

**TPC Benchmark™ C**  
**Full Disclosure Report**  
**for**  
**IBM® @server™ xSeries™ 445**  
**using**  
**Microsoft® SQL Server 2000 Enterprise Edition**  
**and**  
**Microsoft Windows® Server 2003 Datacenter Edition**

**TPC-C Version 5.2**

**Submitted for Review**  
**March 1, 2004**



## **First Edition - March 2004**

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### ***Notes***

<sup>1</sup> GHz and MHz only measures microprocessor internal clock speed, not application performance. Many factors affect application performance.

<sup>2</sup> When referring to hard disk capacity, GB, or gigabyte, means one thousand million bytes. Total user-accessible capacity may be less.

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## Abstract

IBM Corporation conducted the TPC Benchmark™ C on the IBM® @server xSeries™ 445 configured as a client/server system. This report documents the full disclosure information required by the TPC Benchmark C Standard Specification, Revision 5.2, including the methodology used to achieve the reported results. All testing fully complied with this revision level.

The software used on the xSeries 445 system includes Microsoft® Windows® Server 2003 Datacenter Edition operating system 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.

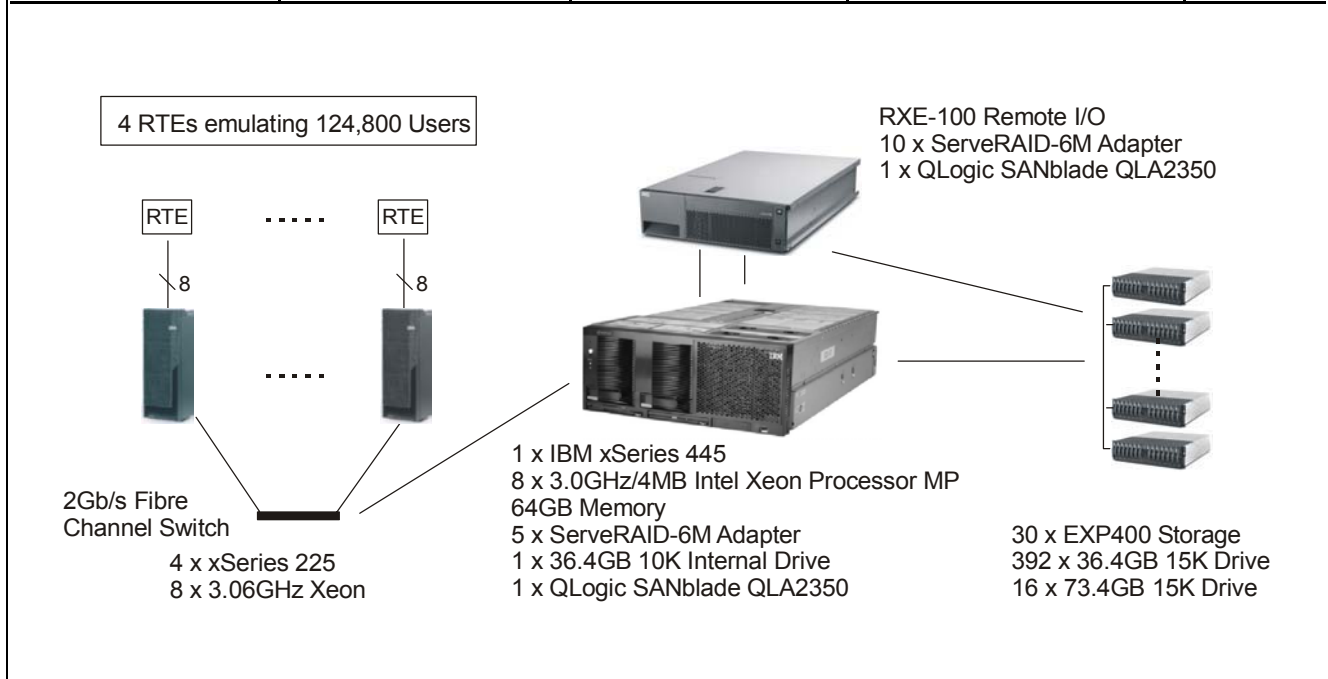
Hardware	Software	Total System Cost	tpmC	\$/tpmC	Total Solution Availability Date
IBM @server xSeries 445	Microsoft SQL Server 2000 Enterprise Edition  Microsoft Windows Server 2003 Datacenter Edition	\$672,287	156,105.72	\$4.31	Aug. 31 , 2004

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

	<b>IBM® @server® xSeries® 445 c/s</b>		TPC-C Rev. 5.2
	<b>with Microsoft® SQL Server 2000</b>		Report Date: March 1, 2004

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
<b>\$672,287</b>	<b>156,105.72 tpmC</b>	<b>\$4.31 / tpmC</b>	<b>Aug. 31, 2004</b>

Database Server	Database Manager	Operating System	Other Software	Number of Users
<b>Processors/Cores/Threads: 8/8/16 Intel Xeon Processor MP 3.0GHz</b>	<b>Microsoft SQL Server 2000 Enterprise Edition SP3 with QFE</b>	<b>Microsoft Windows® Server 2003 Datacenter Edition with QFE KB834628</b>	<b>Microsoft Visual C++ 6.0 Professional Microsoft COM+</b>	<b>124,800</b>



System Component	Qty	Server:	Qty	Each of Four Clients:
Processors/Cores/Threads	8/8/16	3.0GHz Xeon Processor MP w/4MB L3 Cache	2/2/4	3.06GHz Xeon DP w/512KB L2 Cache
Cache		MP w/4MB L3 Cache		w/512KB L2 Cache
Memory	32	2GB ECC RDIMM	4	512MB
Disk Controllers	15	ServeRAID-6M Ultra320 SCSI Adapter	1	Ultra320 SCSI Interface
Disk Drives	1	36.4GB (10000 rpm)	1	36.4GB Hard Disk
	392	36.4GB (15000 rpm)		
	16	73.4GB (15000 rpm)		
Total Storage		14417.08GB		
Tape Drive	1	20/40GB SCSI Tape Drive		

IBM Corporation	IBM @server xSeries 445 c/s			TPC-C Revision 5.2			
	with Microsoft SQL Server 2000			Report Date: March 1, 2004			
Description	Part Number	Third Party Brand	Pricing	Unit Price	Quantity	Extended Price	3-Yr. Maint. Price
<b>Server Hardware</b>							
xSeries 445 with:	8870-4BX	IBM		26,599	1	26,599	3,221
2 x 3.0GHz/4MB Xeon Processor MP							0
4 x 512MB ECC RDIMM							0
xSeries 3.0GHz/4MB Xeon Processor MP Upgrade	13N0721	IBM		6,599	6	39,594	0
xSeries 445 SMP Expansion Module	02R1870	IBM		4,849	1	4,849	0
2GB PC2100 DDR ECC SDRAM RDIMM	33L5040	IBM		1,849	32	59,168	0
36.4GB 10K Ultra320 SCSI Hot-Swap Drive	32P0726	IBM		275	1	275	0
IBM Preferred Pro Full-Size Keyboard PS/2	31P7415	IBM		29	1	29	0
IBM Sleek 2-Button Mouse	28L3673	IBM		19	1	19	0
ServeRAID-6M Ultra320 SCSI Adapter	32P0033	IBM		999	15	14,985	0
QLLogic SANBlade QLA2350 FC-VI Adapter (2 spares)	QLA2350-BK	QLLogic		1,995	4	7,980	0
E54 15" (13.8" Viewable) Color Monitor	633147N	IBM		119	1	119	90
					<b>Subtotal</b>	<b>153,617</b>	<b>3,311</b>
<b>Server Storage</b>							
IBM RXE-100 Remote Expansion Enclosure	8684-1RX	IBM		4,569	1	4,569	1,330
IBM Remote I/O PCI-X 6-Slot Expansion Kit	31P5998	IBM		1,699	1	1,699	0
IBM EXP400 Rack Storage Exp. Enclosure	17331RU	IBM		3,099	30	92,970	22,800
36.4GB 15K Ultra320 SCSI Hot-Swap Drive	32P0734	IBM		495	392	194,040	0
73.4GB 15K Ultra320 SCSI Hot-Swap Drive	32P0735	IBM		769	16	12,304	0
3.5M Remote I/O Cable Kit	31P6102	IBM		599	1	599	0
Netfinity 4.2M Ultra2 SCSI Cable	03K9311	IBM		105	30	3,150	0
NetBAY42S Standard Rack	9306421	IBM		1,439	3	4,317	504
IBM UPS 500	252277	IBM		99	1	99	0
IBM NetBAY Tape Enclosure	0034B0X	IBM		849	1	849	120
20/40GB DDS/4 Tape AutoLoader	00N7991	IBM		699	1	699	0
Enterprise Rack Setup	06P7514	IBM		400	3	1,200	0
Enterprise Rack Configuration	06P7515	IBM		160	3	480	0
Option Integration Fee	58P8665	IBM		110	3	330	0
Load Non-Image Custom Ultra Image - Server	06P7505	IBM		35	1	35	0
					<b>Subtotal</b>	<b>317,340</b>	<b>24,754</b>
<b>Server Software</b>							
Microsoft SQL Server 2000 Enterprise Edition	810-00846	Microsoft		16,541	8	132,328	
Database Software Support Package		Microsoft		1,950	3		5,850
IBM Preload Kit for Datacenter 2003 (1-8 Processors)	4816-7BU	IBM		27,279	1	27,279	
IBM Maintenance Update Subscription (1-8 Processors-1 Yr)	4816-DBX	IBM		2,549	3	7,647	
Support for Datacenter - MAPS 10 incidents per year	23L9991			9000	3		27,000
					<b>Subtotal</b>	<b>167,254</b>	<b>32,850</b>
<b>Client Hardware</b>							
x225 with 3.06GHz/512KB Xeon DP, 1 x 36.4GB Drive	8647-62X	IBM		1,775	4	7,100	1,000
3.06GHz/512KB Xeon DP Processor Upgrade	24P8122	IBM		999	4	3,996	0
512MB PC2100 ECC SDRAM RDIMM	33L5038	IBM		249	16	3,984	0
QLLogic SANblade QLA 2350 FC-VI Adapter	QLA2350-BK	QLLogic		1,995	4	7,980	0
NetXtreme 1000T Dual-Port Ethernet Adapter	31P6401	IBM		269	8	2,152	0
Adaptec Quartet64 4-Port Adapter (2 spares)	ANA64044	Adaptec		440	6	2,640	0
E54 15" (13.8" Viewable) Color Monitor	633147N	IBM		119	4	476	360
					<b>Subtotal</b>	<b>28,328</b>	<b>1,360</b>
<b>Client Software</b>							
Microsoft Windows 2000 Server with COM+	C11-00821	Microsoft		738	4	2,952	0
Microsoft Visual C++ Professional 6.0	254-00170	Microsoft		109	1	109	0
					<b>Subtotal</b>	<b>3,061</b>	<b>0</b>
<b>Network Components</b>							
SAN Fibre Channel 8-Port Switch	3534F08	IBM		5,250	1	5,250	2,300
IBM Short Wave SFP Module	19K1271	IBM		499	2	998	0
IBM 5M LC-LC Fibre Channel Cable	19K1248	IBM		129	6	774	0
					<b>Subtotal</b>	<b>7,022</b>	<b>2,300</b>
					<b>Total</b>	<b>676,622</b>	<b>64,575</b>
Compsat Technology discount.					<b>Discount</b>	<b>61,293</b>	<b>7,617</b>
1 - Compsat Technology; 2 - Microsoft				<b>Three-Year Cost of Ownership:</b>		\$672,287	
Audited by Francois Raab, InfoSizing, Inc.				tpmC:		156,105.72	
				\$/tpmC:		\$4.31	
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: 156,105.72 tpmC

Response Times (in seconds)	90th Percentile	Average	Maximum
New-Order	0.55	0.32	35.15
Payment	0.49	0.27	42.61
Delivery	0.40	0.20	5.74
Stock Level	1.06	0.73	11.45
Order Status	0.51	0.29	12.44
Delivery (Deferred)	0.18	0.13	4.11
Menu	0.40	0.20	63.56
<b>Response Time Delay Added for Emulated Components: 0.1 Seconds</b>			
Transaction Mix (in percent of total transactions)			Percent
New-Order			44.96
Payment			43.02
Delivery			4.01
Stock-Level			4.01
Order Status			4.00
Keying/Think Times (in seconds)	Minimum	Average	Maximum
New Order	18.00 / 0.00	18.02 / 12.06	18.06 / 120.53
Payment	3.00 / 0.00	3.02 / 12.05	3.06 / 120.53
Delivery	2.00 / 0.00	2.02 / 5.05	2.05 / 50.52
Stock Level	2.00 / 0.00	2.02 / 5.05	2.06 / 50.52
Order Status	2.00 / 0.00	2.02 / 10.05	2.06 / 100.52
<b>Test Duration</b>			
Ramp-up time			52 minutes 0 seconds
Measurement interval			120 minutes
Number of checkpoints			4
Checkpoint interval			30 minutes
Number of transactions (all types) completed in measurement interval			43,338,961

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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 5.2.

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.

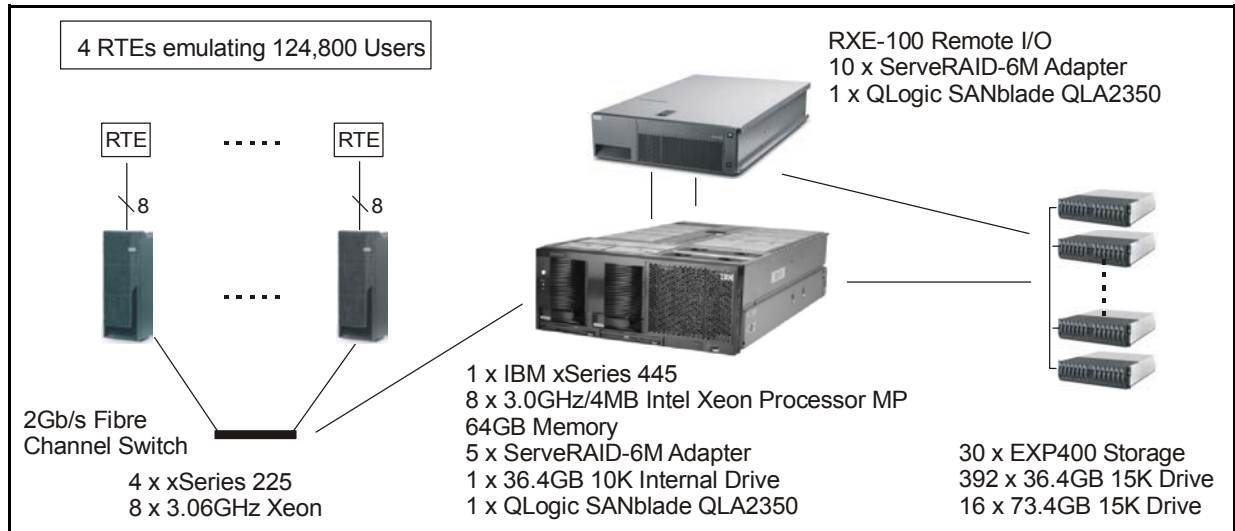
The Remote Terminal Emulator (RTE) used for these TPC Benchmark C tests is the Microsoft BenchCraft RTE. Under Version 5.0, the components of the configuration being emulated by the RTE are the workstations . Appendix C contains a listing of the RTE scripts and inputs used in the benchmark testing.

The measured configuration used four IBM xSeries 225 systems, each configured with two 3.06GHz Xeon DP 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.

The server's disk subsystem capability was enhanced by using the IBM RXE-100 Expansion Enclosure to increase the number of PCI buses available. The RXE-100 added twelve PCI slots and six PCI buses to the base server. The RAID and LAN controllers were distributed between the server and the RXE-100.

<b>Controller</b>	<b>PCI Slot Location</b>
QLogic 2350 FC -VI Adapter	Server Slot 1
IBM ServeRAID-6M Ultra320 SCSI Adapter	Server Slot 2
IBM ServeRAID-6M Ultra320 SCSI Adapter	Server Slot 3
IBM ServeRAID-6M Ultra320 SCSI Adapter	Server Slot 4
IBM ServeRAID-6M Ultra320 SCSI Adapter	Server Slot 5
IBM ServeRAID-6M Ultra320 SCSI Adapter	Server Slot 6
IBM ServeRAID-6M Ultra320 SCSI Adapter	RXE-100 Slot 1
IBM ServeRAID-6M Ultra320 SCSI Adapter	RXE-100 Slot 3
IBM ServeRAID-6M Ultra320 SCSI Adapter	RXE-100 Slot 4
IBM ServeRAID-6M Ultra320 SCSI Adapter	RXE-100 Slot 5
QLogic 2350 FC -VI Adapter	RXE-100 Slot 6
IBM ServeRAID-6M Ultra320 SCSI Adapter	RXE-100 Slot 7
IBM ServeRAID-6M Ultra320 SCSI Adapter	RXE-100 Slot 8
IBM ServeRAID-6M Ultra320 SCSI Adapter	RXE-100 Slot 9
IBM ServeRAID-6M Ultra320 SCSI Adapter	RXE-100 Slot 10
IBM ServeRAID-6M Ultra320 SCSI Adapter	RXE-100 Slot 11
IBM ServeRAID-6M Ultra320 SCSI Adapter	RXE-100 Slot 12

## Measured Configuration



See the Executive Summary for the priced configuration.

The priced and measured configurations are identical.

---

## 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.*

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## 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 x225 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 x445 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**

<b>New Order</b>	<b>Value (%)</b>
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
<b>Payment</b>	
Home warehouse payment transactions	0.85
Remote warehouse payment transactions	0.15
<b>Non-Primary Key Access</b>	
Payment transactions using C_LAST	60.01
Order-Status transactions using C_LAST	60.07
<b>Delivery</b>	
Delivery transactions skipped	0
<b>Transaction Mix</b>	
New-Order	44.96
Payment	43.02
Delivery	4.01
Stock Level	4.01
Order Status	4.00

## 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.

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## 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 12,480 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 giving 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 another 6 minutes 14 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 6 minutes 46 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 12,480 warehouses and the audited run used all 12,480 warehouses.

**Table 4-1. Initial Cardinality of Tables**

Table Name	Rows
Warehouse	12,480
District	124,800
Item	100,000
New Order	112,319,997
History	374,400,003
Orders	374,400,007
Customer	374,400,000
Order Line	3,743,996,515
Stock	1,248,000,000
Inactive Warehouses	0

### 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	16 - 73.4GB	E: F:	334.47GB 212.44GB (NTFS)	Logfile MDF File
2	14 - 36.4GB	C:\mp\c1 c:\mp\m1 G:	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Backup files
3	14 - 36.4GB	C:\mp\c2 c:\mp\m2 H:	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Backup files
4	14 - 36.4GB	C:\mp\c3 c:\mp\m3 I:	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Backup files
5	14 - 36.4GB	C:\mp\c4 c:\mp\m4 J:	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Backup files
6	14 - 36.4GB	C:\mp\c5 c:\mp\m5 K:	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Backup files
7	14 - 36.4GB	C:\mp\c6 c:\mp\m6 L:	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Backup files
8	14 - 36.4GB	C:\mp\c7 c:\mp\m7 M:	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Backup files
9	14 - 36.4GB	C:\mp\c8 c:\mp\m8 N:	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Backup files
10	14 - 36.4GB	C:\mp\c9 c:\mp\m9 O:	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Backup files
11	14 - 36.4GB	C:\mp\c10 c:\mp\m10 P:	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Backup files
12	14 - 36.4GB	C:\mp\c11 c:\mp\m11 Q:	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Backup files
13	14 - 36.4GB	C:\mp\c12 c:\mp\m12 R:	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Backup files
14	14 - 36.4GB	C:\mp\c13 c:\mp\m13 S:	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Backup files
15	14 - 36.4GB	C:\mp\c14 c:\mp\m14 T:	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Backup files
16	14 - 36.4GB	C:\mp\c15 c:\mp\m15 U:	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Backup files
17	14 - 36.4GB	C:\mp\c16 c:\mp\m16 V:	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Backup files

18	14 - 36.4GB	C:\mp\c17 c:\mp\m17 W:	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Backup files
19	14 - 36.4GB	C:\mp\c18 c:\mp\m18 D:	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Backup files
20	14 - 36.4GB	C:\mp\c19 c:\mp\m19	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Unused
21	14 - 36.4GB	C:\mp\c20 c:\mp\m20	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Unused
22	14 - 36.4GB	C:\mp\c21 c:\mp\m21	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Unused
23	14 - 36.4GB	C:\mp\c22 c:\mp\m22	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Unused
24	14 - 36.4GB	C:\mp\c23 c:\mp\m23	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Unused
25	14 - 36.4GB	C:\mp\c24 c:\mp\m24	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Unused
26	14 - 36.4GB	C:\mp\c25 c:\mp\m25	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Unused
27	14 - 36.4GB	C:\mp\c26 c:\mp\m26	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Unused
28	14 - 36.4GB	C:\mp\c27 c:\mp\m27	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Unused
29	14 - 36.4GB	C:\mp\c28 c:\mp\m28	25.88GB 15.14GB 433.11GB (NTFS)	Customer and Stock Miscellaneous Unused

### 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/I, 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.



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## Clause 5: Performance Metrics and Response Time Related Items

### Measured tpmC

*Measured tpmC must be reported.*

Measured tpmC: 156,105.72 tpmC

Price per tpmC: \$4.31 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	0.32	35.15	0.55
Payment	0.27	42.61	0.49
Delivery	0.20	5.74	0.40
Stock Level	0.73	11.45	1.06
Order Status	0.29	12.44	0.51
Delivery (Deferred)	0.13	4.11	0.18
Menu	0.20	63.56	0.40

### 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.

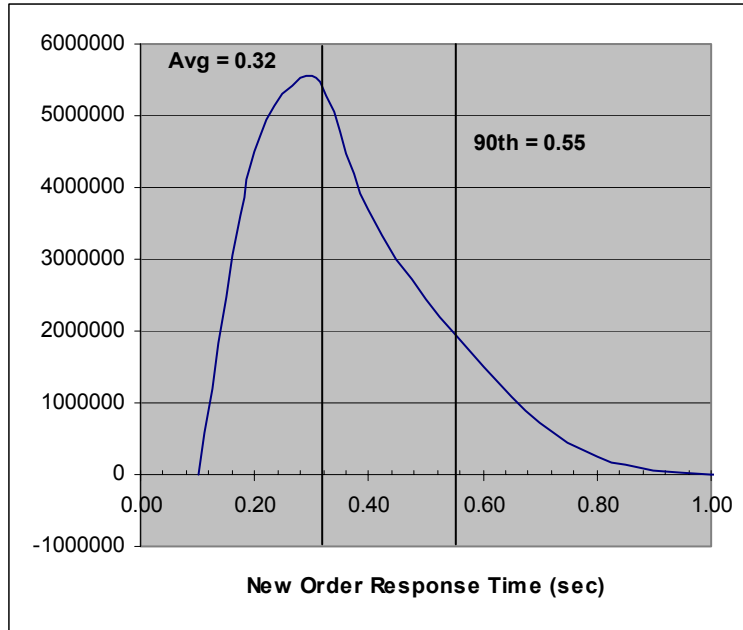
**Table 5-2. Keying/Think Times**

Transaction Type	Average	Minimum	Maximum
New-Order	18.02 / 12.06	18.00 / 0.00	18.06 / 120.53
Payment	3.02 / 12.05	3.00 / 0.00	3.06 / 120.53
Delivery	2.02 / 5.05	2.00 / 0.00	2.05 / 50.52
Stock Level	2.02 / 5.05	2.00 / 0.00	2.06 / 50.52
Order Status	2.02 / 10.05	2.00 / 0.00	2.06 / 100.52

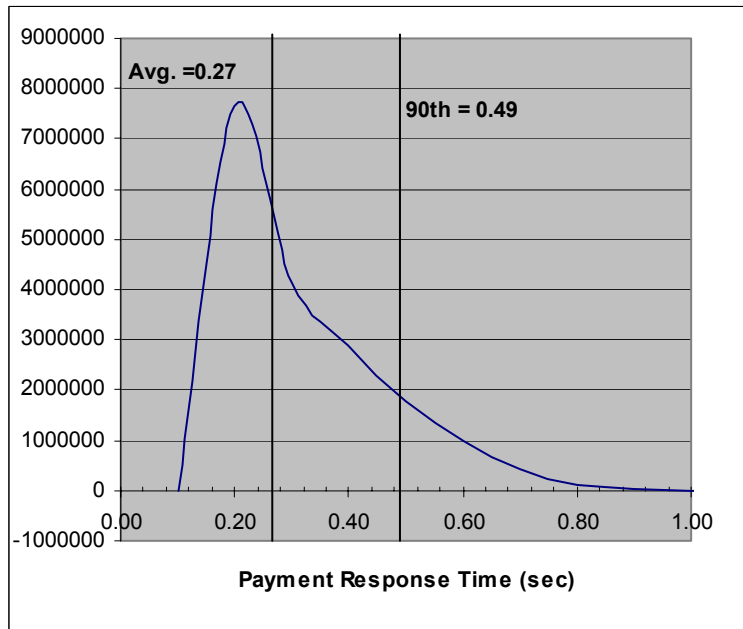
## Response Time Frequency Distribution Curves

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**



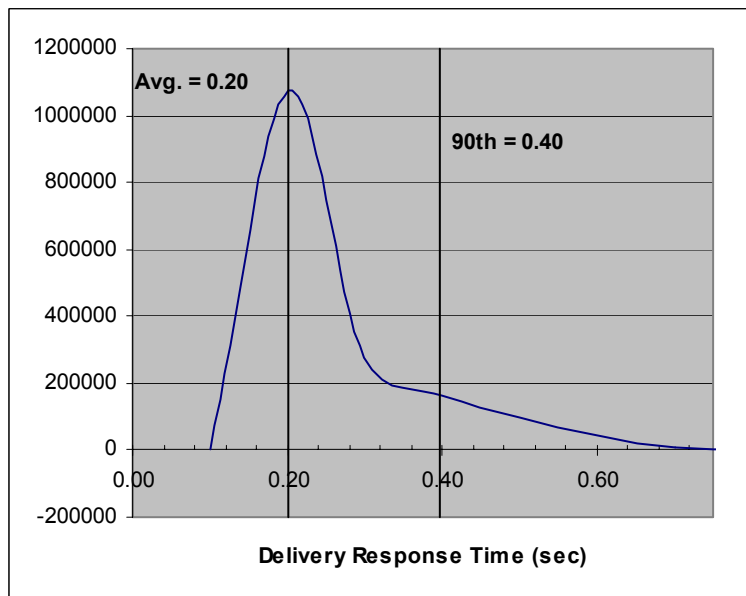
**Figure 5-2. Payment Transaction - Response Time Frequency Distribution**



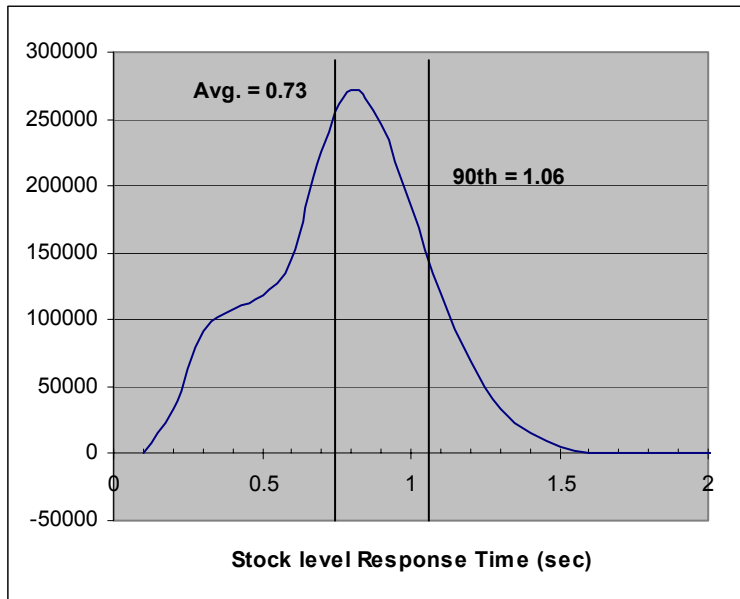
**Figure 5-3. Order-Status Transaction - Response Time Frequency Distribution**



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



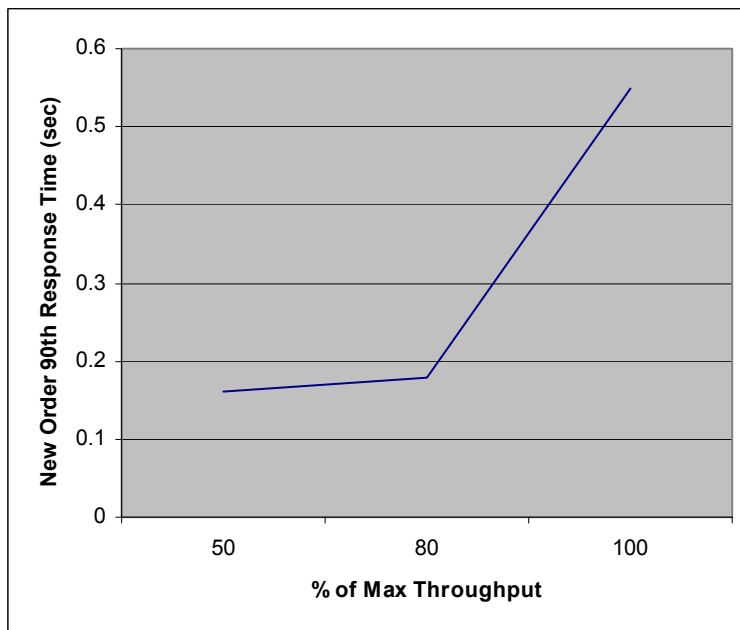
**Figure 5-5. Stock-Level Transaction - Response Time Frequency Distribution**



### Performance Curve for Response Time vs. Throughput

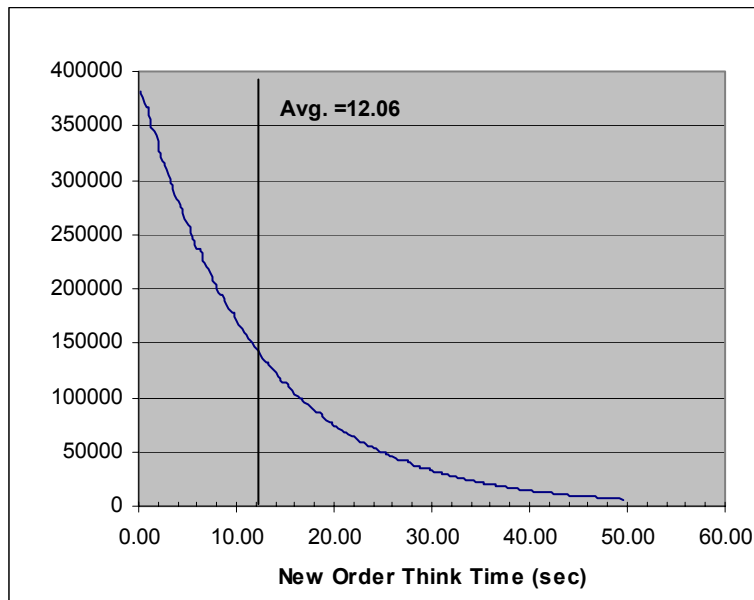
*The performance curve for response time vs. throughput (see Clause 5.6.2) must be reported for the New-Order transaction.*

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



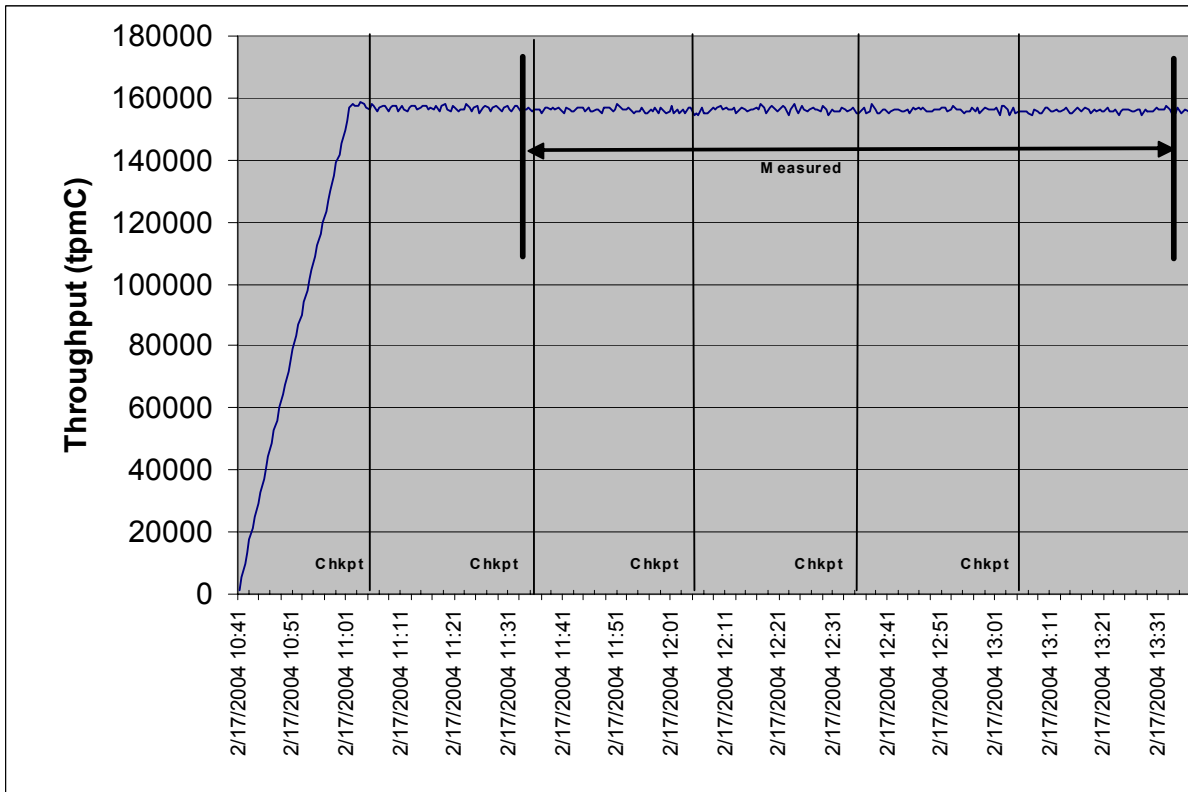
## New Order Think Time Distribution

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)*

See Table 5-3.

The RTE was given a weighted random distribution, which was not adjusted during the run.

## 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**

<b>New Order</b>	<b>Value (%)</b>
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
<b>Payment</b>	
Home warehouse payment transactions	0.85
Remote warehouse payment transactions	0.15
<b>Non-Primary Key Access</b>	
Payment transactions using C_LAST	60.01
Order-Status transactions using C_LAST	60.07
<b>Delivery</b>	
Delivery transactions skipped	0
<b>Transaction Mix</b>	
New-Order	44.96
Payment	43.02
Delivery	4.01
Stock Level	4.01
Order-Status	4.00

## 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 1 minute 56 seconds after the start of the measurement interval. The four checkpoints in the measured interval are shown in Table 5-4.

**Table 5-4. Checkpoint Start Time and Duration**

<b>Checkpoint</b>	<b>Start Time</b>	<b>Duration</b>
1	11:35:21 a.m.	28 minutes
2	12:05:18 p.m.	28 minutes
3	12:35:15 p.m.	28 minutes
4	01:05:12 p.m.	28 minutes

The checkpoint interval was 30 minutes.



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## 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 was Microsoft BenchCraft RTE. Benchcraft is a proprietary tool provided by Microsoft and is not commercially available. 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 100Mbps. 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.

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## 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 system as priced will be available August 31, 2004.

### 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: 156,105.72 tpmC
- Price per tpmC: \$4.31 per tpmC
- Three-year cost of ownership: \$672,287

### 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 Datacenter Edition
- 4 Microsoft Windows 2000 Server
- 8 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.

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## 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 Francois Raab 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<sup>TM</sup>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](http://www.tpc.org).

Benchmark Sponsor: Kamran Amini  
 Manager, xSeries Performance  
 IBM Systems and Technology Group  
 3039 Cornwallis Road  
 Research Triangle Park, NC 27709

February 27, 2004

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

Platform: **IBM @server xSeries 445 c/s**  
 Operating system: **Microsoft Windows Server 2003 Datacenter Edition w/QFE KB834628**  
 Database Manager: **Microsoft SQL Server 2000 Enterprise Edition SP3 w/QFE**  
 Transaction Manager: **Microsoft COM+**

The results were:

CPU's Speed	Memory	Disks	NewOrder 90% Response Time	tpmC
<b>Server: IBM @server xSeries 445</b>				
8 x Xeon MP (3.0GHz)	64 GB Main (4 MB L3 Cache per processor)	16 x 73.4 GB ext. 392 x 36.4 GB ext. 1 x 36.4 GB int.	0.55 Seconds	<b>156,105.72</b>
<b>Clients: Four (4) IBM @server xSeries 225 (Specification for each)</b>				
2 x Xeon DP (3.06 GHz)	2 GB Main (512 KB 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,

A handwritten signature in black ink, appearing to read "François Raab", with a long horizontal flourish extending to the right.

François Raab, President

# 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 /I 0x409 /d "NDEBUG"
# ADD RSC /I 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 odbccp32.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 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 /I 0x409 /d "_DEBUG"
# ADD RSC /I 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 odbccp32.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 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 /I 0x409 /d "_DEBUG"
# ADD RSC /I 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 odbcc32.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 odbcc32.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

#ifdef _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 receive
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 CheckWWWService(void);
static BOOL StartWWWService(void);
static BOOL StopWWWService(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, "Arial");
            SendMessage( GetDlgItem(hwnd,
IDR_LICENSE1), WM_SETFONT, (LPARAM)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);
            }
            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);
            default:
                break;
    }
    return FALSE;
}

}

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.%2d.%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_THREAD_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 szErrMsg[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_THREAD_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) ocured 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 ocured 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 ocured 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 CheckWWWWebService(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 **

# TARGETTYPE "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 /I 0x409 /d "NDEBUG"
# ADD RSC /I 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 odbcc32.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 odbcc32.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 /I 0x409 /d "_DEBUG"
# ADD RSC /I 0x409 /d "_DEBUG"

BSC32=bscmake.exe
# ADD BASE 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 odbcc32.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 /I 0x409 /i "src"
# ADD RSC /I 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_THREAD_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"

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

#ifndef _AFX_RESOURCE_DLL || defined(AFX_TARG_ENU)
#define _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_THREAD_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_RTLEADING
EDITTEXT ED_IIS_THREAD_TIMEOUT,164,291,34,12,ES_RIGHT |
ES_NUMBER,
  WS_EX_RTLEADING
EDITTEXT ED_IIS_LISTEN_BACKLOG,164,305,34,12,ES_RIGHT |
ES_NUMBER,
  WS_EX_RTLEADING
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
Successful",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"

////////////////////////////////////
//
// TPCDLL
//

IDR_TPCDLL      TPCDLL DISCARDABLE
"..\\..\\isapi_dll\\bin\\tpcc.dll"

#ifdef _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 Installer0"
VALUE "CompanyName", "Microsoft0"
VALUE "FileDescription", "install0"
VALUE "FileVersion", "0, 4, 20, 00"
VALUE "InternalName", "install0"
VALUE "LegalCopyright", "Copyright © 19990"
VALUE "OriginalFilename", "install.exe0"
VALUE "ProductName", "Microsoft install0"
VALUE "ProductVersion", "0, 4, 20, 00"
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;
```

```
(if any) // iterate through applications to delete existing "TPC-C" application
```

```
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 (wcsncmp(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;

```



```

collection                // save key to get the MethodsForInterface
                           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_THREAD_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 4001
#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 **

# TARGETTYPE "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 /I 0x409 /d "NDEBUG"
# ADD RSC /I 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 odbccp32.lib
# ADD LINK32 ..\common\txnl\lib\release\rttime.lib
..\common\txnl\lib\release\spinlock.lib ..\common\txnl\lib\release\error.lib
..\common\txnl\lib\release\txnl.lib wsock32.lib kernel32.lib user32.lib
gdi32.lib winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib
oleaut32.lib uuid.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 /I 0x409 /d "_DEBUG"
# ADD RSC /I 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 odbcc32.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 odbcc32.lib odbccp32.lib /nologo /subsystem:windows /dll
/debug /machine:I386 /nodefaultlib:"LIBCMDT" /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_dll"
# PROP BASE Intermediate_Dir "isapi_dll"
# 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 /I 0x409 /d "_DEBUG"
# ADD RSC /I 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 odbcc32.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 odbcc32.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
#ifdef 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
            PAYMENT_DATA          Payment;
            DELIVERY_DATA        Delivery;
            STOCK_LEVEL_DATA     StockLevel;
            ORDER_STATUS_DATA    OrderStatus;
        };
    };

// CTPCC
// 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()

};

// CTPCC

```

```

// 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, 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 = 'dzKcOCObBqbC3yu',
        @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,
                                @threshold  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
*
*      4.20.000
*
*      All Rights Reserved
*
*
*      Copyright Microsoft, 1999
*
*      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 ( !strcmp(szTmp, szDBNames[ODBC]) )
            pReg->eDB_Protocol = ODBC;
        else if ( !strcmp(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 ( !strcmp(szTmp, szTxnMonNames[TUXEDO]) )
            pReg->eTxnMon = TUXEDO;
        else if ( !strcmp(szTmp, szTxnMonNames[ENCINA]) )
            pReg->eTxnMon = ENCINA;
        else if ( !strcmp(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 ( !strcmp(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
0x7FFFFFFF
#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")
```

<pre> If SQL_fso.FileExists(SQL_Out) Then     Set SQL_Out_File = SQL_fso.OpenTextFile(SQL_Out,1)     Do While SQL_Out_File.AtEndOfStream &lt;&gt; 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             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                 LocMsg =                 'find out where the                 LocComma =                 'now isolate the error                 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."                 End Select             End If         End If     Loop End If </pre>	<pre> wScript.Echo "!!!" Case "1921" ErrorFlag = 1 wScript.Echo "!!!" wScript.Echo "CREATE INDEX failed." wScript.Echo "SQL Server Error 1921." wScript.Echo "Check " &amp; SQL_Out &amp; "." 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" </pre>
---	--





```
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 = "bulddb") 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 = "bulddb" _
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 = "bulddb" _
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\MSSQLServer\Client\SharedMemoryOn")
    If SharedMemoryRegKey = 1 Then
        WshShell.RegWrite
"HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Client\SharedMemoryOn", 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\SharedMemoryOn", 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 fl In fcErr
        If fl.Type = "ERR File" Then
            If fl.Size = 0 Then
                fl.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 "*"
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.

```

```

*/
#ifdef _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 **

# TARGETTYPE "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 /I 0x409 /d "NDEBUG"
# ADD RSC /I 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 odbcc32.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 odbcc32.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 /I 0x409 /d " _DEBUG"
# ADD RSC /I 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 odbccp32.lib
odbc32.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 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 <char.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 definitions 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: DIIMain
*
* 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 WINAPI DIIMain(HANDLE hModule, DWORD ul_reason_for_call,
LPVOID lpReserved)
{
    DWORD i;
    char szEvent[LEN_ERR_STRING] = "";
    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");

```



```

LoadLibrary( szDllName );
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");
LoadLibrary( szDllName );
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
(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
hLibInstanceTm =
if (hLibInstanceTm ==
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
{
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
HANDLE[dwNumDeliveryThreads];
pDeliHandles = new
DELIVERY_TRANSACTION[dwDelBuffSize];
pDelBuff = new
// 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
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 = 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);
lstrcpy(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];
                sprintf( 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:
            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\">"

```

```

TYPE="hidden" NAME="ERROR" VALUE="0"
TYPE="hidden" NAME="FORMID" VALUE="1"
TYPE="hidden" NAME="TERMIN" VALUE="0"
TYPE="hidden" NAME="SYNCID" VALUE="0"
TYPE="hidden" NAME="VERSION" VALUE=""
WEBCIENT_VERSION "" );

    sprintf( szTmp, "Configuration Settings: <BR><font
face="Courier New" color="blue"><PRE>"
    Txn Monitor =
<B>%s</B><BR>"
    Database protocol
    Max Connections
    # of Delivery Threads
    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>"

```

```

        = <B>%s</B><BR>"
        ID = <B>%s</B><BR>"
        Password = <B>%s</B><BR>"
        = <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, WEBCIENT_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 iTotals;

```

```

EnterCriticalSection(&TermCriticalSection);

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

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>"
    , iTotals );
}

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)
        sprintf( 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
*
* pKey         char
key value to look for
*
* pValue       char
character array into which to place key's value
*
* iMax         int
maximum length of key value array.
*
* err          WEBERROR
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
*
* pKey         char
key value to look for
*
* NoKeyErr     WEBERROR
error value to throw if key not found
*
* NotIntErr    WEBERROR
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=\"TERMINID\"
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=\"TERMINID\"
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 = sprintf(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=\"TERMIN\"
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></PRE><HR>"
        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Process\">"
        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Menu\">"
        "</FORM></HTML>");
    }
    else
    {
        sprintf(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></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 = sprintf(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=\"TERMIN\"
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 += sprintf(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 += sprintf(szForm+c, "Warehouse: %4.4d District:
%2.2d Date: ",
        pNewOrderData->w_id,

```

```

        pNewOrderData->d_id);
        if ( bValid )
        {
            c += sprintf(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 += sprintf(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,
"%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 += sprintf(szForm+c,
"%Disc:<BR>"
        "Order Number: %8.8d Number
of Lines:      W_tax:      D_tax:<BR><BR>"

```

```

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 committed. Total: $%8.2f ",
pNewOrderData->total_amount);
else
c += sprintf(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 blnput, char *szForm)
{
int c;

c = sprintf(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=\"TERMINID\"
VALUE=\"%d\">"
"<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
"<PRE><font face=\"Courier\">
Payment<BR>"
"Date: "

```

```

, PAYMENT_FORM, iTermId,
Term.pClientData[iTermId].iSyncId);

if ( !blnput )
{
c += sprintf(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 ( blnput )
{
c += sprintf(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 += sprintf(szForm+c,
"<BR> <BR>Warehouse: %4.4d
District: %2.2d<BR>"
"%0-20s %0-20s<BR>"
"%0-20s %0-20s<BR>"
"%0-20s %0-2s %5.5s-%4.4s %0-20s %0-2s
%5.5s-%4.4s<BR> <BR>"
"Customer: %4.4d Cust-Warehouse: %4.4d
Cust-District: %2.2d<BR>"
"Name: %0-16s %0-2s %0-16s Since:
%2.2d-%2.2d-%4.4d<BR>"
" %0-20s Credit: %0-2s<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          %5.2f Disc:
%5.2f<BR>",
        pPaymentData->c_street_2,
100.0*pPaymentData->c_discount);

        c += sprintf(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 += sprintf(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..\">"
                    );
            }
        }

/* 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 = sprintf(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> <BR> <BR></font></PRE>"
            "<HR><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Process\"><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Menu\">"
            "</BODY></FORM></HTML>");
    }
    else
    {
        c += sprintf(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 += sprintf(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 = sprintf(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=\"TERMINID\"
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].iSynclId, 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> </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 definitions 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 WINAPI DllMain(HANDLE hModule, DWORD ul_reason_for_call,
LPVOID lpReserved)
{
    DWORD i;
    char szEvent[LEN_ERR_STRING] = "";
    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");
            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");
            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");
            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");
            }
        }
    }
}

```

<pre> 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(&amp;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( &amp;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-&gt;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&lt;dwNumDeliveryThreads; i++) { </pre>	<pre> 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-&gt;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(&amp;DelBuffCriticalSection); } DeleteCriticalSection(&amp;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-&gt;ErrorText() ); } </pre>
--	---



```

        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);
    lstrcpy(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.
*
* ARGUMENTS:   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
        INPUT_FORM, szBuffer);
        MakeNewOrderForm(TermId, NULL,
        break;
    case 3:
        // payment selected from menu; display
        payment input form
        INPUT_FORM, szBuffer);
        MakePaymentForm(TermId, NULL,
        break;
    case 4:
        // delivery selected from menu; display
        delivery input form
        INPUT_FORM, szBuffer);
        MakeDeliveryForm(TermId, NULL,
        break;
    case 5:
        // order-status selected from menu; display
        order-status input form
        INPUT_FORM, szBuffer);
        MakeOrderStatusForm(TermId, NULL,
        break;
    case 6:
        // stock-level selected from menu; display
        stock-level input form
        INPUT_FORM, szBuffer);
        MakeStockLevelForm(TermId, NULL,
        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 );
    }
#endif 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"));

```

```

    _sprintf(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];
        sprintf( 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];
        sprintf( 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 *pSynclId)
{
    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;
    *pTermId = 0;
    // default is the login screen

    // 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\" color=\"blue\"><PRE>"
" __DATE__ ", "__TIME__ " <BR>"
"Source:
" __FILE__ " (" __TIMESTAMP__ ) <BR>"
"</PRE></font>"
" <FORM
" <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>"
                , iTot);
}

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
*
* pKey         char                key value to look for
*
* pValue       char                character array into which to place key's value
*
* iMax         int                maximum length of key value array.
*
* err          WEBERROR          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
*
* pKey         char
key value to look for
*
* NoKeyErr     WEBERROR
error value to throw if key not found
*
* NotIntErr    WEBERROR
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=value0. 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 TPC.C.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'>"

```

```

VALUE="%d">"
" <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="TERMIN"
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)
{
    sprintf(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="TERMIN"
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 = sprintf(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="TERMIN"
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
    {
        sprintf(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></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..">"

```



```

pNewOrderData->o_entry_d.minute,
pNewOrderData->o_entry_d.second);
    }

    c += sprintf(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,
                    "%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 += sprintf(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 )

```

```

Transaction committed.
        c += sprintf(szForm+c, "Execution Status:
Total: %8.2f ",
                    pNewOrderData->total_amount);
    else
        c += sprintf(szForm+c, "Execution Status:
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 blnInput, char *szForm)
{
    int c;

    c = sprintf(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='\"TERMINID\"'"
                VALUE='\"%d\">"
                "<INPUT TYPE='hidden' NAME='\"SYNCID\"'"
                VALUE='\"%d\">"
                "<PRE><font face='\"Courier\"'"
                Payment<BR>"
                "Date: "
                , PAYMENT_FORM, iTermId,
                Term.pClientData[iTermId].iSyncId);

    if ( !blnInput )
    {
        c += sprintf(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 += sprintf(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 += sprintf(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->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_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 += sprintf(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 += sprintf(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> <BR>";

c = sprintf(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> <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 += sprintf(szForm+c,
" District: %2.2d<BR>"
" Customer: %4.4d Name: %-16s %-2s
%-16s<BR>",
pOrderStatusData->d_id,
pOrderStatusData->c_first,
pOrderStatusData->c_middle, pOrderStatusData->c_last);
c += sprintf(szForm+c, "Cust-Balance: %9.2f<BR>
<BR>",
pOrderStatusData->c_balance);
c += sprintf(szForm+c,
" Order-Number: %8.8d Entry-Date:
%2.2d-%2.2d-%4.4d %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 = sprintf(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\">"

```

```

VALUE="%">">"
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> <BR> </font><PRE><HR>"
                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Process\">"
                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Menu\">"
                "</BODY></FORM></HTML>");
    }
    else
    {
        sprintf( 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> <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 <odbc.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;
} TPCC_LDR_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

```

```

#ifdef _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

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

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

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

tpcc_com.cpp

/*      FILE:          TPCC_COM.CPP
 *
 *      4.20.000
 *
 *      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 definations 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
DllDecl __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
            PAYMENT_DATA
            DELIVERY_DATA
            STOCK_LEVEL_DATA
            ORDER_STATUS_DATA
        } 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
                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"));

    _sprintf(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)
    sprintf( 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* pObjContext = NULL;

    // get our object context
    HRESULT hr = CoGetObjectContext( IID_IObjectContext, (void
**) &pObjContext );
    pObjContext->SetComplete();
    ReleaseInterface(pObjContext);
    return hr;
}

// called by the ctor activator
//
// STDMETHODCALLTYPE 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 (...)
    {
}
}

        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 **

# TARGETTYPE "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 /I 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 odbccp32.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 odbccp32.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 /I 0x409 /d "_DEBUG"
# ADD RSC /I 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 odbccp32.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 odbccp32.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
# End 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__ */

#endif /* __tpcc_com_all_h__ */

#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

#ifdef _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
////////////////////////////////////

#ifdef 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 **

# TARGETTYPE "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 /I 0x409 /d "NDEBUG"
# ADD RSC /I 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 odbcc32.lib
odbccp32.lib /nologo /subsystem:windows /machine:I386
# ADD LINK32 kernel32.lib rpcndr.lib rpcns4.lib rpert4.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 /I 0x409 /d "_DEBUG"
# ADD RSC /I 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 odbcc32.lib
odbccp32.lib /nologo /subsystem:windows /debug /machine:I386 /pdbtype:sept
# ADD LINK32 kernel32.lib rpcndr.lib rpcns4.lib rpert4.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\dll\data.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\dll\data.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\dll\data.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 ( STDMETHODCALLTYPE __RPC_FAR *NewOrder )(
    ITPCC __RPC_FAR * This,
    /* [in] */ VARIANT txn_in,
    /* [out] */ VARIANT __RPC_FAR *txn_out);

HRESULT ( STDMETHODCALLTYPE __RPC_FAR *Payment )(
    ITPCC __RPC_FAR * This,
    /* [in] */ VARIANT txn_in,
    /* [out] */ VARIANT __RPC_FAR *txn_out);

HRESULT ( STDMETHODCALLTYPE __RPC_FAR *Delivery )(
    ITPCC __RPC_FAR * This,
    /* [in] */ VARIANT txn_in,
    /* [out] */ VARIANT __RPC_FAR *txn_out);

HRESULT ( STDMETHODCALLTYPE __RPC_FAR *StockLevel )(
    ITPCC __RPC_FAR * This,
    /* [in] */ VARIANT txn_in,
    /* [out] */ VARIANT __RPC_FAR *txn_out);

HRESULT ( STDMETHODCALLTYPE __RPC_FAR *OrderStatus )(
    ITPCC __RPC_FAR * This,
    /* [in] */ VARIANT txn_in,
    /* [out] */ VARIANT __RPC_FAR *txn_out);

HRESULT ( STDMETHODCALLTYPE __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 STDMETHODCALLTYPE 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 STDMETHODCALLTYPE 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 STDMETHODCALLTYPE 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 STDMETHODCALLTYPE 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 STDMETHODCALLTYPE 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

#ifdef 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( )

#ifdef !defined(_M_IA64) && !defined(_M_AXP64)
#define USE_STUBLESS_PROXY

/* verify that the <rpcproxy.h> version is high enough to compile this file*/
#ifdef __REDQ_RPCPROXY_H_VERSION__
#define __REQUIRED_RPCPROXY_H_VERSION__ 440
#endif

#include "rpcproxy.h"
#ifdef __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,{0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00}} */

/* Object interface: IUnknown, ver. 0.0,

GUID={0x00000000,0x0000,0x0000,{0xC0,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x46}} */

/* Object interface: ITPCC, ver. 0.0,

GUID={0xFEE6AA2,0x84B1,0x11d2,{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,
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,
    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 */

        FC_AUTO_HANDLE /*/
        0x33, /*/

        Oi2 /*/
        /* 2 */ NdrFcLong( 0x0 ), /* 0 */
        /* 6 */ NdrFcShort( 0x3 ), /* 3 */
#ifdef _ALPHA_
#ifdef _PPC_
#if !defined(_MIPS_)
/* 8 */ NdrFcShort( 0x1c ), /* x86 Stack size/offset = 28 */
#else
NdrFcShort( 0x20 ), /* MIPS Stack
size/offset = 32 */
#endif
#endif
#endif
/* 8 */ NdrFcShort( 0x20 ), /* PPC Stack size/offset
= 32 */
#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, */
#ifdef _ALPHA_
#ifdef _PPC_
#if !defined(_MIPS_)
/* 18 */ NdrFcShort( 0x4 ), /* x86 Stack size/offset = 4 */
#else
NdrFcShort( 0x8 ), /* MIPS Stack
size/offset = 8 */
#endif
#endif
/* 18 */ NdrFcShort( 0x8 ), /* PPC Stack size/offset
= 8 */
#endif
/* 20 */ 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 */
#ifdef _ALPHA_
#ifdef _PPC_
#if !defined(_MIPS_)
/* 24 */ NdrFcShort( 0x14 ), /* x86 Stack size/offset = 20 */
#else
NdrFcShort( 0x18 ), /* MIPS Stack
size/offset = 24 */

```

```

#endif
#else
= 24 */
#endif
#else
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
size/offset = 28 */
#endif
#else
= 28 */
#endif
#else
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
size/offset = 32 */
#endif
#else
= 32 */
#endif
#else
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
size/offset = 8 */
#endif
#else
= 8 */
#endif
#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
size/offset = 24 */
#endif
#else
= 24 */
#endif
#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
size/offset = 28 */
#endif
#else
= 28 */
#endif
#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 */
#ifdef _ALPHA_
#ifdef _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, */
#ifdef _ALPHA_
#ifdef _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 */
#ifdef _ALPHA_
#ifdef _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, */
#ifdef _ALPHA_
#ifdef _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 */
#ifdef _ALPHA_
#ifdef _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( 0x20 ), /* Alpha Stack
size/offset = 24 */
#endif
/* 162 */ NdrFcShort( 0x3da ), /* Type Offset=986 */

/* Return value */

/* 164 */ NdrFcShort( 0x70 ), /* Flags: out, return, base type, */
#ifdef _ALPHA_
#ifdef _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 */
#ifdef _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, */
#ifdef _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( 0xffff ), /* -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( 0xffffffff2 ), /* 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( 0xffffffff6e ), /* 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( 0xfffffd4 ), /* 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( 0xfffff50 ), /* 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( 0xfffff40 ), /* 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_CARRY */
                                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( 0xfffffd4 ), /* 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_CARRY */
                                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 */	0x4c, /*
/* 618 */ NdrFcShort( 0xa ), /* Offset= 10 (628) */	FC_EMBEDDED_COMPLEX /*
/* 620 */ 0x8, /* FC_LONG */	/* 692 */ 0x0, /* 0 */
/* 622 */ 0x4c, /* FC_EMBEDDED_COMPLEX */	NdrFcShort( 0xffffffff ), /* Offset=
/* 624 */ NdrFcShort( 0xffffffff8 ), /* Offset= -40 (584) */	-15 (678) */
/* 626 */ 0x36, /* FC_POINTER */	0x5b, /* FC_END */
/* 628 */ 0x5b, /* FC_END */	0x1a, /*
/* 630 */ NdrFcShort( 0xffffffff4 ), /* Offset= -28 (602) */	FC_BOGUS_STRUCT /*
/* 632 */ 0x12, 0x0, /* FC_UP */	0x3, /* 3 */
/* 634 */ NdrFcShort( 0xffffffffe4 ), /* Offset= -28 (602) */	/* 698 */ NdrFcShort( 0x18 ), /* 24 */
/* 636 */ 0x1b, /* FC_CARRY */	/* 700 */ NdrFcShort( 0x0 ), /* 0 */
/* 638 */ NdrFcShort( 0x4 ), /* 4 */	/* 702 */ NdrFcShort( 0xa ), /* Offset= 10 (712) */
/* 640 */ 0x19, /* Corr desc: field pointer, FC_ULONG */	/* 704 */ 0x8, /* FC_LONG */
/* 642 */ 0x0, /* */	0x36, /* FC_POINTER */
/* 644 */ NdrFcShort( 0x0 ), /* 0 */	/* 706 */ 0x4c, /* FC_EMBEDDED_COMPLEX */
/* 646 */ 0x4b, /* FC_PP */	0x0, /* 0 */
/* 648 */ 0x5c, /* FC_PAD */	/* 708 */ NdrFcShort( 0xffffffffe8 ), /* Offset= -24 (684) */
/* 650 */ 0x48, /*	/* 710 */ 0x5c, /* FC_PAD */
/* 652 */ 0x49, /*	0x5b, /* FC_END */
/* 654 */ 0x12, 0x0, /* FC_UP */	/* 712 */ 0x11, 0x0, /* FC_RP */
/* 656 */ NdrFcShort( 0xffffffffd4 ), /* Offset= -44 (612) */	/* 714 */ NdrFcShort( 0xffffffff0c ), /* Offset= -244 (470) */
/* 658 */ 0x5b, /* FC_END */	/* 716 */ 0x1b, /* FC_CARRY */
/* 660 */ 0x5c, /* FC_PAD */	0x0, /* 0 */
/* 662 */ 0x5b, /* FC_END */	/* 718 */ NdrFcShort( 0x1 ), /* 1 */
/* 664 */ 0x1a, /*	/* 720 */ 0x19, /* Corr desc: field pointer, FC_ULONG */
/* 666 */ 0x3, /* 3 */	0x0, /* */
/* 668 */ NdrFcShort( 0x8 ), /* 8 */	/* 722 */ NdrFcShort( 0x0 ), /* 0 */
/* 670 */ NdrFcShort( 0x0 ), /* 0 */	/* 724 */ 0x1, /* FC_BYTE */
/* 672 */ NdrFcShort( 0x6 ), /* Offset= 6 (674) */	0x5b, /* FC_END */
/* 674 */ 0x8, /* FC_LONG */	/* 726 */ 0x16, /* FC_PSTRUCT */
/* 676 */ 0x36, /* FC_POINTER */	0x3, /* 3 */
/* 678 */ 0x5c, /* FC_PAD */	/* 728 */ NdrFcShort( 0x8 ), /* 8 */
/* 680 */ 0x5b, /* FC_END */	/* 730 */ 0x4b, /* FC_PP */
/* 682 */ 0x1a, /*	0x5c, /* FC_PAD */
/* 684 */ 0x11, 0x0, /* FC_RP */	/* 732 */ 0x46, /* FC_NO_REPEAT */
/* 686 */ NdrFcShort( 0xffffffffd4 ), /* Offset= -44 (632) */	0x5c, /* FC_PAD */
/* 688 */ 0x1d, /* FC_SMFARRAY */	/* 734 */ NdrFcShort( 0x4 ), /* 4 */
/* 690 */ 0x0, /* 0 */	/* 736 */ NdrFcShort( 0x4 ), /* 4 */
/* 692 */ NdrFcShort( 0x8 ), /* 8 */	/* 738 */ 0x12, 0x0, /* FC_UP */
/* 694 */ 0x1, /* FC_BYTE */	/* 740 */ NdrFcShort( 0xffffffffe8 ), /* Offset= -24 (716) */
/* 696 */ 0x5b, /* FC_END */	/* 742 */ 0x5b, /* FC_END */
/* 698 */ 0x15, /* FC_STRUCT */	0x8, /* FC_LONG */
/* 700 */ NdrFcShort( 0x10 ), /* 16 */	0x5b, /* FC_END */
/* 702 */ 0x8, /* FC_LONG */	/* 744 */ 0x8, /* FC_LONG */
/* 704 */ 0x6, /* FC_SHORT */	0x5b, /* FC_END */
/* 706 */ 0x6, /* FC_SHORT */	/* 746 */ 0x1b, /* FC_CARRY */
/* 708 */ 0x4b, /* FC_PP */	0x1, /* 1 */
/* 710 */ 0x5c, /* FC_PAD */	/* 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( 0xfffffe8 ), /* 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( 0xfffffe8 ), /* 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( 0xfffffe8 ), /* 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( 0xfffd8 ), /* -40 */
/* 852 */ 0x4c,          /* FC_EMBEDDED_COMPLEX */
                                0x0,          /* 0 */
/* 854 */ NdrFcShort( 0xfffffee ), /* Offset=-18 (836) */
/* 856 */ 0x5c,          /* FC_PAD */
                                0x5b,          /* FC_END */
/* 858 */
                                0x1a,          /*
FC_BOGUS_STRUCT */
                                0x3,          /* 3 */
/* 860 */ NdrFcShort( 0x28 ), /* 40 */
/* 862 */ NdrFcShort( 0xfffffee ), /* 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( 0xfffffd7 ), /* Offset=
-521 (352) */
                                0x5b,          /* FC_END */
/* 876 */
                                0x12, 0x0, /* FC_UP */
/* 878 */ NdrFcShort( 0xfffffef6 ), /* Offset=-266 (612) */
/* 880 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
                                /* FC_BYTE */
                                0x5c,          /* FC_PAD */
/* 884 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
                                /* FC_SHORT */
                                0x5c,          /* FC_PAD */
/* 888 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
                                /* FC_LONG */
                                0x5c,          /* FC_PAD */
/* 890 */ 0x8,
/* 892 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
                                /* FC_FLOAT */
                                0x5c,          /* FC_PAD */
/* 894 */ 0xa,
/* 896 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
                                /* FC_DOUBLE */
                                0x5c,          /* FC_PAD */
/* 898 */ 0xc,
/* 900 */
                                0x12, 0x0, /* FC_UP */
/* 902 */ NdrFcShort( 0xffffd90 ), /* 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( 0xffffda6 ), /* Offset= -602 (308) */
/* 912 */
                                0x12, 0x10,          /* FC_UP
[pointer_deref] */
/* 914 */ NdrFcShort( 0xffffdb4 ), /* Offset= -588 (326) */
/* 916 */
                                0x12, 0x10,          /* FC_UP
[pointer_deref] */
/* 918 */ NdrFcShort( 0xffffdc2 ), /* 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( 0xfffff2 ), /* 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 [allocated_on_stack] */
/* 980 */ NdrFcShort( 0x6 ), /* Offset= 6 (986) */
/* 982 */
                                0x13, 0x0, /* FC_OP */
/* 984 */ NdrFcShort( 0xfffffde ), /* Offset= -36 (948) */
/* 986 */ 0xb4, /* FC_USER_MARSHAL */
                                0x83,        /* 131 */
/* 988 */ NdrFcShort( 0x0 ), /* 0 */
/* 990 */ NdrFcShort( 0x10 ), /* 16 */
/* 992 */ NdrFcShort( 0x0 ), /* 0 */
/* 994 */ NdrFcShort( 0xffffff4 ), /* 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( )

#ifdef _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,{0x00,0x00,0x00,0x00,0x00,0x00,0x00,0
x00}} */

/* Object interface: IUnknown, ver. 0.0,
GUID={0x00000000,0x0000,0x0000,{0xC0,0x00,0x00,0x00,0x00,0x00,0x00,0
x46}} */

```

```

/* Object interface: ITPCC, ver. 0.0,
GUID={0xFEE6AA2,0x84B1,0x11d2,{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,
    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,
    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 */
            FC_AUTO_HANDLE */
            0x33, /*
            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, */
#ifdef _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 */
#ifdef _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, */
#ifdef _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 */
#ifdef _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, */
#ifdef _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 */
#ifdef _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, */
#ifdef _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 */
#ifdef _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, */
#ifdef _ALPHA_
/* 160 */ NdrFcShort( 0x10 ), /* ia64 Stack size/offset = 16 */
#else
NdrFcShort( 0x8 ), /* axp64 Stack
size/offset = 8 */
#endif

```

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/* 162 */ NdrFcShort( 0x3b6 ), /* Type Offset=950 */
        /* Parameter txn_out */

/* 164 */ NdrFcShort( 0x6113 ), /* Flags: must size, must free, out,
simple ref, srv alloc size=24 */
#ifdef _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, */
#ifdef _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 */
#ifdef _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, */
#ifdef _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 */
#ifdef _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, */
#ifdef _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( 0xffff8 ), /* -8 */
/* 12 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 14 */ NdrFcShort( 0x2 ), /* Offset= 2 (16) */
/* 16 */ NdrFcShort( 0x10 ), /* 16 */

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/* 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( 0xffffffff0 ), /* 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 */

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0x5a, /*
FC_CONSTANT_IID */
/* 332 */ NdrFcLong( 0x20400 ), /* 132096 */
/* 336 */ NdrFcShort( 0x0 ), /* 0 */
/* 338 */ NdrFcShort( 0x0 ), /* 0 */
/* 340 */ 0xc0, /* 192 */
/* 342 */ 0x0, /* 0 */
/* 344 */ 0x0, /* 0 */
/* 346 */ 0x0, /* 0 */
/* 348 */ 0x46, /* 70 */
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 */
/* 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 */
/* 426 */ NdrFcShort( 0x0 ), /* 0 */
/* 428 */ 0x19, /* Corr desc: field pointer, FC_ULONG */
/* 430 */ 0x0, /* */
/* 432 */ NdrFcShort( 0x0 ), /* 0 */
/* 434 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 436 */ NdrFcLong( 0xffffffff ), /* -1 */
/* 438 */ NdrFcShort( 0x0 ), /* Corr flags: */
/* 440 */ 0x12, 0x0, /* FC_UP */
/* 442 */ NdrFcShort( 0xffffffff74 ), /* Offset= -140 (302) */
/* 444 */ 0x5c, /* FC_PAD */
/* 446 */ 0x5b, /* FC_END */
0x1a, /*
FC_BOGUS_STRUCT */
/* 448 */ NdrFcShort( 0x10 ), /* 16 */
/* 450 */ NdrFcShort( 0x0 ), /* 0 */
/* 452 */ NdrFcShort( 0x6 ), /* Offset= 6 (458) */
/* 454 */ 0x8, /* FC_LONG */
/* 456 */ 0x36, /* FC_POINTER */
/* 458 */ 0x5b, /* FC_END */
/* 460 */ 0x11, 0x0, /* FC_RP */
/* 462 */ NdrFcShort( 0xffffffffdc ), /* Offset= -36 (424) */
/* 464 */ 0x21, /*
FC_BOGUS_ARRAY */
/* 466 */ NdrFcShort( 0x0 ), /* 0 */
/* 468 */ 0x19, /* Corr desc: field pointer, FC_ULONG */
/* 470 */ 0x0, /* */
/* 472 */ NdrFcShort( 0x0 ), /* 0 */
/* 474 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 476 */ NdrFcLong( 0xffffffff ), /* -1 */
/* 478 */ NdrFcShort( 0x0 ), /* Corr flags: */
/* 480 */ 0x4c, /* FC_EMBEDDED_COMPLEX */
/* 482 */ 0x0, /* 0 */
/* 484 */ NdrFcShort( 0xffffffff58 ), /* Offset= -168 (312) */
/* 486 */ 0x5c, /* FC_PAD */
/* 488 */ 0x5b, /* FC_END */
0x1a, /*
FC_BOGUS_STRUCT */
/* 490 */ NdrFcShort( 0x10 ), /* 16 */
/* 492 */ NdrFcShort( 0x0 ), /* 0 */
/* 494 */ NdrFcShort( 0x6 ), /* Offset= 6 (496) */
/* 496 */ 0x8, /* FC_LONG */
/* 498 */ 0x36, /* FC_POINTER */
/* 500 */ 0x5b, /* FC_END */
/* 502 */ 0x11, 0x0, /* FC_RP */
/* 504 */ NdrFcShort( 0xffffffffdc ), /* Offset= -36 (462) */
/* 506 */ 0x21, /*
FC_BOGUS_ARRAY */
/* 508 */ NdrFcShort( 0x0 ), /* 0 */
/* 510 */ 0x19, /* Corr desc: field pointer, FC_ULONG */
/* 512 */ 0x0, /* */
/* 514 */ NdrFcShort( 0x0 ), /* 0 */
/* 516 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 518 */ NdrFcLong( 0xffffffff ), /* -1 */
/* 520 */ NdrFcShort( 0x0 ), /* Corr flags: */
/* 522 */ 0x4c, /* FC_EMBEDDED_COMPLEX */
/* 524 */ 0x0, /* 0 */
/* 526 */ NdrFcShort( 0xffffffff44 ), /* Offset= -188 (330) */
/* 528 */ 0x5c, /* FC_PAD */
/* 530 */ 0x5b, /* FC_END */
0x1a, /*
FC_BOGUS_STRUCT */
/* 532 */ NdrFcShort( 0x10 ), /* 16 */
/* 534 */ NdrFcShort( 0x0 ), /* 0 */
/* 536 */ NdrFcShort( 0x6 ), /* Offset= 6 (534) */
/* 538 */ 0x8, /* FC_LONG */
/* 540 */ 0x36, /* FC_POINTER */
/* 542 */ 0x5b, /* FC_END */
/* 544 */ 0x11, 0x0, /* FC_RP */

```

```

/* 536 */ NdrFcShort( 0xfffffde ), /* Offset= -36 (500) */
/* 538 */
FC_BOGUS_ARRAY */
0x21, /*
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( 0xfffffde ), /* 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( 0xfffffd6 ), /* Offset= -42 (576) */
/* 620 */ 0x39, /* FC_ALIGNM8 */
0x36, /* FC_POINTER */
/* 622 */ 0x5c, /* FC_PAD */
0x5b, /* FC_END */
/* 624 */
0x12, 0x0, /* FC_UP */
/* 626 */ NdrFcShort( 0xfffffe0 ), /* 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( 0xfffffd8 ), /* 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( 0xfffffde ), /* 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( 0xfffff1 ), /* 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 */
-25 (672) */ NdrFcShort( 0xffffffe7 ), /* Offset=
0x5b, /* FC_END */
/* 700 */ 0x11, 0x0, /* FC_RP */
/* 702 */ NdrFcShort( 0xfffff10 ), /* 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( 0xfffffe6 ), /* 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( 0xfffffe6 ), /* 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( 0xfffffe6 ), /* 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( 0xfffffe6 ), /* 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( 0xfffffec ), /* Offset= -20 (816) */
/* 838 */ 0x5c, /* FC_PAD */
0x5b, /* FC_END */
/* 840 */ 0x1a, /*
FC_BOGUS_STRUCT */
0x3, /* 3 */
/* 842 */ NdrFcShort( 0x38 ), /* 56 */
/* 844 */ NdrFcShort( 0xfffffec ), /* 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( 0xfffff02 ), /* Offset= -254 (606) */
/* 862 */
0x12, 0x8, /* FC_UP [simple_pointer] */
/* FC_BYTE */
/* 864 */ 0x1,
0x5c, /* FC_PAD */
/* 866 */
0x12, 0x8, /* FC_UP [simple_pointer] */
/* FC_SHORT */
/* 868 */ 0x6,
0x5c, /* FC_PAD */
/* 870 */
0x12, 0x8, /* FC_UP [simple_pointer] */
/* FC_LONG */
/* 872 */ 0x8,
0x5c, /* FC_PAD */
/* 874 */
0x12, 0x8, /* FC_UP [simple_pointer] */
/* FC_FLOAT */
/* 876 */ 0xa,
0x5c, /* FC_PAD */
/* 878 */
0x12, 0x8, /* FC_UP [simple_pointer] */
/* FC_DOUBLE */
/* 880 */ 0xc,
0x5c, /* FC_PAD */
/* 882 */
0x12, 0x0, /* FC_UP */
/* 884 */ NdrFcShort( 0xffffda4 ), /* Offset= -604 (280) */
/* 886 */
0x12, 0x10, /* FC_UP
[pointer_deref] */
/* 888 */ NdrFcShort( 0xffffda6 ), /* Offset= -602 (286) */
/* 890 */
0x12, 0x10, /* FC_UP
[pointer_deref] */
/* 892 */ NdrFcShort( 0xffffdbc ), /* Offset= -580 (312) */
/* 894 */
0x12, 0x10, /* FC_UP
[pointer_deref] */
/* 896 */ NdrFcShort( 0xffffdca ), /* Offset= -566 (330) */
/* 898 */
0x12, 0x10, /* FC_UP
[pointer_deref] */
/* 900 */ NdrFcShort( 0xffffdd8 ), /* 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( 0xfffff2 ), /* Offset= -14 (910) */
/* 926 */
0x12, 0x8, /* FC_UP [simple_pointer] */
/* FC_CHAR */
/* 928 */ 0x2,
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( 0xffffc44 ), /* Offset= -956 (2) */
/* 960 */
0x11, 0x4, /* FC_RP [allocated_on_stack] */
/* 962 */ NdrFcShort( 0x6 ), /* Offset= 6 (968) */
/* 964 */
0x13, 0x0, /* FC_OP */
/* 966 */ NdrFcShort( 0xfffffdc ), /* Offset= -36 (930) */
/* 968 */ 0xb4, /* FC_USER_MARSHAL */
0x83, /* 131 */
/* 970 */ NdrFcShort( 0x0 ), /* 0 */
/* 972 */ NdrFcShort( 0x18 ), /* 24 */
/* 974 */ NdrFcShort( 0x0 ), /* 0 */
/* 976 */ NdrFcShort( 0xffffff4 ), /* 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 WINAPI 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_erno == 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           INativeError;
    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, &INativeError,
                                (BYTE *)&szMsg,
sizeof(szMsg), NULL);
        if (rc == SQL_NO_DATA)
            break;

        // check for deadlock
        if (INativeError == 1205 || (INativeError ==
iErrOleDbProvider &&
                                strstr(szMsg, sErrTimeoutExpired) != NULL))

```

```

        pODBCErr->m_bDeadLock = TRUE;

        // capture the (first) database error
        if (pODBCErr->m_NativeError == 0 && !INativeError !=
0)
            pODBCErr->m_NativeError = INativeError;

        // 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
    RETCODE
    int
    i;
    rc;
    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;
    wcsncpy( &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_hdcbc,
&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.
#ifdef DllDecl
#define DllDecl __declspec( dllimport )
#endif

class CODBCERR : public CBaseErr
{
public:
    enum ACTION
    {
        eNone,
        eUnknown,
        eAllocConn,
        error from SQLAllocConnect
        eAllocHandle, // error from
        SQLAllocHandle
    }
};

```

```

SQLSetConnectOption eConnOption, // error from
SQLConnect eConnect, // error from
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_erno = iErr;
m_iTryCount = 0; };

        CTPCC_ODBC_ERR( int iErr, int iTryCount ) {
m_erno = iErr; m_iTryCount = iTryCount; };

        int          m_erno;
        int          m_iTryCount;

        int ErrorType() {return ERR_TYPE_TPCC_ODBC;};
        int ErrorNum() {return m_erno;};

        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
    SQLINTEGER      m_BindOffset;
    SQLINTEGER      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 dlib, 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 /*
*/ month;
    unsigned short /*
*/ day;
    unsigned short /*
*/ hour;
    unsigned short /*
*/ minute;
    unsigned short /*
*/ second;
    unsigned long  /*
fraction;
} TIMESTAMP_STRUCT;
#endif

// possible values for exec_status_code after transaction completes
enum EXEC_STATUS
{
    eOK,          // 0      "Transaction
committed."
    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.
#ifdef 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 iFilePointer;
//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 iSavePtFilePointer;
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 **

# TARGETTYPE "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 "WebcInt.mak" CFG="webcInt - Win32 Release"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "webcInt - Win32 Release" (based on "Win32 (x86) Application")
!MESSAGE "webcInt - 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)" == "webcInt - 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 /I 0x409 /d "NDEBUG"
# ADD RSC /I 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 odbccp32.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 odbccp32.lib
/nologo /subsystem:windows /machine:I386

```

```

!ELSEIF "$(CFG)" == "webcInt - 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 /I 0x409 /d "_DEBUG"

```

```

# ADD RSC /I 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 odbccp32.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 odbccp32.lib
/nologo /subsystem:windows /debug /machine:I386

```

```

!ENDIF

```

```

# Begin Target

```

```

# Name "webcInt - Win32 Release"
# Name "webcInt - 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,

```

```

@s_w_id11 int = 0, @ol_qty11 smallint = 0,
@s_w_id12 int = 0, @ol_qty12 smallint = 0,
@s_w_id13 int = 0, @ol_qty13 smallint = 0,
@s_w_id14 int = 0, @ol_qty14 smallint = 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 available 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

```

```
@i_id11 int = 0,
```

```
@i_id12 int = 0,
```

```
@i_id13 int = 0,
```

```
@i_id14 int = 0,
```

```
@i_id15 int = 0,
```

```

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 - @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

```

```

s_dist_01          when 1 then
s_dist_02          when 2 then
s_dist_03          when 3 then
s_dist_04          when 4 then
s_dist_05          when 5 then
s_dist_06          when 6 then
s_dist_07          when 7 then
s_dist_08          when 8 then
s_dist_09          when 9 then
s_dist_10          when 10 then
                    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
                rollback transaction n

-- all that work for nuthin!!!

-- 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 (repeatable read)
                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 (repeatable read)
                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 uplock)
        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,

where @c_id = o_c_id
      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

-- accumulate 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 tpc
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,
                           @threshold 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 < @threshold

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 tpc
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                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc2,
    FILENAME             = 'C:\mp\m2\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc3,
    FILENAME             = 'C:\mp\m3\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc4,
    FILENAME             = 'C:\mp\m4\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc5,
    FILENAME             = 'C:\mp\m5\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc6,
```

```
FILENAME             = 'C:\mp\m6\',
SIZE                 = 15000MB,
FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc7,
    FILENAME             = 'C:\mp\m7\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc8,
    FILENAME             = 'C:\mp\m8\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc9,
    FILENAME             = 'C:\mp\m9\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc10,
    FILENAME             = 'C:\mp\m10\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc11,
    FILENAME             = 'C:\mp\m11\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc12,
    FILENAME             = 'C:\mp\m12\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc13,
    FILENAME             = 'C:\mp\m13\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc14,
    FILENAME             = 'C:\mp\m14\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc15,
    FILENAME             = 'C:\mp\m15\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc16,
    FILENAME             = 'C:\mp\m16\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc17,
    FILENAME             = 'C:\mp\m17\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc18,
    FILENAME             = 'C:\mp\m18\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc19,
    FILENAME             = 'C:\mp\m19\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc20,
    FILENAME             = 'C:\mp\m20\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc21,
    FILENAME             = 'C:\mp\m21\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc22,
    FILENAME             = 'C:\mp\m22\',
    SIZE                 = 15000MB,
    FILEGROWTH           = 0),
(
    NAME                = MSSQL_misc23,
```

```

        FILENAME      = 'C:\mp\m23\',
        SIZE          = 15000MB,
        FILEGROWTH    = 0),
(
    NAME            = MSSQL_misc24,
    FILENAME        = 'C:\mp\m24\',
    SIZE            = 15000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_misc25,
    FILENAME        = 'C:\mp\m25\',
    SIZE            = 15000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_misc26,
    FILENAME        = 'C:\mp\m26\',
    SIZE            = 15000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_misc27,
    FILENAME        = 'C:\mp\m27\',
    SIZE            = 15000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_misc28,
    FILENAME        = 'C:\mp\m28\',
    SIZE            = 15000MB,
    FILEGROWTH      = 0),
FILEGROUP          MSSQL_cs_fg
(
    NAME            = MSSQL_cs1,
    FILENAME        = 'c:\mp\c1\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs2,
    FILENAME        = 'c:\mp\c2\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs3,
    FILENAME        = 'c:\mp\c3\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs4,
    FILENAME        = 'c:\mp\c4\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs5,
    FILENAME        = 'c:\mp\c5\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs6,
    FILENAME        = 'c:\mp\c6\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs7,
    FILENAME        = 'c:\mp\c7\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs8,
    FILENAME        = 'c:\mp\c8\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs9,
    FILENAME        = 'c:\mp\c9\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs10,
    FILENAME        = 'c:\mp\c10\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs11,
    FILENAME        = 'c:\mp\c11\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs12,
    FILENAME        = 'c:\mp\c12\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs13,
    FILENAME        = 'c:\mp\c13\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs14,
    FILENAME        = 'c:\mp\c14\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs15,
    FILENAME        = 'c:\mp\c15\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs16,
    FILENAME        = 'c:\mp\c16\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs17,
    FILENAME        = 'c:\mp\c17\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs18,
    FILENAME        = 'c:\mp\c18\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs19,
    FILENAME        = 'c:\mp\c19\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs20,
    FILENAME        = 'c:\mp\c20\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs21,
    FILENAME        = 'c:\mp\c21\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs22,
    FILENAME        = 'c:\mp\c22\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs23,
    FILENAME        = 'c:\mp\c23\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs24,
    FILENAME        = 'c:\mp\c24\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs25,
    FILENAME        = 'c:\mp\c25\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs26,
    FILENAME        = 'c:\mp\c26\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs27,
    FILENAME        = 'c:\mp\c27\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),
(
    NAME            = MSSQL_cs28,
    FILENAME        = 'c:\mp\c28\',
    SIZE            = 26000MB,
    FILEGROWTH      = 0),

```

```

        FILEGROWTH      = 0)
LOG ON
(
    NAME                = MSSQL_tpcc_log,
    FILENAME            = 'E:',
    SIZE                = 342000MB,
    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
```

### ***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 tpc
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 tpc
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 tpc
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 tpc
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 tpc
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 through */
            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':

```

<pre> atol(ptr+2); case 's': atol(ptr+2); case 't': FALSE; == 0) pargs-&gt;table_item = TRUE; (strcmp(ptr+2, "warehouse") == 0) pargs-&gt;table_warehouse = TRUE; (strcmp(ptr+2, "customer") == 0) pargs-&gt;table_customer = TRUE; (strcmp(ptr+2, "orders") == 0) pargs-&gt;table_orders = TRUE; command"); case 'f': pargs-&gt;loader_res_file = ptr+2; break; case 'L': pargs-&gt;log_path = ptr+2; break; case 'p': pargs-&gt;pack_size = atol(ptr+2); break; case 'i': pargs-&gt;build_index = atol(ptr+2); break; case 'o': pargs-&gt;index_order = atol(ptr+2); break; case 'c': pargs-&gt;scale_down = atol(ptr+2); break; case 'd': pargs-&gt;index_script_path = ptr+2; break; </pre>	<pre> pargs-&gt;num_warehouses = break; pargs-&gt;starting_warehouse = break; { pargs-&gt;tables_all = if (strcmp(ptr+2, "item") else if else if else if else { printf("\nUnrecognized GetArgsLoaderUsage(); exit(1); } break; } pargs-&gt;loader_res_file = ptr+2; break; pargs-&gt;log_path = ptr+2; break; pargs-&gt;pack_size = atol(ptr+2); break; pargs-&gt;build_index = atol(ptr+2); break; pargs-&gt;index_order = atol(ptr+2); break; pargs-&gt;scale_down = atol(ptr+2); break; pargs-&gt;index_script_path = ptr+2; break; </pre>	<pre> default: GetArgsLoaderUsage(); exit(-1); break; } } /* check for required args */ if (pargs-&gt;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) DEFLDPPACKSIZE); 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"); </pre>
---	---	--

```

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("[%d]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("[%d]DBG: RandomNumber between %ld & %ld ==> %ld\n",
(int) GetCurrentThreadId(), lower,
upper, rand_num);
#endif

    return rand_num;
}

#if 0
//Original code pgd 08/13/96

long RandomNumber(long lower,
long upper)
{
    long rand_num;

#ifdef DEBUG
    printf("[%d]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("[%d]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("[%d]DBG: Entering NURand()...\n", (int) GetCurrentThreadId());
#endif

    rand_num = (((RandomNumber(0,iConst) | RandomNumber(x,y)) + C) %
(y-x+1))+x;

#ifdef DEBUG
    printf("[%d]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("[%d]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("[%d]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("[%d]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 <%d> out of range
    (0,999)\n", num);
        exit(-1);
    }

#ifdef DEBUG
    printf("[%d]DBG: LastName: num = [%d] ==> [%d][%d][%d]\n",
           (int) GetCurrentThreadId(), num, num/100,
    (num/10)%10, num%10);
    printf("[%d]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[] =
    "0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz";
    static int chArrayMax = 61;

#ifdef DEBUG
    printf("[%d]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 percentage is valid
if ((percent < 0) || (percent > 100))
{
printf("MakeOriginalAlphaString: 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;
} TPCCDR_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:                TPCCDR.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
} 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;

TPCCCLR_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,
(LPPTHREAD_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,
(LPPTHREAD_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        bcpint[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("idxitm1");
    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(bcpint, "tablock, order (i_id),
ROWS_PER_BATCH = 100000");
        rc = bcp_control(i_hdbc1, BCPHINTS, (void*) bcpint);
    }
}

```

```

        if (rc != SUCCEEDED)
            HandleErrorDBC(i_hdbc1);
    }

    rc = bcp_bind(i_hdbc1, (BYTE *) &i_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 1);
    if (rc != SUCCEEDED)
        HandleErrorDBC(i_hdbc1);

    rc = bcp_bind(i_hdbc1, (BYTE *) &i_im_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, 2);
    if (rc != SUCCEEDED)
        HandleErrorDBC(i_hdbc1);

    rc = bcp_bind(i_hdbc1, (BYTE *) i_name, 0, I_NAME_LEN,
NULL, 0, 0, 3);
    if (rc != SUCCEEDED)
        HandleErrorDBC(i_hdbc1);

    rc = bcp_bind(i_hdbc1, (BYTE *) &i_price, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 4);
    if (rc != SUCCEEDED)
        HandleErrorDBC(i_hdbc1);

    rc = bcp_bind(i_hdbc1, (BYTE *) i_data, 0, I_DATA_LEN, NULL,
0, 0, 5);
    if (rc != SUCCEEDED)
        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 != SUCCEEDED)
            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("idxwarc1");

    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 != SUCCEEDED)
        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 != SUCCEEDED)
            HandleErrorDBC(w_hdbc1);
    }

    rc = bcp_bind(w_hdbc1, (BYTE *) &w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 1);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
}

```

```

        rc = bcp_bind(w_hdbc1, (BYTE *) w_name, 0, W_NAME_LEN,
NULL, 0, 0, 2);
        if (rc != SUCCEEDED)
            HandleErrorDBC(w_hdbc1);

        rc = bcp_bind(w_hdbc1, (BYTE *) w_street_1, 0, ADDRESS_LEN,
NULL, 0, 0, 3);
        if (rc != SUCCEEDED)
            HandleErrorDBC(w_hdbc1);

        rc = bcp_bind(w_hdbc1, (BYTE *) w_street_2, 0, ADDRESS_LEN,
NULL, 0, 0, 4);
        if (rc != SUCCEEDED)
            HandleErrorDBC(w_hdbc1);

        rc = bcp_bind(w_hdbc1, (BYTE *) w_city, 0, ADDRESS_LEN,
NULL, 0, 0, 5);
        if (rc != SUCCEEDED)
            HandleErrorDBC(w_hdbc1);

        rc = bcp_bind(w_hdbc1, (BYTE *) w_state, 0, STATE_LEN,
NULL, 0, 0, 6);
        if (rc != SUCCEEDED)
            HandleErrorDBC(w_hdbc1);

        rc = bcp_bind(w_hdbc1, (BYTE *) w_zip, 0, ZIP_LEN, NULL, 0, 0,
7);
        if (rc != SUCCEEDED)
            HandleErrorDBC(w_hdbc1);

        rc = bcp_bind(w_hdbc1, (BYTE *) &w_tax, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 8);
        if (rc != SUCCEEDED)
            HandleErrorDBC(w_hdbc1);

        rc = bcp_bind(w_hdbc1, (BYTE *) &w_ytd, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 9);
        if (rc != SUCCEEDED)
            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 != SUCCEEDED)
                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("idxwarc1");

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("idxdiscl1");

    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 != SUCCEEDED)
        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 != SUCCEEDED)
            HandleErrorDBC(w_hdbc1);
    }

    rc = bcp_bind(w_hdbc1, (BYTE *) &d_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 1);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) &d_w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 2);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) d_name, 0, D_NAME_LEN,
NULL, 0, 0, 3);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) d_street_1, 0, ADDRESS_LEN,
NULL, 0, 0, 4);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) d_street_2, 0, ADDRESS_LEN,
NULL, 0, 0, 5);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) d_city, 0, ADDRESS_LEN,
NULL, 0, 0, 6);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) d_state, 0, STATE_LEN, NULL,
0, 0, 7);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) d_zip, 0, ZIP_LEN, NULL, 0, 0,
8);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) &d_tax, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 9);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) &d_ytd, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 10);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) &d_next_o_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, 11);
    if (rc != SUCCEEDED)
        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 != SUCCEEDED)
                    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 bcp hint[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 != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

if ((aptr->build_index == 1) && (aptr->index_order == 1))
{
    sprintf(bcp hint, "tablock, order (s_i_id, s_w_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 100000));
    rc = bcp_control(w_hdbc1, BCPHINTS, (void*)
bcp hint);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
}

rc = bcp_bind(w_hdbc1, (BYTE *) &s_i_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, 1);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) &s_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 2);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) &s_quantity, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 3);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_01, 0, S_DIST_LEN,
NULL, 0, 0, 4);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_02, 0, S_DIST_LEN,
NULL, 0, 0, 5);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_03, 0, S_DIST_LEN,
NULL, 0, 0, 6);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_04, 0, S_DIST_LEN,
NULL, 0, 0, 7);
if (rc != SUCCEEDED)

```

```

    HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_05, 0, S_DIST_LEN,
NULL, 0, 0, 8);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_06, 0, S_DIST_LEN,
NULL, 0, 0, 9);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_07, 0, S_DIST_LEN,
NULL, 0, 0, 10);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_08, 0, S_DIST_LEN,
NULL, 0, 0, 11);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_09, 0, S_DIST_LEN,
NULL, 0, 0, 12);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_10, 0, S_DIST_LEN,
NULL, 0, 0, 13);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) &s_ytd, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, 14);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) &s_order_cnt, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 15);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) &s_remote_cnt, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 16);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) s_data, 0, S_DATA_LEN,
NULL, 0, 0, 17);
    if (rc != SUCCEEDED)
        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);

```

```

s_dist_01);
s_dist_02);
s_dist_03);
s_dist_04);
s_dist_05);
s_dist_06);
s_dist_07);
s_dist_08);
s_dist_09);
s_dist_10);

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("idxhisc1");
}

// 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 != SUCCEEDED)
    HandleErrorDBC(c_hdbc2);

sprintf(bcphint, "tablock");
rc = bcp_control(c_hdbc2, BCPHINTS, (void*) bcphint);
if (rc != SUCCEEDED)
    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
        //      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,"");

```

problem.

```

    }
}

//=====
//
// 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
            // c_balance = customer_buf[i].c_balance;
            strcpy(c_balance, customer_buf[i].c_balance);

```

problem.

```

        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 != SUCCEEDED)
    HandleErrorDBC(c_hdbc2);

rc = bcp_bind(c_hdbc2, (BYTE *) h_data, 0, H_DATA_LEN, NULL, 0, 0,
8);
if (rc != SUCCEEDED)
    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 != SUCCEEDED)
        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("idxodcl");
}

// 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 != SUCCEEDED)
    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 != SUCCEEDED)
        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 != SUCCEEDED)
    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 != SUCCEEDED)
        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 != SUCCEEDED)
    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 != SUCCEEDED)
        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 OrdersBufNnit()
{
    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 != SUCCEEDED)
    HandleErrorDBC(o_hdbc1);

rc = bcp_bind(o_hdbc1, (BYTE *) &o_d_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 2);
if (rc != SUCCEEDED)
    HandleErrorDBC(o_hdbc1);

rc = bcp_bind(o_hdbc1, (BYTE *) &o_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 3);
if (rc != SUCCEEDED)
    HandleErrorDBC(o_hdbc1);

rc = bcp_bind(o_hdbc1, (BYTE *) &o_c_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 4);
if (rc != SUCCEEDED)
    HandleErrorDBC(o_hdbc1);

rc = bcp_bind(o_hdbc1, (BYTE *) &o_entry_d, 0,
O_ENTRY_D_LEN, NULL, 0, SQLCHARACTER, 5);
if (rc != SUCCEEDED)
    HandleErrorDBC(o_hdbc1);

rc = bcp_bind(o_hdbc1, (BYTE *) &o_carrier_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 6);
if (rc != SUCCEEDED)
    HandleErrorDBC(o_hdbc1);

rc = bcp_bind(o_hdbc1, (BYTE *) &o_ol_cnt, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 7);
if (rc != SUCCEEDED)
    HandleErrorDBC(o_hdbc1);

rc = bcp_bind(o_hdbc1, (BYTE *) &o_all_local, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 8);
if (rc != SUCCEEDED)
    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 != SUCCEEDED)
        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 == apr->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 ((apr->build_index == 1) && (apr->index_order ==
0))
            BuildIndex("idxordel");

        // build non-clustered index
        if (apr->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 != SUCCEEDED)
        HandleErrorDBC(o_hdbc2);

    rc = bcp_bind(o_hdbc2, (BYTE *) &o_d_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 2);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc2);

    rc = bcp_bind(o_hdbc2, (BYTE *) &o_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 3);
    if (rc != SUCCEEDED)
        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 != SUCCEEDED)
    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 == apr->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 ((apr->build_index == 1) && (apr->index_order ==
0))
        BuildIndex("idxnode1");
}
}

//=====
//
// Function : LoadOrderLineTable
//
//=====

void LoadOrderLineTable(LOADER_TIME_STRUCT *order_line_time_start)
{
    int    ij;
    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 != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &o_d_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 2);

    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &o_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 3);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &ol, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT4, 4);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_i_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 5);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_supply_w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 6);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_delivery_d, 0,
OL_DELIVERY_D_LEN, NULL, 0, SQLCHARACTER, 7);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_quantity, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 8);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_amount, 0, SQL_VARLEN_DATA,
NULL, 0, SQLFLT8, 9);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) ol_dist_info, 0, DIST_INFO_LEN,
NULL, 0, 0, 10);
    if (rc != SUCCEEDED)
        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 != SUCCEEDED)
                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);

```

```

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->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->password,

aptr->database );

    rc = SQLSetConnectOption ( o_hdbc2, SQL_PACKET_SIZE,
aptr->pack_size);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc2);

```

aptr->user,

aptr->user,

```

    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->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];

```

aptr->user,

```

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_INTEGER );
    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] = 'u')
            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;

// iterate 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 **

# TARGETTYPE "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"$(INTDIR)"/ /c
CPP_OBJS=.objects/
CPP_SBRS=. \
# ADD BASE RSC /I 0x409 /d "NDEBUG"
# ADD RSC /I 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
BSC32_FLAGS=/nologo /o"$(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 odbcc32.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 odbcc32.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 odbcc32.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 /I 0x409 /d "_DEBUG"
# ADD RSC /I 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 odbcc32.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 odbcc32.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 odbcc32.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 23 2004  2:31:38:380PM

(1 row affected)

1> 2> 3>
select @@version

-----
-----
Microsoft SQL Server 2000 - 8.00.883 (Intel X86)
Nov 19 2003 09:33:09
Cop
yright (c) 1988-2003 Microsoft Corporation
Enterprise Edition on Windo
ws NT 5.2 (Build 3790: )

(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 23 2004  2:31:40:257PM

(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
65535      65535

```

allow updates	0	1	0
awe enabled	0	1	1
c2 audit mode	0	1	0
cost threshold for parallelism	0	32767	
Cross DB Ownership Chaining	0	1	
cursor threshold	-1	2147483647	
default full-text language	0	2147483647	
default language	0	9999	0
fill factor (%)	0	100	0
index create memory (KB)	704	2147483647	
lightweight pooling	0	1	1
locks	5000	2147483647	0
max degree of parallelism	0	32	1
max server memory (MB)	4	2147483647	
max text repl size (B)	0	2147483647	
max worker threads	32	32767	
media retention	0	365	0
min memory per query (KB)	512	2147483647	
min server memory (MB)	0	2147483647	
nested triggers	0	1	1
network packet size (B)	512	65536	
open objects	0	2147483647	0
priority boost	0	1	1
query governor cost limit	0	2147483647	
query wait (s)	-1	2147483647	-1
recovery interval (min)	0	32767	
remote access	0	1	1
remote login timeout (s)	0	2147483647	
remote proc trans	0	1	0
remote query timeout (s)	0	2147483647	
scan for startup procs	0	1	0
set working set size	0	1	0
show advanced options	0	1	1
two digit year cutoff	1753	9999	

```

user connections          0  32767  0
0
user options             0  32767  0
0

```

I>

## Microsoft Windows Server 2003 Datacenter Edition

### Changes to the SUT

Changes made to the default installation of Windows Server 2003 Datacenter Edition on the SUT

All services were left in their default setup, except the following services were disabled:

- Auto Update
- Computer Browser
- Error Reporting

Control Panel - System - Advanced - Performance Options - Visual Effects - Adjust for best performance

Then turn on "show windows contents while dragging"

c:\boot.ini added /PAE and /HAL=hal\_141D.dll (x445 HAL)

Installed pre-SP1 hotfix from Microsoft, KB834628, to address a data corruption problem with Windows Server 2003 when systems have greater than 4GB of memory and are running with PAE. Essentially the fix is a new PAE kernel.

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 time and 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

Key Name:  
 HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\Session  
 Manager\Memory Management  
 Class Name: <NO CLASS>  
 Last Write Time: 8/8/2003 - 9:44 AM

Value 0  
 Name: ClearPageFileAtShutdown  
 Type: REG\_DWORD  
 Data: 0

Value 1  
 Name: DisablePagingExecutive  
 Type: REG\_DWORD  
 Data: 0x1

Value 2  
 Name: LargeSystemCache  
 Type: REG\_DWORD  
 Data: 0

Value 3  
 Name: NonPagedPoolQuota  
 Type: REG\_DWORD  
 Data: 0

Value 4  
 Name: NonPagedPoolSize  
 Type: REG\_DWORD  
 Data: 0

Value 5  
 Name: PagedPoolQuota  
 Type: REG\_DWORD  
 Data: 0

Value 6  
 Name: PagedPoolSize  
 Type: REG\_DWORD  
 Data: 0

Value 7  
 Name: SecondLevelDataCache  
 Type: REG\_DWORD  
 Data: 0

Value 8  
 Name: SystemPages  
 Type: REG\_DWORD  
 Data: 0

Value 9  
 Name: PagingFiles  
 Type: REG\_MULTI\_SZ  
 Data: c:\pagefile.sys 2048 12288

Value 10  
 Name: PhysicalAddressExtension  
 Type: REG\_DWORD  
 Data: 0x1

Value 11  
 Name: WriteWatch  
 Type: REG\_DWORD  
 Data: 0x1

Value 12  
 Name: SessionViewSize  
 Type: REG\_DWORD  
 Data: 0x30

Value 13  
 Name: SessionPoolSize  
 Type: REG\_DWORD  
 Data: 0x4

Value 14  
 Name: DontVerifyRandomDrivers  
 Type: REG\_DWORD  
 Data: 0x1

Key Name:  
 HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\Session  
 Manager\Memory Management\PrefetchParameters  
 Class Name: <NO CLASS>  
 Last Write Time: 2/20/2004 - 12:01 PM

Value 0  
 Name: VideoInitTime  
 Type: REG\_DWORD  
 Data: 0x148

Value 1  
 Name: AppLaunchMaxNumPages  
 Type: REG\_DWORD



Data: 0xfa0  
Value 2  
Name: AppLaunchMaxNumSections  
Type: REG\_DWORD  
Data: 0xaa  
Value 3  
Name: AppLaunchTimerPeriod  
Type: REG\_BINARY  
Data: 80 69 67 ff ff ff ff ff - .igÿÿÿÿÿÿ  
Value 4  
Name: BootMaxNumPages  
Type: REG\_DWORD  
Data: 0x1f400  
Value 5  
Name: BootMaxNumSections  
Type: REG\_DWORD  
Data: 0xff0  
Value 6  
Name: BootTimerPeriod  
Type: REG\_BINARY  
Data: 00 f2 d8 f8 ff ff ff ff - .ò0ÿÿÿÿÿÿ  
Value 7  
Name: MaxNumActiveTraces  
Type: REG\_DWORD  
Data: 0x8  
Value 8  
Name: MaxNumSavedTraces  
Type: REG\_DWORD  
Data: 0x8  
Value 9  
Name: RootDirPath  
Type: REG\_SZ  
Data: Prefetch  
Value 10  
Name: HostingAppList  
Type: REG\_SZ  
Data: DLLHOST.EXE,MMC.EXE,RUNDLL32.EXE  
Value 11  
Name: EnablePrefetcher  
Type: REG\_DWORD  
Data: 0x2  
Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\Session  
Manager\I/O System  
Class Name: <NO CLASS>  
Last Write Time: 3/12/2003 - 5:31 PM  
Value 0  
Name: CountOperations  
Type: REG\_DWORD  
Data: 0  
Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika  
Class Name: <NO CLASS>  
Last Write Time: 2/20/2004 - 4:58 PM  
Value 0  
Name: ImagePath  
Type: REG\_EXPAND\_SZ  
Data: system32\DRIVERS\qlvika.sys  
Value 1  
Name: Tag  
Type: REG\_DWORD  
Data: 0x1  
Value 2  
Name: group  
Type: REG\_SZ  
Data: MVIA

Value 3  
Name: Type  
Type: REG\_DWORD  
Data: 0x1  
Value 4  
Name: Start  
Type: REG\_DWORD  
Data: 0x2  
Value 5  
Name: ErrorControl  
Type: REG\_DWORD  
Data: 0x1  
Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Ada  
pters  
Class Name: <NO CLASS>  
Last Write Time: 2/4/2004 - 2:56 PM  
Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Ada  
pters\210000E08B0711B0  
Class Name: <NO CLASS>  
Last Write Time: 2/9/2004 - 10:23 AM  
Value 0  
Name: IPAddress  
Type: REG\_MULTI\_SZ  
Data: 192.168.230.1  
Value 1  
Name: VIDeviceNumber  
Type: REG\_DWORD  
Data: 0x1  
Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Ada  
pters\210000E08B09A45A  
Class Name: <NO CLASS>  
Last Write Time: 2/4/2004 - 2:52 PM  
Value 0  
Name: IPAddress  
Type: REG\_MULTI\_SZ  
Data: 192.168.120.1  
Value 1  
Name: VIDeviceNumber  
Type: REG\_DWORD  
Data: 0  
Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Para  
meters  
Class Name: <NO CLASS>  
Last Write Time: 2/4/2004 - 2:56 PM  
Value 0  
Name: MaxRegisterMBytes  
Type: REG\_DWORD  
Data: 0x200  
Value 1  
Name: MaxRegisterRdmaMBytes  
Type: REG\_DWORD  
Data: 0x200  
Value 2  
Name: MaxCQEntries  
Type: REG\_DWORD  
Data: 0x2000  
Value 3  
Name: MaxRegisterRegions  
Type: REG\_DWORD  
Data: 0x1000  
Value 4  
Name: MaxVIs  
Type: REG\_DWORD  
Data: 0x400

Value 5  
 Name: MaxCQs  
 Type: REG\_DWORD  
 Data: 0x400

Value 6  
 Name: MaxTransferSize  
 Type: REG\_DWORD  
 Data: 0x10000

Value 7  
 Name: MaxPTags  
 Type: REG\_DWORD  
 Data: 0x800

Value 8  
 Name: IuBuffers  
 Type: REG\_DWORD  
 Data: 0x100

Value 9  
 Name: SendDescQuota  
 Type: REG\_DWORD  
 Data: 0x8

Value 10  
 Name: RecvDescQuota  
 Type: REG\_DWORD  
 Data: 0x8

Value 11  
 Name: SupportPrototypeCards  
 Type: REG\_DWORD  
 Data: 0x1

Value 12  
 Name: HostFile  
 Type: REG\_MULTI\_SZ  
 Data: C:\WINDOWS\system32\drivers\etc\vihosts

Key Name:  
 HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Sec  
 urity  
 Class Name: <NO CLASS>  
 Last Write Time: 3/13/2003 - 1:06 PM

Value 0  
 Name: Security  
 Type: REG\_BINARY  
 Data:  
 00000000 01 00 14 80 90 00 00 00 - 9c 00 00 00 14 00 00 00 .....  
 00000010 30 00 00 00 02 00 1c 00 - 01 00 00 00 02 80 14 00 0.....  
 00000020 ff 01 0f 00 01 01 00 00 - 00 00 00 01 00 00 00 00 y.....  
 00000030 02 00 60 00 04 00 00 00 - 00 00 14 00 fd 01 02 00 .`.....ý...  
 00000040 01 01 00 00 00 00 05 05 - 12 00 00 00 00 00 18 00 .....  
 00000050 ff 01 0f 00 01 02 00 00 - 00 00 00 05 20 00 00 00 y.....  
 00000060 20 02 00 00 00 00 14 00 - 8d 01 02 00 01 01 00 00 .....  
 00000070 00 00 00 05 0b 00 00 00 - 00 00 18 00 fd 01 02 00 .....ý...  
 00000080 01 02 00 00 00 00 05 - 20 00 00 00 23 02 00 00 .....#...  
 00000090 01 01 00 00 00 00 05 - 12 00 00 00 01 01 00 00 .....  
 00 00 00 05 12 00 00 00 - .....

Key Name:  
 HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Enu  
 m  
 Class Name: <NO CLASS>  
 Last Write Time: 2/20/2004 - 4:58 PM

Value 0  
 Name: 0  
 Type: REG\_SZ  
 Data: Root\LEGACY\_QLVIKA\0000

Value 1  
 Name: Count  
 Type: REG\_DWORD  
 Data: 0x1

Value 2  
 Name: NextInstance

Type: REG\_DWORD  
 Data: 0x1

## SUT System Information Report

System Information report written at: 02/23/04 14:26:06

System Name: IBMSERV2

[System Summary]

Item Value

OS Name Microsoft(R) Windows(R) Server 2003, Datacenter Edition

Version 5.2.3790 Build 3790

OS Manufacturer Microsoft Corporation

System Name IBMSERV2

System Manufacturer IBM

System Model eserver xSeries 445 -[88704RX]-

System Type X86-based PC

Processor x86 Family 15 Model 2 Stepping 6 GenuineIntel ~3000 Mhz

Processor x86 Family 15 Model 2 Stepping 6 GenuineIntel ~2999 Mhz

Processor x86 Family 15 Model 2 Stepping 6 GenuineIntel ~2999 Mhz

Processor x86 Family 15 Model 2 Stepping 6 GenuineIntel ~2999 Mhz

Processor x86 Family 15 Model 2 Stepping 6 GenuineIntel ~2999 Mhz

Processor x86 Family 15 Model 2 Stepping 6 GenuineIntel ~3000 Mhz

Processor x86 Family 15 Model 2 Stepping 6 GenuineIntel ~3000 Mhz

Processor x86 Family 15 Model 2 Stepping 6 GenuineIntel ~3000 Mhz

Processor x86 Family 15 Model 2 Stepping 6 GenuineIntel ~2999 Mhz

Processor x86 Family 15 Model 2 Stepping 6 GenuineIntel ~2999 Mhz

Processor x86 Family 15 Model 2 Stepping 6 GenuineIntel ~2999 Mhz

Processor x86 Family 15 Model 2 Stepping 6 GenuineIntel ~2999 Mhz

Processor x86 Family 15 Model 2 Stepping 6 GenuineIntel ~3000 Mhz

Processor x86 Family 15 Model 2 Stepping 6 GenuineIntel ~3000 Mhz

Processor x86 Family 15 Model 2 Stepping 6 GenuineIntel ~3000 Mhz

Processor x86 Family 15 Model 2 Stepping 6 GenuineIntel ~3000 Mhz

BIOS Version/Date IBM -[REE136PF1-1.0;]-, 2/9/2004

SMBIOS Version 2.3

Windows Directory C:\WINDOWS

System Directory C:\WINDOWS\system32

Boot Device \Device\HarddiskVolume1

Locale United States

Hardware Abstraction Layer Version = "1.25.0000 built by: (x86chk\_i)"

User Name IBMSERV2\Administrator

Time Zone Eastern Standard Time

Total Physical Memory 65,536.00 MB

Available Physical Memory 62.31 GB

Total Virtual Memory 127.43 GB

Available Virtual Memory 126.62 GB

Page File Space 64.44 GB

Page File C:\pagefile.sys

[Hardware Resources]

[Conflicts/Sharing]

Resource Device

Memory Address 0xF0C00000-0xF0DFFFFFF PCI bus

Memory Address 0xF0C00000-0xF0DFFFFFF PCI standard

PCI-to-PCI bridge

Memory Address 0xF1100000-0xF11FFFFFF PCI bus

Memory Address 0xF1100000-0xF11FFFFFF PCI standard PCI-to-PCI bridge

I/O Port 0x00000000-0x00001FFF PCI bus

I/O Port 0x00000000-0x00001FFF Direct memory access controller

Memory Address 0xF0800000-0xF09FFFFFF PCI bus

Memory Address 0xF0800000-0xF09FFFFFF PCI standard PCI-to-PCI bridge

Memory Address 0xF4000000-0xF5FFFFFF PCI bus

Memory Address 0xF4000000-0xF5FFFFFF FRAGE XL PCI

Memory Address 0xF6200000-0xF63FFFFFF PCI bus

Memory Address 0xF6200000-0xF63FFFFFF PCI standard PCI-to-PCI bridge

I/O Port 0x00002A00-0x00002BFF PCI bus

I/O Port 0x00002A00-0x00002BFF QLogic QLA23xx PCI Fibre

Channel Adapter

I/O Port 0x00002000-0x000027FF PCI bus

I/O Port 0x00002000-0x000027FF	LSI Logic 1020/1030 Ultra320 SCSI Adapter	0x00000092-0x00000092	Motherboard resources	OK
Memory Address 0xF6A00000-0xF6AFFFFF	PCI bus	0x000000A8-0x000000A9	Motherboard resources	OK
Memory Address 0xF6A00000-0xF6AFFFFF	LSI Logic 1020/1030 Ultra320 SCSI Adapter	0x00000440-0x0000044F	Motherboard resources	OK
Memory Address 0xF1000000-0xF10FFFFFFF	PCI bus	0x000004C0-0x000004C3	Motherboard resources	OK
Memory Address 0xF1000000-0xF10FFFFFFF	PCI standard	0x000004D0-0x000004D1	Motherboard resources	OK
Memory Address 0xF6600000-0xF67FFFFFFF	PCI standard PCI-to-PCI bridge	0x000004E0-0x000004FF	Motherboard resources	OK
Memory Address 0xF6600000-0xF67FFFFFFF	PCI standard PCI-to-PCI bridge	0x00000500-0x0000057F	Motherboard resources	OK
Memory Address 0xF0A00000-0xF0BFFFFFFF	PCI bus	0x00000700-0x0000070F	VIA Bus Master IDE Controller	OK
Memory Address 0xF0A00000-0xF0BFFFFFFF	PCI standard	0x000001F0-0x000001F7	Primary IDE Channel	OK
Memory Address 0xF0A00000-0xF0BFFFFFFF	PCI standard	0x000003F6-0x000003F6	Primary IDE Channel	OK
Memory Address 0xF6000000-0xF61FFFFFFF	PCI standard PCI-to-PCI bridge	0x00000170-0x00000177	Secondary IDE Channel	OK
I/O Port 0x00002800-0x000029FF	PCI bus	0x00000376-0x00000376	Secondary IDE Channel	OK
I/O Port 0x00002800-0x000029FF	QLogic QLA23xx PCI Fibre Channel Adapter	0x00001980-0x0000199F	VIA Rev 5 or later USB Universal Host Controller	OK
IRQ 16 IBM (Version 5.24) Remote Supervisor+Serial Port+Mouse/Keyboard		0x000019A0-0x000019BF	VIA Rev 5 or later USB Universal Host Controller	OK
IRQ 16 IBM (Version 5.24) Remote Supervisor + Mouse/Keyboard		0x00002000-0x000027FF	PCI bus	OK
IRQ 16 IBM (Version 5.24) Remote Supervisor Serial Port (COM3)		0x00002000-0x000027FF	LSI Logic 1020/1030 Ultra320 SCSI Adapter	OK
IRQ 18 VIA Rev 5 or later USB Universal Host Controller		0x00002100-0x000021FF	LSI Logic 1020/1030 Ultra320 SCSI Adapter	OK
IRQ 18 VIA Rev 5 or later USB Universal Host Controller		0x00002800-0x000029FF	PCI bus	OK
Memory Address 0xF6400000-0xF65FFFFFFF	PCI bus	0x00002800-0x000029FF	QLogic QLA23xx PCI Fibre Channel Adapter	OK
Memory Address 0xF6400000-0xF65FFFFFFF	PCI standard PCI-to-PCI bridge	0x00002A00-0x00002BFF	PCI bus	OK
Memory Address 0xF5000000-0xF51FFFFFFF	IBM (Version 5.24) Remote Supervisor+Serial Port+Mouse/Keyboard	0x00002A00-0x00002BFF	QLogic QLA23xx PCI Fibre Channel Adapter	OK
Memory Address 0xF5000000-0xF51FFFFFFF	IBM (Version 5.24) Remote Supervisor + Mouse/Keyboard	0x00003000-0x00003FFF	PCI bus	OK
Memory Address 0xA0000-0xA7FFF	PCI bus	[IRQs]		
Memory Address 0xA0000-0xA7FFF	RAGE XL PCI [DMA]	Resource Device Status		
Resource Device Status		IRQ 9 Microsoft ACPI-Compliant System		OK
Channel 2 Standard floppy disk controller	OK	IRQ 39 RAGE XL PCI		OK
Channel 4 Direct memory access controller	OK	IRQ 16 IBM (Version 5.24) Remote Supervisor+Serial Port+Mouse/Keyboard		OK
[Forced Hardware]		IRQ 16 IBM (Version 5.24) Remote Supervisor + Mouse/Keyboard		OK
Device PNP Device ID		IRQ 16 IBM (Version 5.24) Remote Supervisor Serial Port (COM3)		OK
[I/O]		IRQ 1 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard		OK
Resource Device Status		IRQ 12 PS/2 Compatible Mouse		OK
0x00000000-0x00001FFF	PCI bus	IRQ 6 Standard floppy disk controller		OK
0x00000000-0x00001FFF	Direct memory access controller	IRQ 0 System timer		OK
0x00001800-0x000018FF	RAGE XL PCI	IRQ 8 System CMOS/real time clock		OK
0x000003B0-0x000003BB	RAGE XL PCI	IRQ 13 Numeric data processor		OK
0x000003C0-0x000003DF	RAGE XL PCI	IRQ 14 Primary IDE Channel		OK
0x00001900-0x0000197F	IBM (Version 5.24) Remote Supervisor+Serial Port+Mouse/Keyboard	IRQ 15 Secondary IDE Channel		OK
0x00000A79-0x00000A79	ISAPNP Read Data Port	IRQ 18 VIA Rev 5 or later USB Universal Host Controller		OK
0x00000279-0x00000279	ISAPNP Read Data Port	IRQ 18 VIA Rev 5 or later USB Universal Host Controller		OK
0x00000274-0x00000277	ISAPNP Read Data Port	IRQ 40 LSI Logic 1020/1030 Ultra320 SCSI Adapter		OK
0x00000430-0x00000437	Motherboard resources	IRQ 41 LSI Logic 1020/1030 Ultra320 SCSI Adapter		OK
0x00000438-0x00000439	Motherboard resources	IRQ 42 Broadcom NetXtreme Gigabit Ethernet #7		OK
0x0000002E-0x0000002F	Motherboard resources	IRQ 11 Broadcom NetXtreme Gigabit Ethernet #8		OK
0x00000064-0x00000064	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard	IRQ 44 QLogic QLA23xx PCI Fibre Channel Adapter		OK
0x00000060-0x00000060	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard	IRQ 48 IBM ServeRAID 6M Controller		OK
0x000003F0-0x000003F5	Standard floppy disk controller	IRQ 64 IBM ServeRAID 6M Controller		OK
0x000003F7-0x000003F7	Standard floppy disk controller	IRQ 60 IBM ServeRAID 6M Controller		OK
0x00000020-0x00000021	Advanced programmable interrupt controller	IRQ 52 IBM ServeRAID 6M Controller		OK
0x000000A0-0x000000A1	Advanced programmable interrupt controller	IRQ 56 IBM ServeRAID 6M Controller		OK
0x00000080-0x0000008F	Direct memory access controller	IRQ 123 IBM ServeRAID 6M Controller		OK
0x000000C0-0x000000DF	Direct memory access controller	IRQ 127 QLogic QLA23xx PCI Fibre Channel Adapter		OK
0x00000040-0x00000043	System timer	IRQ 116 IBM ServeRAID 6M Controller		OK
0x00000070-0x00000073	System CMOS/real time clock	IRQ 120 IBM ServeRAID 6M Controller		OK
0x00000061-0x00000061	System speaker	IRQ 109 IBM ServeRAID 6M Controller		OK
0x000000F0-0x000000FF	Numeric data processor	IRQ 102 IBM ServeRAID 6M Controller		OK
		IRQ 106 IBM ServeRAID 6M Controller		OK
		IRQ 95 IBM ServeRAID 6M Controller		OK
		IRQ 99 IBM ServeRAID 6M Controller		OK

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IRQ 88 IBM ServeRAID 6M Controller OK
IRQ 92 IBM ServeRAID 6M Controller OK
[Memory]
Resource Device Status
0xA0000-0xA7FFF PCI bus OK
0xA0000-0xA7FFF RAGE XL PCI OK
0xA8000-0xAFFFF PCI bus OK
0xB0000-0xB7FFF PCI bus OK
0xB8000-0xBFFFF PCI bus OK
0xF4000000-0xF5FFFFFF PCI bus OK
0xF4000000-0xF5FFFFFF RAGE XL PCI OK
0xF5200000-0xF5200FFF RAGE XL PCI OK
0xF5000000-0xF51FFFFF IBM (Version 5.24) Remote
Supervisor+Serial Port+Mouse/Keyboard OK
0xF5000000-0xF51FFFFF IBM (Version 5.24) Remote Supervisor +
Mouse/Keyboard OK
0x0400-0x04FF System board OK
0x100000-0xBFF9C33F Memory Module OK
0xF6A00000-0xF6AFFFFF PCI bus OK
0xF6A00000-0xF6AFFFFF LSI Logic 1020/1030 Ultra320 SCSI Adapter
OK
0xF6A10000-0xF6A1FFFF LSI Logic 1020/1030 Ultra320 SCSI Adapter
OK
0xF6A20000-0xF6A2FFFF LSI Logic 1020/1030 Ultra320 SCSI Adapter
OK
0xF6A30000-0xF6A3FFFF LSI Logic 1020/1030 Ultra320 SCSI Adapter
OK
0xF6A40000-0xF6A4FFFF Broadcom NetXtreme Gigabit Ethernet #7
OK
0xF6A50000-0xF6A5FFFF Broadcom NetXtreme Gigabit Ethernet #7
OK
0xF6A60000-0xF6A6FFFF Broadcom NetXtreme Gigabit Ethernet #8
OK
0xF6A70000-0xF6A7FFFF Broadcom NetXtreme Gigabit Ethernet #8
OK
0xF6000000-0xF61FFFFF PCI bus OK
0xF6000000-0xF61FFFFF PCI standard PCI-to-PCI bridge OK
0xF6120000-0xF6120FFF QLogic QLA23xx PCI Fibre Channel Adapter
OK
0xF6080000-0xF6080FFF IBM ServeRAID 6M Controller OK
0xF1000000-0xF10FFFFFF PCI bus OK
0xF1000000-0xF10FFFFFF PCI standard PCI-to-PCI bridge OK
0xF1080000-0xF1080FFF IBM ServeRAID 6M Controller OK
0xF1100000-0xF11FFFFFF PCI bus OK
0xF1100000-0xF11FFFFFF PCI standard PCI-to-PCI bridge OK
0xF1180000-0xF1180FFF IBM ServeRAID 6M Controller OK
0xF0800000-0xF09FFFFF PCI bus OK
0xF0800000-0xF09FFFFF PCI standard PCI-to-PCI bridge OK
0xF0900000-0xF09FFFFF PCI standard PCI-to-PCI bridge OK
0xF0980000-0xF0980FFF IBM ServeRAID 6M Controller OK
0xF0880000-0xF0880FFF IBM ServeRAID 6M Controller OK
0xF0A00000-0xF0BFFFFF PCI bus OK
0xF0A00000-0xF0BFFFFF PCI standard PCI-to-PCI bridge OK
0xF0A80000-0xF0A80FFF IBM ServeRAID 6M Controller OK
0xF0B20000-0xF0B20FFF QLogic QLA23xx PCI Fibre Channel Adapter
OK
0xF0C00000-0xF0DFFFFF PCI bus OK
0xF0C00000-0xF0DFFFFF PCI standard PCI-to-PCI bridge OK
0xF0D00000-0xF0DFFFFF PCI standard PCI-to-PCI bridge OK
0xF0D80000-0xF0D80FFF IBM ServeRAID 6M Controller OK
0xF0C80000-0xF0C80FFF IBM ServeRAID 6M Controller OK
0xF0000000-0xF07FFFFF PCI bus OK
0xF2000000-0xF23FFFFF PCI bus OK
0xF0400000-0xF04FFFFF PCI standard PCI-to-PCI bridge OK
0xF0480000-0xF0480FFF IBM ServeRAID 6M Controller OK
0xF6200000-0xF63FFFFF PCI bus OK
0xF6200000-0xF63FFFFF PCI standard PCI-to-PCI bridge OK
0xF6300000-0xF63FFFFF PCI standard PCI-to-PCI bridge OK

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0xF6380000-0xF6380FFF IBM ServeRAID 6M Controller OK
0xF6280000-0xF6280FFF IBM ServeRAID 6M Controller OK
0xF6400000-0xF65FFFFFF PCI bus OK
0xF6400000-0xF65FFFFFF PCI standard PCI-to-PCI bridge OK
0xF6500000-0xF65FFFFFF PCI standard PCI-to-PCI bridge OK
0xF6580000-0xF6580FFF IBM ServeRAID 6M Controller OK
0xF6480000-0xF6480FFF IBM ServeRAID 6M Controller OK
0xF6600000-0xF67FFFFF PCI bus OK
0xF6600000-0xF67FFFFF PCI standard PCI-to-PCI bridge OK
0xF6700000-0xF67FFFFF PCI standard PCI-to-PCI bridge OK
0xF6780000-0xF6780FFF IBM ServeRAID 6M Controller OK
0xF6680000-0xF6680FFF IBM ServeRAID 6M Controller OK
[Components]
[Multimedia]
[Audio Codecs]
CODEC Manufacturer Description Status File
Version Size Creation Date
c:\windows\system32\msgsm32.acm Microsoft Corporation
OK C:\WINDOWS\system32\MSGSM32.ACM 5.2.3785.0
(srv03_rtm.030308-1736) 20.50 KB (20,992 bytes) 3/12/2003
5:17 PM
c:\windows\system32\msadp32.acm Microsoft Corporation
OK C:\WINDOWS\system32\MSADP32.ACM 5.2.3785.0
(srv03_rtm.030308-1736) 14.50 KB (14,848 bytes) 3/12/2003
5:17 PM
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) 3/12/2003 5:17 PM
c:\windows\system32\tsoft32.acm DSP GROUP, INC.
OK C:\WINDOWS\system32\TSSOFT32.ACM 1.01 9.50 KB
(9,728 bytes) 3/12/2003 5:17 PM
c:\windows\system32\msg711.acm Microsoft Corporation
OK C:\WINDOWS\system32\MSG711.ACM 5.2.3785.0
(srv03_rtm.030308-1736) 10.00 KB (10,240 bytes) 3/12/2003
5:17 PM
c:\windows\system32\msg723.acm Microsoft Corporation
OK C:\WINDOWS\system32\MSG723.ACM 4.4.4000 116.00 KB
(118,784 bytes) 3/12/2003 5:42 PM
c:\windows\system32\imaadp32.acm Microsoft Corporation
OK C:\WINDOWS\system32\IMAADP32.ACM5.2.3785.0
(srv03_rtm.030308-1736) 15.50 KB (15,872 bytes) 3/12/2003
5:17 PM
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) 3/12/2003 5:17 PM
[Video Codecs]
CODEC Manufacturer Description Status File
Version Size Creation Date
c:\windows\system32\msrle32.dll Microsoft Corporation
OK C:\WINDOWS\system32\MSRLE32.DLL 5.2.3785.0
(srv03_rtm.030308-1736) 10.50 KB (10,752 bytes) 3/12/2003
5:17 PM
c:\windows\system32\tsbyuv.dll Microsoft Corporation
OK C:\WINDOWS\system32\TSBYUV.DLL 5.2.3785.0
(srv03_rtm.030308-1736) 8.00 KB (8,192 bytes) 3/8/2003 6:01 PM
c:\windows\system32\msh261.drv Microsoft Corporation
OK C:\WINDOWS\system32\MSH261.DRV 4.4.4000 180.00 KB
(184,320 bytes) 3/12/2003 5:42 PM
c:\windows\system32\msyuv.dll Microsoft Corporation
OK C:\WINDOWS\system32\MSYUV.DLL 5.2.3785.0
(srv03_rtm.030308-1736) 16.50 KB (16,896 bytes) 3/8/2003
6:00 PM
c:\windows\system32\iyuv_32.dll Microsoft Corporation
OK C:\WINDOWS\system32\IYUV_32.DLL 5.2.3785.0
(srv03_rtm.030308-1736) 45.00 KB (46,080 bytes) 3/8/2003
6:00 PM

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c:\windows\system32\msh263.drv      Microsoft Corporation
OK      C:\WINDOWS\system32\MSH263.DRV  4.4.4000 284.00 KB
(290,816 bytes) 3/8/2003 5:57 PM
c:\windows\system32\msvidc32.dll    Microsoft Corporation
OK      C:\WINDOWS\system32\MSVIDC32.DLL 5.2.3785.0
(srv03_rtm.030308-1736) 26.50 KB (27,136 bytes) 3/12/2003
5:17 PM
[CD-ROM]
Item      Value
Drive     Z:
Description      CD-ROM Drive
Media Loaded     No
Media Type       CD-ROM
Name             HL-DT-ST DVD-ROM GDR8081N
Manufacturer     (Standard CD-ROM drives)
Status          OK
Transfer Rate    Not Available
SCSI Target ID  0
PNP Device ID
IDE\CDROMHL-DT-ST_DVD-ROM_GDR8081N_____0012_____
_\5&CBC355F&0&0.0.0
Driver      c:\windows\system32\drivers\cdrom.sys (5.2.3785.0
(srv03_rtm.030308-1736), 49.50 KB (50,688 bytes), 3/8/2003 3:03 PM)
[Sound Device]
Item      Value
[Display]
Item      Value
Name      RAGE XL PCI
PNP Device ID
PCI\VEN_1002&DEV_4752&SUBSYS_02401014&REV_27\3&267A616A&
0&18
Adapter Type      ATI RAGE XL PCI (B41), ATI Technologies Inc.
compatible
Adapter Description  RAGE XL PCI
Adapter RAM         8.00 MB (8,388,608 bytes)
Installed Drivers   ati2drad.dll
Driver Version      5.00.2195.5012
INF File            oem2.inf (ati2mpad section)
Color Planes       1
Color Table Entries 65536
Resolution 1024 x 768 x 85 hertz
Bits/Pixel 16
Memory Address     0xF4000000-0xF5FFFFFF
I/O Port          0x00001800-0x000018FF
Memory Address     0xF5200000-0xF5200FFF
IRQ Channel        IRQ 39
I/O Port          0x000003B0-0x000003BB
I/O Port          0x000003C0-0x000003DF
Memory Address     0xA0000-0xA7FFF
Driver             c:\windows\system32\drivers\ati2mpad.sys (5.00.2195.5012, 316.20
KB (323,793 bytes), 12/21/2001 11:09 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&7FD7688&0
Number of Function Keys 12
IRQ Channel     IRQ 1
I/O Port        0x00000064-0x00000064
I/O Port        0x00000060-0x00000060
Driver          c:\windows\system32\drivers\i8042prt.sys (5.2.3785.0
(srv03_rtm.030308-1736), 69.00 KB (70,656 bytes), 3/8/2003 5:13 PM)
[Pointing Device]

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Item      Value
Hardware Type      PS/2 Compatible Mouse
Number of Buttons  2
Status            OK
PNP Device ID     ACPI\PNP0F13\4&7FD7688&0
Power Management Supported No
Double Click Threshold 6
Handedness        Right Handed Operation
IRQ Channel        IRQ 12
Driver            c:\windows\system32\drivers\i8042prt.sys (5.2.3785.0
(srv03_rtm.030308-1736), 69.00 KB (70,656 bytes), 3/8/2003 5:13 PM)
[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 2/20/2004 4:58 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_L2TPMINIPOINT\0000
Last Reset 2/20/2004 4:58 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 (5.2.3785.0
(srv03_rtm.030308-1736), 77.00 KB (78,848 bytes), 3/12/2003 5:17 PM)
Name             [00000003] WAN Miniport (PPTP)
Adapter Type      Wide Area Network (WAN)
Product Type      WAN Miniport (PPTP)
Installed         Yes
PNP Device ID     ROOT\MS_PPTPMINIPOINT\0000
Last Reset 2/20/2004 4:58 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 (5.2.3785.0
(srv03_rtm.030308-1736), 70.50 KB (72,192 bytes), 3/12/2003 5:17 PM)

```

Name [00000004] WAN Miniport (PPPOE)  
 Adapter Type Wide Area Network (WAN)  
 Product Type WAN Miniport (PPPOE)  
 Installed Yes  
 PNP Device ID ROOT\MS\_PPPOEMINIPOINT\0000  
 Last Reset 2/20/2004 4:58 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\rasppoe.sys (5.2.3785.0 (srv03\_rtm.030308-1736), 38.00 KB (38,912 bytes), 3/12/2003 5:17 PM)  
 Name [00000005] Direct Parallel  
 Adapter Type Not Available  
 Product Type Direct Parallel  
 Installed Yes  
 PNP Device ID ROOT\MS\_PTMINIPOINT\0000  
 Last Reset 2/20/2004 4:58 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 (5.2.3785.0 (srv03\_rtm.030308-1736), 18.50 KB (18,944 bytes), 3/12/2003 5:17 PM)  
 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 2/20/2004 4:58 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 (5.2.3785.0 (srv03\_rtm.030308-1736), 100.00 KB (102,400 bytes), 3/12/2003 5:17 PM)  
 Name [00000007] Broadcom NetXtreme Gigabit Ethernet  
 Adapter Type Not Available  
 Product Type Broadcom NetXtreme Gigabit Ethernet  
 Installed Yes  
 PNP Device ID Not Available  
 Last Reset 2/20/2004 4:58 PM  
 Index 7  
 Service Name b57w2k  
 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 [00000008] Broadcom NetXtreme Gigabit Ethernet  
 Adapter Type Not Available  
 Product Type Broadcom NetXtreme Gigabit Ethernet  
 Installed Yes  
 PNP Device ID Not Available  
 Last Reset 2/20/2004 4:58 PM  
 Index 8  
 Service Name b57w2k  
 IP Address Not Available  
 IP Subnet Not Available  
 Default IP Gateway Not Available  
 DHCP Enabled Yes  
 DHCP Server Not Available  
 DHCP Lease Expires Not Available  
 DHCP Lease Obtained Not Available  
 MAC Address Not Available  
 Name [00000009] Broadcom NetXtreme Gigabit Ethernet  
 Adapter Type Not Available  
 Product Type Broadcom NetXtreme Gigabit Ethernet  
 Installed Yes  
 PNP Device ID Not Available  
 Last Reset 2/20/2004 4:58 PM  
 Index 9  
 Service Name b57w2k  
 IP Address Not Available  
 IP Subnet Not Available  
 Default IP Gateway Not Available  
 DHCP Enabled Yes  
 DHCP Server Not Available  
 DHCP Lease Expires Not Available  
 DHCP Lease Obtained Not Available  
 MAC Address Not Available  
 Name [00000010] Broadcom NetXtreme Gigabit Ethernet  
 Adapter Type Not Available  
 Product Type Broadcom NetXtreme Gigabit Ethernet  
 Installed Yes  
 PNP Device ID Not Available  
 Last Reset 2/20/2004 4:58 PM  
 Index 10  
 Service Name b57w2k  
 IP Address Not Available  
 IP Subnet Not Available  
 Default IP Gateway Not Available  
 DHCP Enabled Yes  
 DHCP Server Not Available  
 DHCP Lease Expires Not Available  
 DHCP Lease Obtained Not Available  
 MAC Address Not Available  
 Name [00000011] Broadcom NetXtreme Gigabit Ethernet  
 Adapter Type Not Available  
 Product Type Broadcom NetXtreme Gigabit Ethernet  
 Installed Yes  
 PNP Device ID Not Available  
 Last Reset 2/20/2004 4:58 PM  
 Index 11  
 Service Name b57w2k  
 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 [00000012] Broadcom NetXtreme Gigabit Ethernet  
 Adapter Type Not Available

Product Type Broadcom NetXtreme Gigabit Ethernet  
 Installed Yes  
 PNP Device ID Not Available  
 Last Reset 2/20/2004 4:58 PM  
 Index 12  
 Service Name b57w2k  
 IP Address Not Available  
 IP Subnet Not Available  
 Default IP Gateway Not Available  
 DHCP Enabled Yes  
 DHCP Server Not Available  
 DHCP Lease Expires Not Available  
 DHCP Lease Obtained Not Available  
 MAC Address Not Available  
 Name [00000013] 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\_02A61014&REV\_02\3&13C0B0C5  
 &0&20  
 Last Reset 2/20/2004 4:58 PM  
 Index 13  
 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 00:09:6B:E6:01:D8  
 Memory Address 0xF6A40000-0xF6A4FFFF  
 Memory Address 0xF6A50000-0xF6A5FFFF  
 IRQ Channel IRQ 42  
 Driver c:\windows\system32\drivers\b57xp32.sys (7.33.0.0 built by:  
 WinDDK, 110.63 KB (113,280 bytes), 10/16/2003 6:08 PM)  
 Name [00000014] 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\_02A61014&REV\_02\3&13C0B0C5  
 &0&21  
 Last Reset 2/20/2004 4:58 PM  
 Index 14  
 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 9.44.5.76  
 DHCP Lease Expires 4/11/2003 12:14 AM  
 DHCP Lease Obtained 4/10/2003 12:14 PM  
 MAC Address 00:09:6B:16:01:D8  
 Memory Address 0xF6A60000-0xF6A6FFFF  
 Memory Address 0xF6A70000-0xF6A7FFFF  
 IRQ Channel IRQ 11  
 Driver c:\windows\system32\drivers\b57xp32.sys (7.33.0.0 built by:  
 WinDDK, 110.63 KB (113,280 bytes), 10/16/2003 6:08 PM)  
 [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\_{6555F8AF-C295-42B7-BC08-5CA9701F80BF}]  
 SEQPACKET 9  
 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\_{6555F8AF-C295-42B7-BC08-5CA9701F80BF}]  
 DATAGRAM 9  
 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\_{427F00F0-2FB6-43E0-8360-047418245272}]  
 SEQPACKET 8  
 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\_{427F00F0-2FB6-43E0-8360-047418245272}]  
 DATAGRAM 8  
 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\_{427F00F0-2FB6-43E0-8360-047418245272}]

Supports Guaranteed Bandwidth No  
 Supports Multicasting No  
 Name MSAFD NetBIOS  
 [\Device\NetBT\_Tcpip\_{A9D928ED-5B56-4A58-A123-8C70BD5583A5}]  
 SEQPACKET 7  
 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\_{A9D928ED-5B56-4A58-A123-8C70BD5583A5}]  
 DATAGRAM 7  
 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\_{8402267C-A1B1-45D4-B2E6-BEADDB99EB27}]  
 SEQPACKET 6  
 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\_{8402267C-A1B1-45D4-B2E6-BEADDB99EB27}]  
 DATAGRAM 6  
 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\_{8C62745E-AAE6-4A42-91B0-0400578C9D31}]  
SEQPACKET 5  
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\_{8C62745E-AAE6-4A42-91B0-0400578C9D31}]  
DATAGRAM 5  
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\_{B47CA0B2-DDB4-4E0A-8C65-9B88716FE1A8}]  
SEQPACKET 4  
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\_{B47CA0B2-DDB4-4E0A-8C65-9B88716FE1A8}]  
DATAGRAM 4  
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\_{0CDA6DA7-D004-4785-98CB-D32569132772}]  
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\_{0CDA6DA7-D004-4785-98CB-D32569132772}]  
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\_{563BD738-1A53-4026-A72C-5242D6C20910}]  
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_{563BD738-1A53-4026-A72C-5242D6C20910}]	
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_{5E9E0D53-7C36-4180-8443-B07EF9866CCD}]	
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_{5E9E0D53-7C36-4180-8443-B07EF9866CCD}]	
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_{0834FA02-EE26-4BEE-A6CA-964D45B9EACD}]	
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_{0834FA02-EE26-4BEE-A6CA-964D45B9EACD}]	
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	5.2.3785.0 (srv03_rtm.030308-1736)
[Ports]	
[Serial]	
Item	Value
[Parallel]	
Item	Value
[Storage]	
[Drives]	
Item	Value
Drive	A:
Description	3 1/2 Inch Floppy Drive
Drive	C:
Description	Local Fixed Disk
Compressed	No
File System	NTFS
Size	33.90 GB (36,396,830,720 bytes)
Free Space	26.39 GB (28,330,790,912 bytes)
Volume Name	C_DRIVE
Volume Serial Number	F0C2D5E1
Drive	D:
Description	Local Fixed Disk
Compressed	No
File System	NTFS
Size	433.11 GB (465,045,532,672 bytes)
Free Space	433.03 GB (464,963,747,840 bytes)
Volume Name	D_DRIVE

Volume Serial Number E874BE0F  
 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 212.44 GB (228,109,299,712 bytes)  
 Free Space 212.37 GB (228,026,351,616 bytes)  
 Volume Name F\_DRIVE  
 Volume Serial Number 500BBEAF  
 Drive G:  
 Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 433.11 GB (465,045,532,672 bytes)  
 Free Space 198.54 GB (213,180,207,104 bytes)  
 Volume Name G\_DRIVE  
 Volume Serial Number CCD7605E  
 Drive H:  
 Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 433.11 GB (465,045,532,672 bytes)  
 Free Space 198.54 GB (213,180,272,640 bytes)  
 Volume Name H\_DRIVE  
 Volume Serial Number B0011CA2  
 Drive I:  
 Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 433.11 GB (465,045,532,672 bytes)  
 Free Space 198.54 GB (213,180,272,640 bytes)  
 Volume Name I\_DRIVE  
 Volume Serial Number 9CEF11D6  
 Drive J:  
 Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 433.11 GB (465,045,532,672 bytes)  
 Free Space 198.54 GB (213,180,272,640 bytes)  
 Volume Name J\_DRIVE  
 Volume Serial Number F0F6237B  
 Drive K:  
 Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 433.11 GB (465,045,532,672 bytes)  
 Free Space 198.54 GB (213,180,207,104 bytes)  
 Volume Name K\_DRIVE  
 Volume Serial Number FCFDC1D1  
 Drive L:  
 Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 433.11 GB (465,045,532,672 bytes)  
 Free Space 197.46 GB (212,026,191,872 bytes)  
 Volume Name L\_DRIVE  
 Volume Serial Number 501232E4  
 Drive M:  
 Description Local Fixed Disk  
 Compressed No

File System NTFS  
 Size 433.11 GB (465,045,532,672 bytes)  
 Free Space 198.54 GB (213,180,272,640 bytes)  
 Volume Name M\_DRIVE  
 Volume Serial Number BC194712  
 Drive N:  
 Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 433.11 GB (465,045,532,672 bytes)  
 Free Space 198.54 GB (213,180,272,640 bytes)  
 Volume Name N\_DRIVE  
 Volume Serial Number 081FF459  
 Drive O:  
 Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 433.11 GB (465,045,532,672 bytes)  
 Free Space 198.12 GB (212,728,008,704 bytes)  
 Volume Name O\_DRIVE  
 Volume Serial Number 20271914  
 Drive P:  
 Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 433.11 GB (465,045,532,672 bytes)  
 Free Space 198.12 GB (212,728,008,704 bytes)  
 Volume Name P\_DRIVE  
 Volume Serial Number 682DC69A  
 Drive Q:  
 Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 433.11 GB (465,045,532,672 bytes)  
 Free Space 198.12 GB (212,728,008,704 bytes)  
 Volume Name Q\_DRIVE  
 Volume Serial Number C035CFF8  
 Drive R:  
 Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 433.11 GB (465,045,532,672 bytes)  
 Free Space 198.12 GB (212,728,008,704 bytes)  
 Volume Name R\_DRIVE  
 Volume Serial Number B83CA633  
 Drive S:  
 Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 433.11 GB (465,045,532,672 bytes)  
 Free Space 198.12 GB (212,728,008,704 bytes)  
 Volume Name S\_DRIVE  
 Volume Serial Number 68432644  
 Drive T:  
 Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 433.11 GB (465,045,532,672 bytes)  
 Free Space 198.12 GB (212,728,008,704 bytes)  
 Volume Name T\_DRIVE  
 Volume Serial Number 5058706F  
 Drive U:  
 Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 433.11 GB (465,045,532,672 bytes)  
 Free Space 198.12 GB (212,728,008,704 bytes)

Volume Name U\_DRIVE  
Volume Serial Number A45F6A4D  
Drive V:  
Description Local Fixed Disk  
Compressed No  
File System NTFS  
Size 433.11 GB (465,045,532,672 bytes)  
Free Space 198.12 GB (212,728,008,704 bytes)  
Volume Name V\_DRIVE  
Volume Serial Number 3867469A  
Drive W:  
Description Local Fixed Disk  
Compressed No  
File System NTFS  
Size 433.11 GB (465,045,532,672 bytes)  
Free Space 433.03 GB (464,963,747,840 bytes)  
Volume Name W\_DRIVE  
Volume Serial Number 601141F5  
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 ServeRAID 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	20
SCSI Target ID	0
Sectors/Track	32
Size	474.61 GB (509,612,130,304 bytes)
Total Cylinders	243,002
Total Sectors	995,336,192
Total Tracks	31,104,256
Tracks/Cylinder	128
Partition Disk #28, Partition #0	
Partition Size	25.88 GB (27,789,344,768 bytes)
Partition Starting Offset	2,113,536 bytes
Partition Disk #28, Partition #1	
Partition Size	15.14 GB (16,255,008,768 bytes)
Partition Starting Offset	27,791,474,688 bytes
Partition Disk #28, Partition #2	
Partition Size	433.11 GB (465,045,536,768 bytes)
Partition Starting Offset	44,046,499,840 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	3
SCSI Bus	0
SCSI Logical Unit	0
SCSI Port	20
SCSI Target ID	1
Sectors/Track	32
Size	474.61 GB (509,612,130,304 bytes)
Total Cylinders	243,002
Total Sectors	995,336,192
Total Tracks	31,104,256
Tracks/Cylinder	128

Partition Disk #29, Partition #0	
Partition Size	25.88 GB (27,789,344,768 bytes)
Partition Starting Offset	2,113,536 bytes
Partition Disk #29, Partition #1	
Partition Size	15.14 GB (16,255,008,768 bytes)
Partition Starting Offset	27,791,474,688 bytes
Partition Disk #29, Partition #2	
Partition Size	433.11 GB (465,045,536,768 bytes)
Partition Starting Offset	44,046,499,840 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	3
SCSI Bus	0
SCSI Logical Unit	0
SCSI Port	6
SCSI Target ID	0
Sectors/Track	32
Size	474.62 GB (509,618,421,760 bytes)
Total Cylinders	243,005
Total Sectors	995,348,480
Total Tracks	31,104,640
Tracks/Cylinder	128
Partition Disk #1, Partition #0	
Partition Size	25.88 GB (27,789,344,768 bytes)
Partition Starting Offset	2,113,536 bytes
Partition Disk #1, Partition #1	
Partition Size	15.14 GB (16,255,008,768 bytes)
Partition Starting Offset	27,791,474,688 bytes
Partition Disk #1, Partition #2	
Partition Size	433.11 GB (465,045,536,768 bytes)
Partition Starting Offset	44,046,499,840 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	3
SCSI Bus	0
SCSI Logical Unit	0
SCSI Port	6
SCSI Target ID	1
Sectors/Track	32
Size	474.62 GB (509,618,421,760 bytes)
Total Cylinders	243,005
Total Sectors	995,348,480
Total Tracks	31,104,640
Tracks/Cylinder	128
Partition Disk #2, Partition #0	
Partition Size	25.88 GB (27,789,344,768 bytes)
Partition Starting Offset	2,113,536 bytes
Partition Disk #2, Partition #1	
Partition Size	15.14 GB (16,255,008,768 bytes)
Partition Starting Offset	27,791,474,688 bytes
Partition Disk #2, Partition #2	
Partition Size	433.11 GB (465,045,536,768 bytes)
Partition Starting Offset	44,046,499,840 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	3

SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 10  
 SCSI Target ID 0  
 Sectors/Track 32  
 Size 474.62 GB (509,618,421,760 bytes)  
 Total Cylinders 243,005  
 Total Sectors 995,348,480  
 Total Tracks 31,104,640  
 Tracks/Cylinder 128  
 Partition Disk #8, Partition #0  
 Partition Size 25.88 GB (27,789,344,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #8, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes  
 Partition Disk #8, Partition #2  
 Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 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 3  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 10  
 SCSI Target ID 1  
 Sectors/Track 32  
 Size 474.62 GB (509,618,421,760 bytes)  
 Total Cylinders 243,005  
 Total Sectors 995,348,480  
 Total Tracks 31,104,640  
 Tracks/Cylinder 128  
 Partition Disk #9, Partition #0  
 Partition Size 25.88 GB (27,789,344,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #9, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes  
 Partition Disk #9, Partition #2  
 Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 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 3  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 19  
 SCSI Target ID 0  
 Sectors/Track 32  
 Size 474.61 GB (509,612,130,304 bytes)  
 Total Cylinders 243,002  
 Total Sectors 995,336,192  
 Total Tracks 31,104,256  
 Tracks/Cylinder 128  
 Partition Disk #26, Partition #0  
 Partition Size 25.88 GB (27,789,344,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #26, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes

Partition Disk #26, Partition #2  
 Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 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 3  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 19  
 SCSI Target ID 1  
 Sectors/Track 32  
 Size 474.61 GB (509,612,130,304 bytes)  
 Total Cylinders 243,002  
 Total Sectors 995,336,192  
 Total Tracks 31,104,256  
 Tracks/Cylinder 128  
 Partition Disk #27, Partition #0  
 Partition Size 25.88 GB (27,789,344,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #27, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes  
 Partition Disk #27, Partition #2  
 Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 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 3  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 12  
 SCSI Target ID 0  
 Sectors/Track 32  
 Size 474.62 GB (509,618,421,760 bytes)  
 Total Cylinders 243,005  
 Total Sectors 995,348,480  
 Total Tracks 31,104,640  
 Tracks/Cylinder 128  
 Partition Disk #12, Partition #0  
 Partition Size 25.88 GB (27,789,344,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #12, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes  
 Partition Disk #12, Partition #2  
 Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 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 3  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 12  
 SCSI Target ID 1  
 Sectors/Track 32  
 Size 474.62 GB (509,618,421,760 bytes)

Total Cylinders	243,005	Bytes/Sector	512
Total Sectors	995,348,480	Media Loaded	Yes
Total Tracks	31,104,640	Media Type	Fixed hard disk
Tracks/Cylinder	128	Partitions	3
Partition Disk #13, Partition #0		SCSI Bus	0
Partition Size	25.88 GB (27,789,344,768 bytes)	SCSI Logical Unit	0
Partition Starting Offset	2,113,536 bytes	SCSI Port	18
Partition Disk #13, Partition #1		SCSI Target ID	0
Partition Size	15.14 GB (16,255,008,768 bytes)	Sectors/Track	32
Partition Starting Offset	27,791,474,688 bytes	Size	474.61 GB (509,612,130,304 bytes)
Partition Disk #13, Partition #2		Total Cylinders	243,002
Partition Size	433.11 GB (465,045,536,768 bytes)	Total Sectors	995,336,192
Partition Starting Offset	44,046,499,840 bytes	Total Tracks	31,104,256
Description	Disk drive	Tracks/Cylinder	128
Manufacturer	(Standard disk drives)	Partition Disk #24, Partition #0	
Model	IBM ServeRAID SCSI Disk Device	Partition Size	25.88 GB (27,789,344,768 bytes)
Bytes/Sector	512	Partition Starting Offset	2,113,536 bytes
Media Loaded	Yes	Partition Disk #24, Partition #1	
Media Type	Fixed hard disk	Partition Size	15.14 GB (16,255,008,768 bytes)
Partitions	3	Partition Starting Offset	27,791,474,688 bytes
SCSI Bus	0	Partition Disk #24, Partition #2	
SCSI Logical Unit	0	Partition Size	433.11 GB (465,045,536,768 bytes)
SCSI Port	11	Partition Starting Offset	44,046,499,840 bytes
SCSI Target ID	0	Description	Disk drive
Sectors/Track	32	Manufacturer	(Standard disk drives)
Size	474.61 GB (509,612,130,304 bytes)	Model	IBM ServeRAID SCSI Disk Device
Total Cylinders	243,002	Bytes/Sector	512
Total Sectors	995,336,192	Media Loaded	Yes
Total Tracks	31,104,256	Media Type	Fixed hard disk
Tracks/Cylinder	128	Partitions	3
Partition Disk #10, Partition #0		SCSI Bus	0
Partition Size	25.88 GB (27,789,344,768 bytes)	SCSI Logical Unit	0
Partition Starting Offset	2,113,536 bytes	SCSI Port	18
Partition Disk #10, Partition #1		SCSI Target ID	1
Partition Size	15.14 GB (16,255,008,768 bytes)	Sectors/Track	32
Partition Starting Offset	27,791,474,688 bytes	Size	474.61 GB (509,612,130,304 bytes)
Partition Disk #10, Partition #2		Total Cylinders	243,002
Partition Size	433.11 GB (465,045,536,768 bytes)	Total Sectors	995,336,192
Partition Starting Offset	44,046,499,840 bytes	Total Tracks	31,104,256
Description	Disk drive	Tracks/Cylinder	128
Manufacturer	(Standard disk drives)	Partition Disk #25, Partition #0	
Model	IBM ServeRAID SCSI Disk Device	Partition Size	25.88 GB (27,789,344,768 bytes)
Bytes/Sector	512	Partition Starting Offset	2,113,536 bytes
Media Loaded	Yes	Partition Disk #25, Partition #1	
Media Type	Fixed hard disk	Partition Size	15.14 GB (16,255,008,768 bytes)
Partitions	3	Partition Starting Offset	27,791,474,688 bytes
SCSI Bus	0	Partition Disk #25, Partition #2	
SCSI Logical Unit	0	Partition Size	433.11 GB (465,045,536,768 bytes)
SCSI Port	11	Partition Starting Offset	44,046,499,840 bytes
SCSI Target ID	1	Description	Disk drive
Sectors/Track	32	Manufacturer	(Standard disk drives)
Size	474.61 GB (509,612,130,304 bytes)	Model	IBM ServeRAID SCSI Disk Device
Total Cylinders	243,002	Bytes/Sector	512
Total Sectors	995,336,192	Media Loaded	Yes
Total Tracks	31,104,256	Media Type	Fixed hard disk
Tracks/Cylinder	128	Partitions	3
Partition Disk #11, Partition #0		SCSI Bus	0
Partition Size	25.88 GB (27,789,344,768 bytes)	SCSI Logical Unit	0
Partition Starting Offset	2,113,536 bytes	SCSI Port	9
Partition Disk #11, Partition #1		SCSI Target ID	0
Partition Size	15.14 GB (16,255,008,768 bytes)	Sectors/Track	32
Partition Starting Offset	27,791,474,688 bytes	Size	474.61 GB (509,612,130,304 bytes)
Partition Disk #11, Partition #2		Total Cylinders	243,002
Partition Size	433.11 GB (465,045,536,768 bytes)	Total Sectors	995,336,192
Partition Starting Offset	44,046,499,840 bytes	Total Tracks	31,104,256
Description	Disk drive	Tracks/Cylinder	128
Manufacturer	(Standard disk drives)	Partition Disk #6, Partition #0	
Model	IBM ServeRAID SCSI Disk Device	Partition Size	25.88 GB (27,789,344,768 bytes)

Partition Starting Offset 2,113,536 bytes  
 Partition Disk #6, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes  
 Partition Disk #6, Partition #2  
 Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 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 3  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 9  
 SCSI Target ID 1  
 Sectors/Track 32  
 Size 474.61 GB (509,612,130,304 bytes)  
 Total Cylinders 243,002  
 Total Sectors 995,336,192  
 Total Tracks 31,104,256  
 Tracks/Cylinder 128  
 Partition Disk #7, Partition #0  
 Partition Size 25.88 GB (27,789,344,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #7, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes  
 Partition Disk #7, Partition #2  
 Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 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 3  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 15  
 SCSI Target ID 0  
 Sectors/Track 32  
 Size 474.61 GB (509,612,130,304 bytes)  
 Total Cylinders 243,002  
 Total Sectors 995,336,192  
 Total Tracks 31,104,256  
 Tracks/Cylinder 128  
 Partition Disk #18, Partition #0  
 Partition Size 25.88 GB (27,789,344,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #18, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes  
 Partition Disk #18, Partition #2  
 Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 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 3  
 SCSI Bus 0  
 SCSI Logical Unit 0

SCSI Port 15  
 SCSI Target ID 1  
 Sectors/Track 32  
 Size 474.61 GB (509,612,130,304 bytes)  
 Total Cylinders 243,002  
 Total Sectors 995,336,192  
 Total Tracks 31,104,256  
 Tracks/Cylinder 128  
 Partition Disk #19, Partition #0  
 Partition Size 25.88 GB (27,789,344,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #19, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes  
 Partition Disk #19, Partition #2  
 Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 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 8  
 SCSI Target ID 0  
 Sectors/Track 32  
 Size 546.92 GB (587,252,891,648 bytes)  
 Total Cylinders 280,024  
 Total Sectors 1,146,978,304  
 Total Tracks 35,843,072  
 Tracks/Cylinder 128  
 Partition Disk #5, Partition #0  
 Partition Size 334.47 GB (359,139,360,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #5, Partition #1  
 Partition Size 212.44 GB (228,109,303,808 bytes)  
 Partition Starting Offset 359,141,490,688 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 3  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 7  
 SCSI Target ID 0  
 Sectors/Track 32  
 Size 474.61 GB (509,612,130,304 bytes)  
 Total Cylinders 243,002  
 Total Sectors 995,336,192  
 Total Tracks 31,104,256  
 Tracks/Cylinder 128  
 Partition Disk #3, Partition #0  
 Partition Size 25.88 GB (27,789,344,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #3, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes  
 Partition Disk #3, Partition #2  
 Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 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 3  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 7  
 SCSI Target ID 1  
 Sectors/Track 32  
 Size 474.61 GB (509,612,130,304 bytes)  
 Total Cylinders 243,002  
 Total Sectors 995,336,192  
 Total Tracks 31,104,256  
 Tracks/Cylinder 128  
 Partition Disk #4, Partition #0  
 Partition Size 25.88 GB (27,789,344,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #4, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes  
 Partition Disk #4, Partition #2  
 Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 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 3  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 17  
 SCSI Target ID 0  
 Sectors/Track 32  
 Size 474.61 GB (509,612,130,304 bytes)  
 Total Cylinders 243,002  
 Total Sectors 995,336,192  
 Total Tracks 31,104,256  
 Tracks/Cylinder 128  
 Partition Disk #22, Partition #0  
 Partition Size 25.88 GB (27,789,344,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #22, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes  
 Partition Disk #22, Partition #2  
 Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 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 3  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 17  
 SCSI Target ID 1  
 Sectors/Track 32  
 Size 474.61 GB (509,612,130,304 bytes)  
 Total Cylinders 243,002  
 Total Sectors 995,336,192  
 Total Tracks 31,104,256  
 Tracks/Cylinder 128  
 Partition Disk #23, Partition #0

Partition Size 25.88 GB (27,789,344,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #23, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes  
 Partition Disk #23, Partition #2  
 Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 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 3  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 16  
 SCSI Target ID 0  
 Sectors/Track 32  
 Size 474.61 GB (509,612,130,304 bytes)  
 Total Cylinders 243,002  
 Total Sectors 995,336,192  
 Total Tracks 31,104,256  
 Tracks/Cylinder 128  
 Partition Disk #20, Partition #0  
 Partition Size 25.88 GB (27,789,344,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #20, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes  
 Partition Disk #20, Partition #2  
 Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 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 3  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 16  
 SCSI Target ID 1  
 Sectors/Track 32  
 Size 474.61 GB (509,612,130,304 bytes)  
 Total Cylinders 243,002  
 Total Sectors 995,336,192  
 Total Tracks 31,104,256  
 Tracks/Cylinder 128  
 Partition Disk #21, Partition #0  
 Partition Size 25.88 GB (27,789,344,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #21, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes  
 Partition Disk #21, Partition #2  
 Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 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 3  
 SCSI Bus 0



SCSI Logical Unit 0  
 SCSI Port 13  
 SCSI Target ID 0  
 Sectors/Track 32  
 Size 474.61 GB (509,612,130,304 bytes)  
 Total Cylinders 243,002  
 Total Sectors 995,336,192  
 Total Tracks 31,104,256  
 Tracks/Cylinder 128  
 Partition Disk #14, Partition #0  
 Partition Size 25.88 GB (27,789,344,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #14, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes  
 Partition Disk #14, Partition #2  
 Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 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 3  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 13  
 SCSI Target ID 1  
 Sectors/Track 32  
 Size 474.61 GB (509,612,130,304 bytes)  
 Total Cylinders 243,002  
 Total Sectors 995,336,192  
 Total Tracks 31,104,256  
 Tracks/Cylinder 128  
 Partition Disk #15, Partition #0  
 Partition Size 25.88 GB (27,789,344,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #15, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes  
 Partition Disk #15, Partition #2  
 Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 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 3  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 14  
 SCSI Target ID 0  
 Sectors/Track 32  
 Size 474.61 GB (509,612,130,304 bytes)  
 Total Cylinders 243,002  
 Total Sectors 995,336,192  
 Total Tracks 31,104,256  
 Tracks/Cylinder 128  
 Partition Disk #16, Partition #0  
 Partition Size 25.88 GB (27,789,344,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #16, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes  
 Partition Disk #16, Partition #2

Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 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 3  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 14  
 SCSI Target ID 1  
 Sectors/Track 32  
 Size 474.61 GB (509,612,130,304 bytes)  
 Total Cylinders 243,002  
 Total Sectors 995,336,192  
 Total Tracks 31,104,256  
 Tracks/Cylinder 128  
 Partition Disk #17, Partition #0  
 Partition Size 25.88 GB (27,789,344,768 bytes)  
 Partition Starting Offset 2,113,536 bytes  
 Partition Disk #17, Partition #1  
 Partition Size 15.14 GB (16,255,008,768 bytes)  
 Partition Starting Offset 27,791,474,688 bytes  
 Partition Disk #17, Partition #2  
 Partition Size 433.11 GB (465,045,536,768 bytes)  
 Partition Starting Offset 44,046,499,840 bytes  
 Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM-ESXS ST336607LC !# 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 4  
 SCSI Target ID 0  
 Sectors/Track 63  
 Size 33.90 GB (36,396,864,000 bytes)  
 Total Cylinders 4,425  
 Total Sectors 71,087,625  
 Total Tracks 1,128,375  
 Tracks/Cylinder 255  
 Partition Disk #0, Partition #0  
 Partition Size 33.90 GB (36,396,831,744 bytes)  
 Partition Starting Offset 32,256 bytes  
 [SCSI]  
 Item Value  
 Name LSI Logic 1020/1030 Ultra320 SCSI Adapter  
 Manufacturer LSI Logic  
 Status OK  
 PNP Device ID  
 PCI\VEN\_1000&DEV\_0030&SUBSYS\_02921014&REV\_07\3&13C0B0C5&0&18  
 I/O Port 0x00002000-0x000027FF  
 Memory Address 0xF6A00000-0xF6AFFFFF  
 Memory Address 0xF6A10000-0xF6A1FFFF  
 IRQ Channel IRQ 40  
 Driver c:\windows\system32\drivers\symmpi.sys (1.09.06.00 built by:  
 WinDDK, 33.50 KB (34,304 bytes), 5/23/2003 9:15 AM)  
 Name LSI Logic 1020/1030 Ultra320 SCSI Adapter  
 Manufacturer LSI Logic  
 Status OK  
 PNP Device ID  
 PCI\VEN\_1000&DEV\_0030&SUBSYS\_02921014&REV\_07\3&13C0B0C5&0&19

I/O Port 0x00002100-0x000021FF  
 Memory Address 0xF6A20000-0xF6A2FFFF  
 Memory Address 0xF6A30000-0xF6A3FFFF  
 IRQ Channel IRQ 41  
 Driver c:\windows\system32\drivers\symmpi.sys (1.09.06.00 built by:  
 WinDDK, 33.50 KB (34,304 bytes), 5/23/2003 9:15 AM)  
 Name QLogic QLA23xx PCI Fibre Channel Adapter  
 Manufacturer QLogic  
 Status OK  
 PNP Device ID  
 PCI\VEN\_1077&DEV\_2312&SUBSYS\_010C1077&REV\_02\3&1070020&0  
 &08  
 I/O Port 0x00002800-0x000029FF  
 Memory Address 0xF6120000-0xF6120FFF  
 IRQ Channel IRQ 44  
 Driver c:\windows\system32\drivers\ql2300.sys (8.2.3.61 (w32 VI), 456.92  
 KB (467,890 bytes), 2/4/2004 4:54 PM)  
 Name IBM ServeRAID 6M Controller  
 Manufacturer IBM Corporation  
 Status OK  
 PNP Device ID  
 PCI\VEN\_9005&DEV\_0250&SUBSYS\_02791014&REV\_02\4&392398EF&0  
 &4010  
 Memory Address 0xF6080000-0xF6080FFF  
 IRQ Channel IRQ 48  
 Driver c:\windows\system32\drivers\nfrd6m.sys (6.06.07 built by:  
 WinDDK, 29.50 KB (30,208 bytes), 2/4/2004 9:53 AM)  
 Name IBM ServeRAID 6M Controller  
 Manufacturer IBM Corporation  
 Status OK  
 PNP Device ID  
 PCI\VEN\_9005&DEV\_0250&SUBSYS\_02791014&REV\_02\4&180CD7A4&  
 0&4020  
 Memory Address 0xF1080000-0xF1080FFF  
 IRQ Channel IRQ 64  
 Driver c:\windows\system32\drivers\nfrd6m.sys (6.06.07 built by:  
 WinDDK, 29.50 KB (30,208 bytes), 2/4/2004 9:53 AM)  
 Name IBM ServeRAID 6M Controller  
 Manufacturer IBM Corporation  
 Status OK  
 PNP Device ID  
 PCI\VEN\_9005&DEV\_0250&SUBSYS\_02791014&REV\_02\4&14F365D1&  
 0&4018  
 Memory Address 0xF1180000-0xF1180FFF  
 IRQ Channel IRQ 60  
 Driver c:\windows\system32\drivers\nfrd6m.sys (6.06.07 built by:  
 WinDDK, 29.50 KB (30,208 bytes), 2/4/2004 9:53 AM)  
 Name IBM ServeRAID 6M Controller  
 Manufacturer IBM Corporation  
 Status OK  
 PNP Device ID  
 PCI\VEN\_9005&DEV\_0250&SUBSYS\_02791014&REV\_02\4&27CC8076&  
 0&4008  
 Memory Address 0xF0980000-0xF0980FFF  
 IRQ Channel IRQ 52  
 Driver c:\windows\system32\drivers\nfrd6m.sys (6.06.07 built by:  
 WinDDK, 29.50 KB (30,208 bytes), 2/4/2004 9:53 AM)  
 Name IBM ServeRAID 6M Controller  
 Manufacturer IBM Corporation  
 Status OK  
 PNP Device ID  
 PCI\VEN\_9005&DEV\_0250&SUBSYS\_02791014&REV\_02\4&8C37DC5&0  
 &4010  
 Memory Address 0xF0880000-0xF0880FFF  
 IRQ Channel IRQ 56  
 Driver c:\windows\system32\drivers\nfrd6m.sys (6.06.07 built by:  
 WinDDK, 29.50 KB (30,208 bytes), 2/4/2004 9:53 AM)  
 Name IBM ServeRAID 6M Controller

Manufacturer IBM Corporation  
 Status OK  
 PNP Device ID  
 PCI\VEN\_9005&DEV\_0250&SUBSYS\_02791014&REV\_02\4&1CCD9D43  
 &0&4008  
 Memory Address 0xF0A80000-0xF0A80FFF  
 IRQ Channel IRQ 123  
 Driver c:\windows\system32\drivers\nfrd6m.sys (6.06.07 built by:  
 WinDDK, 29.50 KB (30,208 bytes), 2/4/2004 9:53 AM)  
 Name QLogic QLA23xx PCI Fibre Channel Adapter  
 Manufacturer QLogic  
 Status OK  
 PNP Device ID  
 PCI\VEN\_1077&DEV\_2312&SUBSYS\_010C1077&REV\_02\3&389E99D&0  
 &10  
 I/O Port 0x00002A00-0x00002BFF  
 Memory Address 0xF0B20000-0xF0B20FFF  
 IRQ Channel IRQ 127  
 Driver c:\windows\system32\drivers\ql2300.sys (8.2.3.61 (w32 VI), 456.92  
 KB (467,890 bytes), 2/4/2004 4:54 PM)  
 Name IBM ServeRAID 6M Controller  
 Manufacturer IBM Corporation  
 Status OK  
 PNP Device ID  
 PCI\VEN\_9005&DEV\_0250&SUBSYS\_02791014&REV\_02\4&219E2F76&0  
 &4008  
 Memory Address 0xF0D80000-0xF0D80FFF  
 IRQ Channel IRQ 116  
 Driver c:\windows\system32\drivers\nfrd6m.sys (6.06.07 built by:  
 WinDDK, 29.50 KB (30,208 bytes), 2/4/2004 9:53 AM)  
 Name IBM ServeRAID 6M Controller  
 Manufacturer IBM Corporation  
 Status OK  
 PNP Device ID  
 PCI\VEN\_9005&DEV\_0250&SUBSYS\_02791014&REV\_02\4&2952CC5&0  
 &4010  
 Memory Address 0xF0C80000-0xF0C80FFF  
 IRQ Channel IRQ 120  
 Driver c:\windows\system32\drivers\nfrd6m.sys (6.06.07 built by:  
 WinDDK, 29.50 KB (30,208 bytes), 2/4/2004 9:53 AM)  
 Name IBM ServeRAID 6M Controller  
 Manufacturer IBM Corporation  
 Status OK  
 PNP Device ID  
 PCI\VEN\_9005&DEV\_0250&SUBSYS\_02791014&REV\_02\4&C31448A&0  
 &4008  
 Memory Address 0xF0480000-0xF0480FFF  
 IRQ Channel IRQ 109  
 Driver c:\windows\system32\drivers\nfrd6m.sys (6.06.07 built by:  
 WinDDK, 29.50 KB (30,208 bytes), 2/4/2004 9:53 AM)  
 Name IBM ServeRAID 6M Controller  
 Manufacturer IBM Corporation  
 Status OK  
 PNP Device ID  
 PCI\VEN\_9005&DEV\_0250&SUBSYS\_02791014&REV\_02\4&87B0ABB&0  
 &4008  
 Memory Address 0xF6380000-0xF6380FFF  
 IRQ Channel IRQ 102  
 Driver c:\windows\system32\drivers\nfrd6m.sys (6.06.07 built by:  
 WinDDK, 29.50 KB (30,208 bytes), 2/4/2004 9:53 AM)  
 Name IBM ServeRAID 6M Controller  
 Manufacturer IBM Corporation  
 Status OK  
 PNP Device ID  
 PCI\VEN\_9005&DEV\_0250&SUBSYS\_02791014&REV\_02\4&27840D6C&  
 0&4010  
 Memory Address 0xF6280000-0xF6280FFF  
 IRQ Channel IRQ 106

Driver c:\windows\system32\drivers\nfrd6m.sys (6.06.07 built by: WinDDK, 29.50 KB (30,208 bytes), 2/4/2004 9:53 AM)  
Name IBM ServeRAID 6M Controller  
Manufacturer IBM Corporation  
Status OK  
PNP Device ID  
PCI\VEN\_9005&DEV\_0250&SUBSYS\_02791014&REV\_02\4&29C662D9&0&4008  
Memory Address 0xF6580000-0xF6580FFF  
IRQ Channel IRQ 95  
Driver c:\windows\system32\drivers\nfrd6m.sys (6.06.07 built by: WinDDK, 29.50 KB (30,208 bytes), 2/4/2004 9:53 AM)  
Name IBM ServeRAID 6M Controller  
Manufacturer IBM Corporation  
Status OK  
PNP Device ID  
PCI\VEN\_9005&DEV\_0250&SUBSYS\_02791014&REV\_02\4&4603C61&0&4010  
Memory Address 0xF6480000-0xF6480FFF  
IRQ Channel IRQ 99  
Driver c:\windows\system32\drivers\nfrd6m.sys (6.06.07 built by: WinDDK, 29.50 KB (30,208 bytes), 2/4/2004 9:53 AM)  
Name IBM ServeRAID 6M Controller  
Manufacturer IBM Corporation  
Status OK  
PNP Device ID  
PCI\VEN\_9005&DEV\_0250&SUBSYS\_02791014&REV\_02\4&1B09B77C&0&4008  
Memory Address 0xF6780000-0xF6780FFF  
IRQ Channel IRQ 88  
Driver c:\windows\system32\drivers\nfrd6m.sys (6.06.07 built by: WinDDK, 29.50 KB (30,208 bytes), 2/4/2004 9:53 AM)  
Name IBM ServeRAID 6M Controller  
Manufacturer IBM Corporation  
Status OK  
PNP Device ID  
PCI\VEN\_9005&DEV\_0250&SUBSYS\_02791014&REV\_02\4&3A12BA2D&0&4010  
Memory Address 0xF6680000-0xF6680FFF  
IRQ Channel IRQ 92  
Driver c:\windows\system32\drivers\nfrd6m.sys (6.06.07 built by: WinDDK, 29.50 KB (30,208 bytes), 2/4/2004 9:53 AM)  
[IDE]  
Item Value  
Name VIA Bus Master IDE Controller  
Manufacturer VIA Technologies, Inc.  
Status OK  
PNP Device ID  
PCI\VEN\_1106&DEV\_0571&SUBSYS\_02A61014&REV\_06\3&267A616A&0&29  
I/O Port 0x00000700-0x0000070F  
Driver c:\windows\system32\drivers\vialde.sys (1.00.01.00, 7.00 KB (7,168 bytes), 3/8/2003 3:02 PM)  
Name Primary IDE Channel  
Manufacturer (Standard IDE ATA/ATAPI controllers)  
Status OK  
PNP Device ID PCI\IDE\IDECHANNEL\4&29582549&0&0  
I/O Port 0x000001F0-0x000001F7  
I/O Port 0x000003F6-0x000003F6  
IRQ Channel IRQ 14  
Driver c:\windows\system32\drivers\atapi.sys (5.2.3785.0 (srv03\_rtm.030308-1736), 89.00 KB (91,136 bytes), 3/8/2003 3:02 PM)  
Name Secondary IDE Channel  
Manufacturer (Standard IDE ATA/ATAPI controllers)  
Status OK  
PNP Device ID PCI\IDE\IDECHANNEL\4&29582549&0&1  
I/O Port 0x00000170-0x00000177  
I/O Port 0x00000376-0x00000376

IRQ Channel IRQ 15  
Driver c:\windows\system32\drivers\atapi.sys (5.2.3785.0 (srv03\_rtm.030308-1736), 89.00 KB (91,136 bytes), 3/8/2003 3:02 PM)  
[Printing]  
Name Driver Port Name Server Name  
[Problem Devices]  
Device PNP Device ID Error Code  
[USB]  
Device PNP Device ID  
VIA Rev 5 or later USB Universal Host Controller  
PCI\VEN\_1106&DEV\_3038&SUBSYS\_02A61014&REV\_16\3&267A616A&0&2A  
USB Root Hub USB\ROOT\_HUB\4&226DFD17&0  
VIA Rev 5 or later USB Universal Host Controller  
PCI\VEN\_1106&DEV\_3038&SUBSYS\_02A61014&REV\_16\3&267A616A&0&2B  
USB Root Hub USB\ROOT\_HUB\4&3527ADBC&0  
[Software Environment]  
[System Drivers]  
Name Description File Type Started Start Mode  
State Status Error Control Accept Pause Accept Stop  
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 Networking Support Environment  
c:\windows\system32\drivers\afd.sys Kernel Driver Yes  
Auto Running OK Normal No Yes  
aha154x Aha154x Not Available Kernel Driver No  
Disabled Stopped OK Normal No No  
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  
asynmac RAS Asynchronous Media Driver  
c:\windows\system32\drivers\asynmac.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  
ati2mpad ati2mpad c:\windows\system32\drivers\ati2mpad.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 Driver	Yes	c:\windows\system32\drivers\beep.sys	Kernel Driver	System	Running	OK	Normal	No	flpydisk	Floppy Disk Driver	Yes	c:\windows\system32\drivers\flpydisk.sys	Kernel Driver	Manual	Running	OK	Normal	No	Yes	
cbidf2k	cbidf2k Driver	No	c:\windows\system32\drivers\cbidf2k.sys	Kernel Driver	Disabled	Stopped	OK	Normal	No	ftdisk	Volume Manager Driver										
cdfs	Cdfs Driver	Yes	c:\windows\system32\drivers\cdfs.sys	File System	Disabled	Running	OK	Normal	No	c:\windows\system32\drivers\ftdisk.sys	Kernel Driver	Yes									Yes
cdrom	CD-ROM Driver	Yes	c:\windows\system32\drivers\cdrom.sys	Kernel Driver	System	Running	OK	Normal	No	gpc	Generic Packet Classifier										
changer	Changer System	Stopped	Not Available	Kernel Driver	Ignore	No	No	No	No	c:\windows\system32\drivers\msgpc.sys	Kernel Driver	Manual	Running	OK	Normal	No	Yes				Yes
clusdisk	Cluster Disk Driver	No	c:\windows\system32\drivers\clusdisk.sys	Kernel Driver	Disabled	Stopped	OK	Normal	No	hpn	hpn	Not Available									No
cmdide	CmdIde	Disabled	Not Available	Kernel Driver					No	hpt3xx	hpt3xx	Not Available									No
cpqarray	Cpqarray	Disabled	Not Available	Kernel Driver					No	Disabled	Stopped	OK	Normal	No	No						No
cpqarray2	cpqarray2	Disabled	Not Available	Kernel Driver					No	hpt3xx	hpt3xx	Not Available									No
cpqcissm	cpqcissm	Disabled	Not Available	Kernel Driver					No	http	HTTP Driver	Not Available									No
cpqfcalm	cpqfcalm	Disabled	Not Available	Kernel Driver					No	c:\windows\system32\drivers\http.sys	Kernel Driver	Manual	Stopped	OK	Normal	No					No
credisk	CRC Disk Filter Driver								No	i2omgmt	i2omgmt	Not Available									No
	c:\windows\system32\drivers\credisk.sys			Kernel Driver					Yes	System	Stopped	OK	Normal	No	No						No
	Boot	Running	OK	Normal	No	Yes				i2omp	i2omp	Not Available									No
dac2w2k	dac2w2k Driver	No	c:\windows\system32\drivers\dac2w2k.sys	Kernel Driver	Disabled	Stopped	OK	Normal	No	Disabled	Stopped	OK	Normal	No	No						No
dac960nt	dac960nt	Disabled	Not Available	Kernel Driver					No	i8042prt	i8042 Keyboard and PS/2 Mouse Port Driver										No
dellcerc	dellcerc	Disabled	Not Available	Kernel Driver					No	c:\windows\system32\drivers\i8042prt.sys	Kernel Driver	System	Running	OK	Normal	No	Yes				Yes
dfsdriver	DfsDriver	Yes	c:\windows\system32\drivers\dfs.sys	File System	Boot	Running	OK	Normal	No	ibmcomw	IBM (Version 5.24) Remote Supervisor Serial Port										Yes
disk	Disk Driver	Yes	c:\windows\system32\drivers\disk.sys	Kernel Driver	Boot	Running	OK	Normal	No	c:\windows\system32\drivers\ibmcomw.sys	Kernel Driver	Manual	Running	OK	Normal	No	Yes				Yes
dmboot	dmboot Driver	No	c:\windows\system32\drivers\dmboot.sys	Kernel Driver	Disabled	Stopped	OK	Normal	No	ibmhpa	IBMHPA Driver	Yes	Manual	Running	OK	Normal	No				No
dmio	Logical Disk Manager Driver								No	ibmspw	IBM (Version 5.24) Remote Supervisor + Mouse/Keyboard										Yes
	c:\windows\system32\drivers\dmio.sys			Kernel Driver					Yes	c:\windows\system32\drivers\ibmspw.sys	Kernel Driver	Manual	Running	OK	Normal	No	Yes				Yes
dmload	dmload Driver	Yes	c:\windows\system32\drivers\dmload.sys	Kernel Driver	Boot	Running	OK	Normal	No	iirsp	iirsp	Not Available									No
dpti2o	dpti2o	Disabled	Not Available	Kernel Driver					No	Disabled	Stopped	OK	Normal	No	No						No
em	em Driver	No	c:\windows\system32\drivers\em.sys	Kernel Driver	Manual	Stopped	OK	Normal	No	imapi	CD-Burning Filter Driver										No
fastfat	Fastfat Driver	Yes	c:\windows\system32\drivers\fastfat.sys	File System	Boot	Running	OK	Normal	No	c:\windows\system32\drivers\imapi.sys	Kernel Driver	System	Stopped	OK	Normal	No	No				No
fdc	Floppy Disk Controller Driver								No	intelide	IntelIde	Not Available									No
	c:\windows\system32\drivers\fdc.sys			Kernel Driver					Yes	Disabled	Stopped	OK	Normal	No	No						No
	Manual	Running	OK	Normal	No	Yes				interruptaffinityfilter	Interrupt Affinity Filter										Yes
fips	Fips Driver	Yes	c:\windows\system32\drivers\fips.sys	Kernel Driver	System	Running	OK	Normal	No	c:\windows\system32\drivers\intfiltr.sys	Kernel Driver	Boot	Running	OK	Normal	No	Yes				Yes
	Yes								No	ipfilterdriver	IP Traffic Filter Driver										No
									No	c:\windows\system32\drivers\ipfltdrv.sys	Kernel Driver	Manual	Stopped	OK	Normal	No	No				No
									No	ipinip	IP in IP Tunnel Driver										No
									No	c:\windows\system32\drivers\ipinip.sys	Kernel Driver	Kernel Driver	No	Manual	Stopped	OK	Normal				Normal
									No	ipnat	IP Network Address Translator										No
									No	c:\windows\system32\drivers\ipnat.sys	Kernel Driver	Manual	Stopped	OK	Normal	No	No				No
									No	ipsec	IPSEC driver										No
									No	c:\windows\system32\drivers\ipsec.sys	Kernel Driver	Kernel Driver	Yes	System	Running	OK	Normal				Normal
									No	ipsraidn	ipsraidn	Not Available									No
									No	Disabled	Stopped	OK	Normal	No	No						No
									No	isapnp	PnP ISA/EISA Bus Driver										No
									No	c:\windows\system32\drivers\isapnp.sys	Kernel Driver	Boot	Running	OK	Critical	No	Yes				Yes
									No	kbdclass	Keyboard Class Driver										Yes
									No	c:\windows\system32\drivers\kbdclass.sys	Kernel Driver	System	Running	OK	Normal	No	Yes				Yes
									No	ksecdd	KSecDD										Kernel
									No	c:\windows\system32\drivers\ksecdd.sys	Kernel Driver	Driver	Yes	Boot	Running	OK	Normal	No			No
									No	lp6nds35	lp6nds35	Not Available									No
									No	Disabled	Stopped	OK	Normal	No	No						No

mf	mf	c:\windows\system32\drivers\mf.sys	Kernel						parport	Parport	c:\windows\system32\drivers\parport.sys	Kernel			
Driver	Yes	Manual	Running	OK	Normal	No			Driver	No	Manual	Stopped	OK	Ignore	No
Yes									No						
mnmdd	mnmdd	c:\windows\system32\drivers\mnmdd.sys	Kernel						partmgr	Partition Manager	c:\windows\system32\drivers\partmgr.sys	Kernel			
Driver	Yes	System	Running	OK	Ignore	No			Kernel Driver	Yes	Boot	Running	OK	Normal	
Yes									No	Yes					
modem	Modem	c:\windows\system32\drivers\modem.sys	Kernel						pci	PCI Bus Driver	c:\windows\system32\drivers\pci.sys	Kernel			
Driver	No	Manual	Stopped	OK	Ignore	No			Kernel Driver	Yes	Boot	Running	OK	Critical	
No									No	Yes					
mouclass	Mouse Class Driver	c:\windows\system32\drivers\mouclass.sys	Kernel						pciide	PCIIDE	Not Available	Kernel Driver	No		
Kernel Driver	Yes	System	Running	OK	Normal	No			Disabled	Stopped	OK	Normal	No	No	
No	Yes								pcmcia	Pcmcia	c:\windows\system32\drivers\pcmcia.sys	Kernel			
mountmgr	Mount Point Manager	c:\windows\system32\drivers\mountmgr.sys	Kernel						Driver	No	Disabled	Stopped	OK	Normal	No
Kernel Driver	Yes	Boot	Running	OK	Normal	No			No						
No	Yes								pdcomp	PDCOMP	Not Available	Kernel Driver	No		
mraid35x	mraid35x	Not Available	Kernel Driver	No					Manual	Stopped	OK	Ignore	No	No	
Disabled	Stopped	OK	Normal	No	No				pdframe	PDFRAME	Not Available	Kernel Driver			
mrxdav	WebDav Client Redirector								No	Manual	Stopped	OK	Ignore	No	No
c:\windows\system32\drivers\mrxdav.sys	File System Driver		No						pdreli	PDRELI	Not Available	Kernel Driver	No		
Manual	Stopped	OK	Normal	No	No				Manual	Stopped	OK	Ignore	No	No	
mrxsmb	MRXSMB	c:\windows\system32\drivers\mrxsmb.sys	File System						pdrframe	PDRFRAME	Not Available	Kernel Driver			
Driver	Yes	System	Running	OK	Normal	No			No	Manual	Stopped	OK	Ignore	No	No
Yes									perc2	perc2	Not Available	Kernel Driver	No		
msfs	Msfs	c:\windows\system32\drivers\msfs.sys	File System						Disabled	Stopped	OK	Normal	No	No	
Driver	Yes	System	Running	OK	Normal	No			perc2hib	perc2hib	Not Available	Kernel Driver	No		
Yes									Disabled	Stopped	OK	Normal	No	No	
mup	Mup	c:\windows\system32\drivers\mup.sys	File System						pnpmem	Microsoft Memory Module Driver		Kernel Driver	Yes		
Driver	Yes	Boot	Running	OK	Normal	No			c:\windows\system32\drivers\pnpmem.sys	Kernel Driver	Yes				
Yes									Manual	Running	OK	Normal	No	Yes	
ndis	NDIS System Driver	c:\windows\system32\drivers\ndis.sys	Kernel						pptpminiport	WAN Miniport (PPTP)		Kernel Driver	Yes		
Kernel Driver	Yes	Boot	Running	OK	Normal	No			c:\windows\system32\drivers\raspptp.sys	Kernel Driver	Yes				
No	Yes								Manual	Running	OK	Normal	No	Yes	
ndistapi	Remote Access NDIS TAPI Driver								processor	Processor Driver	c:\windows\system32\drivers\processr.sys	Kernel			
c:\windows\system32\drivers\ndistapi.sys	Kernel Driver	Yes							Kernel Driver	Yes	Manual	Running	OK	Normal	
Manual	Running	OK	Normal	No	Yes				No	Yes					
ndisuio	NDIS Usermode I/O Protocol								ptilink	Direct Parallel Link Driver		Kernel Driver	Yes		
c:\windows\system32\drivers\ndisuio.sys	Kernel Driver	Yes							c:\windows\system32\drivers\ptilink.sys	Kernel Driver	Yes				
Manual	Running	OK	Normal	No	Yes				Manual	Running	OK	Normal	No	Yes	
ndiswan	Remote Access NDIS WAN Driver								ql1080	ql1080	Not Available	Kernel Driver	No		
c:\windows\system32\drivers\ndiswan.sys	Kernel Driver	Yes							Disabled	Stopped	OK	Normal	No	No	
Manual	Running	OK	Normal	No	Yes				ql10wnt	ql10wnt	Not Available	Kernel Driver	No		
ndproxy	NDIS Proxy	c:\windows\system32\drivers\ndproxy.sys	Kernel Driver						Disabled	Stopped	OK	Normal	No	No	
Kernel Driver	Yes	Manual	Running	OK	Normal	No			ql12160	ql12160	Not Available	Kernel Driver	No		
No	Yes								Disabled	Stopped	OK	Normal	No	No	
netbios	NetBIOS Interface	c:\windows\system32\drivers\netbios.sys	Kernel Driver						ql1240	ql1240	Not Available	Kernel Driver	No		
File System Driver	Yes	System	Running	OK	Normal	No			Disabled	Stopped	OK	Normal	No	No	
No	Yes								ql1280	ql1280	Not Available	Kernel Driver	No		
netbt	NetBios over Tcpip	c:\windows\system32\drivers\netbt.sys	Kernel Driver						Disabled	Stopped	OK	Normal	No	No	
Kernel Driver	Yes	System	Running	OK	Normal	No			ql2100	ql2100	Not Available	Kernel Driver	No		
No	Yes								Disabled	Stopped	OK	Normal	No	No	
nfd6m	IBM ServeRAID 6M Device Driver								ql2200	ql2200	Not Available	Kernel Driver	No		
c:\windows\system32\drivers\nfd6m.sys	Kernel Driver	Yes							Disabled	Stopped	OK	Normal	No	No	
Boot	Running	OK	Normal	No	Yes				ql2300	ql2300	c:\windows\system32\drivers\ql2300.sys	Kernel			
nfd6mpf	IBM ServeRAID 6M Performance Driver								Driver	Yes	Boot	Running	OK	Normal	No
c:\windows\system32\drivers\nfd6mpf.sys	Kernel Driver	Yes							Yes						
Boot	Running	OK	Normal	No	Yes				ql2300vi	ql2300vi	c:\windows\system32\drivers\ql2300vi.sys	Kernel			
nfd960	nfd960	Not Available	Kernel Driver	No					Driver	Yes	Boot	Running	OK	Normal	No
Disabled	Stopped	OK	Normal	No	No				Yes						
npfs	Npfs	c:\windows\system32\drivers\npfs.sys	File System						qlvika	qlvika	c:\windows\system32\drivers\qlvika.sys	Kernel			
Driver	Yes	System	Running	OK	Normal	No			Driver	Yes	Auto	Running	OK	Normal	No
Yes									Yes						
ntfs	Ntfs	c:\windows\system32\drivers\ntfs.sys	File System						rasacd	Remote Access Auto Connection Driver		Kernel Driver	Yes		
Driver	Yes	Disabled	Running	OK	Normal	No			c:\windows\system32\drivers\rasacd.sys	Kernel Driver	Yes				
Yes									System	Running	OK	Normal	No	Yes	
null	Null	c:\windows\system32\drivers\null.sys	Kernel						rasl2tp	WAN Miniport (L2TP)		Kernel Driver	Yes		
Driver	Yes	System	Running	OK	Normal	No			c:\windows\system32\drivers\rasl2tp.sys	Kernel Driver	Yes				
Yes									Manual	Running	OK	Normal	No	Yes	

rasppoe	Remote Access PPPOE Driver						
c:\windows\system32\drivers\rasppoe.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		
sandra	SANDRA						
Driver	No	Manual	Stopped	OK	Normal	No	
No							
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	No	Manual	Stopped	OK	Normal	
Kernel Driver	No	Manual	Stopped	OK	Normal		
No	No						
serial	Serial port driver						
c:\windows\system32\drivers\serial.sys	Kernel Driver	No	System	Stopped	OK	Ignore	
Kernel Driver	No	System	Stopped	OK	Ignore		
No	No						
sfloppy	Sfloppy						
c:\windows\system32\drivers\sfloppy.sys	Kernel						
Driver	No	System	Stopped	OK	Ignore	No	
No							
simbad	Simbad						
Not Available	Kernel Driver	No					
Disabled	Stopped	OK	Normal	No	No		
sparrow	Sparrow						
Not Available	Kernel Driver	No					
Disabled	Stopped	OK	Normal	No	No		
srv	Srv						
c:\windows\system32\drivers\srsv.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	
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						
c:\windows\system32\drivers\symmpi.sys	Kernel						
Driver	Yes	Boot	Running	OK	Normal	No	
Yes							
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					
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							
update	Microcode Update Driver						
c:\windows\system32\drivers\update.sys	Kernel Driver	Yes					
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	
Kernel Driver	Yes	Manual	Running	OK	Normal		
No	Yes						
usbuhci	Microsoft USB Universal Host Controller Miniport Driver						
c:\windows\system32\drivers\usbuhci.sys	Kernel Driver	Yes					
Kernel Driver	Yes						
Manual	Running	OK	Normal	No	Yes		
vga	vga						
c:\windows\system32\drivers\vgapnp.sys	Kernel						
Driver	No	Manual	Stopped	OK	Ignore	No	
No							
vgasave	VGA Display Controller.						
c:\windows\system32\drivers\vgasave.sys	Kernel Driver	Yes					
Kernel Driver	Yes						
System	Running	OK	Ignore	No	Yes		
viaide	ViaIde						
c:\windows\system32\drivers\viaide.sys	Kernel						
Driver	Yes	Boot	Running	OK	Normal	No	
Yes							
volsnap	Storage volumes						
c:\windows\system32\drivers\volsnap.sys	Kernel Driver	Yes	Boot	Running	OK	Normal	
Kernel Driver	Yes	Boot	Running	OK	Normal		
No	Yes						
wanarp	Remote Access IP ARP Driver						
c:\windows\system32\drivers\wanarp.sys	Kernel Driver	Yes					
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					
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							
Not Available	Not Available	Not Available	Not Available				
Available	Not Available	Not Available	Not Available				
Not Available	HTREE\ROOT\0						
ACPI Multiprocessor Node	Not Available	COMPUTER					
Not Available	Not Available	(Node-based Computers)					
Not Available	Not Available	ROOT\ACPI_HAL\0000					
Microsoft ACPI-Compliant System	Yes	SYSTEM	5.2.3785.0				
10/1/2002	Microsoft	acpi.inf	Not Available				
ACPI_HAL\PNP0C08\0							
IBM Active PCI Device	Yes	SYSTEM	5.1.1.1	2/7/2003			
IBM Corporation	oem11.inf	Not Available					
ACPI\IBM37D4\2&DABA3FF&0							
PCI bus	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system		
devices)	machine.inf	Not Available	ACPI\PNP0A03\0				
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3785.0	10/1/2002			
(Standard system devices)	machine.inf	Not Available					
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&267A616A&0&00							
RAGE XL PCI	No	DISPLAY	5.0.2195.5012	12/28/2001			
ATI Technologies Inc.	oem2.inf	Not Available					
PCI\VEN_1002&DEV_4752&SUBSYS_02401014&REV_27\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&F17EA7B&0&80000000&00&03							
IBM (Version 5.24) Remote Supervisor+Serial Port+Mouse/Keyboard							
No	MULTIFUNCTION	5.24.0.0	10/8/2003	IBM	oem7.inf		

Not Available				VIA Rev 5 or later USB Universal Host Controller	Yes	USB	
PCI\VEN_1014&DEV_010F&SUBSYS_01131014&REV_003&267A616A&0&20				5.2.3785.0 10/1/2002 VIA Technologies usbport.inf	Not Available		
IBM (Version 5.24) Remote Supervisor + Mouse/Keyboard	No			PCI\VEN_1106&DEV_3038&SUBSYS_02A61014&REV_163&267A616A&0&2A			
SYSTEM 5.24.0.0 10/8/2003 IBM oem8.inf	Not Available			USB Root Hub	Yes	USB	5.2.3785.0 10/1/2002 (Standard
MF\PCI#VEN_1014&DEV_010F&SUBSYS_01131014&REV_004&20A2B2&0&20#CHILD0002				USB Host Controller) usbport.inf	Not Available		
IBM (Version 5.24) Remote Supervisor Serial Port	No	PORTS		USB\ROOT_HUB\4&226DFD17&0			
5.24.0.0 10/8/2003 IBM oem9.inf	Not Available			VIA Rev 5 or later USB Universal Host Controller	Yes	USB	
MF\PCI#VEN_1014&DEV_010F&SUBSYS_01131014&REV_004&20A2B2&0&20#CHILD0001				5.2.3785.0 10/1/2002 VIA Technologies usbport.inf	Not Available		
VIA Tech PCI to ISA bridge	Yes	SYSTEM	5.2.3785.0 10/1/2002	PCI\VEN_1106&DEV_3038&SUBSYS_02A61014&REV_163&267A616A&0&2B			
VIA machine.inf	Not Available			USB Root Hub	Yes	USB	5.2.3785.0 10/1/2002 (Standard
PCI\VEN_1106&DEV_0686&SUBSYS_00000000&REV_403&267A616A&0&28				USB Host Controller) usbport.inf	Not Available		
ISAPNP Read Data Port	Yes	SYSTEM	5.2.3785.0 10/1/2002	USB\ROOT_HUB\4&3527ADBC&0			
(Standard system devices) machine.inf	Not Available			VIA Tech Power Management controller	Yes	SYSTEM	5.2.3785.0
ISAPNP\READDATAPORT\0				10/1/2002 VIA machine.inf	Not Available		
Motherboard resources	Yes	SYSTEM	5.2.3785.0 10/1/2002	PCI\VEN_1106&DEV_3057&SUBSYS_02A61014&REV_403&267A616A&0&2C			
(Standard system devices) machine.inf	Not Available			System board	Yes	SYSTEM	5.2.3785.0 10/1/2002 (Standard
ACPI\PNP0C02\2				system devices) machine.inf	Not Available		
Standard 101/102-Key or Microsoft Natural PS/2 Keyboard	Yes			ACPI\PNP0C01\1			
KEYBOARD 5.2.3785.0 10/1/2002 (Standard keyboards) keyboard.inf				ACPI Fixed Feature Button	Yes	SYSTEM	5.2.3785.0 10/1/2002
Not Available ACPI\PNP0303\4&7FD7688&0				(Standard system devices) machine.inf	Not Available		
PS/2 Compatible Mouse	Yes	MOUSE	5.2.3785.0 10/1/2002	ACPI\FIXEDBUTTON\2&DABA3FF&0			
Microsoft mouse.inf	Not Available			Processor	Yes	PROCESSOR	5.2.3785.0 10/1/2002 (Standard
ACPI\PNP0F13\4&7FD7688&0				processor types) cpu.inf	Not Available		
Standard floppy disk controller	Yes	FDC	5.2.3785.0 10/1/2002	ACPI\GENUINEINTEL_-X86_FAMILY_15_MODEL_2_0			
(Standard floppy disk controllers) fdc.inf	Not Available			Processor	Yes	PROCESSOR	5.2.3785.0 10/1/2002 (Standard
ACPI\PNP0700\4&7FD7688&0				processor types) cpu.inf	Not Available		
Floppy disk drive	Yes	FLOPPYDISK	5.2.3785.0 10/1/2002	ACPI\GENUINEINTEL_-X86_FAMILY_15_MODEL_2_1			
(Standard floppy disk drives) floppydisk.inf	Not Available			Processor	Yes	PROCESSOR	5.2.3785.0 10/1/2002 (Standard
FDC\GENERIC_FLOPPY_DRIVE\5&17D92A40&0&0				processor types) cpu.inf	Not Available		
Advanced programmable interrupt controller	Yes	SYSTEM	5.2.3785.0	ACPI\GENUINEINTEL_-X86_FAMILY_15_MODEL_2_2			
10/1/2002 (Standard system devices) machine.inf	Not Available			Processor	Yes	PROCESSOR	5.2.3785.0 10/1/2002 (Standard
Available ACPI\PNP0003\4&7FD7688&0				processor types) cpu.inf	Not Available		
Direct memory access controller	Yes	SYSTEM	5.2.3785.0 10/1/2002	ACPI\GENUINEINTEL_-X86_FAMILY_15_MODEL_2_3			
(Standard system devices) machine.inf	Not Available			Processor	Yes	PROCESSOR	5.2.3785.0 10/1/2002 (Standard
ACPI\PNP0200\4&7FD7688&0				processor types) cpu.inf	Not Available		
System timer	Yes	SYSTEM	5.2.3785.0 10/1/2002 (Standard	ACPI\GENUINEINTEL_-X86_FAMILY_15_MODEL_2_4			
system devices) machine.inf	Not Available			Processor	Yes	PROCESSOR	5.2.3785.0 10/1/2002 (Standard
ACPI\PNP0100\4&7FD7688&0				processor types) cpu.inf	Not Available		
System CMOS/real time clock	Yes	SYSTEM	5.2.3785.0 10/1/2002	ACPI\GENUINEINTEL_-X86_FAMILY_15_MODEL_2_5			
(Standard system devices) machine.inf	Not Available			Processor	Yes	PROCESSOR	5.2.3785.0 10/1/2002 (Standard
ACPI\PNP0B00\4&7FD7688&0				processor types) cpu.inf	Not Available		
System speaker	Yes	SYSTEM	5.2.3785.0 10/1/2002 (Standard	ACPI\GENUINEINTEL_-X86_FAMILY_15_MODEL_2_6			
system devices) machine.inf	Not Available			Processor	Yes	PROCESSOR	5.2.3785.0 10/1/2002 (Standard
ACPI\PNP0800\4&7FD7688&0				processor types) cpu.inf	Not Available		
Numeric data processor	Yes	SYSTEM	5.2.3785.0 10/1/2002	ACPI\GENUINEINTEL_-X86_FAMILY_15_MODEL_2_7			
(Standard system devices) machine.inf	Not Available			Processor	Yes	PROCESSOR	5.2.3785.0 10/1/2002 (Standard
ACPI\PNP0C04\4&7FD7688&0				processor types) cpu.inf	Not Available		
Motherboard resources	Yes	SYSTEM	5.2.3785.0 10/1/2002	ACPI\GENUINEINTEL_-X86_FAMILY_15_MODEL_2_8			
(Standard system devices) machine.inf	Not Available			Processor	Yes	PROCESSOR	5.2.3785.0 10/1/2002 (Standard
ACPI\PNP0C02\3				processor types) cpu.inf	Not Available		
VIA Bus Master IDE Controller	Yes	HDC	5.2.3785.0 10/1/2002	ACPI\GENUINEINTEL_-X86_FAMILY_15_MODEL_2_9			
VIA Technologies, Inc. mshdc.inf	Not Available			Processor	Yes	PROCESSOR	5.2.3785.0 10/1/2002 (Standard
PCI\VEN_1106&DEV_0571&SUBSYS_02A61014&REV_063&267A616A&0&29				processor types) cpu.inf	Not Available		
Primary IDE Channel	Yes	HDC	5.2.3785.0 10/1/2002 (Standard	ACPI\GENUINEINTEL_-X86_FAMILY_15_MODEL_2\10			
IDE ATA/ATAPI controllers) mshdc.inf	Not Available			Processor	Yes	PROCESSOR	5.2.3785.0 10/1/2002 (Standard
PCI\IDE\IDECHANNEL\4&29582549&0&0				processor types) cpu.inf	Not Available		
CD-ROM Drive	Yes	CDROM	5.2.3785.0 10/1/2002 (Standard	ACPI\GENUINEINTEL_-X86_FAMILY_15_MODEL_2\11			
CD-ROM drives) cdrom.inf	Not Available			Processor	Yes	PROCESSOR	5.2.3785.0 10/1/2002 (Standard
IDE\CDROMHL-DT-ST_DVD-ROM_GDR8081N_____0012_				processor types) cpu.inf	Not Available		
_5&CBC355F&0&0.0.0				ACPI\GENUINEINTEL_-X86_FAMILY_15_MODEL_2\12			
Secondary IDE Channel	Yes	HDC	5.2.3785.0 10/1/2002	Processor	Yes	PROCESSOR	5.2.3785.0 10/1/2002 (Standard
(Standard IDE ATA/ATAPI controllers) mshdc.inf	Not Available			processor types) cpu.inf	Not Available		
PCI\IDE\IDECHANNEL\4&29582549&0&1				ACPI\GENUINEINTEL_-X86_FAMILY_15_MODEL_2\13			

Processor Yes processor types)	PROCESSOR	5.2.3785.0	10/1/2002	(Standard	PCI\VEN_1014&DEV_01A7&SUBSYS_00000000&REV_02\3&1070020&0
ACPI\GENUINEINTEL_-X86_FAMILY_15_MODEL_2\14	cpu.inf	Not Available			&10
Processor Yes processor types)	PROCESSOR	5.2.3785.0	10/1/2002	(Standard	IBM ServeRAID 6M Controller No
ACPI\GENUINEINTEL_-X86_FAMILY_15_MODEL_2\15	cpu.inf	Not Available			SCSIADAPTER 6.6.7.0
Memory Module	Yes	MEMORY5.2.3785.0	10/1/2002	Microsoft	10/22/2003 IBM Corporation oem18.inf Not Available
memory.inf	Not Available	ACPI\PNP0C80\0			PCI\VEN_9005&DEV_0250&SUBSYS_02791014&REV_02\4&392398EF&0
Memory Module	Yes	MEMORY5.2.3785.0	10/1/2002	Microsoft	&4010
memory.inf	Not Available	ACPI\PNP0C80\2			Disk drive Yes
PCI bus	Yes	SYSTEM 5.2.3785.0	10/1/2002	(Standard system	DISKDRIVE 5.2.3785.0
devices)	machine.inf	Not Available		ACPI\PNP0A03\1	10/1/2002 (Standard
PCI standard host CPU bridge	Yes	SYSTEM 5.2.3785.0	10/1/2002		disk drives) disk.inf Not Available
(Standard system devices)	machine.inf	Not Available			SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&18834900&0&0
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&13C0B0C5&0&00					000
LSI Logic 1020/1030 Ultra320 SCSI Adapter	Yes				Disk drive Yes
SCSIADAPTER 1.9.6.0	5/23/2003	LSI Logic	oem15.inf	Not Available	DISKDRIVE 5.2.3785.0
Available					10/1/2002 (Standard
PCI\VEN_1000&DEV_0030&SUBSYS_02921014&REV_07\3&13C0B0C5&0&18					disk drives) disk.inf Not Available
Disk drive Yes	DISKDRIVE	5.2.3785.0	10/1/2002	(Standard	SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&18834900&0&0
disk drives)	disk.inf	Not Available			010
SCSI\DISK&VEN_IBM-ESXS&PROD_ST336607LC_!#&REV_B25\1\4&3CF91A&0&000					SCSI Processor Device
SCSI Processor Device	Yes	SYSTEM 5.2.3785.0	10/1/2002		Yes
IBM	scsidev.inf	Not Available			SYSTEM 5.2.3785.0
SCSI\PROCESSOR&VEN_IBM&PROD_EXP400__S320&REV_D110\5&18834900&0&2F0					10/1/2002
IBM Dummy Device	Yes	SYSTEM 5.2.3785.0	10/1/2002	IBM	SCSI Processor Device
scsidev.inf	Not Available	ACPI\PNP0A03\3			Yes
SCSI\BRIDGE&VEN_IBM&PROD_DUMMY_DEVICE&REV_6.06\5&18834900&0&300					SYSTEM 5.2.3785.0
LSI Logic 1020/1030 Ultra320 SCSI Adapter	Yes				10/1/2002
SCSIADAPTER 1.9.6.0	5/23/2003	LSI Logic	oem15.inf	Not Available	IBM
Available					scsidev.inf
PCI\VEN_1000&DEV_0030&SUBSYS_02921014&REV_07\3&13C0B0C5&0&19					Not Available
Disk drive Yes	DISKDRIVE	5.2.3785.0	10/1/2002	(Standard	ACPI\PNP0A03\3
disk drives)	disk.inf	Not Available			PCI standard host CPU bridge
SCSI\DISK&VEN_IBM&PROD_ST336607LC_!#&REV_B25\1\4&3CF91A&0&000					Yes
SCSI Processor Device	Yes	SYSTEM 5.2.3785.0	10/1/2002		SYSTEM 5.2.3785.0
IBM	scsidev.inf	Not Available			10/1/2002
SCSI\PROCESSOR&VEN_IBM&PROD_EXP400__S320&REV_D110\5&18834900&0&080					(Standard system devices)
IBM Dummy Device	Yes	SYSTEM 5.2.3785.0	10/1/2002	IBM	machine.inf
scsidev.inf	Not Available	ACPI\PNP0A03\3			Not Available
SCSI\BRIDGE&VEN_IBM&PROD_DUMMY_DEVICE&REV_4.80\4&3CF91A&0&100					PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&29E81982&0
LSI Logic 1020/1030 Ultra320 SCSI Adapter	Yes				&00
SCSIADAPTER 1.9.6.0	5/23/2003	LSI Logic	oem15.inf	Not Available	PCI standard PCI-to-PCI bridge
Available					Yes
PCI\VEN_1000&DEV_0030&SUBSYS_02921014&REV_07\3&13C0B0C5&0&19					SYSTEM 5.2.3785.0
IBM Dummy Device	Yes	SYSTEM 5.2.3785.0	10/1/2002	IBM	10/1/2002
scsidev.inf	Not Available	ACPI\PNP0A03\3			(Standard system devices)
SCSI\BRIDGE&VEN_IBM&PROD_DUMMY_DEVICE&REV_4.80\4&12F6A9BF&0&100					machine.inf
Broadcom NetXtreme Gigabit Ethernet	Yes	NET 7.33.0.0			Not Available
10/16/2003	Broadcom	oem10.inf	Not Available		
PCI\VEN_14E4&DEV_1648&SUBSYS_02A61014&REV_02\3&13C0B0C5&0&20					PCI\VEN_1014&DEV_01A7&SUBSYS_00000000&REV_02\3&29E81982&0&20
Broadcom NetXtreme Gigabit Ethernet	Yes	NET 7.33.0.0			IBM ServeRAID 6M Controller
10/16/2003	Broadcom	oem10.inf	Not Available		No
PCI\VEN_14E4&DEV_1648&SUBSYS_02A61014&REV_02\3&13C0B0C5&0&21					SCSIADAPTER 6.6.7.0
PCI bus	Yes	SYSTEM 5.2.3785.0	10/1/2002	(Standard system	10/22/2003 IBM Corporation oem18.inf Not Available
devices)	machine.inf	Not Available			PCI\VEN_9005&DEV_0250&SUBSYS_02791014&REV_02\4&180CD7A4&0&4020
PCI standard host CPU bridge	Yes	SYSTEM 5.2.3785.0	10/1/2002		Disk drive Yes
(Standard system devices)	machine.inf	Not Available			DISKDRIVE 5.2.3785.0
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&1070020&0&00					10/1/2002 (Standard
QLogic QLA23xx PCI Fibre Channel Adapter	Yes				disk drives) disk.inf Not Available
SCSIADAPTER 8.2.3.61	7/25/2003	QLogic	oem16.inf	Not Available	SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&35EFC5FC&0
Available					&000
PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\3&1070020&0&08					SCSI Processor Device
Qlogic processor device	Yes	SYSTEM 5.2.3785.0	10/1/2002		Yes
QLOGIC	scsidev.inf	Not Available			SYSTEM 5.2.3785.0
SCSI\PROCESSOR&VEN_QLOGIC&PROD_PSEUDO_LUN&REV_1\4&18CF6E5C&0&07F0					10/1/2002
PCI standard PCI-to-PCI bridge	Yes	SYSTEM 5.2.3785.0	10/1/2002		IBM
(Standard system devices)	machine.inf	Not Available			scsidev.inf
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&172E68DD&0&00					Not Available
QLogic QLA23xx PCI Fibre Channel Adapter	Yes				SCSI\BRIDGE&VEN_IBM&PROD_DUMMY_DEVICE&REV_6.06\5&35EFC5FC&0&300
SCSIADAPTER 8.2.3.61	7/25/2003	QLogic	oem16.inf	Not Available	
Available					PCI bus
PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\3&1070020&0&08					Yes
Qlogic processor device	Yes	SYSTEM 5.2.3785.0	10/1/2002		SYSTEM 5.2.3785.0
QLOGIC	scsidev.inf	Not Available			10/1/2002
SCSI\PROCESSOR&VEN_QLOGIC&PROD_PSEUDO_LUN&REV_1\4&18CF6E5C&0&07F0					(Standard system devices)
PCI standard PCI-to-PCI bridge	Yes	SYSTEM 5.2.3785.0	10/1/2002		machine.inf
(Standard system devices)	machine.inf	Not Available			Not Available
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&172E68DD&0&00					PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&172E68DD&0&00
QLogic QLA23xx PCI Fibre Channel Adapter	Yes				PCI standard PCI-to-PCI bridge
SCSIADAPTER 8.2.3.61	7/25/2003	QLogic	oem16.inf	Not Available	Yes
Available					SYSTEM 5.2.3785.0
PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\3&1070020&0&08					10/1/2002
Qlogic processor device	Yes	SYSTEM 5.2.3785.0	10/1/2002		(Standard system devices)
QLOGIC	scsidev.inf	Not Available			machine.inf
SCSI\PROCESSOR&VEN_QLOGIC&PROD_PSEUDO_LUN&REV_1\4&18CF6E5C&0&07F0					Not Available
PCI standard PCI-to-PCI bridge	Yes	SYSTEM 5.2.3785.0	10/1/2002		PCI\VEN_1014&DEV_01A7&SUBSYS_00000000&REV_02\3&172E68DD&0&18
(Standard system devices)	machine.inf	Not Available			IBM ServeRAID 6M Controller
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&172E68DD&0&00					No
QLogic QLA23xx PCI Fibre Channel Adapter	Yes				SCSIADAPTER 6.6.7.0
SCSIADAPTER 8.2.3.61	7/25/2003	QLogic	oem16.inf	Not Available	10/22/2003 IBM Corporation oem18.inf Not Available
Available					



PCI\VEN_9005&DEV_0250&SUBSYS_02791014&REV_02\4&14F365D1&0&4018	Disk drive	Yes	DISKDRIVE	5.2.3785.0	10/1/2002	(Standard disk drives)	disk.inf	Not Available
SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&1D86B3A9&0&000	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP400__S320&REV_D110\5&1D86B3A9&0&1F0	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
SCSI\BRIDGE&VEN_IBM&PROD_DUMMY_DEVICE&REV_6.06\5&1D86B3A9&0&300	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP400__S320&REV_D110\5&1D86B3A9&0&2F0	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
IBM Dummy Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf	Not Available	
SCSI\BRIDGE&VEN_IBM&PROD_DUMMY_DEVICE&REV_6.06\5&1D86B3A9&0&300	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
PCI bus	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available	ACPI\PNP0A03\5
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available	
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&474B838&0&00	PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
PCI\VEN_1014&DEV_01A7&SUBSYS_00000000&REV_02\3&474B838&0&08	IBM ServeRAID 6M Controller	No	SCSIADAPTER	6.6.7.0	10/22/2003	IBM Corporation	oem18.inf	Not Available
PCI\VEN_9005&DEV_0250&SUBSYS_02791014&REV_02\4&27CC8076&0&4008	Disk drive	Yes	DISKDRIVE	5.2.3785.0	10/1/2002	(Standard disk drives)	disk.inf	Not Available
SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&2AEF9AA8&0&000	Disk drive	Yes	DISKDRIVE	5.2.3785.0	10/1/2002	(Standard disk drives)	disk.inf	Not Available
SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&2AEF9AA8&0&010	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP400__S320&REV_D110\5&2AEF9AA8&0&1F0	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP400__S320&REV_D110\5&2AEF9AA8&0&2F0	IBM Dummy Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf	Not Available
IBM Dummy Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf	Not Available	
SCSI\BRIDGE&VEN_IBM&PROD_DUMMY_DEVICE&REV_6.06\5&2AEF9AA8&0&300	PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
PCI\VEN_1014&DEV_01A7&SUBSYS_00000000&REV_02\3&474B838&0&10	IBM ServeRAID 6M Controller	No	SCSIADAPTER	6.6.7.0	10/22/2003	IBM Corporation	oem18.inf	Not Available
PCI\VEN_9005&DEV_0250&SUBSYS_02791014&REV_02\4&8C37DC5&0&4010	Disk drive	Yes	DISKDRIVE	5.2.3785.0	10/1/2002	(Standard disk drives)	disk.inf	Not Available
SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&F3D1498&0&00	SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&F3D1498&0&010	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf
SCSI\PROCESSOR&VEN_IBM&PROD_EXP400__S320&REV_D110\5&F3D1498&0&1F0	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP400__S320&REV_D110\5&F3D1498&0&2F0	IBM Dummy Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf	Not Available
IBM Dummy Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf	Not Available	
SCSI\BRIDGE&VEN_IBM&PROD_DUMMY_DEVICE&REV_6.06\5&95FC660&0&300	QLogic QLA23xx PCI Fibre Channel Adapter	Yes	SCSIADAPTER	8.2.3.61	7/25/2003	QLogic	oem16.inf	Not Available
PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\3&389E99D&0&10	Qlogic processor device	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
QLOGIC	scsidev.inf	Not Available						
SCSI\PROCESSOR&VEN_QLOGIC&PROD_PSEUDO_LUN&REV_4&1592FC88&0&07F0	PCI bus	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
PCI bus	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available	ACPI\PNP0A03\81
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available	

PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&F2FC708&0&00	IBM ServeRAID 6M Controller	No	SCSIADAPTER	6.6.7.0
PCI standard PCI-to-PCI bridge (Standard system devices)	Yes	SYSTEM	5.2.3785.0	10/1/2002
machine.inf	Not Available			
PCI\VEN_1014&DEV_01A7&SUBSYS_00000000&REV_02\3&F2FC708&0&08	IBM ServeRAID 6M Controller	No	SCSIADAPTER	6.6.7.0
10/22/2003	IBM Corporation	oem18.inf	Not Available	
PCI\VEN_9005&DEV_0250&SUBSYS_02791014&REV_02\4&219E2F76&0&4008	Disk drive	Yes	DISKDRIVE	5.2.3785.0
10/1/2002	(Standard disk drives)	disk.inf	Not Available	
SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&2F37A55C&0&000	Disk drive	Yes	DISKDRIVE	5.2.3785.0
10/1/2002	(Standard disk drives)	disk.inf	Not Available	
SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&2F37A55C&0&000	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0
10/1/2002	IBM	scsidev.inf	Not Available	
SCSI\PROCESSOR&VEN_IBM&PROD_EXP400__S320&REV_D110\5&29697B4D&0&1F0	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0
10/1/2002	IBM	scsidev.inf	Not Available	
SCSI\PROCESSOR&VEN_IBM&PROD_EXP400__S320&REV_D110\5&29697B4D&0&2F0	IBM Dummy Device	Yes	SYSTEM	5.2.3785.0
10/1/2002	IBM	scsidev.inf	Not Available	
SCSI\BRIDGE&VEN_IBM&PROD_DUMMY_DEVICE&REV_6.06\5&29697B4D&0&300	Motherboard resources (Standard system devices)	Yes	SYSTEM	5.2.3785.0
10/1/2002	machine.inf	Not Available		
ACPI\PNP0C02\20	PCI bus	Yes	SYSTEM	5.2.3785.0
10/1/2002	(Standard system devices)	machine.inf	Not Available	
ACPI\PNP0A03\88	PCI standard host CPU bridge (Standard system devices)	Yes	SYSTEM	5.2.3785.0
10/1/2002	machine.inf	Not Available		
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&32219A6E&0&00	PCI standard PCI-to-PCI bridge (Standard system devices)	Yes	SYSTEM	5.2.3785.0
10/1/2002	machine.inf	Not Available		
PCI\VEN_1014&DEV_01A7&SUBSYS_00000000&REV_02\3&32219A6E&0&08	IBM ServeRAID 6M Controller	No	SCSIADAPTER	6.6.7.0
10/22/2003	IBM Corporation	oem18.inf	Not Available	
PCI\VEN_9005&DEV_0250&SUBSYS_02791014&REV_02\4&87B0ABB&0&4008	Disk drive	Yes	DISKDRIVE	5.2.3785.0
10/1/2002	(Standard disk drives)	disk.inf	Not Available	
SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&770B03D&0&000	Disk drive	Yes	DISKDRIVE	5.2.3785.0
10/1/2002	(Standard disk drives)	disk.inf	Not Available	
SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&770B03D&0&010	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0
10/1/2002	IBM	scsidev.inf	Not Available	
SCSI\PROCESSOR&VEN_IBM&PROD_EXP400__S320&REV_D110\5&770B03D&0&1F0	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0
10/1/2002	IBM	scsidev.inf	Not Available	
SCSI\PROCESSOR&VEN_IBM&PROD_EXP400__S320&REV_D110\5&770B03D&0&2F0	IBM Dummy Device	Yes	SYSTEM	5.2.3785.0
10/1/2002	IBM	scsidev.inf	Not Available	
SCSI\BRIDGE&VEN_IBM&PROD_DUMMY_DEVICE&REV_6.06\5&770B03D&0&300	PCI standard PCI-to-PCI bridge (Standard system devices)	Yes	SYSTEM	5.2.3785.0
10/1/2002	machine.inf	Not Available		
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&21E977AD&0&00	PCI standard PCI-to-PCI bridge (Standard system devices)	Yes	SYSTEM	5.2.3785.0
10/1/2002	machine.inf	Not Available		
PCI\VEN_1014&DEV_01A7&SUBSYS_00000000&REV_02\3&21E977AD&0&08	IBM ServeRAID 6M Controller	No	SCSIADAPTER	6.6.7.0
10/22/2003	IBM Corporation	oem18.inf	Not Available	

PCI\VEN_9005&DEV_0250&SUBSYS_02791014&REV_02\4&27840D6C&0&4010	Disk drive Yes	DISKDRIVE	5.2.3785.0	10/1/2002	(Standard disk drives)	disk.inf	Not Available
Disk drive Yes	DISKDRIVE	5.2.3785.0	10/1/2002	(Standard disk drives)	disk.inf	Not Available	
SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&31A91E9&0&000	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf Not Available
Disk drive Yes	DISKDRIVE	5.2.3785.0	10/1/2002	(Standard disk drives)	disk.inf	Not Available	
SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&31A91E9&0&010	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf Not Available
SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf Not Available	
SCSI\PROCESSOR&VEN_IBM&PROD_EXP400__S320&REV_D110\5&31A91E9&0&1F0	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf Not Available
SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf Not Available	
SCSI\PROCESSOR&VEN_IBM&PROD_EXP400__S320&REV_D110\5&31A91E9&0&2F0	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf Not Available
IBM Dummy Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf Not Available	
SCSI\BRIDGE&VEN_IBM&PROD_DUMMY_DEVICE&REV_6.06\5&31A91E9&0&300	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf Not Available
PCI bus	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&1F67E9C9&0&00	PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf Not Available
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
PCI\VEN_1014&DEV_01A7&SUBSYS_00000000&REV_02\3&1F67E9C9&0&08	IBM ServeRAID 6M Controller	No	SCSIADAPTER	6.6.7.0	10/22/2003	IBM Corporation	oem18.inf Not Available
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
PCI\VEN_1014&DEV_01A7&SUBSYS_00000000&REV_02\3&1F67E9C9&0&08	Disk drive Yes	DISKDRIVE	5.2.3785.0	10/1/2002	(Standard disk drives)	disk.inf	Not Available
IBM ServeRAID 6M Controller	No	SCSIADAPTER	6.6.7.0	10/22/2003	IBM Corporation	oem18.inf Not Available	
PCI\VEN_9005&DEV_0250&SUBSYS_02791014&REV_02\4&29C662D9&0&4008	Disk drive Yes	DISKDRIVE	5.2.3785.0	10/1/2002	(Standard disk drives)	disk.inf	Not Available
Disk drive Yes	DISKDRIVE	5.2.3785.0	10/1/2002	(Standard disk drives)	disk.inf	Not Available	
SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&C96A4E2&0&000	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf Not Available
Disk drive Yes	DISKDRIVE	5.2.3785.0	10/1/2002	(Standard disk drives)	disk.inf	Not Available	
SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&C96A4E2&0&010	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf Not Available
SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf Not Available	
SCSI\PROCESSOR&VEN_IBM&PROD_EXP400__S320&REV_D110\5&C96A4E2&0&1F0	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf Not Available
SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf Not Available	
SCSI\PROCESSOR&VEN_IBM&PROD_EXP400__S320&REV_D110\5&C96A4E2&0&2F0	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf Not Available
IBM Dummy Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf Not Available	
SCSI\BRIDGE&VEN_IBM&PROD_DUMMY_DEVICE&REV_6.06\5&C96A4E2&0&300	PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf Not Available
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3785.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
PCI\VEN_1014&DEV_01A7&SUBSYS_00000000&REV_02\3&1F67E9C9&0&10	IBM ServeRAID 6M Controller	No	SCSIADAPTER	6.6.7.0	10/22/2003	IBM Corporation	oem18.inf Not Available
IBM ServeRAID 6M Controller	No	SCSIADAPTER	6.6.7.0	10/22/2003	IBM Corporation	oem18.inf Not Available	
PCI\VEN_9005&DEV_0250&SUBSYS_02791014&REV_02\4&4603C61&0&4010	Disk drive Yes	DISKDRIVE	5.2.3785.0	10/1/2002	(Standard disk drives)	disk.inf	Not Available
Disk drive Yes	DISKDRIVE	5.2.3785.0	10/1/2002	(Standard disk drives)	disk.inf	Not Available	
SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.06\5&2C803D65&0&000	SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	IBM	scsidev.inf Not Available

SCSI\PROCESSOR&VEN_IBM&PROD_EXP400___S320&REV_D110\5&49190AB&0&1F0					Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
SCSI Processor Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	volume.inf	Not Available		
IBM scsidev.inf	Not Available				STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A76OFFSET20			
SCSI\PROCESSOR&VEN_IBM&PROD_EXP400___S320&REV_D110\5&49190AB&0&2F0					4000LENGTH6785FC000			
IBM Dummy Device	Yes	SYSTEM	5.2.3785.0	10/1/2002	Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
scsidev.inf	Not Available				volume.inf	Not Available		
SCSI\BRIDGE&VEN_IBM&PROD_DUMMY_DEVICE&REV_6.06\5&49190AB&0&300					STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A76OFFSET67			
Motherboard resources	Yes	SYSTEM	5.2.3785.0	10/1/2002	8804000LENGTH3C8DFC000			
(Standard system devices)	machine.inf	Not Available			Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
ACPI\PNP0C02\21					volume.inf	Not Available		
Logical Disk Manager	Yes	SYSTEM	5.2.3785.0	10/1/2002	STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A79OFFSET20			
(Standard system devices)	machine.inf	Not Available			4000LENGTH6785FC000			
ROOT\DMIO\0000					Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
Volume Manager	Yes	SYSTEM	5.2.3785.0	10/1/2002	volume.inf	Not Available		
(Standard system devices)	machine.inf	Not Available			STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A79OFFSET67			
ROOT\FTDISK\0000					8804000LENGTH3C8DFC000			
Generic volume	Yes	VOLUME	5.2.3785.0	10/1/2002	Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
volume.inf	Not Available				volume.inf	Not Available		
STORAGE\VOLUME\1&30A96598&0&SIGNATUREF89AF89AOFFSET7E00LENGTH8796B9400					STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A79OFFSETA4			
Generic volume	Yes	VOLUME	5.2.3785.0	10/1/2002	1604000LENGTH6C46DFC000			
volume.inf	Not Available				Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A0AOFFSET204000LENGTH6785FC000					volume.inf	Not Available		
Generic volume	Yes	VOLUME	5.2.3785.0	10/1/2002	STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A0AOFFSET20			
volume.inf	Not Available				4000LENGTH6785FC000			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A0AOFFSET678804000LENGTH3C8DFC000					Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
Generic volume	Yes	VOLUME	5.2.3785.0	10/1/2002	volume.inf	Not Available		
volume.inf	Not Available				STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A0AOFFSETA4			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A0AOFFSETA41604000LENGTH6C46DFC000					1604000LENGTH6C46DFC000			
Generic volume	Yes	VOLUME	5.2.3785.0	10/1/2002	Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
volume.inf	Not Available				volume.inf	Not Available		
STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A16OFFSET204000LENGTH6785FC000					STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A45OFFSET20			
Generic volume	Yes	VOLUME	5.2.3785.0	10/1/2002	4000LENGTH6785FC000			
volume.inf	Not Available				Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A16OFFSET678804000LENGTH3C8DFC000					volume.inf	Not Available		
Generic volume	Yes	VOLUME	5.2.3785.0	10/1/2002	STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A49OFFSET20			
volume.inf	Not Available				4000LENGTH6785FC000			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A16OFFSETA41604000LENGTH6C46DFC000					Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
Generic volume	Yes	VOLUME	5.2.3785.0	10/1/2002	volume.inf	Not Available		
volume.inf	Not Available				STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A49OFFSET67			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A1AOFFSET204000LENGTH539E5FC000					8804000LENGTH3C8DFC000			
Generic volume	Yes	VOLUME	5.2.3785.0	10/1/2002	Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
volume.inf	Not Available				volume.inf	Not Available		
STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A1AOFFSET539E804000LENGTH351C5FC000					STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A49OFFSETA4			
Generic volume	Yes	VOLUME	5.2.3785.0	10/1/2002	1604000LENGTH6C46DFC000			
volume.inf	Not Available				Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A6BOFFSET204000LENGTH6785FC000					volume.inf	Not Available		
Generic volume	Yes	VOLUME	5.2.3785.0	10/1/2002	STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A55OFFSET20			
volume.inf	Not Available				4000LENGTH6785FC000			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A6BOFFSET678804000LENGTH3C8DFC000					Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
Generic volume	Yes	VOLUME	5.2.3785.0	10/1/2002	volume.inf	Not Available		
volume.inf	Not Available				STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A59OFFSET20			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A6BOFFSETA41604000LENGTH6C46DFC000					4000LENGTH6785FC000			
Generic volume	Yes	VOLUME	5.2.3785.0	10/1/2002	Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
volume.inf	Not Available				volume.inf	Not Available		
STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A6BOFFSETA41604000LENGTH6C46DFC000					STORAGE\VOLUME\1&30A96598&0&SIGNATURE443A3A59OFFSET67			
Generic volume	Yes	VOLUME	5.2.3785.0	10/1/2002	8804000LENGTH3C8DFC000			
volume.inf	Not Available							



Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft	Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
volume.inf	Not Available			volume.inf	Not Available		
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A41	OFFSET20		STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A6F	OFFSETA4	
4000	LENGTH6785FC000			1604000	LENGTH6C46DFC000		
Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft	Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
volume.inf	Not Available			volume.inf	Not Available		
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A41	OFFSET67		STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A12	OFFSET20	
4000	LENGTH3C8DFC000			4000	LENGTH6785FC000		
Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft	Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
volume.inf	Not Available			volume.inf	Not Available		
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A41	OFFSETA4		STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A12	OFFSET67	
4000	LENGTH6785FC000			8804000	LENGTH3C8DFC000		
Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft	Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
volume.inf	Not Available			volume.inf	Not Available		
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A4D	OFFSET20		STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A12	OFFSETA4	
4000	LENGTH6785FC000			1604000	LENGTH6C46DFC000		
Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft	Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
volume.inf	Not Available			volume.inf	Not Available		
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A4D	OFFSET67		STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A1E	OFFSET20	
8804000	LENGTH3C8DFC000			4000	LENGTH6785FC000		
Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft	Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
volume.inf	Not Available			volume.inf	Not Available		
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A4D	OFFSETA4		STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A1E	OFFSET67	
1604000	LENGTH6C46DFC000			8804000	LENGTH3C8DFC000		
Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft	Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft
volume.inf	Not Available			volume.inf	Not Available		
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A72	OFFSET20		STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A1E	OFFSETA4	
4000	LENGTH6785FC000			1604000	LENGTH6C46DFC000		
Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft	AFD Networking Support Environment	Not Available		
volume.inf	Not Available			LEGACYDRIVER	Not Available	Not Available	Not
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A72	OFFSET67		Available	Not Available	Not Available	
8804000	LENGTH3C8DFC000			ROOT\LEGACY_AFD\0000			
Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft	Beep	Not Available	LEGACYDRIVER	Not Available
volume.inf	Not Available			Not Available	Not Available	Not Available	Not
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A72	OFFSETA4		Available	ROOT\LEGACY_BEEP\0000		
1604000	LENGTH6C46DFC000			CRC Disk Filter Driver	Not Available	LEGACYDRIVER	
Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft	Not Available	Not Available	Not Available	Not
volume.inf	Not Available			Available	Not Available	ROOT\LEGACY_CRCDISK\0000	
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A7E	OFFSET20		dmboot	Not Available	LEGACYDRIVER	Not Available
4000	LENGTH6785FC000			Not Available	Not Available	Not Available	Not
Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft	Available	ROOT\LEGACY_DMBOOT\0000		
volume.inf	Not Available			dmload	Not Available	LEGACYDRIVER	Not Available
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A7E	OFFSET67		Not Available	Not Available	Not Available	Not
8804000	LENGTH3C8DFC000			Available	ROOT\LEGACY_DMLOAD\0000		
Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft	em	Not Available	LEGACYDRIVER	Not Available
volume.inf	Not Available			Not Available	Not Available	Not Available	Not
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A7E	OFFSETA4		Available	ROOT\LEGACY_EM\0000		
1604000	LENGTH6C46DFC000			Fips	Not Available	LEGACYDRIVER	Not Available
Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft	Not Available	Not Available	Not Available	Not
volume.inf	Not Available			Available	ROOT\LEGACY_FIPS\0000		
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A63	OFFSET20		Generic Packet Classifier	Not Available	LEGACYDRIVER	
4000	LENGTH6785FC000			Not Available	Not Available	Not Available	Not
Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft	Available	Not Available	ROOT\LEGACY_GPC\0000	
volume.inf	Not Available			IPSEC driver	Not Available	LEGACYDRIVER	Not
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A63	OFFSET67		Available	Not Available	Not Available	Not Available
8804000	LENGTH3C8DFC000			Not Available	ROOT\LEGACY_IPSEC\0000		
Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft	ksecdd	Not Available	LEGACYDRIVER	Not Available
volume.inf	Not Available			Not Available	Not Available	Not Available	Not
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A63	OFFSETA4		Available	ROOT\LEGACY_KSECCD\0000		
1604000	LENGTH6C46DFC000			mmnmd	Not Available	LEGACYDRIVER	Not Available
Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft	Not Available	Not Available	Not Available	Not
volume.inf	Not Available			Not Available	ROOT\LEGACY_MNMDD\0000		
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A6F	OFFSET20		mountmgr	Not Available	LEGACYDRIVER	Not Available
4000	LENGTH6785FC000			Not Available	Not Available	Not Available	Not
Generic volume	Yes	VOLUME 5.2.3785.0 10/1/2002	Microsoft	Available	ROOT\LEGACY_MOUNTMGR\0000		
volume.inf	Not Available			NDIS System Driver	Not Available	LEGACYDRIVER	Not
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE443A3A6F	OFFSET67		Available	Not Available	Not Available	Not Available
8804000	LENGTH3C8DFC000			Not Available	ROOT\LEGACY_NDIS\0000		

Remote Access NDIS TAPI Driver Not Available  
LEGACYDRIVER Not Available Not Available Not Available  
Available Not Available Not Available  
ROOT\LEGACY\_NDISAPI\0000  
NDIS Usermode I/O Protocol Not Available LEGACYDRIVER  
Not Available Not Available Not Available Not Available  
Available Not Available ROOT\LEGACY\_NDISUIO\0000  
NDProxy Not Available LEGACYDRIVER Not Available  
Not Available Not Available Not Available Not Available  
Available ROOT\LEGACY\_NDPROXY\0000  
NetBios over Tcpip Not Available LEGACYDRIVER Not Available  
Available Not Available Not Available Not Available  
Not Available ROOT\LEGACY\_NETBT\0000  
Null Not Available LEGACYDRIVER Not Available  
Not Available Not Available Not Available Not Available  
Available ROOT\LEGACY\_NULL\0000  
Partition Manager Not Available LEGACYDRIVER Not Available  
Available Not Available Not Available Not Available  
Not Available ROOT\LEGACY\_PARTMGR\0000  
ql2300vi Not Available LEGACYDRIVER Not Available  
Not Available Not Available Not Available Not Available  
Available ROOT\LEGACY\_QL2300VI\0000  
qlvika Not Available LEGACYDRIVER Not Available  
Not Available Not Available Not Available Not Available  
Available ROOT\LEGACY\_QLVIKA\0000  
Remote Access Auto Connection Driver Not Available  
LEGACYDRIVER Not Available Not Available Not Available  
Available Not Available Not Available  
ROOT\LEGACY\_RASACD\0000  
RDPcDD Not Available LEGACYDRIVER Not Available  
Not Available Not Available Not Available Not Available  
Available ROOT\LEGACY\_RDPcDD\0000  
SANDRA Not Available LEGACYDRIVER Not Available  
Not Available Not Available Not Available Not Available  
Available ROOT\LEGACY\_SANDRA\0000  
TCP/IP Protocol Driver Not Available LEGACYDRIVER  
Not Available Not Available Not Available Not Available  
Available Not Available ROOT\LEGACY\_TCPIP\0000  
VGA Display Controller. Not Available LEGACYDRIVER  
Not Available Not Available Not Available Not Available  
Available Not Available ROOT\LEGACY\_VGASAVE\0000  
volsnap Not Available LEGACYDRIVER Not Available  
Not Available Not Available Not Available Not Available  
Available ROOT\LEGACY\_VOLSNAP\0000  
Remote Access IP ARP Driver Not Available LEGACYDRIVER  
Not Available Not Available Not Available Not Available  
Available Not Available ROOT\LEGACY\_WANARP\0000  
Audio Codecs Yes MEDIA 5.2.3785.0 10/1/2002 (Standard system devices) wave.inf Not Available  
ROOT\MEDIA\MS\_MMCM Legacy Audio Drivers Yes MEDIA 5.2.3785.0 10/1/2002 (Standard system devices) wave.inf Not Available  
ROOT\MEDIA\MS\_MMDRV Media Control Devices Yes MEDIA 5.2.3785.0 10/1/2002 (Standard system devices) wave.inf Not Available  
ROOT\MEDIA\MS\_MMMC Legacy Video Capture Devices Yes MEDIA 5.2.3785.0 10/1/2002 (Standard system devices) wave.inf Not Available  
ROOT\MEDIA\MS\_MVCD Video Codecs Yes MEDIA 5.2.3785.0 10/1/2002 (Standard system devices) wave.inf Not Available  
ROOT\MEDIA\MS\_MMVID WAN Miniport (L2TP) Yes NET 5.2.3785.0 10/1/2002 Microsoft netrasa.inf Not Available  
ROOT\MS\_L2TPMINIPORT\0000  
WAN Miniport (IP) Yes NET 5.2.3785.0 10/1/2002 Microsoft netrasa.inf Not Available  
ROOT\MS\_NDISWANIP\0000

WAN Miniport (PPPOE) Yes NET 5.2.3785.0 10/1/2002 Microsoft netrasa.inf Not Available  
ROOT\MS\_PPPOEMINIPORT\0000  
WAN Miniport (PPTP) Yes NET 5.2.3785.0 10/1/2002 Microsoft netrasa.inf Not Available  
ROOT\MS\_PPTPMINIPORT\0000  
Direct Parallel Yes NET 5.2.3785.0 10/1/2002 Microsoft netrasa.inf Not Available  
ROOT\MS\_PTMINIPORT\0000  
Terminal Server Device Redirector Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available  
Available ROOT\RDPDR\0000  
Terminal Server Keyboard Driver Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available  
Available ROOT\RDP\_KBD\0000  
Terminal Server Mouse Driver Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available  
Available ROOT\RDP\_MOUSE\0000  
Plug and Play Software Device Enumerator Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available  
Available ROOT\SYSTEM\0000  
Microcode Update Device Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available  
ROOT\SYSTEM\0001  
[Environment Variables]  
Variable Value User Name  
ClusterLog C:\WINDOWS\Cluster\cluster.log <SYSTEM>  
ComSpec %SystemRoot%\system32\cmd.exe <SYSTEM>  
NUMBER\_OF\_PROCESSORS 16 <SYSTEM>  
OS Windows\_NT <SYSTEM>  
Path  
%SystemRoot%\system32;%SystemRoot%;%SystemRoot%\system32\WBEM;  
C:\Program Files\Microsoft SQL Server\80\Tools\BINN;c:\batfiles;c:\tools;c:\tools\util <SYSTEM>  
PATHEXT  
.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH <SYSTEM>  
PROCESSOR\_ARCHITECTURE x86 <SYSTEM>  
PROCESSOR\_IDENTIFIER x86 Family 15 Model 2 Stepping 6, GenuineIntel <SYSTEM>  
PROCESSOR\_LEVEL 15 <SYSTEM>  
PROCESSOR\_REVISION 0206 <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 Current 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	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	Not	
Available					
smss.exe	Not Available	404	11	204800	1413120
2/20/2004 5:00 PM	Not Available	Not Available	Not Available	Not	
Available					
csrss.exe	Not Available	588	13	Not Available	
Not Available	2/20/2004 5:00 PM	Not Available	Not		
Available	Not Available				
winlogon.exe	c:\windows\system32\winlogon.exe				612
13	204800	1413120	2/20/2004 5:00 PM	5.2.3785.0	
(srv03_rtm.030308-1736)			537.00 KB (549,888 bytes)		3/12/2003 5:17 PM
services.exe	c:\windows\system32\services.exe				656
204800	1413120	2/20/2004 5:00 PM	5.2.3785.0		
(srv03_rtm.030308-1736)			102.00 KB (104,448 bytes)		3/12/2003 5:17 PM
lsass.exe	c:\windows\system32\lsass.exe	668	9	204800	
1413120	2/20/2004 5:00 PM	5.2.3785.0 (srv03_rtm.030308-1736)			
13.00 KB (13,312 bytes)					3/12/2003 5:17 PM
svchost.exe	c:\windows\system32\svchost.exe				844
204800	1413120	2/20/2004 5:00 PM	5.2.3785.0		
(srv03_rtm.030308-1736)			13.00 KB (13,312 bytes)		3/12/2003 5:17 PM
svchost.exe	c:\windows\system32\svchost.exe				868
204800	1413120	2/20/2004 5:00 PM	5.2.3785.0		
(srv03_rtm.030308-1736)			13.00 KB (13,312 bytes)		3/12/2003 5:17 PM
svchost.exe	Not Available	1024	8	Not	
Available	Not Available	2/20/2004 5:00 PM	Not Available	Not	
Not Available	Not Available				
svchost.exe	Not Available	1072	8	Not	
Available	Not Available	2/20/2004 5:00 PM	Not Available	Not	
Not Available	Not Available				
svchost.exe	c:\windows\system32\svchost.exe				1084
204800	1413120	2/20/2004 5:00 PM	5.2.3785.0		
(srv03_rtm.030308-1736)			13.00 KB (13,312 bytes)		3/12/2003 5:17 PM
spoolsv.exe	c:\windows\system32\spoolsv.exe				1272
204800	1413120	2/20/2004 5:01 PM	5.2.3785.0		
(srv03_rtm.030308-1736)			55.00 KB (56,320 bytes)		3/12/2003 5:17 PM
msdtc.exe	Not Available	1300	8	Not Available	
Not Available	2/20/2004 5:01 PM	Not Available	Not		
Available	Not Available				
ibmhpasv.exe	c:\windows\system32\ibmhpasv.exe				1616
204800	1413120	2/20/2004 5:01 PM	5.1.1.1	14.50 KB (14,848 bytes)	2/7/2003 10:55 PM
ibmshpsvc.exe	c:\windows\system32\ibmshpsvc.exe				1632
204800	1413120	2/20/2004 5:01 PM	Not Available		
(30,208 bytes)					29.50 KB
ibmsprem.exe	c:\windows\system32\ibmsprem.exe				1644
204800	1413120	2/20/2004 5:01 PM	Not Available		
(35,840 bytes)					35.00 KB
ibmsprem.exe	c:\windows\system32\ibmsprem.exe				1656
204800	1413120	2/20/2004 5:01 PM	Not Available		
(35,840 bytes)					35.00 KB
svchost.exe	Not Available	1768	8	Not	
Available	Not Available	2/20/2004 5:01 PM	Not Available	Not	
Not Available	Not Available				

dfssvc.exe	c:\windows\system32\dfssvc.exe	1960	8	204800	
1413120	2/20/2004 5:01 PM	5.2.3785.0 (srv03_rtm.030308-1736)			
130.50 KB (133,632 bytes)					3/12/2003 5:16 PM
explorer.exe	c:\windows\explorer.exe		464	8	
204800	1413120	2/20/2004 5:01 PM	6.00.3785.0		
(srv03_rtm.030308-1736)			1,008.50 KB (1,032,704 bytes)		3/12/2003 5:16 PM
svchost.exe	c:\windows\system32\svchost.exe			956	8
204800	1413120	2/20/2004 5:01 PM	5.2.3785.0		
(srv03_rtm.030308-1736)			13.00 KB (13,312 bytes)		3/12/2003 5:17 PM
wmiprvse.exe	Not Available	1144	8	Not	
Available	Not Available	2/20/2004 5:01 PM	Not Available	Not Available	
Not Available	Not Available				
cmd.exe	c:\windows\system32\cmd.exe	252	8	204800	
1413120	2/23/2004 1:22 PM	5.2.3785.0 (srv03_rtm.030308-1736)			
373.50 KB (382,464 bytes)					3/12/2003 5:16 PM
helpctr.exe	c:\windows\pchealth\helpctr\binaries\helpctr.exe			2568	8
204800	1413120	2/23/2004 2:24 PM	5.2.3785.0		
(srv03_rtm.030308-1736)			764.00 KB (782,336 bytes)		3/12/2003 5:42 PM
helpsvc.exe	c:\windows\pchealth\helpctr\binaries\helpsvc.exe				
1204	8	204800	1413120	2/23/2004 2:24 PM	5.2.3785.0
(srv03_rtm.030308-1736)			720.00 KB (737,280 bytes)		3/12/2003 5:42 PM
wmiprvse.exe	Not Available	2608	8	Not	
Available	Not Available	2/23/2004 2:24 PM	Not Available	Not Available	
Not Available	Not Available				
[Loaded Modules]					
Name	Version	Size	File Date	Manufacturer	Path
winlogon	5.2.3785.0 (srv03_rtm.030308-1736)				537.00 KB (549,888 bytes)
				Microsoft Corporation	
c:\windows\system32\winlogon.exe					
ntdll	5.2.3785.0 (srv03_rtm.030308-1736)				723.00 KB (740,352 bytes)
				Microsoft Corporation	
c:\windows\system32\ntdll.dll					
kernel32	5.2.3785.0 (srv03_rtm.030308-1736)				965.00 KB (988,160 bytes)
				Microsoft Corporation	
c:\windows\system32\kernel32.dll					
msvcrt	7.0.3785.0 (srv03_rtm.030308-1736)				319.50 KB (327,168 bytes)
				Microsoft Corporation	
c:\windows\system32\msvcrt.dll					
advapi32	5.2.3785.0 (srv03_rtm.030308-1736)				559.50 KB (572,928 bytes)
				Microsoft Corporation	
c:\windows\system32\advapi32.dll					
rpert4	5.2.3785.0 (srv03_rtm.030308-1736)				644.50 KB (659,968 bytes)
				Microsoft Corporation	
c:\windows\system32\rpert4.dll					
user32	5.2.3785.0 (srv03_rtm.030308-1736)				562.50 KB (576,000 bytes)
				Microsoft Corporation	
c:\windows\system32\user32.dll					
gdi32	5.2.3785.0 (srv03_rtm.030308-1736)				263.00 KB (269,312 bytes)
				Microsoft Corporation	
c:\windows\system32\gdi32.dll					
userenv	5.2.3785.0 (srv03_rtm.030308-1736)				733.50 KB (751,104 bytes)
				Microsoft Corporation	
c:\windows\system32\userenv.dll					
nddeapi	5.2.3785.0 (srv03_rtm.030308-1736)				16.00 KB (16,384 bytes)
				Microsoft Corporation	
c:\windows\system32\nddeapi.dll					
crypt32	5.131.3785.0 (srv03_rtm.030308-1736)				598.00 KB (612,352 bytes)
				Microsoft Corporation	
c:\windows\system32\crypt32.dll					
msasn1	5.2.3785.0 (srv03_rtm.030308-1736)				58.00 KB (59,392 bytes)
				Microsoft Corporation	
c:\windows\system32\msasn1.dll					



secur32	5.2.3785.0 (srv03_rtm.030308-1736)	63.00 KB (64,512 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\secur32.dll
winsta	5.2.3785.0 (srv03_rtm.030308-1736)	51.00 KB (52,224 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\winsta.dll
netapi32	5.2.3785.0 (srv03_rtm.030308-1736)	317.00 KB (324,608 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\netapi32.dll
profmap	5.2.3785.0 (srv03_rtm.030308-1736)	22.00 KB (22,528 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\profmap.dll
regapi	5.2.3785.0 (srv03_rtm.030308-1736)	48.50 KB (49,664 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\regapi.dll
ws2_32	5.2.3785.0 (srv03_rtm.030308-1736)	85.50 KB (87,552 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\ws2_32.dll
ws2help	5.2.3785.0 (srv03_rtm.030308-1736)	19.50 KB (19,968 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\ws2help.dll
psapi	5.2.3785.0 (srv03_rtm.030308-1736)	21.50 KB (22,016 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\psapi.dll
version	5.2.3785.0 (srv03_rtm.030308-1736)	17.00 KB (17,408 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\version.dll
setupapi	5.2.3785.0 (srv03_rtm.030308-1736)	1,014.50 KB (1,038,848 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\setupapi.dll
msgina	5.2.3785.0 (srv03_rtm.030308-1736)	1.14 MB (1,191,936 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\msgina.dll
shsvcs	6.00.3785.0 (srv03_rtm.030308-1736)	121.50 KB (124,416 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\shsvcs.dll
shlwapi	6.00.3785.0 (srv03_rtm.030308-1736)	281.00 KB (287,744 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\shlwapi.dll
sfc	5.2.3785.0 (srv03_rtm.030308-1736)	4.50 KB (4,608 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\sfc.dll
sfc_os	5.2.3785.0 (srv03_rtm.030308-1736)	133.00 KB (136,192 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\sfc_os.dll
wintrust	5.131.3785.0 (srv03_rtm.030308-1736)	163.50 KB (167,424 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\wintrust.dll
ole32	5.2.3785.0 (srv03_rtm.030308-1736)	1.13 MB (1,187,328 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\ole32.dll
imagehlp	5.2.3785.0 (srv03_rtm.030308-1736)	142.50 KB (145,920 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\imagehlp.dll
comctl32	6.0 (srv03_rtm.030308-1736)	907.00 KB (928,768 bytes)	1/14/2003 12:16 PM	Microsoft Corporation	c:\windows\winsxs\x86_microsoft.windows.common-controls_6595b64144ccfd6_6.0.100.0_x-ww_8417450b\comctl32.dll
winscard	5.2.3785.0 (srv03_rtm.030308-1736)	98.50 KB (100,864 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\winscard.dll
wtsapi32	5.2.3785.0 (srv03_rtm.030308-1736)	17.50 KB (17,920 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\wtsapi32.dll
sxs	5.2.3785.0 (srv03_rtm.030308-1736)	733.00 KB (750,592 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\sxs.dll
winmm	5.2.3785.0 (srv03_rtm.030308-1736)	166.00 KB (169,984 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\winmm.dll
shell32	6.00.3785.0 (srv03_rtm.030308-1736)	7.79 MB (8,164,352 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\shell32.dll
wldap32	5.2.3785.0 (srv03_rtm.030308-1736)	158.00 KB (161,792 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\wldap32.dll
rsaenh	5.2.3785.0 (srv03_rtm.030308-1736)	176.83 KB (181,072 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\rsaenh.dll
cscdll	5.2.3785.0 (srv03_rtm.030308-1736)	99.00 KB (101,376 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\cscdll.dll
wlnotify	5.2.3785.0 (srv03_rtm.030308-1736)	87.50 KB (89,600 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\wlnotify.dll
winspool	5.2.3785.0 (srv03_rtm.030308-1736)	140.00 KB (143,360 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\winspool.drv
mpr	5.2.3785.0 (srv03_rtm.030308-1736)	56.00 KB (57,344 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\mpr.dll
comctl32	5.82 (srv03_rtm.030308-1736)	561.00 KB (574,464 bytes)	1/14/2003 12:16 PM	Microsoft Corporation	c:\windows\winsxs\x86_microsoft.windows.common-controls_6595b64144ccfd6_5.82.0.0_x-ww_8a69ba05\comctl32.dll
uxtheme	6.00.3785.0 (srv03_rtm.030308-1736)	196.00 KB (200,704 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\uxtheme.dll
samlib	5.2.3785.0 (srv03_rtm.030308-1736)	49.00 KB (50,176 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\samlib.dll
cscur	5.2.3785.0 (srv03_rtm.030308-1736)	305.00 KB (312,320 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\cscur.dll
mprapi	5.2.3785.0 (srv03_rtm.030308-1736)	81.00 KB (82,944 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\mprapi.dll
activeds	5.2.3785.0 (srv03_rtm.030308-1736)	189.00 KB (193,536 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\activeds.dll
adslsdp	5.2.3785.0 (srv03_rtm.030308-1736)	142.50 KB (145,920 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\adslsdp.dll
credui	5.2.3785.0 (srv03_rtm.030308-1736)	159.00 KB (162,816 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\credui.dll
atl	3.05.2283 (84,992 bytes)	83.00 KB (84,992 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\atl.dll
oleaut32	5.2.3785.0 (84,992 bytes)	486.00 KB (497,664 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\oleaut32.dll
rtutils	5.2.3785.0 (srv03_rtm.030308-1736)	32.00 KB (32,768 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\rtutils.dll
clbcatq	2001.12.4715.0 (srv03_rtm.030308-1736)	481.00 KB (492,544 bytes)	3/12/2003 5:40 PM	Microsoft Corporation	c:\windows\system32\clbcatq.dll
comres	2001.12.4715.0 (srv03_rtm.030308-1736)	778.00 KB (796,672 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\comres.dll
ntmarta	5.2.3785.0 (srv03_rtm.030308-1736)	114.00 KB (116,736 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\ntmarta.dll
wbemprox	5.2.3785.0 (srv03_rtm.030308-1736)	17.50 KB (17,920 bytes)	3/12/2003 5:40 PM	Microsoft Corporation	c:\windows\system32\wbem\wbemprox.dll

wbemcomn	5.2.3785.0 (srv03_rtm.030308-1736)	212.00 KB	(217,088 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\wbem\wbemcomn.dll
wbemsvc	5.2.3785.0 (srv03_rtm.030308-1736)	42.50 KB	(43,520 bytes)	3/12/2003 5:40 PM	Microsoft Corporation	c:\windows\system32\wbem\wbemsvc.dll
fastprox	5.2.3785.0 (srv03_rtm.030308-1736)	443.00 KB	(453,632 bytes)	3/12/2003 5:40 PM	Microsoft Corporation	c:\windows\system32\wbem\fastprox.dll
msvcp60	6.05.2144.0	388.00 KB	(397,312 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\msvcp60.dll
ntdsapi	5.2.3785.0 (srv03_rtm.030308-1736)	76.00 KB	(77,824 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\ntdsapi.dll
dnsapi	5.2.3785.0 (srv03_rtm.030308-1736)	147.50 KB	(151,040 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\dnsapi.dll
services	5.2.3785.0 (srv03_rtm.030308-1736)	102.00 KB	(104,448 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\services.exe
scsvr	5.2.3785.0 (srv03_rtm.030308-1736)	316.50 KB	(324,096 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\scsvr.dll
authz	5.2.3785.0 (srv03_rtm.030308-1736)	67.50 KB	(69,120 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\authz.dll
umpnpgmr	5.2.3785.0 (srv03_rtm.030308-1736)	121.50 KB	(124,416 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\umpnpgmr.dll
ncobjapi	5.2.3785.0 (srv03_rtm.030308-1736)	35.00 KB	(35,840 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\ncobjapi.dll
eventlog	5.2.3785.0 (srv03_rtm.030308-1736)	60.00 KB	(61,440 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\eventlog.dll
lsass	5.2.3785.0 (srv03_rtm.030308-1736)	13.00 KB	(13,312 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\lsass.exe
lsasrv	5.2.3785.0 (srv03_rtm.030308-1736)	781.00 KB	(799,744 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\lsasrv.dll
samsrv	5.2.3785.0 (srv03_rtm.030308-1736)	453.00 KB	(463,872 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\samsrv.dll
cryptdll	5.2.3785.0 (srv03_rtm.030308-1736)	34.50 KB	(35,328 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\cryptdll.dll
msprivs	5.2.3785.0 (srv03_rtm.030308-1736)	46.50 KB	(47,616 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\msprivs.dll
kerberos	5.2.3785.0 (srv03_rtm.030308-1736)	314.00 KB	(321,536 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\kerberos.dll
msv1_0	5.2.3785.0 (srv03_rtm.030308-1736)	127.00 KB	(130,048 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\msv1_0.dll
netlogon	5.2.3785.0 (srv03_rtm.030308-1736)	409.50 KB	(419,328 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\netlogon.dll
w32time	5.2.3785.0 (srv03_rtm.030308-1736)	216.00 KB	(221,184 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\w32time.dll
iphlpapi	5.2.3785.0 (srv03_rtm.030308-1736)	83.00 KB	(84,992 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\iphlpapi.dll
schannel	5.2.3785.0 (srv03_rtm.030308-1736)	149.50 KB	(153,088 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\schannel.dll
wdigest	5.2.3785.0 (srv03_rtm.030308-1736)	61.00 KB	(62,464 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\wdigest.dll
rassfm	5.2.3785.0 (srv03_rtm.030308-1736)	20.50 KB	(20,992 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\rassfm.dll
kdcsvc	5.2.3785.0 (srv03_rtm.030308-1736)	221.00 KB	(226,304 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\kdcsvc.dll
ntdsa	5.2.3785.0 (srv03_rtm.030308-1736)	1.58 MB	(1,652,224 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\ntdsa.dll
ntdsatq	5.2.3785.0 (srv03_rtm.030308-1736)	32.00 KB	(32,768 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\ntdsatq.dll
mswsock	5.2.3785.0 (srv03_rtm.030308-1736)	254.00 KB	(260,096 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\mswsock.dll
esent	5.2.3785.0 (srv03_rtm.030308-1736)	952.50 KB	(975,360 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\esent.dll
scecli	5.2.3785.0 (srv03_rtm.030308-1736)	179.50 KB	(183,808 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\scecli.dll
wshtcpip	5.2.3785.0 (srv03_rtm.030308-1736)	18.00 KB	(18,432 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\wshtcpip.dll
ipsecsvc	5.2.3785.0 (srv03_rtm.030308-1736)	163.00 KB	(166,912 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\ipsecsvc.dll
oakley	5.2.3785.0 (srv03_rtm.030308-1736)	324.50 KB	(332,288 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\oakley.dll
winipsec	5.2.3785.0 (srv03_rtm.030308-1736)	34.00 KB	(34,816 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\winipsec.dll
pstorsvc	5.2.3785.0 (srv03_rtm.030308-1736)	24.00 KB	(24,576 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\pstorsvc.dll
psbase	5.2.3785.0 (srv03_rtm.030308-1736)	81.00 KB	(82,944 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\psbase.dll
dssenh	5.2.3785.0 (srv03_rtm.030308-1736)	131.33 KB	(134,480 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\dssenh.dll
wlbcstrl	5.2.3785.0 (srv03_rtm.030308-1736)	78.00 KB	(79,872 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\wlbcstrl.dll
svchost	5.2.3785.0 (srv03_rtm.030308-1736)	13.00 KB	(13,312 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\svchost.exe
rpess	5.2.3785.0 (srv03_rtm.030308-1736)	276.00 KB	(282,624 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\rpess.dll
termsrv	5.2.3785.0 (srv03_rtm.030308-1736)	216.50 KB	(221,696 bytes)	3/12/2003 5:40 PM	Microsoft Corporation	c:\windows\system32\termsrv.dll
icaapi	5.2.3785.0 (srv03_rtm.030308-1736)	10.50 KB	(10,752 bytes)	3/12/2003 5:40 PM	Microsoft Corporation	c:\windows\system32\icaapi.dll
mstlsapi	5.2.3785.0 (srv03_rtm.030308-1736)	104.50 KB	(107,008 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\mstlsapi.dll
wzcsvc	5.2.3785.0 (srv03_rtm.030308-1736)	272.50 KB	(279,040 bytes)	3/8/2003 6:01 PM	Microsoft Corporation	c:\windows\system32\wzcsvc.dll

wmi	5.2.3785.0 (srv03_rtm.030308-1736)	6.50 KB (6,656 bytes)	wmisvc	5.2.3785.0 (srv03_rtm.030308-1736)	131.00 KB (134,144 bytes)
3/12/2003 5:17 PM	Microsoft Corporation		3/12/2003 5:40 PM	Microsoft Corporation	
c:\windows\system32\wmi.dll			c:\windows\system32\wbem\wmisvc.dll		
dhcpcsvc	5.2.3785.0 (srv03_rtm.030308-1736)	101.50 KB (103,936 bytes)	comsvcs	2001.12.4715.0 (srv03_rtm.030308-1736)	1.14 MB (1,199,616 bytes)
3/12/2003 5:16 PM	Microsoft Corporation		3/12/2003 5:40 PM	Microsoft Corporation	
c:\windows\system32\dhcpcsvc.dll			c:\windows\system32\comsvcs.dll		
rastls	5.2.3785.0 (srv03_rtm.030308-1736)	155.00 KB (158,720 bytes)	netman	5.2.3785.0 (srv03_rtm.030308-1736)	209.00 KB (214,016 bytes)
3/12/2003 5:17 PM	Microsoft Corporation		3/12/2003 5:17 PM	Microsoft Corporation	
c:\windows\system32\rastls.dll			c:\windows\system32\netman.dll		
cryptui	5.131.3785.0 (srv03_rtm.030308-1736)	473.50 KB (484,864 bytes)	wzcsapi	5.2.3785.0 (srv03_rtm.030308-1736)	24.50 KB (25,088 bytes)
3/12/2003 5:16 PM	Microsoft Corporation		3/8/2003 6:01 PM	Microsoft Corporation	
c:\windows\system32\cryptui.dll			c:\windows\system32\wzcsapi.dll		
rasapi32	5.2.3785.0 (srv03_rtm.030308-1736)	227.50 KB (232,960 bytes)	netshell	5.2.3785.0 (srv03_rtm.030308-1736)	1.67 MB (1,747,456 bytes)
3/12/2003 5:17 PM	Microsoft Corporation		3/12/2003 5:17 PM	Microsoft Corporation	
c:\windows\system32\rasapi32.dll			c:\windows\system32\netshell.dll		
rasman	5.2.3785.0 (srv03_rtm.030308-1736)	56.50 KB (57,856 bytes)	clusapi	5.2.3785.0 (srv03_rtm.030308-1736)	56.00 KB (57,344 bytes)
3/12/2003 5:17 PM	Microsoft Corporation		3/12/2003 5:16 PM	Microsoft Corporation	
c:\windows\system32\rasman.dll			c:\windows\system32\clusapi.dll		
tapi32	5.2.3785.0 (srv03_rtm.030308-1736)	175.00 KB (179,200 bytes)	netcfgx	5.2.3785.0 (srv03_rtm.030308-1736)	726.00 KB (743,424 bytes)
3/12/2003 5:17 PM	Microsoft Corporation		3/12/2003 5:17 PM	Microsoft Corporation	
c:\windows\system32\tapi32.dll			c:\windows\system32\netcfgx.dll		
raschap	5.2.3785.0 (srv03_rtm.030308-1736)	106.00 KB (108,544 bytes)	hnetcfg	5.2.3785.0 (srv03_rtm.030308-1736)	243.50 KB (249,344 bytes)
3/12/2003 5:17 PM	Microsoft Corporation		3/12/2003 5:16 PM	Microsoft Corporation	
c:\windows\system32\raschap.dll			c:\windows\system32\hnetcfg.dll		
schedsvc	5.2.3785.0 (srv03_rtm.030308-1736)	176.00 KB (180,224 bytes)	wininet	6.00.3785.0 (srv03_rtm.030308-1736)	609.00 KB (623,616 bytes)
3/12/2003 5:42 PM	Microsoft Corporation		3/12/2003 5:17 PM	Microsoft Corporation	
c:\windows\system32\schedsvc.dll			c:\windows\system32\wininet.dll		
msidle	6.00.3785.0 (srv03_rtm.030308-1736)	5.50 KB (5,632 bytes)	wbemcore	5.2.3785.0 (srv03_rtm.030308-1736)	457.00 KB (467,968 bytes)
3/12/2003 5:17 PM	Microsoft Corporation		3/12/2003 5:40 PM	Microsoft Corporation	
c:\windows\system32\msidle.dll			c:\windows\system32\wbem\wbemcore.dll		
wkssvc	5.2.3785.0 (srv03_rtm.030308-1736)	125.00 KB (128,000 bytes)	esscli	5.2.3785.0 (srv03_rtm.030308-1736)	235.50 KB (241,152 bytes)
3/12/2003 5:17 PM	Microsoft Corporation		3/12/2003 5:40 PM	Microsoft Corporation	
c:\windows\system32\wkssvc.dll			c:\windows\system32\wbem\esscli.dll		
wiarpc	5.2.3785.0 (srv03_rtm.030308-1736)	30.00 KB (30,720 bytes)	wmiutils	5.2.3785.0 (srv03_rtm.030308-1736)	90.50 KB (92,672 bytes)
3/12/2003 5:17 PM	Microsoft Corporation		3/12/2003 5:40 PM	Microsoft Corporation	
c:\windows\system32\wiarpc.dll			c:\windows\system32\wbem\wmiutils.dll		
cryptsvc	5.2.3785.0 (srv03_rtm.030308-1736)	51.50 KB (52,736 bytes)	repdrvfs	5.2.3785.0 (srv03_rtm.030308-1736)	165.00 KB (168,960 bytes)
3/12/2003 5:16 PM	Microsoft Corporation		3/12/2003 5:40 PM	Microsoft Corporation	
c:\windows\system32\cryptsvc.dll			c:\windows\system32\wbem\repdrvfs.dll		
certcli	5.2.3785.0 (srv03_rtm.030308-1736)	228.00 KB (233,472 bytes)	wmiprvsd	5.2.3785.0 (srv03_rtm.030308-1736)	405.50 KB (415,232 bytes)
3/12/2003 5:16 PM	Microsoft Corporation		3/12/2003 5:40 PM	Microsoft Corporation	
c:\windows\system32\certcli.dll			c:\windows\system32\wbem\wmiprvsd.dll		
vssapi	5.2.3785.0 (srv03_rtm.030308-1736)	528.00 KB (540,672 bytes)	wbemess	5.2.3785.0 (srv03_rtm.030308-1736)	256.50 KB (262,656 bytes)
3/12/2003 5:17 PM	Microsoft Corporation		3/12/2003 5:40 PM	Microsoft Corporation	
c:\windows\system32\vssapi.dll			c:\windows\system32\wbem\wbemess.dll		
dmserver	5.2.3785.0 (srv03_rtm.030308-1736)	24.00 KB (24,576 bytes)	rasmans	5.2.3785.0 (srv03_rtm.030308-1736)	163.50 KB (167,424 bytes)
3/12/2003 5:16 PM	Microsoft Corporation		3/12/2003 5:17 PM	Microsoft Corporation	
c:\windows\system32\dmserver.dll			c:\windows\system32\rasmans.dll		
es	2001.12.4715.0 (srv03_rtm.030308-1736)	221.50 KB (226,816 bytes)	ncprov	5.2.3785.0 (srv03_rtm.030308-1736)	43.00 KB (44,032 bytes)
3/12/2003 5:16 PM	Microsoft Corporation		3/12/2003 5:40 PM	Microsoft Corporation	
c:\windows\system32\es.dll			c:\windows\system32\wbem\ncprov.dll		
pchsvc	5.2.3785.0 (srv03_rtm.030308-1736)	31.50 KB (32,256 bytes)	rastapi	5.2.3785.0 (srv03_rtm.030308-1736)	57.00 KB (58,368 bytes)
3/12/2003 5:42 PM	Microsoft Corporation		3/12/2003 5:17 PM	Microsoft Corporation	
c:\windows\pchealth\helpctr\binaries\pchsvc.dll			c:\windows\system32\rastapi.dll		
srvsvc	5.2.3785.0 (srv03_rtm.030308-1736)	89.00 KB (91,136 bytes)	rasppp	5.2.3785.0 (srv03_rtm.030308-1736)	195.00 KB (199,680 bytes)
3/12/2003 5:17 PM	Microsoft Corporation		3/12/2003 5:17 PM	Microsoft Corporation	
c:\windows\system32\srvsvc.dll			c:\windows\system32\rasppp.dll		
seclogon	5.2.3785.0 (srv03_rtm.030308-1736)	16.50 KB (16,896 bytes)	ntlsapi	5.2.3785.0 (srv03_rtm.030308-1736)	8.00 KB (8,192 bytes)
3/12/2003 5:17 PM	Microsoft Corporation		3/12/2003 5:17 PM	Microsoft Corporation	
c:\windows\system32\seclogon.dll			c:\windows\system32\ntlsapi.dll		
sens	5.2.3785.0 (srv03_rtm.030308-1736)	35.50 KB (36,352 bytes)	ipbootp	5.2.3785.0 (srv03_rtm.030308-1736)	34.50 KB (35,328 bytes)
3/12/2003 5:17 PM	Microsoft Corporation		3/12/2003 5:17 PM	Microsoft Corporation	
c:\windows\system32\sens.dll			c:\windows\system32\ipbootp.dll		
trkwks	5.2.3785.0 (srv03_rtm.030308-1736)	85.00 KB (87,040 bytes)	rasdlg	5.2.3785.0 (srv03_rtm.030308-1736)	642.00 KB (657,408 bytes)
3/12/2003 5:17 PM	Microsoft Corporation		3/12/2003 5:17 PM	Microsoft Corporation	
c:\windows\system32\trkwks.dll			c:\windows\system32\rasdlg.dll		

rasadhlp	5.2.3785.0 (srv03_rtm.030308-1736)	6.50 KB (6,656 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\rasadhlp.dll
spoolsv	5.2.3785.0 (srv03_rtm.030308-1736)	55.00 KB (56,320 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\spoolsv.exe
spoolss	5.2.3785.0 (srv03_rtm.030308-1736)	79.50 KB (81,408 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\spoolss.dll
localspl	5.2.3785.0 (srv03_rtm.030308-1736)	304.50 KB (311,808 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\localspl.dll
cnbjmon	5.2.3680.0 (Lab03_dev(skatar).020509-1043)	45.50 KB (46,592 bytes)	3/8/2003 5:59 PM	Microsoft Corporation	c:\windows\system32\cnbjmon.dll
plmon	5.2.3785.0 (srv03_rtm.030308-1736)	15.00 KB (15,360 bytes)	3/8/2003 6:00 PM	Microsoft Corporation	c:\windows\system32\plmon.dll
tcpmon	5.2.3785.0 (srv03_rtm.030308-1736)	44.00 KB (45,056 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\tcpmon.dll
mgmtapi	5.2.3785.0 (srv03_rtm.030308-1736)	14.00 KB (14,336 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\mgmtapi.dll
snmpapi	5.2.3785.0 (srv03_rtm.030308-1736)	17.50 KB (17,920 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\snmpapi.dll
wsnmp32	5.2.3785.0 (srv03_rtm.030308-1736)	39.50 KB (40,448 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\wsnmp32.dll
usbmon	5.2.3785.0 (srv03_rtm.030308-1736)	17.00 KB (17,408 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\usbmon.dll
winnr	5.2.3785.0 (srv03_rtm.030308-1736)	15.00 KB (15,360 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\winnr.dll
win32spl	5.2.3785.0 (srv03_rtm.030308-1736)	105.00 KB (107,520 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\win32spl.dll
netrap	5.2.3785.0 (srv03_rtm.030308-1736)	11.50 KB (11,776 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\netrap.dll
inetpp	5.2.3785.0 (srv03_rtm.030308-1736)	71.50 KB (73,216 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\inetpp.dll
icmp	5.2.3785.0 (srv03_rtm.030308-1736)	4.50 KB (4,608 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\icmp.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
ibmspsvc	Not Available	29.50 KB (30,208 bytes)	5/6/2003 2:40 PM	Not Available	c:\windows\system32\ibmspsvc.exe
ibmsprem	Not Available	35.00 KB (35,840 bytes)	5/6/2003 2:40 PM	Not Available	c:\windows\system32\ibmsprem.exe
ibmspw	5.24	74.50 KB (76,288 bytes)	5/6/2003 2:40 PM	IBM Corporation	c:\windows\system32\ibmspw.dll
hid	5.2.3785.0 (srv03_rtm.030308-1736)	17.50 KB (17,920 bytes)	3/8/2003 5:59 PM	Microsoft Corporation	c:\windows\system32\hid.dll
dfssvc	5.2.3785.0 (srv03_rtm.030308-1736)	130.50 KB (133,632 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\dfssvc.exe
resutils	5.2.3785.0 (srv03_rtm.030308-1736)	59.00 KB (60,416 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\resutils.dll
mfc42u	6.05.3014.0	960.00 KB (983,040 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\mfc42u.dll
wsock32	5.2.3785.0 (srv03_rtm.030308-1736)	22.00 KB (22,528 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\wsock32.dll
explorer	6.00.3785.0 (srv03_rtm.030308-1736)	1,008.50 KB (1,032,704 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\explorer.exe
browseui	6.00.3785.0 (srv03_rtm.030308-1736)	1.01 MB (1,056,768 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\browseui.dll
shdocvw	6.00.3785.0 (srv03_rtm.030308-1736)	1.33 MB (1,393,664 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\shdocvw.dll
apphelp	5.2.3785.0 (srv03_rtm.030308-1736)	122.00 KB (124,928 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\apphelp.dll
themeui	6.00.3785.0 (srv03_rtm.030308-1736)	360.50 KB (369,152 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\themeui.dll
msimg32	5.2.3785.0 (srv03_rtm.030308-1736)	4.50 KB (4,608 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\msimg32.dll
linkinfo	5.2.3785.0 (srv03_rtm.030308-1736)	16.50 KB (16,896 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\linkinfo.dll
ntshui	6.00.3785.0 (srv03_rtm.030308-1736)	136.00 KB (139,264 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\ntshui.dll
urlmon	6.00.3785.0 (srv03_rtm.030308-1736)	501.50 KB (513,536 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\urlmon.dll
webcheck	6.00.3785.0 (srv03_rtm.030308-1736)	261.50 KB (267,776 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\webcheck.dll
stobject	5.2.3785.0 (srv03_rtm.030308-1736)	117.50 KB (120,320 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\stobject.dll
batmeter	6.00.3785.0 (srv03_rtm.030308-1736)	28.50 KB (29,184 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\batmeter.dll
powrprof	6.00.3785.0 (srv03_rtm.030308-1736)	14.50 KB (14,848 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\powrprof.dll
printui	5.2.3785.0 (srv03_rtm.030308-1736)	536.50 KB (549,376 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\printui.dll
cfgmgr32	5.2.3785.0 (srv03_rtm.030308-1736)	17.50 KB (17,920 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\cfgmgr32.dll
drprov	5.2.3785.0 (srv03_rtm.030308-1736)	12.50 KB (12,800 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\drprov.dll
ntlanman	5.2.3785.0 (srv03_rtm.030308-1736)	41.00 KB (41,984 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\ntlanman.dll
netui0	5.2.3785.0 (srv03_rtm.030308-1736)	75.50 KB (77,312 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\netui0.dll
netui1	5.2.3785.0 (srv03_rtm.030308-1736)	184.00 KB (188,416 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\netui1.dll
davclnt	5.2.3785.0 (srv03_rtm.030308-1736)	23.50 KB (24,064 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\davclnt.dll
browsecl	6.00.3785.0 (srv03_rtm.030308-1736)	62.00 KB (63,488 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\browsecl.dll

shdoclc	6.00.3785.0 (srv03_rtm.030308-1736)	588.50 KB (602,624 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\shdoclc.dll
mydocs	6.00.3785.0 (srv03_rtm.030308-1736)	88.00 KB (90,112 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\mydocs.dll
zipfldr	6.00.3785.0 (srv03_rtm.030308-1736)	316.00 KB (323,584 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\zipfldr.dll
tapisrv	5.2.3785.0 (srv03_rtm.030308-1736)	238.50 KB (244,224 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\tapisrv.dll
unimdm	5.2.3785.0 (srv03_rtm.030308-1736)	190.50 KB (195,072 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\unimdm.tsp
uniplat	5.2.3785.0 (srv03_rtm.030308-1736)	15.00 KB (15,360 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\uniplat.dll
kmddsp	5.2.3785.0 (srv03_rtm.030308-1736)	34.00 KB (34,816 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\kmddsp.tsp
ndptsp	5.2.3785.0 (srv03_rtm.030308-1736)	54.50 KB (55,808 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\ndptsp.tsp
ipconf	5.2.3785.0 (srv03_rtm.030308-1736)	16.50 KB (16,896 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\ipconf.tsp
h323	5.2.3785.0 (srv03_rtm.030308-1736)	250.00 KB (256,000 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\h323.tsp
hidphone	5.2.3785.0 (srv03_rtm.030308-1736)	28.00 KB (28,672 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\hidphone.tsp
cmd	5.2.3785.0 (srv03_rtm.030308-1736)	373.50 KB (382,464 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\cmd.exe
helpctr	5.2.3785.0 (srv03_rtm.030308-1736)	764.00 KB (782,336 bytes)	3/12/2003 5:42 PM	Microsoft Corporation	c:\windows\pchealth\helpctr\binaries\helpctr.exe
hcappres	5.2.3785.0 (srv03_rtm.030308-1736)	6.50 KB (6,656 bytes)	3/12/2003 5:42 PM	Microsoft Corporation	c:\windows\pchealth\helpctr\binaries\hcappres.dll
itss	5.2.3785.0 (srv03_rtm.030308-1736)	119.50 KB (122,368 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\itss.dll
msxml3	8.40.9419.0	1.28 MB (1,337,344 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\msxml3.dll
pchshell	5.2.3785.0 (srv03_rtm.030308-1736)	100.50 KB (102,912 bytes)	3/12/2003 5:42 PM	Microsoft Corporation	c:\windows\pchealth\helpctr\binaries\pchshell.dll
mlang	6.00.3785.0 (srv03_rtm.030308-1736)	570.00 KB (583,680 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\mlang.dll
mshtml	6.00.3785.0 (srv03_rtm.030308-1736)	2.78 MB (2,915,328 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\mshtml.dll
msimtf	5.2.3785.0 (srv03_rtm.030308-1736)	149.00 KB (152,576 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\msimtf.dll
msctf	5.2.3785.0 (srv03_rtm.030308-1736)	287.00 KB (293,888 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\msctf.dll
jscrip	5.6.0.8515	436.00 KB (446,464 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\jscrip.dll
msls31	3.10.349.0	147.00 KB (150,528 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\msls31.dll
imm32	5.2.3785.0 (srv03_rtm.030308-1736)	105.50 KB (108,032 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\imm32.dll
mshtml	6.00.3785.0 (srv03_rtm.030308-1736)	443.00 KB (453,632 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\mshtml.dll
vbscript	5.6.0.8515	404.00 KB (413,696 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\vbscript.dll
mfc42	6.05.3014.0	960.00 KB (983,040 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\mfc42.dll
msinfo	5.2.3785.0 (srv03_rtm.030308-1736)	358.50 KB (367,104 bytes)	3/12/2003 5:42 PM	Microsoft Corporation	c:\windows\pchealth\helpctr\binaries\msinfo.dll
comdlg32	6.00.3785.0 (srv03_rtm.030308-1736)	261.00 KB (267,264 bytes)	3/12/2003 5:16 PM	Microsoft Corporation	c:\windows\system32\comdlg32.dll
riched32	5.2.3785.0 (srv03_rtm.030308-1736)	3.50 KB (3,584 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\riched32.dll
riched20	5.31.23.1218	406.00 KB (415,744 bytes)	3/12/2003 5:17 PM	Microsoft Corporation	c:\windows\system32\riched20.dll
helpsvc	5.2.3785.0 (srv03_rtm.030308-1736)	720.00 KB (737,280 bytes)	3/12/2003 5:42 PM	Microsoft Corporation	c:\windows\pchealth\helpctr\binaries\helpsvc.exe
[Services]					
Display Name	Name	State	Start Name	Mode	Service Type
Path	Error Control	Start Name	Tag ID		
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	Manual	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\dlhst.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			
Distributed File System	Dfs	Running	Auto	Own	
Process	c:\windows\system32\dfssvc.exe		Normal	LocalSystem	0
DHCP Client	Dhcp	Running	Auto	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	File Replication	NtFrs	Stopped	Manual	Own Process
Process	c:\windows\system32\svchost.exe -k winerr	Ignore	LocalSystem	0	c:\windows\system32\ntfrs.exe	Ignore	LocalSystem	0	
Event Log	Eventlog	Running	Auto	Share Process	NT LM Security Support Provider		NtLmSsp	Stopped	Manual
c:\windows\system32\services.exe		Normal	LocalSystem	0	Share Process	c:\windows\system32\lsass.exe	Normal	LocalSystem	0
COM+ Event System	EventSystem	Running	Manual	Share	Removable Storage	NtmsSvc	Stopped	Manual	Share Process
Process	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
Help and Support	helpsvc	Running	Auto	Share Process	Plug and Play	PlugPlay	Running	Auto	Share Process
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	c:\windows\system32\services.exe		Normal	LocalSystem	0
Human Interface Device	Access HidServ	Stopped	Disabled	Share	IPSEC Services	PolicyAgent	Running	Auto	Share
Process	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	Process	c:\windows\system32\lsass.exe	Normal	LocalSystem	0
HTTP SSLHTTPFilter		Stopped	Manual	Share Process	Protected Storage	ProtectedStorage	Running	Auto	Share
c:\windows\system32\lsass.exe		Normal	LocalSystem	0	Process	c:\windows\system32\lsass.exe	Normal	LocalSystem	0
IBM Active PCI Alert Service	IBMHPAS	Running	Auto	Own	Remote Access Auto Connection Manager	RasAuto	Stopped	Manual	
Process	c:\windows\system32\ibmhpasv.exe	Normal	LocalSystem	0	Share Process	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0
IBM Advanced System Management	Remote Mouse	ibmmspsvc	Running	Auto	Remote Access Connection Manager	RasMan	Running	Manual	
Auto	Own Process	c:\windows\system32\ibmmspsvc.exe	Normal	LocalSystem	0	Share Process	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem
IMAPI CD-Burning COM Service		ImapiService	Stopped	Disabled	Remote Desktop Help Session Manager	RDSessMgr	Stopped	Manual	Own Process
Process	c:\windows\system32\imapi.exe	Normal	LocalSystem	0	Manual	Own Process	c:\windows\system32\sessmgr.exe	Normal	LocalSystem
Intersite Messaging	IsmServ	Stopped	Disabled	Own Process	Normal	LocalSystem	0		
c:\windows\system32\ismserv.exe		Normal	LocalSystem	0	Routing and Remote Access	RemoteAccess	Stopped	Disabled	
Kerberos Key Distribution Center	kdc	Stopped	Disabled	Share Process	Share Process	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0
Process	c:\windows\system32\lsass.exe	Normal	LocalSystem	0	Remote Registry	RemoteRegistry	Running	Auto	Share
Server	lanmanserver	Running	Auto	Share Process	Process	c:\windows\system32\svchost.exe -k regsvc	Normal	NT	
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	AUTHORITY\LocalService	0			
Workstation	lanmanworkstation	Running	Auto	Share	Remote Procedure Call (RPC) Locator	RpcLocator	Stopped	Manual	Own Process
Process	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	Manual	Own Process	c:\windows\system32\locator.exe	Normal	LocalSystem
License Logging	LicenseService	Stopped	Disabled	Own	NT AUTHORITY\NetworkService	0			
Process	c:\windows\system32\llsdrv.exe	Normal	NT		Remote Procedure Call (RPC)	RpcSs	Running	Auto	Share
AUTHORITY\NetworkService	0				Process	c:\windows\system32\svchost -k rpsvc	Normal	LocalSystem	0
TCP/IP NetBIOS Helper	LmHosts	Running	Auto	Share	Resultant Set of Policy Provider	RSOPProv	Stopped	Manual	Share
Process	c:\windows\system32\svchost.exe -k localservice	Normal	LocalSystem	0	LocalSystem	0			
Messenger	Messenger	Stopped	Disabled	Share Process	Special Administration Console Helper	sacsvr	Stopped	Manual	Share Process
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	Share Process	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0
NetMeeting Remote Desktop Sharing	mnmsrvc	Stopped	Manual	Own Process	Security Accounts Manager	SamSs	Running	Auto	Share
Process	c:\windows\system32\mnmsrvc.exe	Normal	LocalSystem	0	Process	c:\windows\system32\lsass.exe	Normal	LocalSystem	0
Distributed Transaction Coordinator		MSDTC	Running	Auto	Smart Card	SCardSvr	Stopped	Manual	Share Process
Own Process	c:\windows\system32\msdtc.exe	Normal	NT		c:\windows\system32\scardsvr.exe		Ignore	NT	
AUTHORITY\NetworkService	1				AUTHORITY\LocalService	0			
Windows Installer	MSIServer	Stopped	Manual	Share Process	Task Scheduler	Schedule	Running	Auto	Share Process
c:\windows\system32\msiexec.exe /v		Normal	LocalSystem	0	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
MSSQLSERVER	MSSQLSERVER	Stopped	Manual	Own	Secondary Logon	seclogon	Running	Auto	Share Process
Process	c:\progra~1\micro~1\mssql\bin\sqlservr.exe	Normal	LocalSystem	0	c:\windows\system32\svchost.exe -k netsvcs	Ignore	LocalSystem	0	
MSSQLServerADHelper	MSSQLServerADHelper	Stopped	Manual	Own Process	System Event Notification	SENS	Running	Auto	Share
c:\program files\microsoft sql server\80\tools\bin\sqladhlp.exe		Normal	LocalSystem	0	Process	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0
Network DDE	NetDDE	Stopped	Disabled	Share Process	ServeRAID Manager Agent	ServeRAIDManagerAgent	Stopped	Manual	Own Process
c:\windows\system32\netdde.exe		Normal	LocalSystem	0	Manual	Own Process	c:\program files\raidman\raidsvr.exe	Normal	LocalSystem
Network DDE DSDMNetDDEdsdm		Stopped	Disabled	Share	Normal	LocalSystem	0		
Process	c:\windows\system32\netdde.exe	Normal	LocalSystem	0	Shell Hardware Detection	ShellHWDetection	Running	Auto	Share Process
Net Logon	Netlogon	Stopped	Manual	Share Process	Share Process	c:\windows\system32\svchost.exe -k netsvcs	Ignore	LocalSystem	0
c:\windows\system32\lsass.exe		Normal	LocalSystem	0	LocalSystem	0			
Network Connections	Netman	Running	Manual	Share Process	Print Spooler	Spooler	Running	Auto	Own Process
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	c:\windows\system32\spoolsv.exe		Normal	LocalSystem	0
Network Location Awareness (NLA)	Nla	Running	Manual	Share Process	SQLSERVERAGENT	SQLSERVERAGENT	Stopped	Manual	Own Process
Share Process	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	Manual	Own Process	c:\progra~1\micro~1\mssql\bin\sqlagent.exe	Normal	LocalSystem
LocalSystem	0				Normal	LocalSystem	0		
					Windows Image Acquisition (WIA)	stisvc	Stopped	Disabled	Share Process
					Share Process	c:\windows\system32\svchost.exe -k imgsrv	Normal	NT AUTHORITY\LocalService	0

Microsoft Software Shadow Copy Provider	swprv	Stopped	Manual	LocalSystem	0	Accessories\Communications	All Users:Accessories\Communications
Own Process	c:\windows\system32\svchost.exe -k swprv		Normal			All Users	
Performance Logs and Alerts	SysmonLog	Stopped	Manual	LocalSystem	0	Accessories\Entertainment	All Users:Accessories\Entertainment
Own Process	c:\windows\system32\smlogsvc.exe		Normal			All Users	
NT Authority\NetworkService	0					Accessories\System Tools	All Users:Accessories\System Tools
Telephony TapiSrv	Running	Manual	Share Process			All Users	
c:\windows\system32\svchost.exe -k tapisrv		Normal	LocalSystem	0		Administrative Tools	All Users:Administrative Tools
Terminal Services	TermService	Running	Manual	Share		Microsoft SQL Server	All Users:Microsoft SQL Server
Process	c:\windows\system32\svchost.exe -k termsvcs		Normal			ServeRAID Manager	All Users:ServeRAID Manager
LocalSystem	0					Startup	All Users:Startup
Themes	Themes	Stopped	Disabled	Share Process		Accessories	NT AUTHORITY\SYSTEM:Accessories
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0		AUTHORITY\SYSTEM	
Telnet	TlntSvr	Stopped	Disabled	Own Process		Accessories\Accessibility	NT
c:\windows\system32\tlntsvr.exe		Normal	NT AUTHORITY\LocalService	0		AUTHORITY\SYSTEM:Accessories\Accessibility	NT
Distributed Link Tracking Server	TrkSvr	Stopped	Disabled	Share		AUTHORITY\SYSTEM	
Process	c:\windows\system32\svchost.exe -k netsvcs		Normal			Accessories\Entertainment	NT
LocalSystem	0					AUTHORITY\SYSTEM:Accessories\Entertainment	NT
Distributed Link Tracking Client	TrkWks	Running	Auto	Share		AUTHORITY\SYSTEM	
Process	c:\windows\system32\svchost.exe -k netsvcs		Normal			Startup	NT AUTHORITY\SYSTEM:Startup
LocalSystem	0					AUTHORITY\SYSTEM	
Terminal Services Session Directory	Tssdis	Stopped	Disabled			Accessories	IBMSERV2\Administrator:Accessories
Own Process	c:\windows\system32\tssdis.exe		Normal			IBMSERV2\Administrator	
LocalSystem	0					Accessories\Accessibility	
Upload Manager	uploadmgr	Stopped	Disabled	Share Process		IBMSERV2\Administrator:Accessories\Accessibility	
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0		IBMSERV2\Administrator	
Uninterruptible Power Supply	UPS	Stopped	Manual	Own		Accessories\Entertainment	
Process	c:\windows\system32\ups.exe		Normal	LocalSystem	0	IBMSERV2\Administrator:Accessories\Entertainment	
Virtual Disk Service	vds	Stopped	Manual	Own Process		IBMSERV2\Administrator	
c:\windows\system32\vds.exe		Normal	LocalSystem	0		Administrative Tools	IBMSERV2\Administrator:Administrative Tools
Volume Shadow Copy	VSS	Stopped	Manual	Own		IBMSERV2\Administrator	
Process	c:\windows\system32\vssvc.exe		Normal	LocalSystem	0	QLogic Corporation	IBMSERV2\Administrator:QLogic Corporation
Windows Time	W32Time	Running	Auto	Share Process		IBMSERV2\Administrator	
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0		QLogic Corporation\SANblade Control	VIXIBMSERV2\Administrator:QLogic
WebClient	WebClient	Stopped	Disabled	Share Process		Corporation\SANblade Control	VIX
c:\windows\system32\svchost.exe -k localservice		Normal	NT			Startup	IBMSERV2\Administrator:Startup
AUTHORITY\LocalService	0					IBMSERV2\Administrator	
WinHTTP Web Proxy Auto-Discovery Service	WinHttpAutoProxySvc	Stopped	Manual	Share Process		[Startup Programs]	
c:\windows\system32\svchost.exe -k localservice		Normal	NT AUTHORITY\LocalService	0		Program	Command User NameLocation
Windows Management Instrumentation	winmgmt	Running	Auto	Share Process		desktop	desktop.iniNT AUTHORITY\SYSTEM
Process	c:\windows\system32\svchost.exe -k netsvcs		Ignore			desktop	desktop.iniIBMSERV2\Administrator
LocalSystem	0					Shortcut to synctime	shortcut to synctime.lnk
Portable Media Serial Number Service	WmdmPmSN	Stopped				IBMSERV2\Administrator	Startup
Manual	Share Process					desktop	desktop.ini.DEFAULT
Normal	LocalSystem	0				desktop	desktop.iniAll Users
Windows Management Instrumentation Driver Extensions	Wmi	Stopped	Manual	Share Process		Common	Startup
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0		[OLE Registration]	
WMI Performance Adapter	WmiApSrv	Stopped	Manual	Own Process		Object	Local Server
c:\windows\system32\wbem\wmiapsrv.exe		Normal	LocalSystem	0		Sound (OLE2)	sndrec32.exe
Automatic Updates	wuauclt	Stopped	Manual	Share Process		Media Clip	mplay32.exe
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0		Video Clip	mplay32.exe /avi
Wireless Configuration	WZCSVC	Running	Auto	Share		MIDI Sequence	mplay32.exe /mid
Process	c:\windows\system32\svchost.exe -k netsvcs		Normal			Sound	Not Available
LocalSystem	0					Media Clip	Not Available
[Program Groups]						WordPad Document	"%programfiles%\windows nt\accessories\wordpad.exe"
Group Name	Name	User Name				Windows Media Services	DRM Storage object
Accessories	Default User:Accessories	Default User				Bitmap Image	mspaint.exe
Accessories\Accessibility	Default User:Accessories\Accessibility	Default User				[Windows Error Reporting]	
Default User						Time	Type Details
Accessories\Entertainment	Default User:Accessories\Entertainment	Default User				[Internet Settings]	
Default User						[Internet Explorer]	
Startup	Default User:Startup	Default User				[ Following are sub-categories of this main category ]	
Accessories	All Users:Accessories	All Users				[Summary]	
Accessories\Accessibility	All Users:Accessories\Accessibility	All Users				Item	Value
All Users						Version	6.0.3785.0
						Build	63785
						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	6.0.3785.0	95 KB	3/8/2003 10:58:44 PM	C:\WINDOWS\system32	Microsoft Corporation
advpack.dll	6.0.3785.0	94 KB	3/8/2003 10:58:46 PM	C:\WINDOWS\system32	Microsoft Corporation
asctrls.ocx	6.0.3785.0	90 KB	3/8/2003 10:57:56 PM	C:\WINDOWS\system32	Microsoft Corporation
browsecl.dll	6.0.3785.0	62 KB	3/8/2003 10:54:24 PM	C:\WINDOWS\system32	Microsoft Corporation
browseui.dll	6.0.3785.0	1,032 KB	3/8/2003 10:58:54 PM	C:\WINDOWS\system32	Microsoft Corporation
cdview.dll	6.0.3785.0	144 KB	3/8/2003 10:58:56 PM	C:\WINDOWS\system32	Microsoft Corporation
comctl32.dll	5.82.3785.0	561 KB	3/8/2003 10:59:04 PM	C:\WINDOWS\system32	Microsoft Corporation
dxtrans.dll	6.3.3785.0	198 KB	3/8/2003 10:59:20 PM	C:\WINDOWS\system32	Microsoft Corporation
dxtmsft.dll	6.3.3785.0	344 KB	3/8/2003 10:59:20 PM	C:\WINDOWS\system32	Microsoft Corporation
iecont.dll	<File Missing>	Not Available	Not Available	Not Available	Not Available
iecontl.dll	<File Missing>	Not Available	Not Available	Not Available	Not Available
iedkcs32.dll	6.0.3785.0	300 KB	3/8/2003 10:59:54 PM	C:\WINDOWS\system32	Microsoft Corporation
iepeers.dll	6.0.3785.0	230 KB	3/8/2003 10:59:54 PM	C:\WINDOWS\system32	Microsoft Corporation
iesetup.dll	6.0.3785.0	59 KB	3/8/2003 10:59:54 PM	C:\WINDOWS\system32	Microsoft Corporation
ieunit.inf	Not Available	20 KB	3/8/2003 6:53:32 PM	C:\WINDOWS\system32	Not Available
ieexplore.exe	6.0.3785.0	90 KB	3/8/2003 10:58:12 PM	C:\Program Files\Internet Explorer	Microsoft Corporation
imgutil.dll	5.2.3785.0	35 KB	3/8/2003 10:59:56 PM	C:\WINDOWS\system32	Microsoft Corporation
inetctl.cpl	6.0.3785.0	303 KB	3/8/2003 10:57:54 PM	C:\WINDOWS\system32	Microsoft Corporation
inetctl.dll	6.0.3785.0	109 KB	3/8/2003 10:55:48 PM	C:\WINDOWS\system32	Microsoft Corporation
inseng.dll	6.0.3785.0	72 KB	3/8/2003 10:59:58 PM	C:\WINDOWS\system32	Microsoft Corporation
mlang.dll	6.0.3785.0	570 KB	3/8/2003 11:00:14 PM	C:\WINDOWS\system32	Microsoft Corporation
msencode.dll	2002.10.4.0	112 KB	3/8/2003 11:00:24 PM	C:\WINDOWS\system32	Not Available
mshta.exe	6.0.3785.0	26 KB	3/8/2003 10:58:22 PM	C:\WINDOWS\system32	Microsoft Corporation
mshtml.dll	6.0.3785.0	2,847 KB	3/8/2003 11:00:26 PM	C:\WINDOWS\system32	Microsoft Corporation
mshtml.tlb	6.0.3785.0	1,319 KB	3/8/2003 6:37:48 PM	C:\WINDOWS\system32	Microsoft Corporation
mshtmlmed.dll	6.0.3785.0	443 KB	3/8/2003 11:00:26 PM	C:\WINDOWS\system32	Microsoft Corporation
mshtmlr.dll	6.0.3785.0	55 KB	3/8/2003 10:56:10 PM	C:\WINDOWS\system32	Microsoft Corporation
msident.dll	6.0.3785.0	47 KB	3/8/2003 11:00:28 PM	C:\WINDOWS\system32	Microsoft Corporation
msidntld.dll	6.0.3785.0	15 KB	3/8/2003 10:56:10 PM	C:\WINDOWS\system32	Microsoft Corporation
msieftp.dll	6.0.3785.0	230 KB	3/8/2003 11:00:28 PM	C:\WINDOWS\system32	Microsoft Corporation
msrating.dll	6.0.3785.0	132 KB	3/8/2003 11:00:32 PM	C:\WINDOWS\system32	Microsoft Corporation
mstime.dll	6.0.3785.0	491 KB	3/8/2003 11:00:34 PM	C:\WINDOWS\system32	Microsoft Corporation

occache.dll	6.0.3785.0	89 KB	3/8/2003 11:00:48 PM	C:\WINDOWS\system32	Microsoft Corporation
proctexe.ocx	6.3.3785.0	78 KB	3/8/2003 10:57:56 PM	C:\WINDOWS\system32	Intel Corporation
sendmail.dll	6.0.3785.0	52 KB	3/8/2003 11:01:06 PM	C:\WINDOWS\system32	Microsoft Corporation
shdoclc.dll	6.0.3785.0	589 KB	3/8/2003 10:53:56 PM	C:\WINDOWS\system32	Microsoft Corporation
shdocvw.dll	6.0.3785.0	1,361 KB	3/8/2003 11:01:08 PM	C:\WINDOWS\system32	Microsoft Corporation
shfolder.dll	6.0.3785.0	23 KB	3/8/2003 11:01:10 PM	C:\WINDOWS\system32	Microsoft Corporation
shlwapi.dll	6.0.3785.0	281 KB	3/8/2003 11:01:10 PM	C:\WINDOWS\system32	Microsoft Corporation
tdc.ocx	1.3.0.3130	58 KB	3/8/2003 10:57:56 PM	C:\WINDOWS\system32	Microsoft Corporation
url.dll	6.0.3785.0	36 KB	3/8/2003 11:01:24 PM	C:\WINDOWS\system32	Microsoft Corporation
urlmon.dll	6.0.3785.0	502 KB	3/8/2003 11:01:24 PM	C:\WINDOWS\system32	Microsoft Corporation
webcheck.dll	6.0.3785.0	262 KB	3/8/2003 11:01:30 PM	C:\WINDOWS\system32	Microsoft Corporation
wininet.dll	6.0.3785.0	609 KB	3/8/2003 11:01:32 PM	C:\WINDOWS\system32	Microsoft Corporation
[Connectivity]					
Item	Value				
Connection Preference				Never dial	
LAN Settings					
AutoConfigProxy				Not Available	
AutoProxyDetectMode				Disabled	
AutoConfigURL					
Proxy				Disabled	
ProxyServer					
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\NetworkService\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				Medium-low	
Trusted sites				Medium	
Internet				High	



Restricted sites High

## Server-RAID-6M Controller Configuration Parameters

February 23, 2004 5:17:40 PM EST

### Configuration summary

Server name.....ibmserv2  
ServeRAID Manager agent.....6.10.24 (1250)  
ServeRAID Manager console.....6.10.24 (1250)  
Number of controllers.....17  
Operating system.....Windows 2003

### Configuration information for controller 1

Controller type.....LSI 1030  
BIOS version.....5.03.10.00  
Firmware version.....1.00.14.00  
Device driver version.....1.09.06.00  
Hot-swap rebuild.....Enabled  
Data scrubbing.....Enabled  
Auto-synchronization.....Enabled  
Unattended mode.....Disabled  
Number of arrays.....0  
Number of logical drives.....0  
Number of hot-spare drives.....0  
Number of ready drives.....1

### SCSI channel 1

Number of drives.....1  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336607LC  
FRU part number.....10L60xx  
Serial number.....3JA06QA8  
Firmware level.....B251  
Channel.....1  
SCSI ID.....0  
Size.....34715 MB  
State.....Ready  
PFA error.....No  
Partitioned.....Yes  
Write-cache mode.....Write through

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....25P3495a S320  
Firmware level.....1  
Channel.....1  
SCSI ID.....8

### End of the configuration information for controller 1

### Configuration information for controller 2

Controller type.....LSI 1030  
BIOS version.....5.03.10.00  
Firmware version.....1.00.14.00  
Device driver version.....1.09.06.00

Hot-swap rebuild.....Enabled  
Data scrubbing.....Enabled  
Auto-synchronization.....Enabled  
Unattended mode.....Disabled  
Number of arrays.....0  
Number of logical drives.....0  
Number of hot-spare drives.....0  
Number of ready drives.....0

### SCSI channel 1

Number of drives.....0  
SCSI initiator ID.....7

### End of the configuration information for controller 2

### Configuration information for controller 3

Controller type.....ServeRAID-6M  
SCSI backend type.....AIC-7902  
SCSI backend revision.....16  
Controller FRU.....02R0998  
Battery FRU.....02R0986  
Serial number.....30B7E9DB  
Part number.....02R0988  
Physical slot.....2  
BIOS version.....6.11.07  
Firmware version.....6.11.04  
Device driver version.....6.06.07  
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.....2  
Number of logical drives.....2  
Number of hot-spare drives.....0  
Number of ready drives.....0

### Array A

Array identifier.....A  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...1/0 1/1 1/2 1/3 1/4 1/5 1/6 1/8 1/9 1/10 1/11 1/12  
1/13 1/14  
Number of physical drives.....14

### Logical drives in array A

Logical drive.....1  
Array letter.....A  
State.....Okay  
RAID level.....0  
Data space.....486010 MB

Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array A

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BBH4  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CATV  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMMS  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMZC  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AQN  
Firmware level.....B85B  
Channel.....1

SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BMPM  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX17VZE  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AP79  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BWSG  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX09WXT  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online

Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AS06  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ANP3  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C61K  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CN3X  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

#### Array B

-----  
Array identifier.....B  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device).....2/0 2/1 2/2 2/3 2/4 2/5 2/6 2/8 2/9 2/10 2/11 2/12  
2/13 2/14  
Number of physical drives.....14

#### Logical drives in array B

-----  
Logical drive.....2

Array letter.....B  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

#### Physical drives in array B

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0D5RX  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CA79  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ARYF  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BWNS  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753

FRU part number.....32P0736  
Serial number.....3HX0D5SH  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CHCL  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BW64  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BF7V  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0B41R  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CM7X  
Firmware level.....B85B

Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C6S3  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CF1L  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C5VY  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CFN4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

SCSI channel 1

Number of drives.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS

Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BBH4  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CATV  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMMS  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMZC  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AQNB  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BMPM

Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX17VZE  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AP79  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BWSG  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX09WXT  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AS06  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11

Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No  
  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ANP3  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C61K  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CN3X  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23B1384  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4865  
FRU serial number.....13CP0J6  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4866  
FRU serial number.....1R0433CP0J5  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665  
FRU serial number.....1R0453CP0J2  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665

FRU serial number.....1R0453CP0J1  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4869  
FRU serial number.....1R0443CP0J3  
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.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0D5RX  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CA79  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ARYF  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BWNS  
Firmware level.....B85B  
Channel.....2

SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0D5SH  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CHCL  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BW64  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BF7V  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0B41R  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online

Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CM7X  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C6S3  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CF1L  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C5VY  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CFN4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23B1276  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4865  
FRU serial number.....13CN00Y  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4866  
FRU serial number.....1R0433CN00X  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665  
FRU serial number.....1R0453CN00T  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665  
FRU serial number.....1R0453CN00S  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4869  
FRU serial number.....1R0443CN00V  
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 3

-----  
Configuration information for controller 4

-----  
Controller type.....ServeRAID-6M  
SCSI backend type.....AIC-7902  
SCSI backend revision.....16  
Controller FRU.....02R0998  
Battery FRU.....02R0986  
Serial number.....30B7E9E5  
Part number.....02R0988  
Physical slot.....14  
BIOS version.....6.11.07  
Firmware version.....6.11.04  
Device driver version.....6.06.07  
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.....2  
Number of logical drives.....2  
Number of hot-spare drives.....0  
Number of ready drives.....0

Array A

-----  
Array identifier.....A  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...1/0 1/1 1/2 1/3 1/4 1/5 1/6 1/8 1/9 1/10 1/11 1/12  
1/13 1/14  
Number of physical drives.....14

Logical drives in array A

-----  
Logical drive.....1  
Array letter.....A  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array A

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R22H  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PE89  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QS5J  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2



Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QZLP  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1PA  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QMSH  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PZAE  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R251  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A

PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PFPN  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R15Q  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PEBX  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MLGD  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1SW  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive

Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQMB  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Array B

-----  
Array identifier.....B  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...2/0 2/1 2/2 2/3 2/4 2/5 2/6 2/8 2/9 2/10 2/11 2/12  
2/13 2/14  
Number of physical drives.....14

Logical drives in array B

-----  
Logical drive.....2  
Array letter.....B  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array B

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CCCA  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BSAZ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736

Serial number.....3HX0ANK0  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AS88  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CJKZ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX09ATM  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CCD0  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMP1  
Firmware level.....B85B  
Channel.....2

SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMLM  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BY79  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ARZJ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C9JW  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ARLV  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online

Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ARYT  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

SCSI channel 1  
-----

Number of drives.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R22H  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PE89  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QS5J  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QZLP  
Firmware level.....B85B

Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1PA  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QM5H  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PZAE  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R251  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PFPN  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB

State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R15Q  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PEBX  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MLGD  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R15W  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQMB  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0160  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4865  
FRU serial number.....138E192  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E235  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E175  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E321  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E322  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4869  
FRU serial number.....1R04438E237  
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.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CCCA  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753

FRU part number.....32P0736  
Serial number.....3HX0BSAZ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ANK0  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AS88  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CJKZ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX09ATM  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CCD0  
Firmware level.....B85B

Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMP1  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMLM  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BY79  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ARZJ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C9JW  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB

State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ARLV  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ARYT  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0168  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4865  
FRU serial number.....138E234  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E193  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E236  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E347  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E348  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4869  
FRU serial number.....1R04438E195  
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 4  
-----

Configuration information for controller 5  
-----

Controller type.....Server RAID-6M  
SCSI backend type.....AIC-7902  
SCSI backend revision.....16  
Controller FRU.....02R0998  
Battery FRU.....02R0986  
Serial number.....30B7EA07  
Part number.....02R0988  
Physical slot.....6  
BIOS version.....6.11.07  
Firmware version.....6.11.04  
Device driver version.....6.06.07  
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.....1120096 MB  
Free space.....0 MB  
Number of logical drives.....1  
Number of physical drives.....16

Arrays in spanned array 1  
-----

Array identifier.....A  
Array size.....140012 MB  
Stripe order (channel/device)...2/0 1/0  
Number of physical drives.....2

Array identifier.....B  
Array size.....140012 MB  
Stripe order (channel/device)...1/1 2/1  
Number of physical drives.....2

Array identifier.....C  
Array size.....140012 MB  
Stripe order (channel/device)...1/2 2/2  
Number of physical drives.....2

Array identifier.....D  
Array size.....140012 MB  
Stripe order (channel/device)...1/3 2/3  
Number of physical drives.....2

Array identifier.....E  
Array size.....140012 MB  
Stripe order (channel/device)...1/4 2/4  
Number of physical drives.....2

Array identifier.....F  
Array size.....140012 MB  
Stripe order (channel/device)...1/5 2/5  
Number of physical drives.....2

Array identifier.....G  
Array size.....140012 MB  
Stripe order (channel/device)...1/6 2/6  
Number of physical drives.....2

Array identifier.....H  
Array size.....140012 MB  
Stripe order (channel/device)...1/8 2/8  
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.....3HW0CS2Q  
Firmware level.....B85B  
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.....3HW0BQRS  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....0  
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.....3HW09J80  
Firmware level.....B85B  
Channel.....1  
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.....3HW0E330  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
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.....3HW01YTH  
Firmware level.....B85B  
Channel.....1  
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.....3HW023P5  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
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.....3HW021Q7  
Firmware level.....B85B  
Channel.....1  
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.....3HW06Q75  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3

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.....3HW0AP83  
Firmware level.....B85B  
Channel.....1  
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.....3HW0ATLD  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
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.....MAS3735N  
FRU part number.....32P0737  
Serial number.....0590002G  
Firmware level.....B905  
Channel.....1  
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.....MAS3735N  
FRU part number.....32P0737  
Serial number.....0590002M  
Firmware level.....B905  
Channel.....2  
SCSI ID.....5  
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.....MAS3735N  
FRU part number.....32P0737  
Serial number.....0590003H  
Firmware level.....B903  
Channel.....1  
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.....MAS3735N  
FRU part number.....32P0737  
Serial number.....0590003W  
Firmware level.....B905  
Channel.....2  
SCSI ID.....6  
Size.....70006 MB  
State.....Online  
Array letter.....G  
PFA error.....No

Physical drives in array H

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW0CTKY  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....70006 MB  
State.....Online  
Array letter.....H  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW062FS  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....70006 MB  
State.....Online  
Array letter.....H  
PFA error.....No

Logical drives in spanned array 1

Logical drive.....1  
Spanned array number .....1  
State.....Okay  
RAID level.....10  
Data space.....560048 MB  
Parity space.....560048 MB  
Date created.....02/11/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

SCSI channel 1  
-----  
Number of drives.....8  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW0BQRS  
Firmware level.....B85B  
Channel.....1  
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.....3HW09J80  
Firmware level.....B85B  
Channel.....1  
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.....3HW01YTH  
Firmware level.....B85B  
Channel.....1  
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.....3HW021Q7  
Firmware level.....B85B  
Channel.....1  
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.....3HW0AP83  
Firmware level.....B85B  
Channel.....1  
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.....MAS3735N  
FRU part number.....32P0737  
Serial number.....0590002G  
Firmware level.....B905  
Channel.....1  
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.....MAS3735N  
FRU part number.....32P0737  
Serial number.....0590003H  
Firmware level.....B903  
Channel.....1  
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.....3HW0CTKY  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....70006 MB  
State.....Online  
Array letter.....H  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0151  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4865  
FRU serial number.....138E125  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E223  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E144  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E333  
FRU type.....Power

FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E334  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4869  
FRU serial number.....1R04438E372  
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.....8  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW0CS2Q  
Firmware level.....B85B  
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.....3HW0E330  
Firmware level.....B85B  
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.....3HW023P5  
Firmware level.....B85B  
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.....3HW06Q75  
Firmware level.....B85B  
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.....3HW0ATLD  
Firmware level.....B85B  
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.....MAS3735N  
FRU part number.....32P0737  
Serial number.....0590002M  
Firmware level.....B905  
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.....MAS3735N  
FRU part number.....32P0737  
Serial number.....0590003W  
Firmware level.....B905  
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.....3HW062FS  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....70006 MB  
State.....Online  
Array letter.....H  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0154  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM

FRU date of manufacture.....08/2003  
FRU part number.....59P4865  
FRU serial number.....138E143  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E126  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E359  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E337  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E338  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4869  
FRU serial number.....1R04438E146  
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 5

-----  
Configuration information for controller 6  
-----

Controller type.....ServeRAID-6M  
SCSI backend type.....AIC-7902  
SCSI backend revision.....16  
Controller FRU.....02R0998  
Battery FRU.....02R0986  
Serial number.....30B7E9F9  
Part number.....02R0988  
Physical slot.....13  
BIOS version.....6.11.07  
Firmware version.....6.11.04  
Device driver version.....6.06.07  
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.....2  
Number of logical drives.....2  
Number of hot-spare drives.....0  
Number of ready drives.....0

Array A

-----  
Array identifier.....A  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...1/0 1/1 1/2 1/3 1/4 1/5 1/6 1/8 1/9 1/10 1/11 1/12  
1/13 1/14  
Number of physical drives.....14

Logical drives in array A

-----  
Logical drive.....1  
Array letter.....A  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array A

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R114  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R12D  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1L6  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online

Array letter.....A  
PFA error.....No  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQTZ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QN32  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MFF1  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R17F  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R10X  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0P49C  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QN5J  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQ5Y  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PFNX  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QFYK  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753

FRU part number.....32P0736  
Serial number.....3HX0QRZ3  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

#### Array B

Array identifier.....B  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...2/0 2/1 2/2 2/3 2/4 2/5 2/6 2/8 2/9 2/10 2/11 2/12  
2/13 2/14  
Number of physical drives.....14

#### Logical drives in array B

Logical drive.....2  
Array letter.....B  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

#### Physical drives in array B

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QAB4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MHRM  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0HS2Z  
Firmware level.....B85B

Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1BC  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQ7R  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QN3Z  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0P83S  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1LX  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB

State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PEY7  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0RCZ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0L3LS  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KSPN  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0L8KQ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0LAKR  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

SCSI channel 1

Number of drives.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R114  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R12D  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1L6  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQTZ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3

Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QN32  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MFF1  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R17F  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R10X  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0P49C  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A

PFA error.....No  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QN5J  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQ5Y  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PFNX  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QFYK  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QRZ3  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Enclosure

Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0166  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4865  
FRU serial number.....138E222  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E211  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E383  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E345  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E346  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4869  
FRU serial number.....1R04438E378  
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.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QAB4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MHRM



Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0HS2Z  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1BC  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQ7R  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QN3Z  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0P83S  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6

Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1LX  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PEY7  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ROCZ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0L3LS  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KSPN  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B

PFA error.....No  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0L8KQ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0LAKR  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0156  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4865  
FRU serial number.....138E162  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E364  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E365  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E335  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E336  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4869  
FRU serial number.....1R04438E165  
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 6

-----  
Configuration information for controller 7  
-----

Controller type.....ServerRAID-6M  
SCSI backend type.....AIC-7902  
SCSI backend revision.....16  
Controller FRU.....02R0998  
Battery FRU.....02R0986  
Serial number.....30B7EA08  
Part number.....02R0988  
Physical slot.....5  
BIOS version.....6.11.07  
Firmware version.....6.11.04  
Device driver version.....6.06.07  
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.....2  
Number of logical drives.....2  
Number of hot-spare drives.....0  
Number of ready drives.....0

Array A

-----  
Array identifier.....A  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...1/0 1/1 1/2 1/3 1/4 1/5 1/6 1/8 1/9 1/10 1/11 1/12  
1/13 1/14  
Number of physical drives.....14

Logical drives in array A

-----  
Logical drive.....1  
Array letter.....A  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array A

-----  
Type.....Hard disk drive

Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QM5B  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KW2R  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0LK0L  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KR5T  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KW78  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736

Serial number.....3HX0MMA5  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MP10  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0LK0Q  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MNAD  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MNYQ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MMAX  
Firmware level.....B85B  
Channel.....1

SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MHNX  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MK6F  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MK56  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

#### Array B

-----  
Array identifier.....B  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...2/0 2/1 2/2 2/3 2/4 2/5 2/6 2/8 2/9 2/10 2/11 2/12  
2/13 2/14  
Number of physical drives.....14

#### Logical drives in array B

-----  
Logical drive.....2  
Array letter.....B  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

#### Physical drives in array B

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QPNT  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QB07  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1J2  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1FD  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R14F  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QZJX  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQH3  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QMQ4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R224  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QMWF  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753

FRU part number.....32P0736  
Serial number.....3HX0QSVB  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R10Q  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q4DP  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QSVW  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

SCSI channel 1

-----  
Number of drives.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QMSB  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KW2R  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0LK0L  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KR5T  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KW78  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MMA5  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS

Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MP10  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0LK0Q  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MNAD  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MNYQ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MMAX  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MHNX

Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MK6F  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MK56  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0139  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4865  
FRU serial number.....1379163  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4866  
FRU serial number.....1R043379164  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4866  
FRU serial number.....1R043379165  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....71P8146  
FRU serial number.....1R045379167  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....71P8146  
FRU serial number.....1R045379168  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4869

FRU serial number.....1R044379166  
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.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QPNT  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QB07  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1J2  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1FD  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R14F  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QZJX  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQH3  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QMQ4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R224  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS

Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QMWF  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QSVB  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R10Q  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q4DP  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QSVW  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0173  
Firmware level.....D110



FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4865  
FRU serial number.....138E369  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E145  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E127  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....71P8146  
FRU serial number.....1R04537B376  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E373  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4869  
FRU serial number.....1R04438E128  
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 7

Configuration information for controller 8

Controller type.....ServeRAID-6M  
SCSI backend type.....AIC-7902  
SCSI backend revision.....16  
Controller FRU.....02R0998  
Battery FRU.....02R0986  
Serial number.....30B7EA0F  
Part number.....02R0988  
Physical slot.....16  
BIOS version.....6.11.07  
Firmware version.....6.11.04  
Device driver version.....6.06.07  
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.....2  
Number of logical drives.....2  
Number of hot-spare drives.....0  
Number of ready drives.....0

Array A

-----  
Array identifier.....A  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...1/0 1/1 1/2 1/3 1/4 1/5 1/6 1/8 1/9 1/10 1/11 1/12  
1/13 1/14  
Number of physical drives.....14

Logical drives in array A

-----  
Logical drive.....1  
Array letter.....A  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array A

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0B0K1  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AEF2  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CBEC  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2

Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BAYF  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C6KD  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CHW5  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C5RS  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CKDP  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A

PFA error.....No  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CA1K  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX08S4G  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CAYX  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CJT0  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BV9Y  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive

Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMQA  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Array B

-----  
Array identifier.....B  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...2/0 2/1 2/2 2/3 2/4 2/5 2/6 2/8 2/9 2/10 2/11 2/12  
2/13 2/14  
Number of physical drives.....14

Logical drives in array B

-----  
Logical drive.....2  
Array letter.....B  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/06/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array B

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BWBP  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMLT  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736

Serial number.....3HX0AMM6  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BTZR  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BLNT  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C6WG  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BYJE  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AP8S  
Firmware level.....B85B  
Channel.....2

SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ASRG  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BWEC  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CHT5  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AM76  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BTG4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online

Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BEY4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

SCSI channel 1  
-----

Number of drives.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0B0K1  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AEF2  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CBEC  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BAYF  
Firmware level.....B85B

Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C6KD  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CHW5  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C5RS  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CKDP  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CA1K  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB

State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0S4G  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CAYX  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CJT0  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BV9Y  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMQA  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0152  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4865  
FRU serial number.....138E131  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4866  
FRU serial number.....1R043371021  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E164  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E341  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E342  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4869  
FRU serial number.....1R04438E134  
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.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BWBP  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753

FRU part number.....32P0736  
Serial number.....3HX0AML7  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMM6  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BTZR  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BLNT  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C6WG  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BYJE  
Firmware level.....B85B

Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AP8S  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ASRG  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BWEC  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CHT5  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AM76  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB

State.....Online  
Array letter.....B  
PFA error.....No  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BTG4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BEY4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0158  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4865  
FRU serial number.....138E174  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E176  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E194  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E317  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E318  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4869  
FRU serial number.....1R04438E177  
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 8

Configuration information for controller 9

Controller type.....ServeRAID-6M  
SCSI backend type.....AIC-7902  
SCSI backend revision.....16  
Controller FRU.....02R0998  
Battery FRU.....02R0986  
Serial number.....30B7E9F4  
Part number.....02R0988  
Physical slot.....3  
BIOS version.....6.11.07  
Firmware version.....6.11.04  
Device driver version.....6.06.07  
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.....2  
Number of logical drives.....2  
Number of hot-spare drives.....0  
Number of ready drives.....0

Array A

Array identifier.....A  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...1/0 1/1 1/2 1/3 1/4 1/5 1/6 1/8 1/9 1/10 1/11 1/12  
1/13 1/14  
Number of physical drives.....14

Logical drives in array A

Logical drive.....1  
Array letter.....A  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array A

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQ1N  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1VR  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1CR  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q7M2  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q3KQ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS



Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX00Q6J  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PG7C  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1VF  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R100  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QPSM  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QMWZ

Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PF4C  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1VP  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1KR  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Array B

-----  
Array identifier.....B  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...2/0 2/1 2/2 2/3 2/4 2/5 2/6 2/8 2/9 2/10 2/11 2/12  
2/13 2/14  
Number of physical drives.....14

Logical drives in array B

-----  
Logical drive.....2  
Array letter.....B  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207

Merge-group state.....Non-shared

Physical drives in array B

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1KG  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MHQ8  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MHK7  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1NK  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1HT  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B

PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QG2J  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PFE6  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R0XP  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MK3Z  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QNM9  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive

Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1RH  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R19P  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QMSQ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1E5  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

SCSI channel 1

Number of drives.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQ1N  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1VR  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1CR  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q7M2  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q3KQ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQ6J  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PG7C  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1VF  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R100  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QPSM  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QMWZ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753

FRU part number.....32P0736  
Serial number.....3HX0PF4C  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1VP  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1KR  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0100  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4865  
FRU serial number.....137B378  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4866  
FRU serial number.....1R04337B379  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4866  
FRU serial number.....1R04337B380  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....71P8146  
FRU serial number.....1R04537B322  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....71P8146  
FRU serial number.....1R04537B383  
FRU type.....CARD  
FRU vendor.....IBM

FRU date of manufacture.....07/2003  
FRU part number.....59P4869  
FRU serial number.....1R04437B381  
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.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1KG  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MHQ8  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MHK7  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1NK  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online

Array letter.....B  
PFA error.....No  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1HT  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QGJ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PFE6  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R0XP  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MK3Z  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QNM9  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1RH  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R19P  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QMSQ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1E5  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400

Serial number.....23M0095  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4865  
FRU serial number.....137B342  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4866  
FRU serial number.....1R04337B344  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....71P8146  
FRU serial number.....1R04537B346  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....71P8146  
FRU serial number.....1R04537B347  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4869  
FRU serial number.....1R04437B345  
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 9

Configuration information for controller 10

Controller type.....ServeRAID-6M  
SCSI backend type.....AIC-7902  
SCSI backend revision.....16  
Controller FRU.....02R0998  
Battery FRU.....02R0986  
Serial number.....30B7EA2E  
Part number.....02R0988  
Physical slot.....15  
BIOS version.....6.11.07  
Firmware version.....6.11.04  
Device driver version.....6.06.07  
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.....2  
Number of logical drives.....2  
Number of hot-spare drives.....0  
Number of ready drives.....0

Array A

-----  
Array identifier.....A  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...1/0 1/1 1/2 1/3 1/4 1/5 1/6 1/8 1/9 1/10 1/11 1/12  
1/13 1/14  
Number of physical drives.....14

Logical drives in array A

-----  
Logical drive.....1  
Array letter.....A  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array A

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MH6R  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KTL6  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KJRJ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A

PFA error.....No  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0LAWP  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1SV  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0L5H0  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KNLC  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0LK0K  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive

Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MK61  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KJH1  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0L4MJ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0L4T0  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0L3T8  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736

Serial number.....3HX0KQ6C  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

#### Array B

-----  
Array identifier.....B  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...2/0 2/1 2/2 2/3 2/4 2/5 2/6 2/8 2/9 2/10 2/11 2/12  
2/13 2/14  
Number of physical drives.....14

#### Logical drives in array B

-----  
Logical drive.....2  
Array letter.....B  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

#### Physical drives in array B

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CHKC  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CAMV  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX093D7  
Firmware level.....B85B  
Channel.....2



SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CM70  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMM9  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AKX6  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CJ1L  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX08KPD  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online

Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ASXX  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CLX0  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C4V0  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AR4E  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BDPA  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CM72  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

SCSI channel 1

-----  
Number of drives.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MH6R  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KTL6  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KJRJ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0LAWP  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB

State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1SV  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0L5H0  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KNLC  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0LK0K  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MK61  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KJH1  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0L4MJ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0L4T0  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0L3T8  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KQ6C  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM

Product or model number.....EXP400  
Serial number.....23M0140  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4865  
FRU serial number.....1379169  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4866  
FRU serial number.....1R043379170  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4866  
FRU serial number.....1R043379171  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....71P8146  
FRU serial number.....1R045379173  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....71P8146  
FRU serial number.....1R045379174  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4869  
FRU serial number.....1R044379172  
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.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CHKC  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CAMV  
Firmware level.....B85B

Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX093D7  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CM70  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMM9  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AKX6  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CJ1L  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB

State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX08KPD  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ASXX  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CLX0  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C4V0  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AR4E  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BDPA  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CM72  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0079  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4865  
FRU serial number.....1379091  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4866  
FRU serial number.....1R043379092  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4866  
FRU serial number.....1R043379093  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....03/2002  
FRU part number.....07K5985  
FRU serial number.....1R0KG23Y325  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....71P8146  
FRU serial number.....1R045379096  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4869  
FRU serial number.....1R044379094  
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 10  
-----

Configuration information for controller 11  
-----

Controller type.....ServeRAID-6M  
SCSI backend type.....AIC-7902  
SCSI backend revision.....16  
Controller FRU.....02R0998  
Battery FRU.....02R0986  
Serial number.....30B7EA06  
Part number.....02R0988  
Physical slot.....4  
BIOS version.....6.11.07  
Firmware version.....6.11.04  
Device driver version.....6.06.07  
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.....2  
Number of logical drives.....2  
Number of hot-spare drives.....0  
Number of ready drives.....0

Array A  
-----

Array identifier.....A  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...1/0 1/1 1/2 1/3 1/4 1/5 1/6 1/8 1/9 1/10 1/11 1/12  
1/13 1/14  
Number of physical drives.....14

Logical drives in array A  
-----

Logical drive.....1  
Array letter.....A  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array A  
-----

Type.....Hard disk drive  
Vendor.....IBM-ESXS

Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q4ZT  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1JG  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1R6  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MLFE  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PPYX  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PF7M

Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R16T  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QPHW  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1GN  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R139  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QN4X  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11

Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QP7Q  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q5K1  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MK3L  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Array B

-----  
Array identifier.....B  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device).....2/0 2/1 2/2 2/3 2/4 2/5 2/6 2/8 2/9 2/10 2/11 2/12  
2/13 2/14  
Number of physical drives.....14

Logical drives in array B

-----  
Logical drive.....2  
Array letter.....B  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array B

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R106  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PEAA  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QPDR  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QMT4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QPBF  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive

Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R239  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1AF  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1Q4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1E0  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q2VL  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736

Serial number.....3HX0Q43J  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PESQ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1CT  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R11M  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

SCSI channel 1

-----  
Number of drives.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q4ZT  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1JG  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1R6  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MLFE  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PPYX  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PF7M  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753

FRU part number.....32P0736  
Serial number.....3HX0R16T  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QPHW  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1GN  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R139  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QN4X  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QP7Q  
Firmware level.....B85B

Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q5K1  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MK3L  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0063  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4865  
FRU serial number.....1379007  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4866  
FRU serial number.....1R043379009  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....71P8146  
FRU serial number.....1R045379011  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....71P8146  
FRU serial number.....1R045379012  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4869  
FRU serial number.....1R044379010  
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.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R106  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PEAA  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QPDR  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QMT4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QPF

Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R239  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1AF  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1Q4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1E0  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q2VL  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10

Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q43J  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PESQ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1CT  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R11M  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0051  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4865  
FRU serial number.....1373197  
FRU type.....CARD

FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4866  
FRU serial number.....1R043373198  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4866  
FRU serial number.....1R043373199  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....71P8146  
FRU serial number.....1R045373201  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....71P8146  
FRU serial number.....1R045373202  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4869  
FRU serial number.....1R044373200  
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 11  
-----

Configuration information for controller 12  
-----

Controller type.....ServeRAID-6M  
SCSI backend type.....AIC-7902  
SCSI backend revision.....16  
Controller FRU.....02R0998  
Battery FRU.....02R0986  
Serial number.....80B8E672  
Part number.....02R0988  
Physical slot.....18  
BIOS version.....6.11.07  
Firmware version.....6.11.04  
Device driver version.....6.06.07  
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.....2  
Number of logical drives.....2  
Number of hot-spare drives.....0

Number of ready drives.....0  
Array A  
-----  
Array identifier.....A  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...1/0 1/1 1/2 1/3 1/4 1/5 1/6 1/8 1/9 1/10 1/11 1/12  
1/13 1/14  
Number of physical drives.....14

Logical drives in array A  
-----  
Logical drive.....1  
Array letter.....A  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array A  
-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BXFS  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BYPC  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BX79  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive

Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BXWH  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C1TP  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BYF9  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BXNA  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BJ92  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736

Serial number.....3HX0BZYQ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C3X0  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0B0N0  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BYKH  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BYLB  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BYA7  
Firmware level.....B85B  
Channel.....1

SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Array B

-----  
Array identifier.....B  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...2/0 2/1 2/2 2/3 2/4 2/5 2/6 2/8 2/9 2/10 2/11 2/12  
2/13 2/14  
Number of physical drives.....14

Logical drives in array B

-----  
Logical drive.....2  
Array letter.....B  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array B

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BXDZ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C0JA  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0A182  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online

Array letter.....B  
PFA error.....No  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C49R  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BY3B  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BDTB  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BXVS  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BYA6  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BXEE  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BXGK  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C3F0  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BZR7  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX09E6B  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753

FRU part number.....32P0736  
Serial number.....3HX0AJ0C  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

SCSI channel 1

Number of drives.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BXFS  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BYPC  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BX79  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BXWH  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C1TP  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BYF9  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BXNA  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BJ92  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BZYQ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS

Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C3X0  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0B0N0  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BYKH  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BYLB  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BYA7  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23B1423  
Firmware level.....D110



FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4865  
FRU serial number.....13CP0SG  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4866  
FRU serial number.....1R0433CP0SE  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665  
FRU serial number.....1R0453CP0SC  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665  
FRU serial number.....1R0453CP0SB  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4869  
FRU serial number.....1R0443CP0SD  
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.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BXDZ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C0JA  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive

Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0A182  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C49R  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BY3B  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BDTB  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BXVS  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736

Serial number.....3HX0BYA6  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BXEE  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BXGK  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C3F0  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BZR7  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX09E6B  
Firmware level.....B85B  
Channel.....2

SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AJOC  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23B1390  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4865  
FRU serial number.....13CP0KA  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4866  
FRU serial number.....1R0433CP0K8  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665  
FRU serial number.....1R0453CP0K6  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665  
FRU serial number.....1R0453CP0K5  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4869  
FRU serial number.....1R0443CP0K7  
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 12

Configuration information for controller 13

Controller type.....ServeRAID-6M  
SCSI backend type.....AIC-7902  
SCSI backend revision.....16

Controller FRU.....02R0998  
Battery FRU.....02R0986  
Serial number.....30B7EA2D  
Part number.....02R0988  
Physical slot.....11  
BIOS version.....6.11.07  
Firmware version.....6.11.04  
Device driver version.....6.06.07  
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.....2  
Number of logical drives.....2  
Number of hot-spare drives.....0  
Number of ready drives.....0

Array A

-----  
Array identifier.....A  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...1/0 1/1 1/2 1/3 1/4 1/5 1/6 1/8 1/9 1/10 1/11 1/12  
1/13 1/14  
Number of physical drives.....14

Logical drives in array A

-----  
Logical drive.....1  
Array letter.....A  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array A

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1SF  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QN4Y  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MK3E  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q6CF  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MK3N  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1MC  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1PZ

Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1LY  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PSPZ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q7FQ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QPG5  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PEH1  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12

Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q8SS  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1L8  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

#### Array B

-----  
Array identifier.....B  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...2/0 2/1 2/2 2/3 2/4 2/5 2/6 2/8 2/9 2/10 2/11 2/12  
2/13 2/14  
Number of physical drives.....14

#### Logical drives in array B

-----  
Logical drive.....2  
Array letter.....B  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/06/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

#### Physical drives in array B

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QMG7  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B

PFA error.....No  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQG9  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQEZ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R19W  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PFX0  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R24P  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive

Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QN45  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PEV9  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QML4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QSW1  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QN57  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736

Serial number.....3HX0R1K6  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX08KJG  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CMGC  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

SCSI channel 1

-----  
Number of drives.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1SF  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QN4Y  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MK3E  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q6CF  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MK3N  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1MC  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1PZ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753

FRU part number.....32P0736  
Serial number.....3HX0R1LY  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PSPZ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q7FQ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QPG5  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PEH1  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q8SS  
Firmware level.....B85B

Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1L8  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0163  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4865  
FRU serial number.....138E204  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E157  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E158  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E325  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E326  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4869  
FRU serial number.....1R04438E366  
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.....14

SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QMG7  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQG9  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQEZ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R19W  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PFX0  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R24P  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QN45  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PEV9  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QML4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QSW1  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753



FRU part number.....32P0736  
 Serial number.....3HX0QN57  
 Firmware level.....B85B  
 Channel.....2  
 SCSI ID.....11  
 Size.....34715 MB  
 State.....Online  
 Array letter.....B  
 PFA error.....No

Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST336753  
 FRU part number.....32P0736  
 Serial number.....3HX0R1K6  
 Firmware level.....B85B  
 Channel.....2  
 SCSI ID.....12  
 Size.....34715 MB  
 State.....Online  
 Array letter.....B  
 PFA error.....No

Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST336753  
 FRU part number.....32P0736  
 Serial number.....3HX08KJG  
 Firmware level.....B85B  
 Channel.....2  
 SCSI ID.....13  
 Size.....34715 MB  
 State.....Online  
 Array letter.....B  
 PFA error.....No

Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST336753  
 FRU part number.....32P0736  
 Serial number.....3HX0CMGC  
 Firmware level.....B85B  
 Channel.....2  
 SCSI ID.....14  
 Size.....34715 MB  
 State.....Online  
 Array letter.....B  
 PFA error.....No

Type.....Enclosure  
 Vendor.....IBM  
 Product or model number.....EXP400  
 Serial number.....23M0164  
 Firmware level.....D110  
 FRU type.....MIDPLANE  
 FRU vendor.....IBM  
 FRU date of manufacture.....08/2003  
 FRU part number.....59P4865  
 FRU serial number.....138E210  
 FRU type.....CARD  
 FRU vendor.....IBM  
 FRU date of manufacture.....08/2003  
 FRU part number.....59P4866  
 FRU serial number.....1R04338E370  
 FRU type.....CARD  
 FRU vendor.....IBM  
 FRU date of manufacture.....08/2003  
 FRU part number.....59P4866

FRU serial number.....1R04338E371  
 FRU type.....Power  
 FRU vendor.....IBM  
 FRU date of manufacture.....08/2003  
 FRU part number.....14J0665  
 FRU serial number.....1R04538E315  
 FRU type.....Power  
 FRU vendor.....IBM  
 FRU date of manufacture.....08/2003  
 FRU part number.....14J0665  
 FRU serial number.....1R04538E316  
 FRU type.....CARD  
 FRU vendor.....IBM  
 FRU date of manufacture.....08/2003  
 FRU part number.....59P4869  
 FRU serial number.....1R04438E384  
 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 13

Configuration information for controller 14

Controller type.....ServerRAID-6M  
 SCSI backend type.....AIC-7902  
 SCSI backend revision.....16  
 Controller FRU.....02R0998  
 Battery FRU.....02R0986  
 Serial number.....30B7E9E3  
 Part number.....02R0988  
 Physical slot.....17  
 BIOS version.....6.11.07  
 Firmware version.....6.11.04  
 Device driver version.....6.06.07  
 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.....2  
 Number of logical drives.....2  
 Number of hot-spare drives.....0  
 Number of ready drives.....0

Array A

Array identifier.....A  
 Array size.....486010 MB  
 Free space.....0 MB  
 Number of logical drives.....1

Stripe order (channel/device)...1/0 1/1 1/2 1/3 1/4 1/5 1/6 1/8 1/9 1/10 1/11 1/12  
1/13 1/14  
Number of physical drives.....14

Logical drives in array A

-----  
Logical drive.....1  
Array letter.....A  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array A

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QN46  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0LAX8  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MHS2  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1LS  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB

State.....Online  
Array letter.....A  
PFA error.....No  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KTJ8  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQ5C  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1SY  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1SZ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PXR0  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PE65  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QAW5  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MFDN  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QNRW  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QMKGK  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Array B  
-----

Array identifier.....B  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...2/0 2/1 2/2 2/3 2/4 2/5 2/6 2/8 2/9 2/10 2/11 2/12  
2/13 2/14  
Number of physical drives.....14

Logical drives in array B  
-----  
Logical drive.....2  
Array letter.....B  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array B  
-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MHS0  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQH2  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1TS  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0LAR0

Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MMFB  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PTBJ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QNPP  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QNPY  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QP6H  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9

Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QP6V  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QSW7  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PZLZ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q10D  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1C3  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B

PFA error.....No

SCSI channel 1

-----  
Number of drives.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QN46  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0LAX8  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MHS2  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1LS  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0KTJ8  
Firmware level.....B85B  
Channel.....1

SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQ5C  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1SY  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1SZ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PXR0  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PE65  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online

Array letter.....A  
PFA error.....No  
  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QAW5  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MFDN  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QNRW  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QMGK  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23B1314  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4865  
FRU serial number.....13CN08C  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003

FRU part number.....59P4866  
FRU serial number.....1R0433CN08B  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665  
FRU serial number.....1R0453CN088  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665  
FRU serial number.....1R0453CN087  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4869  
FRU serial number.....1R0443CN089  
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.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MHS0  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQH2  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1TS  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB

State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0LAR0  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MMFB  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PTBJ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QNPP  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QNPY  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QP6H  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QP6V  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QSW7  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PZLZ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q10D  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS

Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1C3  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0091  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4865  
FRU serial number.....137B318  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4866  
FRU serial number.....1R04337B319  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4866  
FRU serial number.....1R04337B320  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....71P8146  
FRU serial number.....1R045379095  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....71P8146  
FRU serial number.....1R04537B323  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....07/2003  
FRU part number.....59P4869  
FRU serial number.....1R04437B321  
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 14  
-----

Configuration information for controller 15  
-----

Controller type.....ServeRAID-6M  
SCSI backend type.....AIC-7902  
SCSI backend revision.....16  
Controller FRU.....02R0988  
Battery FRU.....02R0986  
Serial number.....30B7EA04

Part number.....02R0988  
Physical slot.....9  
BIOS version.....6.11.07  
Firmware version.....6.11.04  
Device driver version.....6.06.07  
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.....2  
Number of logical drives.....2  
Number of hot-spare drives.....0  
Number of ready drives.....0

Array A  
-----

Array identifier.....A  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...1/0 1/1 1/2 1/3 1/4 1/5 1/6 1/8 1/9 1/10 1/11 1/12  
1/13 1/14  
Number of physical drives.....14

Logical drives in array A  
-----

Logical drive.....1  
Array letter.....A  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array A  
-----

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0B1PY  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BBWF



Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CFCW  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AQM7  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ARP8  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AN9F  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CBPR  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6

Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CF20  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BBNZ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ARQG  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C1Y1  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AKX9  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A

PFA error.....No  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AG7A  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BW12  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Array B

-----  
Array identifier.....B  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...2/0 2/1 2/2 2/3 2/4 2/5 2/6 2/8 2/9 2/10 2/11 2/12  
2/13 2/14  
Number of physical drives.....14

Logical drives in array B

-----  
Logical drive.....2  
Array letter.....B  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/06/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array B

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0APPG  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive

Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CM4H  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ALZR  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CJ4R  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CLEB  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CFNJ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736

Serial number.....3HX0CKRT  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ASML  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CBAT  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CER2  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CKNG  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX17RV2  
Firmware level.....B85B  
Channel.....2

SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AN8A  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMM5  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

#### SCSI channel 1

Number of drives.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0B1PY  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BBWF  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753

FRU part number.....32P0736  
Serial number.....3HX0CFCW  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AQM7  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ARP8  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AN9F  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CBPR  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CF20  
Firmware level.....B85B

Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BBNZ  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ARQG  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C1Y1  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AKX9  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AG7A  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB

State.....Online  
 Array letter.....A  
 PFA error.....No  
  
 Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST336753  
 FRU part number.....32P0736  
 Serial number.....3HX0BW12  
 Firmware level.....B85B  
 Channel.....1  
 SCSI ID.....14  
 Size.....34715 MB  
 State.....Online  
 Array letter.....A  
 PFA error.....No  
  
 Type.....Enclosure  
 Vendor.....IBM  
 Product or model number.....EXP400  
 Serial number.....23M0170  
 Firmware level.....D108  
 FRU type.....MIDPLANE  
 FRU vendor.....IBM  
 FRU date of manufacture.....08/2003  
 FRU part number.....55P3100  
 FRU serial number.....138E357  
 FRU type.....CARD  
 FRU vendor.....IBM  
 FRU date of manufacture.....08/2003  
 FRU part number.....59P4866  
 FRU serial number.....1R04338E358  
 FRU type.....CARD  
 FRU vendor.....IBM  
 FRU date of manufacture.....08/2003  
 FRU part number.....59P4866  
 FRU serial number.....1R04338E377  
 FRU type.....Power  
 FRU vendor.....IBM  
 FRU date of manufacture.....08/2003  
 FRU part number.....14J0665  
 FRU serial number.....1R04538E361  
 FRU type.....Power  
 FRU vendor.....IBM  
 FRU date of manufacture.....08/2003  
 FRU part number.....14J0665  
 FRU serial number.....1R04538E362  
 FRU type.....CARD  
 FRU vendor.....IBM  
 FRU date of manufacture.....08/2003  
 FRU part number.....59P4869  
 FRU serial number.....1R04438E225  
 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.....14  
 SCSI transfer speed.....Ultra160 SCSI  
 SCSI initiator ID.....7

Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST336753  
 FRU part number.....32P0736  
 Serial number.....3HX0APPG  
 Firmware level.....B85B  
 Channel.....2  
 SCSI ID.....0  
 Size.....34715 MB  
 State.....Online  
 Array letter.....B  
 PFA error.....No  
  
 Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST336753  
 FRU part number.....32P0736  
 Serial number.....3HX0CM4H  
 Firmware level.....B85B  
 Channel.....2  
 SCSI ID.....1  
 Size.....34715 MB  
 State.....Online  
 Array letter.....B  
 PFA error.....No  
  
 Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST336753  
 FRU part number.....32P0736  
 Serial number.....3HX0ALZR  
 Firmware level.....B85B  
 Channel.....2  
 SCSI ID.....2  
 Size.....34715 MB  
 State.....Online  
 Array letter.....B  
 PFA error.....No  
  
 Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST336753  
 FRU part number.....32P0736  
 Serial number.....3HX0CJ4R  
 Firmware level.....B85B  
 Channel.....2  
 SCSI ID.....3  
 Size.....34715 MB  
 State.....Online  
 Array letter.....B  
 PFA error.....No  
  
 Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST336753  
 FRU part number.....32P0736  
 Serial number.....3HX0CLEB  
 Firmware level.....B85B  
 Channel.....2  
 SCSI ID.....4  
 Size.....34715 MB  
 State.....Online  
 Array letter.....B  
 PFA error.....No  
  
 Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST336753

FRU part number.....32P0736  
Serial number.....3HX0CFNJ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CKRT  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ASML  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CBAT  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CER2  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CKNG  
Firmware level.....B85B

Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX17RV2  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AN8A  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMM5  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0150  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4865  
FRU serial number.....138E119  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E388  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E120  
FRU type.....Power  
FRU vendor.....IBM

FRU date of manufacture.....08/2003  
 FRU part number.....14J0665  
 FRU serial number.....1R04538E329  
 FRU type.....Power  
 FRU vendor.....IBM  
 FRU date of manufacture.....08/2003  
 FRU part number.....14J0665  
 FRU serial number.....1R04538E330  
 FRU type.....CARD  
 FRU vendor.....IBM  
 FRU date of manufacture.....08/2003  
 FRU part number.....59P4869  
 FRU serial number.....1R04438E159  
 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 15

Configuration information for controller 16

Controller type.....ServeRAID-6M  
 SCSI backend type.....AIC-7902  
 SCSI backend revision.....16  
 Controller FRU.....02R0998  
 Battery FRU.....02R0986  
 Serial number.....30B7E9F8  
 Part number.....02R0988  
 Physical slot.....7  
 BIOS version.....6.11.07  
 Firmware version.....6.11.04  
 Device driver version.....6.06.07  
 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.....2  
 Number of logical drives.....2  
 Number of hot-spare drives.....0  
 Number of ready drives.....0

Array A

Array identifier.....A  
 Array size.....486010 MB  
 Free space.....0 MB  
 Number of logical drives.....1  
 Stripe order (channel/device)...1/0 1/1 1/2 1/3 1/4 1/5 1/6 1/8 1/9 1/10 1/11 1/12  
 1/13 1/14  
 Number of physical drives.....14

Logical drives in array A

Logical drive.....1  
 Array letter.....A  
 State.....Okay  
 RAID level.....0  
 Data space.....486010 MB  
 Parity space.....0 MB  
 Date created.....02/05/2004  
 Write-cache mode.....Write through  
 Merge-group number.....207  
 Merge-group state.....Non-shared

Physical drives in array A

Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST336753  
 FRU part number.....32P0736  
 Serial number.....3HX0AQPZ  
 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.....ST336753  
 FRU part number.....32P0736  
 Serial number.....3HX0BGV7  
 Firmware level.....B85B  
 Channel.....1  
 SCSI ID.....1  
 Size.....34715 MB  
 State.....Online  
 Array letter.....A  
 PFA error.....No

Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST336753  
 FRU part number.....32P0736  
 Serial number.....3HX0BW2G  
 Firmware level.....B85B  
 Channel.....1  
 SCSI ID.....2  
 Size.....34715 MB  
 State.....Online  
 Array letter.....A  
 PFA error.....No

Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST336753  
 FRU part number.....32P0736  
 Serial number.....3HX0AMA8  
 Firmware level.....B85B  
 Channel.....1  
 SCSI ID.....3  
 Size.....34715 MB  
 State.....Online  
 Array letter.....A  
 PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C3KM  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CC0Y  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CAPY  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX08RTH  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ARHC  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS

Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0APAH  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BY7X  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0B9MV  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0APFE  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX08RS3  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Array B  
-----  
Array identifier.....B  
Array size.....486010 MB  
Free space.....0 MB



Number of logical drives.....1  
Stripe order (channel/device)....2/0 2/1 2/2 2/3 2/4 2/5 2/6 2/8 2/9 2/10 2/11 2/12  
2/13 2/14  
Number of physical drives.....14

Logical drives in array B

Logical drive.....2  
Array letter.....B  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array B

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1MD  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QMYQ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1X5  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1LE  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3

Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q03F  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1QJ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MHPH  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R0H4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PF2E  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B

PFA error.....No  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQ7S  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MK4X  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1CX  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0NL29  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QNV4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

SCSI channel 1  
-----  
Number of drives.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AQPZ  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BGV7  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BW2G  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMA8  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C3KM  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online

Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CC0Y  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CAPY  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX08RTH  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0ARHC  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0APAH  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BY7X  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0B9MV  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0APFE  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX08RS3  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0169  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4865  
FRU serial number.....138E351  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E132  
FRU type.....CARD

FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E133  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E355  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E356  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4869  
FRU serial number.....1R04438E396  
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.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1MD  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QMYQ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1X5  
Firmware level.....B85B  
Channel.....2

SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1LE  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q03F  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1QJ  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MHPH  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R0H4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online

Array letter.....B  
PFA error.....No  
  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0PF2E  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QQ7S  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MK4X  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1CX  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0NL29  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QNV4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0172  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4865  
FRU serial number.....138E375  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E376  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E212  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E379  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E380  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4869  
FRU serial number.....1R04438E360  
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 16

Configuration information for controller 17

Controller type.....ServeRAID-6M  
SCSI backend type.....AIC-7902  
SCSI backend revision.....16  
Controller FRU.....02R0998

Battery FRU.....02R0986  
Serial number.....30B7EA00  
Part number.....02R0988  
Physical slot.....10  
BIOS version.....6.11.07  
Firmware version.....6.11.04  
Device driver version.....6.06.07  
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.....2  
Number of logical drives.....2  
Number of hot-spare drives.....0  
Number of ready drives.....0

Array A

-----  
Array identifier.....A  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...1/0 1/1 1/2 1/3 1/4 1/5 1/6 1/8 1/9 1/10 1/11 1/12  
1/13 1/14  
Number of physical drives.....14

Logical drives in array A

-----  
Logical drive.....1  
Array letter.....A  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

Physical drives in array A

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R16E  
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.....ST336753

FRU part number.....32P0736  
Serial number.....3HX0MHP3  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q2DC  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1DT  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R12F  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MMY1  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q5R8  
Firmware level.....B85B

Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1PK  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QSJ4  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QSN7  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QS4K  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q815  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB

State.....Online  
Array letter.....A  
PFA error.....No  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MK3W  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1CL  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

#### Array B

-----  
Array identifier.....B  
Array size.....486010 MB  
Free space.....0 MB  
Number of logical drives.....1  
Stripe order (channel/device)...2/0 2/1 2/2 2/3 2/4 2/5 2/6 2/8 2/9 2/10 2/11 2/12  
2/13 2/14  
Number of physical drives.....14

#### Logical drives in array B

-----  
Logical drive.....2  
Array letter.....B  
State.....Okay  
RAID level.....0  
Data space.....486010 MB  
Parity space.....0 MB  
Date created.....02/05/2004  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

#### Physical drives in array B

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX09E24  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C9TS  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX092TR  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMMF  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX092A2  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CMZ9  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS

Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BZF0  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CMZ5  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BR1C  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0B9W5  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BTQ7  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AML4



Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BVN5  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C57W  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

SCSI channel 1  
-----

Number of drives.....14  
SCSI transfer speed.....Ultra160 SCSI  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R16E  
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.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MHP3  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive

Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q2DC  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1DT  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R12F  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MMY1  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q5R8  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736

Serial number.....3HX0R1PK  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QSJ4  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QSN7  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0QS4K  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0Q815  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0MK3W  
Firmware level.....B85B  
Channel.....1

SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0R1CL  
Firmware level.....B85B  
Channel.....1  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....A  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0174  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4865  
FRU serial number.....138E393  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E394  
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.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E397  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E398  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4869  
FRU serial number.....1R04438E207  
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.....14  
SCSI transfer speed.....Ultra160 SCSI

SCSI initiator ID.....7  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX09E24  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....0  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C9TS  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....1  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX092TR  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....2  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AMMF  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....3  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX092A2  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....4  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive

Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CMZ9  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BZF0  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....6  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0CMZ5  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....8  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BR1C  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....9  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0B9W5  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....10  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736

Serial number.....3HX0BTQ7  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....11  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0AML4  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....12  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0BVN5  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....13  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST336753  
FRU part number.....32P0736  
Serial number.....3HX0C57W  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....14  
Size.....34715 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Enclosure  
Vendor.....IBM  
Product or model number.....EXP400  
Serial number.....23M0171  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4865  
FRU serial number.....138E363  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E353  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4866  
FRU serial number.....1R04338E352

FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E367  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....14J0665  
FRU serial number.....1R04538E368  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....08/2003  
FRU part number.....59P4869  
FRU serial number.....1R04438E122  
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 17  
-----

## Microsoft Windows 2000 Server

### Client System Information Report

System Information report written at: 02/23/2004 02:27:26 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	-[8647xxx]-
System Type	X86-based PC
Processor	x86 Family 15 Model 2 Stepping 7 GenuineIntel ~3066 Mhz
Processor	x86 Family 15 Model 2 Stepping 7 GenuineIntel ~3066 Mhz
Processor	x86 Family 15 Model 2 Stepping 7 GenuineIntel ~3066 Mhz
Processor	x86 Family 15 Model 2 Stepping 7 GenuineIntel ~3066 Mhz
BIOS Version	)Phoenix - Award WorkstationBIOS v6.00PG
Windows Directory	C:\WINNT
System Directory	C:\WINNT\System32
Boot Device	\Device\Harddisk0\Partition1
Locale	United States
User Name	VCLIENT10\Administrator
Time Zone	Eastern Standard Time
Total Physical Memory	2,096,604 KB
Available Physical Memory	1,870,428 KB
Total Virtual Memory	5,608,980 KB
Available Virtual Memory	5,305,292 KB
Page File Space	3,512,376 KB
Page File	C:\pagefile.sys

[Hardware Resources]

[ Following are sub-categories of this main category ]

[Conflicts/Sharing]

Resource Device  
No conflicted/shared resources

```

[DMA]
Channel Device Status
4 Direct memory access controller OK
2 Standard floppy disk controller 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
0x0D00-0x40B7 PCI bus OK
0x40B9-0xFFFF PCI bus OK
0x7000-0xBFFF Intel(R) E7000 Series Hub Interface B PCI-to-PCI Bridge
- 2553 OK
0x7000-0xBFFF Intel(R) P64H2 PCI to PCI Bridge - 1460 OK
0x7000-0xBFFF PCI standard PCI-to-PCI bridge OK
0x7000-0xBFFF Intel(R) PRO/100 S Dual Port Server Adapter
OK
0xA000-0xBFFF Intel(R) P64H2 PCI to PCI Bridge - 1460 OK
0xA000-0xBFFF DEC 21154 PCI to PCI bridge OK
0xA000-0xBFFF Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet
Adapter OK
0xB000-0xB0FF QLogic QLA23xx PCI Fibre Channel Adapter
OK
0xA400-0xA4FF Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet
Adapter #2OK
0xA800-0xA8FF Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet
Adapter #3OK
0xAC00-0xACFF Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet
Adapter #4OK
0x7400-0x743F Intel(R) PRO/100 S Dual Port Server Adapter #2
OK
0x8000-0x8FFF PCI standard PCI-to-PCI bridge OK
0x8000-0x8FFF Intel(R) PRO/100 S Dual Port Server Adapter #3
OK
0x8400-0x843F Intel(R) PRO/100 S Dual Port Server Adapter #4
OK
0x9000-0x90FF LSI Logic 1020/1030 Ultra320 SCSI Adapter
OK
0x9400-0x94FF LSI Logic 1020/1030 Ultra320 SCSI Adapter
OK
0xD400-0xD41F Intel(R) 82801DB/DBM USB Universal Host Controller
- 24C2 OK
0xD000-0xD01F Intel(R) 82801DB/DBM USB Universal Host Controller
- 24C4 OK
0xC000-0xC0FF RAGE XL PCI OK
0x03B0-0x03BB RAGE XL PCI OK
0x03C0-0x03DF RAGE XL PCI 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
0x0022-0x003F Motherboard resources OK
0x0044-0x005F Motherboard resources OK
0x0062-0x0063 Motherboard resources OK
0x0065-0x006F Motherboard resources OK
0x0074-0x007F Motherboard resources OK
0x0091-0x0093 Motherboard resources OK
0x00A2-0x00BF Motherboard resources OK
0x00E0-0x00EF Motherboard resources OK
0x04D0-0x04D1 Motherboard resources OK
0x0800-0x087F Motherboard resources OK
0x0020-0x0021 Programmable interrupt controller OK
0x00A0-0x00A1 Programmable interrupt controller OK
0x0080-0x0090 Direct memory access controller OK
0x0094-0x009F Direct memory access controller OK
0x00C0-0x00DF Direct memory access controller OK

```

```

0x0040-0x0043 System timer OK
0x0070-0x0073 System CMOS/real time clock OK
0x0061-0x0061 System speaker OK
0x00F0-0x00FF Numeric data processor OK
0x03F2-0x03F5 Standard floppy disk controller OK
0x03F7-0x03F7 Standard floppy disk controller OK
0x03F8-0x03FF Communications Port (COM1) OK
0x02F8-0x02FF Communications Port (COM2) OK
0x0378-0x037F Printer Port (LPT1) 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
0xF000-0xF00F Intel(R) 82801DB Ultra ATA Storage Controller - 24CB
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
0x5000-0x501F Intel(R) 82801DB/DBM SMBus Controller - 24C3
OK
0xDC00-0xDCFF SoundMAX Integrated Digital Audio OK
0xE000-0xE03F SoundMAX Integrated Digital Audio OK
0x4000-0x40BF Motherboard resources OK
0x40B8-0x40B8 Not Available OK
[IRQs]
IRQ Number Device
9 Microsoft ACPI-Compliant System
48 Broadcom NetXtreme Gigabit Ethernet
52 QLogic QLA23xx PCI Fibre Channel Adapter
56 Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter
57 Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter #2
58 Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter #3
59 Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter #4
24 Intel(R) PRO/100 S Dual Port Server Adapter
25 Intel(R) PRO/100 S Dual Port Server Adapter #2
28 Intel(R) PRO/100 S Dual Port Server Adapter #3
29 Intel(R) PRO/100 S Dual Port Server Adapter #4
32 LSI Logic 1020/1030 Ultra320 SCSI Adapter
33 LSI Logic 1020/1030 Ultra320 SCSI Adapter
16 Intel(R) 82801DB/DBM USB Universal Host Controller - 24C2
19 Intel(R) 82801DB/DBM USB Universal Host Controller - 24C4
23 Intel PCI to USB Enhanced Host Controller
22 RAGE XL PCI
8 System CMOS/real time clock
13 Numeric data processor
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
5 Intel(R) 82801DB/DBM SMBus Controller - 24C3
17 SoundMAX Integrated Digital Audio
[Memory]
Range Device Status
0xC8000-0xCBFFF System board OK
0xCE200-0xCFFFF System board OK
0xF0000-0xFBFFF System board OK
0xFC000-0xFFFFF System board OK
0x7FFF0000-0x7FFFFFFF System board OK
0x0000-0x9FFFFF System board OK
0x100000-0x7FFFFFFF System board OK
0xFEC00000-0xFECFFFFFFF System board OK
0xFEE00000-0xFEEFFFFFFF System board OK
0xFFB00000-0xFFB7FFFF System board OK
0xFFFF0000-0xFFFFFFF System board OK

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0xE0000-0xEFFFF System board OK  
0xFFB80000-0xFFBFFFF Intel(r) 82802 Firmware Hub Device OK  
0xA0000-0xBFFFF PCI bus OK  
0xA0000-0xBFFFF RAGE XL PCI OK  
0xC0000-0xDFFFF PCI bus OK  
0x80000000-0xFEBFFFF PCI bus OK  
0xEC000000-0xEFFFFFF Intel(R) E7000 Series Processor to AGP Controller - 2552 OK  
0xE8000000-0xEBFFFF Intel(R) E7000 Series Processor to AGP Controller - 2552 OK  
0xF0000000-0xF6FFFF Intel(R) E7000 Series Hub Interface B PCI-to-PCI Bridge - 2553 OK  
0xF0000000-0xF6FFFF Intel(R) P64H2 PCI to PCI Bridge - 1460 OK  
0xF6001000-0xF6001FFF Intel(R) P64H2 I/O Advanced Programmable Interrupt Controller - 1461 OK  
0xF3000000-0xF300FFFF Broadcom NetXtreme Gigabit Ethernet OK  
0xF3010000-0xF3010FFF QLogic QLA23xx PCI Fibre Channel Adapter OK  
0xF1000000-0xF2FFFFFF DEC 21154 PCI to PCI bridge OK  
0xF2000000-0xF207FFFF Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter OK  
0xF2080000-0xF20FFFF Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter #2 OK  
0xF2100000-0xF217FFFF Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter #3 OK  
0xF2180000-0xF21FFFF Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter #4 OK  
0xF6000000-0xF6000FFF Intel(R) P64H2 I/O Advanced Programmable Interrupt Controller - 1461 OK  
0xF4000000-0xF5FFFFFF Intel(R) P64H2 PCI to PCI Bridge - 1460 OK  
0xF5100000-0xF51FFFF PCI standard PCI-to-PCI bridge OK  
0xF5100000-0xF51FFFF Intel(R) PRO/100 S Dual Port Server Adapter OK  
0xF5141000-0xF5141FFF Intel(R) PRO/100 S Dual Port Server Adapter OK  
0xF5140000-0xF5140FFF Intel(R) PRO/100 S Dual Port Server Adapter #2 OK  
0xF5120000-0xF513FFFF Intel(R) PRO/100 S Dual Port Server Adapter #2 OK  
0xF5000000-0xF50FFFF PCI standard PCI-to-PCI bridge OK  
0xF5000000-0xF50FFFF Intel(R) PRO/100 S Dual Port Server Adapter #3 OK  
0xF5041000-0xF5041FFF Intel(R) PRO/100 S Dual Port Server Adapter #3 OK  
0xF5040000-0xF5040FFF Intel(R) PRO/100 S Dual Port Server Adapter #4 OK  
0xF5020000-0xF503FFFF Intel(R) PRO/100 S Dual Port Server Adapter #4 OK  
0xF5210000-0xF521FFFF LSI Logic 1020/1030 Ultra320 SCSI Adapter OK  
0xF5200000-0xF520FFFF LSI Logic 1020/1030 Ultra320 SCSI Adapter OK  
0xF5220000-0xF522FFFF LSI Logic 1020/1030 Ultra320 SCSI Adapter OK  
0xF5230000-0xF523FFFF LSI Logic 1020/1030 Ultra320 SCSI Adapter OK  
0xFA000000-0xFA0003FF Intel PCI to USB Enhanced Host Controller OK  
0xF7000000-0xF7FFFFFF RAGE XL PCI OK  
0xF9000000-0xF9000FFF RAGE XL PCI OK  
0xFEBFFC00-0xFEBFFFF Intel(R) 82801DB Ultra ATA Storage Controller - 24CB OK  
0xFA001000-0xFA0011FF SoundMAX Integrated Digital Audio OK

0xFA002000-0xFA0020FF SoundMAX Integrated Digital Audio 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\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\msg723.acm	Microsoft Corporation			
OK	C:\WINNT\System32\MSG723.ACM	4.4.3385	106.77 KB	
(109,328 bytes)	2/12/2003 12:55:58 PM			
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\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\lhacm.acm	Microsoft Corporation			
OK	C:\WINNT\System32\LHACM.ACM	4.4.3385	33.27 KB	
(34,064 bytes)	2/12/2003 12:55:58 PM			
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\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\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\msh261.drv	Microsoft Corporation			
OK	C:\WINNT\System32\MSH261.DRV	4.4.3385	163.77 KB	
(167,696 bytes)	2/12/2003 12:55:58 PM			
c:\winnt\system32\msh263.drv	Microsoft Corporation			
OK	C:\WINNT\System32\MSH263.DRV	4.4.3385	252.27 KB	
(258,320 bytes)	2/12/2003 12:55:39 PM			
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			
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\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\iccvd.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				

[CD-ROM]  

Item	Value
Drive	Z:
Description	CD-ROM Drive
Media Loaded	False
Media Type	CD-ROM
Name	HL-DT-ST CD-ROM GCR-8480B
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-8480B\_\_\_\_\_1.02\_\_\_\_\5&74A80B&0&0.0.0  
 [Sound Device]  
 Item Value  
 Name SoundMAX Integrated Digital Audio  
 Status OK  
 PNP Device ID  
 PCI\VEN\_8086&DEV\_24C5&SUBSYS\_027A1014&REV\_023&13C0B0C5&0&FD  
 IRQ Number 17  
 I/O Port 0xDC00-0xDCFF  
 I/O Port 0xE000-0xE03F  
 Memory Range 0xFA001000-0xFA0011FF  
 Memory Range 0xFA002000-0xFA0020FF  
 Driver c:\winnt\system32\drivers\smwdm.sys (552932, PRE-RELEASE)  
 [Display]  
 Item Value  
 Name RAGE XL PCI  
 PNP Device ID  
 PCI\VEN\_1002&DEV\_4752&SUBSYS\_02401014&REV\_27\4&1A671D0C&0&08F0  
 Adapter Type ATI RAGE XL PCI (B41), ATI Technologies Inc. compatible  
 Adapter Description RAGE XL PCI  
 Adapter RAM 8.00 MB (8,388,608 bytes)  
 Installed Drivers ati2drad.dll  
 Driver Version 5.00.2195.5005  
 INF File oem1.inf (ati2mpad 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\4&323CF337&0  
 NumberOfFunctionKeys 12  
 [Pointing Device]  
 Item Value  
 Hardware Type PS/2 Compatible Mouse  
 Number of Buttons 3  
 Status OK  
 PNP Device ID ACPI\PNP0F13\4&323CF337&0  
 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 2/23/2004 8:45:38 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 2/23/2004 8:45:38 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 2/23/2004 8:45:38 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\_PTMINIPORT\0000  
 Last Reset 2/23/2004 8:45:38 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 2/23/2004 8:45:38 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\_16A7&SUBSYS\_026F1014&REV\_02\5&121CC7C2  
 &0&08E810  
 Last Reset 2/23/2004 8:45:38 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 00:10:DC:72:A2:2D  
 Service Name b57w2k  
 IRQ Number 48  
 Driver c:\winnt\system32\drivers\b57w2k.sys (79336, 2.90.0.0)  
 Name [00000006] Intel(R) PRO/100 S Dual Port Server Adapter  
 Adapter Type Ethernet 802.3  
 Product Name Intel(R) PRO/100 S Dual Port Server Adapter  
 Installed True  
 PNP Device ID  
 PCI\VEN\_8086&DEV\_1229&SUBSYS\_10158086&REV\_0D\6&11588895&0  
 &2008F810  
 Last Reset 2/23/2004 8:45:38 AM  
 Index 6  
 Service Name E100B  
 IP Address 192.168.13.99  
 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 00:02:B3:AC:69:D8  
 Service Name E100B  
 IRQ Number 24  
 I/O Port 0x7000-0xBFFF  
 Driver c:\winnt\system32\drivers\e100bnt5.sys (141584, 6.04.14.0000)  
 Name [00000007] Intel(R) PRO/100 S Dual Port Server Adapter  
 Adapter Type Ethernet 802.3  
 Product Name Intel(R) PRO/100 S Dual Port Server Adapter  
 Installed True  
 PNP Device ID  
 PCI\VEN\_8086&DEV\_1229&SUBSYS\_10158086&REV\_0D\6&11588895&0  
 &2808F810

Last Reset 2/23/2004 8:45:38 AM  
 Index 7  
 Service Name E100B  
 IP Address 192.168.12.99  
 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 00:02:B3:AC:69:D9  
 Service Name E100B  
 IRQ Number 25  
 I/O Port 0x7400-0x743F  
 Driver c:\winnt\system32\drivers\e100bnt5.sys (141584, 6.04.14.0000)  
 Name [00000008] Intel(R) PRO/100 S Dual Port Server Adapter  
 Adapter Type Ethernet 802.3  
 Product Name Intel(R) PRO/100 S Dual Port Server Adapter  
 Installed True  
 PNP Device ID  
 PCI\VEN\_8086&DEV\_1229&SUBSYS\_10158086&REV\_0D\6&34E7E7F4&  
 0&2010F810  
 Last Reset 2/23/2004 8:45:38 AM  
 Index 8  
 Service Name E100B  
 IP Address 192.168.17.99  
 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 00:02:B3:AC:6C:44  
 Service Name E100B  
 IRQ Number 28  
 I/O Port 0x8000-0x8FFF  
 Driver c:\winnt\system32\drivers\e100bnt5.sys (141584, 6.04.14.0000)  
 Name [00000009] Intel(R) PRO/100 S Dual Port Server Adapter  
 Adapter Type Ethernet 802.3  
 Product Name Intel(R) PRO/100 S Dual Port Server Adapter  
 Installed True  
 PNP Device ID  
 PCI\VEN\_8086&DEV\_1229&SUBSYS\_10158086&REV\_0D\6&34E7E7F4&  
 0&2810F810  
 Last Reset 2/23/2004 8:45:38 AM  
 Index 9  
 Service Name E100B  
 IP Address 192.168.16.99  
 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 00:02:B3:AC:6C:45  
 Service Name E100B  
 IRQ Number 29  
 I/O Port 0x8400-0x843F  
 Driver c:\winnt\system32\drivers\e100bnt5.sys (141584, 6.04.14.0000)  
 Name [00000014] Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet  
 Adapter  
 Adapter Type Ethernet 802.3  
 Product Name Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet  
 Adapter  
 Installed True  
 PNP Device ID  
 PCI\VEN\_9004&DEV\_6915&SUBSYS\_00199004&REV\_03\6&1CD10E71&  
 0&2018E810



Last Reset 2/23/2004 8:45:38 AM  
 Index 14  
 Service Name ADPTSF  
 IP Address 192.168.15.99  
 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 00:00:D1:EF:69:F9  
 Service Name ADPTSF  
 IRQ Number 56  
 I/O Port 0xA000-0xBFFF  
 Driver c:\winnt\system32\drivers\adptsf50.sys (48384, 5.20.0.24)  
 Name [00000015] Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet  
 Adapter  
 Adapter Type Ethernet 802.3  
 Product Name Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet  
 Adapter  
 Installed True  
 PNP Device ID  
 PCI\VEN\_9004&DEV\_6915&SUBSYS\_00199004&REV\_03\6&1CD10E71&0&2818E810  
 Last Reset 2/23/2004 8:45:38 AM  
 Index 15  
 Service Name ADPTSF  
 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 00:00:D1:EF:69:FA  
 Service Name ADPTSF  
 IRQ Number 57  
 I/O Port 0xA400-0xA4FF  
 Driver c:\winnt\system32\drivers\adptsf50.sys (48384, 5.20.0.24)  
 Name [00000016] Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet  
 Adapter  
 Adapter Type Ethernet 802.3  
 Product Name Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet  
 Adapter  
 Installed True  
 PNP Device ID  
 PCI\VEN\_9004&DEV\_6915&SUBSYS\_00199004&REV\_03\6&1CD10E71&0&3018E810  
 Last Reset 2/23/2004 8:45:38 AM  
 Index 16  
 Service Name ADPTSF  
 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 00:00:D1:EF:69:FB  
 Service Name ADPTSF  
 IRQ Number 58  
 I/O Port 0xA800-0xA8FF  
 Driver c:\winnt\system32\drivers\adptsf50.sys (48384, 5.20.0.24)  
 Name [00000017] Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet  
 Adapter  
 Adapter Type Ethernet 802.3  
 Product Name Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet  
 Adapter

Installed True  
 PNP Device ID  
 PCI\VEN\_9004&DEV\_6915&SUBSYS\_00199004&REV\_03\6&1CD10E71&0&3818E810  
 Last Reset 2/23/2004 8:45:38 AM  
 Index 17  
 Service Name ADPTSF  
 IP Address 192.168.14.99  
 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 00:00:D1:EF:69:FC  
 Service Name ADPTSF  
 IRQ Number 59  
 I/O Port 0xAC00-0xACFF  
 Driver c:\winnt\system32\drivers\adptsf50.sys (48384, 5.20.0.24)  
 [Protocol]  
 Item Value  
 Name MSADF 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 MSADF 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  
 MinimumAddressSize 16 bytes  
 PseudoStreamOriented False  
 SupportsBroadcasting True  
 SupportsConnectData False  
 SupportsDisconnectData False  
 SupportsEncryption True

SupportsExpeditedData	False	MinimumAddressSize	20 bytes
SupportsGracefulClosing	False	PseudoStreamOriented	False
SupportsGuaranteedBandwidth	False	SupportsBroadcasting	False
SupportsMulticasting	True	SupportsConnectData	False
Name	RSVP TCP Service Provider	SupportsDisconnectData	False
ConnectionlessService	False	SupportsEncryption	False
GuaranteesDelivery	True	SupportsExpeditedData	False
GuaranteesSequencing	True	SupportsGracefulClosing	False
MaximumAddressSize	16 bytes	SupportsGuaranteedBandwidth	False
MaximumMessageSize	0 bytes	SupportsMulticasting	False
MessageOriented	False	Name	MSAFD NetBIOS
MinimumAddressSize	16 bytes	[\Device\NetBT_Tcpip_{7342D553-7C2A-4066-9070-1B50781771D5}]	
PseudoStreamOriented	False	DATAGRAM 11	
SupportsBroadcasting	False	ConnectionlessService	True
SupportsConnectData	False	GuaranteesDelivery	False
SupportsDisconnectData	False	GuaranteesSequencing	False
SupportsEncryption	True	MaximumAddressSize	20 bytes
SupportsExpeditedData	True	MaximumMessageSize	64000 bytes
SupportsGracefulClosing	True	MessageOriented	True
SupportsGuaranteedBandwidth	False	MinimumAddressSize	20 bytes
SupportsMulticasting	False	PseudoStreamOriented	False
Name	MSAFD NetBIOS	SupportsBroadcasting	True
[\Device\NetBT_Tcpip_{C5A9DCD8-47C5-437F-A456-3998B708852F}]		SupportsConnectData	False
SEQPACKET 14		SupportsDisconnectData	False
ConnectionlessService	False	SupportsEncryption	False
GuaranteesDelivery	True	SupportsExpeditedData	False
GuaranteesSequencing	True	SupportsGracefulClosing	False
MaximumAddressSize	20 bytes	SupportsGuaranteedBandwidth	False
MaximumMessageSize	64000 bytes	SupportsMulticasting	False
MessageOriented	True	Name	MSAFD NetBIOS
MinimumAddressSize	20 bytes	[\Device\NetBT_Tcpip_{4A2A9C9A-DDD8-4FED-BF81-B957B71EB0BE}]	
PseudoStreamOriented	False	SEQPACKET 4	
SupportsBroadcasting	False	ConnectionlessService	False
SupportsConnectData	False	GuaranteesDelivery	True
SupportsDisconnectData	False	GuaranteesSequencing	True
SupportsEncryption	False	MaximumAddressSize	20 bytes
SupportsExpeditedData	False	MaximumMessageSize	64000 bytes
SupportsGracefulClosing	False	MessageOriented	True
SupportsGuaranteedBandwidth	False	MinimumAddressSize	20 bytes
SupportsMulticasting	False	PseudoStreamOriented	False
Name	MSAFD NetBIOS	SupportsBroadcasting	False
[\Device\NetBT_Tcpip_{C5A9DCD8-47C5-437F-A456-3998B708852F}]		SupportsConnectData	False
DATAGRAM 14		SupportsDisconnectData	False
ConnectionlessService	True	SupportsEncryption	False
GuaranteesDelivery	False	SupportsExpeditedData	False
GuaranteesSequencing	False	SupportsGracefulClosing	False
MaximumAddressSize	20 bytes	SupportsGuaranteedBandwidth	False
MaximumMessageSize	64000 bytes	SupportsMulticasting	False
MessageOriented	True	Name	MSAFD NetBIOS
MinimumAddressSize	20 bytes	[\Device\NetBT_Tcpip_{4A2A9C9A-DDD8-4FED-BF81-B957B71EB0BE}]	
PseudoStreamOriented	False	DATAGRAM 4	
SupportsBroadcasting	True	ConnectionlessService	True
SupportsConnectData	False	GuaranteesDelivery	False
SupportsDisconnectData	False	GuaranteesSequencing	False
SupportsEncryption	False	MaximumAddressSize	20 bytes
SupportsExpeditedData	False	MaximumMessageSize	64000 bytes
SupportsGracefulClosing	False	MessageOriented	True
SupportsGuaranteedBandwidth	False	MinimumAddressSize	20 bytes
SupportsMulticasting	False	PseudoStreamOriented	False
Name	MSAFD NetBIOS	SupportsBroadcasting	True
[\Device\NetBT_Tcpip_{7342D553-7C2A-4066-9070-1B50781771D5}]		SupportsConnectData	False
SEQPACKET 11		SupportsDisconnectData	False
ConnectionlessService	False	SupportsEncryption	False
GuaranteesDelivery	True	SupportsExpeditedData	False
GuaranteesSequencing	True	SupportsGracefulClosing	False
MaximumAddressSize	20 bytes	SupportsGuaranteedBandwidth	False
MaximumMessageSize	64000 bytes	SupportsMulticasting	False
MessageOriented	True		

Name MSAFD NetBIOS  
 [\Device\NetBT\_Tcpip\_{04626D60-9758-487A-8A9E-33BA956B6C94}]  
 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\_{04626D60-9758-487A-8A9E-33BA956B6C94}]  
 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\_{9580B244-281D-49A2-868D-2DB50DC4BB14}]  
 SEQPACKET 13  
 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\_{9580B244-281D-49A2-868D-2DB50DC4BB14}]  
 DATAGRAM 13  
 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\_{F37FFD50-F485-4FB7-A01E-55B193228DED}]  
 SEQPACKET 6  
 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\_{F37FFD50-F485-4FB7-A01E-55B193228DED}]  
 DATAGRAM 6  
 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\_{E64AEA55-29FE-46A2-900A-0F724D1CC407}]  
 SEQPACKET 12  
 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\_{E64AEA55-29FE-46A2-900A-0F724D1CC407}]  
 DATAGRAM 12

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_{70347C08-B8F8-4918-93D1-FFF1CE9DB212}]	
SEQPACKET 5	
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_{70347C08-B8F8-4918-93D1-FFF1CE9DB212}]	
DATAGRAM 5	
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_{4DA8936B-544A-43FE-B2F7-D71CAF394BCD}]	
SEQPACKET 0	
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_{4DA8936B-544A-43FE-B2F7-D71CAF394BCD}]	
DATAGRAM 0	
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_{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  
 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\_{7A1A1C49-720E-4C27-ADCC-2C8703574F7C}]  
 DATAGRAM 2  
 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  
 [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\PNP0400\4&323CF337&0  
 [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	28.74 GB (30,861,840,384 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 DTN036C3UCDY10FN SCSI Disk Device
Drive BytesPerSector	512
Drive MediaLoaded	True
Drive MediaType	Fixed hard disk media
Drive Partitions	1
Drive SCSI Bus	0
Drive SCSI Logical Unit	0
Drive SCSI Port	2
Drive SCSI Target Id	4
Drive SectorsPerTrack	63
Drive Size	36396864000 bytes
Drive TotalCylinders	4425
Drive TotalSectors	71087625
Drive TotalTracks	1128375
Drive TracksPerCylinder	255

[SCSI]

Item	Value
Name	QLogic QLA23xx PCI Fibre Channel Adapter
Caption	QLogic QLA23xx PCI Fibre Channel Adapter
Driver	ql2300
Status	OK
PNP Device ID	
PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\5&121CC7C2&0&10E810	
Device ID	
PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\5&121CC7C2&0&10E810	
Device Map	Not Available
Index	Not Available
Max Number Controlled	Not Available
IRQ Number	52
I/O Port	0xB000-0xB0FF
Driver	c:\winnt\system32\drivers\ql2300.sys (467890, 8.2.3.61 (w32 VI))
Name	LSI Logic 1020/1030 Ultra320 SCSI Adapter
Caption	LSI Logic 1020/1030 Ultra320 SCSI Adapter
Driver	SYMMPI
Status	OK
PNP Device ID	
PCI\VEN_1000&DEV_0030&SUBSYS_10001014&REV_07\5&21593F33&0&18F810	
Device ID	
PCI\VEN_1000&DEV_0030&SUBSYS_10001014&REV_07\5&21593F33&0&18F810	
Device Map	Not Available
Index	Not Available
Max Number Controlled	Not Available
IRQ Number	32
I/O Port	0x9000-0x90FF
Driver	c:\winnt\system32\drivers\symmpi.sys (38512, 1.08.22.00)
Name	LSI Logic 1020/1030 Ultra320 SCSI Adapter
Caption	LSI Logic 1020/1030 Ultra320 SCSI Adapter

Driver	SYMMPI
Status	OK
PNP Device ID	
PCI\VEN_1000&DEV_0030&SUBSYS_10001014&REV_07\5&21593F33&0&19F810	
Device ID	
PCI\VEN_1000&DEV_0030&SUBSYS_10001014&REV_07\5&21593F33&0&19F810	
Device Map	Not Available
Index	Not Available
Max Number Controlled	Not Available
IRQ Number	33
I/O Port	0x9400-0x94FF
Driver	c:\winnt\system32\drivers\symmpi.sys (38512, 1.08.22.00)

[Printing]

Name	Port Name Server Name
No printing information	

[Problem Devices]

Device	PNP Device ID	Error Code
Not Available	ACPI\IBM37D6\2&DABA3FF&0	28
Not Available	ACPI\ASF0001\2&DABA3FF&0	28

[USB]

Device	PNP Device ID
Intel(R) 82801DB/DBM USB Universal Host Controller - 24C2	
PCI\VEN_8086&DEV_24C2&SUBSYS_027A1014&REV_02\3&13C0B0C5&0&E8	
USB Root Hub	USB\ROOT_HUB\4&BF47197&0
Intel(R) 82801DB/DBM USB Universal Host Controller - 24C4	
PCI\VEN_8086&DEV_24C4&SUBSYS_027A1014&REV_02\3&13C0B0C5&0&E9	
USB Root Hub	USB\ROOT_HUB\4&31A3CFF4&0
Intel PCI to USB Enhanced Host Controller	
PCI\VEN_8086&DEV_24CD&SUBSYS_027A1014&REV_02\3&13C0B0C5&0&EF	
USB 2.0 Root Hub	USB\ROOT_HUB\20\4&E58626F&0

[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	False
Disabled	Stopped	OK	Ignore	False	False
abp480n5	abp480n5	Not Available	Kernel Driver	False	False
Disabled	Stopped	OK	Normal	False	False
acpi	Microsoft ACPI Driver	c:\winnt\system32\drivers\acpi.sys	Kernel Driver	Running	OK
Kernel Driver	True	Boot	Running	OK	Normal
False	True				
acpiec	ACPIEC	c:\winnt\system32\drivers\acpiec.sys	Kernel Driver	Running	OK
Driver	False	Disabled	Stopped	OK	Normal
False					
adptsf	Adaptec DuraLAN PCI Ethernet/Fast Ethernet driver for Windows 2000	c:\winnt\system32\drivers\adptsf50.sys	Kernel Driver	Running	OK
True	Manual	Running	OK	Normal	False
adpu160m	adpu160m	Not Available	Kernel Driver	False	False
Disabled	Stopped	OK	Normal	False	False
aeaudio	aeaudio	c:\winnt\system32\drivers\aeaudio.sys	Kernel Driver	Running	OK
Driver	True	Manual	Running	OK	Normal
True					
afd	AFD Networking Support Environment	c:\winnt\system32\drivers\afd.sys	Kernel Driver	Running	OK
Running	OK	Normal	False	True	Auto
agp440	Intel AGP Bus Filter	c:\winnt\system32\drivers\agp440.sys	Kernel Driver	Running	OK
Kernel Driver	True	Boot	Running	OK	Normal
False	True				
aha154x	Aha154x	Not Available	Kernel Driver	False	False
Disabled	Stopped	OK	Normal	False	False
aic116x	aic116x	Not Available	Kernel Driver	False	False
Disabled	Stopped	OK	Normal	False	False

aic78u2	aic78u2	Not Available	Kernel Driver	False	dfsdriver	DfsDriver	c:\winnt\system32\drivers\dfs.sys	File System Driver	
Disabled	Stopped	OK	Normal	False	True	Boot	Running	OK	Normal
aic78xx	aic78xx	Not Available	Kernel Driver	False	disk	Disk Driver	c:\winnt\system32\drivers\disk.sys		
Disabled	Stopped	OK	Normal	False	Kernel Driver	True	Boot	Running	OK
ami0nt	ami0nt	Not Available	Kernel Driver	False	False	True			
Disabled	Stopped	OK	Normal	False	diskperf	Diskperf	c:\winnt\system32\drivers\diskperf.sys	Kernel	
amsint	amsint	Not Available	Kernel Driver	False	Driver	True	Boot	Running	OK
Disabled	Stopped	OK	Normal	False	True				
asc	asc	Not Available	Kernel Driver	False	dmboot	dmboot	c:\winnt\system32\drivers\dmboot.sys	Kernel	
Disabled	Stopped	OK	Normal	False	Driver	False	Disabled	Stopped	OK
asc3350p	asc3350p	Not Available	Kernel Driver	False	False				
Disabled	Stopped	OK	Normal	False	dmio	Logical Disk Manager Driver			
asc3550	asc3550	Not Available	Kernel Driver	False	c:\winnt\system32\drivers\dmio.sys			Kernel Driver	True
Disabled	Stopped	OK	Normal	False	Boot	Running	OK	Normal	False
asyncmac	RAS Asynchronous Media Driver				dmload	dmload	c:\winnt\system32\drivers\dmload.sys	Kernel	
c:\winnt\system32\drivers\asyncmac.sys			Kernel Driver	False	Driver	True	Boot	Running	OK
Manual	Stopped	OK	Normal	False	True				
atapi	Standard IDE/ESDI Hard Disk Controller				dmusic	Microsoft DirectMusic SW Synth (WDM)			
c:\winnt\system32\drivers\atapi.sys			Kernel Driver	True	c:\winnt\system32\drivers\dmusic.sys			Kernel Driver	False
Boot	Running	OK	Normal	False	Manual	Stopped	OK	Normal	False
atdisk	Atdisk	Not Available	Kernel Driver	False	e100b	Intel(R) PRO Adapter Driver			
Disabled	Stopped	OK	Ignore	False	c:\winnt\system32\drivers\e100bnt5.sys			Kernel Driver	True
ati2mpad	ati2mpad	c:\winnt\system32\drivers\ati2mpad.sys	Kernel		Manual	Running	OK	Normal	False
Driver	True	Manual	Running	OK	Ignore				True
True				False	efs	EFS	c:\winnt\system32\drivers\efs.sys	File System Driver	
atirage3	atirage3	c:\winnt\system32\drivers\atimpab.sys	Kernel		True	Disabled	Running	OK	Normal
Driver	False	Manual	Stopped	OK	Ignore				True
False				False	fastfat	Fastfat	c:\winnt\system32\drivers\fastfat.sys	File System	
atmarpc	ATM ARP Client Protocol				Driver	True	Disabled	Running	OK
c:\winnt\system32\drivers\atmarpc.sys			Kernel Driver	False	True				False
Manual	Stopped	OK	Normal	False	fd16_700	Fd16_700	Not Available	Kernel Driver	False
audstub	Audio Stub Driver	c:\winnt\system32\drivers\audstub.sys	Kernel Driver	True	Disabled	Stopped	OK	Normal	False
Kernel Driver	True	Manual	Running	OK	False	Fdc	Floppy Disk Controller Driver		
False	True			Normal	Kernel Driver	True	Manual	Running	OK
b57w2k	Broadcom NetXtreme Gigabit Ethernet				False	True			Normal
c:\winnt\system32\drivers\b57w2k.sys			Kernel Driver	True	fips	Fips	c:\winnt\system32\drivers\fips.sys	Kernel	
Manual	Running	OK	Normal	False	Driver	True	Auto	Running	OK
beep	Beep	c:\winnt\system32\drivers\beep.sys	Kernel		True				Normal
Driver	True	System	Running	OK	fireport	fireport	Not Available	Kernel Driver	False
True				False	Disabled	Stopped	OK	Normal	False
buslogic	BusLogic	Not Available	Kernel Driver	False	flashpnt	flashpnt	Not Available	Kernel Driver	False
Disabled	Stopped	OK	Normal	False	Disabled	Stopped	OK	Normal	False
cd20xrnt	cd20xrnt	Not Available	Kernel Driver	False	flpydisk	Floppy Disk Driver	c:\winnt\system32\drivers\flpydisk.sys		
Disabled	Stopped	OK	Normal	False	Kernel Driver	True	Manual	Running	OK
cdaudio	Cdaudio	c:\winnt\system32\drivers\cdaudio.sys	Kernel		False	True			Normal
Driver	False	System	Stopped	OK	ftdisk	Volume Manager Driver			
False				False	c:\winnt\system32\drivers\ftdisk.sys			Kernel Driver	True
cdfs	Cdfs	c:\winnt\system32\drivers\cdfs.sys	File System		Boot	Running	OK	Normal	False
Driver	True	Disabled	Running	OK	True				True
True				False	gpc	Generic Packet Classifier			
cdrom	CD-ROM Driver	c:\winnt\system32\drivers\cdrom.sys	Kernel Driver	True	c:\winnt\system32\drivers\msgpc.sys			Kernel Driver	True
Kernel Driver	True	System	Running	OK	Manual	Running	OK	Normal	False
False	True			Normal	i8042prt	i8042 Keyboard and PS/2 Mouse Port Driver			
changer	Changer	Not Available	Kernel Driver	False	c:\winnt\system32\drivers\i8042prt.sys			Kernel Driver	True
System	Stopped	OK	Ignore	False	System	Running	OK	Normal	False
cpqarray	Cpqarray	Not Available	Kernel Driver	False	ini910u	ini910u	Not Available	Kernel Driver	False
Disabled	Stopped	OK	Normal	False	Disabled	Stopped	OK	Normal	False
cpqarray2	cpqarray2	Not Available	Kernel Driver	False	intelide	IntelIde	Not Available	Kernel Driver	False
Disabled	Stopped	OK	Normal	False	Disabled	Stopped	OK	Normal	False
cpqfcalm	cpqfcalm	Not Available	Kernel Driver	False	ipfilterdriver	IP Traffic Filter Driver			
Disabled	Stopped	OK	Normal	False	c:\winnt\system32\drivers\ipfltdrv.sys			Kernel Driver	False
cpqfws2e	cpqfws2e	Not Available	Kernel Driver	False	Manual	Stopped	OK	Normal	False
Disabled	Stopped	OK	Normal	False	ipinip	IP in IP Tunnel Driver:c:\winnt\system32\drivers\ipinip.sys			
dac960nt	dac960nt	Not Available	Kernel Driver	False	Kernel Driver	False	Manual	Stopped	OK
Disabled	Stopped	OK	Normal	False	False	False			Normal
deckzpsx	deckzpsx	Not Available	Kernel Driver	False	ipnat	IP Network Address Translator			
Disabled	Stopped	OK	Normal	False	Kernel Driver	False	Manual	Stopped	OK
False				False	False	False			Normal
ipsec	IPSEC driver				ipsec	IPSEC driver			
Kernel Driver	True	Manual	Running	OK	Kernel Driver	True	Manual	Running	OK
False	True			Normal	False	True			Normal

ipsraidn Disabled	ipsraidn Stopped	Not Available OK	Kernel Driver Normal	False	False		netbios File System Driver	NetBIOS Interface True	c:\winnt\system32\drivers\netbios.sys System	Running	OK	Normal
irenum	IR Enumerator Service						netbt	NetBios over Tcpip	c:\winnt\system32\drivers\netbt.sys			
c:\winnt\system32\drivers\irenum.sys			Kernel Driver	False	False		netdetect	NetDetect	c:\winnt\system32\drivers\netdetect.sys	Kernel Driver	True	Normal
isapnp	PnP ISA/EISA Bus Driver						ntfs	Npfs	c:\winnt\system32\drivers\npfs.sys	File System Driver	True	Normal
c:\winnt\system32\drivers\isapnp.sys			Kernel Driver	True			ntfs	Ntfs	c:\winnt\system32\drivers\ntfs.sys	File System Driver	True	Normal
kbdclass	Keyboard Class Driver						null	Null	c:\winnt\system32\drivers\null.sys	Kernel Driver	True	Normal
c:\winnt\system32\drivers\kbdclass.sys			Kernel Driver	True			nwlnkflt	IPX Traffic Filter Driver				
System	Running	OK	Normal	False	True		nwlnkflt	IPX Traffic Filter Driver				
kmixer	Microsoft Kernel Wave Audio Mixer						nwlnkfwd	IPX Traffic Forwarder Driver				
c:\winnt\system32\drivers\kmixer.sys			Kernel Driver	False			parallel	Parallel class driver	c:\winnt\system32\drivers\parallel.sys	Kernel Driver	True	Normal
Manual	Stopped	OK	Normal	False	False		parallel	Parallel class driver	c:\winnt\system32\drivers\parallel.sys	Kernel Driver	True	Normal
ksecdd	KSecDD	c:\winnt\system32\drivers\ksecdd.sys	Kernel Driver	True	Boot	Running	OK	Normal	False	False	False	False
Driver	True	Boot	Running	OK	Normal	False	parport	Parallel port driver	c:\winnt\system32\drivers\parport.sys	Kernel Driver	True	Normal
True							parport	Parallel port driver	c:\winnt\system32\drivers\parport.sys	Kernel Driver	True	Normal
lbrtfdc	lbrtfdc	Not Available	Kernel Driver	False			partmgr	PartMgr	c:\winnt\system32\drivers\partmgr.sys	Kernel Driver	True	Normal
System	Stopped	OK	Ignore	False	False		partmgr	PartMgr	c:\winnt\system32\drivers\partmgr.sys	Kernel Driver	True	Normal
lp6nds35	lp6nds35	Not Available	Kernel Driver	False			parvdm	ParVdm	c:\winnt\system32\drivers\parvdm.sys	Kernel Driver	True	Normal
Disabled	Stopped	OK	Normal	False	False		pci	PCI Bus Driver	c:\winnt\system32\drivers\pci.sys	Kernel Driver	True	Normal
mnmdd	mnmdd	c:\winnt\system32\drivers\mnmdd.sys	Kernel Driver	True	System	Running	OK	Ignore	False	False	False	False
Driver	True	System	Running	OK	Ignore	False	pci	PCI Bus Driver	c:\winnt\system32\drivers\pci.sys	Kernel Driver	True	Normal
True							pcidump	PCIDump	Not Available	Kernel Driver	False	False
modem	Modem	c:\winnt\system32\drivers\modem.sys	Kernel Driver	False			pcidump	PCIDump	Not Available	Kernel Driver	False	False
Driver	False	Manual	Stopped	OK	Ignore	False	pciide	PCIIde	c:\winnt\system32\drivers\pciide.sys	Kernel Driver	True	Normal
False							pciide	PCIIde	c:\winnt\system32\drivers\pciide.sys	Kernel Driver	True	Normal
mouclass	Mouse Class Driver	c:\winnt\system32\drivers\mouclass.sys	Kernel Driver	True	System	Running	OK	Normal	False	False	False	False
Kernel Driver	True	System	Running	OK	Normal	False	pcmcia	Pcmcia	c:\winnt\system32\drivers\pcmcia.sys	Kernel Driver	False	Normal
False	True						pcmcia	Pcmcia	c:\winnt\system32\drivers\pcmcia.sys	Kernel Driver	False	Normal
mountmgr	MountMgr	c:\winnt\system32\drivers\mountmgr.sys	Kernel Driver	True	Boot	Running	OK	Normal	False	False	False	False
Driver	True	Boot	Running	OK	Normal	False	pdcomp	PDCOMP	Not Available	Kernel Driver	False	False
True							pdcomp	PDCOMP	Not Available	Kernel Driver	False	False
mraid35x	mraid35x	Not Available	Kernel Driver	False			pdframe	PDFRAME	Not Available	Kernel Driver	False	False
Disabled	Stopped	OK	Normal	False	False		pdframe	PDFRAME	Not Available	Kernel Driver	False	False
mrx SMB	MRXSMB	c:\winnt\system32\drivers\mrx smb.sys	File System Driver	True	System	Running	OK	Normal	False	False	False	False
Driver	True	System	Running	OK	Normal	False	pdreli	PDRELI	Not Available	Kernel Driver	False	False
True							pdreli	PDRELI	Not Available	Kernel Driver	False	False
msfs	Msfs	c:\winnt\system32\drivers\msfs.sys	File System Driver	True	System	Running	OK	Normal	False	False	False	False
Driver	True	System	Running	OK	Normal	False	pdrframe	PDRFRAME	Not Available	Kernel Driver	False	False
True							pdrframe	PDRFRAME	Not Available	Kernel Driver	False	False
msskrv	Microsoft Streaming Service Proxy						pptpminiport	WAN Miniport (PPTP)				
c:\winnt\system32\drivers\msskrv.sys			Kernel Driver	False			pptpminiport	WAN Miniport (PPTP)				
Manual	Stopped	OK	Normal	False	False		rasppptp	rasppptp	c:\winnt\system32\drivers\rasppptp.sys	Kernel Driver	True	Normal
mclock	Microsoft Streaming Clock Proxy						rasppptp	rasppptp	c:\winnt\system32\drivers\rasppptp.sys	Kernel Driver	True	Normal
c:\winnt\system32\drivers\mspclock.sys			Kernel Driver	False			ptilink	Direct Parallel Link Driver				
Manual	Stopped	OK	Normal	False	False		ptilink	Direct Parallel Link Driver				
mssqm	Microsoft Streaming Quality Manager Proxy						q11080	q11080	Not Available	Kernel Driver	False	False
c:\winnt\system32\drivers\mssqm.sys			Kernel Driver	False			q11080	q11080	Not Available	Kernel Driver	False	False
Manual	Stopped	OK	Normal	False	False		q110wnt	Q110wnt	Not Available	Kernel Driver	False	False
mup	Mup	c:\winnt\system32\drivers\mup.sys	File System Driver	True	Boot	Running	OK	Normal	False	False	False	False
Driver	True	Boot	Running	OK	Normal	False	q11240	q11240	Not Available	Kernel Driver	False	False
True							q11240	q11240	Not Available	Kernel Driver	False	False
nrc710	Nrc710	Not Available	Kernel Driver	False			q11240	q11240	Not Available	Kernel Driver	False	False
Disabled	Stopped	OK	Normal	False	False		q11240	q11240	Not Available	Kernel Driver	False	False
ndis	NDIS System Driver	c:\winnt\system32\drivers\ndis.sys	Kernel Driver	True	Boot	Running	OK	Normal	False	False	False	False
Kernel Driver	True	Boot	Running	OK	Normal	False	rasppptp	rasppptp	c:\winnt\system32\drivers\rasppptp.sys	Kernel Driver	True	Normal
False	True						rasppptp	rasppptp	c:\winnt\system32\drivers\rasppptp.sys	Kernel Driver	True	Normal
ndistapi	Remote Access NDIS TAPI Driver						ptilink	Direct Parallel Link Driver				
c:\winnt\system32\drivers\ndistapi.sys			Kernel Driver	True			ptilink	Direct Parallel Link Driver				
Manual	Running	OK	Normal	False	True		q11080	q11080	Not Available	Kernel Driver	False	False
ndiswan	Remote Access NDIS WAN Driver						q11080	q11080	Not Available	Kernel Driver	False	False
c:\winnt\system32\drivers\ndiswan.sys			Kernel Driver	True			q110wnt	Q110wnt	Not Available	Kernel Driver	False	False
Manual	Running	OK	Normal	False	True		q110wnt	Q110wnt	Not Available	Kernel Driver	False	False
ndproxy	NDIS Proxy	c:\winnt\system32\drivers\ndproxy.sys	Kernel Driver	True	Manual	Running	OK	Normal	False	False	False	False
Kernel Driver	True	Manual	Running	OK	Normal	False	q11240	q11240	Not Available	Kernel Driver	False	False
False	True						q11240	q11240	Not Available	Kernel Driver	False	False



ql2100	ql2100	Not Available	Kernel Driver	False	sym_hi	sym_hi	Not Available	Kernel Driver	False
Disabled	Stopped	OK	Normal	False	False	False	Normal	False	False
ql2300	ql2300	c:\winnt\system32\drivers\ql2300.sys	Kernel Driver	False	sysaudio	Microsoft System Audio Device			
Driver	True	Boot	Running	OK	Normal	c:\winnt\system32\drivers\sysaudio.sys	Kernel Driver	True	
True					Manual	Running	OK	Normal	False
ql2300vi	ql2300vi	c:\winnt\system32\drivers\ql2300vi.sys	Kernel Driver	False	tcpip	TCP/IP Protocol Driver	c:\winnt\system32\drivers\tcpip.sys		
Driver	True	Boot	Running	OK	Normal	Kernel Driver	True	System	Running
True					False	True		OK	Normal
qlvika	qlvika	c:\winnt\system32\drivers\qlvika.sys	Kernel Driver	False	tdasync	TDASYNC	c:\winnt\system32\drivers\tdasync.sys		
Driver	True	Auto	Running	OK	Normal	Kernel Driver	False	Manual	Stopped
True					False	False	OK	Ignore	
rasacd	Remote Access Auto Connection Driver				tdipx	TDIPX	c:\winnt\system32\drivers\tdipx.sys	Kernel Driver	
c:\winnt\system32\drivers\rasacd.sys			Kernel Driver	True	Driver	False	Manual	Stopped	OK
System	Running	OK	Normal	False	True	False		Ignore	False
rasl2tp	WAN Miniport (L2TP)				tdnetb	TDNETB	c:\winnt\system32\drivers\tdnetb.sys	Kernel Driver	
c:\winnt\system32\drivers\rasl2tp.sys			Kernel Driver	True	Driver	False	Manual	Stopped	OK
Manual	Running	OK	Normal	False	True	False		Ignore	False
raspti	Direct Parallel				tdpipe	TDPIPE	c:\winnt\system32\drivers\tdpipe.sys	Kernel Driver	
Kernel Driver	True	Manual	Running	OK	Normal	Driver	False	Manual	Stopped
False	True				False	False	OK	Ignore	False
rca	Microsoft Streaming Network Raw Channel Access				tdspx	TDSPX	c:\winnt\system32\drivers\tdspx.sys	Kernel Driver	
c:\winnt\system32\drivers\rca.sys			Kernel Driver	False	Manual	Driver	False	Manual	Stopped
Stopped	OK	Normal	False	False	False	False	OK	Ignore	False
rdbss	Rdbss	c:\winnt\system32\drivers\rdbss.sys	File System	False	tdtcp	TDTCP	c:\winnt\system32\drivers\tdtcp.sys	Kernel Driver	
Driver	True	System	Running	OK	Normal	Driver	False	Manual	Stopped
True					False	False	OK	Ignore	False
rdpwd	RDPWD	c:\winnt\system32\drivers\rdpwd.sys	Kernel Driver	False	termdd	Terminal Device Driver			
Driver	False	Manual	Stopped	OK	Ignore	c:\winnt\system32\drivers\termdd.sys	Kernel Driver	False	
False					Disabled	Stopped	OK	Normal	False
redbook	Digital CD Audio Playback Filter Driver				tga	tga	Not Available	Kernel Driver	False
c:\winnt\system32\drivers\redbook.sys			Kernel Driver	False	System	Stopped	OK	Ignore	False
System	Stopped	OK	Normal	False	False	System	Stopped	OK	Ignore
serenum	Serenum Filter Driver				udfs	Udfs	c:\winnt\system32\drivers\udfs.sys	File System	
Kernel Driver	True	Manual	Running	OK	Normal	Driver	False	Disabled	Stopped
False	True				False	False	OK	Normal	False
serial	Serial port driver				uhcd	Microsoft USB Universal Host Controller Driver			
Kernel Driver	True	System	Running	OK	Ignore	c:\winnt\system32\drivers\uhcd.sys	Kernel Driver	True	
False	True				Manual	Running	OK	Normal	False
sfloppy	Sfloppy	c:\winnt\system32\drivers\sfloppy.sys	Kernel Driver	False	ultra66	ultra66	Not Available	Kernel Driver	False
Driver	False	System	Stopped	OK	Ignore	Disabled	Stopped	OK	Normal
False					False	False	False	False	False
sglfb	sglfb	Not Available	Kernel Driver	False	update	Microcode Update Driver			
System	Stopped	OK	Normal	False	False	c:\winnt\system32\drivers\update.sys	Kernel Driver	True	
simbad	Simbad	Not Available	Kernel Driver	False	usbehci	Microsoft USB 2.0 Enhanced Host Controller Miniport Driver			
Disabled	Stopped	OK	Normal	False	False	c:\winnt\system32\drivers\usbehci.sys	Kernel Driver	True	
smwdm	smwdm	c:\winnt\system32\drivers\smwdm.sys	Kernel Driver	False	Manual	Running	OK	Normal	False
Driver	True	Manual	Running	OK	Normal	True	Kernel Driver	True	
True					Manual	Running	OK	Normal	False
sparrow	Sparrow	Not Available	Kernel Driver	False	usbhub	Microsoft USB Standard Hub Driver			
Disabled	Stopped	OK	Normal	False	False	c:\winnt\system32\drivers\usbhub.sys	Kernel Driver	True	
spud	Special Purpose Utility Driver				usbhub20	USB 2.0 Root Hub Support			
Kernel Driver	True	Manual	Running	OK	Normal	c:\winnt\system32\drivers\usbhub20.sys	Kernel Driver	True	
False	True				Manual	Running	OK	Normal	False
srv	Srv	c:\winnt\system32\drivers\srv.sys	File System Driver	True	Manual	Running	OK	Normal	False
True	Manual	Running	OK	Normal	False	True	Kernel Driver	True	
swenum	Software Bus Driver				vgasave	VgaSave	c:\winnt\system32\drivers\vga.sys	Kernel Driver	
Kernel Driver	True	Manual	Running	OK	Normal	Driver	True	System	Running
False	True				False	True	OK	Ignore	False
swmidi	Microsoft Kernel GS Wavetable Synthesizer				wanarp	Remote Access IP ARP Driver			
c:\winnt\system32\drivers\swmidi.sys			Kernel Driver	False	c:\winnt\system32\drivers\wanarp.sys	Kernel Driver	True		
Manual	Stopped	OK	Normal	False	Manual	Running	OK	Normal	False
symc810	symc810	Not Available	Kernel Driver	False	Manual	Running	OK	Normal	False
Disabled	Stopped	OK	Normal	False	False	True	Kernel Driver	True	
symc8xx	symc8xx	Not Available	Kernel Driver	False	wdica	WDICA	Not Available	Kernel Driver	False
Disabled	Stopped	OK	Normal	False	False	Manual	Stopped	OK	Ignore
symmpi	symmpi	c:\winnt\system32\drivers\symmpi.sys	Kernel Driver	False	wdmaud	Microsoft WINMM WDM Audio Compatibility Driver			
Driver	True	Boot	Running	OK	Normal	c:\winnt\system32\drivers\wdmaud.sys	Kernel Driver	True	
True					Manual	Running	OK	Normal	False
					False	True	Kernel Driver	True	
					[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
<SYSTEM>
PATHEXT
.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH <SYSTEM>
PROCESSOR_ARCHITECTURE x86 <SYSTEM>
PROCESSOR_IDENTIFIER x86 Family 15 Model 2 Stepping 7,
GenuineIntel <SYSTEM>
PROCESSOR_LEVEL 15 <SYSTEM>
PROCESSOR_REVISION 0207 <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
No print jobs
[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
system Not Available 8 8 0 1413120
Not Available Unknown Unknown Unknown
smss.exe c:\winnt\system32\smss.exe 176 11 204800
1413120 2/23/2004 1:45:35 PM 5.00.2195.5382 44.77 KB
(45,840 bytes) 12/7/1999 7:00:00 AM
csrss.exe Not Available 200 13 Not Available
Not Available 2/23/2004 1:45:37 PM Unknown Unknown
winlogon.exe c:\winnt\system32\winlogon.exe 196 13
204800 1413120 2/23/2004 1:45:38 PM 5.00.2195.5386
174.77 KB (178,960 bytes) 3/6/2003 1:54:15 PM
services.exe c:\winnt\system32\services.exe 248 9
204800 1413120 2/23/2004 1:45:38 PM 5.00.2195.3940
86.77 KB (88,848 bytes) 12/7/1999 7:00:00 AM
lsass.exe c:\winnt\system32\lsass.exe 260 9 204800
1413120 2/23/2004 1:45:38 PM 5.00.2195.5430 32.77 KB
(33,552 bytes) 12/7/1999 7:00:00 AM
svchost.exe c:\winnt\system32\svchost.exe 436 8
204800 1413120 2/23/2004 1:45:41 PM 5.00.2134.1
7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM
spoolsv.exe c:\winnt\system32\spoolsv.exe 460 8
204800 1413120 2/23/2004 1:45:41 PM 5.00.2195.4299
44.27 KB (45,328 bytes) 2/12/2003 7:39:06 AM
msdtc.exe c:\winnt\system32\msdtc.exe 488 8 204800
1413120 2/23/2004 1:45:41 PM 1999.9.3421.3 6.77 KB
(6,928 bytes) 2/12/2003 7:52:40 AM
svchost.exe c:\winnt\system32\svchost.exe 652 8
204800 1413120 2/23/2004 1:45:42 PM 5.00.2134.1
7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM
llssrv.exe c:\winnt\system32\llssrv.exe 676 9 204800
1413120 2/23/2004 1:45:42 PM 5.00.2195.4907 81.27 KB
(83,216 bytes) 7/22/2002 1:05:04 PM

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regsvc.exe c:\winnt\system32\regsvc.exe 760 8 204800
1413120 2/23/2004 1:45:43 PM 5.00.2195.3649 65.27 KB
(66,832 bytes) 3/6/2003 1:54:11 PM
rsys.exe Not Available 872 8 Not Available
Not Available 2/23/2004 1:45:44 PM Unknown Unknown
Unknown
explorer.exe c:\winnt\explorer.exe 988 8 204800
1413120 2/23/2004 1:45:52 PM 5.00.3502.5321 237.27 KB
(242,960 bytes) 3/6/2003 1:54:16 PM
mstask.exe c:\winnt\system32\mstask.exe 740 8 204800
1413120 2/23/2004 1:46:44 PM 4.71.2195.1 115.77 KB
(118,544 bytes) 3/6/2003 1:54:07 PM
tcpvcs.exe c:\winnt\system32\tcpvcs.exe 1072 8
204800 1413120 2/23/2004 1:46:44 PM 5.00.2134.1
24.77 KB (25,360 bytes) 12/7/1999 7:00:00 AM
winmgmt.exe c:\winnt\system32\wbem\winmgmt.exe 1104 8
204800 1413120 2/23/2004 1:46:44 PM 1.50.1085.0070
192.08 KB (196,685 bytes) 3/6/2003 1:54:18 PM
svchost.exe c:\winnt\system32\svchost.exe 1136 8
204800 1413120 2/23/2004 1:46:44 PM 5.00.2134.1
7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM
inetinfo.exe c:\winnt\system32\inetinfo.exe 1148 8
204800 1413120 2/23/2004 1:46:44 PM 5.00.0984 14.27 KB
(14,608 bytes) 3/6/2003 1:54:26 PM
dfsvc.exe c:\winnt\system32\dfsvc.exe 748 8 204800
1413120 2/23/2004 1:46:49 PM 5.00.2195.3649 88.27 KB
(90,384 bytes) 3/6/2003 1:53:59 PM
svchost.exe c:\winnt\system32\svchost.exe 1444 8
204800 1413120 2/23/2004 1:48:49 PM 5.00.2134.1
7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM
mmc.exe c:\winnt\system32\mmc.exe 1256 8 204800
1413120 2/23/2004 2:26:23 PM 5.00.2195.4933 589.27 KB
(603,408 bytes) 3/6/2003 1:54:04 PM
rsvp.exe c:\winnt\system32\rsvp.exe 1492 8 204800
1413120 2/23/2004 2:27:12 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
wbemprox.dll 1.50.1085.0045 40.08 KB (41,040 bytes)
3/6/2003 1:54:18 PM Microsoft Corporation
c:\winnt\system32\wbem\wbemprox.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
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)
3/6/2003 1:54:19 PM Microsoft Corporation c:\program
files\common files\microsoft shared\msinfo\msinfo32.dll
mmcmdmgr.dll 5.00.2195.5352 816.27 KB (835,856 bytes)
3/6/2003 1:54:04 PM Microsoft Corporation
c:\winnt\system32\mmcmdmgr.dll
mmc.exe 5.00.2195.4933 589.27 KB (603,408 bytes) 3/6/2003
1:54:04 PM Microsoft Corporation
c:\winnt\system32\mmc.exe
tapisrv.dll 5.00.2195.5227 169.27 KB (173,328 bytes) 3/6/2003
1:54:14 PM Microsoft Corporation
c:\winnt\system32\tapisrv.dll
dfsvc.exe 5.00.2195.3649 88.27 KB (90,384 bytes) 3/6/2003
1:53:59 PM Microsoft Corporation
c:\winnt\system32\dfsvc.exe

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iislog.dll	5.00.0984	75.27 KB (77,072 bytes)	3/6/2003 1:54:26 PM	iismap.dll	5.00.0984	55.77 KB (57,104 bytes)	3/6/2003 1:54:02 PM
Microsoft Corporation		c:\winnt\system32\inetsrv\iislog.dll		Microsoft Corporation		c:\winnt\system32\iismap.dll	
ntfsdrv.dll	5.00.0984	37.27 KB (38,160 bytes)	3/6/2003 1:54:26 PM	nsepm.dll	5.00.0984	43.27 KB (44,304 bytes)	3/6/2003 1:54:26 PM
Microsoft Corporation		c:\winnt\system32\inetsrv\ntfsdrv.dll		Microsoft Corporation		c:\winnt\system32\inetsrv\nsepm.dll	
ntlsapi.dll	5.00.2195.4907	6.77 KB (6,928 bytes)	12/7/1999 7:00:00 AM	admwprox.dll	5.00.0984	31.77 KB (32,528 bytes)	2/12/2003 7:53:06 AM
Microsoft Corporation		c:\winnt\system32\ntlsapi.dll		Microsoft Corporation		c:\winnt\system32\admwprox.dll	
httpext.dll	5.00.0984	240.27 KB (246,032 bytes)	3/6/2003 1:54:26 PM	coadmin.dll	5.00.0984	39.77 KB (40,720 bytes)	3/6/2003 1:54:25 PM
Microsoft Corporation		c:\winnt\system32\inetsrv\httpext.dll		Microsoft Corporation		c:\winnt\system32\inetsrv\coadmin.dll	
aqueue.dll	5.00.0984	313.77 KB (321,296 bytes)	3/6/2003 1:54:21 PM	iisadmin.dll	5.00.0984	15.27 KB (15,632 bytes)	3/6/2003 1:54:26 PM
Microsoft Corporation		c:\winnt\system32\inetsrv\aqueue.dll		Microsoft Corporation		c:\winnt\system32\inetsrv\iisadmin.dll	
rpcproxy.dll	5.00.2195.5419	16.27 KB (16,656 bytes)	3/6/2003 1:54:22 PM	rpref.dll	5.00.0984	4.27 KB (4,368 bytes)	3/6/2003 1:54:26 PM
Microsoft Corporation		c:\winnt\system32\inetsrv\rpcproxy.dll		Microsoft Corporation		c:\winnt\system32\inetsrv\rpref.dll	
fpexedll.dll	4.0.2.5526	20.06 KB (20,541 bytes)	3/6/2003 1:54:21 PM	iiisrtl.dll	5.00.0984	119.77 KB (122,640 bytes)	3/6/2003 1:54:02 PM
Microsoft Corporation		c:\program files\common files\microsoft shared\web server extensions\40\bin\fpexedll.dll		Microsoft Corporation		c:\winnt\system32\iiisrtl.dll	
md5filt.dll	5.00.0984	32.77 KB (33,552 bytes)	3/6/2003 1:54:26 PM	inetinfo.exe	5.00.0984	14.27 KB (14,608 bytes)	3/6/2003 1:54:26 PM
Microsoft Corporation		c:\winnt\system32\inetsrv\md5filt.dll		Microsoft Corporation		c:\winnt\system32\inetinfo.exe	
gzip.dll	5.00.0984	30.27 KB (30,992 bytes)	3/6/2003 1:54:26 PM	winhttp.dll	5.1.2600.1039 (xpsp1.020511-1800)	303.00 KB (310,272 bytes)	3/6/2003 1:54:25 PM
Microsoft Corporation		c:\winnt\system32\inetsrv\gzip.dll		Microsoft Corporation		c:\winnt\system32\winhttp.dll	
compfilt.dll	5.00.0984	22.77 KB (23,312 bytes)	3/6/2003 1:54:25 PM	regapi.dll	5.00.2195.5201	35.27 KB (36,112 bytes)	3/6/2003 1:54:11 PM
Microsoft Corporation		c:\winnt\system32\inetsrv\compfilt.dll		Microsoft Corporation		c:\winnt\system32\regapi.dll	
seo.dll	5.00.0984	229.27 KB (234,768 bytes)	3/6/2003 1:54:26 PM	util.dll	5.00.2153.1	25.77 KB (26,384 bytes)	12/7/1999 7:00:00 AM
Microsoft Corporation		c:\winnt\system32\inetsrv\seo.dll		Microsoft Corporation		c:\winnt\system32\util.dll	
sspifilt.dll	5.00.0984	42.77 KB (43,792 bytes)	3/6/2003 1:54:27 PM	wtsapi32.dll	5.00.2134.1	14.27 KB (14,608 bytes)	12/7/1999 7:00:00 AM
Microsoft Corporation		c:\winnt\system32\inetsrv\sspifilt.dll		Microsoft Corporation		c:\winnt\system32\wtsapi32.dll	
iscomlog.dll	5.00.0984	24.27 KB (24,848 bytes)	3/6/2003 1:54:26 PM	advpack.dll	6.00.2800.1106	89.00 KB (91,136 bytes)	8/29/2002 8:14:40 AM
Microsoft Corporation		c:\winnt\system32\inetsrv\iscomlog.dll		Microsoft Corporation		c:\winnt\system32\advpack.dll	
lonsint.dll	5.00.0984	11.77 KB (12,048 bytes)	3/6/2003 1:54:26 PM	wuaueng.dll	5.4.3628.1	182.50 KB (186,880 bytes)	3/6/2003 1:54:25 PM
Microsoft Corporation		c:\winnt\system32\inetsrv\lonsint.dll		Microsoft Corporation		c:\winnt\system32\wuaueng.dll	
inetsloc.dll	5.00.0984	20.27 KB (20,752 bytes)	3/6/2003 1:54:02 PM	wuauerv.dll	5.4.3628.1	8.50 KB (8,704 bytes)	3/6/2003 1:54:25 PM
Microsoft Corporation		c:\winnt\system32\inetsloc.dll		Microsoft Corporation		c:\winnt\system32\wuauerv.dll	
w3svc.dll	5.00.0984	335.27 KB (343,312 bytes)	3/6/2003 1:54:27 PM	wshnetbs.dll	5.00.2134.1	7.77 KB (7,952 bytes)	12/7/1999 7:00:00 AM
Microsoft Corporation		c:\winnt\system32\inetsrv\w3svc.dll		Microsoft Corporation		c:\winnt\system32\wshnetbs.dll	
staxmem.dll	5.00.0984	8.27 KB (8,464 bytes)	3/6/2003 1:54:13 PM	ntmarta.dll	5.00.2195.4836	99.77 KB (102,160 bytes)	3/6/2003 1:54:09 PM
Microsoft Corporation		c:\winnt\system32\staxmem.dll		Microsoft Corporation		c:\winnt\system32\ntmarta.dll	
extrace.dll	5.00.0984	13.77 KB (14,096 bytes)	2/12/2003 7:53:07 AM	provthrd.dll	1.50.1085.0000	68.07 KB (69,708 bytes)	2/12/2003 12:55:49 PM
Microsoft Corporation		c:\winnt\system32\extrace.dll		Microsoft Corporation		c:\winnt\system32\wbem\provthrd.dll	
rwnh.dll	5.00.0984	10.77 KB (11,024 bytes)	3/6/2003 1:54:12 PM	ntevt.dll	1.50.1085.0072	192.06 KB (196,671 bytes)	3/6/2003 1:54:17 PM
Microsoft Corporation		c:\winnt\system32\rwnh.dll		Microsoft Corporation		c:\winnt\system32\wbem\ntevt.dll	
fcachdll.dll	5.00.0984	43.77 KB (44,816 bytes)	3/6/2003 1:54:01 PM	perfos.dll	5.00.2155.1	21.27 KB (21,776 bytes)	12/7/1999 7:00:00 AM
Microsoft Corporation		c:\winnt\system32\fcachdll.dll		Microsoft Corporation		c:\winnt\system32\perfos.dll	
iisfecnv.dll	5.00.0984	7.27 KB (7,440 bytes)	2/12/2003 7:53:06 AM	psapi.dll	5.00.2134.1	28.27 KB (28,944 bytes)	12/7/1999 7:00:00 AM
Microsoft Corporation		c:\winnt\system32\inetsrv\iisfecnv.dll		Microsoft Corporation		c:\winnt\system32\psapi.dll	
isatq.dll	5.00.0984	60.77 KB (62,224 bytes)	3/6/2003 1:54:26 PM	framedyn.dll	1.50.1085.0076	164.07 KB (168,009 bytes)	3/6/2003 1:54:17 PM
Microsoft Corporation		c:\winnt\system32\inetsrv\isatq.dll		Microsoft Corporation		c:\winnt\system32\wbem\framedyn.dll	
infocomm.dll	5.00.0984	240.77 KB (246,544 bytes)	3/6/2003 1:54:26 PM	cimwin32.dll	1.50.1085.0073	1.04 MB (1,085,520 bytes)	3/6/2003 1:54:17 PM
Microsoft Corporation		c:\winnt\system32\inetsrv\infocomm.dll		Microsoft Corporation		c:\winnt\system32\wbem\cimwin32.dll	
smtpsvc.dll	5.00.0984	428.27 KB (438,544 bytes)	3/6/2003 1:54:26 PM	wbemsvcdll.dll	1.50.1085.0007	40.07 KB (41,036 bytes)	3/6/2003 1:54:18 PM
Microsoft Corporation		c:\winnt\system32\inetsrv\smtpsvc.dll		Microsoft Corporation		c:\winnt\system32\wbem\wbemsvcdll.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)	3/6/2003 1:54:27 PM				
Microsoft Corporation		c:\winnt\system32\inetsrv\svcext.dll					
admexs.dll	5.00.0984	27.77 KB (28,432 bytes)	3/6/2003 1:54:25 PM				
Microsoft Corporation		c:\winnt\system32\inetsrv\admexs.dll					
wamreg.dll	5.00.0984	45.77 KB (46,864 bytes)	3/6/2003 1:54:27 PM				
Microsoft Corporation		c:\winnt\system32\inetsrv\wamreg.dll					
metadata.dll	5.00.0984	68.77 KB (70,416 bytes)	3/6/2003 1:54:26 PM				
Microsoft Corporation		c:\winnt\system32\inetsrv\metadata.dll					

wbemess.dll	1.50.1085.0074	364.07 KB (372,804 bytes)	
3/6/2003 1:54:18 PM Microsoft Corporation			
c:\winnt\system32\wbem\wbemess.dll			
fastprox.dll	1.50.1085.0056	144.08 KB (147,536 bytes)	
3/6/2003 1:54:17 PM Microsoft Corporation			
c:\winnt\system32\wbem\fastprox.dll			
wbemcore.dll	1.50.1085.0085	628.07 KB (643,146 bytes)	
3/6/2003 1:54:18 PM Microsoft Corporation			
c:\winnt\system32\wbem\wbemcore.dll			
wbemcomn.dll	1.50.1085.0077	692.07 KB (708,675 bytes)	
3/6/2003 1:54:18 PM Microsoft Corporation			
c:\winnt\system32\wbem\wbemcomn.dll			
winmgmt.exe	1.50.1085.0070	192.08 KB (196,685 bytes)	
3/6/2003 1:54:18 PM Microsoft Corporation			
c:\winnt\system32\wbem\winmgmt.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)	3/6/2003
1:54:07 PM Microsoft Corporation			
c:\winnt\system32\mstask.exe			
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			
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			
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			
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			
msacm32.drv	5.00.2134.1	20.77 KB (21,264 bytes)	
12/7/1999 7:00:00 AM Microsoft Corporation			
c:\winnt\system32\msacm32.drv			
msi.dll	2.0.2600.1	1.90 MB (1,991,168 bytes)	3/6/2003 1:54:05 PM
Microsoft Corporation			
c:\winnt\system32\msi.dll			
powrprof.dll	5.00.3502.5305	13.27 KB (13,584 bytes)	
3/6/2003 1:54:10 PM Microsoft Corporation			
c:\winnt\system32\powrprof.dll			
batmeter.dll	5.00.3502.5305	20.27 KB (20,752 bytes)	
3/6/2003 1:53:55 PM Microsoft Corporation			
c:\winnt\system32\batmeter.dll			
stobject.dll	5.00.2195.4455	79.27 KB (81,168 bytes)	3/6/2003
1:54:13 PM 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)	3/6/2003
1:54:08 PM 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)	3/6/2003
1:54:08 PM 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			
mmshext.dll	5.00.2153.1	24.27 KB (24,848 bytes)	
12/7/1999 7:00:00 AM Microsoft Corporation			
c:\winnt\system32\mmshext.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)	
3/6/2003 1:54:16 PM Microsoft Corporation			
c:\winnt\explorer.exe			
regsvc.exe	5.00.2195.3649	65.27 KB (66,832 bytes)	3/6/2003
1:54:11 PM 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			
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)	3/6/2003
1:54:08 PM Microsoft Corporation			
c:\winnt\system32\netcfgx.dll			
rasmans.dll	5.00.2195.5436	149.27 KB (152,848 bytes)	
3/6/2003 1:54:11 PM 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)	3/6/2003
1:54:08 PM Microsoft Corporation			
c:\winnt\system32\netshell.dll			
netman.dll	5.00.2195.5282	89.27 KB (91,408 bytes)	3/6/2003
1:54:08 PM Microsoft Corporation			
c:\winnt\system32\netman.dll			
comsvcs.dll	2000.2.3497.0	1.37 MB (1,439,504 bytes)	
3/6/2003 1:53:57 PM Microsoft Corporation			
c:\winnt\system32\comsvcs.dll			
ntmsdba.dll	5.00.2195.5279	169.27 KB (173,328 bytes)	
3/6/2003 1:54:09 PM Microsoft Corporation			
c:\winnt\system32\ntmsdba.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			
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)	3/6/2003
1:54:01 PM Microsoft Corporation			
c:\winnt\system32\iasacct.dll			

iasuser.dll 5.00.2195.4609	19.77 KB (20,240 bytes)	12/7/1999	es.dll 2000.2.3497.0	225.27 KB (230,672 bytes)	3/6/2003
7:00:00 AM	Microsoft Corporation		1:54:00 PM	Microsoft Corporation	
c:\winnt\system32\iasuser.dll			c:\winnt\system32\es.dll		
iasnap.dll 5.00.2195.4115	58.77 KB (60,176 bytes)	3/6/2003	mtxoci.dll 2000.2.3497.0	103.77 KB (106,256 bytes)	3/6/2003
1:54:01 PM	Microsoft Corporation		1:54:08 PM	Microsoft Corporation	
c:\winnt\system32\iasnap.dll			c:\winnt\system32\mtxoci.dll		
iaspipe.dll 5.00.2134.1	41.77 KB (42,768 bytes)	12/7/1999	resutils.dll 5.00.2195.5339	39.77 KB (40,720 bytes)	3/6/2003
7:00:00 AM	Microsoft Corporation		1:54:11 PM	Microsoft Corporation	
c:\winnt\system32\iaspipe.dll			c:\winnt\system32\resutils.dll		
expsrv.dll 6.72.9414	371.77 KB (380,688 bytes)	3/6/2003	1:54:00 PM		
Microsoft Corporation	c:\winnt\system32\expsrv.dll		clusapi.dll 5.00.2195.4678	54.27 KB (55,568 bytes)	3/6/2003
1:54:00 PM			1:53:57 PM	Microsoft Corporation	
vbajet32.dll 6.1.8268	30.27 KB (30,992 bytes)	3/6/2003	c:\winnt\system32\clusapi.dll		
1:54:15 PM	Microsoft Corporation		msvcvp50.dll 5.00.7051	552.50 KB (565,760 bytes)	12/7/1999
c:\winnt\system32\vbajet32.dll			7:00:00 AM	Microsoft Corporation	
msjtes40.dll 4.00.5914.0	236.27 KB (241,936 bytes)		c:\winnt\system32\msvcvp50.dll		
3/6/2003	1:54:06 PM	Microsoft Corporation	xolehlp.dll 1999.9.3421.3	17.27 KB (17,680 bytes)	2/12/2003
c:\winnt\system32\msjtes40.dll			7:52:40 AM	Microsoft Corporation	
oledb32r.dll 2.70.9001.0	built by: Lab06_N(dagbuild) 64.00 KB (65,536 bytes)	5/27/2003	9:51:18 AM	Microsoft Corporation	
c:\program files\common files\system\ole db\oledb32r.dll			msdtclog.dll 2000.2.3497.0	86.77 KB (88,848 bytes)	
comdlg32.dll 5.00.3315.3727	221.27 KB (226,576 bytes)		3/6/2003	1:54:04 PM	Microsoft Corporation
12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\msdtclog.dll		
c:\winnt\system32\comdlg32.dll			mtxclu.dll 2000.2.3497.0	51.27 KB (52,496 bytes)	3/6/2003
msdart.dll 2.71.9031.4	built by: Lab06_N(dagbuild) 124.00 KB (126,976 bytes)	5/27/2003	1:54:08 PM	Microsoft Corporation	
9:51:18 AM	Microsoft Corporation		c:\winnt\system32\mtxclu.dll		
c:\winnt\system32\msdart.dll			msdtcprx.dll 2000.2.3497.0	683.77 KB (700,176 bytes)	
oledb32.dll 2.71.9031.4	built by: Lab06_N(dagbuild) 408.00 KB (417,792 bytes)	5/27/2003	3/6/2003	1:54:04 PM	Microsoft Corporation
9:51:18 AM	Microsoft Corporation		c:\winnt\system32\msdtcprx.dll		
c:\program files\common files\system\ole db\oledb32.dll			txfaux.dll 2000.2.3497.0	383.27 KB (392,464 bytes)	3/6/2003
msjint40.dll 4.00.2927.2	148.27 KB (151,824 bytes)		1:54:14 PM	Microsoft Corporation	
3/6/2003	1:54:06 PM	Microsoft Corporation	c:\winnt\system32\txfaux.dll		
c:\winnt\system32\msjint40.dll			msdtctm.dll 2000.2.3497.0	1.08 MB (1,128,208 bytes)	
msjter40.dll 4.00.2927.2	52.27 KB (53,520 bytes)		3/6/2003	1:54:05 PM	Microsoft Corporation
3/6/2003	1:54:06 PM	Microsoft Corporation	c:\winnt\system32\msdtctm.dll		
c:\winnt\system32\msjter40.dll			msdtc.exe 1999.9.3421.3	6.77 KB (6,928 bytes)	2/12/2003
mswstr10.dll 4.00.3829.2	600.27 KB (614,672 bytes)		Microsoft Corporation	c:\winnt\system32\msdtc.exe	
3/6/2003	1:54:07 PM	Microsoft Corporation	inetpp.dll 5.00.2195.4299	64.27 KB (65,808 bytes)	3/6/2003
c:\winnt\system32\mswstr10.dll			1:54:02 PM	Microsoft Corporation	
msjet40.dll 4.00.6218.0	1.43 MB (1,503,504 bytes)	3/6/2003	c:\winnt\system32\inetpp.dll		
1:54:06 PM	Microsoft Corporation		win32spl.dll 5.00.2195.5201	92.27 KB (94,480 bytes)	
c:\winnt\system32\msjet40.dll			12/7/1999	7:00:00 AM	Microsoft Corporation
msjetoledb40.dll 4.00.5919.0	340.27 KB (348,432 bytes)		c:\winnt\system32\win32spl.dll		
3/6/2003	1:54:06 PM	Microsoft Corporation	usbmon.dll 5.00.2195.4299	11.27 KB (11,536 bytes)	3/6/2003
c:\winnt\system32\msjetoledb40.dll			1:54:14 PM	Microsoft Corporation	
iasrad.dll 5.00.2195.4841	94.77 KB (97,040 bytes)	3/6/2003	c:\winnt\system32\usbmon.dll		
1:54:01 PM	Microsoft Corporation		tcpmon.dll 5.00.2195.4299	40.77 KB (41,744 bytes)	3/6/2003
c:\winnt\system32\iasrad.dll			1:54:14 PM	Microsoft Corporation	
iassam.dll 5.00.2195.5427	98.27 KB (100,624 bytes)	3/6/2003	c:\winnt\system32\tcpmon.dll		
1:54:01 PM	Microsoft Corporation		pjlmon.dll 5.00.2165.1	12.77 KB (13,072 bytes)	11/30/1999
c:\winnt\system32\iassam.dll			6:39:36 PM	Microsoft Corporation	
iasads.dll 5.00.2195.5080	73.77 KB (75,536 bytes)	3/6/2003	c:\winnt\system32\pjlmon.dll		
1:54:01 PM	Microsoft Corporation		cnbjmon.dll 5.00.2134.1	43.77 KB (44,816 bytes)	
c:\winnt\system32\iasads.dll			11/30/1999	6:38:48 PM	Microsoft Corporation
iaspolcy.dll 5.00.2134.1	25.27 KB (25,872 bytes)		c:\winnt\system32\cnbjmon.dll		
12/7/1999	7:00:00 AM	Microsoft Corporation	localspl.dll 5.00.2195.5423	250.27 KB (256,272 bytes)	12/7/1999
c:\winnt\system32\iaspolcy.dll			7:00:00 AM	Microsoft Corporation	
iassvcs.dll 5.00.2195.4916	58.77 KB (60,176 bytes)	3/6/2003	c:\winnt\system32\localspl.dll		
1:54:01 PM	Microsoft Corporation		spoolss.dll 5.00.2195.5400	61.77 KB (63,248 bytes)	2/12/2003
c:\winnt\system32\iassvcs.dll			7:39:06 AM	Microsoft Corporation	
iaspdo.dll 5.00.2195.4115	263.27 KB (269,584 bytes)	3/6/2003	c:\winnt\system32\spoolss.dll		
1:54:01 PM	Microsoft Corporation		spoolsv.exe 5.00.2195.4299	44.27 KB (45,328 bytes)	
c:\winnt\system32\iaspdo.dll			2/12/2003	7:39:06 AM	Microsoft Corporation
ntmssvc.dll 5.00.2195.5254	391.77 KB (401,168 bytes)		c:\winnt\system32\spoolsv.exe		
3/6/2003	1:54:09 PM	Microsoft Corporation	rpss.dll 5.00.2195.5429	231.27 KB (236,816 bytes)	3/6/2003
c:\winnt\system32\ntmssvc.dll			1:54:11 PM	Microsoft Corporation	
ias.dll 5.00.2134.1	7.27 KB (7,440 bytes)	12/7/1999	c:\winnt\system32\rpss.dll		
7:00:00 AM	Microsoft Corporation		svchost.exe 5.00.2134.1	7.77 KB (7,952 bytes)	12/7/1999
c:\winnt\system32\ias.dll			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	winnr.dll	5.00.2160.1	18.77 KB (19,216 bytes)	12/7/1999
1:54:23 PM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\dssenh.dll				c:\winnt\system32\winnr.dll			
oakley.dll	5.00.2195.5326	382.27 KB (391,440 bytes)	3/6/2003	wshtcpip.dll	5.00.2195.4874	17.27 KB (17,680 bytes)	
1:54:09 PM	Microsoft Corporation			3/6/2003 1:54:16 PM	Microsoft Corporation		
c:\winnt\system32\oakley.dll				c:\winnt\system32\wshtcpip.dll			
mfc42u.dll	6.00.8665.0	972.05 KB (995,384 bytes)	12/7/1999	msafd.dll	5.00.2195.4874	103.27 KB (105,744 bytes)	3/6/2003
7:00:00 AM	Microsoft Corporation			1:54:04 PM	Microsoft Corporation		
c:\winnt\system32\mfc42u.dll				c:\winnt\system32\msafd.dll			
polagent.dll	5.00.2195.5428	94.77 KB (97,040 bytes)		mswsock.dll	5.00.2195.4874	62.77 KB (64,272 bytes)	
3/6/2003 1:54:10 PM	Microsoft Corporation			3/6/2003 1:54:07 PM	Microsoft Corporation		
c:\winnt\system32\polagent.dll				c:\winnt\system32\mswsock.dll			
scecli.dll	5.00.2195.4874	109.27 KB (111,888 bytes)	3/6/2003	msgsvc.dll	5.00.2195.4874	34.77 KB (35,600 bytes)	12/7/1999
1:54:12 PM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\scecli.dll				c:\winnt\system32\msgsvc.dll			
atl.dll	3.00.9435	73.06 KB (74,810 bytes)	3/6/2003	browser.dll	5.00.2195.4874	48.77 KB (49,936 bytes)	
Microsoft Corporation			1:53:55 PM	3/6/2003 1:53:55 PM	Microsoft Corporation		
c:\winnt\system32\atl.dll				c:\winnt\system32\browser.dll			
certcli.dll	5.00.2195.3649	130.27 KB (133,392 bytes)	3/6/2003	alrsvc.dll	5.00.2134.1	17.77 KB (18,192 bytes)	12/7/1999
1:53:56 PM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\certcli.dll				c:\winnt\system32\alrsvc.dll			
esent.dll	6.0.3940.25	1.09 MB (1,137,936 bytes)	3/6/2003	trkwks.dll	5.00.2195.4874	88.77 KB (90,896 bytes)	3/6/2003
1:54:00 PM	Microsoft Corporation			1:54:14 PM	Microsoft Corporation		
c:\winnt\system32\esent.dll				c:\winnt\system32\trkwks.dll			
ntdsatq.dll	5.00.2195.5246	31.27 KB (32,016 bytes)	3/6/2003	seclogon.dll	5.00.2195.5201	17.27 KB (17,680 bytes)	
1:54:08 PM	Microsoft Corporation			3/6/2003 1:54:12 PM	Microsoft Corporation		
c:\winnt\system32\ntdsatq.dll				c:\winnt\system32\seclogon.dll			
ntdsa.dll	5.00.2195.5438	1002.27 KB (1,026,320 bytes)	3/6/2003	rnr20.dll	5.00.2195.4874	35.77 KB (36,624 bytes)	3/6/2003
1:54:08 PM	Microsoft Corporation			1:54:11 PM	Microsoft Corporation		
c:\winnt\system32\ntdsa.dll				c:\winnt\system32\rnr20.dll			
kdcsvc.dll	5.00.2195.5246	141.77 KB (145,168 bytes)	3/6/2003	psbase.dll	5.00.2195.4822	111.77 KB (114,448 bytes)	3/6/2003
1:54:03 PM	Microsoft Corporation			1:54:10 PM	Microsoft Corporation		
c:\winnt\system32\kdcsvc.dll				c:\winnt\system32\psbase.dll			
sfmapi.dll	5.00.2134.1	38.77 KB (39,696 bytes)	12/7/1999	cryptsvc.dll	5.00.2195.4368	73.27 KB (75,024 bytes)	
7:00:00 AM	Microsoft Corporation			3/6/2003 1:53:58 PM	Microsoft Corporation		
c:\winnt\system32\sfmapi.dll				c:\winnt\system32\cryptsvc.dll			
rassfm.dll	5.00.2195.4874	21.27 KB (21,776 bytes)	3/6/2003	cryptdll.dll	5.00.2135.1	41.27 KB (42,256 bytes)	12/7/1999
1:54:11 PM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\rassfm.dll				c:\winnt\system32\cryptdll.dll			
rsabase.dll	5.00.2195.3839	128.27 KB (131,344 bytes)	7/22/2002	wkssvc.dll	5.00.2195.4874	95.27 KB (97,552 bytes)	12/7/1999
1:05:04 PM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\rsabase.dll				c:\winnt\system32\wkssvc.dll			
schannel.dll	5.00.2195.5284	139.27 KB (142,608 bytes)		srvsvc.dll	5.00.2195.5400	81.77 KB (83,728 bytes)	12/7/1999
5/4/2001 1:05:02 PM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\schannel.dll				c:\winnt\system32\srvsvc.dll			
netlogon.dll	5.00.2195.5400	362.77 KB (371,472 bytes)		cfgmgr32.dll	5.00.2134.1	16.77 KB (17,168 bytes)	
3/6/2003 1:54:08 PM	Microsoft Corporation			12/7/1999 7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\netlogon.dll				c:\winnt\system32\cfgmgr32.dll			
kerberos.dll	5.00.2195.5246	202.77 KB (207,632 bytes)		dmserver.dll	2195.3649.297.3	12.27 KB (12,560 bytes)	
3/6/2003 1:54:03 PM	Microsoft Corporation			3/6/2003 1:53:59 PM	VERITAS Software Corp.		
c:\winnt\system32\kerberos.dll				c:\winnt\system32\dmserver.dll			
msprivs.dll	5.00.2154.1	41.50 KB (42,496 bytes)	12/7/1999	winsta.dll	5.00.2195.4655	36.77 KB (37,648 bytes)	3/6/2003
7:00:00 AM	Microsoft Corporation			1:54:15 PM	Microsoft Corporation		
c:\winnt\system32\msprivs.dll				c:\winnt\system32\winsta.dll			
samsrv.dll	5.00.2195.5201	374.27 KB (383,248 bytes)	12/7/1999	lmhsvc.dll	5.00.2195.4874	9.77 KB (10,000 bytes)	12/7/1999
7:00:00 AM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\samsrv.dll				c:\winnt\system32\lmhsvc.dll			
lsasrv.dll	5.00.2195.5430	500.27 KB (512,272 bytes)	12/7/1999	dnssrslvr.dll	5.00.2195.5354	89.77 KB (91,920 bytes)	
7:00:00 AM	Microsoft Corporation			3/6/2003 1:53:59 PM	Microsoft Corporation		
c:\winnt\system32\lsasrv.dll				c:\winnt\system32\dnssrslvr.dll			
lsass.exe	5.00.2195.5430	32.77 KB (33,552 bytes)	12/7/1999	tapi32.dll	5.00.2182.1	123.27 KB (126,224 bytes)	12/7/1999
7:00:00 AM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\lsass.exe				c:\winnt\system32\tapi32.dll			
wmicore.dll	5.00.2195.3649	72.27 KB (74,000 bytes)		rasman.dll	5.00.2195.5292	54.77 KB (56,080 bytes)	12/7/1999
3/6/2003 1:54:15 PM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\wmicore.dll				c:\winnt\system32\rasman.dll			
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							

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			
adslldpc.dll	5.00.2195.5400	127.77 KB (130,832 bytes)	3/6/2003
1:53:55 PM	Microsoft Corporation		
c:\winnt\system32\adslldpc.dll			
activeds.dll	5.00.2195.5312	175.27 KB (179,472 bytes)	
3/6/2003 1:53:53 PM	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)	
3/6/2003 1:54:02 PM	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		
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			
eventlog.dll	5.00.2195.5336	44.27 KB (45,328 bytes)	
3/6/2003 1:54:00 PM	Microsoft Corporation		
c:\winnt\system32\eventlog.dll			
ntdsapi.dll	5.00.2195.4827	56.27 KB (57,616 bytes)	3/6/2003
1:54:08 PM	Microsoft Corporation		
c:\winnt\system32\ntdsapi.dll			
scesrv.dll	5.00.2195.5316	242.77 KB (248,592 bytes)	3/6/2003
1:54:12 PM	Microsoft Corporation		
c:\winnt\system32\scesrv.dll			
umpnprmgr.dll	5.00.2182.1	86.27 KB (88,336 bytes)	
12/7/1999 7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\umpnprmgr.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			
msv1_0.dll	5.00.2195.4745	112.27 KB (114,960 bytes)	12/7/1999
7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\msv1_0.dll			
clbcatq.dll	2000.2.3497.0	497.77 KB (509,712 bytes)	3/6/2003
1:53:57 PM	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)	3/6/2003
1:53:58 PM	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)	
3/6/2003 1:54:15 PM	Microsoft Corporation		
c:\winnt\system32\wlnotify.dll			
cscdll.dll	5.00.2195.5434	98.77 KB (101,136 bytes)	3/6/2003
1:53:58 PM	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			
wdmaud.drv	5.00.2195.3649	21.27 KB (21,776 bytes)	
3/6/2003 1:54:15 PM	Microsoft Corporation		
c:\winnt\system32\wdmaud.drv			
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)	3/6/2003
1:54:09 PM	Microsoft Corporation		
c:\winnt\system32\ole32.dll			
imagehlp.dll	5.00.2195.5242	125.77 KB (128,784 bytes)	
5/4/2001 1:05:02 PM	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)	3/6/2003
1:53:57 PM	Microsoft Corporation		
c:\winnt\system32\crypt32.dll			
wintrust.dll	5.131.2195.3775	162.27 KB (166,160 bytes)	
3/6/2003 1:54:15 PM	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)	3/6/2003
1:54:04 PM	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)	3/6/2003
1:54:12 PM	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)	
3/6/2003 1:54:16 PM	Microsoft Corporation		
c:\winnt\system32\wsock32.dll			
dnsapi.dll	5.00.2195.5354	131.27 KB (134,416 bytes)	3/6/2003
1:53:59 PM	Microsoft Corporation		
c:\winnt\system32\dnsapi.dll			
wldap32.dll	5.00.2195.5400	158.77 KB (162,576 bytes)	
3/6/2003 1:54:15 PM	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)	3/6/2003
1:54:15 PM	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			

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netapi32.dll      5.00.2195.5427      305.27 KB (312,592 bytes)
3/6/2003 1:54:08 PM 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)      3/6/2003
1:54:12 PM Microsoft Corporation
c:\winnt\system32\secur32.dll
sfc.dll 5.00.2195.3649      92.11 KB (94,320 bytes)      3/6/2003
1:54:12 PM Microsoft Corporation
c:\winnt\system32\sfc.dll
nddeapi.dll 5.00.2195.4509      15.77 KB (16,144 bytes)      3/6/2003
1:54:08 PM Microsoft Corporation
c:\winnt\system32\nddeapi.dll
userenv.dll 5.00.2195.5425      363.77 KB (372,496 bytes)      12/7/1999
7:00:00 AM Microsoft Corporation
c:\winnt\system32\userenv.dll
user32.dll 5.00.2195.4314      395.77 KB (405,264 bytes)      12/7/1999
7:00:00 AM Microsoft Corporation
c:\winnt\system32\user32.dll
gdi32.dll 5.00.2195.5252      228.77 KB (234,256 bytes)      12/7/1999
7:00:00 AM Microsoft Corporation
c:\winnt\system32\gdi32.dll
rpert4.dll 5.00.2195.5419      440.27 KB (450,832 bytes)      3/6/2003
1:54:11 PM Microsoft Corporation
c:\winnt\system32\rpert4.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 5.00.2195.5386      174.77 KB (178,960 bytes)
3/6/2003 1:54:15 PM Microsoft Corporation
c:\winnt\system32\winlogon.exe
sfcfiles.dll 5.00.2195.5426      951.27 KB (974,096 bytes)      3/6/2003
1:54:12 PM Microsoft Corporation
c:\winnt\system32\sfcfiles.dll
ntdll.dll 5.00.2195.5400      479.27 KB (490,768 bytes)      5/4/2001
1:05:02 PM 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 ModeService Type
Path Error Control Start NameTag 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
Background Intelligent Transfer Service BITS Stopped Manual
Share Process c:\winnt\system32\svchost.exe -k bitsgroup Normal
LocalSystem 0
Computer Browser Browser Running Auto 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\dfsrv.exe Normal LocalSystem 0
DHCP Client Dhcp Running Auto Share Process
c:\winnt\system32\services.exe Normal LocalSystem 0

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Logical Disk Manager Administrative Service dmadmin Stopped
Manual Share Process c:\winnt\system32\dmadmin.exe /com
Normal LocalSystem 0
Logical Disk Manager dmserver 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\inetrv\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 Running Auto 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 0
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 DSDMNetDDEdsdm 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	Windows Management Instrumentation Driver Extensions	Wmi
Share Process	c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	Running	Manual
LocalSystem	0			Share Process	c:\winnt\system32\services.exe
Routing and Remote Access	RemoteAccess	Stopped	Disabled	Normal	LocalSystem
Share Process	c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
LocalSystem	0			Automatic Updates	wuauerv Running Auto
Remote Registry Service	RemoteRegistry	Running	Auto	Share Process	c:\winnt\system32\svchost.exe -k wugroup
Own Process	c:\winnt\system32\regsvc.exe	Normal	LocalSystem	0	
LocalSystem	0			[Program Groups]	
Remote Command Service	RMSYS	Running	Auto	Group Name	Name
Process	c:\program files\benchcraft\rsvs.exe	Normal	LocalSystem	Default User	User Name
LocalSystem	0			Accessories	Default User:Accessories
Remote Procedure Call (RPC) Locator	RpcLocator	Stopped	Manual	Accessories\Accessibility	Default User:Accessories\Accessibility
Own Process	c:\winnt\system32\locator.exe	Normal	LocalSystem	0	
LocalSystem	0			Default User	Default User:Accessories\Accessibility
Remote Procedure Call (RPC)	RpcSs	Running	Auto	Accessories\Entertainment	Default User:Accessories\Entertainment
Process	c:\winnt\system32\svchost -k rpsvc	Normal	LocalSystem	0	
LocalSystem	0			Default User	Default User:Accessories\System Tools
QoS RSVP	RSVP	Running	Manual	Accessories\System Tools	Default User:Accessories\System Tools
Process	c:\winnt\system32\rsvp.exe -s	Normal	LocalSystem	0	
LocalSystem	0			Startup	Default User:Startup
Security Accounts Manager	SamSs	Running	Auto	Accessories	All Users:Accessories
Process	c:\winnt\system32\lsass.exe	Normal	LocalSystem	0	
LocalSystem	0			Accessories\Accessibility	All Users:Accessories\Accessibility
Smart Card Helper	SCardDrv	Stopped	Manual	All Users	
Process	c:\winnt\system32\scardsvr.exe	Ignore	LocalSystem	0	
LocalSystem	0			Accessories\Communications	All Users:Accessories\Communications
Smart Card	SCardSvr	Stopped	Manual	LocalSystem	0
Process	c:\winnt\system32\scardsvr.exe	Ignore	LocalSystem	0	
LocalSystem	0			All Users	
Task Scheduler	Schedule	Running	Auto	Accessories\Entertainment	All Users:Accessories\Entertainment
Process	c:\winnt\system32\mtask.exe	Normal	LocalSystem	0	
LocalSystem	0			All Users	
RunAs Service	seclogon	Running	Auto	Accessories\Games	All Users:Accessories\Games
Process	c:\winnt\system32\services.exe	Ignore	LocalSystem	0	
LocalSystem	0			Accessories\System Tools	All Users:Accessories\System Tools
System Event Notification	SENS	Running	Auto	LocalSystem	0
Process	c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
LocalSystem	0			All Users	
Internet Connection Sharing	SharedAccess	Stopped	Manual	Administrative Tools	All Users:Administrative Tools
Share Process	c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
LocalSystem	0			Microsoft SQL Server	All Users:Microsoft SQL Server
Simple TCP/IP Services	SimpTcp	Running	Auto	Startup	All Users:Startup
Process	c:\winnt\system32\tcpvcs.exe	Normal	LocalSystem	0	
LocalSystem	0			Accessories	VCLIENT10\Administrator:Accessories
Simple Mail Transport Protocol (SMTP)	SMTPSVC	Running	Auto	VCLIENT10\Administrator	
Process	c:\winnt\system32\inetrv\inetinfo.exe	Normal	LocalSystem	0	
LocalSystem	0			Accessories\Accessibility	VCLIENT10\Administrator:Accessories\Accessibility
Print Spooler	Spooler	Running	Auto	VCLIENT10\Administrator	
Process	c:\winnt\system32\spoolsv.exe	Normal	LocalSystem	0	
LocalSystem	0			Accessories\Entertainment	VCLIENT10\Administrator:Accessories\Entertainment
Performance Logs and Alerts	SysmonLog	Stopped	Manual	VCLIENT10\Administrator	
Own Process	c:\winnt\system32\smlogsvc.exe	Normal	LocalSystem	0	
LocalSystem	0			Accessories\System Tools	VCLIENT10\Administrator:Accessories\System Tools
Telephony TapiSrv	Running	Manual	Share Process	VCLIENT10\Administrator	
Process	c:\winnt\system32\svchost.exe -k tapisrv	Normal	LocalSystem	0	
LocalSystem	0			Administrative Tools	VCLIENT10\Administrator:Administrative Tools
Terminal Services	TermService	Stopped	Disabled	LocalSystem	0
Process	c:\winnt\system32\termsrv.exe	Normal	LocalSystem	0	
LocalSystem	0			VCLIENT10\Administrator	
Telnet	TlntSvr	Stopped	Manual	Share Process	
Process	c:\winnt\system32\tlntsvr.exe	Normal	LocalSystem	0	
LocalSystem	0			Benchcraft	VCLIENT10\Administrator:Benchcraft
Distributed Link Tracking Server	TrkSvr	Stopped	Manual	LocalSystem	0
Process	c:\winnt\system32\services.exe	Normal	LocalSystem	0	
LocalSystem	0			VCLIENT10\Administrator	
Distributed Link Tracking Client	TrkWks	Running	Auto	Share Process	
Process	c:\winnt\system32\services.exe	Normal	LocalSystem	0	
LocalSystem	0			VCLIENT10\Administrator:Startup	
Uninterruptible Power Supply	UPS	Stopped	Manual	LocalSystem	0
Process	c:\winnt\system32\ups.exe	Normal	LocalSystem	0	
LocalSystem	0			VCLIENT10\Administrator	
Utility Manager	UtilMan	Stopped	Manual	Own Process	
Process	c:\winnt\system32\utilman.exe	Normal	LocalSystem	0	
LocalSystem	0			[Startup Programs]	
Windows Time	W32Time	Stopped	Manual	Share Process	
Process	c:\winnt\system32\services.exe	Normal	LocalSystem	0	
LocalSystem	0			Program	Command
World Wide Web Publishing Service	W3SVC	Running	Auto	User Name	Location
Share Process	c:\winnt\system32\inetrv\inetinfo.exe	Normal	LocalSystem	0	
LocalSystem	0			synctime	synctime.cmd
Windows Management Instrumentation	WinMgmt	Running	Auto	All Users	Common Startup
Own Process	c:\winnt\system32\wbem\winmgmt.exe	Ignore	LocalSystem	0	
LocalSystem	0			[OLE Registration]	
				Object	Local Server
				Sound (OLE2)	sndrec32.exe
				Media Clip	mplay32.exe
				Video Clip	mplay32.exe /avi
				MIDI Sequence	mplay32.exe /midi
				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 55736-459-9608732-04017  
 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
browsecl.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
ehhsg.dll	File not present	Not Available	Not Available	Not Available	Not Available
iemigrat.dll	File not present	Not Available	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
ieexplore.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
jscrip.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
mshhtml.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	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	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	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	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	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	
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	29432 MB
Maximum Cache Size	541 MB
Available Cache Size	542 MB

[List of Objects]

Program File	Status	Version	CodeBase
No cached object information available			

[Content]

[ Following are sub-categories of this main category ]

[Summary]

Item	Value
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[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters]	"First Help"=dword:00000bbf
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B07D3AF]	"Library Validation Code"=hex:18,ef,36,c1,11,e4,c2,01,10,25,00,00,00,00,00
"IPAddress"=hex(7):31,00,39,00,32,00,2e,00,31,00,36,00,38,00,2e,00,31,00,32,00,\	"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
30,00,2e,00,31,00,30,00,00,00,00,	"WbemAdapFileSize"=dword:00002510
"VIDeviceNumber"=dword:00000000	"WbemAdapStatus"=dword:00000000
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Parameters]	[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\TPCC]
"MaxRegisterMBytes"=dword:00000200	"Path"="C:\\Inetpub\\wwwroot\\"
"MaxRegisterRdmaMBytes"=dword:00000200	"NumberOfDeliveryThreads"=dword:00000017
"MaxCQEntries"=dword:00002000	"MaxConnections"=dword:0000abe0
"MaxRegisterRegions"=dword:00001000	"MaxPendingDeliveries"=dword:00001130
"MaxVIs"=dword:00000400	"DB_Protocol"="ODBC"
"MaxCQs"=dword:00000400	"TxnMonitor"="COM"
"MaxTransferSize"=dword:00010000	"DbServer"="ibmserv2"
"MaxPTags"=dword:00000800	"DbName"="tpcc"
"IuBuffers"=dword:00000100	"DbUser"="sa"
"SendDescQuota"=dword:00000008	"DbPassword"=""
"RecvDescQuota"=dword:00000008	"COM_SinglePool"="YES"
"SupportPrototypeCards"=dword:00000001	<h2>Client 2</h2>
"HostFile"=hex(7):43,00,3a,00,5c,00,57,00,49,00,4e,00,4e,00,54,00,5c,00,73,00,\	[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC]
0,\	"Type"=dword:00000020
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,\	"Start"=dword:00000002
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,\	"ErrorControl"=dword:00000001
74,00,73,00,00,00,00,00,	"ImagePath"=hex(2):43,00,3a,00,5c,00,57,00,49,00,4e,00,4e,00,54,00,5c,00,53,
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Securitiy]	00,\
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14,00,00,00,30,00,00,00,02,\	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,\
00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,01,00,00,\	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,\
00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,\	65,00,78,00,65,00,00,00
05,12,00,00,00,6f,00,72,00,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,05,\	"DisplayName"="World Wide Web Publishing Service"
20,00,00,00,20,02,00,00,74,00,00,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,\	"DependOnService"=hex(7):49,00,49,00,53,00,41,00,44,00,4d,00,49,00,4e,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,\
00,05,20,00,00,00,23,02,00,00,74,00,00,00,01,01,00,00,00,00,05,12,00,00,\	00,00
00,01,01,00,00,00,00,05,12,00,00,00,	"DependOnGroup"=hex(7):00,00
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Enum]	"ObjectName"="LocalSystem"
"0"="Root\LEGACY_QLVIKA\0000"	"Description"="Provides Web connectivity and administration through the Internet Information Services snap-in."
"Count"=dword:00000001	"FailureActions"=hex:ff,ff,ff,ff,00,00,00,00,00,00,00,00,03,00,00,00,48,5b,0e,\
"NextInstance"=dword:00000001	00,
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo]	[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\ASP]
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Parameters]	"NOTE"="This is for backward compatibility only."
"ListenBackLog"=dword:00000096	[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\ASP\Parameters]
"DispatchEntries"=hex(7):4c,00,44,00,41,00,50,00,53,00,56,00,43,00,00,00,53,	[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters]
00,\	"MajorVersion"=dword:00000005
4d,00,54,00,50,00,53,00,56,00,43,00,00,00,00,	"MinorVersion"=dword:00000000
"PoolThreadLimit"=dword:000000be	"InstallPath"="C:\\WINNT\\System32\\inetsrv"
"ThreadTimeout"=dword:00015180	"CertMapList"="C:\\WINNT\\System32\\inetsrv\\iisrmap.dll"
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Performance]	"AccessDeniedMessage"="Error: Access is Denied."
"Library"="infectrs.dll"	"Filter DLLs"=""
"Open"="OpenINFOPerformanceData"	"LogFileDirectory"="C:\\WINNT\\System32\\LogFiles"
"Close"="CloseINFOPerformanceData"	"AcceptExOutstanding"=dword:00000028
"Collect"="CollectINFOPerformanceData"	[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch]
"Last Counter"=dword:00000bfe	[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch\AdvancedDataFactory]
"Last Help"=dword:00000bfff	
"First Counter"=dword:00000bbe	

[HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch\RDS\Server.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,,1"  
"/IISHelp"="c:\winnt\help\iishelp,,1"  
"/IISAdmin"="C:\WINNT\System32\inetsrv\iisadmin,,1"  
"/IISSamples"="c:\inetpub\iissamples,,1"  
"/MSADC"="c:\program files\common files\system\msadc,,1"  
"/\_vti\_bin"="C:\Program Files\Common Files\Microsoft Shared\Web Server Extensions\40\isapi,,1"  
"/Rpc"="C:\WINNT\System32\RpcProxy,,1"  
"/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:00000b76  
"Last Help"=dword:00000b77  
"First Counter"=dword:00000ad4  
"First Help"=dword:00000ad5  
"Library Validation Code"=hex:72,cd,1f,77,30,e4,c2,01,10,1d,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,00,01,01,00,00,00,00,01,00,00,00,00,02,00,70,00,04,00,00,00,00,18,00,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

[HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\ImagePath]

"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,00,31,00,32,00,30,00,2e,00,32,00,30,00,00,00,00,00  
"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,00,32,00,33,00,30,00,2e,00,31,00,31,00,00,00,00,00

[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:00000001  
"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,00,00,00,14,00,00,00,30,00,00,00,02,00,00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,00,00,02,00,70,00,04,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,00,05,12,00,00,00,61,67,65,72,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,20,00,00,00,20,02,00,00,00,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,00,00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,00,00,05,20,00,00,00,23,02,00,00,00,00,00,01,01,00,00,00,00,00,05,12,00,00,00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Enum]

"0"="Root\LEGACY\_QLVIKA\0000"  
"Count"=dword:00000001  
"NextInstance"=dword:00000001

[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"="infectrs.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:00000bfe  
"Last Help"=dword:00000bff  
"First Counter"=dword:00000bbe  
"First Help"=dword:00000bbf  
"Library Validation  
Code"=hex:6a,e3,97,6e,30,e4,c2,01,10,25,00,00,00,00,00,00

[HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\TPCC]  
"Path"="C:\Inetpub\wwwroot\  
"NumberOfDeliveryThreads"=dword:00000017  
"MaxConnections"=dword:0000abe0  
"MaxPendingDeliveries"=dword:00001130  
"DB\_Protocol"="ODBC"  
"TxnMonitor"="COM"  
"DbServer"="ibmserv2"  
"DbName"="tpcc"  
"DbUser"="sa"  
"DbPassword"=""  
"COM\_SinglePool"="YES"

### Client 3

[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,00,00,00,00,00,00,00,03,00,00,00,e0,d6,12,\  
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\inet\_srv\  
"CertMapList"="C:\WINNT\System32\inet\_srv\iisrcmap.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,,1"  
"/IISHelp"="c:\winnt\help\iishelp,,1"  
"/IISAdmin"="C:\WINNT\System32\inet\_srv\iisadmin,,1"  
"/IISamples"="c:\inetpub\iisamples,,1"  
"/MSADC"="c:\program files\common files\system\msadc,,1"  
"/\_vti\_bin"="C:\Program Files\Common Files\Microsoft Shared\Web Server  
Extensions\40\isapi,,1"  
"/Rpc"="C:\WINNT\System32\RpcProxy,,1"  
"/Printers"="C:\WINNT\web\printers,,201"

[HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Performance]

"Library"="w3ctrs.dll"  
"Open"="OpenW3PerformanceData"  
"Close"="CloseW3PerformanceData"  
"Collect"="CollectW3PerformanceData"  
"Last Counter"=dword:00000b76  
"Last Help"=dword:00000b77  
"First Counter"=dword:00000ad4  
"First Help"=dword:00000ad5  
"Library Validation Code"=hex:94,ef,ff,ac,30,e4,c2,01,10,1d,00,00,00,00,00,00,  
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01  
"WbemAdapFileSize"=dword:00001d10  
"WbemAdapStatus"=dword:00000000

[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,  
2,\  
00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,01,00,00,\  
00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,\  
05,12,00,00,00,74,00,6f,00,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,05,\  
20,00,00,00,20,02,00,00,72,00,73,00,00,00,18,00,8d,01,02,00,01,01,00,00,\  
00,00,05,0b,00,00,00,20,02,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,\  
00,05,20,00,00,00,23,02,00,00,72,00,73,00,01,01,00,00,00,00,05,12,00,00,\  
00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Enumeration]

"0"="Root\LEGACY\_W3SVC\0000"  
"Count"=dword:00000001  
"NextInstance"=dword:00000001

[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\210000E08B07D3AF]  
"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,00,34,00,30,00,00,00,00,  
"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,00,32,00,33,00,\  
30,00,2e,00,31,00,31,00,00,00,00,00

[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:00000001  
"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,\  
05,12,00,00,00,61,67,65,72,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,\  
20,00,00,00,20,02,00,00,00,00,00,00,00,18,00,8d,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

[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"="infectrs.dll"  
"Open"="OpenINFOPerformanceData"  
"Close"="CloseINFOPerformanceData"

"Collect"="CollectINFOPerformanceData"  
"Last Counter"=dword:00000bfe  
"Last Help"=dword:00000bfb  
"First Counter"=dword:00000bbe  
"First Help"=dword:00000bbf  
"Library Validation  
Code"=hex:24,7c,6e,a4,30,e4,c2,01,10,25,00,00,00,00,00,00,  
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01  
"WbemAdapFileSize"=dword:00002510  
"WbemAdapStatus"=dword:00000000

[HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\TPCC]

"Path"="C:\\Inetpub\\wwwroot\\"  
"NumberOfDeliveryThreads"=dword:00000017  
"MaxConnections"=dword:0000abe0  
"MaxPendingDeliveries"=dword:00001130  
"DB\_Protocol"="ODBC"  
"TxnMonitor"="COM"  
"DbServer"="ibmserv2"  
"DbName"="tpcc"  
"DbUser"="sa"  
"DbPassword"=""  
"COM\_SinglePool"="YES"

## Client 4

[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,  
"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,e8,96,09,\  
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\\inetrv"  
"CertMapList"="C:\\WINNT\System32\\inetrv\\iisrmap.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\RDS\Server.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,,1"  
"/IISHelp"="c:\winnt\help\iishelp,,1"  
"/IISAdmin"="C:\WINNT\System32\inetstrv\iisadmin,,1"  
"/IISSamples"="c:\inetpub\iissamples,,1"  
"/MSADC"="c:\program files\common files\system\msadc,,1"  
"/\_vti\_bin"="C:\Program Files\Common Files\Microsoft Shared\Web Server Extensions\40\isapi,,1"  
"/Rpc"="C:\WINNT\System32\RpcProxy,,1"  
"/Printers"="C:\WINNT\web\printers,,201"

[HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Performance]

"Library"="w3ctrs.dll"  
"Open"="OpenW3PerformanceData"  
"Close"="CloseW3PerformanceData"  
"Collect"="CollectW3PerformanceData"  
"Last Counter"=dword:00000b76  
"Last Help"=dword:00000b77  
"First Counter"=dword:00000ad4  
"First Help"=dword:00000ad5  
"Library Validation  
Code"=hex:06,a9,7b,fb,30,e4,c2,01,10,1d,00,00,00,00,00,00  
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01  
"WbemAdapFileSize"=dword:00001d10  
"WbemAdapStatus"=dword:00000000

[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,\n00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,01,00,00,\n00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,\n05,12,00,00,00,74,00,6f,00,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,05,\n20,00,00,00,20,02,00,00,72,00,73,00,00,00,18,00,8d,01,02,00,01,01,00,00,\n00,00,05,0b,00,00,00,20,02,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,\n00,05,20,00,00,00,23,02,00,00,72,00,73,00,01,01,00,00,00,00,05,12,00,00,\n00,01,01,00,00,00,00,05,12,00,00,00

[HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Enum]

"0"="Root\LEGACY\_W3SVC\0000"  
"Count"=dword:00000001  
"NextInstance"=dword:00000001

[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,\n52,00,49,00,56,00,45,00,52,00,53,00,5c,00,71,00,6c,00,76,00,69,00,6b,00,61,\n00,2e,00,73,00,79,00,73,00,00,00  
"Tag"=dword:00000001  
"group"="MVA"  
"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\210000E08B0727B0]

"IPAddress"=hex(7):31,00,39,00,32,00,2e,00,31,00,36,00,38,00,2e,00,32,00,33,00,\n30,00,2e,00,35,00,30,00,00,00,00,00  
"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,00,32,00,33,00,\n30,00,2e,00,31,00,31,00,00,00,00,00

[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:00000001  
"HostFile"=hex(7):43,00,3a,00,5c,00,57,00,49,00,4e,00,4e,00,54,00,5c,00,73,00,\n79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,64,00,72,00,69,00,76,00,65,\n00,72,00,73,00,5c,00,65,00,74,00,63,00,5c,00,76,00,69,00,68,00,6f,00,73,00,\n74,00,73,00,00,00,00,00

[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,\n00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,\n00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,\n05,12,00,00,00,61,67,65,72,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,05,\n20,00,00,00,20,02,00,00,00,00,00,00,00,00,18,00,8d,01,02,00,01,01,00,00,\n00,00,05,0b,00,00,00,20,02,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,\n00,05,20,00,00,00,23,02,00,00,00,00,01,01,00,00,00,00,05,12,00,00,\n00,01,01,00,00,00,00,05,12,00,00,00

[HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Enum]

"0"="Root\LEGACY\_QLVIKA\0000"  
"Count"=dword:00000001  
"NextInstance"=dword:00000001

[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,\n4d,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"="infectrs.dll"



"Open"="OpenINFOPerformanceData"  
 "Close"="CloseINFOPerformanceData"  
 "Collect"="CollectINFOPerformanceData"  
 "Last Counter"=dword:00000bfe  
 "Last Help"=dword:00000bff  
 "First Counter"=dword:00000bbe  
 "First Help"=dword:00000bbf  
 "Library Validation  
 Code"=hex:34,24,b8,f2,30,e4,c2,01,10,25,00,00,00,00,00,00  
 "WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01  
 "WbemAdapFileSize"=dword:00002510  
 "WbemAdapStatus"=dword:00000000

[HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\TPCC]

"Path"="C:\inetpub\wwwroot\  
 "NumberOfDeliveryThreads"=dword:00000017  
 "MaxConnections"=dword:0000abe0  
 "MaxPendingDeliveries"=dword:00001130  
 "DB\_Protocol"="ODBC"  
 "TxnMonitor"="COM"  
 "DbServer"="ibmserv2"  
 "DbName"="tpcc"  
 "DbUser"="sa"  
 "DbPassword"=""  
 "COM\_SinglePool"="YES"

## RTE Input Parameters

Profile: 12480x4x8x3900  
 File Path: C:\Program Files\BenchCraft\12480x4x8x3900.pro  
 Version: 3

Number of Engines: 32

Name: v10e  
 Description: v10e  
 Directory: c:\rtelogs\v10e.log  
 Machine: vrte10  
 Parameter Set: PARAM2  
 Index: 312500000  
 Seed: 4678  
 Configured Users: 3900  
 Pipe Name: DRIVER14723953  
 Connect Rate: 1000  
 Start Rate: 0  
 Max. Concurrency: 3900  
 Concurrency Rate: 10  
 CLIENT\_NURAND: 233  
 CPU: 0

Name: v20a  
 Description: v20a  
 Directory: c:\rtelogs\v20a.log  
 Machine: vrte20  
 Parameter Set: PARAM2  
 Index: 562500000  
 Seed: 4678  
 Configured Users: 3900  
 Pipe Name: DRIVER24872015  
 Connect Rate: 1000  
 Start Rate: 0  
 Max. Concurrency: 3900  
 Concurrency Rate: 10  
 CLIENT\_NURAND: 233  
 CPU: 0

Name: v20b

Description: v20b  
 Directory: c:\rtelogs\v20b.log  
 Machine: vrte20  
 Parameter Set: PARAM2  
 Index: 625000000  
 Seed: 4678  
 Configured Users: 3900  
 Pipe Name: DRIVER34966171  
 Connect Rate: 1000  
 Start Rate: 0  
 Max. Concurrency: 3900  
 Concurrency Rate: 10  
 CLIENT\_NURAND: 233  
 CPU: 1

Name: v10f  
 Description: v10f  
 Directory: c:\rtelogs\v10f.log  
 Machine: vrte10  
 Parameter Set: PARAM2  
 Index: 375000000  
 Seed: 4678  
 Configured Users: 3900  
 Pipe Name: DRIVER45012500  
 Connect Rate: 1000  
 Start Rate: 0  
 Max. Concurrency: 3900  
 Concurrency Rate: 10  
 CLIENT\_NURAND: 233  
 CPU: 1

Name: v10a  
 Description: v10a  
 Directory: c:\rtelogs\v10a.log  
 Machine: vrte10  
 Parameter Set: PARAM2  
 Index: 625000000  
 Seed: 4678  
 Configured Users: 3900  
 Pipe Name: DRIVER55066765  
 Connect Rate: 1000  
 Start Rate: 0  
 Max. Concurrency: 3900  
 Concurrency Rate: 10  
 CLIENT\_NURAND: 233  
 CPU: 0

Name: v20c  
 Description: v20c  
 Directory: c:\rtelogs\v20c.log  
 Machine: vrte20  
 Parameter Set: PARAM2  
 Index: 687500000  
 Seed: 4678  
 Configured Users: 3900  
 Pipe Name: DRIVER65126187  
 Connect Rate: 1000  
 Start Rate: 0  
 Max. Concurrency: 3900  
 Concurrency Rate: 10  
 CLIENT\_NURAND: 233  
 CPU: 0

Name: v20d  
 Description: v20d  
 Directory: c:\rtelogs\v20d.log  
 Machine: vrte20  
 Parameter Set: PARAM2

Index: 75000000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER75175640  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 1

Name: v10b  
Description: v10b  
Directory: c:\rtelogs\v10b.log  
Machine: vrte10  
Parameter Set: PARAM2  
Index: 12500000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER85211109  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 1

Name: v10c  
Description: v10c  
Directory: c:\rtelogs\v10c.log  
Machine: vrte10  
Parameter Set: PARAM2  
Index: 187500000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER95259171  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 0

Name: v20e  
Description: v20e  
Directory: c:\rtelogs\v20e.log  
Machine: vrte20  
Parameter Set: PARAM2  
Index: 812500000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER105308218  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 0

Name: v20f  
Description: v20f  
Directory: c:\rtelogs\v20f.log  
Machine: vrte20  
Parameter Set: PARAM2  
Index: 875000000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER115358203

Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 1

Name: v10d  
Description: v10d  
Directory: c:\rtelogs\v10d.log  
Machine: vrte10  
Parameter Set: PARAM2  
Index: 250000000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER125397734  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 1

Name: v10g  
Description: v10g  
Directory: c:\rtelogs\v10g.log  
Machine: vrte10  
Parameter Set: PARAM2  
Index: 437500000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER135452671  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 0

Name: v10h  
Description: v10h  
Directory: c:\rtelogs\v10h.log  
Machine: vrte10  
Parameter Set: PARAM2  
Index: 500000000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER145492328  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 1

Name: v20g  
Description: v20g  
Directory: c:\rtelogs\v20g.log  
Machine: vrte20  
Parameter Set: PARAM2  
Index: 937500000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER155552765  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10

CLIENT\_NURAND: 233  
CPU: 0

Name: v20h  
Description: v20h  
Directory: c:\rtelogs\v20h.log  
Machine: vrte20  
Parameter Set: PARAM2  
Index: 1000000000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER165598015  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 1

Name: v50a  
Description: v50a  
Directory: c:\rtelogs\v50a.log  
Machine: vrte50  
Parameter Set: PARAM2  
Index: 1562500000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER2966335687  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 0

Name: v50b  
Description: v50b  
Directory: c:\rtelogs\v50b.log  
Machine: vrte50  
Parameter Set: PARAM2  
Index: 1625000000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER3066392812  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 1

Name: v50c  
Description: v50c  
Directory: c:\rtelogs\v50c.log  
Machine: vrte50  
Parameter Set: PARAM2  
Index: 1687500000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER3166432171  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 0

Name: v50d

Description: v50d  
Directory: c:\rtelogs\v50d.log  
Machine: vrte50  
Parameter Set: PARAM2  
Index: 1750000000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER3266504046  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 1

Name: v50e  
Description: v50e  
Directory: c:\rtelogs\v50e.log  
Machine: vrte50  
Parameter Set: PARAM2  
Index: 1812500000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER3366550687  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 0

Name: v50f  
Description: v50f  
Directory: c:\rtelogs\v50f.log  
Machine: vrte50  
Parameter Set: PARAM2  
Index: 1875000000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER3466629296  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 1

Name: v50g  
Description: v50g  
Directory: c:\rtelogs\v50g.log  
Machine: vrte50  
Parameter Set: PARAM2  
Index: 1937500000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER3566700406  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 0

Name: v50h  
Description: v50h  
Directory: c:\rtelogs\v50h.log  
Machine: vrte50  
Parameter Set: PARAM2

Index: 2000000000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER3666766140  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 1

Name: v40a  
Description: v40a  
Directory: c:\rtelogs\v40a.log  
Machine: vrte40  
Parameter Set: PARAM2  
Index: 1062500000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER4367196046  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 0

Name: v40b  
Description: v40b  
Directory: c:\rtelogs\v40b.log  
Machine: vrte40  
Parameter Set: PARAM2  
Index: 1125000000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER4467244484  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 1

Name: v40c  
Description: v40c  
Directory: c:\rtelogs\v40c.log  
Machine: vrte40  
Parameter Set: PARAM2  
Index: 1187500000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER4567282265  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 0

Name: v40d  
Description: v40d  
Directory: c:\rtelogs\v40d.log  
Machine: vrte40  
Parameter Set: PARAM2  
Index: 1250000000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER4667357593

Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 1

Name: v40e  
Description: v40e  
Directory: c:\rtelogs\v40e.log  
Machine: vrte40  
Parameter Set: PARAM2  
Index: 1312500000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER4767405796  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 0

Name: v40f  
Description: v40f  
Directory: c:\rtelogs\v40f.log  
Machine: vrte40  
Parameter Set: PARAM2  
Index: 1375000000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER4867450406  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 1

Name: v40g  
Description: v40g  
Directory: c:\rtelogs\v40g.log  
Machine: vrte40  
Parameter Set: PARAM2  
Index: 1437500000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER4967505484  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10  
CLIENT\_NURAND: 233  
CPU: 0

Name: v40h  
Description: v40h  
Directory: c:\rtelogs\v40h.log  
Machine: vrte40  
Parameter Set: PARAM2  
Index: 1500000000  
Seed: 4678  
Configured Users: 3900  
Pipe Name: DRIVER5067590062  
Connect Rate: 1000  
Start Rate: 0  
Max. Concurrency: 3900  
Concurrency Rate: 10

CLIENT\_NURAND: 233  
CPU: 1

Number of User groups: 32

Driver Engine: v10e  
IIS Server: vclient10e  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 1561 - 1950  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v10f  
IIS Server: vclient10f  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 1951 - 2340  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v10a  
IIS Server: vclient10a  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 1 - 390  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v10b  
IIS Server: vclient10b  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 391 - 780  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v10c  
IIS Server: vclient10c  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 781 - 1170

w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v10d  
IIS Server: vclient10d  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 1171 - 1560  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v10g  
IIS Server: vclient10g  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 2341 - 2730  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v10h  
IIS Server: vclient10h  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 2731 - 3120  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v20a  
IIS Server: vclient20a  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 3121 - 3510  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v20b  
IIS Server: vclient20b  
SQL Server: ibmserv2  
Database: tpcc  
User: sa

Protocol: HTML  
w\_id Range: 3511 - 3900  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v20c  
IIS Server: vclient20c  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 3901 - 4290  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v20d  
IIS Server: vclient20d  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 4291 - 4680  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v20e  
IIS Server: vclient20e  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 4681 - 5070  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v20f  
IIS Server: vclient20f  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 5071 - 5460  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v20g  
IIS Server: vclient20g  
SQL Server: ibmserv2

Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 5461 - 5850  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v20h  
IIS Server: vclient20h  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 5851 - 6240  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v40a  
IIS Server: vclient40a  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 6241 - 6630  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v40b  
IIS Server: vclient40b  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 6631 - 7020  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v40c  
IIS Server: vclient40c  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 7021 - 7410  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v40d

IIS Server: vclient40d  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 7411 - 7800  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v40e  
IIS Server: vclient40e  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 7801 - 8190  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v40f  
IIS Server: vclient40f  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 8191 - 8580  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v40g  
IIS Server: vclient40g  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 8581 - 8970  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v40h  
IIS Server: vclient40h  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 8971 - 9360  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v50a  
IIS Server: vclient50a  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 9361 - 9750  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v50b  
IIS Server: vclient50b  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 9751 - 10140  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v50c  
IIS Server: vclient50c  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 10141 - 10530  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v50d  
IIS Server: vclient50d  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 10531 - 10920  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: v50e  
IIS Server: vclient50e  
SQL Server: ibmserv2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 10921 - 11310  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 12480  
Scale: Normal  
User Count: 3900

District id: 1		New Order	10.09	12.05	18.01	0.10
Scale Down: No	5.00 0.10	Payment	9.66	12.05	3.01	0.10
Driver Engine: v50f	5.00 0.10	Delivery	0.90	5.05	2.01	0.10
IIS Server: vclient50f	5.00 0.10	Stock Level	0.90	5.05	2.01	0.10
SQL Server: ibmserv2	20.00 0.10	Order Status	0.90	10.05	2.01	0.10
Database: tpcc	5.00 0.10					
User: sa						
Protocol: HTML						
w_id Range: 11311 - 11700						
w_id Min Warehouse: 1						
w_id Max Warehouse: 12480						
Scale: Normal						
User Count: 3900						
District id: 1						
Scale Down: No						
Driver Engine: v50g						
IIS Server: vclient50g						
SQL Server: ibmserv2						
Database: tpcc						
User: sa						
Protocol: HTML						
w_id Range: 11701 - 12090						
w_id Min Warehouse: 1						
w_id Max Warehouse: 12480						
Scale: Normal						
User Count: 3900						
District id: 1						
Scale Down: No						
Driver Engine: v50h						
IIS Server: vclient50h						
SQL Server: ibmserv2						
Database: tpcc						
User: sa						
Protocol: HTML						
w_id Range: 12091 - 12480						
w_id Min Warehouse: 1						
w_id Max Warehouse: 12480						
Scale: Normal						
User Count: 3900						
District id: 1						
Scale Down: No						

Number of Parameter Sets: 2

```

~Default
Default Parameter Set
  Txn Think Key RT RT Menu
  Weight Time Time Delay Fence Delay
New Order 10.00 12.05 18.01 0.10
Payment 10.00 12.05 3.01 0.10
Delivery 1.00 5.05 2.01 0.10
Stock Level 1.00 5.05 2.01 0.10
Order Status 1.00 10.05 2.01 0.10

PARAM2
3 Tier
  Txn Think Key RT RT Menu
  Weight Time Time Delay Fence Delay

```

5.00 0.10  
5.00 0.10  
5.00 0.10  
20.00 0.10  
5.00 0.10



# Appendix D: 60-Day Space

TPC-C 60-Day Space Requirements						
Warehouses	12,480				tpmC	156,105.72
Table	Rows	Data KB	Index KB	Extra 5% KB	8HR Space	Total Space KB
Warehouse	12,480	1,352	192	77.20		1,621.20
District	124,800	14,064	264	716.40		15,044.40
Item	100,000	9,528	248	488.80		10,264.80
New-Order	112,319,997	2,001,280	5,192		998,400.00	3,004,872.00
History	374,400,003	22,352,256	86,872		4,490,866.96	26,929,994.96
Orders	374,400,007	12,225,336	5,963,976		3,640,327.75	21,829,639.75
Customer	374,400,000	272,290,912	16,992,088	14,464,150.00		303,747,150.00
Order-Line	3,743,996,515	249,599,792	590,752		50,072,019.24	300,262,563.24
Stock	1,248,000,000	399,360,000	845,448	20,010,272.40		420,215,720.40
Totals		957,854,520	24,485,032	34,475,704.80	59,201,613.96	1,076,016,870.76
Segment	LogDev Cnt.	Segment Size	Needed	Overhead		Not Needed
misc	8	15,360,000	352,054,000	3,520,540		(340,214,540.36)
big	8	26,624,000	723,962,870	7,239,629		(704,578,499.10)
master, msdb,model	1	13,312	13,312			-
tpcc_root	1	8,192	8,192			-
tempdb	1	8,704	8,704			-
Totals		42,014,208.00	1,076,047,078.76	10,760,168.71		(1,044,793,039.47)
Dynamic Space	284,177,384.00	Sum of Data for Order, Order-Line and History				
Static Space	743,398,041.51	Data + Index + 5% Space + Overhead - Dynamic Space				
Free Space	59,231,821.96	Total Segment Size - Dynamic Space - Static Space - Not needed				
Daily Growth	56,873,993.77	(Dynamic Space/W * 62.5) * tpmC				
Daily Spread	(26,079,168.69)	Free Space - 1.5 * Daily Growth (Zero If Negative)				
60-Day Space (KB)	4,155,837,667.43	Static Space + 60 (Daily Growth + Daily Spread)				
60-Day Space (GB)	3,963.32	60-Day Space in GB (Excludes OS,Paging and RDBMS Logs)				
Available (GB)	13,289.34	Total storage configured and available for database, minus logs, in RAID-0 configuration.				
Log File Storage Requirement						
Log Size (MB)	342,000.00	Total Size of Log File				
% Log Used	35.8510	% of Log File Used During Entire Run				
Total N-O Txn	26,978,573.00	Total Count of New-Order Transactions during Entire Run				
Log / N-O Txn	4.65	KB of Log per New-Order Transaction				
8 Hour Log (GB)	332.56	8 Hours of Log in GB (Excluding Space for Redundancy)				
Log Configured (GB)	546.92					
Disk Capacity	MB	GB				
36.4GB	34,715	33.90				
73.4GB	70,006	68.37				
Space Usage	GB Needed		Disks Priced	Disk Size	GB Priced	GB Usable
60-Day (RAID-0)	3,963.32		392	36.4GB	13,289.34	13,289.34
					Total DB	13,289.34
8hr Log (RAID-1)	332.56		16	73.4GB	1,093.84	546.92
					Total Log	546.92
OS, SQL Server	4.00		1	36.4GB	33.90	33.9
Total Space	4,299.87		409		14,417.08	13,870.16

---

## Appendix E: Third-Party Quotations



Protect Your Data - Grow Your Business

To:  
Attention:  
Phone:  
Fax:  
Email:

From: Alan Powers  
Phone: (248)223-1020 x344  
Fax: (248)223-1026  
Email: [apowers@compsat.com](mailto:apowers@compsat.com)

QUOTE # : 8W445\_022704  
DATE: 02/27/04

## IBM x445 Configuration

Part No.	Description	Qty	List Price		Compsat Discounted Price	
			(per unit) US Dollar	(quantity x unit price) US Dollar	(per unit) US Dollar	(quantity x unit price) US Dollar
<b>x445 SERVER</b>						
88704BX	x445, 2xXeon MP 3.0GHz/400MHz, 4MB, 0GB, O/Bay, 2x1050W p/s, Rack	1	\$26,599.00	\$26,599.00	\$22,343.16	\$22,343.16
96P1984	3 YR onsite repair 24x7x4 hour (x445)	1	\$3,221.00	\$3,221.00	\$2,834.48	\$2,834.48
13N0721	3.0GHz/4MB Xeon Processor Upgrade	6	\$6,599.00	\$39,594.00	\$5,939.10	\$35,634.60
02R1870	xSeries 445 SMP Expansion Module	1	\$4,849.00	\$4,849.00	\$4,364.10	\$4,364.10
33L5040	2GB PC2100 DDR ECC SDRAM RDIMM	32	\$1,849.00	\$59,168.00	\$1,664.10	\$53,251.20
32P0726	IBM 36.4GB 10K Ultra320 SCSI Hot-Swap SL HDD	1	\$275.00	\$275.00	\$247.50	\$247.50
03K9311	4.2M Ultra2 SCSI Cable	30	\$105.00	\$3,150.00	\$94.50	\$2,835.00
32P0033	IBM ServeRAID-6M Ultra320 SCSI Adapter	15	\$999.00	\$14,985.00	\$899.10	\$13,486.50
QLA2350BK	Qlogic SANBlade QLA2350 FC-VI Adapter	4	\$1,995.00	\$7,980.00	\$1,795.50	\$7,182.00
633147N	E54 15" Colour Monitor (Stealth Grey)/MPRII	1	\$119.00	\$119.00	\$107.10	\$107.10
30L9183	3 YR onsite exch. 24x7x4 hour (E54 Monitor)	1	\$90.00	\$90.00	\$79.20	\$79.20
31P7415	IBM Preferred Pro Full-size Keyboard PS/2	1	\$29.00	\$29.00	\$26.10	\$26.10
28L3673	IBM Sleek 2-Button Mouse	1	\$14.95	\$14.95	\$13.46	\$13.46
<b>EXP400(s)</b>						
17331RU	IBM EXP400 Storage Expansion Enclosure	30	\$3,099.00	\$92,970.00	\$2,603.16	\$78,094.80
41L2768	3 YR onsite repair 24x7x4 hour (EXP400)	30	\$760.00	\$22,800.00	\$668.80	\$20,064.00
8684-1RX	IBM RXE-100 Remote Expansion Enclosure	1	\$4,569.00	\$4,569.00	\$4,112.10	\$4,112.10
96P2469	3 YR onsite repair 24x7x4 hour (RXE-100)	1	\$1,330.00	\$1,330.00	\$1,170.40	\$1,170.40
31P5998	IBM Remote i/O PCI-X 6-Slot Expansion Kit	1	\$1,699.00	\$1,699.00	\$1,529.10	\$1,529.10
31P6102	3.5M Remote I/O Cable Kit	1	\$599.00	\$599.00	\$539.10	\$539.10
32P0734	IBM 36.4GB 15K Hot-Swap SCSI HDD	392	\$495.00	\$194,040.00	\$445.50	\$174,636.00
32P0735	IBM 73.4GB 15K Hot-Swap SCSI HDD	16	\$769.00	\$12,304.00	\$692.10	\$11,073.60
<b>RACK and OPTIONS</b>						
9306421	NetBAY42 SX Standard Expansion Rack Cabinet - includes Perforated front door	3	\$1,439.00	\$4,317.00	\$1,208.76	\$3,626.28
41L2758	3 YR onsite repair 24x7x4 hour (NetBAY Rack)	3	\$168.00	\$504.00	\$147.84	\$443.52
33L3477	IBM UPS 500	1	\$99.00	\$99.00	\$89.10	\$89.10
00N7991	IBM 20/40GB DDS/4 4mm Internal Tape Drive -SCSI	1	\$699.00	\$699.00	\$629.10	\$629.10
0034BOX	IBM NetBAY Tape Enclosure	1	\$849.00	\$849.00	\$764.10	\$764.10
3534F08	SAN Fibre Channel 8-Port Switch	1	\$5,250.00	\$5,250.00	\$4,725.00	\$4,725.00
19K1271	IBM Short Wave SFP Module	2	\$499.00	\$998.00	\$449.10	\$898.20
19K1248	IBM 5M LC-LC Fibre Channel Cable	6	\$129.00	\$774.00	\$116.10	\$696.60
96P1994	3 YR onsite repair 24x7x4 hour (SAN Switch)	1	\$2,300.00	\$2,300.00	\$2,024.00	\$2,024.00
<b>x225 SERVER(s)</b>						
864762X	x225, Intel Xeon 3.06GHz/533MHz, 512KB, 512MB, 1x36.4GB, 1x425W p/s, Tow	4	\$1,775.00	\$7,100.00	\$1,491.00	\$5,964.00
96P2250	3 YR onsite repair 24x7x4 hour (x225)	4	\$1,000.00	\$4,000.00	\$880.00	\$3,520.00
24P8122	3.06GHz/533Mhz, 512KB Upgrade with Intel Xeon Processor	4	\$999.00	\$3,996.00	\$899.10	\$3,596.40
33L5038	512MB PC2100 CL2.5 ECC DDR SDRAM RDIMM	16	\$249.00	\$3,984.00	\$224.10	\$3,585.60
31P6401	NetXtreme 1000T Dual-Port Ethernet Adapter	8	\$269.00	\$2,152.00	\$242.10	\$1,936.80
ANA64044	Adaptec Quartet66 Network 4-port Interface Adapter (ANA64044)	6	\$550.00	\$3,300.00	\$495.00	\$2,970.00
QLA2350-BK	QLogic SANBlade 2350 FC-VI Adapter	4	\$1,995.00	\$7,980.00	\$1,795.50	\$7,182.00
633147N	E54 15" Colour Monitor (Stealth Grey)/MPRII	4	\$119.00	\$476.00	\$104.72	\$418.88
30L9183	3 YR onsite exch. 24x7x4 hour (E54 Monitor)	4	\$90.00	\$360.00	\$79.20	\$316.80
<b>SOFTWARE &amp; SERVICES</b>						
4816-7BU	IBM Preload Kit for Datacenter (1-8 Processors)	1	\$27,279.00	\$27,279.00	\$24,551.10	\$24,551.10
4816-DBX	IBM Software Update for Datacenter (1-8 Processors)	3	\$2,549.00	\$7,647.00	\$2,294.10	\$6,882.30
23L9991	3 Years of Support for Datacenter - MAPS 10 incidents at \$9000/year	3	\$9,000.00	\$27,000.00	\$8,100.00	\$24,300.00
06P7514	xSeries Enterprise Rack Setup	3	\$400.00	\$1,200.00	\$360.00	\$1,080.00
06P7515	xSeries Enterprise Rack Config	3	\$160.00	\$480.00	\$144.00	\$432.00
06P8665	Option Integration Fee	3	\$110.00	\$330.00	\$99.00	\$297.00
06P7505	Load Non-Image Custom Ultra Image - Server	1	\$35.00	\$35.00	\$31.50	\$31.50
<b>TOTAL =</b>				<b>\$603,493.95</b>	<b>TOTAL =</b>	<b>\$534,583.78</b>

25330 Telegraph Road / Suite 200 Raleigh Officentre / Southfield, Michigan 48034  
Phone: 248-223-1020 / Fax: 248-223-1026 / [www.compsat.com](http://www.compsat.com)

NOTE:  
- This quote may include Compsat Technology consulting and configuration charges.  
- Mfg. pricing is out of our control and could change without notice.  
- Pricing good for 30 Days from date quoted.

8W445\_030104\_IBM\_A.xls

Microsoft Corporation  
One Microsoft Way  
Redmond, WA 98052-6399

Tel 425 882 8080  
Fax 425 936 7329  
<http://www.microsoft.com/>

**Microsoft**

February 25, 2004

IBM Corporation  
Chris King  
3039 Cornwallis Road  
Research Triangle Park,  
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	<b>SQL Server 2000 Enterprise Edition</b> <i>Per processor licensing Discount Schedule: Open Program Level C Unit Price reflects a 17% discount from the retail unit price of \$19,999.</i>	\$16,541	8	\$132,328
C11-00821	<b>Windows 2000 Server</b> <i>Server license only - No CALs Discount Schedule: Open Program - No Level Unit Price reflects a 8% discount from the retail unit price of \$799.</i>	\$738	4	\$2,952
254-00170	<b>Visual C++ Standard</b> <i>No discounts applied</i>	\$109	1	\$109
PRO-PRORS-16U-01	<b>Database Server Support Package</b> <i>1 Year Term</i>	\$1,950	3	\$5,850

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](mailto:jamiere@microsoft.com).

Reference ID: PCchki0425025198

Please include this Reference ID in any correspondence regarding this price quote.