Raw capacity: 33.902 GB
    Usable capacity: 33.402 GB
    Current data rate: 2 Gbps
    Product ID: ST336753FC    F
    Firmware version: B954
    Serial number: 3HX0J3SH00007339SNRT
    Vendor: IBM-ESXS
    Date of manufacture: April 5, 2003
    World-wide name: 20:00:00:04:cf:ff:02:a4
    Drive type: Fibre Channel
    Speed: 15015 RPM
    Mode: Assigned
    Associated array: 10

PROFILE FOR STORAGE SUBSYSTEM: Rack_3 (2/8/05 4:40:27 PM)

SUMMARY------------------------------
  Number of controllers: 2
  Number of arrays: 10
  Total number of logical drives (includes an access logical drive): 11 of 2048
used
    Number of standard logical drives: 10
    Number of access logical drives: 1
  Number of drives: 140
  Supported drive types: Fibre (140)
  Total hot spare drives: 0
    Standby: 0
    In use: 0
  Access logical drive: None mapped
  Default host type: Windows 2000/Server 2003 Non-Clustered (Host type
index 2)
  Current configuration
    Firmware version: 06.10.06.00
    NVSRAM version: N1742F900R910V02
  Pending configuration
    Staged firmware download supported?: Yes
    Firmware version: None
    NVSRAM version: None
    Transferred on: None
  NVSRAM configured for batteries?: Yes
  Start cache flushing at (in percentage): 80
  Stop cache flushing at (in percentage): 80
  Cache block size (in KB): 4
  Media scan frequency (in days): Disabled
  Failover alert delay (in minutes): 5
  Feature enable identifier: 3037373535003038303935003F379E17
  Storage Subsystem worldwide name (ID):
600A0B80001361CE000000004163CEF7

ARRAYS-------------------------------
  Number of arrays: 10

  Array 1 (RAID 0)
    Status: Online
    Drive type: Fibre Channel
    Enclosure loss protection: No
    Current owner: Controller in slot A
    Associated logical drives and free capacities:
      RACK3LUN0 (467.619 GB)
    Associated drives (in piece order):
      Drive at Enclosure 40, Slot 1
      Drive at Enclosure 40, Slot 2
      Drive at Enclosure 40, Slot 3
      Drive at Enclosure 40, Slot 4
      Drive at Enclosure 40, Slot 5
      Drive at Enclosure 40, Slot 6
      Drive at Enclosure 40, Slot 7
      Drive at Enclosure 40, Slot 8
      Drive at Enclosure 40, Slot 9
      Drive at Enclosure 40, Slot 10
      Drive at Enclosure 40, Slot 11
      Drive at Enclosure 40, Slot 12
      Drive at Enclosure 40, Slot 13
      Drive at Enclosure 40, Slot 14
  Array 2 (RAID 0)
    Status: Online
    Drive type: Fibre Channel
    Enclosure loss protection: No
    Current owner: Controller in slot A
    Associated logical drives and free capacities:
      RACK3LUN1 (467.619 GB)
    Associated drives (in piece order):
      Drive at Enclosure 41, Slot 1
      Drive at Enclosure 41, Slot 2
      Drive at Enclosure 41, Slot 3
      Drive at Enclosure 41, Slot 4
      Drive at Enclosure 41, Slot 5
      Drive at Enclosure 41, Slot 6
      Drive at Enclosure 41, Slot 7
      Drive at Enclosure 41, Slot 8
      Drive at Enclosure 41, Slot 9
      Drive at Enclosure 41, Slot 10
      Drive at Enclosure 41, Slot 11
      Drive at Enclosure 41, Slot 12
      Drive at Enclosure 41, Slot 13
```

Drive at Enclosure 41, Slot 14
Array 3 (RAID 0)
Status: Online
Drive type: Fibre Channel
Enclosure loss protection: No
Current owner: Controller in slot A
Associated logical drives and free capacities:
RACK3LUN2 (467.619 GB)
Associated drives (in piece order):
Drive at Enclosure 42, Slot 1
Drive at Enclosure 42, Slot 2
Drive at Enclosure 42, Slot 3
Drive at Enclosure 42, Slot 4
Drive at Enclosure 42, Slot 5
Drive at Enclosure 42, Slot 6
Drive at Enclosure 42, Slot 7
Drive at Enclosure 42, Slot 8
Drive at Enclosure 42, Slot 9
Drive at Enclosure 42, Slot 10
Drive at Enclosure 42, Slot 11
Drive at Enclosure 42, Slot 12
Drive at Enclosure 42, Slot 13
Drive at Enclosure 42, Slot 14
Array 4 (RAID 0)
Status: Online
Drive type: Fibre Channel
Enclosure loss protection: No
Current owner: Controller in slot A
Associated logical drives and free capacities:
RACK3LUN3 (467.619 GB)
Associated drives (in piece order):
Drive at Enclosure 43, Slot 1
Drive at Enclosure 43, Slot 2
Drive at Enclosure 43, Slot 3
Drive at Enclosure 43, Slot 4
Drive at Enclosure 43, Slot 5
Drive at Enclosure 43, Slot 6
Drive at Enclosure 43, Slot 7
Drive at Enclosure 43, Slot 8
Drive at Enclosure 43, Slot 9
Drive at Enclosure 43, Slot 10
Drive at Enclosure 43, Slot 11
Drive at Enclosure 43, Slot 12
Drive at Enclosure 43, Slot 13
Drive at Enclosure 43, Slot 14
Array 5 (RAID 0)
Status: Online
Drive type: Fibre Channel
Enclosure loss protection: No
Current owner: Controller in slot A
Associated logical drives and free capacities:
RACK3LUN4 (467.619 GB)
Associated drives (in piece order):
Drive at Enclosure 44, Slot 1
Drive at Enclosure 44, Slot 2
Drive at Enclosure 44, Slot 3
Drive at Enclosure 44, Slot 4
Drive at Enclosure 44, Slot 5
Drive at Enclosure 44, Slot 6
Drive at Enclosure 44, Slot 7
Drive at Enclosure 44, Slot 8
Drive at Enclosure 44, Slot 9
Drive at Enclosure 44, Slot 10
Drive at Enclosure 44, Slot 11
Drive at Enclosure 44, Slot 12
Drive at Enclosure 44, Slot 13
Drive at Enclosure 44, Slot 14
Array 6 (RAID 0)
Status: Online
Drive type: Fibre Channel
Enclosure loss protection: No
Current owner: Controller in slot B
Associated logical drives and free capacities:
RACK3LUN5 (467.619 GB)
Associated drives (in piece order):
Drive at Enclosure 50, Slot 1
Drive at Enclosure 50, Slot 2
Drive at Enclosure 50, Slot 3
Drive at Enclosure 50, Slot 4
Drive at Enclosure 50, Slot 5
Drive at Enclosure 50, Slot 6
Drive at Enclosure 50, Slot 7
Drive at Enclosure 50, Slot 8
Drive at Enclosure 50, Slot 9
Drive at Enclosure 50, Slot 10
Drive at Enclosure 50, Slot 11
Drive at Enclosure 50, Slot 12
Drive at Enclosure 50, Slot 13
Drive at Enclosure 50, Slot 14
Array 7 (RAID 0)
Status: Online
Drive type: Fibre Channel
Enclosure loss protection: No
Current owner: Controller in slot B
Associated logical drives and free capacities:
RACK3LUN6 (467.619 GB)
Associated drives (in piece order):
Drive at Enclosure 51, Slot 1
Drive at Enclosure 51, Slot 2
Drive at Enclosure 51, Slot 3
Drive at Enclosure 51, Slot 4
Drive at Enclosure 51, Slot 5
Drive at Enclosure 51, Slot 6
Drive at Enclosure 51, Slot 7
Drive at Enclosure 51, Slot 8
Drive at Enclosure 51, Slot 9
Drive at Enclosure 51, Slot 10
Drive at Enclosure 51, Slot 11
Drive at Enclosure 51, Slot 12
Drive at Enclosure 51, Slot 13
Drive at Enclosure 51, Slot 14
Array 8 (RAID 0)
Status: Online
Drive type: Fibre Channel
Enclosure loss protection: No
Current owner: Controller in slot B
Associated logical drives and free capacities:
RACK3LUN7 (467.619 GB)
Associated drives (in piece order):
Drive at Enclosure 52, Slot 1
Drive at Enclosure 52, Slot 2
Drive at Enclosure 52, Slot 3
Drive at Enclosure 52, Slot 4
Drive at Enclosure 52, Slot 5
Drive at Enclosure 52, Slot 6
Drive at Enclosure 52, Slot 7
Drive at Enclosure 52, Slot 8
Drive at Enclosure 52, Slot 9
Drive at Enclosure 52, Slot 10
Drive at Enclosure 52, Slot 11
Drive at Enclosure 52, Slot 12
Drive at Enclosure 52, Slot 13
Drive at Enclosure 52, Slot 14
Array 9 (RAID 0)
Status: Online
Drive type: Fibre Channel

Enclosure loss protection: No
Current owner: Controller in slot B
Associated logical drives and free capacities:
RACK3LUN8 (467.619 GB)
Associated drives (in piece order):
Drive at Enclosure 53, Slot 1
Drive at Enclosure 53, Slot 2
Drive at Enclosure 53, Slot 3
Drive at Enclosure 53, Slot 4
Drive at Enclosure 53, Slot 5
Drive at Enclosure 53, Slot 6
Drive at Enclosure 53, Slot 7
Drive at Enclosure 53, Slot 8
Drive at Enclosure 53, Slot 9
Drive at Enclosure 53, Slot 10
Drive at Enclosure 53, Slot 11
Drive at Enclosure 53, Slot 12
Drive at Enclosure 53, Slot 13
Drive at Enclosure 53, Slot 14
Array 10 (RAID 0)
Status: Online
Drive type: Fibre Channel
Enclosure loss protection: No
Current owner: Controller in slot B
Associated logical drives and free capacities:
RACK3LUN9 (467.619 GB)
Associated drives (in piece order):
Drive at Enclosure 54, Slot 1
Drive at Enclosure 54, Slot 2
Drive at Enclosure 54, Slot 3
Drive at Enclosure 54, Slot 4
Drive at Enclosure 54, Slot 5
Drive at Enclosure 54, Slot 6
Drive at Enclosure 54, Slot 7
Drive at Enclosure 54, Slot 8
Drive at Enclosure 54, Slot 9
Drive at Enclosure 54, Slot 10
Drive at Enclosure 54, Slot 11
Drive at Enclosure 54, Slot 12
Drive at Enclosure 54, Slot 13
Drive at Enclosure 54, Slot 14

STANDARD LOGICAL DRIVES----------

SUMMARY
Number of standard logical drives: 10
See other Logical Drives sub-tabs for premium feature information.

NAME	STATUS	CAPACITY	RAID LEVEL	ARRAY
RACK3LUN0	Optimal	467.619 GB	0	1
RACK3LUN1	Optimal	467.619 GB	0	2
RACK3LUN2	Optimal	467.619 GB	0	3
RACK3LUN3	Optimal	467.619 GB	0	4
RACK3LUN4	Optimal	467.619 GB	0	5
RACK3LUN5	Optimal	467.619 GB	0	6
RACK3LUN6	Optimal	467.619 GB	0	7
RACK3LUN7	Optimal	467.619 GB	0	8
RACK3LUN8	Optimal	467.619 GB	0	9
RACK3LUN9	Optimal	467.619 GB	0	10

DETAILS
Logical Drive name: RACK3LUN0
Logical Drive ID: 60:0a:0b:80:00:13:61:ce:00:00:00:00:41:65:5c:2e
Subsystem ID (SSID): 0
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot A
Current owner: Controller in slot A
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 1
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK3LUN1
Logical Drive ID: 60:0a:0b:80:00:13:61:ce:00:00:00:02:41:65:5c:94
Subsystem ID (SSID): 1
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot A
Current owner: Controller in slot A
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 2
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK3LUN2
Logical Drive ID: 60:0a:0b:80:00:13:61:ce:00:00:00:04:41:65:5c:ba
Subsystem ID (SSID): 2
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot A
Current owner: Controller in slot A
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 3
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK3LUN3
Logical Drive ID: 60:0a:0b:80:00:13:61:ce:00:00:00:06:41:65:5c:e2
Subsystem ID (SSID): 3
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot A
Current owner: Controller in slot A
Capacity: 467.619 GB

RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 4
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK3LUN4
Logical Drive ID: 60:0a:0b:80:00:13:61:ce:00:00:00:08:41:65:5d:12
Subsystem ID (SSID): 4
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot A
Current owner: Controller in slot A
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 5
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK3LUN5
Logical Drive ID: 60:0a:0b:80:00:13:60:24:00:00:00:00:41:65:5d:c9
Subsystem ID (SSID): 5
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot B
Current owner: Controller in slot B
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 6
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK3LUN6
Logical Drive ID: 60:0a:0b:80:00:13:60:24:00:00:00:02:41:65:5d:ef
Subsystem ID (SSID): 6
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot B
Current owner: Controller in slot B
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 7
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK3LUN7
Logical Drive ID: 60:0a:0b:80:00:13:60:24:00:00:00:04:41:65:5e:19
Subsystem ID (SSID): 7
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot B
Current owner: Controller in slot B
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 8
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK3LUN8
Logical Drive ID: 60:0a:0b:80:00:13:60:24:00:00:00:06:41:65:5e:43
Subsystem ID (SSID): 8
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot B
Current owner: Controller in slot B
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 9
Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

Logical Drive name: RACK3LUN9
Logical Drive ID: 60:0a:0b:80:00:13:60:24:00:00:00:08:41:65:5e:af
Subsystem ID (SSID): 9
Status: Optimal
Drive type: Fibre Channel
Enclosure loss protection: No
Preferred owner: Controller in slot B
Current owner: Controller in slot B
Capacity: 467.619 GB
RAID level: 0
Segment size: 64 KB
Modification priority: High
Associated array: 10

Read cache: Enabled
Write cache: Disabled
Write cache without batteries: Disabled
Write cache with mirroring: Disabled
Flush write cache after (in seconds): 10.00
Cache read ahead multiplier: 1
Enable background media scan: Disabled
Media scan with redundancy check: Disabled

MISSING LOGICAL DRIVES----------
Number of missing logical drives: 0

DRIVES----------

SUMMARY
Number of drives: 140
Supported drive types: Fibre (140)

BASIC:

TRAY, SLOT	STATUS	CAPACITY	CURRENT DATA RATE	PRODUCT ID	FIRMWARE VERSION
40, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
40, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
40, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
40, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
40, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
40, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
40, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
40, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
40, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
40, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
40, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
40, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
40, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
40, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
41, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
41, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
41, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
41, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
41, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
41, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
41, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
41, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
41, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
41, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
41, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
41, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
41, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
41, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
42, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
42, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
42, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
42, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
42, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
42, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
42, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
42, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
42, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
42, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
42, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
42, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
42, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
42, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
43, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
43, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
43, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
43, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
43, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
43, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
43, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
43, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
43, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
43, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
43, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
43, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
43, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
43, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954

44, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
44, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
44, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
44, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
44, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
44, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
44, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
44, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
44, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
44, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
44, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
44, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
44, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
44, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
50, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
50, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
50, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
50, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
50, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
50, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
50, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
50, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
50, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
50, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
50, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
50, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
50, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
50, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
51, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
51, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
51, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
51, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
51, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
51, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
51, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
51, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
51, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
51, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
51, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
51, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
51, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
51, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
52, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
52, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
52, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
52, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
52, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
52, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
52, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
52, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
52, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
52, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
52, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
52, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
52, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
52, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
53, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
53, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
53, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
53, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
53, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
53, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
53, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
53, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
53, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
53, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
53, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
53, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954

53, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
53, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
54, 1	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
54, 2	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
54, 3	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
54, 4	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
54, 5	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
54, 6	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
54, 7	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
54, 8	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
54, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
54, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
54, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
54, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
54, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954
54, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F B954

DRIVE CHANNELS:

TRAY, SLOT	PREFERRED CHANNEL	REDUNDANT CHANNEL
40, 1	2	1
40, 2	1	2
40, 3	2	1
40, 4	1	2
40, 5	2	1
40, 6	1	2
40, 7	2	1
40, 8	1	2
40, 9	2	1
40, 10	1	2
40, 11	2	1
40, 12	1	2
40, 13	2	1
40, 14	1	2
41, 1	2	1
41, 2	1	2
41, 3	2	1
41, 4	1	2
41, 5	2	1
41, 6	1	2
41, 7	2	1
41, 8	1	2
41, 9	2	1
41, 10	1	2
41, 11	2	1
41, 12	1	2
41, 13	2	1
41, 14	1	2
42, 1	2	1
42, 2	1	2
42, 3	2	1
42, 4	1	2
42, 5	2	1
42, 6	1	2
42, 7	2	1
42, 8	1	2
42, 9	2	1
42, 10	1	2
42, 11	2	1
42, 12	1	2
42, 13	2	1
42, 14	1	2
43, 1	2	1
43, 2	1	2
43, 3	2	1
43, 4	1	2
43, 5	2	1
43, 6	1	2
43, 7	2	1
43, 8	1	2
43, 9	2	1
43, 10	1	2
43, 11	2	1
43, 12	1	2
43, 13	2	1
43, 14	1	2
44, 1	2	1
44, 2	1	2
44, 3	2	1
44, 4	1	2
44, 5	2	1
44, 6	1	2
44, 7	2	1
44, 8	1	2
44, 9	2	1
44, 10	1	2
44, 11	2	1
44, 12	1	2
44, 13	2	1
44, 14	1	2
50, 1	4	3
50, 2	3	4
50, 3	4	3
50, 4	3	4
50, 5	4	3
50, 6	3	4
50, 7	4	3
50, 8	3	4
50, 9	4	3
50, 10	3	4
50, 11	4	3
50, 12	3	4
50, 13	4	3
50, 14	3	4
51, 1	4	3
51, 2	3	4
51, 3	4	3
51, 4	3	4
51, 5	4	3
51, 6	3	4
51, 7	4	3
51, 8	3	4
51, 9	4	3
51, 10	3	4
51, 11	4	3
51, 12	3	4
51, 13	4	3
51, 14	3	4
52, 1	4	3
52, 2	3	4

52, 3 4 3
52, 4 3 4
52, 5 4 3
52, 6 3 4
52, 7 4 3
52, 8 3 4
52, 9 4 3
52, 10 3 4
52, 11 4 3
52, 12 3 4
52, 13 4 3
52, 14 3 4
53, 1 4 3
53, 2 3 4
53, 3 4 3
53, 4 3 4
53, 5 4 3
53, 6 3 4
53, 7 4 3
53, 8 3 4
53, 9 4 3
53, 10 3 4
53, 11 4 3
53, 12 3 4
53, 13 4 3
53, 14 3 4
54, 1 4 3
54, 2 3 4
54, 3 4 3
54, 4 3 4
54, 5 4 3
54, 6 3 4
54, 7 4 3
54, 8 3 4
54, 9 4 3
54, 10 3 4
54, 11 4 3
54, 12 3 4
54, 13 4 3
54, 14 3 4

HOT SPARE COVERAGE:
The following arrays are not protected: 3, 9, 2, 5, 4, 6, 1, 7, 10, 8

Total hot spare drives: 0
Standby: 0
In use: 0

DETAILS
Drive at Enclosure 40, Slot 1
Drive port: 1, Channel: 2, ID: 0/0xEF
Drive port: 2, Channel: 1, ID: 0/0xEF
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HSJX000073405FSJ
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:12:88
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 40, Slot 2
Drive port: 1, Channel: 1, ID: 1/0xE8
Drive port: 2, Channel: 2, ID: 1/0xE8
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K40R00007339SP25
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:f5:7b
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 40, Slot 3
Drive port: 1, Channel: 2, ID: 2/0xE4
Drive port: 2, Channel: 1, ID: 2/0xE4
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KD7F00007340WVXJ
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:12:e4
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 40, Slot 4
Drive port: 1, Channel: 1, ID: 3/0xE2
Drive port: 2, Channel: 2, ID: 3/0xE2
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KD3E000073409KX4
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:11:89
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 40, Slot 5
Drive port: 1, Channel: 2, ID: 4/0xE1
Drive port: 2, Channel: 1, ID: 4/0xE1
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HSZF000073392DU9

Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e3:78
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 40, Slot 6
Drive port: 1, Channel: 1, ID: 5/0xE0
Drive port: 2, Channel: 2, ID: 5/0xE0
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HM8W00007340X4YM
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:fb:99
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 40, Slot 7
Drive port: 1, Channel: 2, ID: 6/0xDC
Drive port: 2, Channel: 1, ID: 6/0xDC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K03N00007340X59K
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:0d:2d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 40, Slot 8
Drive port: 1, Channel: 1, ID: 7/0xDA
Drive port: 2, Channel: 2, ID: 7/0xDA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KD5X000073405FVJ
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:12:5d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 40, Slot 9
Drive port: 1, Channel: 2, ID: 80/0x55
Drive port: 2, Channel: 1, ID: 80/0x55
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HMX4000073409KF1
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:db:2f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 40, Slot 10
Drive port: 1, Channel: 1, ID: 96/0x3A
Drive port: 2, Channel: 2, ID: 96/0x3A
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HLYW00007340YESX
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:dd:8a
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 40, Slot 11
Drive port: 1, Channel: 2, ID: 64/0x72
Drive port: 2, Channel: 1, ID: 64/0x72
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K0V100007339SP68
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:08:41
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 40, Slot 12
Drive port: 1, Channel: 1, ID: 72/0x67
Drive port: 2, Channel: 2, ID: 72/0x67
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HNCH00007339SNP5
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:02:45

Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 40, Slot 13
Drive port: 1, Channel: 2, ID: 88/0x4B
Drive port: 2, Channel: 1, ID: 88/0x4B
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JT8L00007339GMT3
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:f9:fc:22
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 40, Slot 14
Drive port: 1, Channel: 1, ID: 104/0x2E
Drive port: 2, Channel: 2, ID: 104/0x2E
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K5YK00007339RGCS
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:fa:e1
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 1

Drive at Enclosure 41, Slot 1
Drive port: 1, Channel: 2, ID: 8/0xD9
Drive port: 2, Channel: 1, ID: 8/0xD9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX23XZQ0000743449PP
Vendor: IBM-ESXS
Date of manufacture: February 26, 2004
World-wide name: 20:00:00:0c:50:b6:5d:69
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 41, Slot 2
Drive port: 1, Channel: 1, ID: 9/0xD6
Drive port: 2, Channel: 2, ID: 9/0xD6
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JQYY000073405G81
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e5:db
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 41, Slot 3
Drive port: 1, Channel: 2, ID: 10/0xD5
Drive port: 2, Channel: 1, ID: 10/0xD5
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRQF00007339TYAC
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ea:5f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 41, Slot 4
Drive port: 1, Channel: 1, ID: 11/0xD4
Drive port: 2, Channel: 2, ID: 11/0xD4
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX117K9000073514CQT
Vendor: IBM-ESXS
Date of manufacture: June 19, 2003
World-wide name: 20:00:00:0c:50:3d:9d:a5
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 41, Slot 5
Drive port: 1, Channel: 2, ID: 12/0xD3
Drive port: 2, Channel: 1, ID: 12/0xD3
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRV300007340WVQ3
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ec:a4
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned

Associated array: 2

Drive at Enclosure 41, Slot 6
Drive port: 1, Channel: 1, ID: 13/0xD2
Drive port: 2, Channel: 2, ID: 13/0xD2
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HPLN00007339GN40
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:b8
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 41, Slot 7
Drive port: 1, Channel: 2, ID: 14/0xD1
Drive port: 2, Channel: 1, ID: 14/0xD1
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT0H000073392DUC
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e3:46
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 41, Slot 8
Drive port: 1, Channel: 1, ID: 15/0xCE
Drive port: 2, Channel: 2, ID: 15/0xCE
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KBPL000073405FUU
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:12:8b
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 41, Slot 9
Drive port: 1, Channel: 2, ID: 81/0x54
Drive port: 2, Channel: 1, ID: 81/0x54
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K0V300007339SNTZ
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:02:3b
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 41, Slot 10
Drive port: 1, Channel: 1, ID: 97/0x39
Drive port: 2, Channel: 2, ID: 97/0x39
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K5BR00007340WVK7
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ed:52
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 41, Slot 11
Drive port: 1, Channel: 2, ID: 65/0x71
Drive port: 2, Channel: 1, ID: 65/0x71
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K6NF000073393FD6
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:8c
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 41, Slot 12
Drive port: 1, Channel: 1, ID: 73/0x66
Drive port: 2, Channel: 2, ID: 73/0x66
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HSZ9000073392E2L
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e2:ca
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 41, Slot 13

Drive port: 1, Channel: 2, ID: 89/0x4A
Drive port: 2, Channel: 1, ID: 89/0x4A
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX24C9000007433GUUW
Vendor: IBM-ESXS
Date of manufacture: February 27, 2004
World-wide name: 20:00:00:0c:50:b6:64:4f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 41, Slot 14
Drive port: 1, Channel: 1, ID: 105/0x2D
Drive port: 2, Channel: 2, ID: 105/0x2D
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JPE700007340GTYD
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:f4:ec
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 2

Drive at Enclosure 42, Slot 1
Drive port: 1, Channel: 2, ID: 16/0xCD
Drive port: 2, Channel: 1, ID: 16/0xCD
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K67H00007339SP3G
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:f5:40
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 42, Slot 2
Drive port: 1, Channel: 1, ID: 17/0xCC
Drive port: 2, Channel: 2, ID: 17/0xCC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT48000073392DQT
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ea:28
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 42, Slot 3
Drive port: 1, Channel: 2, ID: 18/0xCB
Drive port: 2, Channel: 1, ID: 18/0xCB
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HK8Q00007339SNNC
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:f5:1b
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 42, Slot 4
Drive port: 1, Channel: 1, ID: 19/0xCA
Drive port: 2, Channel: 2, ID: 19/0xCA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K4EQ00007339SNXX
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:f5:28
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 42, Slot 5
Drive port: 1, Channel: 2, ID: 20/0xC9
Drive port: 2, Channel: 1, ID: 20/0xC9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K6CP00007340GU24
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:f4:e8
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 42, Slot 6
Drive port: 1, Channel: 1, ID: 21/0xC7
Drive port: 2, Channel: 2, ID: 21/0xC7
Drive path redundancy: OK

Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K40A00007340GU4Z
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:f4:ea
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 42, Slot 7
Drive port: 1, Channel: 2, ID: 22/0xC6
Drive port: 2, Channel: 1, ID: 22/0xC6
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT66000073405G6G
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e6:17
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 42, Slot 8
Drive port: 1, Channel: 1, ID: 23/0xC5
Drive port: 2, Channel: 2, ID: 23/0xC5
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HM4E000073409KKZ
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:dc:2f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 42, Slot 9
Drive port: 1, Channel: 2, ID: 82/0x53
Drive port: 2, Channel: 1, ID: 82/0x53
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0V56000007346PCAS
Vendor: IBM-ESXS
Date of manufacture: May 17, 2003
World-wide name: 20:00:00:0c:50:20:a2:1f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 42, Slot 10
Drive port: 1, Channel: 1, ID: 98/0x36
Drive port: 2, Channel: 2, ID: 98/0x36
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K4SF00007339SNNK
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:f5:25
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 42, Slot 11
Drive port: 1, Channel: 2, ID: 66/0x6E
Drive port: 2, Channel: 1, ID: 66/0x6E
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HM52000073409KEZ
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:dd:45
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 42, Slot 12
Drive port: 1, Channel: 1, ID: 74/0x65
Drive port: 2, Channel: 2, ID: 74/0x65
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HSQF00007339RGRW
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e1:97
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 42, Slot 13
Drive port: 1, Channel: 2, ID: 90/0x49
Drive port: 2, Channel: 1, ID: 90/0x49
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB

Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HLYD000073409K2D
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:dd:bc
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 42, Slot 14
Drive port: 1, Channel: 1, ID: 106/0x2C
Drive port: 2, Channel: 2, ID: 106/0x2C
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HSWK000073392E28
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e2:45
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 3

Drive at Enclosure 43, Slot 1
Drive port: 1, Channel: 2, ID: 24/0xC3
Drive port: 2, Channel: 1, ID: 24/0xC3
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HN8F00007339GMGU
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:da:46
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 43, Slot 2
Drive port: 1, Channel: 1, ID: 25/0xBC
Drive port: 2, Channel: 2, ID: 25/0xBC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT1W00007339SNMS
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e2:b8
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 43, Slot 3
Drive port: 1, Channel: 2, ID: 26/0xBA
Drive port: 2, Channel: 1, ID: 26/0xBA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HSW8000073392E3H
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e2:55
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 43, Slot 4
Drive port: 1, Channel: 1, ID: 27/0xB9
Drive port: 2, Channel: 2, ID: 27/0xB9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HLYY000073409KGF
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:dd:bf
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 43, Slot 5
Drive port: 1, Channel: 2, ID: 28/0xB6
Drive port: 2, Channel: 1, ID: 28/0xB6
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0GTWN000073392DYK
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e2:e4
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 43, Slot 6
Drive port: 1, Channel: 1, ID: 29/0xB5
Drive port: 2, Channel: 2, ID: 29/0xB5
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954

Serial number: 3HX0K86A000073392DZ9
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e2:58
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 43, Slot 7
Drive port: 1, Channel: 2, ID: 30/0xB4
Drive port: 2, Channel: 1, ID: 30/0xB4
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K57Q000073410HSY
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:12:9a
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 43, Slot 8
Drive port: 1, Channel: 1, ID: 31/0xB3
Drive port: 2, Channel: 2, ID: 31/0xB3
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K5W90000073405FWF
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:12:c9
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 43, Slot 9
Drive port: 1, Channel: 2, ID: 83/0x52
Drive port: 2, Channel: 1, ID: 83/0x52
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K4EJ00007339SNWV
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:f5:5f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 43, Slot 10
Drive port: 1, Channel: 1, ID: 99/0x35
Drive port: 2, Channel: 2, ID: 99/0x35
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HQ4D00007339SP4Z
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:f9:f5:c5
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 43, Slot 11
Drive port: 1, Channel: 2, ID: 67/0x6D
Drive port: 2, Channel: 1, ID: 67/0x6D
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0KBS6000073405FXS
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:12:9c
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 43, Slot 12
Drive port: 1, Channel: 1, ID: 75/0x63
Drive port: 2, Channel: 2, ID: 75/0x63
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JPQ7000073392DXG
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:18:c7
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 43, Slot 13
Drive port: 1, Channel: 2, ID: 91/0x47
Drive port: 2, Channel: 1, ID: 91/0x47
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JAE000007339GMPM
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003

World-wide name: 20:00:00:04:cf:f9:fc:61
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 43, Slot 14
Drive port: 1, Channel: 1, ID: 107/0x2B
Drive port: 2, Channel: 2, ID: 107/0x2B
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HWYB000073393FVR
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:f9:fc:1c
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 4

Drive at Enclosure 44, Slot 1
Drive port: 1, Channel: 2, ID: 32/0xB2
Drive port: 2, Channel: 1, ID: 32/0xB2
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT3000007339FFYH
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e4:3d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 44, Slot 2
Drive port: 1, Channel: 1, ID: 33/0xB1
Drive port: 2, Channel: 2, ID: 33/0xB1
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRGN00007339TYA2
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:eb:cf
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 44, Slot 3
Drive port: 1, Channel: 2, ID: 34/0xAE
Drive port: 2, Channel: 1, ID: 34/0xAE
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRPH00007340WVK1
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ed:05
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 44, Slot 4
Drive port: 1, Channel: 1, ID: 35/0xAD
Drive port: 2, Channel: 2, ID: 35/0xAD
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HLWZ00007340WVK9
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ed:5d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 44, Slot 5
Drive port: 1, Channel: 2, ID: 36/0xAC
Drive port: 2, Channel: 1, ID: 36/0xAC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K1BC00007339TYYW
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:02:37
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 44, Slot 6
Drive port: 1, Channel: 1, ID: 37/0xAB
Drive port: 2, Channel: 2, ID: 37/0xAB
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT7N0000734058KY
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e7:23
Drive type: Fibre Channel
Speed: 15015 RPM

Mode: Assigned
Associated array: 5

Drive at Enclosure 44, Slot 7
Drive port: 1, Channel: 2, ID: 38/0xAA
Drive port: 2, Channel: 1, ID: 38/0xAA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HH1K00007339TYUA
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:fc:1f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 44, Slot 8
Drive port: 1, Channel: 1, ID: 39/0xA9
Drive port: 2, Channel: 2, ID: 39/0xA9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K56P000023125CXC
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:f2
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 44, Slot 9
Drive port: 1, Channel: 2, ID: 84/0x51
Drive port: 2, Channel: 1, ID: 84/0x51
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K7K700007340WVN8
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ec:0e
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 44, Slot 10
Drive port: 1, Channel: 1, ID: 100/0x34
Drive port: 2, Channel: 2, ID: 100/0x34
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K1QD00007340WVYH
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:d4
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 44, Slot 11
Drive port: 1, Channel: 2, ID: 68/0x6C
Drive port: 2, Channel: 1, ID: 68/0x6C
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K89J00007340X534
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e9:16
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 44, Slot 12
Drive port: 1, Channel: 1, ID: 76/0x5C
Drive port: 2, Channel: 2, ID: 76/0x5C
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HM8E00007339TYTF
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:02:5d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 44, Slot 13
Drive port: 1, Channel: 2, ID: 92/0x46
Drive port: 2, Channel: 1, ID: 92/0x46
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K88M000073392DV0
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e3:8a
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 44, Slot 14
Drive port: 1, Channel: 1, ID: 108/0x2A
Drive port: 2, Channel: 2, ID: 108/0x2A
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0BC3Y00007328RYAB
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:f9:dd
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 5

Drive at Enclosure 50, Slot 1
Drive port: 1, Channel: 4, ID: 0/0xEF
Drive port: 2, Channel: 3, ID: 0/0xEF
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HLYQ000073409K43
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:dd:b7
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 50, Slot 2
Drive port: 1, Channel: 3, ID: 1/0xE8
Drive port: 2, Channel: 4, ID: 1/0xE8
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0J3SB000073409KJ7
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:da:e4
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 50, Slot 3
Drive port: 1, Channel: 4, ID: 2/0xE4
Drive port: 2, Channel: 3, ID: 2/0xE4
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HNM9000073405FEM
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:db:bc
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 50, Slot 4
Drive port: 1, Channel: 3, ID: 3/0xE2
Drive port: 2, Channel: 4, ID: 3/0xE2
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JLFY00007339RG84
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e1:ef
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 50, Slot 5
Drive port: 1, Channel: 4, ID: 4/0xE1
Drive port: 2, Channel: 3, ID: 4/0xE1
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HM9900007340YETV
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:db:9e
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 50, Slot 6
Drive port: 1, Channel: 3, ID: 5/0xE0
Drive port: 2, Channel: 4, ID: 5/0xE0
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HSY400007339RGPF
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e1:ed
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 50, Slot 7
Drive port: 1, Channel: 4, ID: 6/0xDC
Drive port: 2, Channel: 3, ID: 6/0xDC

Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K85X000073392DUF
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e2:71
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 50, Slot 8
Drive port: 1, Channel: 3, ID: 7/0xDA
Drive port: 2, Channel: 4, ID: 7/0xDA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HM3Y000073409KQF
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:dc:80
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 50, Slot 9
Drive port: 1, Channel: 4, ID: 80/0x55
Drive port: 2, Channel: 3, ID: 80/0x55
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HNNH000073409K7L
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:da:ef
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 50, Slot 10
Drive port: 1, Channel: 3, ID: 96/0x3A
Drive port: 2, Channel: 4, ID: 96/0x3A
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HSV200007339TY7Q
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e2:4e
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 50, Slot 11
Drive port: 1, Channel: 4, ID: 64/0x72
Drive port: 2, Channel: 3, ID: 64/0x72
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HWN700007339SPCB
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:d5
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 50, Slot 12
Drive port: 1, Channel: 3, ID: 72/0x67
Drive port: 2, Channel: 4, ID: 72/0x67
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K21400007339TYJG
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:98
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 50, Slot 13
Drive port: 1, Channel: 4, ID: 88/0x4B
Drive port: 2, Channel: 3, ID: 88/0x4B
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HVNB00007339RG18
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:a4
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 50, Slot 14
Drive port: 1, Channel: 3, ID: 104/0x2E
Drive port: 2, Channel: 4, ID: 104/0x2E
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB

Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K4EL00007335MBAA
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:f9:e0
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 6

Drive at Enclosure 51, Slot 1
Drive port: 1, Channel: 4, ID: 8/0xD9
Drive port: 2, Channel: 3, ID: 8/0xD9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HLEA00007340WEZ5
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:04:e6
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 51, Slot 2
Drive port: 1, Channel: 3, ID: 9/0xD6
Drive port: 2, Channel: 4, ID: 9/0xD6
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT2D000073392DSJ
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e3:ad
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 51, Slot 3
Drive port: 1, Channel: 4, ID: 10/0xD5
Drive port: 2, Channel: 3, ID: 10/0xD5
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K18B000073392DYC
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:b3
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 51, Slot 4
Drive port: 1, Channel: 3, ID: 11/0xD4
Drive port: 2, Channel: 4, ID: 11/0xD4
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K2KY00007338WBA0
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:06
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 51, Slot 5
Drive port: 1, Channel: 4, ID: 12/0xD3
Drive port: 2, Channel: 3, ID: 12/0xD3
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0J4BJ00007339GN8Z
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:b9
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 51, Slot 6
Drive port: 1, Channel: 3, ID: 13/0xD2
Drive port: 2, Channel: 4, ID: 13/0xD2
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0GVEA00007338K0TD
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:fc:54
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 51, Slot 7
Drive port: 1, Channel: 4, ID: 14/0xD1
Drive port: 2, Channel: 3, ID: 14/0xD1
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F

Firmware version: B954
Serial number: 3HX0JMBL00007339SP6R
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:89
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 51, Slot 8
Drive port: 1, Channel: 3, ID: 15/0xCE
Drive port: 2, Channel: 4, ID: 15/0xCE
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K1FA00007339TYMT
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:3f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 51, Slot 9
Drive port: 1, Channel: 4, ID: 81/0x54
Drive port: 2, Channel: 3, ID: 81/0x54
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0J2B200007340X572
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:fa:9f
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 51, Slot 10
Drive port: 1, Channel: 3, ID: 97/0x39
Drive port: 2, Channel: 4, ID: 97/0x39
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K7EN00007340WW8P
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:c5
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 51, Slot 11
Drive port: 1, Channel: 4, ID: 65/0x71
Drive port: 2, Channel: 3, ID: 65/0x71
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K87B00007339SNPS
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:21
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 51, Slot 12
Drive port: 1, Channel: 3, ID: 73/0x66
Drive port: 2, Channel: 4, ID: 73/0x66
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0GXKH000073393FMH
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:a3
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 51, Slot 13
Drive port: 1, Channel: 4, ID: 89/0x4A
Drive port: 2, Channel: 3, ID: 89/0x4A
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HP3C00007339SPAE
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:dd
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 51, Slot 14
Drive port: 1, Channel: 3, ID: 105/0x2D
Drive port: 2, Channel: 4, ID: 105/0x2D
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HPKC00007338K0N4
Vendor: IBM-ESXS

Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:d2
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 7

Drive at Enclosure 52, Slot 1
Drive port: 1, Channel: 4, ID: 16/0xCD
Drive port: 2, Channel: 3, ID: 16/0xCD
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0H16R00007339TYQG
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:d0
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 52, Slot 2
Drive port: 1, Channel: 3, ID: 17/0xCC
Drive port: 2, Channel: 4, ID: 17/0xCC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HNT6000073393FK2
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:22
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 52, Slot 3
Drive port: 1, Channel: 4, ID: 18/0xCB
Drive port: 2, Channel: 3, ID: 18/0xCB
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRTY00007339TYBC
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ea:18
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 52, Slot 4
Drive port: 1, Channel: 3, ID: 19/0xCA
Drive port: 2, Channel: 4, ID: 19/0xCA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRFK0000734059RJ
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e7:28
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 52, Slot 5
Drive port: 1, Channel: 4, ID: 20/0xC9
Drive port: 2, Channel: 3, ID: 20/0xC9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0TMYQ00008305U0QC
Vendor: IBM-ESXS
Date of manufacture: May 17, 2003
World-wide name: 20:00:00:0c:50:20:a1:c8
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 52, Slot 6
Drive port: 1, Channel: 3, ID: 21/0xC7
Drive port: 2, Channel: 4, ID: 21/0xC7
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT8D0000734059V2
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e7:a6
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 52, Slot 7
Drive port: 1, Channel: 4, ID: 22/0xC6
Drive port: 2, Channel: 3, ID: 22/0xC6
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT6M0000734058JL
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e7:2a
Drive type: Fibre Channel

Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 52, Slot 8
Drive port: 1, Channel: 3, ID: 23/0xC5
Drive port: 2, Channel: 4, ID: 23/0xC5
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRT3000073392DYS
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ea:bc
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 52, Slot 9
Drive port: 1, Channel: 4, ID: 82/0x53
Drive port: 2, Channel: 3, ID: 82/0x53
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K7K9000073392DZP
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ea:8c
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 52, Slot 10
Drive port: 1, Channel: 3, ID: 98/0x36
Drive port: 2, Channel: 4, ID: 98/0x36
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HSR000007339RGR2
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e1:98
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 52, Slot 11
Drive port: 1, Channel: 4, ID: 66/0x6E
Drive port: 2, Channel: 3, ID: 66/0x6E
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HLZ5000073392DQW
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:eb:a4
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 52, Slot 12
Drive port: 1, Channel: 3, ID: 74/0x65
Drive port: 2, Channel: 4, ID: 74/0x65
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRNB000073392DQR
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ea:41
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 52, Slot 13
Drive port: 1, Channel: 4, ID: 90/0x49
Drive port: 2, Channel: 3, ID: 90/0x49
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K81E00007340X5J3
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e8:72
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 52, Slot 14
Drive port: 1, Channel: 3, ID: 106/0x2C
Drive port: 2, Channel: 4, ID: 106/0x2C
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K7LS00007340X5JL
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e8:ad
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 8

Drive at Enclosure 53, Slot 1
Drive port: 1, Channel: 4, ID: 24/0xC3
Drive port: 2, Channel: 3, ID: 24/0xC3
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HPGH000073393FM6
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:fb:58
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 53, Slot 2
Drive port: 1, Channel: 3, ID: 25/0xBC
Drive port: 2, Channel: 4, ID: 25/0xBC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K0TS00007339TYSD
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:ff:02:50
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 53, Slot 3
Drive port: 1, Channel: 4, ID: 26/0xBA
Drive port: 2, Channel: 3, ID: 26/0xBA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JR4900007340WW3K
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:b7
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 53, Slot 4
Drive port: 1, Channel: 3, ID: 27/0xB9
Drive port: 2, Channel: 4, ID: 27/0xB9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K14Z00007339SNV6
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:03:ab
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 53, Slot 5
Drive port: 1, Channel: 4, ID: 28/0xB6
Drive port: 2, Channel: 3, ID: 28/0xB6
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HM1J000073409KQC
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:dc:c4
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 53, Slot 6
Drive port: 1, Channel: 3, ID: 29/0xB5
Drive port: 2, Channel: 4, ID: 29/0xB5
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K79K0000734058FJ
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e8:15
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 53, Slot 7
Drive port: 1, Channel: 4, ID: 30/0xB4
Drive port: 2, Channel: 3, ID: 30/0xB4
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K89M0000734059QL
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e7:94
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 53, Slot 8
Drive port: 1, Channel: 3, ID: 31/0xB3

Drive port: 2, Channel: 4, ID: 31/0xB3
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT9P00007340X5AA
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e8:6c
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 53, Slot 9
Drive port: 1, Channel: 4, ID: 83/0x52
Drive port: 2, Channel: 3, ID: 83/0x52
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT7W00007340X5AF
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e8:f2
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 53, Slot 10
Drive port: 1, Channel: 3, ID: 99/0x35
Drive port: 2, Channel: 4, ID: 99/0x35
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JN550000734059MP
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e7:a8
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 53, Slot 11
Drive port: 1, Channel: 4, ID: 67/0x6D
Drive port: 2, Channel: 3, ID: 67/0x6D
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRM900007340X5AU
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e8:62
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 53, Slot 12
Drive port: 1, Channel: 3, ID: 75/0x63
Drive port: 2, Channel: 4, ID: 75/0x63
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0V6HR000073462EUF
Vendor: IBM-ESXS
Date of manufacture: May 17, 2003
World-wide name: 20:00:00:0c:50:20:a1:76
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 53, Slot 13
Drive port: 1, Channel: 4, ID: 91/0x47
Drive port: 2, Channel: 3, ID: 91/0x47
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0JD9D00007339TYB2
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ea:9a
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 53, Slot 14
Drive port: 1, Channel: 3, ID: 107/0x2B
Drive port: 2, Channel: 4, ID: 107/0x2B
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HM3T000073409KRH
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:dc:0d
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 9

Drive at Enclosure 54, Slot 1
Drive port: 1, Channel: 4, ID: 32/0xB2
Drive port: 2, Channel: 3, ID: 32/0xB2
Drive path redundancy: OK
Status: Optimal

Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K6YS00007340WVKN
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:ed:32
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 54, Slot 2
Drive port: 1, Channel: 3, ID: 33/0xB1
Drive port: 2, Channel: 4, ID: 33/0xB1
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HPGC00007339EG7M
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:fc:5a
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 54, Slot 3
Drive port: 1, Channel: 4, ID: 34/0xAE
Drive port: 2, Channel: 3, ID: 34/0xAE
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HGVA00007340X4QC
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e5:17
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 54, Slot 4
Drive port: 1, Channel: 3, ID: 35/0xAD
Drive port: 2, Channel: 4, ID: 35/0xAD
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HBVE00007339TY96
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:84
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 54, Slot 5
Drive port: 1, Channel: 4, ID: 36/0xAC
Drive port: 2, Channel: 3, ID: 36/0xAC
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HLXZ000073409K10
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:dc:d9
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 54, Slot 6
Drive port: 1, Channel: 3, ID: 37/0xAB
Drive port: 2, Channel: 4, ID: 37/0xAB
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K89B00007340X503
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e5:b5
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 54, Slot 7
Drive port: 1, Channel: 4, ID: 38/0xAA
Drive port: 2, Channel: 3, ID: 38/0xAA
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HND4000073409KRW
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:dc:27
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 54, Slot 8
Drive port: 1, Channel: 3, ID: 39/0xA9
Drive port: 2, Channel: 4, ID: 39/0xA9
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps

Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HNBF00007339RGFJ
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e4:f0
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 54, Slot 9
Drive port: 1, Channel: 4, ID: 84/0x51
Drive port: 2, Channel: 3, ID: 84/0x51
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HT6L00007339RFZD
Vendor: IBM-ESXS
Date of manufacture: April 4, 2003
World-wide name: 20:00:00:04:cf:f9:e4:95
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 54, Slot 10
Drive port: 1, Channel: 3, ID: 100/0x34
Drive port: 2, Channel: 4, ID: 100/0x34
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0J60V00007339EG3V
Vendor: IBM-ESXS
Date of manufacture: April 4, 2003
World-wide name: 20:00:00:04:cf:f9:e4:42
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 54, Slot 11
Drive port: 1, Channel: 4, ID: 68/0x6C
Drive port: 2, Channel: 3, ID: 68/0x6C
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRK20000734058GJ
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e8:09
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 54, Slot 12
Drive port: 1, Channel: 3, ID: 76/0x5C
Drive port: 2, Channel: 4, ID: 76/0x5C
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HRP8000073392DTP
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:f9:e8:64
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 54, Slot 13
Drive port: 1, Channel: 4, ID: 92/0x46
Drive port: 2, Channel: 3, ID: 92/0x46
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0HEYQ00007339SNVJ
Vendor: IBM-ESXS
Date of manufacture: April 5, 2003
World-wide name: 20:00:00:04:cf:ff:02:6a
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Drive at Enclosure 54, Slot 14
Drive port: 1, Channel: 3, ID: 108/0x2A
Drive port: 2, Channel: 4, ID: 108/0x2A
Drive path redundancy: OK
Status: Optimal
Raw capacity: 33.902 GB
Usable capacity: 33.402 GB
Current data rate: 2 Gbps
Product ID: ST336753FC F
Firmware version: B954
Serial number: 3HX0K2AM00007339GMLP
Vendor: IBM-ESXS
Date of manufacture: April 6, 2003
World-wide name: 20:00:00:04:cf:f9:fb:12
Drive type: Fibre Channel
Speed: 15015 RPM
Mode: Assigned
Associated array: 10

Client Configuration Parameters

Microsoft Windows 2000 Client System Information Report

Following is the System Information report for Client 1. Clients 2, 3 and 4 were configured similarly to Client 1.

System Information report written at: 02/08/2005 03:32:23 PM

[System Information]

[Following are sub-categories of this main category]
[System Summary]
Item Value
OS Name Microsoft Windows 2000 Server
Version 5.0.2195 Service Pack 3 Build 2195
OS Manufacturer Microsoft Corporation
System Name VCLIENT10
System Manufacturer IBM
System Model IBM eServer x226-[86482BU]-
System Type X86-based PC
Processor x86 Family 15 Model 3 Stepping 4 GenuineIntel ~3200 Mhz
Processor x86 Family 15 Model 3 Stepping 4 GenuineIntel ~3200 Mhz
Processor x86 Family 15 Model 3 Stepping 4 GenuineIntel ~3200 Mhz
Processor x86 Family 15 Model 3 Stepping 4 GenuineIntel ~3200 Mhz
BIOS Version PhoenixBIOS 4.0 Release 6.1.U
Windows Directory C:\WINNT
System Directory C:\WINNT\System32
Boot Device \Device\Harddisk0\Partition1
Locale United States
User NameVCLIENT10\Administrator
Time ZoneEastern Standard Time
Total Physical Memory 2,096,092 KB
Available Physical Memory 1,867,904 KB
Total Virtual Memory 5,607,640 KB
Available Virtual Memory 5,303,304 KB
Page File Space 3,511,548 KB
Page File C:\pagefile.sys
[Hardware Resources]
[Following are sub-categories of this main category]
[Conflicts/Sharing]
Resource Device
IRQ 16 Intel(R) E7525/E7520/E7320 PCI Express Root Port A0 - 3595
IRQ 16 Broadcom NetXtreme Gigabit Ethernet
IRQ 16 Intel(R) E7525/E7520/E7320 PCI Express Root Port A1 - 3596
IRQ 16 Intel(R) E7525/E7520 PCI Express Root Port B0 - 3597
IRQ 16 Intel(R) 82801EB USB Universal Host Controller - 24D2
IRQ 16 Intel(R) 82801EB USB Universal Host Controller - 24DE
[DMA]
Channel Device Status
4 Direct memory access controller OK
2 Standard floppy disk controller OK
3 ECP Printer Port (LPT1) OK
[Forced Hardware]
Device PNP Device ID
No Forced Hardware
[I/O]
Address Range Device Status
0x0000-0x0CF7 PCI bus OK
0x0000-0x0CF7 Direct memory access controller OK
0x0D00-0xFFFF PCI bus OK

0x2000-0x4FFF Intel(R) E7525/E7520/E7320 PCI Express Root Port A1 - 3596 OK
0x2000-0x4FFF Intel(R) 6700PXH PCI Express-to-PCI Bridge A - 0329 OK
0x2000-0x4FFF QLogic Fibre Channel Adapter OK
0x2800-0x28FF Adaptec AIC-7902B - Ultra320 SCSI OK
0x2400-0x24FF Adaptec AIC-7902B - Ultra320 SCSI OK
0x3000-0x30FF Adaptec AIC-7902B - Ultra320 SCSI OK
0x2C00-0x2CFF Adaptec AIC-7902B - Ultra320 SCSI OK
0x4000-0x4FFF Intel(R) 6700PXH PCI Express-to-PCI Bridge B - 032A OK
0x4000-0x4FFF Intel(R) PRO/1000 MT Dual Port Server Adapter OK
0x4040-0x407F Intel(R) PRO/1000 MT Dual Port Server Adapter #2 OK
0x1400-0x141F Intel(R) 82801EB USB Universal Host Controller - 24D2 OK
0x1420-0x143F Intel(R) 82801EB USB Universal Host Controller - 24D4 OK
0x1440-0x145F Intel(R) 82801EB USB Universal Host Controller - 24D7 OK
0x1460-0x147F Intel(R) 82801EB USB Universal Host Controller - 24DE OK
0x5000-0x50FF RADEON 7000M (on board) OK
0x03B0-0x03BB RADEON 7000M (on board) OK
0x03C0-0x03DF RADEON 7000M (on board) OK
0x0A79-0x0A79 ISAPNP Read Data Port OK
0x0279-0x0279 ISAPNP Read Data Port OK
0x0274-0x0277 ISAPNP Read Data Port OK
0x0010-0x001F Motherboard resources OK
0x0024-0x0025 Motherboard resources OK
0x0028-0x0029 Motherboard resources OK
0x002C-0x002D Motherboard resources OK
0x002E-0x002F Motherboard resources OK
0x0030-0x0031 Motherboard resources OK
0x0034-0x0035 Motherboard resources OK
0x0038-0x0039 Motherboard resources OK
0x003C-0x003D Motherboard resources OK
0x0050-0x0053 Motherboard resources OK
0x0072-0x0077 Motherboard resources OK
0x0080-0x0080 Motherboard resources OK
0x0090-0x009F Motherboard resources OK
0x00A4-0x00A5 Motherboard resources OK
0x00A8-0x00A9 Motherboard resources OK
0x00AC-0x00AD Motherboard resources OK
0x00B0-0x00B5 Motherboard resources OK
0x00B8-0x00B9 Motherboard resources OK
0x00BC-0x00BD Motherboard resources OK
0x04D0-0x04D1 Motherboard resources OK
0x1000-0x107F Motherboard resources OK
0x1180-0x118C Motherboard resources OK
0x118D-0x118D Motherboard resources OK
0x118F-0x118F Motherboard resources OK
0x1190-0x11BF Motherboard resources OK
0x0800-0x082F Motherboard resources OK
0xFE00-0xFE00 Motherboard resources OK
0x0081-0x008F Direct memory access controller OK
0x00C0-0x00DF Direct memory access controller OK
0x00F0-0x00FE Numeric data processor OK
0x0020-0x0021 Programmable interrupt controller OK
0x00A0-0x00A1 Programmable interrupt controller OK
0x0070-0x0071 System CMOS/real time clock OK
0x0061-0x0061 System speaker OK
0x0040-0x0043 System timer OK
0x118E-0x118E Not Available OK
0x03F0-0x03F5 Standard floppy disk controller OK
0x03F7-0x03F7 Standard floppy disk controller OK
0x0378-0x037F ECP Printer Port (LPT1) OK
0x0778-0x077F ECP Printer Port (LPT1) OK
0x03F8-0x03FF Communications Port (COM1) OK
0x02F8-0x02FF Communications Port (COM2) OK
0x0060-0x0060 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard OK
0x0064-0x0064 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard OK
0x14A0-0x14AF Intel(R) 82801EB Ultra ATA Storage Controllers OK
0x01F0-0x01F7 Primary IDE Channel OK
0x03F6-0x03F6 Primary IDE Channel OK
0x0170-0x0177 Secondary IDE Channel OK
0x0376-0x0376 Secondary IDE Channel OK

0x1100-0x111F Intel(R) 82801EB SMBus Controller - 24D3 OK
[IRQs]
IRQ Number Device
9 Microsoft ACPI-Compliant System
16 Intel(R) E7525/E7520/E7320 PCI Express Root Port A0 - 3595
16 Broadcom NetXtreme Gigabit Ethernet
16 Intel(R) E7525/E7520/E7320 PCI Express Root Port A1 - 3596
16 Intel(R) E7525/E7520 PCI Express Root Port B0 - 3597
16 Intel(R) 82801EB USB Universal Host Controller - 24D2
16 Intel(R) 82801EB USB Universal Host Controller - 24DE
24 QLogic Fibre Channel Adapter
30 Adaptec AIC-7902B - Ultra320 SCSI
31 Adaptec AIC-7902B - Ultra320 SCSI
48 Intel(R) PRO/1000 MT Dual Port Server Adapter
49 Intel(R) PRO/1000 MT Dual Port Server Adapter #2
19 Intel(R) 82801EB USB Universal Host Controller - 24D4
18 Intel(R) 82801EB USB Universal Host Controller - 24D7
22 RADEON 7000M (on board)
13 Numeric data processor
8 System CMOS/real time clock
6 Standard floppy disk controller
4 Communications Port (COM1)
3 Communications Port (COM2)
12 PS/2 Compatible Mouse
1 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
14 Primary IDE Channel
15 Secondary IDE Channel
10 Intel(R) 82801EB SMBus Controller - 24D3
[Memory]
Range Device Status
0xA0000-0xBFFFF PCI bus OK
0xA0000-0xBFFFF RADEON 7000M (on board) OK
0xD4000-0xD7FFF PCI bus OK
0xD8000-0xDBFFF PCI bus OK
0xDC000-0xDFFFF PCI bus OK
0x80000000-0xFEBFFFFF PCI bus OK
0xD0100000-0xD01FFFFF Intel(R) E7525/E7520/E7320 PCI Express Root Port A0 - 3595 OK
0xD0100000-0xD01FFFFF Broadcom NetXtreme Gigabit Ethernet OK
0xD0200000-0xD04FFFFF Intel(R) E7525/E7520/E7320 PCI Express Root Port A1 - 3596 OK
0xD0200000-0xD04FFFFF Intel(R) 6700PXH I/OxAPIC Interrupt Controller A - 0326 OK
0xD0300000-0xD03FFFFF Intel(R) 6700PXH PCI Express-to-PCI Bridge A - 0329 OK
0xD0300000-0xD03FFFFF Adaptec AIC-7902B - Ultra320 SCSI OK
0xD0304000-0xD0304FFF QLogic Fibre Channel Adapter OK
0xD0302000-0xD0303FFF Adaptec AIC-7902B - Ultra320 SCSI OK
0xD0400000-0xD04FFFFF Intel(R) 6700PXH PCI Express-to-PCI Bridge B - 032A OK
0xD0400000-0xD04FFFFF Intel(R) PRO/1000 MT Dual Port Server Adapter OK
0xD0440000-0xD045FFFF Intel(R) PRO/1000 MT Dual Port Server Adapter OK
0xD0460000-0xD047FFFF Intel(R) PRO/1000 MT Dual Port Server Adapter #2OK
0xD0201000-0xD0201FFF Intel(R) 6700PXH I/OxAPIC Interrupt Controller B - 0327 OK
0xD8000000-0xDFFFFFFF RADEON 7000M (on board) OK
0xD0500000-0xD050FFFF RADEON 7000M (on board) OK
0xE0000000-0xEFFFFFFF Motherboard resources OK
0xFEE00000-0xFEE0FFFF Motherboard resources OK
0xFEC81000-0xFEC81FFF Motherboard resources OK
0xFEC81400-0xFEC823FF Motherboard resources OK
0xFEBFFC00-0xFEBFFFFF Intel(R) 82801EB Ultra ATA Storage Controllers OK
[Components]
[Following are sub-categories of this main category]
[Multimedia]
[Following are sub-categories of this main category]
[Audio Codecs]
Codec Manufacturer Description Status File Version Size Creation Date
c:\winnt\system32\msg723.acm Microsoft Corporation
OK C:\WINNT\System32\MSG723.ACM 4.4.3385 106.77 KB (109,328 bytes) 1/13/2005 5:08:29 PM

c:\winnt\system32\lhacm.acm Microsoft Corporation
OK C:\WINNT\System32\LHACM.ACM 4.4.3385 33.27 KB (34,064 bytes) 1/13/2005 5:08:30 PM

c:\winnt\system32\iac25_32.ax Intel Corporation Indeo® audio software
OK C:\WINNT\System32\IAC25_32.AX 2.05.53 195.00 KB (199,680 bytes) 12/7/1999 7:00:00 AM

c:\winnt\system32\tssoft32.acm DSP GROUP, INC. OK
C:\WINNT\System32\TSSOFT32.ACM 1.01 9.27 KB (9,488 bytes) 12/7/1999 7:00:00 AM

c:\winnt\system32\msgsm32.acm Microsoft Corporation
OK C:\WINNT\System32\MSGSM32.ACM 5.00.2134.1 22.27 KB (22,800 bytes) 12/7/1999 7:00:00 AM

c:\winnt\system32\msg711.acm Microsoft Corporation
OK C:\WINNT\System32\MSG711.ACM 5.00.2134.1 10.27 KB (10,512 bytes) 12/7/1999 7:00:00 AM

c:\winnt\system32\msadp32.acm Microsoft Corporation
OK C:\WINNT\System32\MSADP32.ACM 5.00.2134.1 14.77 KB (15,120 bytes) 12/7/1999 7:00:00 AM

c:\winnt\system32\imaadp32.acm Microsoft Corporation
OK C:\WINNT\System32\IMAADP32.ACM 5.00.2134.1 16.27 KB (16,656 bytes) 12/7/1999 7:00:00 AM

[Video Codecs]
Codec Manufacturer Description Status File Version Size Creation Date

c:\winnt\system32\ir50_32.dll Intel Corporation Indeo® video 5.10
OK C:\WINNT\System32\IR50_32.DLL R.5.10.15.2.55 737.50 KB (755,200 bytes) 12/7/1999 7:00:00 AM

c:\winnt\system32\msyuv.dll Microsoft Corporation
OK C:\WINNT\System32\MSYUV.DLL 5.00.2134.1 14.77 KB (15,120 bytes) 2/12/2003 2:09:29 PM

c:\winnt\system32\msh263.drv Microsoft Corporation
OK C:\WINNT\System32\MSH263.DRV 4.4.3385 252.27 KB (258,320 bytes) 1/13/2005 5:08:12 PM

c:\winnt\system32\msh261.drv Microsoft Corporation
OK C:\WINNT\System32\MSH261.DRV 4.4.3385 163.77 KB (167,696 bytes) 1/13/2005 5:08:29 PM

c:\winnt\system32\msrle32.dll Microsoft Corporation
OK C:\WINNT\System32\MSRLE32.DLL 5.00.2134.1 10.77 KB (11,024 bytes) 12/7/1999 7:00:00 AM

c:\winnt\system32\ir32_32.dll Intel(R) Corporation OK
C:\WINNT\System32\IR32_32.DLL Not Available 194.50 KB (199,168 bytes) 12/7/1999 7:00:00 AM

c:\winnt\system32\iccvid.dll Radius Inc. OK
C:\WINNT\System32\ICCVID.DLL 1.10.0.6 108.00 KB (110,592 bytes) 12/7/1999 7:00:00 AM

c:\winnt\system32\msvidc32.dll Microsoft Corporation
OK C:\WINNT\System32\MSVIDC32.DLL 5.00.2134.1
27.27 KB (27,920 bytes) 12/7/1999 7:00:00 AM

[CD-ROM]
Item Value
Drive Z:
Description CD-ROM Drive
Media Loaded False
Media Type CD-ROM
Name HL-DT-ST CD-ROM GCR-8482B
Manufacturer (Standard CD-ROM drives)
Status OK
Transfer Rate Not Available
SCSI Target ID 0
PNP Device ID
IDE\CDROMHL-DT-ST_CD-ROM_GCR-8482B_____1.04____\5&2AC42E8E&0&0.0.0

[Sound Device]
Item Value
No sound devices

[Display]
Item Value
Name RADEON 7000M (on board)
PNP Device ID
PCI\VEN_1002&DEV_5159&SUBSYS_02C81014&REV_00\4&AE5993B&0&20F0
Adapter Type RADEON 7000 (0x5159), ATI Technologies Inc. compatible
Adapter Description RADEON 7000M (on board)
Adapter RAM 16.00 MB (16,777,216 bytes)
Installed Drivers ati2dvag.dll
Driver Version 5.2.3790.2
INF File oem20.inf (ati2mtag_RV100 section)
Color Planes 1
Color Table Entries 65536
Resolution 1024 x 768 x 85 hertz
Bits/Pixel 16

[Infrared]
Item Value
No infrared devices
[Input]
[Following are sub-categories of this main category]
[Keyboard]
Item Value
Description Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
Name Enhanced (101- or 102-key)
Layout 00000409
PNP Device ID ACPI\PNP0303\5&9583612&1
NumberOfFunctionKeys 12
[Pointing Device]
Item Value
Hardware Type PS/2 Compatible Mouse
Number of Buttons 3
Status OK
PNP Device ID ACPI\PNP0F13\5&9583612&1
Power Management Supported False
Double Click Threshold 6
Handedness Right Handed Operation

[Modem]
Item Value
No modems
[Network]
[Following are sub-categories of this main category]
[Adapter]
Item Value
Name [00000000] RAS Async Adapter
Adapter Type Not Available
Product Name RAS Async Adapter
Installed True
PNP Device ID Not Available
Last Reset 2/8/2005 5:21:13 AM
Index 0
Service Name AsyncMac
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available
Service Name Not Available
Name [00000001] WAN Miniport (L2TP)
Adapter Type Not Available
Product Name WAN Miniport (L2TP)
Installed True
PNP Device ID ROOT\MS_L2TPMINIPORT\0000
Last Reset 2/8/2005 5:21:13 AM
Index 1
Service Name Rasl2tp
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available
Service Name Rasl2tp
Driver c:\winnt\system32\drivers\rasl2tp.sys (52112, 5.00.2195.4052)
Name [00000002] WAN Miniport (PPTP)
Adapter Type Wide Area Network (WAN)
Product Name WAN Miniport (PPTP)
Installed True
PNP Device ID ROOT\MS_PPTPMINIPORT\0000
Last Reset 2/8/2005 5:21:13 AM
Index 2
Service Name PptpMiniport
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 50:50:54:50:30:30
Service Name PptpMiniport
Driver c:\winnt\system32\drivers\raspptp.sys (47888, 5.00.2195.4080)
Name [00000003] Direct Parallel
Adapter Type Not Available
Product Name Direct Parallel
Installed True
PNP Device ID ROOT\MS_PTIMINIPORT\0000
Last Reset 2/8/2005 5:21:13 AM
Index 3
Service Name Raspti

IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available
Service Name Raspti
Driver c:\winnt\system32\drivers\raspti.sys (16880, 5.00.2146.1)
Name [00000004] WAN Miniport (IP)
Adapter Type Not Available
Product Name WAN Miniport (IP)
Installed True
PNP Device ID ROOT\MS_NDISWANIP\0000
Last Reset 2/8/2005 5:21:13 AM
Index 4
Service Name NdisWan
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available
Service Name NdisWan
Driver c:\winnt\system32\drivers\ndiswan.sys (93104, 5.00.2195.5241)
Name [00000005] Broadcom NetXtreme Gigabit Ethernet
Adapter Type Ethernet 802.3
Product Name Broadcom NetXtreme Gigabit Ethernet
Installed True
PNP Device ID
PCI\VEN_14E4&DEV_1659&SUBSYS_02C61014&REV_01\4&1E33A7FD&0&0010
Last Reset 2/8/2005 5:21:13 AM
Index 5
Service Name b57w2k
IP Address 192.168.122.10
IP Subnet 255.255.255.0
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:0D:60:15:19:AC
Service Name b57w2k
IRQ Number 16
Driver c:\winnt\system32\drivers\b57w2k.sys (122616, 7.86.0.0)
Name [00000006] Intel(R) PRO/1000 MT Dual Port Server Adapter
Adapter Type Ethernet 802.3
Product Name Intel(R) PRO/1000 MT Dual Port Server Adapter
Installed True
PNP Device ID
PCI\VEN_8086&DEV_1079&SUBSYS_117A8086&REV_03\5&33948D71&0&080218
Last Reset 2/8/2005 5:21:13 AM
Index 6
Service Name E1000
IP Address 192.168.11.99
IP Subnet 255.255.255.0
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:0E:0C:36:7A:3C
Service Name E1000
IRQ Number 48
I/O Port 0x4000-0x4FFF
Driver c:\winnt\system32\drivers\e1000nt5.sys (170496, 8.4.21.0 built by: WinDDK)
Name [00000007] Intel(R) PRO/1000 MT Dual Port Server Adapter
Adapter Type Ethernet 802.3
Product Name Intel(R) PRO/1000 MT Dual Port Server Adapter
Installed True
PNP Device ID
PCI\VEN_8086&DEV_1079&SUBSYS_117A8086&REV_03\5&33948D71&0&090218
Last Reset 2/8/2005 5:21:13 AM
Index 7
Service Name E1000
IP Address 192.168.10.99
IP Subnet 255.255.255.0
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:0E:0C:36:7A:3D
Service Name E1000
IRQ Number 49
I/O Port 0x4040-0x407F
Driver c:\winnt\system32\drivers\e1000nt5.sys (170496, 8.4.21.0 built by: WinDDK)
[Protocol]
Item Value
Name MSAFD Tcpip [TCP/IP]
ConnectionlessService False
GuaranteesDelivery True
GuaranteesSequencing True
MaximumAddressSize 16 bytes
MaximumMessageSize 0 bytes
MessageOriented False
MinimumAddressSize 16 bytes
PseudoStreamOriented False
SupportsBroadcasting False
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData True
SupportsGracefulClosing True
SupportsGuaranteedBandwidth False
SupportsMulticasting False
Name MSAFD Tcpip [UDP/IP]
ConnectionlessService True
GuaranteesDelivery False
GuaranteesSequencing False
MaximumAddressSize 16 bytes
MaximumMessageSize 65467 bytes
MessageOriented True
MinimumAddressSize 16 bytes
PseudoStreamOriented False
SupportsBroadcasting True
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting True
Name RSVP UDP Service Provider
ConnectionlessService True
GuaranteesDelivery False
GuaranteesSequencing False
MaximumAddressSize 16 bytes

MaximumMessageSize 65467 bytes
MessageOriented True
MinimumAddressSize16 bytes
PseudoStreamOriented False
SupportsBroadcasting True
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption True
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting True
Name RSVP TCP Service Provider
ConnectionlessService False
GuaranteesDelivery True
GuaranteesSequencing True
MaximumAddressSize 16 bytes
MaximumMessageSize 0 bytes
MessageOriented False
MinimumAddressSize16 bytes
PseudoStreamOriented False
SupportsBroadcasting False
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption True
SupportsExpeditedData True
SupportsGracefulClosing True
SupportsGuaranteedBandwidth False
SupportsMulticasting False
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{9726764A-163E-43CF-836B-CEF1FBDC4F09}] SEQPACKET 4
ConnectionlessService False
GuaranteesDelivery True
GuaranteesSequencing True
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize20 bytes
PseudoStreamOriented False
SupportsBroadcasting False
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{9726764A-163E-43CF-836B-CEF1FBDC4F09}] DATAGRAM 4
ConnectionlessService True
GuaranteesDelivery False
GuaranteesSequencing False
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize20 bytes
PseudoStreamOriented False
SupportsBroadcasting True
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{C7788F23-C676-42D3-807D-00D00D0C84F9}] SEQPACKET 3
ConnectionlessService False
GuaranteesDelivery True
GuaranteesSequencing True
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize20 bytes
PseudoStreamOriented False
SupportsBroadcasting False
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{C7788F23-C676-42D3-807D-00D00D0C84F9}] DATAGRAM 3
ConnectionlessService True
GuaranteesDelivery False
GuaranteesSequencing False
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize20 bytes
PseudoStreamOriented False
SupportsBroadcasting True
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{BF6A26E8-3210-46EE-A818-F9EC97D7B87A}] SEQPACKET 0
ConnectionlessService False
GuaranteesDelivery True
GuaranteesSequencing True
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize20 bytes
PseudoStreamOriented False
SupportsBroadcasting False
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{BF6A26E8-3210-46EE-A818-F9EC97D7B87A}] DATAGRAM 0
ConnectionlessService True
GuaranteesDelivery False
GuaranteesSequencing False
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize20 bytes
PseudoStreamOriented False

SupportsBroadcasting True
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{E4642D43-676A-4938-B902-1D94A9E14871}]
SEQPACKET 1
ConnectionlessService False
GuaranteesDelivery True
GuaranteesSequencing True
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize 20 bytes
PseudoStreamOriented False
SupportsBroadcasting False
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{E4642D43-676A-4938-B902-1D94A9E14871}]
DATAGRAM 1
ConnectionlessService True
GuaranteesDelivery False
GuaranteesSequencing False
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize 20 bytes
PseudoStreamOriented False
SupportsBroadcasting True
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{7A1A1C49-720E-4C27-ADCC-2C8703574F7C}]
SEQPACKET 2
ConnectionlessService False
GuaranteesDelivery True
GuaranteesSequencing True
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize 20 bytes
PseudoStreamOriented False
SupportsBroadcasting False
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{7A1A1C49-720E-4C27-ADCC-2C8703574F7C}]
DATAGRAM 2
ConnectionlessService True
GuaranteesDelivery False
GuaranteesSequencing False
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize 20 bytes
PseudoStreamOriented False
SupportsBroadcasting True
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False
[WinSock]
Item Value
File c:\winnt\system32\winsock.dll
Version 3.10
Size 2.80 KB (2,864 bytes)
File c:\winnt\system32\wsock32.dll
Version 5.00.2195.4874
Size 21.27 KB (21,776 bytes)
[Ports]
[Following are sub-categories of this main category]
[Serial]
Item Value
Name COM1
Status OK
PNP Device ID ACPI\PNP0501\1
Maximum Input Buffer Size 0
Maximum Output Buffer Size False
Settable Baud Rate True
Settable Data Bits True
Settable Flow Control True
Settable Parity True
Settable Parity Check True
Settable Stop Bits True
Settable RLSD True
Supports RLSD True
Supports 16 Bit Mode False
Supports Special Characters False
Baud Rate 9600
Bits/Byte 8
Stop Bits 1
Parity None
Busy 0
Abort Read/Write on Error 0
Binary Mode Enabled -1
Continue XMit on XOff 0
CTS Outflow Control 0
Discard NULL Bytes 0
DSR Outflow Control 0
DSR Sensitivity 0
DTR Flow Control Type Enable
EOF Character 0
Error Replace Character 0
Error Replacement Enabled 0
Event Character 0
Parity Check Enabled 0
RTS Flow Control Type Enable
XOff Character 19
XOffXMit Threshold 512
XOn Character 17
XOnXMit Threshold 2048
XOnXOff InFlow Control 0
XOnXOff OutFlow Control 0

IRQ Number 4
I/O Port 0x03F8-0x03FF
Driver c:\winnt\system32\drivers\serial.sys (62512, 5.00.2195.5080)
Name COM2
Status OK
PNP Device ID ACPI\PNP0501\2
Maximum Input Buffer Size 0
Maximum Output Buffer Size False
Settable Baud Rate True
Settable Data Bits True
Settable Flow Control True
Settable Parity True
Settable Parity Check True
Settable Stop Bits True
Settable RLSD True
Supports RLSD True
Supports 16 Bit Mode False
Supports Special Characters False
Baud Rate 9600
Bits/Byte 8
Stop Bits 1
Parity None
Busy 0
Abort Read/Write on Error 0
Binary Mode Enabled -1
Continue XMit on XOff 0
CTS Outflow Control 0
Discard NULL Bytes 0
DSR Outflow Control 0
DSR Sensitivity 0
DTR Flow Control Type Enable
EOF Character 0
Error Replace Character 0
Error Replacement Enabled 0
Event Character 0
Parity Check Enabled 0
RTS Flow Control Type Enable
XOff Character 19
XOffXMit Threshold 512
XOn Character 17
XOnXMit Threshold 2048
XOnXOff InFlow Control 0
XOnXOff OutFlow Control 0
IRQ Number 3
I/O Port 0x02F8-0x02FF
Driver c:\winnt\system32\drivers\serial.sys (62512, 5.00.2195.5080)
[Parallel]
Item Value
Name LPT1
PNP Device ID ACPI\PNP0401\5&9583612&1
[Storage]
[Following are sub-categories of this main category]
[Drives]
Item Value
Drive A:
Description 3 1/2 Inch Floppy Drive
Drive C:
Description Local Fixed Disk
Compressed False
File System NTFS
Size 33.90 GB (36,396,830,720 bytes)
Free Space 27.78 GB (29,827,870,720 bytes)
Volume Name C_Drive
Volume Serial Number 5C29133F
Partition Disk #0, Partition #0
Partition Size 33.90 GB (36,396,831,744 bytes)
Starting Offset 32256 bytes
Drive Description Disk drive
Drive Manufacturer (Standard disk drives)
Drive Model IBM-ESXS ST336753LC FN SCSI Disk Device
Drive BytesPerSector 512
Drive MediaLoaded True
Drive MediaType Fixed hard disk media
Drive Partitions 1
Drive SCSIBus 0
Drive SCSILogicalUnit 0
Drive SCSIPort 3
Drive SCSITargetId 0
Drive SectorsPerTrack 63
Drive Size 36396864000 bytes
Drive TotalCylinders 4425
Drive TotalSectors 71087625
Drive TotalTracks 1128375
Drive TracksPerCylinder 255
[SCSI]
Item Value
Name QLogic Fibre Channel Adapter
Caption QLogic Fibre Channel Adapter
Driver ql2300
Status OK
PNP Device ID
PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\5&37B3111&0&100018
Device ID
PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\5&37B3111&0&100018
Device Map Not Available
Index Not Available
Max Number Controlled Not Available
IRQ Number 24
I/O Port 0x2000-0x4FFF
Driver c:\winnt\system32\drivers\ql2300.sys (471118, 8.2.3.66 (w32 VI))
Name Adaptec AIC-7902B - Ultra320 SCSI
Caption Adaptec AIC-7902B - Ultra320 SCSI
Driver adpu320
Status OK
PNP Device ID
PCI\VEN_9005&DEV_801D&SUBSYS_02CC1014&REV_10\5&37B3111&0&180018
Device ID
PCI\VEN_9005&DEV_801D&SUBSYS_02CC1014&REV_10\5&37B3111&0&180018
Device Map Not Available
Index Not Available
Max Number Controlled Not Available
IRQ Number 30
I/O Port 0x2800-0x28FF
I/O Port 0x2400-0x24FF
Driver c:\winnt\system32\drivers\adpu320.sys (132608, 3.0.000.000 built by: WinDDK)
Name Adaptec AIC-7902B - Ultra320 SCSI
Caption Adaptec AIC-7902B - Ultra320 SCSI
Driver adpu320
Status OK
PNP Device ID
PCI\VEN_9005&DEV_801D&SUBSYS_02CC1014&REV_10\5&37B3111&0&190018
Device ID
PCI\VEN_9005&DEV_801D&SUBSYS_02CC1014&REV_10\5&37B3111&0&190018
Device Map Not Available
Index Not Available
Max Number Controlled Not Available
IRQ Number 31
I/O Port 0x3000-0x30FF
I/O Port 0x2C00-0x2CFF

Driver c:\winnt\system32\drivers\adpu320.sys (132608, 3.0.000.000 built by: WinDDK)
[Printing]
Name Port Name Server Name
No printing information
[Problem Devices]
Device PNP Device ID Error Code
Not Available ACPI\ASF0001\2&DABA3FF&1 28
Intel(R) 82801EB USB2 Enhanced Host Controller - 24DD PCI\VEN_8086&DEV_24DD&SUBSYS_02ED1014&REV_02\3&18D45AA6&0&EF 10
Not Available ACPI\IBM3737\4&1244EBE3&0 28
[USB]
Device PNP Device ID
Intel(R) 82801EB USB Universal Host Controller - 24D2 PCI\VEN_8086&DEV_24D2&SUBSYS_02ED1014&REV_02\3&18D45AA6&0&E8
USB Root Hub USB\ROOT_HUB\4&1C9550AF&0
Intel(R) 82801EB USB Universal Host Controller - 24D4 PCI\VEN_8086&DEV_24D4&SUBSYS_02ED1014&REV_02\3&18D45AA6&0&E9
USB Root Hub USB\ROOT_HUB\4&2E9CD9B8&0
Intel(R) 82801EB USB Universal Host Controller - 24D7 PCI\VEN_8086&DEV_24D7&SUBSYS_02ED1014&REV_02\3&18D45AA6&0&EA
USB Root Hub USB\ROOT_HUB\4&2B462076&0
Intel(R) 82801EB USB Universal Host Controller - 24DE PCI\VEN_8086&DEV_24DE&SUBSYS_02ED1014&REV_02\3&18D45AA6&0&EB
USB Root Hub USB\ROOT_HUB\4&37241A76&0
Intel(R) 82801EB USB2 Enhanced Host Controller - 24DD PCI\VEN_8086&DEV_24DD&SUBSYS_02ED1014&REV_02\3&18D45AA6&0&EF
[Software Environment]
[Following are sub-categories of this main category]
[Drivers]
Name Description File Type Started Start Mode State Status Error Control Accept Pause Accept Stop

abiosdsk Abiosdsk Not Available Kernel Driver False Disabled Stopped OK Ignore False False

abp480n5 abp480n5 Not Available Kernel Driver False Disabled Stopped OK Normal False False

acpi Microsoft ACPI Driver c:\winnt\system32\drivers\acpi.sys Kernel Driver True Boot Running OK Normal False True

acpiec ACPIEC c:\winnt\system32\drivers\acpiec.sys Kernel Driver False Disabled Stopped OK Normal False False

adptsf Adaptec DuraLAN PCI Ethernet/Fast Ethernet driver for Windows 2000 c:\winnt\system32\drivers\adptsf50.sys Kernel Driver False Manual Stopped OK Normal False False

adpu160m adpu160m Not Available Kernel Driver False Disabled Stopped OK Normal False False

adpu320 adpu320 c:\winnt\system32\drivers\adpu320.sys Kernel Driver True Boot Running OK Normal False True

aeaudio aeaudio c:\winnt\system32\drivers\aeaudio.sys Kernel Driver False Manual Stopped OK Normal False False

afd AFD Networking Support Environment c:\winnt\system32\drivers\afd.sys Kernel Driver True Auto Running OK Normal False True

agp440 Intel AGP Bus Filter c:\winnt\system32\drivers\agp440.sys Kernel Driver True Boot Running OK Normal False True

aha154x Aha154x Not Available Kernel Driver False Disabled Stopped OK Normal False False

aic116x aic116x Not Available Kernel Driver False Disabled Stopped OK Normal False False

aic78u2 aic78u2 Not Available Kernel Driver False Disabled Stopped OK Normal False False

aic78xx aic78xx Not Available Kernel Driver False Disabled Stopped OK Normal False False

ami0nt ami0nt Not Available Kernel Driver False Disabled Stopped OK Normal False False

amsint amsint Not Available Kernel Driver False Disabled Stopped OK Normal False False

asc asc Not Available Kernel Driver False Disabled Stopped OK Normal False False

asc3350p asc3350p Not Available Kernel Driver False Disabled Stopped OK Normal False False

asc3550 asc3550 Not Available Kernel Driver False Disabled Stopped OK Normal False False

asyncmac RAS Asynchronous Media Driver c:\winnt\system32\drivers\asyncmac.sys Kernel Driver False Manual Stopped OK Normal False False

atapi Standard IDE/ESDI Hard Disk Controller c:\winnt\system32\drivers\atapi.sys Kernel Driver True Boot Running OK Normal False True

atdisk Atdisk Not Available Kernel Driver False Disabled Stopped OK Ignore False False

ati2mpad ati2mpad c:\winnt\system32\drivers\ati2mpad.sys Kernel Driver False Manual Stopped OK Ignore False False

ati2mtag ati2mtag c:\winnt\system32\drivers\ati2mtag.sys Kernel Driver True Manual Running OK Ignore False True

atirage3 atirage3 c:\winnt\system32\drivers\atimpab.sys Kernel Driver False Manual Stopped OK Ignore False False

atmarpc ATM ARP Client Protocol c:\winnt\system32\drivers\atmarpc.sys Kernel Driver False Manual Stopped OK Normal False False

audstub Audio Stub Driver c:\winnt\system32\drivers\audstub.sys Kernel Driver True Manual Running OK Normal False True

b57w2k Broadcom NetXtreme Gigabit Ethernet
c:\winnt\system32\drivers\b57w2k.sys Kernel Driver True
Manual Running OK Normal False True

beep Beep c:\winnt\system32\drivers\beep.sys Kernel
Driver True System Running OK Normal False
True

buslogic BusLogic Not Available Kernel Driver False
Disabled Stopped OK Normal False False

cd20xrnt cd20xrnt Not Available Kernel Driver False
Disabled Stopped OK Normal False False

cdaudio Cdaudio c:\winnt\system32\drivers\cdaudio.sys Kernel
Driver False System Stopped OK Ignore False
False

cdfs Cdfs c:\winnt\system32\drivers\cdfs.sys File System
Driver True Disabled Running OK Normal False
True

cdrom CD-ROM Driver c:\winnt\system32\drivers\cdrom.sys
Kernel Driver True System Running OK Normal
False True

changer Changer Not Available Kernel Driver False
System Stopped OK Ignore False False

cpqarray Cpqarray Not Available Kernel Driver False
Disabled Stopped OK Normal False False

cpqarry2 cpqarry2 Not Available Kernel Driver False
Disabled Stopped OK Normal False False

cpqfcalm cpqfcalm Not Available Kernel Driver False
Disabled Stopped OK Normal False False

cpqfws2e cpqfws2e Not Available Kernel Driver False
Disabled Stopped OK Normal False False

dac960nt dac960nt Not Available Kernel Driver False
Disabled Stopped OK Normal False False

deckzpsx deckzpsx Not Available Kernel Driver False
Disabled Stopped OK Normal False False

dfsdriver DfsDriver c:\winnt\system32\drivers\dfs.sys File System Driver
True Boot Running OK Normal False True

disk Disk Driver c:\winnt\system32\drivers\disk.sys
Kernel Driver True Boot Running OK Normal
False True

diskperf Diskperf c:\winnt\system32\drivers\diskperf.sys Kernel
Driver True Boot Running OK Normal False
True

dmboot dmboot c:\winnt\system32\drivers\dmboot.sys Kernel
Driver False Disabled Stopped OK Normal False
False

dmio Logical Disk Manager Driver
c:\winnt\system32\drivers\dmio.sys Kernel Driver True
Boot Running OK Normal False True

dmload dmload c:\winnt\system32\drivers\dmload.sys Kernel
Driver True Boot Running OK Normal False
True

dmusic Microsoft DirectMusic SW Synth (WDM)
c:\winnt\system32\drivers\dmusic.sys Kernel Driver False
Manual Stopped OK Normal False False

e1000 Intel(R) PRO/1000 Network Connection Driver
c:\winnt\system32\drivers\e1000nt5.sys Kernel Driver True
Manual Running OK Normal False True

e100b Intel(R) PRO Adapter Driver
c:\winnt\system32\drivers\e100bnt5.sys Kernel Driver False
Manual Stopped OK Normal False False

efs EFS c:\winnt\system32\drivers\efs.sys File System Driver
True Disabled Running OK Normal False True

fastfat Fastfat c:\winnt\system32\drivers\fastfat.sys File System
Driver True Disabled Running OK Normal False
True

fd16_700 Fd16_700 Not Available Kernel Driver False
Disabled Stopped OK Normal False False

fdc Floppy Disk Controller Driver c:\winnt\system32\drivers\fdc.sys
Kernel Driver True Manual Running OK Normal
False True

fiddrv fiddrv \??\c:\winnt\system32\drivers\fiddrv.sys Kernel
Driver False Manual Stopped OK Normal False
False

fips Fips c:\winnt\system32\drivers\fips.sys Kernel
Driver True Auto Running OK Normal False
True

fireport fireport Not Available Kernel Driver False
Disabled Stopped OK Normal False False

flashpnt flashpnt Not Available Kernel Driver False
Disabled Stopped OK Normal False False

flpydisk Floppy Disk Driver c:\winnt\system32\drivers\flpydisk.sys
Kernel Driver True Manual Running OK Normal
False True

ftdisk Volume Manager Driver
c:\winnt\system32\drivers\ftdisk.sys Kernel Driver True
Boot Running OK Normal False True

gpc Generic Packet Classifier
c:\winnt\system32\drivers\msgpc.sys Kernel Driver True
Manual Running OK Normal False True

i8042prt i8042 Keyboard and PS/2 Mouse Port Driver
c:\winnt\system32\drivers\i8042prt.sys Kernel Driver True
System Running OK Normal False True

ini910u ini910u Not Available Kernel Driver False
Disabled Stopped OK Normal False False

intelide IntelIde Not Available Kernel Driver False
Disabled Stopped OK Normal False False

ipfilterdriver IP Traffic Filter Driver
c:\winnt\system32\drivers\ipfltdrv.sys Kernel Driver False
Manual Stopped OK Normal False False

ipinip IP in IP Tunnel Driverc:\winnt\system32\drivers\ipinip.sys
Kernel Driver False Manual Stopped OK Normal
False False

ipnat IP Network Address Translator c:\winnt\system32\drivers\ipnat.sys
Kernel Driver False Manual Stopped OK Normal
False False

ipsec IPSEC driver c:\winnt\system32\drivers\ipsec.sys
Kernel Driver True Manual Running OK Normal
False True

ipsraidn ipsraidn Not Available Kernel Driver False
Disabled Stopped OK Normal False False

irenum IR Enumerator Service
c:\winnt\system32\drivers\irenum.sys Kernel Driver False
Manual Stopped OK Normal False False

isapnp PnP ISA/EISA Bus Driver
c:\winnt\system32\drivers\isapnp.sys Kernel Driver True
Boot Running OK Critical False True

kbdclass Keyboard Class Driver
c:\winnt\system32\drivers\kbdclass.sys Kernel Driver True
System Running OK Normal False True

kmixer Microsoft Kernel Wave Audio Mixer
c:\winnt\system32\drivers\kmixer.sys Kernel Driver False
Manual Stopped OK Normal False False

ksecdd KSecDD c:\winnt\system32\drivers\ksecdd.sys Kernel
Driver True Boot Running OK Normal False
True

lbrtfdc lbrtfdc Not Available Kernel Driver False
System Stopped OK Ignore False False

lp6nds35 lp6nds35 Not Available Kernel Driver False
Disabled Stopped OK Normal False False

mnmdd mnmdd c:\winnt\system32\drivers\mnmdd.sys Kernel
Driver True System Running OK Ignore False
True

modem Modem c:\winnt\system32\drivers\modem.sys Kernel
Driver False Manual Stopped OK Ignore False
False

mouclass Mouse Class Driver c:\winnt\system32\drivers\mouclass.sys
Kernel Driver True System Running OK Normal
False True

mountmgr MountMgr c:\winnt\system32\drivers\mountmgr.sys Kernel
Driver True Boot Running OK Normal False
True

mraid35x mraid35x Not Available Kernel Driver False
Disabled Stopped OK Normal False False

mrxsmb MRXSMB c:\winnt\system32\drivers\mrxsmb.sys File System
Driver True System Running OK Normal False
True

msfs Msfs c:\winnt\system32\drivers\msfs.sys File System
Driver True System Running OK Normal False
True

msksrv Microsoft Streaming Service Proxy
c:\winnt\system32\drivers\msksrv.sys Kernel Driver False
Manual Stopped OK Normal False False

mspclock Microsoft Streaming Clock Proxy
c:\winnt\system32\drivers\mspclock.sys Kernel Driver False
Manual Stopped OK Normal False False

mspqm Microsoft Streaming Quality Manager Proxy
c:\winnt\system32\drivers\mspqm.sys Kernel Driver False
Manual Stopped OK Normal False False

mup Mup c:\winnt\system32\drivers\mup.sys File System
Driver True Boot Running OK Normal False
True

nal Nal Service \??\c:\winnt\system32\drivers\iqvw32.sys
Kernel Driver False Manual Stopped OK Normal
False False

ncrc710 Ncrc710 Not Available Kernel Driver False
Disabled Stopped OK Normal False False

ndis NDIS System Driver c:\winnt\system32\drivers\ndis.sys
Kernel Driver True Boot Running OK Normal
False True

ndistapi Remote Access NDIS TAPI Driver
c:\winnt\system32\drivers\ndistapi.sys Kernel Driver True
Manual Running OK Normal False True

ndiswan Remote Access NDIS WAN Driver
c:\winnt\system32\drivers\ndiswan.sys Kernel Driver True
Manual Running OK Normal False True

ndproxy NDIS Proxy c:\winnt\system32\drivers\ndproxy.sys
Kernel Driver True Manual Running OK Normal
False True

netbios NetBIOS Interface c:\winnt\system32\drivers\netbios.sys
File System Driver True System Running OK Normal
False True

netbt NetBios over Tcpip c:\winnt\system32\drivers\netbt.sys
Kernel Driver True System Running OK Normal
False True

netdetect NetDetect c:\winnt\system32\drivers\netdtect.sys Kernel
Driver False Manual Stopped OK Normal False
False

npfs Npfs c:\winnt\system32\drivers\npfs.sys File System
Driver True System Running OK Normal False
True

ntfs Ntfs c:\winnt\system32\drivers\ntfs.sys File System
Driver True Disabled Running OK Normal False
True

null Null c:\winnt\system32\drivers\null.sys Kernel
Driver True System Running OK Normal False
True

nwlnkflt IPX Traffic Filter Driver
c:\winnt\system32\drivers\nwlnkflt.sys Kernel Driver False
Manual Stopped OK Normal False False

nwlnkfwd IPX Traffic Forwarder Driver
c:\winnt\system32\drivers\nwlnkfwd.sys Kernel Driver False
Manual Stopped OK Normal False False

parallel Parallel class driver c:\winnt\system32\drivers\parallel.sys
Kernel Driver True Manual Running OK Normal
False True

parport Parallel port driver c:\winnt\system32\drivers\parport.sys
Kernel Driver True System Running OK Ignore
False True

partmgr PartMgr c:\winnt\system32\drivers\partmgr.sys Kernel
Driver True Boot Running OK Normal False
True

parvdm ParVdm c:\winnt\system32\drivers\parvdm.sys Kernel
Driver True Auto Running OK Ignore False
True

pci PCI Bus Driver c:\winnt\system32\drivers\pci.sys Kernel
Driver True Boot Running OK Critical False
True

pcidump PCIDump Not Available Kernel Driver False
System Stopped OK Ignore False False

pciide PCIIde c:\winnt\system32\drivers\pciide.sys Kernel
Driver True Boot Running OK Normal False
True

pcmcia Pcmcia c:\winnt\system32\drivers\pcmcia.sys Kernel
Driver False Disabled Stopped OK Normal False
False

pdcomp PDCOMP Not Available Kernel Driver False
Manual Stopped OK Ignore False False

pdframe PDFRAME Not Available Kernel Driver
False Manual Stopped OK Ignore False False

pdreli PDRELI Not Available Kernel Driver False
Manual Stopped OK Ignore False False

pdrframe PDRFRAME Not Available Kernel Driver
False Manual Stopped OK Ignore False False

pptpminiport WAN Miniport (PPTP)
c:\winnt\system32\drivers\raspptp.sys Kernel Driver True
Manual Running OK Normal False True

ptilink Direct Parallel Link Driver
c:\winnt\system32\drivers\ptilink.sys Kernel Driver True
Manual Running OK Normal False True

ql1080 ql1080 Not Available Kernel Driver False
Disabled Stopped OK Normal False False

ql10wnt Ql10wnt Not Available Kernel Driver False
Disabled Stopped OK Normal False False

ql1240 ql1240 Not Available Kernel Driver False
Disabled Stopped OK Normal False False

ql2100 ql2100 Not Available Kernel Driver False
Disabled Stopped OK Normal False False

ql2300 ql2300 c:\winnt\system32\drivers\ql2300.sys Kernel
Driver True Boot Running OK Normal False
True

ql2300vi ql2300vi c:\winnt\system32\drivers\ql2300vi.sys Kernel
Driver True Boot Running OK Normal False
True

qlvika qlvika c:\winnt\system32\drivers\qlvika.sys Kernel
Driver True Auto Running OK Normal False
True

rasacd Remote Access Auto Connection Driver
c:\winnt\system32\drivers\rasacd.sys Kernel Driver True
System Running OK Normal False True

rasl2tp WAN Miniport (L2TP)
c:\winnt\system32\drivers\rasl2tp.sys Kernel Driver True
Manual Running OK Normal False True

raspti Direct Parallel c:\winnt\system32\drivers\raspti.sys
Kernel Driver True Manual Running OK Normal
False True

rca Microsoft Streaming Network Raw Channel Access
c:\winnt\system32\drivers\rca.sys Kernel Driver False Manual
Stopped OK Normal False False

rdbss Rdbss c:\winnt\system32\drivers\rdbss.sys File System
Driver True System Running OK Normal False
True

rdpwd RDPWD c:\winnt\system32\drivers\rdpwd.sys Kernel
Driver False Manual Stopped OK Ignore False
False

redbook Digital CD Audio Playback Filter Driver
c:\winnt\system32\drivers\redbook.sys Kernel Driver False
System Stopped OK Normal False False

serenum Serenum Filter Driver c:\winnt\system32\drivers\serenum.sys
Kernel Driver True Manual Running OK Normal
False True

serial Serial port driver c:\winnt\system32\drivers\serial.sys
Kernel Driver True System Running OK Ignore
False True

sfloppy Sfloppy c:\winnt\system32\drivers\sfloppy.sys Kernel
Driver False System Stopped OK Ignore False
False

sglfb sglfb c:\winnt\system32\drivers\sglfb.sys Kernel
Driver False System Stopped OK Normal False
False

simbad Simbad Not Available Kernel Driver False
Disabled Stopped OK Normal False False

smwdm smwdm c:\winnt\system32\drivers\smwdm.sys Kernel
Driver False Manual Stopped OK Normal False
False

sparrow Sparrow Not Available Kernel Driver False
Disabled Stopped OK Normal False False

spud Special Purpose Utility Driver c:\winnt\system32\drivers\spud.sys Kernel Driver True Manual Running OK Normal False True

srv Srv c:\winnt\system32\drivers\srv.sys File System Driver True Manual Running OK Normal False True

swenum Software Bus Driver c:\winnt\system32\drivers\swenum.sys Kernel Driver True Manual Running OK Normal False True

swmidi Microsoft Kernel GS Wavetable Synthesizer c:\winnt\system32\drivers\swmidi.sys Kernel Driver False Manual Stopped OK Normal False False

symc810 symc810 Not Available Kernel Driver False Disabled Stopped OK Normal False False

symc8xx symc8xx Not Available Kernel Driver False Disabled Stopped OK Normal False False

symmpi symmpi c:\winnt\system32\drivers\symmpi.sys Kernel Driver False Disabled Stopped OK Normal False False

sym_hi sym_hi Not Available Kernel Driver False Disabled Stopped OK Normal False False

sysaudio Microsoft System Audio Device c:\winnt\system32\drivers\sysaudio.sys Kernel Driver False Manual Stopped OK Normal False False

tcpip TCP/IP Protocol Driver c:\winnt\system32\drivers\tcpip.sys Kernel Driver True System Running OK Normal False True

tdasync TDASYNC c:\winnt\system32\drivers\tdasync.sys Kernel Driver False Manual Stopped OK Ignore False False

tdipx TDIPX c:\winnt\system32\drivers\tdipx.sys Kernel Driver False Manual Stopped OK Ignore False False

tdnetb TDNETB c:\winnt\system32\drivers\tdnetb.sys Kernel Driver False Manual Stopped OK Ignore False False

tdpipe TDPIPE c:\winnt\system32\drivers\tdpipe.sys Kernel Driver False Manual Stopped OK Ignore False False

tdspx TDSPX c:\winnt\system32\drivers\tdspx.sys Kernel Driver False Manual Stopped OK Ignore False False

tdtcp TDTCP c:\winnt\system32\drivers\tdtcp.sys Kernel Driver False Manual Stopped OK Ignore False False

termdd Terminal Device Driver c:\winnt\system32\drivers\termdd.sys Kernel Driver False Disabled Stopped OK Normal False False

tga tga Not Available Kernel Driver False System Stopped OK Ignore False False

udfs Udfs c:\winnt\system32\drivers\udfs.sys File System Driver False Disabled Stopped OK Normal False False

uhcd Microsoft USB Universal Host Controller Driver c:\winnt\system32\drivers\uhcd.sys Kernel Driver True Manual Running OK Normal False True

ultra66 ultra66 Not Available Kernel Driver False Disabled Stopped OK Normal False False

update Microcode Update Driver c:\winnt\system32\drivers\update.sys Kernel Driver True Manual Running OK Normal False True

usbehci Microsoft USB 2.0 Enhanced Host Controller Miniport Driver c:\winnt\system32\drivers\usbehci.sys Kernel Driver False Manual Stopped OK Normal False False

usbhub Microsoft USB Standard Hub Driver c:\winnt\system32\drivers\usbhub.sys Kernel Driver True Manual Running OK Normal False True

usbhub20 USB 2.0 Root Hub Support c:\winnt\system32\drivers\usbhub20.sys Kernel Driver False Manual Stopped OK Normal False False

vgasave VgaSave c:\winnt\system32\drivers\vga.sys Kernel Driver True System Running OK Ignore False True

wanarp Remote Access IP ARP Driver c:\winnt\system32\drivers\wanarp.sys Kernel Driver True Manual Running OK Normal False True

wdica WDICA Not Available Kernel Driver False Manual Stopped OK Ignore False False

wdmaud Microsoft WINMM WDM Audio Compatibility Driver c:\winnt\system32\drivers\wdmaud.sys Kernel Driver False Manual Stopped OK Normal False False

[Environment Variables]
Variable Value User Name
ComSpec %SystemRoot%\system32\cmd.exe <SYSTEM>
NUMBER_OF_PROCESSORS 4 <SYSTEM>
OS Windows_NT <SYSTEM>
Os2LibPath %SystemRoot%\system32\os2\dll; <SYSTEM>
Path %SystemRoot%\system32;%SystemRoot%;%SystemRoot%\system32\WBEM;C:\Program Files\Microsoft SQL Server\80\Tools\BINN;c:\batfiles;c:\tools;C:\Program Files\Intel\DMIX <SYSTEM>
PATHEXT .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH <SYSTEM>
PROCESSOR_ARCHITECTURE x86 <SYSTEM>
PROCESSOR_IDENTIFIER x86 Family 15 Model 3 Stepping 4, GenuineIntel <SYSTEM>
PROCESSOR_LEVEL 15 <SYSTEM>
PROCESSOR_REVISION 0304 <SYSTEM>
TEMP %SystemRoot%\TEMP <SYSTEM>
TMP %SystemRoot%\TEMP <SYSTEM>
windir %SystemRoot% <SYSTEM>
TEMP %USERPROFILE%\Local Settings\Temp VCLIENT10\Administrator
TMP %USERPROFILE%\Local Settings\Temp VCLIENT10\Administrator
[Jobs]

[Following are sub-categories of this main category]
[Print]
Document Size Owner Notify Status Time Submitted
Start Time Until Time Elapsed Time Pages Printed Job ID
Priority Parameters Driver Name Print Processor Host Print
Queue Data Type Name
Unknown Unknown Unknown Unknown Unknown Unknown Unknown
Unknown Unknown Unknown Unknown Unknown Unknown Unknown
Unknown Unknown Unknown Unknown
[Network Connections]
Local Name Remote Name Type Status User Name
No network connections information
[Running Tasks]
Name Path Process ID Priority Min Working Set Max
Working Set Start Time Version Size File Date
system idle process Not Available 0 0 Not
Available Not Available Not Available Unknown Unknown
Unknown

system Not Available 8 8 0 1413120
Not Available Unknown Unknown Unknown

smss.exe c:\winnt\system32\smss.exe 172 11 204800
1413120 2/8/2005 10:21:35 AM 5.00.2195.5382 44.77 KB
(45,840 bytes) 12/7/1999 7:00:00 AM

csrss.exe Not Available 196 13 Not Available
Not Available 2/8/2005 10:21:37 AM Unknown Unknown
Unknown

winlogon.exe c:\winnt\system32\winlogon.exe 192 13
204800 1413120 2/8/2005 10:21:39 AM 5.00.2195.5731
174.77 KB (178,960 bytes) 5/3/2002 12:31:24 PM

services.exe c:\winnt\system32\services.exe 244 9
204800 1413120 2/8/2005 10:21:40 AM 5.00.2195.3940
86.77 KB (88,848 bytes) 12/7/1999 7:00:00 AM

lsass.exe c:\winnt\system32\lsass.exe 256 9 204800
1413120 2/8/2005 10:21:40 AM 5.00.2195.5430 32.77 KB
(33,552 bytes) 12/7/1999 7:00:00 AM

svchost.exe c:\winnt\system32\svchost.exe 424 8
204800 1413120 2/8/2005 10:21:42 AM 5.00.2134.1
7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM

msdtc.exe c:\winnt\system32\msdtc.exe 452 8 204800
1413120 2/8/2005 10:21:43 AM 1999.9.3421.3 6.77 KB
(6,928 bytes) 2/12/2003 7:52:40 AM

svchost.exe c:\winnt\system32\svchost.exe 616 8
204800 1413120 2/8/2005 10:21:44 AM 5.00.2134.1
7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM

llssrv.exe c:\winnt\system32\llssrv.exe 648 9 204800
1413120 2/8/2005 10:21:44 AM 5.00.2195.4907 81.27 KB
(83,216 bytes) 7/22/2002 1:05:04 PM

regsvc.exe c:\winnt\system32\regsvc.exe 716 8 204800
1413120 2/8/2005 10:21:45 AM 5.00.2195.3649 65.27 KB
(66,832 bytes) 1/14/2005 10:50:10 AM

mstask.exe c:\winnt\system32\mstask.exe 736 8 204800
1413120 2/8/2005 10:21:45 AM 4.71.2195.1 115.77 KB
(118,544 bytes) 1/14/2005 10:50:08 AM

tcpsvcs.exe c:\winnt\system32\tcpsvcs.exe 752 8
204800 1413120 2/8/2005 10:21:46 AM 5.00.2134.1
24.77 KB (25,360 bytes) 12/7/1999 7:00:00 AM

explorer.exe c:\winnt\explorer.exe 928 8 204800
1413120 2/8/2005 10:21:54 AM 5.00.3502.5321 237.27 KB
(242,960 bytes) 1/14/2005 10:50:14 AM

winmgmt.exe c:\winnt\system32\wbem\winmgmt.exe 980 8
204800 1413120 2/8/2005 10:21:55 AM 1.50.1085.0070
192.08 KB (196,685 bytes) 1/14/2005 10:50:15 AM

bmlisten.exe c:\slave\bmlisten.exe 1084 8 204800
1413120 2/8/2005 10:21:56 AM 2, 1, 0, 2 156.00 KB (159,744
bytes) 7/22/2004 4:52:24 PM

dfssvc.exe c:\winnt\system32\dfssvc.exe 1120 8 204800
1413120 2/8/2005 10:21:58 AM 5.00.2195.3649 88.27 KB
(90,384 bytes) 1/14/2005 10:50:02 AM

svchost.exe c:\winnt\system32\svchost.exe 1180 8
204800 1413120 2/8/2005 10:22:20 AM 5.00.2134.1
7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM

dllhost.exe Not Available 1404 8 Not Available
Not Available 2/8/2005 12:45:56 PM Unknown Unknown
Unknown

inetinfo.exe c:\winnt\system32\inetsrv\inetinfo.exe 1004 8
204800 1413120 2/8/2005 2:39:37 PM 5.00.0984 14.27 KB (14,608
bytes) 1/14/2005 10:50:21 AM

mmc.exe c:\winnt\system32\mmc.exe 820 8 204800
1413120 2/8/2005 3:31:15 PM 5.00.2195.4933 589.27 KB (603,408
bytes) 1/14/2005 10:50:06 AM

rsvp.exe c:\winnt\system32\rsvp.exe 1544 8 204800
1413120 2/8/2005 3:32:11 PM 5.00.2167.1 172.77 KB (176,912
bytes) 12/7/1999 7:00:00 AM

[Loaded Modules]
Name Version Size File Date Manufacturer Path

traffic.dll 5.00.2139.1 30.77 KB (31,504 bytes) 12/7/1999
7:00:00 AM Microsoft Corporation
c:\winnt\system32\traffic.dll

rsvp.exe 5.00.2167.1 172.77 KB (176,912 bytes) 12/7/1999
7:00:00 AM Microsoft Corporation
c:\winnt\system32\rsvp.exe

browselc.dll 6.00.2800.1106 61.50 KB (62,976 bytes)
8/29/2002 8:14:40 AM Microsoft Corporation
c:\winnt\system32\browselc.dll

mlang.dll 6.00.2800.1106 561.50 KB (574,976 bytes) 8/29/2002
8:14:40 AM Microsoft Corporation
c:\winnt\system32\mlang.dll

wbemprox.dll 1.50.1085.0045 40.08 KB (41,040 bytes)
1/14/2005 10:50:15 AM Microsoft Corporation
c:\winnt\system32\wbem\wbemprox.dll

mofd.dll 1.50.1085.0065 136.07 KB (139,332 bytes) 1/14/2005
10:50:15 AM Microsoft Corporation
c:\winnt\system32\wbem\mofd.dll

cabinet.dll 5.00.2147.1 54.77 KB (56,080 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\cabinet.dll

msinfo32.dll 5.00.2195.4601 312.27 KB (319,760 bytes) 1/14/2005 10:50:17 AM Microsoft Corporation c:\program files\common files\microsoft shared\msinfo\msinfo32.dll

mmcndmgr.dll 5.00.2195.5352 816.27 KB (835,856 bytes) 1/14/2005 10:50:06 AM Microsoft Corporation c:\winnt\system32\mmcndmgr.dll

mmc.exe 5.00.2195.4933 589.27 KB (603,408 bytes) 1/14/2005 10:50:06 AM Microsoft Corporation c:\winnt\system32\mmc.exe

iislog.dll 5.00.0984 75.27 KB (77,072 bytes) 1/14/2005 10:50:21 AM Microsoft Corporation c:\winnt\system32\inetsrv\iislog.dll

httpext.dll 5.00.0984 240.27 KB (246,032 bytes) 1/14/2005 10:50:21 AM Microsoft Corporation c:\winnt\system32\inetsrv\httpext.dll

rpcproxy.dll 5.00.2195.5419 16.27 KB (16,656 bytes) 1/14/2005 10:50:19 AM Microsoft Corporation c:\winnt\system32\rpcproxy\rpcproxy.dll

fpexedll.dll 4.0.2.5526 20.06 KB (20,541 bytes) 1/14/2005 10:50:18 AM Microsoft Corporation c:\program files\common files\microsoft shared\web server extensions\40\bin\fpexedll.dll

md5filt.dll 5.00.0984 32.77 KB (33,552 bytes) 1/14/2005 10:50:21 AM Microsoft Corporation c:\winnt\system32\inetsrv\md5filt.dll

gzip.dll 5.00.0984 30.27 KB (30,992 bytes) 1/14/2005 10:50:20 AM Microsoft Corporation c:\winnt\system32\inetsrv\gzip.dll

compfilt.dll 5.00.0984 22.77 KB (23,312 bytes) 1/14/2005 10:50:20 AM Microsoft Corporation c:\winnt\system32\inetsrv\compfilt.dll

sspifilt.dll 5.00.0984 42.77 KB (43,792 bytes) 1/14/2005 10:50:21 AM Microsoft Corporation c:\winnt\system32\inetsrv\sspifilt.dll

iscomlog.dll 5.00.0984 24.27 KB (24,848 bytes) 1/14/2005 10:50:21 AM Microsoft Corporation c:\winnt\system32\inetsrv\iscomlog.dll

lonsint.dll 5.00.0984 11.77 KB (12,048 bytes) 1/14/2005 10:50:21 AM Microsoft Corporation c:\winnt\system32\inetsrv\lonsint.dll

inetsloc.dll 5.00.0984 20.27 KB (20,752 bytes) 1/14/2005 10:50:04 AM Microsoft Corporation c:\winnt\system32\inetsloc.dll

iisfecnv.dll 5.00.0984 7.27 KB (7,440 bytes) 1/13/2005 5:06:46 PM Microsoft Corporation c:\winnt\system32\inetsrv\iisfecnv.dll

isatq.dll 5.00.0984 60.77 KB (62,224 bytes) 1/14/2005 10:50:21 AM Microsoft Corporation c:\winnt\system32\inetsrv\isatq.dll

infocomm.dll 5.00.0984 240.77 KB (246,544 bytes) 1/14/2005 10:50:21 AM Microsoft Corporation c:\winnt\system32\inetsrv\infocomm.dll

w3svc.dll 5.00.0984 335.27 KB (343,312 bytes) 1/14/2005 10:50:22 AM Microsoft Corporation c:\winnt\system32\inetsrv\w3svc.dll

security.dll 5.00.2154.1 5.77 KB (5,904 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\security.dll

svcext.dll 5.00.0984 39.77 KB (40,720 bytes) 1/14/2005 10:50:21 AM Microsoft Corporation c:\winnt\system32\inetsrv\svcext.dll

admexs.dll 5.00.0984 27.77 KB (28,432 bytes) 1/14/2005 10:50:20 AM Microsoft Corporation c:\winnt\system32\inetsrv\admexs.dll

wamreg.dll 5.00.0984 45.77 KB (46,864 bytes) 1/14/2005 10:50:22 AM Microsoft Corporation c:\winnt\system32\inetsrv\wamreg.dll

metadata.dll 5.00.0984 68.77 KB (70,416 bytes) 1/14/2005 10:50:21 AM Microsoft Corporation c:\winnt\system32\inetsrv\metadata.dll

iismap.dll 5.00.0984 55.77 KB (57,104 bytes) 1/14/2005 10:50:04 AM Microsoft Corporation c:\winnt\system32\iismap.dll

nsepm.dll 5.00.0984 43.27 KB (44,304 bytes) 1/14/2005 10:50:21 AM Microsoft Corporation c:\winnt\system32\inetsrv\nsepm.dll

admwprox.dll 5.00.0984 31.77 KB (32,528 bytes) 1/13/2005 5:06:47 PM Microsoft Corporation c:\winnt\system32\admwprox.dll

coadmin.dll 5.00.0984 39.77 KB (40,720 bytes) 1/14/2005 10:50:20 AM Microsoft Corporation c:\winnt\system32\inetsrv\coadmin.dll

iisadmin.dll 5.00.0984 15.27 KB (15,632 bytes) 1/14/2005 10:50:21 AM Microsoft Corporation c:\winnt\system32\inetsrv\iisadmin.dll

rpcref.dll 5.00.0984 4.27 KB (4,368 bytes) 1/14/2005 10:50:21 AM Microsoft Corporation c:\winnt\system32\inetsrv\rpcref.dll

iisrtl.dll 5.00.0984 119.77 KB (122,640 bytes) 1/14/2005 10:50:04 AM Microsoft Corporation c:\winnt\system32\iisrtl.dll

inetinfo.exe 5.00.0984 14.27 KB (14,608 bytes) 1/14/2005 10:50:21 AM Microsoft Corporation c:\winnt\system32\inetsrv\inetinfo.exe

tapisrv.dll 5.00.2195.5227 169.27 KB (173,328 bytes) 1/14/2005 10:50:12 AM Microsoft Corporation c:\winnt\system32\tapisrv.dll

dfssvc.exe 5.00.2195.3649 88.27 KB (90,384 bytes) 1/14/2005 10:50:02 AM Microsoft Corporation c:\winnt\system32\dfssvc.exe

bmlisten.exe 2, 1, 0, 2 156.00 KB (159,744 bytes) 7/22/2004 4:52:24 PM IBM xSeries Server Performance c:\slave\bmlisten.exe

wshnetbs.dll 5.00.2134.1 7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\wshnetbs.dll

ntmarta.dll 5.00.2195.4836 99.77 KB (102,160 bytes) 1/14/2005 10:50:09 AM Microsoft Corporation
c:\winnt\system32\ntmarta.dll

perfos.dll 5.00.2155.1 21.27 KB (21,776 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\perfos.dll

provthrd.dll 1.50.1085.0000 68.07 KB (69,708 bytes) 1/13/2005 5:08:21 PM Microsoft Corporation
c:\winnt\system32\wbem\provthrd.dll

ntevt.dll 1.50.1085.0072 192.06 KB (196,671 bytes) 1/14/2005 10:50:15 AM Microsoft Corporation
c:\winnt\system32\wbem\ntevt.dll

psapi.dll 5.00.2134.1 28.27 KB (28,944 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\psapi.dll

framedyn.dll 1.50.1085.0076 164.07 KB (168,009 bytes) 1/14/2005 10:50:15 AM Microsoft Corporation
c:\winnt\system32\wbem\framedyn.dll

cimwin32.dll 1.50.1085.0073 1.04 MB (1,085,520 bytes) 1/14/2005 10:50:15 AM Microsoft Corporation
c:\winnt\system32\wbem\cimwin32.dll

wbemsvc.dll 1.50.1085.0007 40.07 KB (41,036 bytes) 1/14/2005 10:50:15 AM Microsoft Corporation
c:\winnt\system32\wbem\wbemsvc.dll

wbemess.dll 1.50.1085.0074 364.07 KB (372,804 bytes) 1/14/2005 10:50:15 AM Microsoft Corporation
c:\winnt\system32\wbem\wbemess.dll

fastprox.dll 1.50.1085.0056 144.08 KB (147,536 bytes) 1/14/2005 10:50:15 AM Microsoft Corporation
c:\winnt\system32\wbem\fastprox.dll

wbemcore.dll 1.50.1085.0085 628.07 KB (643,146 bytes) 1/14/2005 10:50:15 AM Microsoft Corporation
c:\winnt\system32\wbem\wbemcore.dll

wbemcomn.dll 1.50.1085.0077 692.07 KB (708,675 bytes) 1/14/2005 10:50:15 AM Microsoft Corporation
c:\winnt\system32\wbem\wbemcomn.dll

winmgmt.exe 1.50.1085.0070 192.08 KB (196,685 bytes) 1/14/2005 10:50:15 AM Microsoft Corporation
c:\winnt\system32\wbem\winmgmt.exe

linkinfo.dll 5.00.2134.1 15.77 KB (16,144 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\linkinfo.dll

faxshell.dll 5.00.2134.1 8.27 KB (8,464 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\faxshell.dll

msacm32.dll 5.00.2134.1 65.27 KB (66,832 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\msacm32.dll

avifil32.dll 5.00.2134.1 76.27 KB (78,096 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\avifil32.dll

msvfw32.dll 5.00.2134.1 113.77 KB (116,496 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\msvfw32.dll

docprop2.dll 5.00.2178.1 297.77 KB (304,912 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\docprop2.dll

wininet.dll 6.00.2800.1106 572.00 KB (585,728 bytes) 8/29/2002 8:14:40 AM Microsoft Corporation
c:\winnt\system32\wininet.dll

shdoclc.dll 6.00.2800.1106 521.00 KB (533,504 bytes) 8/29/2002 8:14:40 AM Microsoft Corporation
c:\winnt\system32\shdoclc.dll

msi.dll 2.0.2600.1 1.90 MB (1,991,168 bytes) 1/14/2005 10:50:07 AM Microsoft Corporation c:\winnt\system32\msi.dll

powrprof.dll 5.00.3502.5305 13.27 KB (13,584 bytes) 1/14/2005 10:50:10 AM Microsoft Corporation
c:\winnt\system32\powrprof.dll

batmeter.dll 5.00.3502.5305 20.27 KB (20,752 bytes) 1/14/2005 10:50:00 AM Microsoft Corporation
c:\winnt\system32\batmeter.dll

stobject.dll 5.00.2195.4455 79.27 KB (81,168 bytes) 1/14/2005 10:50:12 AM Microsoft Corporation
c:\winnt\system32\stobject.dll

webcheck.dll 6.00.2800.1106 252.00 KB (258,048 bytes) 8/29/2002 8:14:40 AM Microsoft Corporation
c:\winnt\system32\webcheck.dll

netui1.dll 5.00.2134.1 210.27 KB (215,312 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\netui1.dll

netui0.dll 5.00.2195.4874 70.77 KB (72,464 bytes) 1/14/2005 10:50:09 AM Microsoft Corporation
c:\winnt\system32\netui0.dll

ntlanman.dll 5.00.2195.5428 35.27 KB (36,112 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\ntlanman.dll

ntshrui.dll 5.00.2134.1 46.77 KB (47,888 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\ntshrui.dll

mydocs.dll 5.00.3315.4065 55.27 KB (56,592 bytes) 1/14/2005 10:50:08 AM Microsoft Corporation
c:\winnt\system32\mydocs.dll

hhsetup.dll 4.74.8702 66.27 KB (67,856 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\hhsetup.dll

mmcshext.dll 5.00.2153.1 24.27 KB (24,848 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\mmcshext.dll

browseui.dll 6.00.2800.1106 1002.00 KB (1,026,048 bytes) 8/29/2002 8:14:40 AM Microsoft Corporation
c:\winnt\system32\browseui.dll

shdocvw.dll 6.00.2800.1106 1.28 MB (1,338,368 bytes) 8/29/2002 8:14:40 AM Microsoft Corporation c:\winnt\system32\shdocvw.dll

explorer.exe 5.00.3502.5321 237.27 KB (242,960 bytes) 1/14/2005 10:50:14 AM Microsoft Corporation c:\winnt\explorer.exe

simptcp.dll 5.00.2134.1 19.27 KB (19,728 bytes) 2/12/2003 7:52:36 AM Microsoft Corporation c:\winnt\system32\simptcp.dll

tcpsvcs.exe 5.00.2134.1 24.77 KB (25,360 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\tcpsvcs.exe

msidle.dll 5.00.2920.0000 6.27 KB (6,416 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msidle.dll

mstask.exe 4.71.2195.1 115.77 KB (118,544 bytes) 1/14/2005 10:50:08 AM Microsoft Corporation c:\winnt\system32\mstask.exe

regsvc.exe 5.00.2195.3649 65.27 KB (66,832 bytes) 1/14/2005 10:50:10 AM Microsoft Corporation c:\winnt\system32\regsvc.exe

llsrpc.dll 5.00.2195.4907 47.77 KB (48,912 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\llsrpc.dll

llssrv.exe 5.00.2195.4907 81.27 KB (83,216 bytes) 7/22/2002 1:05:04 PM Microsoft Corporation c:\winnt\system32\llssrv.exe

ntmsdba.dll 5.00.2195.5279 169.27 KB (173,328 bytes) 1/14/2005 10:50:09 AM Microsoft Corporation c:\winnt\system32\ntmsdba.dll

rasdlg.dll 5.00.2195.5438 515.77 KB (528,144 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\rasdlg.dll

netcfgx.dll 5.00.2195.4874 534.77 KB (547,600 bytes) 1/14/2005 10:50:08 AM Microsoft Corporation c:\winnt\system32\netcfgx.dll

rasmans.dll 5.00.2195.5436 149.27 KB (152,848 bytes) 1/14/2005 10:50:10 AM Microsoft Corporation c:\winnt\system32\rasmans.dll

wmi.dll 5.00.2191.1 6.27 KB (6,416 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\wmi.dll

netshell.dll 5.00.2195.5431 457.77 KB (468,752 bytes) 1/14/2005 10:50:09 AM Microsoft Corporation c:\winnt\system32\netshell.dll

netman.dll 5.00.2195.5282 89.27 KB (91,408 bytes) 1/14/2005 10:50:08 AM Microsoft Corporation c:\winnt\system32\netman.dll

iashlpr.dll 5.00.2184.1 33.27 KB (34,064 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\iashlpr.dll

iasacct.dll 5.00.2195.4115 28.27 KB (28,944 bytes) 1/14/2005 10:50:04 AM Microsoft Corporation c:\winnt\system32\iasacct.dll

iasuserr.dll 5.00.2195.4609 19.77 KB (20,240 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\iasuserr.dll

iasnap.dll 5.00.2195.4115 58.77 KB (60,176 bytes) 1/14/2005 10:50:04 AM Microsoft Corporation c:\winnt\system32\iasnap.dll

iaspipe.dll 5.00.2134.1 41.77 KB (42,768 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\iaspipe.dll

expsrv.dll 6.72.9414 371.77 KB (380,688 bytes) 1/14/2005 10:50:03 AM Microsoft Corporation c:\winnt\system32\expsrv.dll

vbajet32.dll 6.1.8268 30.27 KB (30,992 bytes) 1/14/2005 10:50:13 AM Microsoft Corporation c:\winnt\system32\vbajet32.dll

msjtes40.dll 4.00.5914.0 236.27 KB (241,936 bytes) 1/14/2005 10:50:07 AM Microsoft Corporation c:\winnt\system32\msjtes40.dll

oledb32r.dll 2.70.9001.0 built by: Lab06_N(dagbuild) 64.00 KB (65,536 bytes) 1/13/2005 5:09:52 PM Microsoft Corporation c:\program files\common files\system\ole db\oledb32r.dll

comdlg32.dll 5.00.3315.3727 221.27 KB (226,576 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\comdlg32.dll

msdart.dll 2.71.9031.4 built by: Lab06_N(dagbuild) 124.00 KB (126,976 bytes) 1/13/2005 5:09:51 PM Microsoft Corporation c:\winnt\system32\msdart.dll

oledb32.dll 2.71.9031.4 built by: Lab06_N(dagbuild) 408.00 KB (417,792 bytes) 1/13/2005 5:09:51 PM Microsoft Corporation c:\program files\common files\system\ole db\oledb32.dll

msjint40.dll 4.00.2927.2 148.27 KB (151,824 bytes) 1/14/2005 10:50:07 AM Microsoft Corporation c:\winnt\system32\msjint40.dll

msjter40.dll 4.00.2927.2 52.27 KB (53,520 bytes) 1/14/2005 10:50:07 AM Microsoft Corporation c:\winnt\system32\msjter40.dll

mswstr10.dll 4.00.3829.2 600.27 KB (614,672 bytes) 1/14/2005 10:50:08 AM Microsoft Corporation c:\winnt\system32\mswstr10.dll

msjet40.dll 4.00.6218.0 1.43 MB (1,503,504 bytes) 1/14/2005 10:50:07 AM Microsoft Corporation c:\winnt\system32\msjet40.dll

msjetoledb40.dll 4.00.5919.0 340.27 KB (348,432 bytes) 1/14/2005 10:50:07 AM Microsoft Corporation c:\winnt\system32\msjetoledb40.dll

sens.dll 5.00.2163.1 36.77 KB (37,648 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\sens.dll

iasrad.dll 5.00.2195.4841 94.77 KB (97,040 bytes) 1/14/2005 10:50:04 AM Microsoft Corporation c:\winnt\system32\iasrad.dll

iassam.dll 5.00.2195.5427 98.27 KB (100,624 bytes) 1/14/2005 10:50:04 AM Microsoft Corporation c:\winnt\system32\iassam.dll

iasads.dll 5.00.2195.5080 73.77 KB (75,536 bytes) 1/14/2005 10:50:04 AM Microsoft Corporation c:\winnt\system32\iasads.dll

ntmssvc.dll 5.00.2195.5254 391.77 KB (401,168 bytes) 1/14/2005 10:50:09 AM Microsoft Corporation c:\winnt\system32\ntmssvc.dll

iaspolcy.dll 5.00.2134.1 25.27 KB (25,872 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\iaspolcy.dll

iassvcs.dll 5.00.2195.4916 58.77 KB (60,176 bytes) 1/14/2005 10:50:04 AM Microsoft Corporation c:\winnt\system32\iassvcs.dll

iassdo.dll 5.00.2195.4115 263.27 KB (269,584 bytes) 1/14/2005 10:50:04 AM Microsoft Corporation c:\winnt\system32\iassdo.dll

ias.dll 5.00.2134.1 7.27 KB (7,440 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\ias.dll

es.dll 2000.2.3497.0 225.27 KB (230,672 bytes) 1/14/2005 10:50:03 AM Microsoft Corporation c:\winnt\system32\es.dll

mtxoci.dll 2000.2.3497.0 103.77 KB (106,256 bytes) 1/14/2005 10:50:08 AM Microsoft Corporation c:\winnt\system32\mtxoci.dll

resutils.dll 5.00.2195.5339 39.77 KB (40,720 bytes) 1/14/2005 10:50:11 AM Microsoft Corporation c:\winnt\system32\resutils.dll

clusapi.dll 5.00.2195.4678 54.27 KB (55,568 bytes) 1/14/2005 10:50:01 AM Microsoft Corporation c:\winnt\system32\clusapi.dll

msvcp50.dll 5.00.7051 552.50 KB (565,760 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msvcp50.dll

xolehlp.dll 1999.9.3421.3 17.27 KB (17,680 bytes) 2/12/2003 7:52:40 AM Microsoft Corporation c:\winnt\system32\xolehlp.dll

msdtclog.dll 2000.2.3497.0 86.77 KB (88,848 bytes) 1/14/2005 10:50:06 AM Microsoft Corporation c:\winnt\system32\msdtclog.dll

mtxclu.dll 2000.2.3497.0 51.27 KB (52,496 bytes) 1/14/2005 10:50:08 AM Microsoft Corporation c:\winnt\system32\mtxclu.dll

msdtcprx.dll 2000.2.3497.0 683.77 KB (700,176 bytes) 1/14/2005 10:50:06 AM Microsoft Corporation c:\winnt\system32\msdtcprx.dll

txfaux.dll 2000.2.3497.0 383.27 KB (392,464 bytes) 1/14/2005 10:50:13 AM Microsoft Corporation c:\winnt\system32\txfaux.dll

msdtctm.dll 2000.2.3497.0 1.08 MB (1,128,208 bytes) 1/14/2005 10:50:06 AM Microsoft Corporation c:\winnt\system32\msdtctm.dll

msdtc.exe 1999.9.3421.3 6.77 KB (6,928 bytes) 2/12/2003 7:52:40 AM Microsoft Corporation c:\winnt\system32\msdtc.exe

rasadhlp.dll 5.00.2168.1 7.27 KB (7,440 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\rasadhlp.dll

winrnr.dll 5.00.2160.1 18.77 KB (19,216 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\winrnr.dll

rpcss.dll 5.00.2195.5429 231.27 KB (236,816 bytes) 1/14/2005 10:50:11 AM Microsoft Corporation c:\winnt\system32\rpcss.dll

svchost.exe 5.00.2134.1 7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\svchost.exe

dssenh.dll 5.00.2195.3665 142.77 KB (146,192 bytes) 3/6/2003 1:54:23 PM Microsoft Corporation c:\winnt\system32\dssenh.dll

wshtcpip.dll 5.00.2195.4874 17.27 KB (17,680 bytes) 1/14/2005 10:50:14 AM Microsoft Corporation c:\winnt\system32\wshtcpip.dll

msafd.dll 5.00.2195.4874 103.27 KB (105,744 bytes) 1/14/2005 10:50:06 AM Microsoft Corporation c:\winnt\system32\msafd.dll

oakley.dll 5.00.2195.5326 382.27 KB (391,440 bytes) 1/14/2005 10:50:09 AM Microsoft Corporation c:\winnt\system32\oakley.dll

mfc42u.dll 6.00.8665.0 972.05 KB (995,384 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\mfc42u.dll

polagent.dll 5.00.2195.5428 94.77 KB (97,040 bytes) 1/14/2005 10:50:10 AM Microsoft Corporation c:\winnt\system32\polagent.dll

scecli.dll 5.00.2195.4874 109.27 KB (111,888 bytes) 1/14/2005 10:50:11 AM Microsoft Corporation c:\winnt\system32\scecli.dll

atl.dll 3.00.9435 73.06 KB (74,810 bytes) 1/14/2005 10:50:00 AM Microsoft Corporation c:\winnt\system32\atl.dll

certcli.dll 5.00.2195.3649 130.27 KB (133,392 bytes) 1/14/2005 10:50:01 AM Microsoft Corporation c:\winnt\system32\certcli.dll

esent.dll 6.0.3940.25 1.09 MB (1,137,936 bytes) 1/14/2005 10:50:03 AM Microsoft Corporation c:\winnt\system32\esent.dll

mswsock.dll 5.00.2195.4874 62.77 KB (64,272 bytes) 1/14/2005 10:50:08 AM Microsoft Corporation c:\winnt\system32\mswsock.dll

ntdsatq.dll 5.00.2195.5246 31.27 KB (32,016 bytes) 1/14/2005 10:50:09 AM Microsoft Corporation c:\winnt\system32\ntdsatq.dll

ntdsa.dll 5.00.2195.5438 1002.27 KB (1,026,320 bytes) 1/14/2005 10:50:09 AM Microsoft Corporation c:\winnt\system32\ntdsa.dll

kdcsvc.dll 5.00.2195.5246 141.77 KB (145,168 bytes) 1/14/2005 10:50:05 AM Microsoft Corporation c:\winnt\system32\kdcsvc.dll

sfmapi.dll 5.00.2134.1 38.77 KB (39,696 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\sfmapi.dll

rassfm.dll 5.00.2195.4874 21.27 KB (21,776 bytes) 1/14/2005 10:50:10 AM Microsoft Corporation c:\winnt\system32\rassfm.dll

rsabase.dll 5.00.2195.3839 128.27 KB (131,344 bytes) 7/22/2002 1:05:04 PM Microsoft Corporation c:\winnt\system32\rsabase.dll

schannel.dll 5.00.2195.5284 139.27 KB (142,608 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\schannel.dll

netlogon.dll 5.00.2195.5400 362.77 KB (371,472 bytes) 1/14/2005 10:50:08 AM Microsoft Corporation c:\winnt\system32\netlogon.dll

msv1_0.dll5.00.2195.4745 112.27 KB (114,960 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msv1_0.dll

kerberos.dll 5.00.2195.5246 202.77 KB (207,632 bytes) 1/14/2005 10:50:05 AM Microsoft Corporation c:\winnt\system32\kerberos.dll

msprivs.dll5.00.2154.1 41.50 KB (42,496 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msprivs.dll

samsrv.dll 5.00.2195.5201 374.27 KB (383,248 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\samsrv.dll

lsasrv.dll 5.00.2195.5430 500.27 KB (512,272 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\lsasrv.dll

lsass.exe 5.00.2195.5430 32.77 KB (33,552 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\lsass.exe

ntlsapi.dll 5.00.2195.4907 6.77 KB (6,928 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\ntlsapi.dll

wmicore.dll 5.00.2195.3649 72.27 KB (74,000 bytes) 1/14/2005 10:50:14 AM Microsoft Corporation c:\winnt\system32\wmicore.dll

alrsvc.dll 5.00.2134.1 17.77 KB (18,192 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\alrsvc.dll

rnr20.dll 5.00.2195.4874 35.77 KB (36,624 bytes) 1/14/2005 10:50:11 AM Microsoft Corporation c:\winnt\system32\rnr20.dll

trkwks.dll 5.00.2195.4874 88.77 KB (90,896 bytes) 1/14/2005 10:50:13 AM Microsoft Corporation c:\winnt\system32\trkwks.dll

seclogon.dll 5.00.2195.5201 17.27 KB (17,680 bytes) 1/14/2005 10:50:11 AM Microsoft Corporation c:\winnt\system32\seclogon.dll

psbase.dll 5.00.2195.4822 111.77 KB (114,448 bytes) 1/14/2005 10:50:10 AM Microsoft Corporation c:\winnt\system32\psbase.dll

cryptsvc.dll 5.00.2195.4368 73.27 KB (75,024 bytes) 1/14/2005 10:50:02 AM Microsoft Corporation c:\winnt\system32\cryptsvc.dll

cryptdll.dll5.00.2135.1 41.27 KB (42,256 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\cryptdll.dll

wkssvc.dll 5.00.2195.4874 95.27 KB (97,552 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\wkssvc.dll

srvsvc.dll 5.00.2195.5400 81.77 KB (83,728 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\srvsvc.dll

cfgmgr32.dll 5.00.2134.1 16.77 KB (17,168 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\cfgmgr32.dll

dmserver.dll 2195.3649.297.3 12.27 KB (12,560 bytes) 1/14/2005 10:50:02 AM VERITAS Software Corp. c:\winnt\system32\dmserver.dll

winsta.dll 5.00.2195.4655 36.77 KB (37,648 bytes) 1/14/2005 10:50:13 AM Microsoft Corporation c:\winnt\system32\winsta.dll

dhcpcsvc.dll 5.00.2195.4874 87.77 KB (89,872 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\dhcpcsvc.dll

tapi32.dll 5.00.2182.1 123.27 KB (126,224 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\tapi32.dll

rasman.dll 5.00.2195.5292 54.77 KB (56,080 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\rasman.dll

rasapi32.dll 5.00.2195.5438 191.77 KB (196,368 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\rasapi32.dll

rtutils.dll 5.00.2168.1 43.77 KB (44,816 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\rtutils.dll

adsldpc.dll 5.00.2195.5400 127.77 KB (130,832 bytes) 1/14/2005 10:50:00 AM Microsoft Corporation
c:\winnt\system32\adsldpc.dll

activeds.dll 5.00.2195.5312 175.27 KB (179,472 bytes) 1/14/2005 10:49:58 AM Microsoft Corporation
c:\winnt\system32\activeds.dll

mprapi.dll 5.00.2181.1 79.27 KB (81,168 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\mprapi.dll

iphlpapi.dll 5.00.2195.2 68.27 KB (69,904 bytes) 1/14/2005 10:50:05 AM Microsoft Corporation
c:\winnt\system32\iphlpapi.dll

icmp.dll 5.00.2134.1 7.27 KB (7,440 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\icmp.dll

lmhsvc.dll 5.00.2195.4874 9.77 KB (10,000 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\lmhsvc.dll

dnsrslvr.dll 5.00.2195.5354 89.77 KB (91,920 bytes) 1/14/2005 10:50:02 AM Microsoft Corporation
c:\winnt\system32\dnsrslvr.dll

eventlog.dll 5.00.2195.5336 44.27 KB (45,328 bytes) 1/14/2005 10:50:03 AM Microsoft Corporation
c:\winnt\system32\eventlog.dll

ntdsapi.dll 5.00.2195.4827 56.27 KB (57,616 bytes) 1/14/2005 10:50:09 AM Microsoft Corporation
c:\winnt\system32\ntdsapi.dll

scesrv.dll 5.00.2195.5316 242.77 KB (248,592 bytes) 1/14/2005 10:50:11 AM Microsoft Corporation
c:\winnt\system32\scesrv.dll

umpnpmgr.dll 5.00.2182.1 86.27 KB (88,336 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\umpnpmgr.dll

services.exe 5.00.2195.3940 86.77 KB (88,848 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\services.exe

clbcatq.dll 2000.2.3497.0 497.77 KB (509,712 bytes) 1/14/2005 10:50:01 AM Microsoft Corporation
c:\winnt\system32\clbcatq.dll

oleaut32.dll 2.40.4518 612.27 KB (626,960 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\oleaut32.dll

cscui.dll 5.00.2195.4104 233.77 KB (239,376 bytes) 1/14/2005 10:50:02 AM Microsoft Corporation
c:\winnt\system32\cscui.dll

winspool.drv 5.00.2195.5225 111.27 KB (113,936 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\winspool.drv

winscard.dll 5.00.2134.1 77.27 KB (79,120 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\winscard.dll

wlnotify.dll 5.00.2195.5377 54.27 KB (55,568 bytes) 1/14/2005 10:50:14 AM Microsoft Corporation
c:\winnt\system32\wlnotify.dll

cscdll.dll 5.00.2195.5434 98.77 KB (101,136 bytes) 1/14/2005 10:50:02 AM Microsoft Corporation
c:\winnt\system32\cscdll.dll

lz32.dll 5.00.2134.1 9.77 KB (10,000 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\lz32.dll

version.dll 5.00.2134.1 15.77 KB (16,144 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\version.dll

rsaenh.dll 5.00.2195.3839 130.77 KB (133,904 bytes) 3/6/2003 1:54:23 PM Microsoft Corporation
c:\winnt\system32\rsaenh.dll

mscat32.dll 5.131.2134.1 7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\mscat32.dll

ole32.dll 5.00.2195.5400 968.27 KB (991,504 bytes) 1/14/2005 10:50:10 AM Microsoft Corporation
c:\winnt\system32\ole32.dll

imagehlp.dll 5.00.2195.5242 125.77 KB (128,784 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\imagehlp.dll

msasn1.dll 5.00.2195.4067 51.27 KB (52,496 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\msasn1.dll

crypt32.dll 5.131.2195.4558 464.27 KB (475,408 bytes) 1/14/2005 10:50:02 AM Microsoft Corporation
c:\winnt\system32\crypt32.dll

wintrust.dll 5.131.2195.3775 162.27 KB (166,160 bytes) 1/14/2005 10:50:14 AM Microsoft Corporation
c:\winnt\system32\wintrust.dll

setupapi.dll 5.00.2195.5400 553.77 KB (567,056 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\setupapi.dll

winmm.dll 5.00.2161.1 184.77 KB (189,200 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\winmm.dll

mpr.dll 5.00.2195.3649 53.77 KB (55,056 bytes) 1/14/2005 10:50:06 AM Microsoft Corporation
c:\winnt\system32\mpr.dll

comctl32.dll 5.81 517.27 KB (529,680 bytes) 8/29/2002 8:14:40 AM Microsoft Corporation
c:\winnt\system32\comctl32.dll

shlwapi.dll 6.00.2800.1106 386.00 KB (395,264 bytes) 8/29/2002 8:14:40 AM Microsoft Corporation
c:\winnt\system32\shlwapi.dll

shell32.dll 5.00.3502.5436 2.26 MB (2,374,416 bytes) 1/14/2005 10:50:11 AM Microsoft Corporation
c:\winnt\system32\shell32.dll

msgina.dll 5.00.2195.4733 324.77 KB (332,560 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\msgina.dll

wsock32.dll 5.00.2195.4874 21.27 KB (21,776 bytes) 1/14/2005 10:50:14 AM Microsoft Corporation
c:\winnt\system32\wsock32.dll

dnsapi.dll 5.00.2195.5354 131.27 KB (134,416 bytes) 1/14/2005 10:50:02 AM Microsoft Corporation
c:\winnt\system32\dnsapi.dll

wldap32.dll 5.00.2195.5400 158.77 KB (162,576 bytes) 1/14/2005 10:50:14 AM Microsoft Corporation
c:\winnt\system32\wldap32.dll

ws2help.dll 5.00.2134.1 17.77 KB (18,192 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\ws2help.dll

ws2_32.dll 5.00.2195.4874 66.77 KB (68,368 bytes) 1/14/2005 10:50:14 AM Microsoft Corporation
c:\winnt\system32\ws2_32.dll

samlib.dll 5.00.2195.4827 49.77 KB (50,960 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\samlib.dll

netrap.dll 5.00.2134.1 11.27 KB (11,536 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\netrap.dll

netapi32.dll 5.00.2195.5427 305.27 KB (312,592 bytes) 1/14/2005 10:50:08 AM Microsoft Corporation
c:\winnt\system32\netapi32.dll

profmap.dll 5.00.2181.1 29.27 KB (29,968 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\profmap.dll

secur32.dll 5.00.2195.4587 47.27 KB (48,400 bytes) 1/14/2005 10:50:11 AM Microsoft Corporation
c:\winnt\system32\secur32.dll

sfc.dll 5.00.2195.3649 92.11 KB (94,320 bytes) 1/14/2005 10:50:11 AM Microsoft Corporation
c:\winnt\system32\sfc.dll

nddeapi.dll 5.00.2195.4509 15.77 KB (16,144 bytes) 1/14/2005 10:50:08 AM Microsoft Corporation
c:\winnt\system32\nddeapi.dll

userenv.dll 5.00.2195.5968 361.27 KB (369,936 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\userenv.dll

user32.dll 5.00.2195.5931 370.77 KB (379,664 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\user32.dll

gdi32.dll 5.00.2195.5907 217.77 KB (222,992 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\gdi32.dll

rpcrt4.dll 5.00.2195.5419 440.27 KB (450,832 bytes) 1/14/2005 10:50:11 AM Microsoft Corporation
c:\winnt\system32\rpcrt4.dll

advapi32.dll 5.00.2195.5385 358.77 KB (367,376 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\advapi32.dll

kernel32.dll 5.00.2195.5400 716.77 KB (733,968 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\kernel32.dll

msvcrt.dll 6.10.9359.0 284.05 KB (290,869 bytes) 7/22/2002 1:05:04 PM Microsoft Corporation
c:\winnt\system32\msvcrt.dll

winlogon.exe 5.00.2195.5731 174.77 KB (178,960 bytes) 5/3/2002 12:31:24 PM Microsoft Corporation
c:\winnt\system32\winlogon.exe

sfcfiles.dll 5.00.2195.5426 951.27 KB (974,096 bytes) 1/14/2005 10:50:11 AM Microsoft Corporation
c:\winnt\system32\sfcfiles.dll

ntdll.dll 5.00.2195.5400 479.27 KB (490,768 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\ntdll.dll

smss.exe 5.00.2195.5382 44.77 KB (45,840 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\smss.exe

[Services]
Display Name Name State Start Mode Service Type Path Error Control Start Name Tag ID

Alerter Alerter Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

Application Management AppMgmt Stopped Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

Background Intelligent Transfer Service BITS Stopped Manual Share Process c:\winnt\system32\svchost.exe -k bitsgroup Normal LocalSystem 0

Computer Browser Browser Stopped Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

Indexing Service cisvc Stopped Manual Share Process c:\winnt\system32\cisvc.exe Normal LocalSystem 0

ClipBook ClipSrv Stopped Manual Own Process c:\winnt\system32\clipsrv.exe Normal LocalSystem 0

Distributed File System Dfs Running Auto Own Process c:\winnt\system32\dfssvc.exe Normal LocalSystem 0

DHCP Client Dhcp Stopped Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

Logical Disk Manager Administrative Service dmadmin Stopped Manual Share Process c:\winnt\system32\dmadmin.exe /com Normal LocalSystem 0

Logical Disk Managerdmserver Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

DNS Client Dnscache Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

Event Log Eventlog Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

COM+ Event System EventSystem Running Manual Share Process c:\winnt\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Fax Service Fax Stopped Manual Own Process c:\winnt\system32\faxsvc.exe Normal LocalSystem 0

Internet Authentication Service IAS Running Auto Share Process c:\winnt\system32\svchost.exe -k netsvcs Normal LocalSystem 0

IIS Admin Service IISADMIN Running Auto Share Process c:\winnt\system32\inetsrv\inetinfo.exe Normal LocalSystem 0

Intersite Messaging IsmServ Stopped Disabled Own Process c:\winnt\system32\ismserv.exe Normal LocalSystem 0

Kerberos Key Distribution Center kdc Stopped Disabled Share Process c:\winnt\system32\lsass.exe Normal LocalSystem 0

Server lanmanserver Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

Workstation lanmanworkstation Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

License Logging Service LicenseService Running Auto Own Process c:\winnt\system32\llssrv.exe Normal LocalSystem 0

TCP/IP NetBIOS Helper Service LmHosts Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

Messenger Messenger Stopped Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

NetMeeting Remote Desktop Sharing mnmsrvc Stopped Manual Own Process c:\winnt\system32\mnmsrvc.exe Normal LocalSystem 0

Distributed Transaction Coordinator MSDTC Running Auto Own Process c:\winnt\system32\msdtc.exe Normal LocalSystem 1

Windows Installer MSIServer Stopped Manual Share Process c:\winnt\system32\msiexec.exe /v Normal LocalSystem 0

Network DDE NetDDE Stopped Manual Share Process c:\winnt\system32\netdde.exe Normal LocalSystem 0

Network DDE DSDM NetDDEdsdm Stopped Manual Share Process c:\winnt\system32\netdde.exe Normal LocalSystem 0

Net Logon Netlogon Stopped Manual Share Process c:\winnt\system32\lsass.exe Normal LocalSystem 0

Network Connections Netman Running Manual Share Process c:\winnt\system32\svchost.exe -k netsvcs Normal LocalSystem 0

File Replication NtFrs Stopped Manual Own Process c:\winnt\system32\ntfrs.exe Ignore LocalSystem 0

NT LM Security Support Provider NtLmSsp Stopped Manual Share Process c:\winnt\system32\lsass.exe Normal LocalSystem 0

Removable Storage NtmsSvc Running Auto Share Process c:\winnt\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Plug and Play PlugPlay Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

IPSEC Policy Agent PolicyAgent Running Auto Share Process c:\winnt\system32\lsass.exe Normal LocalSystem 0

Protected Storage ProtectedStorage Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

Remote Access Auto Connection Manager RasAuto Stopped Manual Share Process c:\winnt\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Remote Access Connection Manager RasMan Stopped Manual Share Process c:\winnt\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Routing and Remote Access RemoteAccess Stopped Disabled Share Process c:\winnt\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Remote Registry Service RemoteRegistry Running Auto Own Process c:\winnt\system32\regsvc.exe Normal LocalSystem 0

Remote Procedure Call (RPC) Locator RpcLocator Stopped Manual Own Process c:\winnt\system32\locator.exe Normal LocalSystem 0

Remote Procedure Call (RPC) RpcSs Running Auto Share Process c:\winnt\system32\svchost -k rpcss Normal LocalSystem 0

QoS RSVP RSVP Running Manual Own Process c:\winnt\system32\rsvp.exe -s Normal LocalSystem 0

Security Accounts Manager SamSs Running Auto Share Process c:\winnt\system32\lsass.exe Normal LocalSystem 0

Smart Card Helper SCardDrv Stopped Manual Share Process c:\winnt\system32\scardsvr.exe Ignore LocalSystem 0

Smart Card SCardSvr Stopped Manual Share Process c:\winnt\system32\scardsvr.exe Ignore LocalSystem 0

Task Scheduler Schedule Running Auto Share Process c:\winnt\system32\mstask.exe Normal LocalSystem 0

RunAs Service seclogon Running Auto Share Process c:\winnt\system32\services.exe Ignore LocalSystem 0

System Event Notification SENS Running Auto Share Process c:\winnt\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Internet Connection Sharing SharedAccess Stopped Manual Share Process c:\winnt\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Simple TCP/IP Services SimpTcp Running Auto Share Process c:\winnt\system32\tcpsvcs.exe Normal LocalSystem 0

Simple Mail Transport Protocol (SMTP) SMTPSVC Stopped Auto Share Process c:\winnt\system32\inetsrv\inetinfo.exe Normal LocalSystem 0

Print Spooler Spooler Stopped Manual Own Process c:\winnt\system32\spoolsv.exe Normal LocalSystem 0

Performance Logs and Alerts SysmonLog Stopped Manual Own Process c:\winnt\system32\smlogsvc.exe Normal LocalSystem 0

Telephony TapiSrv Running Manual Share Process c:\winnt\system32\svchost.exe -k tapisrv Normal LocalSystem 0

Terminal Services TermService Stopped Disabled Own Process c:\winnt\system32\termsrv.exe Normal LocalSystem 0

Telnet TlntSvr Stopped Manual Own Process c:\winnt\system32\tlntsvr.exe Normal LocalSystem 0

Distributed Link Tracking Server TrkSvr Stopped Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

Distributed Link Tracking Client TrkWks Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

Uninterruptible Power Supply UPS Stopped Manual Own Process c:\winnt\system32\ups.exe Normal LocalSystem 0

Utility Manager UtilMan Stopped Manual Own Process c:\winnt\system32\utilman.exe Normal LocalSystem 0

Windows Time W32Time Stopped Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

World Wide Web Publishing Service W3SVC Running Auto Share Process c:\winnt\system32\inetsrv\inetinfo.exe Normal LocalSystem 0

Windows Management Instrumentation WinMgmt Running Auto Own Process c:\winnt\system32\wbem\winmgmt.exe Ignore LocalSystem 0

Windows Management Instrumentation Driver Extensions Wmi Running Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

Automatic Updates wuauserv Stopped Manual Share Process c:\winnt\system32\svchost.exe -k wugroup Normal LocalSystem 0

[Program Groups]

Group Name Name User Name
Accessories Default User:Accessories Default User
Accessories\Accessibility Default User:Accessories\Accessibility Default User

Accessories\Entertainment Default User:Accessories\Entertainment Default User

Accessories\System Tools Default User:Accessories\System Tools Default User

Startup Default User:Startup Default User

Accessories All Users:Accessories All Users

Accessories\Accessibility All Users:Accessories\Accessibility All Users

Accessories\Communications All Users:Accessories\Communications All Users

Accessories\Entertainment All Users:Accessories\Entertainment All Users

Accessories\Games All Users:Accessories\Games All Users

Accessories\System Tools All Users:Accessories\System Tools All Users

Administrative Tools All Users:Administrative Tools All Users

Microsoft SQL Server All Users:Microsoft SQL Server All Users

Startup All Users:Startup All Users

Accessories VCLIENT10\Administrator:Accessories VCLIENT10\Administrator

Accessories\Accessibility VCLIENT10\Administrator:Accessories\Accessibility VCLIENT10\Administrator

Accessories\Entertainment VCLIENT10\Administrator:Accessories\Entertainment VCLIENT10\Administrator

Accessories\System Tools VCLIENT10\Administrator:Accessories\System Tools VCLIENT10\Administrator

Administrative Tools VCLIENT10\Administrator:Administrative Tools VCLIENT10\Administrator

QLogic Corporation VCLIENT10\Administrator:QLogic Corporation VCLIENT10\Administrator

QLogic Corporation\SANblade Control VIX VCLIENT10\Administrator:QLogic Corporation\SANblade Control VIX VCLIENT10\Administrator

Startup VCLIENT10\Administrator:Startup VCLIENT10\Administrator

[Startup Programs]
Program Command User NameLocation
BMListen.exe c:\slave\bmlisten.exe VCLIENT10\Administrator Startup
synctime synctime.cmd All Users Common Startup
[OLE Registration]
Object Local Server
Sound (OLE2) sndrec32.exe
Media Clip mplay32.exe
Video Clip mplay32.exe /avi
MIDI Sequence mplay32.exe /mid
Sound Not Available
Media Clip Not Available
Image Document "C:\Program Files\Windows NT\Accessories\ImageVue\KodakImg.exe"
WordPad Document "%ProgramFiles%\Windows NT\Accessories\WORDPAD.EXE"
Windows Media Services DRM Storage object Not Available

Bitmap Image C:\WINNT\System32\mspaint.exe
[Internet Explorer]
[Following are sub-categories of this main category]
[Summary]
Item Value
Version 6.0.2800.1106
Build 62800.1106
Product ID 51876-270-6336674-05075
Application Path C:\Program Files\Internet Explorer
Language English (United States)
Active Printer Not Available
Cipher Strength 128-bit
Content Advisor Disabled
Update Versions ;SP1;
Java VM Version 5.0.3805.0
IEAK Install No
[File Versions]
File Version Size Date Path Company
advapi32.dll 5.0.2195.5385 359 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation

advpack.dll 6.0.2800.1106 89 KB 8/29/2002 7:14:40 AM
C:\WINNT\system32 Microsoft Corporation

browselc.dll 6.0.2800.1106 62 KB 8/29/2002 7:14:40 AM
C:\WINNT\system32 Microsoft Corporation

browseui.dll 6.0.2800.1106 1002 KB 8/29/2002 7:14:40 AM
C:\WINNT\system32 Microsoft Corporation

ckcnv.exe 5.0.2189.1 9 KB 12/7/1999 7:00:00 AM
C:\WINNT\system32 Microsoft Corporation

comctl32.dll 5.81.4916.400 517 KB 8/29/2002 7:14:40 AM
C:\WINNT\system32 Microsoft Corporation

crypt32.dll 5.131.2195.4558 464 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation

enhsig.dll File not present Not Available Not Available
Not Available

iemigrat.dll File not present Not Available Not
Available Not Available

iesetup.dll 6.0.2800.1106 57 KB 8/29/2002 7:14:40 AM
C:\WINNT\system32 Microsoft Corporation

iexplore.exe 6.0.2800.1106 89 KB 8/29/2002 7:14:40 AM
C:\Program Files\Internet Explorer Microsoft Corporation

imagehlp.dll 5.0.2195.5242 126 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation

inseng.dll 6.0.2800.1106 68 KB 8/29/2002 7:14:40 AM
C:\WINNT\system32 Microsoft Corporation

jobexec.dll 5.0.0.1 47 KB 12/7/1999 7:00:00 AM
C:\WINNT\system32 Microsoft Corporation

jscript.dll 5.6.0.6626 576 KB 6/26/2001 4:36:02 PM
C:\WINNT\system32 Microsoft Corporation

jsproxy.dll 6.0.2800.1106 12 KB 8/29/2002 7:14:40 AM
C:\WINNT\system32 Microsoft Corporation

mshtml.dll 6.0.2800.1106 2722 KB 8/29/2002 7:14:40 AM
C:\WINNT\system32 Microsoft Corporation

msjava.dll 5.0.3805.0 924 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation

msoss.dll File not present Not Available Not Available
Not Available

msxml.dll 8.0.6730.0 494 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation

occache.dll 6.0.2800.1106 86 KB 8/29/2002 7:14:40 AM
C:\WINNT\system32 Microsoft Corporation

ole32.dll 5.0.2195.5400 968 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation

oleaut32.dll 2.40.4518.0 612 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation

olepro32.dll 5.0.4518.0 160 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation

rsabase.dll 5.0.2195.3839 128 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation

rsaenh.dll 5.0.2195.3839 131 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation

rasapi32.dll 5.0.2195.5438 192 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation

rsasig.dll File not present Not Available Not Available
Not Available

schannel.dll 5.1.2195.0 139 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation

shdoc401.dll File not present Not Available Not
Available Not Available

shdocvw.dll 6.0.2800.1106 1307 KB 8/29/2002 7:14:40 AM
C:\WINNT\system32 Microsoft Corporation

shell32.dll 5.0.3502.5436 2319 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation

shlwapi.dll 6.0.2800.1106 386 KB 8/29/2002 7:14:40 AM
C:\WINNT\system32 Microsoft Corporation

url.dll 6.0.2800.1106 104 KB 8/29/2002 7:14:40 AM
C:\WINNT\system32 Microsoft Corporation

urlmon.dll 6.0.2800.1106 472 KB 8/29/2002 7:14:40 AM
C:\WINNT\system32 Microsoft Corporation

vbscript.dll 5.6.0.7426 452 KB 2/26/2002 3:58:06 PM
C:\WINNT\system32 Microsoft Corporation

webcheck.dll 6.0.2800.1106 252 KB 8/29/2002 7:14:40 AM
C:\WINNT\system32 Microsoft Corporation

win.com 5.0.2134.1 24 KB 12/7/1999 7:00:00 AM
C:\WINNT\system32 Microsoft Corporation

wininet.dll 6.0.2800.1106 572 KB 8/29/2002 7:14:40 AM
C:\WINNT\system32 Microsoft Corporation

winsock.dll 3.10.0.103 3 KB 12/7/1999 7:00:00 AM
C:\WINNT\system32 Microsoft Corporation

wintrust.dll 5.131.2195.3775 162 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation

wsock.vxd File not present Not Available Not Available
Not Available

wsock32.dll 5.0.2195.4874 21 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation

wsock32n.dll File not present Not Available Not
Available Not Available

[Connectivity]
Item Value
Connection Preference Never dial
EnableHttp1.1 1
ProxyHttp1.1 0
LAN Settings
AutoConfigProxy wininet.dll
AutoProxyDetectMode Disabled
AutoConfigURL
Proxy Disabled
ProxyServer 192.168.122.250:6588
ProxyOverride
[Cache]
[Following are sub-categories of this main category]
[Summary]
Item Value
Page Refresh Type Automatic
Temporary Internet Files Folder C:\Documents and
Settings\Administrator\Local Settings\Temporary Internet Files
Total Disk Space 34710 MB
Available Disk Space 28446 MB
Maximum Cache Size 541 MB
Available Cache Size 531 MB
[List of Objects]
Program File Status Version CodeBase
Update Class Installed 5,4,3790,14
http://v4.windowsupdate.microsoft.com/CAB/x86/unicode/iuctl.CAB?38366.39
12615741
[Content]
[Following are sub-categories of this main category]
[Summary]
Item Value
Content Advisor Disabled
[Personal Certificates]
Issued To Issued By Validity Signature Algorithm
Administrator Administrator 2/12/2003 to 1/19/2103
sha1RSA
[Other People Certificates]
Issued To Issued By Validity Signature Algorithm
No other people certificate information available
[Publishers]
Name
No publisher information available
[Security]
Zone Security Level
Local intranet Custom
Trusted sites Custom
Internet Custom
Restricted sites Custom

Microsoft Windows 2000 Client Registry Parameters

Client 1

Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC]
"Type"=dword:00000020
"Start"=dword:00000002
"ErrorControl"=dword:00000001
"ImagePath"=hex(2):43,00,3a,00,5c,00,57,00,49,00,4e,00,4e,00,54,00,5c,00,53,
00,\
79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,69,00,6e,00,65,00,74,00,73,\
00,72,00,76,00,5c,00,69,00,6e,00,65,00,74,00,69,00,6e,00,66,00,6f,00,2e,00,\
65,00,78,00,65,00,00,00
"DisplayName"="World Wide Web Publishing Service"
"DependOnService"=hex(7):49,00,49,00,53,00,41,00,44,00,4d,00,49,00,4e,00,0
0,00,\
00,00
"DependOnGroup"=hex(7):00,00
"ObjectName"="LocalSystem"
"Description"="Provides Web connectivity and administration through the
Internet Information Services snap-in."
"FailureActions"=hex:ff,ff,ff,ff,00,00,00,00,00,00,00,00,03,00,00,00,d8,80,0e,\
00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\
ASP]
"NOTE"="This is for backward compatibility only."

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\
ASP\Parameters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters]
"MajorVersion"=dword:00000005
"MinorVersion"=dword:00000000
"InstallPath"="C:\\WINNT\\System32\\inetsrv"
"CertMapList"="C:\\WINNT\\System32\\inetsrv\\iiscrmap.dll"
"AccessDeniedMessage"="Error: Access is Denied."
"Filter DLLs"=""
"LogFileDirectory"="C:\\WINNT\\System32\\LogFiles"
"AcceptExOutstanding"=dword:00000028

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\ADCLaunch]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\ADCLaunch\AdvancedDataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\ADCLaunch\RDSServer.DataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\Script Map]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\Virtual Roots]
"/"="c:\\inetpub\\wwwroot,,205"
"/Scripts"="c:\\inetpub\\scripts,,204"
"/IISHelp"="c:\\winnt\\help\\iishelp,,201"
"/IISAdmin"="C:\\WINNT\\System32\\inetsrv\\iisadmin,,201"
"/IISSamples"="c:\\inetpub\\iissamples,,201"
"/MSADC"="c:\\program files\\common files\\system\\msadc,,205"
"/_vti_bin"="C:\\Program Files\\Common Files\\Microsoft Shared\\Web Server
Extensions\\40\\isapi,,205"
"/Rpc"="C:\\WINNT\\System32\\RpcProxy,,4"
"/Printers"="C:\\WINNT\\web\\printers,,201"

```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Performance]
"Library"="w3ctrs.dll"
"Open"="OpenW3PerformanceData"
"Close"="CloseW3PerformanceData"
"Collect"="CollectW3PerformanceData"
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
"WbemAdapFileSize"=dword:00001d10
"WbemAdapStatus"=dword:00000000
"Last Counter"=dword:00000e8c
"Last Help"=dword:00000e8d
"First Counter"=dword:00000dea
"First Help"=dword:00000deb
"Library Validation
Code"=hex:2c,3a,4e,bc,50,fa,c4,01,10,1d,00,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Security]
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14,00,00,00,30,00,00,00,02,\
  00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,\
  00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,00,\
  05,12,00,00,00,74,00,6f,00,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,\
  20,00,00,00,20,02,00,00,72,00,73,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,\
  00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,00,\
  00,05,20,00,00,00,23,02,00,00,72,00,73,00,01,01,00,00,00,00,00,05,12,00,00,\
  00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Enum]
"0"="Root\\LEGACY_W3SVC\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001

Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika]
"ImagePath"=hex(2):53,00,79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,44,00,\
  52,00,49,00,56,00,45,00,52,00,53,00,5c,00,71,00,6c,00,76,00,69,00,6b,00,61,\
  00,2e,00,73,00,79,00,73,00,00,00
"Tag"=dword:00000001
"group"="MVIA"
"Type"=dword:00000001
"Start"=dword:00000002
"ErrorControl"=dword:00000001

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B07D2AF]
"IPAddress"=hex(7):31,00,39,00,32,00,2e,00,31,00,36,00,38,00,2e,00,32,00,33,00,\
  30,00,2e,00,32,00,31,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B07D3AF]
"IPAddress"=hex(7):31,00,39,00,32,00,2e,00,31,00,36,00,38,00,2e,00,31,00,32,00,\
  30,00,2e,00,31,00,30,00,00,00,00,00
"VIDeviceNumber"=dword:00000000

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Parameters]
"MaxRegisterMBytes"=dword:00000200
"MaxRegisterRdmaMBytes"=dword:00000200
"MaxCQEntries"=dword:00002000
"MaxRegisterRegions"=dword:00001000
"MaxVIs"=dword:00000400
"MaxCQs"=dword:00000400
"MaxTransferSize"=dword:00010000
"MaxPTags"=dword:00000800
"IuBuffers"=dword:00000100
"SendDescQuota"=dword:00000008
"RecvDescQuota"=dword:00000008
"SupportPrototypeCards"=dword:00000000
"HostFile"=hex(7):43,00,3a,00,5c,00,57,00,49,00,4e,00,4e,00,54,00,5c,00,73,00,\
  79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,64,00,72,00,69,00,76,00,65,\
  00,72,00,73,00,5c,00,65,00,74,00,63,00,5c,00,76,00,69,00,68,00,6f,00,73,00,\
  74,00,73,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Security]
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14,00,00,00,30,00,00,00,02,\
  00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,\
  00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,00,\
  05,12,00,00,00,b0,7e,09,00,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,\
  20,00,00,00,20,02,00,00,00,00,00,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,\
  00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,00,\
  00,05,20,00,00,00,23,02,00,00,00,00,00,00,01,01,00,00,00,00,00,05,12,00,00,\
  00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Enum]
"0"="Root\\LEGACY_QLVIKA\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001

Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Parameters]
"ListenBackLog"=dword:00000096
"DispatchEntries"=hex(7):4c,00,44,00,41,00,50,00,53,00,56,00,43,00,00,00,53,00,\
  4d,00,54,00,50,00,53,00,56,00,43,00,00,00,00,00
"PoolThreadLimit"=dword:000000be
"ThreadTimeout"=dword:00015180

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Performance]
"Library"="infoctrs.dll"
"Open"="OpenINFOPerformanceData"
"Close"="CloseINFOPerformanceData"
"Collect"="CollectINFOPerformanceData"
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
"WbemAdapFileSize"=dword:00002510
"WbemAdapStatus"=dword:00000000
"Last Counter"=dword:00000f14
"Last Help"=dword:00000f15
"First Counter"=dword:00000ed4
"First Help"=dword:00000ed5
"Library Validation
Code"=hex:4c,15,17,b7,50,fa,c4,01,10,25,00,00,00,00,00,00

Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\TPCC]
"Path"="c:\\inetpub\\wwwroot\\"
"NumberOfDeliveryThreads"=dword:00000016
"MaxConnections"=dword:0000abe0
```

```
"MaxPendingDeliveries"=dword:00001130
"DB_Protocol"="ODBC"
"TxnMonitor"="COM"
"DbServer"="ibmserv2"
"DbName"="tpcc"
"DbUser"="sa"
"DbPassword"=""
"COM_SinglePool"="YES"
```

Client 2

```
Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC]
"Type"=dword:00000020
"Start"=dword:00000002
"ErrorControl"=dword:00000001
"ImagePath"=hex(2):43,00,3a,00,5c,00,57,00,49,00,4e,00,4e,00,54,00,5c,00,53,
00,\
  79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,69,00,6e,00,65,00,74,00,73,\
  00,72,00,76,00,5c,00,69,00,6e,00,65,00,74,00,69,00,6e,00,66,00,6f,00,2e,00,\
  65,00,78,00,65,00,00,00
"DisplayName"="World Wide Web Publishing Service"
"DependOnService"=hex(7):49,00,49,00,53,00,41,00,44,00,4d,00,49,00,4e,00,0
0,00,\
  00,00
"DependOnGroup"=hex(7):00,00
"ObjectName"="LocalSystem"
"Description"="Provides Web connectivity and administration through the
Internet Information Services snap-in."
"FailureActions"=hex:ff,ff,ff,ff,00,00,00,00,00,00,00,00,03,00,00,00,d8,80,0e,\
  00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\
ASP]
"NOTE"="This is for backward compatibility only."

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\
ASP\Parameters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters]
"MajorVersion"=dword:00000005
"MinorVersion"=dword:00000000
"InstallPath"="C:\\WINNT\\System32\\inetsrv"
"CertMapList"="C:\\WINNT\\System32\\inetsrv\\iiscrmap.dll"
"AccessDeniedMessage"="Error: Access is Denied."
"Filter DLLs"=""
"LogFileDirectory"="C:\\WINNT\\System32\\LogFiles"
"AcceptExOutstanding"=dword:00000028

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\ADCLaunch]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\ADCLaunch\AdvancedDataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\ADCLaunch\RDSServer.DataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\Script Map]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\Virtual Roots]
"/"="c:\\inetpub\\wwwroot,,205"
"/Scripts"="c:\\inetpub\\scripts,,204"
"/IISHelp"="c:\\winnt\\help\\iishelp,,201"
"/IISAdmin"="C:\\WINNT\\System32\\inetsrv\\iisadmin,,201"
"/IISSamples"="c:\\inetpub\\iissamples,,201"
"/MSADC"="c:\\program files\\common files\\system\\msadc,,205"
"/_vti_bin"="C:\\Program Files\\Common Files\\Microsoft Shared\\Web Server
Extensions\\40\\isapi,,205"
"/Rpc"="C:\\WINNT\\System32\\RpcProxy,,4"
"/Printers"="C:\\WINNT\\web\\printers,,201"

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
erformance]
"Library"="w3ctrs.dll"
"Open"="OpenW3PerformanceData"
"Close"="CloseW3PerformanceData"
"Collect"="CollectW3PerformanceData"
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
"WbemAdapFileSize"=dword:00001d10
"WbemAdapStatus"=dword:00000000
"Last Counter"=dword:00000e8c
"Last Help"=dword:00000e8d
"First Counter"=dword:00000dea
"First Help"=dword:00000deb
"Library Validation
Code"=hex:2c,3a,4e,bc,50,fa,c4,01,10,1d,00,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\S
ecurity]
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14,00,00,00,30,00,00,00,0
2,\
  00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,\
  00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,00,\
  05,12,00,00,00,74,00,6f,00,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,\
  20,00,00,00,20,02,00,00,72,00,73,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,\
  00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,00,\
  00,05,20,00,00,00,23,02,00,00,72,00,73,00,01,01,00,00,00,00,00,05,12,00,00,\
  00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\E
num]
"0"="Root\\LEGACY_W3SVC\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001

Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika]
"ImagePath"=hex(2):53,00,79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,44
,00,\
  52,00,49,00,56,00,45,00,52,00,53,00,5c,00,71,00,6c,00,76,00,69,00,6b,00,61,\
  00,2e,00,73,00,79,00,73,00,00,00
"Tag"=dword:00000001
"group"="MVIA"
"Type"=dword:00000001
"Start"=dword:00000002
"ErrorControl"=dword:00000001

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Ad
apters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Ad
apters\210000E08B07D2AF]
"IPAddress"=hex(7):31,00,39,00,32,00,2e,00,31,00,36,00,38,00,2e,00,32,00,33,
00,\
  30,00,2e,00,32,00,31,00,00,00,00,00
```

```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B07D3AF]
"IPAddress"=hex(7):31,00,39,00,32,00,2e,00,31,00,36,00,38,00,2e,00,31,00,32,00,\
  30,00,2e,00,31,00,30,00,00,00,00,00
"VIDeviceNumber"=dword:00000000

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Parameters]
"MaxRegisterMBytes"=dword:00000200
"MaxRegisterRdmaMBytes"=dword:00000200
"MaxCQEntries"=dword:00002000
"MaxRegisterRegions"=dword:00001000
"MaxVIs"=dword:00000400
"MaxCQs"=dword:00000400
"MaxTransferSize"=dword:00010000
"MaxPTags"=dword:00000800
"IuBuffers"=dword:00000100
"SendDescQuota"=dword:00000008
"RecvDescQuota"=dword:00000008
"SupportPrototypeCards"=dword:00000000
"HostFile"=hex(7):43,00,3a,00,5c,00,57,00,49,00,4e,00,4e,00,54,00,5c,00,73,00,\
  79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,64,00,72,00,69,00,76,00,65,\
  00,72,00,73,00,5c,00,65,00,74,00,63,00,5c,00,76,00,69,00,68,00,6f,00,73,00,\
  74,00,73,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Security]
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14,00,00,00,30,00,00,00,02,\
  00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,\
  00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,00,\
  05,12,00,00,00,b0,7e,09,00,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,\
  20,00,00,00,20,02,00,00,00,00,00,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,\
  00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,00,\
  00,05,20,00,00,00,23,02,00,00,00,00,00,00,01,01,00,00,00,00,00,05,12,00,00,\
  00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Enum]
"0"="Root\\LEGACY_QLVIKA\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001

Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Parameters]
"ListenBackLog"=dword:00000096
"DispatchEntries"=hex(7):4c,00,44,00,41,00,50,00,53,00,56,00,43,00,00,00,53,00,\
  4d,00,54,00,50,00,53,00,56,00,43,00,00,00,00,00
"PoolThreadLimit"=dword:000000be
"ThreadTimeout"=dword:00015180

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Performance]
"Library"="infoctrs.dll"
"Open"="OpenINFOPerformanceData"
"Close"="CloseINFOPerformanceData"
"Collect"="CollectINFOPerformanceData"
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
"WbemAdapFileSize"=dword:00002510
"WbemAdapStatus"=dword:00000000
"Last Counter"=dword:00000f14
"Last Help"=dword:00000f15
"First Counter"=dword:00000ed4
"First Help"=dword:00000ed5
"Library Validation Code"=hex:4c,15,17,b7,50,fa,c4,01,10,25,00,00,00,00,00,00

Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\TPCC]
"Path"="c:\\inetpub\\wwwroot\\"
"NumberOfDeliveryThreads"=dword:00000016
"MaxConnections"=dword:0000abe0
"MaxPendingDeliveries"=dword:00001130
"DB_Protocol"="ODBC"
"TxnMonitor"="COM"
"DbServer"="ibmserv2"
"DbName"="tpcc"
"DbUser"="sa"
"DbPassword"=""
"COM_SinglePool"="YES"
```

Client 3

```
Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC]
"Type"=dword:00000020
"Start"=dword:00000002
"ErrorControl"=dword:00000001
"ImagePath"=hex(2):43,00,3a,00,5c,00,57,00,49,00,4e,00,4e,00,54,00,5c,00,53,00,\
  79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,69,00,6e,00,65,00,74,00,73,\
  00,72,00,76,00,5c,00,69,00,6e,00,65,00,74,00,69,00,6e,00,66,00,6f,00,2e,00,\
  65,00,78,00,65,00,00,00
"DisplayName"="World Wide Web Publishing Service"
"DependOnService"=hex(7):49,00,49,00,53,00,41,00,44,00,4d,00,49,00,4e,00,00,00,\
  00,00
"DependOnGroup"=hex(7):00,00
"ObjectName"="LocalSystem"
"Description"="Provides Web connectivity and administration through the Internet Information Services snap-in."
"FailureActions"=hex:ff,ff,ff,ff,00,00,00,00,00,00,00,00,03,00,00,00,30,77,0e,\
  00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\ASP]
"NOTE"="This is for backward compatibility only."

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\ASP\Parameters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters]
"MajorVersion"=dword:00000005
"MinorVersion"=dword:00000000
"InstallPath"="C:\\WINNT\\System32\\inetsrv"
"CertMapList"="C:\\WINNT\\System32\\inetsrv\\iiscrmap.dll"
"AccessDeniedMessage"="Error: Access is Denied."
"Filter DLLs"=""
"LogFileDirectory"="C:\\WINNT\\System32\\LogFiles"
"AcceptExOutstanding"=dword:00000028

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch]
```

```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch\AdvancedDataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch\RDSServer.DataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\Script Map]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\Virtual Roots]
"/"="c:\\inetpub\\wwwroot,,205"
"/Scripts"="c:\\inetpub\\scripts,,204"
"/IISHelp"="c:\\winnt\\help\\iishelp,,201"
"/IISAdmin"="C:\\WINNT\\System32\\inetsrv\\iisadmin,,201"
"/IISSamples"="c:\\inetpub\\iissamples,,201"
"/MSADC"="c:\\program files\\common files\\system\\msadc,,205"
"/_vti_bin"="C:\\Program Files\\Common Files\\Microsoft Shared\\Web Server Extensions\\40\\isapi,,205"
"/Rpc"="C:\\WINNT\\System32\\RpcProxy,,4"
"/Printers"="C:\\WINNT\\web\\printers,,201"

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Performance]
"Library"="w3ctrs.dll"
"Open"="OpenW3PerformanceData"
"Close"="CloseW3PerformanceData"
"Collect"="CollectW3PerformanceData"
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
"WbemAdapFileSize"=dword:00001d10
"WbemAdapStatus"=dword:00000000
"Last Counter"=dword:00000e8c
"Last Help"=dword:00000e8d
"First Counter"=dword:00000dea
"First Help"=dword:00000deb
"Library Validation Code"=hex:2c,3a,4e,bc,50,fa,c4,01,10,1d,00,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Security]
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14,00,00,00,30,00,00,00,02,\
  00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,\
  00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,00,\
  05,12,00,00,00,74,00,6f,00,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,\
  20,00,00,00,20,02,00,00,72,00,73,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,\
  00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,00,\
  00,05,20,00,00,00,23,02,00,00,72,00,73,00,01,01,00,00,00,00,00,05,12,00,00,\
  00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Enum]
"0"="Root\\LEGACY_W3SVC\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001

Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika]
"ImagePath"=hex(2):53,00,79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,44,00,\
  52,00,49,00,56,00,45,00,52,00,53,00,5c,00,71,00,6c,00,76,00,69,00,6b,00,61,\
  00,2e,00,73,00,79,00,73,00,00,00
"Tag"=dword:00000001
"group"="MVIA"
"Type"=dword:00000001
"Start"=dword:00000002
"ErrorControl"=dword:00000001

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B07D1AF]
"IPAddress"=hex(7):31,00,39,00,32,00,2e,00,31,00,36,00,38,00,2e,00,31,00,32,00,\
  30,00,2e,00,34,00,31,00,00,00,00,00
"VIDeviceNumber"=dword:00000000

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B07D3AF]
"IPAddress"=hex(7):31,00,39,00,32,00,2e,00,31,00,36,00,38,00,2e,00,31,00,32,00,\
  30,00,2e,00,31,00,30,00,00,00,00,00
"VIDeviceNumber"=dword:00000000

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Parameters]
"MaxRegisterMBytes"=dword:00000200
"MaxRegisterRdmaMBytes"=dword:00000200
"MaxCQEntries"=dword:00002000
"MaxRegisterRegions"=dword:00001000
"MaxVIs"=dword:00000400
"MaxCQs"=dword:00000400
"MaxTransferSize"=dword:00010000
"MaxPTags"=dword:00000800
"IuBuffers"=dword:00000100
"SendDescQuota"=dword:00000008
"RecvDescQuota"=dword:00000008
"SupportPrototypeCards"=dword:00000000
"HostFile"=hex(7):43,00,3a,00,5c,00,57,00,49,00,4e,00,4e,00,54,00,5c,00,73,00,\
  79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,64,00,72,00,69,00,76,00,65,\
  00,72,00,73,00,5c,00,65,00,74,00,63,00,5c,00,76,00,69,00,68,00,6f,00,73,00,\
  74,00,73,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Security]
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14,00,00,00,30,00,00,00,02,\
  00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,\
  00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,00,\
  05,12,00,00,00,72,00,74,00,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,\
  20,00,00,00,20,02,00,00,00,00,00,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,\
  00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,00,\
  00,05,20,00,00,00,23,02,00,00,00,00,00,00,01,01,00,00,00,00,00,05,12,00,00,\
  00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Enum]
"0"="Root\\LEGACY_QLVIKA\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001

Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Parameters]
"ListenBackLog"=dword:00000096
"DispatchEntries"=hex(7):4c,00,44,00,41,00,50,00,53,00,56,00,43,00,00,00,53,00,\
  4d,00,54,00,50,00,53,00,56,00,43,00,00,00,00,00
"PoolThreadLimit"=dword:000000be
"ThreadTimeout"=dword:00015180
```

```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Performance]
"Library"="infoctrs.dll"
"Open"="OpenINFOPerformanceData"
"Close"="CloseINFOPerformanceData"
"Collect"="CollectINFOPerformanceData"
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
"WbemAdapFileSize"=dword:00002510
"WbemAdapStatus"=dword:00000000
"Last Counter"=dword:00000f14
"Last Help"=dword:00000f15
"First Counter"=dword:00000ed4
"First Help"=dword:00000ed5
"Library Validation
Code"=hex:4c,15,17,b7,50,fa,c4,01,10,25,00,00,00,00,00,00

Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\TPCC]
"Path"="c:\\inetpub\\wwwroot\\"
"NumberOfDeliveryThreads"=dword:00000016
"MaxConnections"=dword:0000abe0
"MaxPendingDeliveries"=dword:00001130
"DB_Protocol"="ODBC"
"TxnMonitor"="COM"
"DbServer"="ibmserv2"
"DbName"="tpcc"
"DbUser"="sa"
"DbPassword"=""
"COM_SinglePool"="YES"
```

Client 4

```
Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC]
"Type"=dword:00000020
"Start"=dword:00000002
"ErrorControl"=dword:00000001
"ImagePath"=hex(2):43,00,3a,00,5c,00,57,00,49,00,4e,00,4e,00,54,00,5c,00,53,
00,\
  79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,69,00,6e,00,65,00,74,00,73,\
  00,72,00,76,00,5c,00,69,00,6e,00,65,00,74,00,69,00,6e,00,66,00,6f,00,2e,00,\
  65,00,78,00,65,00,00,00
"DisplayName"="World Wide Web Publishing Service"
"DependOnService"=hex(7):49,00,49,00,53,00,41,00,44,00,4d,00,49,00,4e,00,0
0,00,\
  00,00
"DependOnGroup"=hex(7):00,00
"ObjectName"="LocalSystem"
"Description"="Provides Web connectivity and administration through the
Internet Information Services snap-in."
"FailureActions"=hex:ff,ff,ff,ff,00,00,00,00,00,00,00,00,03,00,00,00,98,04,0f,\
  00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\
ASP]
"NOTE"="This is for backward compatibility only."

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\
ASP\Parameters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters]
"MajorVersion"=dword:00000005
"MinorVersion"=dword:00000000
"InstallPath"="C:\\WINNT\\System32\\inetsrv"
"CertMapList"="C:\\WINNT\\System32\\inetsrv\\iiscrmap.dll"
"AccessDeniedMessage"="Error: Access is Denied."
"Filter DLLs"=""
"LogFileDirectory"="C:\\WINNT\\System32\\LogFiles"
"AcceptExOutstanding"=dword:00000028

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch\AdvancedDataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch\RDSServer.DataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\Script Map]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\Virtual Roots]
"/"="c:\\inetpub\\wwwroot,,205"
"/Scripts"="c:\\inetpub\\scripts,,204"
"/IISHelp"="c:\\winnt\\help\\iishelp,,201"
"/IISAdmin"="C:\\WINNT\\System32\\inetsrv\\iisadmin,,201"
"/IISSamples"="c:\\inetpub\\iissamples,,201"
"/MSADC"="c:\\program files\\common files\\system\\msadc,,205"
"/_vti_bin"="C:\\Program Files\\Common Files\\Microsoft Shared\\Web Server
Extensions\\40\\isapi,,205"
"/Rpc"="C:\\WINNT\\System32\\RpcProxy,,4"
"/Printers"="C:\\WINNT\\web\\printers,,201"

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Performance]
"Library"="w3ctrs.dll"
"Open"="OpenW3PerformanceData"
"Close"="CloseW3PerformanceData"
"Collect"="CollectW3PerformanceData"
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
"WbemAdapFileSize"=dword:00001d10
"WbemAdapStatus"=dword:00000000
"Last Counter"=dword:00000e8c
"Last Help"=dword:00000e8d
"First Counter"=dword:00000dea
"First Help"=dword:00000deb
"Library Validation
Code"=hex:2c,3a,4e,bc,50,fa,c4,01,10,1d,00,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Security]
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14,00,00,00,30,00,00,00,0
2,\
  00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,\
  00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,00,\
  05,12,00,00,00,74,00,6f,00,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,\
  20,00,00,00,20,02,00,00,72,00,73,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,\
  00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,00,\
  00,05,20,00,00,00,23,02,00,00,72,00,73,00,01,01,00,00,00,00,00,05,12,00,00,\
  00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Enum]
"0"="Root\\LEGACY_W3SVC\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001

Windows Registry Editor Version 5.00
```

```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika]
"ImagePath"=hex(2):53,00,79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,44
,00,\
  52,00,49,00,56,00,45,00,52,00,53,00,5c,00,71,00,6c,00,76,00,69,00,6b,00,61,\
  00,2e,00,73,00,79,00,73,00,00,00
"Tag"=dword:00000001
"group"="MVIA"
"Type"=dword:00000001
"Start"=dword:00000002
"ErrorControl"=dword:00000001

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Ad
apters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Ad
apters\210000E08B0727B0]
"IPAddress"=hex(7):31,00,39,00,32,00,2e,00,31,00,36,00,38,00,2e,00,31,00,32,
00,\
  30,00,2e,00,35,00,31,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Ad
apters\210000E08B07D3AF]
"IPAddress"=hex(7):31,00,39,00,32,00,2e,00,31,00,36,00,38,00,2e,00,31,00,32,
00,\
  30,00,2e,00,31,00,30,00,00,00,00,00
"VIDeviceNumber"=dword:00000000

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Par
ameters]
"MaxRegisterMBytes"=dword:00000200
"MaxRegisterRdmaMBytes"=dword:00000200
"MaxCQEntries"=dword:00002000
"MaxRegisterRegions"=dword:00001000
"MaxVIs"=dword:00000400
"MaxCQs"=dword:00000400
"MaxTransferSize"=dword:00010000
"MaxPTags"=dword:00000800
"IuBuffers"=dword:00000100
"SendDescQuota"=dword:00000008
"RecvDescQuota"=dword:00000008
"SupportPrototypeCards"=dword:00000000
"HostFile"=hex(7):43,00,3a,00,5c,00,57,00,49,00,4e,00,4e,00,54,00,5c,00,73,0
0,\
  79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,64,00,72,00,69,00,76,00,65,\
  00,72,00,73,00,5c,00,65,00,74,00,63,00,5c,00,76,00,69,00,68,00,6f,00,73,00,\
  74,00,73,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Sec
urity]
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14,00,00,00,30,00,00,00,0
2,\
  00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,\
  00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,00,\
  05,12,00,00,00,72,76,69,63,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,\
  20,00,00,00,20,02,00,00,65,00,00,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,\
  00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,00,\
  00,05,20,00,00,00,23,02,00,00,65,00,00,00,01,01,00,00,00,00,00,05,12,00,00,\
  00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\En
um]
"0"="Root\\LEGACY_QLVIKA\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001

Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\P
arameters]
"ListenBackLog"=dword:00000096
"DispatchEntries"=hex(7):4c,00,44,00,41,00,50,00,53,00,56,00,43,00,00,00,53,
00,\
  4d,00,54,00,50,00,53,00,56,00,43,00,00,00,00,00
"PoolThreadLimit"=dword:000000be
"ThreadTimeout"=dword:00015180

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\P
erformance]
"Library"="infoctrs.dll"
"Open"="OpenINFOPerformanceData"
"Close"="CloseINFOPerformanceData"
"Collect"="CollectINFOPerformanceData"
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
"WbemAdapFileSize"=dword:00002510
"WbemAdapStatus"=dword:00000000
"Last Counter"=dword:00000f14
"Last Help"=dword:00000f15
"First Counter"=dword:00000ed4
"First Help"=dword:00000ed5
"Library Validation
Code"=hex:4c,15,17,b7,50,fa,c4,01,10,25,00,00,00,00,00,00

Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\TPCC]
"Path"="c:\\inetpub\\wwwroot\\"
"NumberOfDeliveryThreads"=dword:00000016
"MaxConnections"=dword:0000abe0
"MaxPendingDeliveries"=dword:00001130
"DB_Protocol"="ODBC"
"TxnMonitor"="COM"
"DbServer"="ibmserv2"
"DbName"="tpcc"
"DbUser"="sa"
"DbPassword"=""
"COM_SinglePool"="YES"
```

RTE Input Parameters

IBM BenchMaster benchmark profile. DO NOT CHANGE THE SPACING IN THIS FILE!

32 ** Number of slaves (all must be defined directly below)

SEGMENT	MACHINE	LOG DIRECTORY	ODBC	WEBSERVER	DB SERVER	STARTWH	ENDWH	#USERS
v10a	vrte10	c:\rtelogs	tpcc	vclient10a	ibmserv2	1	353	3530
v10b	vrte10	c:\rtelogs	tpcc	vclient10b	ibmserv2	354	706	3530
v10c	vrte10	c:\rtelogs	tpcc	vclient10a	ibmserv2	707	1059	3530
v10d	vrte10	c:\rtelogs	tpcc	vclient10b	ibmserv2	1060	1412	3530

```
v10e    vrte10  c:\rtelogs  tpcc    vclient10a ibmserv2  1413
1765    3530

v10f    vrte10  c:\rtelogs  tpcc    vclient10b ibmserv2  1766
2118    3530

v10g    vrte10  c:\rtelogs  tpcc    vclient10a ibmserv2  2119
2471    3530

v10h    vrte10  c:\rtelogs  tpcc    vclient10b ibmserv2  2472
2824    3530

v20a    vrte20  c:\rtelogs  tpcc    vclient20a ibmserv2  2825
3177    3530

v20b    vrte20  c:\rtelogs  tpcc    vclient20b ibmserv2  3178
3530    3530

v20c    vrte20  c:\rtelogs  tpcc    vclient20a ibmserv2  3531
3883    3530

v20d    vrte20  c:\rtelogs  tpcc    vclient20b ibmserv2  3884
4236    3530

v20e    vrte20  c:\rtelogs  tpcc    vclient20a ibmserv2  4237
4589    3530

v20f    vrte20  c:\rtelogs  tpcc    vclient20b ibmserv2  4590
4942    3530

v20g    vrte20  c:\rtelogs  tpcc    vclient20a ibmserv2  4943
5295    3530

v20h    vrte20  c:\rtelogs  tpcc    vclient20b ibmserv2  5296
5648    3530

v40a    vrte40  c:\rtelogs  tpcc    vclient40a ibmserv2  5649
6001    3530

v40b    vrte40  c:\rtelogs  tpcc    vclient40b ibmserv2  6002
6354    3530

v40c    vrte40  c:\rtelogs  tpcc    vclient40a ibmserv2  6355
6707    3530

v40d    vrte40  c:\rtelogs  tpcc    vclient40b ibmserv2  6708
7060    3530

v40e    vrte40  c:\rtelogs  tpcc    vclient40a ibmserv2  7061
7413    3530

v40f    vrte40  c:\rtelogs  tpcc    vclient40b ibmserv2  7414
7766    3530

v40g    vrte40  c:\rtelogs  tpcc    vclient40a ibmserv2  7767
8119    3530

v40h    vrte40  c:\rtelogs  tpcc    vclient40b ibmserv2  8120
8472    3530

v50a    vrte50  c:\rtelogs  tpcc    vclient50a ibmserv2  8473
8825    3530

v50b    vrte50  c:\rtelogs  tpcc    vclient50b ibmserv2  8826
9178    3530

v50c    vrte50  c:\rtelogs  tpcc    vclient50a ibmserv2  9179
9531    3530

v50d    vrte50  c:\rtelogs  tpcc    vclient50b ibmserv2  9532
9884    3530

v50e    vrte50  c:\rtelogs  tpcc    vclient50a ibmserv2  9885
10237   3530

v50f    vrte50  c:\rtelogs  tpcc    vclient50b ibmserv2  10238
10590   3530

v50g    vrte50  c:\rtelogs  tpcc    vclient50a ibmserv2  10591
10943   3530

v50h    vrte50  c:\rtelogs  tpcc    vclient50b ibmserv2  10944
11296   3530


1000        ** Connect rate - rate users log in to the database (users per minute)

176         ** Run rate- rate users ramp in (users per minute)

0           "** Ramp-in type (0 = linear, 1 = 5 step descending rate)"

11296       ** Total number of warehouses

0           "** Run type (0 = 3-tier, 1 = 2-tier)"

123         "** C_LOAD (0-255) - NURAND ""C"" value that WAS used for
customer last name generation during database LOAD, usually 123 for SQL
Server"

208         "** C_RUN (0-255) - NURAND ""C"" value to be used for
customer last name generation when running.  abs(C_LOAD - C_RUN) must be
65 to 119, inclusive, but not 96 or 112."

208         "** C_C_ID (0-1023) - NURAND ""C"" value to be used for
customer ID generation when running"

208         "** C_OL_I_ID (0-8191) - NURAND ""C"" value to be used for
orderline item ID generation when running"

sa          ** Database user name

            ** Database password


TOTAL   NEWORD  PAYMENT     DELI    STCKLVLORDSTAT

0       44950   43020   4010    4010    4010    "**
Transaction mix percentages (must add to 100,000)"

0       12030   12030   5030    5030    10030   ** 3-tier
think times (milliseconds)

0       0       0       0       0       0       ** 2-tier
think times (milliseconds)

0       18000   3000    2000    2000    2000    ** 3-tier key
times (milliseconds)

0       0       0       0       0       0       ** 2-tier key
times (milliseconds)

0       5000    5000    5000    20000   5000    ** 90th
percentile values (milliseconds)

0       100     100     100     100     100     ** Browser
painting menu delay (milliseconds)
```

0 100 100 100 100 100 ** Browser painting response time delay (milliseconds)

2000 ** 90th percentile value for menu transactions (milliseconds)

Appendix D: 60-Day Space

TPC-C 60-Day Space Requirements						
Warehouses	11,296				tpmC	141,504.77
Table	Rows	Data KB	Index KB	Extra 5% KB	8HR Space	Total Space KB
Warehouse	11,296	1,224	224	72.40		1,520.40
District	116,800	13,168	272	672.00		14,112.00
Item	100,000	9,528	264	489.60		10,281.60
New-Order	1,051,199,997	1,873,000	4,952		934,400.00	2,812,352.00
History	350,400,003	20,919,424	81,336		4,209,217.72	25,209,977.72
Orders	350,400,007	11,441,664	5,581,816		3,412,044.79	20,435,524.79
Customer	350,400,000	254,836,368	15,902,976	13,536,967.20		284,276,311.20
Order-Line	3,503,986,183	233,599,104	552,976		46,931,496.07	281,083,576.07
Stock	1,168,000,000	373,760,000	791,160	18,727,558.00		393,278,718.00
Totals		896,453,480	22,915,976	32,265,759.20	55,487,158.59	1,007,122,373.79
Segment	LogDev Cnt.	Segment Size	Needed	Overhead		Not Needed
misc	30	13,312,000	329,567,345	3,295,673		(319,551,018.03)
big	30	23,552,000	677,555,029	6,775,550		(660,778,579.49)
master, msdb,model	1	13,312	13,312			-
tpcc_root	1	8,192	8,192			-
tempdb	1	8,704	8,704			-
Totals		36,894,208.00	1,007,152,581.79	10,071,223.74		(980,329,597.52)
Dynamic Space	265,960,192.00	Sum of Data for Order, Order-Line and History				
Static Space	695,746,246.94	Data + Index + 5% Space + Overhead - Dynamic Space				
Free Space	55,517,366.59	Total Segment Size - Dynamic Space - Static Space - Not needed				
Daily Growth	53,306,849.57	(Dynamic Space/W * 62.5)* tpmC				
Daily Spread	(24,442,907.77)	Free Space - 1.5 * Daily Growth (Zero If Negative)				
60-Day Space (KB)	3,894,157,221.28	Static Space + 60 (Daily Growth + Daily Spread)				
60-Day Space (GB)	3,713.76	60-Day Space in GB (Excludes OS,Paging and RDBMS Logs)				
Available (GB)	14,328.57	Total storage configured and available for database, minus logs, in RAID-0 configuration.				
Log File Storage Requirement						
Log Size (MB)	320,000.00	Total Size of Log File				
% Log Used	34.9327	% of Log File Used During Entire Run				
Total N-O Txn	24,398,641.00	Total Count of New-Order Transactions during Entire Run				
Log / N-O Txn	4.69	KB of Log Storage Used per New-Order Transaction				
8 Hour Log (GB)	303.90	8 Hours of Log in GB (Excluding Space for Redundancy)				
Log Configured (GB)	478.56					
Disk Capacity	MB	GB				
36.4GB	34,715	33.90	Data and OS Drives			
73.4GB	70,006	68.38	Log Drives			
Space Usage	GB Needed		Disks Priced	Disk Size	GB Priced	GB Usable
60-Day (RAID-0)	3,713.76		420	36.4GB	14,238.57	14,238.57
					Total DB	14,238.57
8hr Log (RAID-1)	303.9		14	73.4GB	957.11	478.56
					Total Log	478.56
OS, SQL Server	4.00		1	36.4GB	33.90	33.90
Total Space	4,021.66		435		15,229.59	14,751.03

Appendix E: Third-Party Quotations

Microsoft Corporation
One Microsoft Way
Redmond, WA 98052-6399

Tel 425 882 8080
Fax 425 936 7329
http://www.microsoft.com/

Microsoft

April 21, 2005

IBM Corporation
Chris King
3079 Cornwallis Road
Durham, NC 27709

Ms. King:

Here is the information you requested regarding pricing for several Microsoft products to be used in conjunction with your TPC-C benchmark testing.

All pricing shown is in US Dollars ($).

Part Number	Description	Unit Price	Quantity	Price
810-00846	**SQL Server 2000 Enterprise Edition** *Per Processor Licensing* *Discount Schedule: Open Program - Level C* *Unit Price reflects a 17% discount from the retail unit price of $19,999.*	$16,541	4	$66,164
C11-00821	**Windows 2000 Server** *Server License Only - No CALs* *Discount Schedule: No Level* *Unit Price reflects a 8% discount from the retail unit price of $799.*	$738	4	$2,952
P72-00264	**Windows Server 2003, Enterprise Edition** *Server License Only - No CALs* *Discount Schedule: Open Program - No Level* *Unit Price reflects a 42% discount from the retail unit price of $3,999.*	$2,334	1	$2,334
254-00170	**Visual C++ Standard Edition** *Discount Schedule: No Discounts Applied*	$109	1	$109
	Microsoft Problem Resolution Services *Professional Support* *(1 incident)*	$245	1	$245

All products are currently orderable through Microsoft's normal distribution channels.

This quote is valid for the next 90 days.

If we can be of any further assistance, please contact Jamie Reding at (425) 703-0510 or jamiere@microsoft.com.

Date
04/21/2005

Quote No.
Book Price

Customer
Attn: Chris King
IBM Corporation
3039 Cornwallis Road
RTP, NC 27709

Quote valid for 30 days
F.O.B.: Shipping Point (Aliso Viejo, CA)

QTY	Mfg PN	Unit Price	Lead Time
1	QLA2350-BK	$1,995.00	10-12 weeks