

**TPC Benchmark™ C**  
**Full Disclosure Report**  
**for**  
**IBM® @server® xSeries® 460**  
**using**  
**Microsoft® SQL Server 2005**  
**Enterprise x64 Edition**  
**and**  
**Microsoft® Windows® Server 2003**  
**Enterprise x64 Edition**

**TPC-C Version 5.4**

**Submitted for Review**  
**September 14, 2005**  
**Amended: November 17, 2005**



## **First Edition - September 2005**

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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® 460 configured as a client/server system. This report documents the full disclosure information required by the TPC Benchmark C Standard Specification, Revision 5.4, including the methodology used to achieve the reported results. All testing fully complied with this revision level.

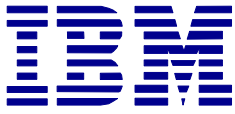
The software used on the xSeries 460 system includes Microsoft® Windows® Server 2003 Enterprise x64 Edition operating system and Microsoft SQL Server 2005 Enterprise x64 Edition.

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 460	Microsoft SQL Server 2005 Enterprise x64 Ed.  Microsoft Windows Server 2003 Enterprise x64 Edition	\$1,470,259 USD	241,300	\$6.09 USD	November 30, 2005

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



**IBM® eServer® xSeries® 460 c/s  
and  
Microsoft® SQL Server 2005**

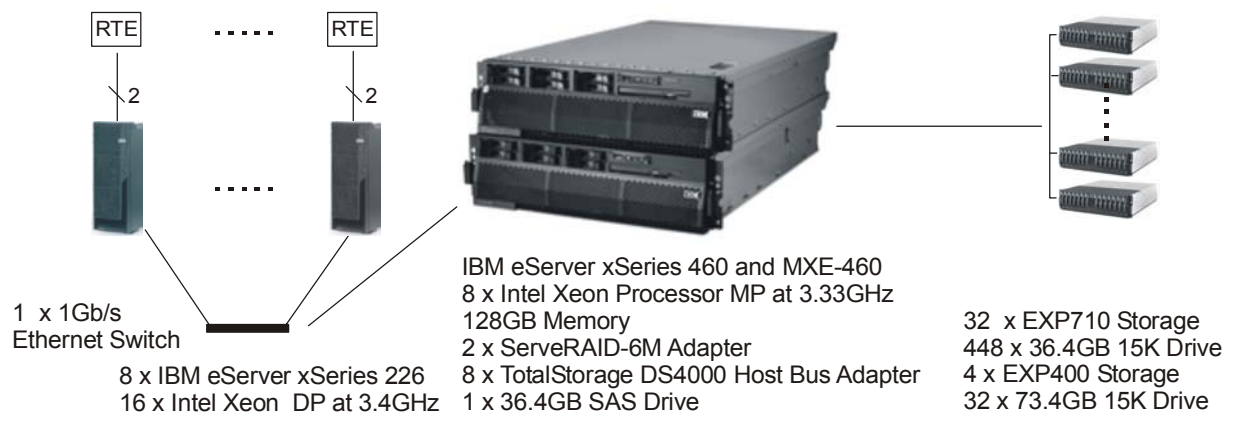
TPC-C Rev. 5.4

Report Date: Sept. 14, 2005  
Amended: Nov. 17, 2005

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
<b>\$1,470,259 USD</b>	<b>241,300 tpmC</b>	<b>\$6.09 USD / tpmC</b>	<b>Nov. 30, 2005</b>

Database Server Processors/Cores/Threads	Database Manager	Operating System	Other Software	Number of Users
<b>8/8/16 64-Bit Intel® Xeon™ Processor MP at 3.33GHz</b>	<b>Microsoft SQL Server 2005 Enterprise x64 Edition</b>	<b>Microsoft Windows® Server 2003 Enterprise x64 Edition</b>	<b>Microsoft Visual C++ 6.0 Microsoft COM+</b>	<b>194,760</b>

8 RTEs emulating 194,760 users



<b>System Component</b>	<b>Qty</b>	<b>Server:</b>	<b>Qty</b>	<b>Each of Eight Clients:</b>
<b>Processors/Cores/Threads</b>	<b>8/8/16</b>	<b>Intel Xeon Processor MP at 3.33GHz/8MB L3 Cache</b>	<b>2/2/4</b>	<b>Intel Xeon DP at 3.4GHz</b>
<b>Cache</b>		<b>4GB ECC RDIMM</b>		<b>2MB L2 Cache</b>
<b>Memory</b>	<b>32</b>	<b>4GB ECC RDIMM</b>	<b>4</b>	<b>512MB</b>
<b>Disk Controllers</b>	<b>2</b>	<b>ServeRAID-6M Adapter</b>	<b>2</b>	<b>256MB</b>
<b>Disk Drives</b>	<b>448</b>	<b>36.4GB 2Gbps FC (15K)</b>	<b>1</b>	<b>Ultra320 SCSI Interface</b>
	<b>32</b>	<b>73.4GB Ultra320 (15K)</b>	<b>1</b>	<b>36.4GB (15K)</b>
	<b>1</b>	<b>36.4GB SAS (10K)</b>		
<b>Total Storage</b>		<b>17535GB</b>		

IBM Corporation	IBM @server 460 c/s			TPC-C Revision 5.4			
	with Microsoft SQL Server 2005			Report Date: September 14, 2005			
Description	Part Number	Third Party Brand	Pricing	Unit Price	Quantity	Extended Price	3-Yr. Maint. Price
<b>Server Hardware</b>							
xSeries 460 with 2 x 3.33GHz/8MB L3 Cache Intel Xeon Processor MP	8872-3RU	IBM		1	24,999	24,999	
xSeries 3.33GHz/8MB L3 Cache Intel Xeon Processor MP	13N0713	IBM		1	5,699	5,699	
MXE-460 (0 Processors, 0 Memory, 2 Memory Cards)	8874-1RU	IBM		1	6,999	6,999	
Scalability Cable 2.3.M	13M7414	IBM		1	299	299	
8GB (2x4GB) PC2-3200 CL3 2RX4 ECC DDR2 SDRAM RDIMM	30R5145	IBM		1	17,879	17,879	
Active Memory 4-Slot Memory Expansion Card	13M7409	IBM		1	499	499	
IBM 36.4GB 10K 2.5 inch SAS Drive	26K5654	IBM		1	419	419	
ServeRAID-6M Ultra320 SCSI Adapter	32P0033	IBM		1	879	879	
E54 15" (13.8" Viewable) Color Monitor	633147N	IBM		1	139	139	
IBM Preferred Pro Full-Size Keyboard PS/2	25R2968	IBM		1	29	29	
Optical 3-Button ScrollPoing Mouse	90P0742	IBM		1	25	25	
ServicePac for 3-Year 24x7x4 Support (x460 and MXE-460)	96P2688	IBM		1	3,390		6,780
ServicePac for 3-Year 24x7x4 Support (Monitor)	30L9183	IBM		1	90		90
<b>Subtotal</b>						<b>357,220</b>	<b>6,870</b>
<b>Server Storage</b>							
IBM TotalStorage DS4000 Host Bus Adapter	24P0960	IBM		1	1,485	1,485	
IBM TotalStorage DS4500 Midrange Disk Subsystem	174290U	IBM		1	49,900	49,900	
IBM DS4000 Mini Hub	19K1269	IBM		1	899	899	
IBM Short Wave SFP Module	19K1271	IBM		1	499	499	
IBM 1m LC-LC Fibre Channel Cable	19K1247	IBM		1	79	79	
IBM 5m LC-LC Fibre Channel Cable	19K1248	IBM		1	129	129	
IBM TotalStorage DS4000 EXP710 Storage Exp. Unit	1740710	IBM		1	6,000	6,000	
2Gbps FC 36.4GB 15K Hot-Swap HDD	06P5772	IBM		1	1,115	1,115	
73.4GB 15K Ultra320 SCSI Hot-Swap HDD	90P1381	IBM		1	499	499	
IBM EXP400 Rack Storage Exp. Enclosure	17331RU	IBM		1	3,099	3,099	
IBM UPS 750TLV	21301TX	IBM		1	299	299	
IBM S2 42U Standard Rack	93074SX	IBM		1	1,489	1,489	
ServicePac for 3-Year 24x7x4 Support (EXP710)	41L2768	IBM		1	760		24,320
ServicePac for 3-Year 24x7x4 Support (DS4500)	96P2062	IBM		1	1,087		4,348
ServicePac for 3-Year 24x7x4 Support (EXP400)	41L2768	IBM		1	760		3,040
ServicePac for 3-Year 24x7x4 Support (Rack)	41L2760	IBM		1	300		1,500
<b>Subtotal</b>						<b>1,020,551</b>	<b>33,208</b>
<b>Server Software</b>							
Microsoft SQL Server 2005 Enterprise x64 Edition	810-03134	Microsoft		2	23,432	46,864	
Microsoft Windows Server 2003 Enterprise x64 Edition *	P72-00264	Microsoft		2	2,334	4,668	
Microsoft Problem Resolution Services		Microsoft		2	245		245
<b>Subtotal</b>						<b>189,790</b>	<b>245</b>
<b>Client Hardware</b>							
x226 with 3.4GHz/2MB Xeon DP, 512MB (2x256MB) Memory	8648-6AU	IBM		1	1,939	1,939	
3.4GHz/2MB Xeon DP Processor Upgrade	13N0674	IBM		1	1,049	1,049	
1GB (2x512MB) PC-3200 DDR2 ECC SDRAM RDIMM	73P3522	IBM		1	399	399	
36.4GB 15K Ultra320 SCSI Drive	90P1380	IBM		1	299	299	
PRO/1000 MT Dual-Port Server Adapter	73P2701	Intel		1	249	249	
E54 15" (13.8" Viewable) Color Monitor	633147N	IBM		1	139	139	
ServicePac for 3-Year 24x7x4 Support (x226)	96P2250	IBM		1	586		4,688
ServicePac for 3-Year 24x7x4 Support (Monitor)	30L9183	IBM		1	90		720
<b>Subtotal</b>						<b>39,768</b>	<b>5,408</b>
<b>Client Software</b>							
Microsoft Windows 2000 Server with COM+*	C11-00821	Microsoft		2	738	1,476	
Microsoft Visual C++ Professional 6.0	254-00170	Microsoft		2	109	218	
<b>Subtotal</b>						<b>6,013</b>	
<b>Network Components</b>							
NetGear 24-Port Ethernet Switch (2 spares)	GSM 7224			3	745	2,235	
Ethernet Cable 8 Ft. (2 spares)				3	4	12	
<b>Subtotal</b>						<b>2,283</b>	
Compsat Technology Discounts (See Quote to View Line Items)							
<b>Total</b>						<b>1,615,625</b>	<b>45,731</b>
<b>Discount</b>						<b>185,639</b>	<b>5,458</b>
Pricing: 1- IBM; 2 - Microsoft (*See Quote for Discounts); 3 - amazon.com				<b>Three-Year Cost of Ownership USD:</b>		\$1,470,259	
Audited by Bradley J. Askins, InfoSizing, Inc.				<b>tpmC:</b>		241,300	
				<b>\$ USD/tpmC:</b>		\$6.09	
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.							

<b>Numerical Quantities Summary</b>			
MQTh, Computed Maximum Qualified Throughput: <b>241,300 tpmC</b>			
<b>Response Times (in seconds)</b>	<b>90th Percentile</b>	<b>Average</b>	<b>Maximum</b>
New-Order	1.23	0.60	16.06
Payment	1.21	0.58	17.24
Delivery	0.11	0.10	2.22
Stock Level	1.49	0.83	14.89
Order Status	1.23	0.61	15.10
Delivery (Deferred)	0.16	0.13	4.09
Menu	0.11	0.10	2.38
Response Time Delay Added for Emulated Components: 0.1 Seconds			
<b>Transaction Mix (in percent of total transactions)</b>			<b>Percent</b>
New-Order			44.95
Payment			43.03
Delivery			4.01
Stock-Level			4.01
Order Status			4.00
<b>Keying/Think Times (in seconds)</b>	<b>Minimum</b>	<b>Average</b>	<b>Maximum</b>
New Order	18.02 / 0.00	18.03 / 12.07	18.07 / 120.53
Payment	3.02 / 0.00	3.03 / 12.06	3.06 / 120.53
Delivery	2.02 / 0.00	2.03 / 5.07	2.06 / 50.53
Stock Level	2.02 / 0.00	2.03 / 5.06	2.06 / 50.53
Order Status	2.02 / 0.00	2.03 / 10.06	2.06 / 100.53
<b>Test Duration</b>			
Ramp-up time			51 minutes 15 seconds
Measurement interval			120 minutes
Number of checkpoints			4
Checkpoint interval			29.5 minutes
Number of transactions (all types) completed in measurement interval			67,000,366

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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 5.4.

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 IBM Corporation.

### Application Code Disclosure and Definition Statements

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

Appendix A contains all source code implemented in this benchmark.

### Parameter Settings

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

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

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

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

### Configuration Diagrams

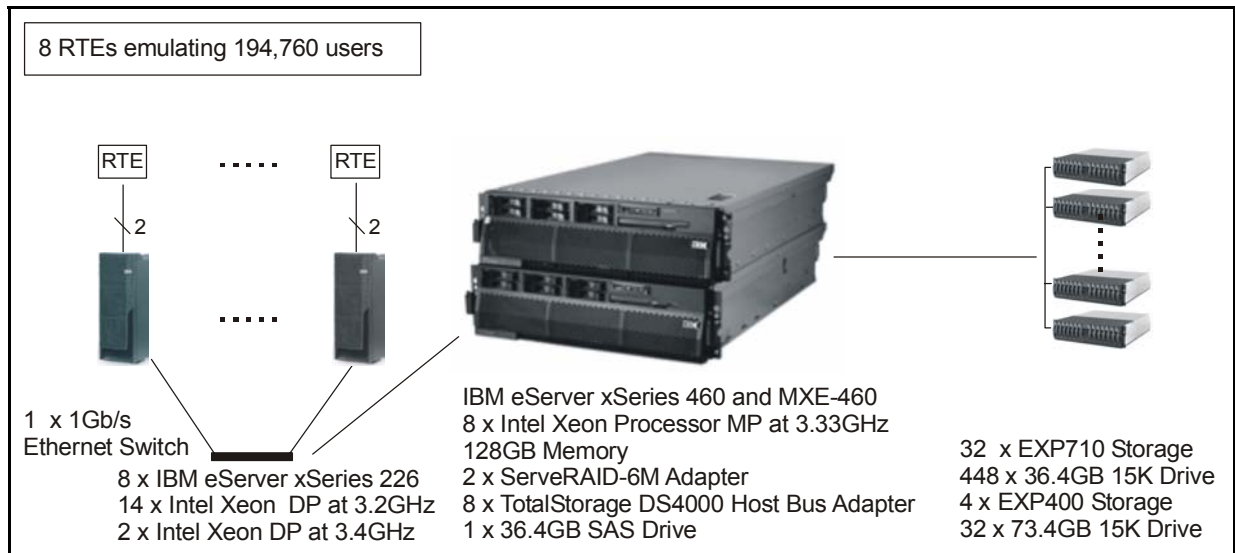
*Diagrams of both measured and priced configurations must be provided, accompanied by a description of the differences.*

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

The Remote Terminal Emulator (RTE) used for these TPC Benchmark C tests is an IBM proprietary RTE. Under Version 5.4, the components of the configuration being emulated by the RTE are the workstations and the Ethernet hubs. Appendix C contains a listing of the RTE scripts and inputs used in the benchmark testing.

The benchmarked configuration used eight IBM eServer xSeries 226 systems as the clients, which executed the terminal I/O and submitted transactions to COM+ servers, which are also running on the clients. Seven of these clients were configured with two 3.2GHz Intel Xeon processors, and one client was configured with two 3.4GHz processors. These COM+ servers forwarded the transaction requests to the server, and returned the results to the RTE. Microsoft SQL Server 2005 Enterprise Edition is the DBMS executing on the server

## Measured Configuration



The measured configuration consisted of one x226 client with two 3.4GHz Intel Xeon DP processors and seven x226 clients each with two 3.2GHz Intel Xeon DP processors. However, eight x226 clients each with two 3.4GHz processors were priced. Based on the specifications of these systems and on additional performance data collected on these systems and submitted to the auditor, the auditor determined that this upgrade does not have a material effect on the reported performance.

All other components, including the Fibre Channel disk subsystem, adapters, HBAs, and the system under test, were priced as measured. For the priced configuration, see the Executive Summary.

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## 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 2005 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 2005 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 xSeries 226 clients. The screen input/output was managed via HTML strings that comply with the HTML Version 2.0 specification. A listing of the code used to implement the intelligent terminals is provided in Appendix A. All data manipulation was handled by the xSeries 460 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	60.05
<b>Delivery</b>	
Delivery transactions skipped	0
<b>Transaction Mix</b>	
New-Order	44.95
Payment	43.03
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 Delivery transaction was submitted to an ISAPI queue that is separate from the COM+ queue that the other transactions used. This queue is serviced by a variable amount of threads that are separate from the worker threads inside the web server. Web server threads are able to complete the on-line part of the Delivery transaction and immediately return successful queuing responses to the drivers. The threads servicing the queue are responsible for completing the deferred part of the transaction asynchronously.

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 nine 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 DS4500 Disk Subsystem contains two RAID controller blades, which provide RAID functionality to the attached disks. Each RAID controller blade contains a Read/Write cache. All write caching was disabled on the controller. The attached disks contained a portion of each of the tables in the tpcc database. During steady state one disk drive was removed causing Microsoft SQL Server 2005 to report errors accessing that device.

The following steps were successfully performed to pass the loss of data durability test with database tables:

1. The contents of the database were backed up to several database dump devices during the initial database load.
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 3,000 users submitting transactions.
4. A 15K rpm Fibre Channel disk drive containing a portion of each of the tables in the tpcc database was pulled out causing Microsoft SQL Server 2005 to report errors accessing that device.
5. The run was aborted and Microsoft SQL Server 2005 was stopped.
6. A new 15K rpm disk drive was reinserted and was recovered.
7. The database was recovered and restored from the backup dump devices. Afterwards, the transaction log was rolled forward 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 19,476 users.
3. The test continued to run for 5 minutes after all users were connected to the server.

4. One disk from the log array was removed. Since the two log disks were RAID-1 mirrored, Microsoft SQL Server 2005 continued to process transactions without interruption.
5. The test continued to run for another 5 minutes.
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. Microsoft SQL Server 2005 was allowed to recover.
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.

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## 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 20,008 warehouses and the audited run used 19,476 warehouses. A total of 532 warehouses were deleted.

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

Table Name	Rows
Warehouse	20,008
District	200,080
Item	100,000
New Order	180,072,000
History	600,240,000
Orders	600,240,000
Customer	600,240,000
Order Line	6,002,383,465
Stock	2,000,800,000
Inactive Warehouses	532

### Distribution of Tables and Logs

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

The log was configured as two RAID-10 disk arrays with sixteen 73.4GB 15K rpm physical disks each attached via an internal ServeRAID-6M adapter. The two partitions from the ServeRAID-6M adapters were striped together via software striping included within the Windows 2003 SP1 Operating System.

For the database tables, there is a total of 448 disk drives. Each physical disk has a capacity of 36.4GB. A total of eight Fibre Channel storage adapters connect these 448 disks.

Each disk volume, as seen by the Windows operating system, is configured as a RAID-0 disk array with 14 physical disks. There is a total of 32 such disk volumes. Each disk volume is further partitioned into 3 partitions.

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

**Figure 4-2. Data Distribution for the Benchmarked Configuration**

Disk #	Drives	Partition	Size	Use
1	14 - 36.4GB EXP710 Enclosure	C:\mp\c1 C:\mp\m2 G:	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
2	14 - 36.4GB EXP710 Enclosure	C:\mp\c2 C:\mp\m2 H:	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
3	14 - 36.4GB EXP710 Enclosure	C:\mp\c3 C:\mp\m3 I:	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
4	14 - 36.4GB EXP710 Enclosure	C:\mp\c4 C:\mp\m4 J:	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
5	14 - 36.4GB EXP710 Enclosure	C:\mp\c5 C:\mp\m5 O:	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
6	14 - 36.4GB EXP710 Enclosure	C:\mp\c6 C:\mp\m6 P:	36.62GB 21.00GB 409.19GB (NTFS)	Customer and Stock Miscellaneous Backup files
7	14 - 36.4GB EXP710 Enclosure	C:\mp\c7 C:\mp\m7 C:\mp\disk11	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
8	14 - 36.4GB EXP710 Enclosure	C:\mp\c8 C:\mp\m8 C:\mp\disk12	36.62GB 21.00GB 409.19GB (NTFS)	Customer and Stock Miscellaneous Backup files
9	14 - 36.4GB EXP710 Enclosure	C:\mp\c9 C:\mp\m9 K:	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
10	14 - 36.4GB EXP710 Enclosure	C:\mp\c10 C:\mp\m10 L:	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
11	14 - 36.4GB EXP710 Enclosure	C:\mp\c11 C:\mp\m11 M:	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
12	14 - 36.4GB EXP710 Enclosure	C:\mp\c12 C:\mp\m12 N:	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
13	14 - 36.4GB EXP710 Enclosure	C:\mp\c13 C:\mp\m13 C:\mp\disk13	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
14	14 - 36.4GB EXP710 Enclosure	C:\mp\c14 C:\mp\m14 C:\mp\disk14	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
15	14 - 36.4GB EXP710 Enclosure	C:\mp\c15 C:\mp\m15 C:\mp\disk15	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
16	14 - 36.4GB EXP710 Enclosure	C:\mp\c16 C:\mp\m16 C:\mp\disk16	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
17	14 - 36.4GB EXP710 Enclosure	C:\mp\c17 C:\mp\m17 C:\mp\disk17	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files

18	14 - 36.4GB EXP710 Enclosure	C:\mp\c18 C:\mp\m18 C:\mp\disk18	36.62GB 21.00GB 409.19GB (NTFS)	Customer and Stock Miscellaneous Backup files
19	14 - 36.4GB EXP710 Enclosure	C:\mp\c19 C:\mp\m19 C:\mp\disk19	36.62GB 21.00GB 409.19GB (NTFS)	Customer and StockMiscellaneousBackup files
20	14 - 36.4GB EXP710 Enclosure	C:\mp\c20 C:\mp\m20 C:\mp\disk20	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
21	14 - 36.4GB EXP710 Enclosure	C:\mp\c21 C:\mp\m21 C:\mp\disk21	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
22	14 - 36.4GB EXP710 Enclosure	C:\mp\c22 C:\mp\m22 C:\mp\disk22	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
23	14 - 36.4GB EXP710 Enclosure	C:\mp\c23 C:\mp\m23 C:\mp\disk23	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
24	14 - 36.4GB EXP710 Enclosure	C:\mp\c24 C:\mp\m24 C:\mp\disk24	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
25	14 - 36.4GB EXP710 Enclosure	C:\mp\c25 C:\mp\m25 C:\mp\disk25	36.62GB 21.00GB 409.19GB (NTFS)	Customer and Stock Miscellaneous Backup files
26	14 - 36.4GB EXP710 Enclosure	C:\mp\c26 C:\mp\m26 C:\mp\disk26	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
27	14 - 36.4GB EXP710 Enclosure	C:\mp\c27 C:\mp\m27 C:\mp\disk27	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
28	14 - 36.4GB EXP710 Enclosure	C:\mp\c28 C:\mp\m28 C:\mp28	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
29	14 - 36.4GB EXP710 Enclosure	C:\mp\c29 C:\mp\m29 C:\mp\disk29	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
30	14 - 36.4GB EXP710 Enclosure	C:\mp\c30 C:\mp\m30 C:\mp\disk30	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
31	14 - 36.4GB EXP710 Enclosure	C:\mp\c31 C:\mp\m31	36.62GB 21.00GB 409.67GB (NTFS)	Customer and Stock Miscellaneous Backup files
32	14 - 36.4GB EXP710 Enclosure	C:\mp\c32 C:\mp\m32	36.62GB 21.00GB	Customer and Stock Miscellaneous
33	16 - 73.4GB EXP400 Enclosure	E: F:	537.11GB 9.77GB	Logfile MDF File
34	16 - 73.4GB EXP400 Enclosure	E: F:	537.11GB 9.77GB	Logfile MDF File

## Database Model Implemented

*A statement must be provided that describes:*

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

Microsoft SQL Server 2005 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.*

Neither horizontal nor vertical partitioning was used.

## 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: 241,300 tpmC

Price per tpmC: \$6.09 USD per tpmC

### Response Times

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

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

**Table 5-1. Response Times in Seconds**

Transaction Type	Average	Maximum	90 %-tile
New-Order	0.60	16.06	1.23
Payment	0.58	17.24	1.21
Delivery	0.10	2.22	0.11
Stock Level	0.83	14.89	1.49
Order Status	0.61	15.10	1.23
Delivery (Deferred)	0.13	4.09	0.16
Menu	0.10	2.38	0.11

### 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**

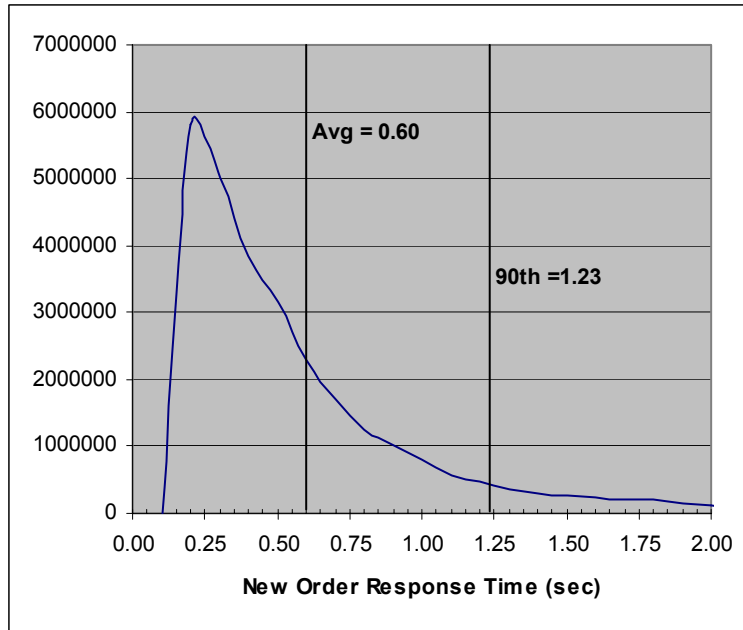
Transaction Type	Minimum	Average	Maximum
New-Order	18.02 / 0.00	18.03 / 12.07	18.07 / 120.53
Payment	3.02 / 0.00	3.03 / 12.06	3.06 / 120.53
Delivery	2.02 / 0.00	2.03 / 5.07	2.06 / 50.53
Stock Level	2.02 / 0.00	2.03 / 5.06	2.06 / 50.53
Order Status	2.02 / 0.00	2.03 / 10.06	2.06 / 100.53



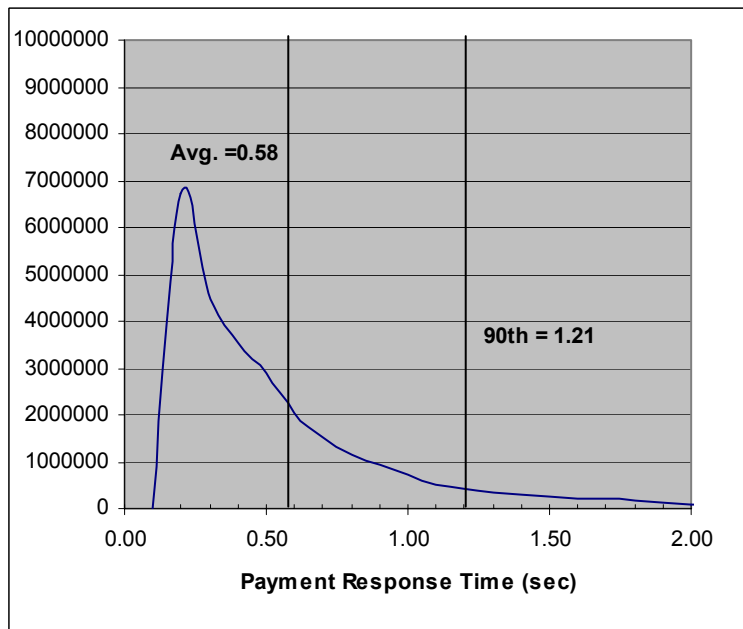
## Response Time Frequency Distribution Curves

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**



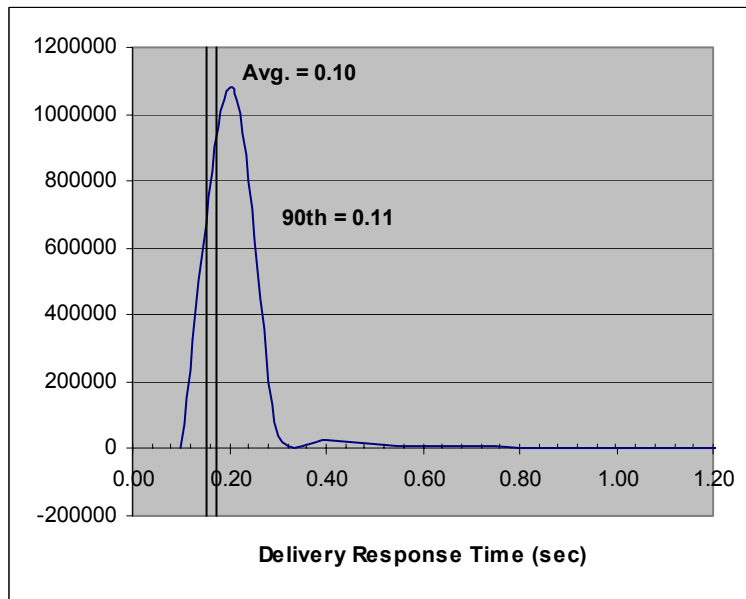
**Figure 5-2. Payment Transaction - Response Time Frequency Distribution**



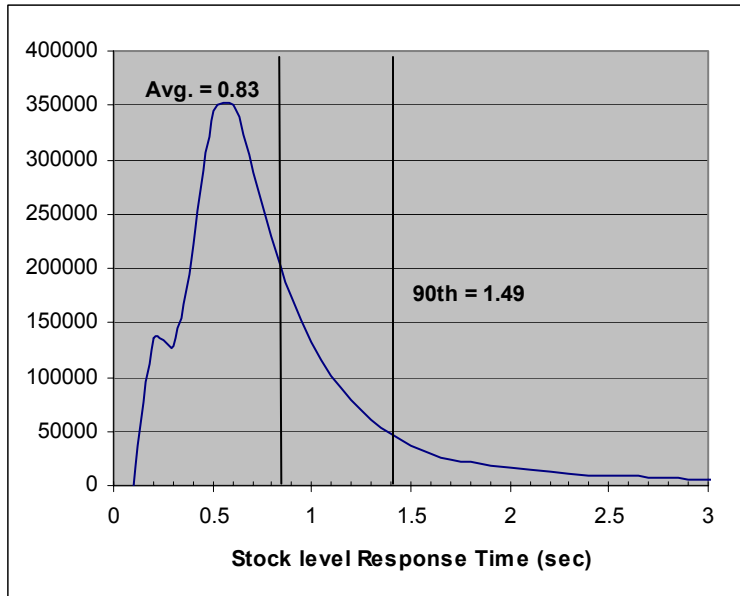
**Figure 5-3. Order-Status Transaction - Response Time Frequency Distribution**



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



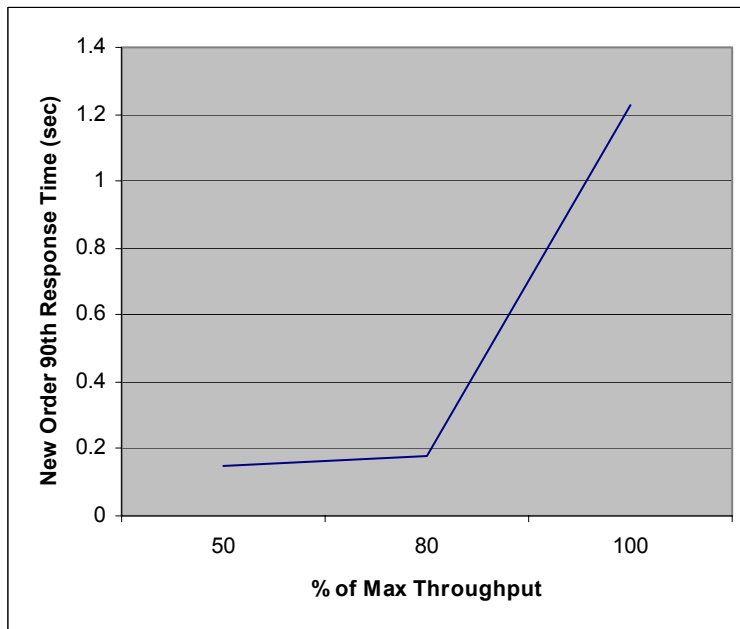
**Figure 5-5. Stock-Level Transaction - Response Time Frequency Distribution**



### Performance Curve for Response Time vs. Throughput

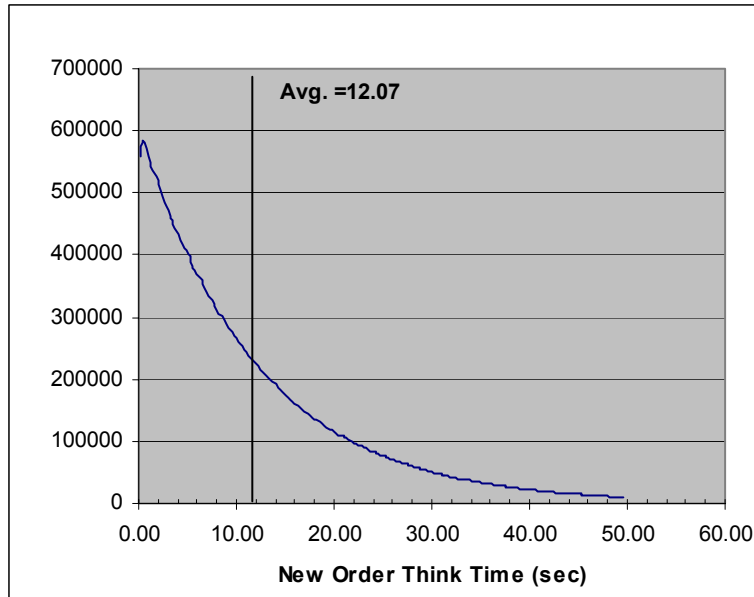
The performance curve for response time vs. throughput (see Clause 5.6.2) must be reported for the New-Order transaction.

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



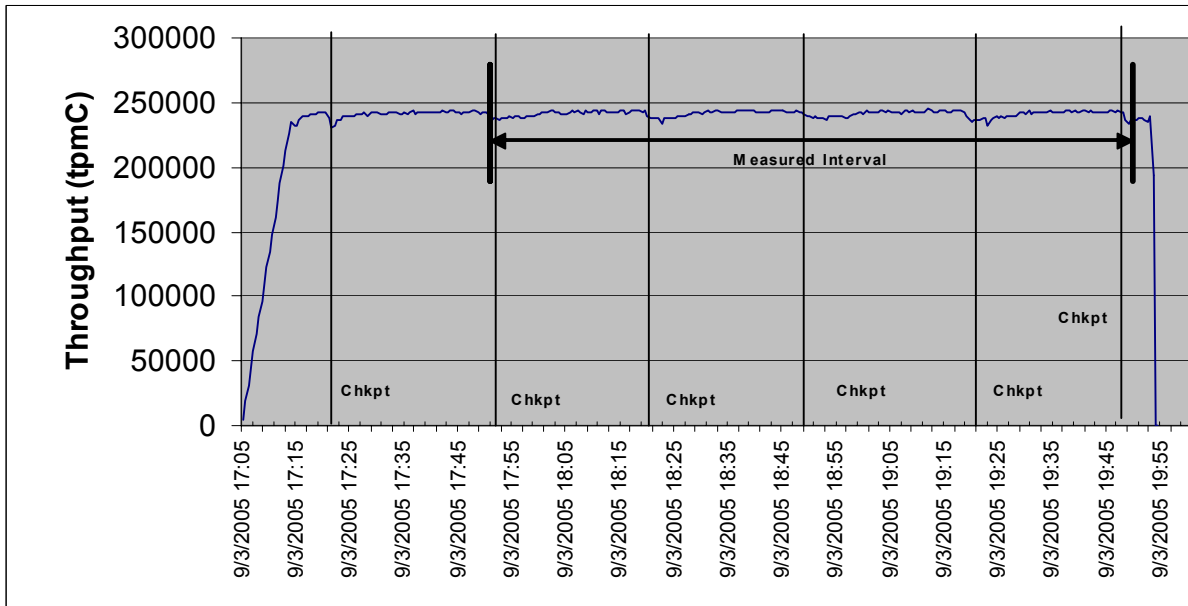
## New Order Think Time Distribution

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 Gigabit Ethernet network using Microsoft SQL Server ODBC library and RPC calls.

### Measurement Interval

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

The measurement interval was 120 minutes.

### Transaction Mix

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

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

### Percentage of Total Mix

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

See Table 5-3.

**Table 5-3. Transaction Statistics and Transaction Mix**

<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	60.05
<b>Delivery</b>	
Delivery transactions skipped	0
<b>Transaction Mix</b>	
New-Order	44.95
Payment	43.03
Delivery	4.01
Stock Level	4.01
Order-Status	4.00

## 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. 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. The first measurement interval checkpoint started 62 seconds after the start of the measurement interval. The checkpoint interval was 29.5 minutes and each checkpoint lasts for 1700 seconds. The four longest checkpoints in the measured interval are shown in Table 5-4.

**Table 5-4. Transaction Statistics and Transaction Mix**

Checkpoint	Start Time	Duration
1	17:51:02	1700 seconds
2	18:20:30	1700 seconds
3	18:49:57	1700 seconds
4	19:19:26	1700 seconds

---

## Clause 6: SUT, Driver and Communication Definition Related Items

### Description of RTE

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

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

### Emulated Components

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

No components were emulated.

### Benchmarked and Targeted System Configuration Diagrams

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

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

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

### Network Configuration

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

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

### Network Bandwidth

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

The Ethernet used in the LAN connecting the clients and driver RTEs complies with the IEEE.802.3 standard. The Ethernet LAN had a bandwidth of 1Gbps. The LAN that connected the clients to the server complies with the IEEE.802.3 standard. The Ethernet LAN had a bandwidth of 1Gbps.

### Operator Intervention

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

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



---

## Clause 7: Pricing Related Items

### Hardware and Software Components

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

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

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

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

### Availability Date

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

The x460 and all other hardware is currently available. The 4GB memory DIMM will be supported in and available for the x460 on November 30, 2005. Microsoft SQL Server 2005 will be generally available November 8, 2005. The total solution as priced will be generally available November 30, 2005.

### Measured tpmC

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

- Maximum Qualified Throughput: 241,300 tpmC
- Price per tpmC: \$6.09 USD per tpmC
- Three-year cost of ownership: \$1,470,259 USD

### Country-Specific Pricing

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

The configuration is priced for the United States of America.

### Usage Pricing

*For any usage pricing, the sponsor must disclose:*

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

The component pricing based on usage is shown below:

- 1 Microsoft Windows Server 2003 Enterprise x64 Edition
- 8 Microsoft Windows 2000 Server
- 8 Microsoft SQL Server 2005 Enterprise Edition (based on per-processor price)

- 3-year support for hardware components (except for components for which a minimum of 2 or 10 percent spares are provided)

## **System Pricing**

*System pricing should include subtotals for the following components: Server Hardware, Server Software, Client Hardware, Client Software, and Network Components used for terminal connection (see Clause 7.2.2.3).*

*System pricing must include line item indication where non-sponsoring companies' brands are used. System pricing must also include line item indication of third-party pricing.*

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

---

## Clause 9: Audit Related Items

### Auditor

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

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

### Availability of the Full Disclosure Report

*The Full Disclosure Report must be readily available to the public at a reasonable charge, similar to the charges for similar documents by the test sponsor. The report must be made available when results are made public. In order to use the phrase "TPC Benchmark<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: Celia Schreiber  
 Manager, xSeries Performance  
 IBM Systems and Technology Group  
 3039 Cornwallis Road  
 Research Triangle Park, NC 27709

September 12, 2005

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

Platform: **IBM @server xSeries 460 c/s**  
 Operating system: **Microsoft Windows Server 2003 Enterprise x64 Edition**  
 Database Manager: **Microsoft SQL Server 2005 Enterprise Edition**  
 Transaction Manager: **Microsoft COM+**

The results were:

CPU's Speed	Memory	Disks	NewOrder 90% Response Time	tpmC
<b>Server: IBM @server xSeries 460</b>				
8 x Xeon MP (3.33GHz)	128 GB Main (8MB L3 Cache per processor)	32 x 73.4 GB (ext.) 448 x 36.4 GB (ext.) 1 x 36.4 GB (int.)	1.23 Seconds	<b>241,300</b>
<b>Clients: Eight (8) IBM @server xSeries 226 (Specification for each)</b>				
2 x Xeon DP (3.4 GHz)	2.5 GB Main (2 MB L2 Cache per processor)	1 x 36.4 GB	n/a	n/a

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

- The database records were the proper size

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

Additional Audit Notes:

The measured configuration included seven x226 client systems each with two 3.2 GHz Intel Xeon DP processors that were substituted by seven x226 client systems with two 3.4 GHz Intel Xeon DP processors in the priced system. Based on the specifications of these systems and on additional performance data collected on these systems, it is my opinion that this upgrade does not have a material effect on the reported performance.

Respectfully Yours,



François Raab, President



Bradley J. Askins, Auditor

# Appendix A: Client Server 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 odbc32.lib
odbccp32.lib /nologo /subsystem:windows /dll /machine:I386
# ADD LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib odbccp32.lib
/nologo /subsystem:windows /dll /machine:I386 /out:".bin\tpcc_odbc.dll"
```

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

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

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

```
# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "db_odbc_"
# PROP BASE Intermediate_Dir "db_odbc_"
# PROP BASE Ignore_Export_Lib 0
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MDd /W3 /Gm /GX /Zi /Od /D "WIN32" /D
"_DEBUG" /D "_WINDOWS" /YX /FD /Gh /c
# ADD CPP /nologo /MD /W3 /Gm /GX /Zi /O2 /D "WIN32" /D "NDEBUG"
/D "_WINDOWS" /D "ICECAP" /YX /FD /Gh /c
# ADD BASE MTL /nologo /D "_DEBUG" /mktyplib203 /o /win32 "NUL"
# ADD MTL /nologo /D "_DEBUG" /mktyplib203 /o /win32 "NUL"
# ADD BASE RSC /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);
            break;
        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.%2.2d.%3.3d",
versionExeMS, versionExeMM, versionExeLS);
        SetDlgItemText(hwnd, IDC_VERSION,
szTmp);

        SetDlgItemText(hwnd, IDC_PATH,
szDllPath);
}
}

```



```

        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
# 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
# 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 /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;rt;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
//

#if !defined(AFX_RESOURCE_DLL) || defined(AFX_TARG_ENU)
#ifndef _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_RTREADING
EDITTEXT ED_IIS_THREAD_TIMEOUT,164,291,34,12,ES_RIGHT |
ES_NUMBER,
  WS_EX_RTREADING
EDITTEXT ED_IIS_LISTEN_BACKLOG,164,305,34,12,ES_RIGHT |
ES_NUMBER,
  WS_EX_RTREADING
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,7,77,12,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"

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

VS_VERSION_INFO VERSIONINFO
FILEVERSION 0,4,20,0
PRODUCTVERSION 0,4,20,0
FILEFLAGSMASK 0x3fL
#ifdef _DEBUG
FILEFLAGS 0x1L
#else
FILEFLAGS 0x0L
#endif
FILEOS 0x40004L
FILETYPE 0x1L
FILESUBTYPE 0x0L
BEGIN
BLOCK "StringFileInfo"
BEGIN
BLOCK "040904b0"
BEGIN
VALUE "Comments", "TPC-C Web Client 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
class CTPCC :
    public CTPCC_Common,
    public CComCoClass<CTPCC, &CLSID_TPCC>
{
public:
    DECLARE_REGISTRY_RESOURCEID(IDR_TPCC)

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

};

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

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

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

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

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

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

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

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

// ITPCC

```

```

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

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

};

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

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

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

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

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

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

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

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

// ITPCC

```

```

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

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

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

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

```

## Null-txns.sql

```

-- File:  NULL-TXNS.SQL

--      Microsoft TPC-C Benchmark Kit Ver. 4.41

--      Copyright Microsoft, 2001

--

-- Purpose:  This script will create stored procs which accept the same
parameters and

--      return correctly formed results sets to match the standard TPC-C stored
--      procs.  Of course, the advantage is that these stored procs place almost
--      no load on SQL Server and do not require a database.

--

--      The purpose of these stored procs is to size and test the web
client without

--      the need of a fully scaled database.

--

```

```

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

go

create proc tpcc_delivery      @w_id      int,
                              @o_carrier_id  smallint
as

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

declare @delaytime varchar(30)

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

waitfor delay @delaytime

```

```
select 3001, 3001, 3001, 3001, 3001, 3001, 3001, 3001, 3001, 3001
```

```
GO
```

```
create proc tpcc_neworder
```

```
        @w_id      int,  
        @d_id      tinyint,  
        @c_id      int,  
        @o_ol_cnt  tinyint,  
        @o_all_local tinyint,  
        @i_id1 int = 0,  
        @i_id2 int = 0,  
        @i_id3 int = 0,  
        @i_id4 int = 0,  
        @i_id5 int = 0,  
        @i_id6 int = 0,  
        @i_id7 int = 0,  
        @i_id8 int = 0,  
        @i_id9 int = 0,  
        @i_id10 int = 0,  
        @i_id11 int = 0,  
        @i_id12 int = 0,  
        @i_id13 int = 0,  
        @i_id14 int = 0,  
        @s_w_id1 int = 0, @ol_qty1 smallint = 0,  
        @s_w_id2 int = 0, @ol_qty2 smallint = 0,  
        @s_w_id3 int = 0, @ol_qty3 smallint = 0,  
        @s_w_id4 int = 0, @ol_qty4 smallint = 0,  
        @s_w_id5 int = 0, @ol_qty5 smallint = 0,  
        @s_w_id6 int = 0, @ol_qty6 smallint = 0,  
        @s_w_id7 int = 0, @ol_qty7 smallint = 0,  
        @s_w_id8 int = 0, @ol_qty8 smallint = 0,  
        @s_w_id9 int = 0, @ol_qty9 smallint = 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
```

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

```
as
```

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

```
declare @delaytime varchar(30)
```

```
begin
```

```
-- uniform random delay of 0 - 0.6 second; avg = 0.3
```

```
select @delaytime = '00:00:0' + cast(cast((rand()*0.60) as decimal(4,3)) as char(5))
```

```
waitfor delay @delaytime
```

```
-- process orderlines
```

```
select @commit_flag = 1, @li_no = 0
```

```
while (@li_no < @o_ol_cnt)
```

```
begin
```

```
select @li_id = case @li_no
```

```
when 1 then @i_id1
```

```

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

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

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

end

-- return order data to client

```

```

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

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

end

GO

create proc tpcc_orderstatus
    @w_id          int,
                @d_id          tinyint,
                @c_id          int,
                @c_last        char(16) = "

as

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

```



```

@o_carrier_id      smallint,
@ol_cnt            smallint

declare @delaytime varchar(30)

-- uniform random delay of 0 - 0.2 second; avg = 0.1

select @delaytime = '00:00:0' + cast(cast((rand()*0.20) as decimal(4,3)) as
char(5))

waitfor delay @delaytime

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

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

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

select @c_id,
@c_last,

```

```

@c_first,
@c_middle,
@o_entry_d,
@o_carrier_id,
@c_balance,
@o_id

GO

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

as

declare @w_street_1 char(20),
@w_street_2 char(20),
@w_city char(20),
@w_state char(2),
@w_zip char(9),
@w_name char(10),
@d_street_1 char(20),
@d_street_2 char(20),
@d_city char(20),
@d_state char(2),
@d_zip char(9),
@d_name char(10),
@c_first char(16),
@c_middle char(2),
@c_street_1 char(20),

```

```

@c_street_2 char(20),
@c_city char(20),
@c_state char(2),
@c_zip char(9),
@c_phone char(16),
@c_since datetime,
@c_credit char(2),
@c_credit_lim numeric(12,2),
@c_balance numeric(12,2),
@c_discount numeric(4,4),
@data char(500),
@c_data char(500),
@datetime datetime,
@w_ytd numeric(12,2),
@d_ytd numeric(12,2),
@cnt smallint,
@val smallint,
@screen_data char(200),
    @d_id_local tinyint,
    @w_id_local int,
    @c_id_local int

declare @delaytime varchar(30)

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

waitfor delay @delaytime

select @screen_data = "

-- get customer info and update balances

select

```

```

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

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

select

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

select

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

```

```
-- return data to client
```

```
select @c_id,
```

```
    @c_last,
```

```
    @datetime,
```

```
    @w_street_1,
```

```
    @w_street_2,
```

```
    @w_city,
```

```
    @w_state,
```

```
    @w_zip,
```

```
    @d_street_1,
```

```
    @d_street_2,
```

```
    @d_city,
```

```
    @d_state,
```

```
    @d_zip,
```

```
    @c_first,
```

```
    @c_middle,
```

```
    @c_street_1,
```

```
    @c_street_2,
```

```
    @c_city,
```

```
    @c_state,
```

```
    @c_zip,
```

```
    @c_phone,
```

```
    @c_since,
```

```
    @c_credit,
```

```
    @c_credit_lim,
```

```
    @c_discount,
```

```
    @c_balance,
```

```
    @screen_data
```

```
GO
```

```
create proc tpcc_stocklevel    @w_id            int,  
                               @d_id            tinyint,  
                               @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
 * Microsoft TPC-C Kit Ver.
4.20.000 Copyright Microsoft, 1999
 * All Rights Reserved
 * not yet audited
 * PURPOSE: Implementation for TPC-C Tuxedo class.
 * Contact: Charles Levine (clevine@microsoft.com)
 * Change history:
 * 4.20.000 - first version
 */

/* FUNCTION: ReadTPCCRegistrySettings
 *
 * PURPOSE: This function reads the NT registry for startup
parameters. There parameters are
 * under the TPCC key.
 *
 * RETURNS FALSE = no errors
 * TRUE = error reading registry
 */
BOOL ReadTPCCRegistrySettings( TPCCREGISTRYDATA *pReg )
{
```

```
HKEY hKey;
DWORD size;
DWORD type;
DWORD dwTmp;
char szTmp[256];

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

// determine database protocol to use; may be either ODBC or
DBLIB
pReg->eDB_Protocol = Unspecified;
size = sizeof(szTmp);
if ( RegQueryValueEx(hKey, "DB_Protocol", 0, &type, (BYTE
*)&szTmp, &size) == ERROR_SUCCESS )
{
if ( !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 "*"
wScript.Echo "*" Microsoft TPC-C Benchmark Kit Ver. 4.41
wScript.Echo "*"
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..."

```









```

                Select Case TempResponse
                Case
"normal","Normal","NORMAL"
TempResponse = "0"
                Case
"scale_down","Scale_Down","Scale_down","SCALE_DOWN"
TempResponse = "1"
                Case Else
rc =
If rc = 2
Then
wScript.Echo ""
wScript.Echo "TPC-C Setup cancelled by user."
wScript.Quit
                End If
                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) = "idxitmc1.log"
LogFileArray(7) = "idxwarc1.log"
LogFileArray(8) = "idxcuscl.log"
LogFileArray(9) = "idxnodcl.log"
LogFileArray(10) = "idxdiscl.log"
LogFileArray(11) = "idxstckcl.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

passed correctly

```

'-----
'--- assume that the server name and sa password was
'-----
'-----
'--- 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

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

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\MS
        SQLServer\Client\SharedMemoryOn")
        If SharedMemoryRegKey = 1 Then
            WshShell.RegWrite
            "HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Client\S
            haredMemoryOn", 0, "REG_DWORD"
        End If
        wScript.Echo "Beginning data load and index creation..."
        CMD_String = SetupDirectory & "\loader\bin\tpccldr.exe"
        CMD_String = CMD_String & " -S" & ServerName
        CMD_String = CMD_String & " -Usa"
        CMD_String = CMD_String & " -P" & saPassword
        CMD_String = CMD_String & " -W" & NumberWarehouses
        CMD_String = CMD_String & " -f" & LogDirectory &
        "bulkload.log"
        CMD_String = CMD_String & " -L" & LogDirectory
        CMD_String = CMD_String & " -d" & ScriptDirectory &
        NumberWarehouses & ".war\ddl"
        CMD_String = CMD_String & " -c" & DatabaseType
        oExec = WshShell.Run(CMD_String, 2, true)
        '-----
        '--- now that the loader is finished, put the
        '--- SharedMemoryOn registry key back to its original
        '--- value.
        '-----
        If SharedMemoryRegKey = 1 Then
            WshShell.RegWrite
            "HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Client\S
            haredMemoryOn", 1, "REG_DWORD"
        End If
        wScript.Echo "Setting database options after load..."
        Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
            ServerName & " -e -i" & ScriptDirectory & "utility\dbopt2.sql -o" &
            LogDirectory & "\dbopt2.log")
        Do While oExec.Status = 0
            wScript.Sleep 100
        Loop
        rc = CheckSQLOutput(LogDirectory & "\dbopt2.log")
        If rc <> 0 Then
            wScript.Quit
        End If
        wScript.Echo "Data load and index creation complete."

```

```

        '-----
        '--- now parse the index creation logs
        '--- to see if there were any errors
        '--- there.
        '-----
        For i = 5 to 15
            rc = CheckSQLOutput(LogDirectory & LogFileArray(i))
            If rc <> 0 Then
                wScript.Quit
            End If
        Next
        wScript.Echo "Calculating initial database space usage...."
        Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
            ServerName & " -e -i" & ACIDDirectory & "space\scripts\spused.sql -o" &
            ACIDDirectory & "space\spused.ver")
        Do While oExec.Status = 0
            wScript.Sleep 100
        Loop
        Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
            ServerName & " -e -i" & ACIDDirectory & "space\scripts\splog.sql -o" &
            ACIDDirectory & "space\splog.ver")
        Do While oExec.Status = 0
            wScript.Sleep 100
        Loop
        Set oExec = WshShell.Exec("isql -Usa -P" & saPassword & " -S" &
            ServerName & " -e -i" & ACIDDirectory & "space\scripts\spfiles.sql -o" &
            ACIDDirectory & "space\spfiles.ver")
        Do While oExec.Status = 0
            wScript.Sleep 100
        Loop
        '-----
        '--- now that the loader is finished
        '--- check the .err files and if they
        '--- are of zero length, delete them.
        '-----
        Set fsErr = CreateObject("Scripting.FileSystemObject")
        Set fErr = fsErr.GetFolder(LogDirectory)
        Set fcErr = fErr.Files
        For Each 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\verifytpcload.sql -o" &
LogDirectory & "verifyload.log")
    Do While oExec.Status = 0
        wScript.Sleep 100
    Loop
    rc = CheckSQLOutput(LogDirectory & "verifyload.log")
    If rc <> 0 Then
        wScript.Quit
    End If
    wScript.Echo "Check logs\verifyload.log to verify database load."
End If
'-----
'--- display banner message
'-----
wScript.Echo
"*****"
wScript.Echo "*"
wScript.Echo "*" Microsoft TPC-C Benchmark Kit Ver. 4.41 - Setup Complete
"*"
wScript.Echo "*"
wScript.Echo
"*****"

```

## spinlock.h

```

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

#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 odbcc32.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 odbc32.lib odbc32.lib
/nologo /subsystem:windows /dll /debug /machine:I386
/out:".bin\tpcc_com.dll" /pdbtype:sept

```

```
!ENDIF
```

```
# Begin Target
```

```

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

```

```

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

```

```

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

```

## tpcc.cpp

```

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

```

```

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

```

```
#include <sqltypes.h>
```

```

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

```

```

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

```

```

#include "..\..\common\src\txn_base.h"
#include "..\..\common\src\ReadRegistry.h"

```

```

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

```

```
// Database layer includes
```

```

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

```

```
// Txn monitor layer includes
```

```

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

```

```

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

```

```
#define LEN_ERR_STRING 256
```

```

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

```

```

char
szMyComputerName[MAX_COMPUTERNAME_LENGTH+1];

```

```
//Terminal client id structure
```

```
TERM Term = { 0, 0, 0, NULL };
```

```
// The WEBCLIENT_VERSION string specifies the version level of this web client interface.
```

```

// The RTE must be synchronized with the interface level on login, otherwise
the login
// will fail. This is a sanity check to catch problems resulting from mismatched
versions
// of the RTE and web client.

```

```
#define WEBCLIENT_VERSION "410"
```

```
static CRITICAL_SECTION TermCriticalSection;
```

```

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

```

```

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

```

```
// For deferred Delivery txns:
```

```

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

```

```

HANDLE hWorkerSemaphore =
INVALID_HANDLE_VALUE;

```

<pre> HANDLE = INVALID_HANDLE_VALUE; HANDLE = 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] = "\0";     char szLogFile[128];     char szDllName[128];  // debugging... // DebugBreak();      try     {         switch( ul_reason_for_call )         {             case DLL_PROCESS_ATTACH:                 {                     DWORD dwSize = MAX_COMPUTERNAME_LENGTH+1;                     GetComputerName(szMyComputerName, &amp;dwSize);                     szMyComputerName[dwSize] = 0; </pre>	<pre> } DisableThreadLibraryCalls((HMODULE)hModule); InitializeCriticalSection(&amp;TermCriticalSection);  if ( ReadTPCCRegistrySettings( &amp;Reg ) )     throw new CWEBCLNT_ERR( ERR_MISSING_REGISTRY_ENTRIES );  dwDelBuffSize = min( Reg.dwMaxPendingDeliveries, 10000 ); // min with 10000 as a sanity constraint dwNumDeliveryThreads = min( Reg.dwNumberOfDeliveryThreads, 100 ); // min with 100 as a sanity constraint TermInit();  // load DLL for txn monitor if (Reg.eTxnMon == TUXEDO) {     strcpy( szDllName, Reg.szPath );     strcat( szDllName, "tpcc_tuxedo.dll");     hLibInstanceTm = LoadLibrary( szDllName );     if (hLibInstanceTm == NULL)         throw new CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );  // get function pointer to wrapper for class constructor pCTPCC_TUXEDO_new = (TYPE_CTPCC_TUXEDO*) GetProcAddress(hLibInstanceTm,"CTPCC_TUXEDO_new"); if (pCTPCC_TUXEDO_new == NULL)     throw new CWEBCLNT_ERR( ERR_GETPROCADDR_FAILED, szDllName, GetLastError() ); } else if (Reg.eTxnMon == ENCINA) {     strcpy( szDllName, Reg.szPath );     strcat( szDllName, "tpcc_encina.dll");     hLibInstanceTm = LoadLibrary( szDllName );     if (hLibInstanceTm == NULL)         throw new CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() ); // get function pointer to wrapper for class constructor pCTPCC_ENCINA_new = (TYPE_CTPCC_ENCINA*) GetProcAddress(hLibInstanceTm,"CTPCC_ENCINA_new"); pCTPCC_ENCINA_post_init = (TYPE_CTPCC_ENCINA*) GetProcAddress(hLibInstanceTm,"CTPCC_ENCINA_post_init"); if (pCTPCC_ENCINA_new == NULL) </pre>
---	--

```

throw new
CWEBCLNNT_ERR( ERR_GETPROCADDR_FAILED, szDllName,
GetLastError() );
}
else if (Reg.eTxnMon == COM)
{
    strcpy( szDllName,
    Reg.szPath );
    strcat( szDllName,
    "tpcc_com.dll");
    hLibInstanceTm =
    LoadLibrary( szDllName );
    if (hLibInstanceTm ==
    NULL)
        throw new
        CWEBCLNNT_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
        CWEBCLNNT_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 CWEBCLNNT_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 CWEBCLNNT_ERR( ERR_GETPROCADDR_FAILED, szDllName,
                    GetLastError() );
                // 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++)
                {
                    strcpy(
                    szDllName, Reg.szPath );
                    strcat(
                    szDllName, "tpcc_odbc.dll");
                    hLibInstanceDb = LoadLibrary( szDllName );
                    if
                    (hLibInstanceDb == NULL)
                        throw new CWEBCLNNT_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 CWEBCLNNT_ERR( ERR_GETPROCADDR_FAILED, szDllName,
                        GetLastError() );
                    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++)
                    {

```



```

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

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

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

#ifdef ICECAP
    StartCAP();
#endif

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

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

                throw new CWEBCLNT_ERR(
ERR_INVALID_TERMID );
            }

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

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

```

```

}

switch(iCmd)
{
case 0:
    WelcomeForm(pECB, szBuffer);
    break;

case 1:
    switch( FormId )
    {
        case WELCOME_FORM:
        case MAIN_MENU_FORM:
            break;
        case NEW_ORDER_FORM:
            ProcessNewOrderForm(pECB, TermId, szBuffer);
            break;
        case PAYMENT_FORM:
            ProcessPaymentForm(pECB, TermId, szBuffer);
            break;
        case DELIVERY_FORM:
            ProcessDeliveryForm(pECB, TermId, szBuffer);
            break;
        case ORDER_STATUS_FORM:
            ProcessOrderStatusForm(pECB, TermId, szBuffer);
            break;
        case STOCK_LEVEL_FORM:
            ProcessStockLevelForm(pECB, TermId, szBuffer);
            break;
    }
    break;

case 2:
    // new-order selected from menu; display
new-order input form
    MakeNewOrderForm(TermId, NULL,
INPUT_FORM, szBuffer);
    break;

case 3:
    // payment selected from menu; display
payment input form
    MakePaymentForm(TermId, NULL,
INPUT_FORM, szBuffer);
    break;

case 4:
    // delivery selected from menu; display
delivery input form
    MakeDeliveryForm(TermId, NULL,
INPUT_FORM, szBuffer);
    break;

case 5:
    // order-status selected from menu; display
order-status input form
    MakeOrderStatusForm(TermId, NULL,
INPUT_FORM, szBuffer);
    break;

case 6:
    // stock-level selected from menu; display
stock-level input form
    MakeStockLevelForm(TermId, NULL,
INPUT_FORM, szBuffer);
    break;

case 7:
    // ExitCmd

```

```

        TermDelete(TermId);
        WelcomeForm(pECB, szBuffer);
        break;
    case 8:
        SubmitCmd(pECB, szBuffer);
        break;
    case 9:
        // menu
        MakeMainMenuForm(TermId,
Term.pClientData[TermId].iSyncId, szBuffer);
        break;
    case 10:
        // CMD=Clear
        // resets all connections; should only be used
when no other connections are active
        TermDeleteAll();
        TermInit();
        WelcomeForm(pECB, szBuffer);
        break;
    case 11:
        // CMD=Stats
        StatsCmd(pECB, szBuffer);
        break;
    }
}
catch (CBaseErr *e)
{
    ErrorForm( pECB, e->ErrorType(), e->ErrorNum(),
TermId, iSyncId, e->ErrorText(), szBuffer );
    delete e;
}
catch (...)
{
    ErrorForm( pECB, ERR_TYPE_WEBDLL, 0, TermId,
iSyncId, "Error: Unhandled exception in Web Client.", szBuffer );
}

#ifdef ICECAP
    StopCAP();
#endif

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

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

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

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

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

```

```

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

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

        (VOID) DeregisterEventSource(hEventSource);
    }
}

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

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

    DELIVERY_TRANSACTION delivery;
    PDELIVERY_DATA
pDeliveryData;
    TXN_RECORD_TPCC_DELIV_DEF txnDeliRec;

    DWORD index;
    HANDLE handles[2];

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

    assert(txnDeliRec != NULL);

    try
    {
        if (Reg.eDB_Protocol == ODBC)
            pTxn = pCTPCC_ODBC_new(
Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, szMyComputerName,
Reg.szDbName );
        else if (Reg.eDB_Protocol == DBLIB)
            pTxn = pCTPCC_DBLIB_new(
Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, szMyComputerName,
Reg.szDbName );
        pDeliveryData = pTxn->BuffAddr_Delivery();
    }
    catch (CBaseErr *e)

```

```

    {
        char szTmp[1024];
        wsprintf( szTmp, "Error in Delivery Txn thread. Could
not connect to database. "
                "%s. Server=%s, User=%s,
Password=%s, Database=%s",
                e->ErrorText(), Reg.szDbServer,
Reg.szDbUser, Reg.szDbPassword, Reg.szDbName );
        WriteMessageToEventLog( szTmp );
        delete e;
        goto ErrorExit;
    }
    catch (...)
    {
        WriteMessageToEventLog(TEXT("Unhandled exception
caught in DeliveryWorkerThread.));
        goto ErrorExit;
    }
    while (TRUE)
    {
        try
        {
            //while delivery thread running, i.e. user has
not requested termination
            while (TRUE)
            {
                // need to wait for multiple objects:
                program exit or worker semaphore;
                handles[0] = hDoneEvent;
                handles[1] = hWorkerSemaphore;
                index = WaitForMultipleObjects(
2, &handles[0], FALSE, INFINITE );
                if (index == WAIT_OBJECT_0)
                    goto ErrorExit;
                ZeroMemory(&txnDeliRec,
sizeof(txnDeliRec));
                txnDeliRec.TxnType =
TXN_REC_TYPE_TPCC_DELIV_DEF;
                // make a local copy of current
entry from delivery buffer and increment buffer index
                EnterCriticalSection(&DelBuffCriticalSection);
                delivery =
*(pDelBuff+dwDelBuffBusyIndex);
                dwDelBuffFreeCount++;
                dwDelBuffBusyIndex++;
                if (dwDelBuffBusyIndex ==
dwDelBuffSize) // wrap-around if at end of buffer
                    dwDelBuffBusyIndex =
0;
                LeaveCriticalSection(&DelBuffCriticalSection);
                pDeliveryData->w_id =
delivery.w_id;
                pDeliveryData->o_carrier_id =
delivery.o_carrier_id;
                txnDeliRec.w_id =
pDeliveryData->w_id;
                txnDeliRec.o_carrier_id =
pDeliveryData->o_carrier_id;
                txnDeliRec.TxnStartT0 =
Get64BitTime(&delivery.queue);
                GetLocalTime( &trans_start );
                pTxn->Delivery();
                GetLocalTime( &trans_end );
                //log txn
                txnDeliRec.TxnStatus =
ERR_SUCCESS;
                for (int i=0; i<10; i++)
                    txnDeliRec.o_id[i] =
pDeliveryData->o_id[i];
                txnDeliRec.DeltaT4 =
(int)(Get64BitTime(&trans_end) - txnDeliRec.TxnStartT0);
                txnDeliRec.DeltaTxnExec =
(int)(Get64BitTime(&trans_end) - Get64BitTime(&trans_start));
                if (txnDelilog != NULL)
                    txnDelilog->WriteToLog(&txnDeliRec);
            }
        }
        catch (CBaseErr *e)
        {
            char szTmp[1024];
            wsprintf( szTmp, "Error in Delivery Txn
thread. %s", e->ErrorText() );
            WriteMessageToEventLog( szTmp );
            // log the error txn
            txnDeliRec.TxnStatus = e->ErrorType();
            if (txnDelilog != NULL)
                txnDelilog->WriteToLog(&txnDeliRec);
            delete e;
        }
        catch (...)
        {
            // unhandled exception; shouldn't happen; not
much we can do...
            WriteMessageToEventLog(TEXT("Unhandled exception caught in
DeliveryWorkerThread.));
        }
    }
}
ErrorExit:
    delete pTxn;
    _endthread();
}
/* FUNCTION: PostDeliveryInfo
*
* PURPOSE:      This function enters the delivery txn into the deferred
delivery buffer.
*
* RETURNS:      BOOL    FALSE    delivery information
                posted successfully
                TRUE     error cannot post delivery info
*/
BOOL PostDeliveryInfo(short w_id, short o_carrier_id)
{
    BOOL bError;
    EnterCriticalSection(&DelBuffCriticalSection);
    if (dwDelBuffFreeCount > 0)

```

```

    {
        bError = FALSE;
        (pDelBuff+dwDelBuffFreeIndex)->w_id
= w_id;
        (pDelBuff+dwDelBuffFreeIndex)->o_carrier_id
o_carrier_id;
        GetLocalTime(&(amp;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:
"Source:
"__DATE__", "__TIME__" <BR>"
"__FILE__" ("__TIMESTAMP__") <BR>"
"</PRE></font>"
"<FORM
ACTION=\"tpcc.dll\" METHOD=\"GET\">"
"<INPUT
TYPE=\"hidden\" NAME=\"STATUSID\" VALUE=\"0\">"
"<INPUT
TYPE=\"hidden\" NAME=\"ERROR\" VALUE=\"0\">"
"<INPUT
TYPE=\"hidden\" NAME=\"FORMID\" VALUE=\"1\">"
"<INPUT
TYPE=\"hidden\" NAME=\"TERMID\" VALUE=\"0\">"
"<INPUT
TYPE=\"hidden\" NAME=\"SYNCID\" VALUE=\"0\">"
"<INPUT
TYPE=\"hidden\" NAME=\"VERSION\" VALUE=\""
WEBCLIENT_VERSION "\">"
);

    sprintf( szTmp, "Configuration Settings: <BR><font
face=\"Courier New\" color=\"blue\"><PRE>"

```



<pre> &lt;B&gt;%s&lt;/B&gt;&lt;BR&gt;" = &lt;B&gt;%s&lt;/B&gt;&lt;BR&gt;" = &lt;B&gt;%d&lt;/B&gt;&lt;BR&gt;" = &lt;B&gt;%d&lt;/B&gt;&lt;BR&gt;" Deliveries = &lt;B&gt;%d&lt;/B&gt;&lt;BR&gt;" szDBNames[Reg.eDB_Protocol], Reg.dwMaxConnections, dwNumDeliveryThreads, dwDelBuffSize ); strcat( szBuffer, szTmp);  if (Reg.eTxnMon == COM) {     sprintf( szTmp, "COM Single Pool = &lt;B&gt;%s&lt;/B&gt;&lt;BR&gt;",             Reg.bCOM_SinglePool ? "YES" : "NO" );     strcat( szBuffer, szTmp); } strcat( szBuffer, "&lt;/PRE&gt;&lt;/font&gt;");  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:&lt;BR&gt;"             "DB Server = &lt;INPUT NAME=\"db_server\" SIZE=20 VALUE=\"%s\"&gt;&lt;BR&gt;"             "DB User ID = &lt;INPUT NAME=\"db_user\" SIZE=20 VALUE=\"%s\"&gt;&lt;BR&gt;"             "DB Password = &lt;INPUT NAME=\"db_passwd\" SIZE=20 VALUE=\"%s\"&gt;&lt;BR&gt;"             "DB Name = &lt;INPUT NAME=\"db_name\" SIZE=20 VALUE=\"%s\"&gt;&lt;BR&gt;" "&lt;/PRE&gt;&lt;/font&gt;"             , 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:&lt;BR&gt;"             "DB Server = &lt;B&gt;%s&lt;/B&gt;&lt;BR&gt;"             "DB User ID = &lt;B&gt;%s&lt;/B&gt;&lt;BR&gt;"             "DB Password = &lt;B&gt;%s&lt;/B&gt;&lt;BR&gt;"             "DB Name = &lt;B&gt;%s&lt;/B&gt;&lt;BR&gt;" "&lt;/PRE&gt;&lt;/font&gt;"             , Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, Reg.szDbName ); strcat( szBuffer, szTmp); </pre>	<pre> sprintf( szTmp, "Please enter your Warehouse and District for this session:&lt;BR&gt;"         "District ID = &lt;INPUT NAME=\"d_id\" SIZE=2&gt;&lt;BR&gt;" "&lt;/PRE&gt;&lt;/font&gt;&lt;HR&gt;"         "&lt;INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Submit\"&gt;" "&lt;/FORM&gt;&lt;/BODY&gt;&lt;/HTML&gt;"); }  /* 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-&gt;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(&amp;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(&amp;ptr, "db_server", szServer, sizeof(szServer), ERR_NO_SERVER_SPECIFIED);         // parse User name         GetKeyValue(&amp;ptr, "db_user", szUser, sizeof(szUser), NO_ERR);         // parse Password         GetKeyValue(&amp;ptr, "db_passwd", szPassword, sizeof(szPassword), NO_ERR);         // parse Database name         GetKeyValue(&amp;ptr, "db_name", szDatabase, sizeof(szDatabase), NO_ERR);     }      // parse warehouse ID     int w_id = GetIntKeyValue(&amp;ptr, "w_id", ERR_HTML_ILL_FORMED, ERR_W_ID_INVALID);     if ( w_id &lt; 1 )         throw new CWEBCLNT_ERR( ERR_W_ID_INVALID );      // parse district ID </pre>
---	---

```

        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);

    iTotals = 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*\"."
        },
    }
}

```

<pre>                 {                     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,         ""     },     } </pre>	<pre>                 {                     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,                     ""                 },             },         } </pre>
--	--

```

};

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

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

```

```

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

ptr++;

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

*pQueryString = ptr;
return;

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

/* FUNCTION: GetIntKeyValue
*
* PURPOSE:      This function parses a http formatted string for a specific
key value.
*
* ARGUMENTS:   char                *pQueryString
http string from client browser
*
*              char
*pKey          key value to look for
*              WEBERROR
NoKeyErr       error value to throw if key not found
*              WEBERROR
NotIntErr      error value to throw if value not numeric
*
* RETURNS:     integer
*
* ERROR:       if (the pKey value is not found) then
*              if (NoKeyErr !=
NO_ERR)
*              throw
CWEBCLNT_ERR(err)
*              else
*              return 0
*              else if (non-numeric char found)
then
*              if (NotIntErr !=
NO_ERR) then
*              throw
CWEBCLNT_ERR(err)
*              else
*              return 0
*
* COMMENTS:    http keys are formatted either KEY=value& or
KEY=value\0. This DLL formats
*              TPC-C input fields in such a
manner that the keys can be extracted in the
*              above manner.
*/

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

```

```

char *ptr;

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

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

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

*pQueryString = ptr;
return atoi(ptr0);

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

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

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

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

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

    ZeroMemory( Term.pClientData, Term.iNumEntries *
sizeof(CLIENTDATA) );

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

```

```

        LeaveCriticalSection(&TermCriticalSection);
    }

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

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

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

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

    LeaveCriticalSection(&TermCriticalSection);
}

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

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

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

    EnterCriticalSection(&TermCriticalSection);
    if (Term.iFreeList != 0)
    {
        // position is available
        iNewTerm = Term.iFreeList;
        Term.iFreeList =
Term.pClientData[iNewTerm].iNextFree;
        Term.pClientData[iNewTerm].iNextFree = -1; //
indicates this position is in use
    }
    else
    {
        // no open slots, so find the slot that hasn't been used in
the longest time and reuse it
        for(iNewTerm=1, i=1, iTickCount=0x7FFFFFFF;
i<Reg.dwMaxConnections; i++)

```

```

        {
            if (iTickCount >
Term.pClientData[i].iTickCount)
            {
                iTickCount =
Term.pClientData[i].iTickCount;
                iNewTerm = i;
            }
            // if oldest term is less than one minute old, it probably
means that more connections
            // are being attempted than were specified as "Max
Connections" at install. In this case,
            // do not bump existing connection; instead, return error
to requestor.
            if ((GetTickCount() - iTickCount) < 60000)
            {
                LeaveCriticalSection(&TermCriticalSection);
                throw new CWEBCLNT_ERR(
ERR_MAX_CONNECTIONS_EXCEEDED );
            }

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

            LeaveCriticalSection(&TermCriticalSection);
            return iNewTerm;
        }

```

```

/* FUNCTION: TermDelete

```

```

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

```

```

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

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

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

        LeaveCriticalSection(&TermCriticalSection);
    }
}

```

```

/* FUNCTION: MakeErrorForm
*/

```

```

void ErrorForm(EXTENSION_CONTROL_BLOCK *pECB, int iType, int
iErrorNum, int iTermId, int iSyncId, char *szErrorText, char *szBuffer )
{
    wsprintf(szBuffer,
        "<HTML><HEAD><TITLE>TPC-C
Error</TITLE></HEAD><BODY>"
        "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"

```

```

        "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"%d\">"
        "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"%d\">"
        "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
        "<INPUT TYPE=\"hidden\" NAME=\"TERMIN\"
VALUE=\"%d\">"
        "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
        "<BOLD>An Error Occured</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=\"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..\">"

```

```

                "<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>";

    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>
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>"
" 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..>"
);
}
}

/* FUNCTION: MakePaymentForm
*
* COMMENTS:   The internal client buffer is created when the terminal id
is assigned and should not
*
*
*                be freed except when the client
terminal id is no longer needed.
*/

void MakePaymentForm(int iTermId, PAYMENT_DATA *pPaymentData,
BOOL bInput, char *szForm)
{
int c;

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

if ( !bInput )
{
c += 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>"
"Customer: <INPUT NAME='CID*'"
SIZE=4>"
"Cust-Warehouse: <INPUT NAME='CWI*'"
SIZE=4> "
"Cust-District: <INPUT NAME='CDI*'"
SIZE=1><BR>"
"Name: <INPUT
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->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_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>";

                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=\"TERMD\"
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:%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);
        }

        strcpy( 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
        {
                sprintf( 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 CWBCLNT_ERR(
ERR_NEWORDER_QTY_WITHOUT_SUPPW );
            }
        }
        if ( items == 0 )
            throw new CWBCLNT_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 CWBCLNT_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 CWBCLNT_ERR(
ERR_PAYMENT_MISSING_CID_CLT );

        _strupr( szTmp );

```

```

        if ( strlen(pPaymentData->c_last) > LAST_NAME_LEN
)
            throw new CWBCLNT_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 CWBCLNT_ERR(
ERR_PAYMENT_CID_AND_CLT );
    }

    GetKeyValue(&ptr, "HAM*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_HAM_KEY);
    if ( !IsDecimal(szTmp) )
        throw new CWBCLNT_ERR(
ERR_PAYMENT_HAM_INVALID );
    pPaymentData->h_amount = atof(szTmp);
    if ( pPaymentData->h_amount >= 10000.00 ||
pPaymentData->h_amount < 0 )
        throw new CWBCLNT_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 CWBCLNT_ERR(
ERR_ORDERSTATUS_MISSING_CID_CLT );

        _strupr( szTmp );
        if ( strlen(pOrderStatusData->c_last) >
LAST_NAME_LEN )
            throw new CWBCLNT_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 CWBCLNT_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 occurred 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] = "0";
    char szLogFile[128];
    char szDllName[128];

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

    try
    {
        switch( ul_reason_for_call )
        {
            case DLL_PROCESS_ATTACH:
                DWORD dwSize =
MAX_COMPUTERNAME_LENGTH+1;
                GetComputerName(szMyComputerName, &dwSize);
                szMyComputerName[dwSize] = 0;
        }

        DisableThreadLibraryCalls((HMODULE)hModule);

        InitializeCriticalSection(&TermCriticalSection);

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

```



<pre> 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"); </pre>	<pre> LoadLibrary( szDllName ); hLibInstanceTm = 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 &gt; 0)) {     if (Reg.eDB_Protocol == DBLIB)     {         strcpy( szDllName, Reg.szPath );         strcat( szDllName, "tpcc_dblib.dll");         hLibInstanceDb = LoadLibrary( szDllName );         if (hLibInstanceDb == NULL)             throw new CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );         // get function pointer to wrapper for class constructor pCTPCC_DBLIB_new = (TYPE_CTPCC_DBLIB*) GetProcAddress(hLibInstanceDb,"CTPCC_DBLIB_new"); if (pCTPCC_DBLIB_new == NULL)         throw new CWEBCLNT_ERR( ERR_GETPROCADDR_FAILED, szDllName, GetLastError() );     } else if (Reg.eDB_Protocol == ODBC)     {         strcpy( szDllName, Reg.szPath );         strcat( szDllName, "tpcc_odbc.dll");         hLibInstanceDb = LoadLibrary( szDllName );         if (hLibInstanceDb == NULL)             throw new CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );         // get function pointer to wrapper for class constructor </pre>
--	--

<pre> 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 HANDLE[dwNumDeliveryThreads]; pDeliHandles = new DELIVERY_TRANSACTION[dwDelBuffSize]; pDelBuff = new // launch DeliveryWorkerThread to perform actual delivery txns for(i=0; i&lt;dwNumDeliveryThreads; i++) { pDeliHandles[i] = (HANDLE) _beginthread( DeliveryWorkerThread, 0, NULL ); if (pDeliHandles[i] == INVALID_HANDLE_VALUE) throw new CWEBCLNT_ERR( ERR_DELIVERY_THREAD_FAILED ); } } break; </pre>	<pre> 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( CloseHandle( hWorkerSemaphore ); 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() ); delete e; TerminateExtension(0); return FALSE; } catch (...) { WriteMessageToEventLog(TEXT("Unhandled exception. DLL could not load.)); TerminateExtension(0); return FALSE; } } </pre>
--	--

```

        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];
                wsprintf( szTmp, "Invalid term ID;
TermId = %d", TermId );
                WriteMessageToEventLog( szTmp
);
                throw new CWEBCLNT_ERR(
ERR_INVALID_TERMID );
            }
            //must have a valid syncid here since termid is
valid
            if (iSyncId !=
Term.pClientData[TermId].iSyncId)
                throw new CWEBCLNT_ERR(
ERR_INVALID_SYNC_CONNECTION );

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

        switch(iCmd)
        {
        case 0:
            WelcomeForm(pECB, szBuffer);
            break;

        case 1:
            switch( FormId )
            {

```

```

        case WELCOME_FORM:
        case MAIN_MENU_FORM:
            break;
        case NEW_ORDER_FORM:
ProcessNewOrderForm(pECB, TermId, szBuffer);
            break;
        case PAYMENT_FORM:
ProcessPaymentForm(pECB, TermId, szBuffer);
            break;
        case DELIVERY_FORM:
ProcessDeliveryForm(pECB, TermId, szBuffer);
            break;
        case ORDER_STATUS_FORM:
ProcessOrderStatusForm(pECB, TermId, szBuffer);
            break;
        case STOCK_LEVEL_FORM:
ProcessStockLevelForm(pECB, TermId, szBuffer);
            break;
    }
    break;
    case 2:
        // new-order selected from menu; display
new-order input form
        MakeNewOrderForm(TermId, NULL,
INPUT_FORM, szBuffer);
            break;
    case 3:
        // payment selected from menu; display
payment input form
        MakePaymentForm(TermId, NULL,
INPUT_FORM, szBuffer);
            break;
    case 4:
        // delivery selected from menu; display
delivery input form
        MakeDeliveryForm(TermId, NULL,
INPUT_FORM, szBuffer);
            break;
    case 5:
        // order-status selected from menu; display
order-status input form
        MakeOrderStatusForm(TermId, NULL,
INPUT_FORM, szBuffer);
            break;
    case 6:
        // stock-level selected from menu; display
stock-level input form
        MakeStockLevelForm(TermId, NULL,
INPUT_FORM, szBuffer);
            break;
    case 7:
        // ExitCmd
        TermDelete(TermId);
        WelcomeForm(pECB, szBuffer);
            break;
    case 8:
        SubmitCmd(pECB, szBuffer);
            break;
    case 9:
        // menu
        MakeMainMenuForm(TermId,
Term.pClientData[TermId].iSyncId, szBuffer);
            break;

```

```

        case 10:
            // CMD=Clear
            // resets all connections; should only be used
when no other connections are active
            TermDeleteAll();
            TermInit();
            WelcomeForm(pECB, szBuffer);
            break;
        case 11: // CMD=Stats
            StatsCmd(pECB, szBuffer);
            break;
    }
}
catch (CBaseErr *e)
{
    ErrorForm( pECB, e->ErrorType(), e->ErrorNum(),
TermId, iSyncId, e->ErrorText(), szBuffer );
    delete e;
}
catch (...)
{
    ErrorForm( pECB, ERR_TYPE_WEBDLL, 0, TermId,
iSyncId, "Error: Unhandled exception in Web Client.", szBuffer );
}
#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"));

    _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(txnDeliRec != 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];
        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 *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);

```



```

" <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 iTot;

    EnterCriticalSection(&TermCriticalSection);

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

    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)
        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.
 *
 * WEBERROR
err error value to throw
 *
 * RETURNS: nothing.
 *
 * ERROR: if (the pKey value is not found) then
 * if (err == 0)
 * return
 * (empty string)
 * else
 * throw
 *
 * CWEBCLNT_ERR(err)
 *
 * COMMENTS: http keys are formatted either KEY=value& or
KEY=value\0. This DLL formats
 * TPC-C input fields in such a
 * manner that the keys can be extracted in the
 * above manner.
 */

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

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

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

```

```

        iMax--;
    }
    *pValue = 0; // terminating null

    *pQueryString = ptr;
    return;

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

/* FUNCTION: GetIntKeyValue
 *
 * PURPOSE:      This function parses a http formatted string for a specific
 key value.
 *
 * ARGUMENTS:   char          *pQueryString
 http string from client browser
 *
 * 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 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\">"
        "<<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>"

```



```

* COMMENTS:   The internal client buffer is created when the terminal id
is assigned and should not
*
*                be freed except when the client
terminal id is no longer needed.
*/

```

```

void MakeNewOrderForm(int iTermId, NEW_ORDER_DATA
*pNewOrderData, BOOL bInput, char *szForm)
{
    int            i, c;
    BOOL          bValid;
    static char szBR[] = " <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR>";

```

```

    if (!bInput)
        assert( pNewOrderData->exec_status_code == eOK ||
pNewOrderData->exec_status_code == eInvalidItem );

    bValid = (bInput || (pNewOrderData->exec_status_code == eOK));

```

```

    c = 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='TERMINID'"
        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>"
                " Supp_W Item_Id Item Name
            Qty Stock B/G Price  Amount<BR>"
                , pNewOrderData->o_id);
            i = 0;
        }
        strncpy( szForm+c, szBR, (15-i)*5 );
        c += (15-i)*5;
        if ( bValid )
            c += sprintf(szForm+c, "Execution Status:
            Transaction 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 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='TERMID\'"
        VALUE="\"%d\">"
        "<INPUT TYPE='hidden' NAME='SYNCID\'"
        VALUE="\"%d\">"
        "<PRE><font face='Courier'>"
        Payment<BR>"
        "Date: "
        , PAYMENT_FORM, iTermId,
        Term.pClientData[iTermId].iSyncId);
    if ( !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 ( blnInput )
    {
        c += sprintf(szForm+c,
            "<BR> <BR> Warehouse: %4.4d"
            " District: <INPUT
            NAME='DID*' SIZE=1><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,
        "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>"
        "%2.2d-%2.2d-%4.4d<BR>"
        "Name: %-16s %-2s %-16s Since:
%-20s Credit: %-2s<BR>"
        , Term.pClientData[iTermId].w_id,
        pPaymentData->d_id,
        pPaymentData->d_street_1,
        pPaymentData->d_street_2,
        pPaymentData->w_state, pPaymentData->w_zip, pPaymentData->w_zip+5,
        pPaymentData->d_state, pPaymentData->d_zip, pPaymentData->d_zip+5,
        pPaymentData->c_w_id, pPaymentData->c_d_id,
        pPaymentData->c_first,
        pPaymentData->c_middle, pPaymentData->c_last,
        pPaymentData->c_since.month, pPaymentData->c_since.year,
        pPaymentData->c_credit
        );
        c += sprintf(szForm+c,
        "%5.2f<BR>",
        100.0*pPaymentData->c_discount);
        c += sprintf(szForm+c,
        "%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>";
    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="0">"
    "<INPUT TYPE="hidden" NAME="TERMINID"
VALUE="0">"

```







```

        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 DEFLOADPACKSIZE 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
      #define OL_DELIVERY_D_LEN
      #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"

//
// 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

#ifdef // 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
 *
 *      Copyright Microsoft, 1999
 *
 *      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 definitions of structures specific to TPC-C
#include "..\..\common\src\error.h"
#include "..\..\common\src\txn_base.h"
#include "tpcc_com.h"

#include "..\tpcc_com_ps\src\tpcc_com_ps_i.c"
#include "..\tpcc_com_all\src\tpcc_com_all_i.c"

// wrapper routine for class constructor
__declspec(dllexport) CTPCC_COM* CTPCC_COM_new(BOOL
bSinglePool)
{
    return new CTPCC_COM(bSinglePool);
}

CTPCC_COM::CTPCC_COM(BOOL bSinglePool)
{
    HRESULT hr = NULL;
    long lRet = 0;
    ULONG ulTmpSize = 0;

    m_pTxn = NULL;
    m_pNewOrder = NULL;
    m_pPayment = NULL;
    m_pStockLevel = NULL;
    m_pOrderStatus = NULL;

    m_bSinglePool = bSinglePool;

    ulTmpSize = (ULONG) sizeof(COM_DATA);
    VariantInit(&m_vTxn);
    m_vTxn.vt = VT_SAFEARRAY;

    m_vTxn.parray = SafeArrayCreateVector(VT_UI1, ulTmpSize,
ulTmpSize);
    if (!m_vTxn.parray)
        throw new CCOMERR( E_FAIL );

    memset((void*)m_vTxn.parray->pvData,0,ulTmpSize);
    m_pTxn = (COM_DATA*)m_vTxn.parray->pvData;

    hr = CoInitializeEx(NULL, COINIT_MULTITHREADED);
    if (FAILED(hr))
    {
        throw new CCOMERR( hr );
    }

    // create components
    if (m_bSinglePool)
    {
        hr = CoCreateInstance(CLSID_TPCC, NULL,
CLSCTX_SERVER, IID_ITPCC, (void **)&m_pNewOrder);
        if (FAILED(hr))
            throw new CCOMERR(hr);

        // all txns will use same component
        m_pPayment = m_pNewOrder;
        m_pStockLevel = m_pNewOrder;
        m_pOrderStatus = m_pNewOrder;
    }
    else
    {
        // use different components for each txn

        hr = CoCreateInstance(CLSID_NewOrder, NULL,
CLSCTX_SERVER, IID_ITPCC, (void **)&m_pNewOrder);
        if (FAILED(hr))

```



```

        throw new CCOMERR(hr);

        hr = CoCreateInstance(CLSID_Payment, NULL,
CLSCTX_SERVER, IID_ITPCC, (void **)&m_pPayment);
        if (FAILED(hr))
            throw new CCOMERR(hr);

        hr = CoCreateInstance(CLSID_StockLevel, NULL,
CLSCTX_SERVER, IID_ITPCC, (void **)&m_pStockLevel);
        if (FAILED(hr))
            throw new CCOMERR(hr);

        hr = CoCreateInstance(CLSID_OrderStatus, NULL,
CLSCTX_SERVER, IID_ITPCC, (void **)&m_pOrderStatus);
        if (FAILED(hr))
            throw new CCOMERR(hr);
    }

    // call setcomplete to release each component back into pool
    hr = m_pNewOrder->CallSetComplete();
    if (FAILED(hr))
        throw new CCOMERR(hr);

    if (!m_bSinglePool)
    {
        hr = m_pPayment->CallSetComplete();
        if (FAILED(hr))
            throw new CCOMERR(hr);

        hr = m_pStockLevel->CallSetComplete();
        if (FAILED(hr))
            throw new CCOMERR(hr);

        hr = m_pOrderStatus->CallSetComplete();
        if (FAILED(hr))
            throw new CCOMERR(hr);
    }
}

CTPCC_COM::~CTPCC_COM()
{
    if (m_pTxn)
        SafeArrayDestroy(m_vTxn.parray);

    ReleaseInterface(m_pNewOrder);
    if (!m_bSinglePool)
    {
        ReleaseInterface(m_pPayment);
        ReleaseInterface(m_pStockLevel);
        ReleaseInterface(m_pOrderStatus);
    }
    CoUninitialize();
}

void CTPCC_COM::NewOrder()
{
    VARIANT vTxn_out;

    HRESULT hr = m_pNewOrder->NewOrder(m_vTxn, &vTxn_out);
    if (FAILED(hr))
        throw new CCOMERR( hr );
    memcpy(m_pTxn, (void
*)vTxn_out.parray->pvData,vTxn_out.parray->rgsabound[0].cElements);
    SafeArrayDestroy(vTxn_out.parray);

    if ( m_pTxn->ErrorType != ERR_SUCCESS )
        throw new CCOMERR( m_pTxn->ErrorType,
m_pTxn->error );
}

```

```

    }

void CTPCC_COM::Payment()
{
    VARIANT vTxn_out;

    HRESULT hr = m_pPayment->Payment(m_vTxn, &vTxn_out);
    if (FAILED(hr))
        throw new CCOMERR( hr );
    memcpy(m_pTxn, (void
*)vTxn_out.parray->pvData,vTxn_out.parray->rgsabound[0].cElements);
    SafeArrayDestroy(vTxn_out.parray);

    if ( m_pTxn->ErrorType != ERR_SUCCESS )
        throw new CCOMERR( m_pTxn->ErrorType,
m_pTxn->error );
}

void CTPCC_COM::StockLevel()
{
    VARIANT vTxn_out;

    HRESULT hr = m_pStockLevel->StockLevel(m_vTxn,
&vTxn_out);
    if (FAILED(hr))
        throw new CCOMERR( hr );
    memcpy(m_pTxn, (void
*)vTxn_out.parray->pvData,vTxn_out.parray->rgsabound[0].cElements);
    SafeArrayDestroy(vTxn_out.parray);

    if ( m_pTxn->ErrorType != ERR_SUCCESS )
        throw new CCOMERR( m_pTxn->ErrorType,
m_pTxn->error );
}

void CTPCC_COM::OrderStatus()
{
    VARIANT vTxn_out;

    HRESULT hr = m_pOrderStatus->OrderStatus(m_vTxn,
&vTxn_out);
    if (FAILED(hr))
        throw new CCOMERR( hr );
    memcpy(m_pTxn, (void
*)vTxn_out.parray->pvData,vTxn_out.parray->rgsabound[0].cElements);
    SafeArrayDestroy(vTxn_out.parray);

    if ( m_pTxn->ErrorType != ERR_SUCCESS )
        throw new CCOMERR( m_pTxn->ErrorType,
m_pTxn->error );
}

```

### ***tpcc\_com.h***

```

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

```

```

*/

#pragma once

#include <stdio.h>
#include "..\..\tpcc_com_ps\src\tpcc_com_ps.h"

// need to declare functions for import, unless define has already been created
// by the DLL's .cpp module for export.
#ifdef 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;

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 ();
    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 <atimpl.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 definitions 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_pTnx = NULL;
    m_bCanBePooled = TRUE;
}

CTPCC_Common::~CTPCC_Common()
{
    if (m_pTnx)
        delete m_pTnx;
}

HRESULT CTPCC_Common::CallSetComplete()
{
    IObjectContext* pObjectContext = NULL;

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

//
// called by the ctor activator
//
STDMETHODIMP CTPCC_Common::Construct(IDispatch * pUnk)
{
    // Code to access construction string, if needed later...
    // if (!pUnk)
    //     return E_UNEXPECTED;
    // IObjectConstructString * pString = NULL;
    // HRESULT hr =
pUnk->QueryInterface(IID_IObjectConstructString, (void **) &pString);
    // pString->Release();

    try
    {
        if (Reg.eDB_Protocol == ODBC)

```

```

        m_pTnx = pCTPCC_ODBC_new(
Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, szMyComputerName,
Reg.szDbName );
        else if (Reg.eDB_Protocol == DBLIB)
            m_pTnx = 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_pTnx->BuffAddr_NewOrder();

        memcpy(pNewOrder, &pData->u.NewOrder,
sizeof(NEW_ORDER_DATA));

        m_pTnx->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();
    }
}

```



```

        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 /l 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbcc32.lib
odbc32.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 odbcc32.lib
odbc32.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
# Begin Source File

SOURCE=\src\resource.h
# End Source File
# End Group
# Begin Source File

SOURCE=\src\tpcc_com_all.rc
# End Source File
# End Target
# End Project

```

## ***Tpcc\_com\_all.h***

```

#pragma warning( disable: 4049 ) /* more than 64k source lines */

/* this ALWAYS GENERATED file contains the definitions for the interfaces */

/* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:14 2001 */
/*
/* Compiler settings for \src\tpcc_com_all.idl:
Oicf (OptLev=i2), W1, Zp8, env=Win32 (32b run), ms_ext, c_ext
error checks: allocation ref bounds_check enum stub_data
VC __declspec() decoration level:
  __declspec(uuid()), __declspec(selectany), __declspec(novtable)
DECLSPEC_UUID(), MIDL_INTERFACE()

```



```

*/
//@@MIDL_FILE_HEADING( )

/* verify that the <rpcndr.h> version is high enough to compile this file*/
#ifndef __REQUIRED_RPCNDR_H_VERSION__
#define __REQUIRED_RPCNDR_H_VERSION__ 440
#endif

#include "rpc.h"
#include "rpcndr.h"

#ifndef __tpcc_com_all_h__
#define __tpcc_com_all_h__

/* Forward Declarations */

#ifndef __TPCC_FWD_DEFINED__
#define __TPCC_FWD_DEFINED__

#ifdef __cplusplus
typedef class TPCC TPCC;
#else
typedef struct TPCC TPCC;
#endif /* __cplusplus */

#endif /* __TPCC_FWD_DEFINED__ */

#ifndef __NewOrder_FWD_DEFINED__
#define __NewOrder_FWD_DEFINED__

#ifdef __cplusplus
typedef class NewOrder NewOrder;
#else
typedef struct NewOrder NewOrder;
#endif /* __cplusplus */

#endif /* __NewOrder_FWD_DEFINED__ */

#ifndef __OrderStatus_FWD_DEFINED__
#define __OrderStatus_FWD_DEFINED__

#ifdef __cplusplus
typedef class OrderStatus OrderStatus;
#else
typedef struct OrderStatus OrderStatus;
#endif /* __cplusplus */

#endif /* __OrderStatus_FWD_DEFINED__ */

#ifndef __Payment_FWD_DEFINED__
#define __Payment_FWD_DEFINED__

#ifdef __cplusplus
typedef class Payment Payment;
#else
typedef struct Payment Payment;
#endif /* __cplusplus */

#endif /* __Payment_FWD_DEFINED__ */

#ifndef __StockLevel_FWD_DEFINED__
#define __StockLevel_FWD_DEFINED__

```

```

#ifdef __cplusplus
typedef class StockLevel StockLevel;
#else
typedef struct StockLevel StockLevel;
#endif /* __cplusplus */

#endif /* __StockLevel_FWD_DEFINED__ */

/* header files for imported files */
#include "oidl.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
 *
 *      4.20.000      Microsoft TPC-C Kit Ver.
 *
 *      All Rights Reserved      Copyright Microsoft, 1999
 *
 *
 *      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 "oidl.idl";
import "ocidl.idl";
import "..\tpcc_com_ps\src\tpcc_com_ps.idl";

```

```

[
    uuid(122A3117-2520-11D3-BA71-00C04FBFE08B),
    version(1.0),
    helpstring("TPC-C 1.0 Type Library")
]
library TPCCLib
{
    importlib("stdole32.tlb");
    importlib("stdole2.tlb");

    [
        uuid(122A3128-2520-11D3-BA71-00C04FBFE08B),
        helpstring("All Txns Class")
    ]
    coclass TPCC
    {

```

```

        [default] interface ITPCC;
    };

    [
        uuid(975BAABF-84A7-11D2-BA47-00C04FBFE08B),
        helpstring("NewOrder Class")
    ]
    coclass NewOrder
    {
        [default] interface ITPCC;
    };

    [
        uuid(266836AD-A50D-11D2-BA4E-00C04FBFE08B),
        helpstring("OrderStatus Class")
    ]
    coclass OrderStatus
    {
        [default] interface ITPCC;
    };

    [
        uuid(CD02F7EF-A4FA-11D2-BA4E-00C04FBFE08B),
        helpstring("Payment Class")
    ]
    coclass Payment
    {
        [default] interface ITPCC;
    };

    [
        uuid(2668369E-A50D-11D2-BA4E-00C04FBFE08B),
        helpstring("StockLevel Class")
    ]
    coclass StockLevel
    {
        [default] interface ITPCC;
    };
};

```

### ***Tpcc\_com\_all.rc***

```

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

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

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

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

#if !defined(AFX_RESOURCE_DLL) || defined(AFX_TARG_ENU)
#ifdef _WIN32
LANGUAGE LANG_ENGLISH, SUBLANG_ENGLISH_US

```

```

#pragma code_page(1252)
#endif // WIN32

#ifdef APSTUDIO_INVOKED
//
// TEXTINCLUDE
//
1 TEXTINCLUDE DISCARDABLE
BEGIN
    "resource.h\0"
END

2 TEXTINCLUDE DISCARDABLE
BEGIN
    "#include ""winres.h""\r\n"
    "\0"
END

3 TEXTINCLUDE DISCARDABLE
BEGIN
    "1 TYPELIB ""tpcc_com_all.tlb""\r\n"
    "\0"
END

#endif // APSTUDIO_INVOKED

#ifndef _MAC
//
// Version
//

VS_VERSION_INFO VERSIONINFO
FILEVERSION 1,0,0,1
PRODUCTVERSION 1,0,0,1
FILEFLAGSMASK 0x3fL
#ifdef _DEBUG
FILEFLAGS 0x1L
#else
FILEFLAGS 0x0L
#endif
FILEOS 0x4L
FILETYPE 0x2L
FILESUBTYPE 0x0L
BEGIN
    BLOCK "StringFileInfo"
    BEGIN
        BLOCK "040904B0"
        BEGIN
            VALUE "CompanyName", "\0"
            VALUE "FileDescription", "tpcc_com_all Module\0"
            VALUE "FileVersion", "1, 0, 0, 1\0"
            VALUE "InternalName", "TPCCNEWORDER\0"
            VALUE "LegalCopyright", "Copyright 1997\0"
            VALUE "OriginalFilename", "tpcc_com_all.DLL\0"
            VALUE "ProductName", "tpcc_com_all Module\0"
            VALUE "ProductVersion", "1, 0, 0, 1\0"
            VALUE "OLESelfRegister", "\0"
        END
    END
    BLOCK "VarFileInfo"
    BEGIN
        VALUE "Translation", 0x409, 1200
    END
END

```

```

#endif // !_MAC
//
// REGISTRY
//
IDR_TPCC          REGISTRY DISCARDABLE "tpcc_com_all.rgs"
IDR_NEWORDER     REGISTRY DISCARDABLE "tpcc_com_no.rgs"
IDR_ORDERSTATUS  REGISTRY DISCARDABLE
"tpcc_com_os.rgs"
IDR_PAYMENT      REGISTRY DISCARDABLE "tpcc_com_pay.rgs"
IDR_STOCKLEVEL   REGISTRY DISCARDABLE "tpcc_com_sl.rgs"

//
// String Table
//

STRINGTABLE DISCARDABLE
BEGIN
    IDS_PROJNAME    "tpcc_com_all"
END

#endif // English (U.S.) resources
//
// Generated from the TEXTINCLUDE 3 resource.
//
1 TYPELIB "tpcc_com_all.tlb"

//
// 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_

#ifdef INITGUID
#define INITGUID
#include <guiddef.h>
#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_

#ifdef __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__

#ifdef 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,0x00,0xC0,0
x4F,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

#ifndef __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
//
#ifndef 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 odbccp32.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=bmake.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 /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 ( __stdcall __RPC_FAR *NewOrder )(
```

```
ITPCC __RPC_FAR * This,
```

```
/* [in] */ VARIANT txn_in,
```

```
/* [out] */ VARIANT __RPC_FAR *txn_out);
```

```
HRESULT ( __stdcall __RPC_FAR *Payment )(
```

```
ITPCC __RPC_FAR * This,
```

```
/* [in] */ VARIANT txn_in,
```

```
/* [out] */ VARIANT __RPC_FAR *txn_out);
```



```

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

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

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

HRESULT ( __stdcall __RPC_FAR *CallSetComplete )(
    ITPCC __RPC_FAR * This);

    END_INTERFACE
} ITPCCVtbl;

interface ITPCC
{
    CONST_VTBL struct ITPCCVtbl __RPC_FAR *lpVtbl;
};

#ifdef COBJMACROS

#define ITPCC_QueryInterface(This,riid,ppvObject) \
    (This)->lpVtbl->QueryInterface(This,riid,ppvObject)

#define ITPCC_AddRef(This) \
    (This)->lpVtbl->AddRef(This)

#define ITPCC_Release(This) \
    (This)->lpVtbl->Release(This)

#define ITPCC_NewOrder(This,txn_in,txn_out) \
    (This)->lpVtbl->NewOrder(This,txn_in,txn_out)

#define ITPCC_Payment(This,txn_in,txn_out) \
    (This)->lpVtbl->Payment(This,txn_in,txn_out)

#define ITPCC_Delivery(This,txn_in,txn_out) \
    (This)->lpVtbl->Delivery(This,txn_in,txn_out)

#define ITPCC_StockLevel(This,txn_in,txn_out) \
    (This)->lpVtbl->StockLevel(This,txn_in,txn_out)

#define ITPCC_OrderStatus(This,txn_in,txn_out) \
    (This)->lpVtbl->OrderStatus(This,txn_in,txn_out)

#define ITPCC_CallSetComplete(This) \
    (This)->lpVtbl->CallSetComplete(This)

#endif /* COBJMACROS */

#ifdef /* C style interface */

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

```

```

void __RPC_STUB ITPCC_NewOrder_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *pRpcChannelBuffer,
    PRPC_MESSAGE pRpcMessage,
    DWORD *_pdwStubPhase);

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

void __RPC_STUB ITPCC_Payment_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *pRpcChannelBuffer,
    PRPC_MESSAGE pRpcMessage,
    DWORD *_pdwStubPhase);

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

void __RPC_STUB ITPCC_Delivery_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *pRpcChannelBuffer,
    PRPC_MESSAGE pRpcMessage,
    DWORD *_pdwStubPhase);

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

void __RPC_STUB ITPCC_StockLevel_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *pRpcChannelBuffer,
    PRPC_MESSAGE pRpcMessage,
    DWORD *_pdwStubPhase);

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

void __RPC_STUB ITPCC_OrderStatus_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *pRpcChannelBuffer,
    PRPC_MESSAGE pRpcMessage,
    DWORD *_pdwStubPhase);

HRESULT __stdcall ITPCC_CallSetComplete_Proxy(
    ITPCC __RPC_FAR * This);

void __RPC_STUB ITPCC_CallSetComplete_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *pRpcChannelBuffer,
    PRPC_MESSAGE pRpcMessage,
    DWORD *_pdwStubPhase);

```

```

#endif /* __ITPCC_INTERFACE_DEFINED__ */

/* Additional Prototypes for ALL interfaces */

unsigned long __RPC_USER VARIANT_UserSize( unsigned long
__RPC_FAR *, unsigned long , VARIANT__RPC_FAR * );
unsigned char __RPC_FAR * __RPC_USER VARIANT_UserMarshal(
unsigned long __RPC_FAR *, unsigned char __RPC_FAR *, VARIANT
__RPC_FAR * );
unsigned char __RPC_FAR * __RPC_USER
VARIANT_UserUnmarshal(unsigned long __RPC_FAR *, unsigned char
__RPC_FAR *, VARIANT __RPC_FAR * );
void __RPC_USER VARIANT_UserFree( unsigned long
__RPC_FAR *, VARIANT __RPC_FAR * );

/* end of Additional Prototypes */

#ifdef __cplusplus
}
#endif

#endif

```

## TPCC\_COM\_PS.IDL

```

/* FILE: ITPCC.IDL
* Microsoft TPC-C Kit Ver.
4.20.000
* Copyright Microsoft, 1999
* All Rights Reserved
*
* not yet audited
*
* PURPOSE: Defines the interface used by TPCC. This
interface can be implemented by C++ components.
*
* Change history:
* 4.20.000 - first version
*/

```

```

// Forward declare all types defined
interface ITPCC;
import "oaidl.idl";
import "ocidl.idl";

[
    object,
    oleautomation,
    uuid(FEEE6AA2-84B1-11d2-BA47-00C04FBFE08B),
    helpstring("ITPCC Interface"),
    pointer_default(unique)
]
interface ITPCC : IUnknown
{
    HRESULT STDMETHODCALLTYPE NewOrder
        (
            [in]
            VARIANT txn_in,
            [out]
            VARIANT *txn_out
        );
    HRESULT STDMETHODCALLTYPE Payment
        (

```

```

            [in]
            VARIANT txn_in,
            [out]
            VARIANT *txn_out
        );
    HRESULT STDMETHODCALLTYPE Delivery
        (
            [in]
            VARIANT txn_in,
            [out]
            VARIANT *txn_out
        );
    HRESULT STDMETHODCALLTYPE StockLevel
        (
            [in]
            VARIANT txn_in,
            [out]
            VARIANT *txn_out
        );
    HRESULT STDMETHODCALLTYPE OrderStatus
        (
            [in]
            VARIANT txn_in,
            [out]
            VARIANT *txn_out
        );
    HRESULT STDMETHODCALLTYPE CallSetComplete
        (
            [in]
            VARIANT txn_in,
            [out]
            VARIANT *txn_out
        );
}; // 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( )

#ifdef _M_IA64 && !defined(_M_IX86)
#endif

#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( )

#ifdef _M_IA64 || defined(_M_AXP64)

#ifdef __cplusplus
extern "C" {
#endif

#include <rpc.h>
#include <rpcndr.h>

#ifdef _MIDL_USE_GUIDDEF_

#ifndef INITGUID
#define INITGUID
#include <guiddef.h>
#undef INITGUID
#else
#include <guiddef.h>
#endif

#define MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8) \
    DEFINE_GUID(name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8)

#else /* !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

typedef struct _IID
{
    unsigned long x;
    unsigned short s1;
    unsigned short s2;
    unsigned char c[8];
} IID;

#endif /* __IID_DEFINED__

#ifndef CLSID_DEFINED
#define CLSID_DEFINED
typedef IID CLSID;
#endif /* CLSID_DEFINED

#define MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8) \
    const type name = {l,w1,w2,{b1,b2,b3,b4,b5,b6,b7,b8}}

#endif /* !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
IID_ITPCC,0xFEEE6AA2,0x84B1,0x11d2,0xBA,0x47,0x00,0xC0,0x4F,0xBF,
0xE0,0x8B);

#undef MIDL_DEFINE_GUID

#ifdef __cplusplus
}
#endif

#endif /* !defined(_M_IA64) || defined(_M_AXP64)*/

Tpcc_com_ps_p.c

#pragma warning( disable: 4049 ) /* more than 64k source lines */

```

```

/* this ALWAYS GENERATED file contains the proxy stub code */

/* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:08 2001
*/
/* Compiler settings for .\src\tpcc_com_ps.idl:
Oicf (OptLev=i2), W1, Zp8, env=Win32 (32b run), ms_ext, c_ext
error checks: allocation ref bounds_check enum stub_data
VC __declspec() decoration level:
__declspec(uuid()), __declspec(selectany), __declspec(novtable)
DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@@MIDL_FILE_HEADING( )

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

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

#include "rpcproxy.h"
#ifndef __RPCPROXY_H_VERSION__
#error this stub requires an updated version of <rpcproxy.h>
#endif // __RPCPROXY_H_VERSION__

#include "tpcc_com_ps.h"

#define TYPE_FORMAT_STRING_SIZE 997
#define PROC_FORMAT_STRING_SIZE 193
#define TRANSMIT_AS_TABLE_SIZE 0
#define WIRE_MARSHAL_TABLE_SIZE 1

typedef struct _MIDL_TYPE_FORMAT_STRING
{
    short Pad;
    unsigned char Format[ TYPE_FORMAT_STRING_SIZE ];
} MIDL_TYPE_FORMAT_STRING;

typedef struct _MIDL_PROC_FORMAT_STRING
{
    short Pad;
    unsigned char Format[ PROC_FORMAT_STRING_SIZE ];
} MIDL_PROC_FORMAT_STRING;

extern const MIDL_TYPE_FORMAT_STRING __MIDL_TypeFormatString;
extern const MIDL_PROC_FORMAT_STRING __MIDL_ProcFormatString;

/* Standard interface: __MIDL_itf_tpcc_com_ps_0000, ver. 0.0,
GUID={0x00000000,0x0000,0x0000,{0x00,0x00,0x00,0x00,0x00,0x00,0x00,0
x00}} */

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

/* Object interface: ITPCC, ver. 0.0,
GUID={0xFEEE6AA2,0x84B1,0x11d2,{0xBA,0x47,0x00,0xC0,0x4F,0xBF,0xE0,0x8B}} */

extern const MIDL_STUB_DESC Object_StubDesc;

extern const MIDL_SERVER_INFO ITPCC_ServerInfo;

#pragma code_seg(".orpc")
static const unsigned short ITPCC_FormatStringOffsetTable[] =
{
    0,
    34,
    68,
    102,
    136,
    170
};

static const MIDL_SERVER_INFO ITPCC_ServerInfo =
{
    &Object_StubDesc,
    0,
    __MIDL_ProcFormatString.Format,
    &ITPCC_FormatStringOffsetTable[-3],
    0,
    0,
    0,
    0
};

static const MIDL_STUBLESS_PROXY_INFO ITPCC_ProxyInfo =
{
    &Object_StubDesc,
    __MIDL_ProcFormatString.Format,
    &ITPCC_FormatStringOffsetTable[-3],
    0,
    0,
    0
};

CINTERFACE_PROXY_VTABLE(9) _ITPCCProxyVtbl =
{
    &ITPCC_ProxyInfo,
    &IID_ITPCC,
    IUnknown_QueryInterface_Proxy,
    IUnknown_AddRef_Proxy,
    IUnknown_Release_Proxy ,
    (void *)-1 /* ITPCC::NewOrder */,
    (void *)-1 /* ITPCC::Payment */,
    (void *)-1 /* ITPCC::Delivery */,
    (void *)-1 /* ITPCC::StockLevel */,
    (void *)-1 /* ITPCC::OrderStatus */,
    (void *)-1 /* ITPCC::CallSetComplete */
};

const CInterfaceStubVtbl _ITPCCStubVtbl =
{
    &IID_ITPCC,
    &ITPCC_ServerInfo,
    9,
    0, /* pure interpreted */
    CStdStubBuffer_METHODS
};

```



```

/* Return value */
/* 28 */ NdrFcShort( 0x70 ), /* Flags: out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 30 */ NdrFcShort( 0x18 ), /* x86 Stack size/offset = 24 */
#else
NdrFcShort( 0x1c ), /* MIPS Stack
size/offset = 28 */
#endif
#else
NdrFcShort( 0x1c ), /* PPC Stack size/offset
= 28 */
#endif
#endif
/* 32 */ 0x8, /* FC_LONG */
0x0, /* 0 */

/* Procedure Payment */
/* 34 */ 0x33, /* FC_AUTO_HANDLE */
0x6c, /* Old Flags: object,
Oi2 */
/* 36 */ NdrFcLong( 0x0 ), /* 0 */
/* 40 */ NdrFcShort( 0x4 ), /* 4 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 42 */ NdrFcShort( 0x1c ), /* x86 Stack size/offset = 28 */
#else
NdrFcShort( 0x20 ), /* MIPS Stack
size/offset = 32 */
#endif
#else
NdrFcShort( 0x20 ), /* PPC Stack size/offset
= 32 */
#endif
#endif
/* 44 */ NdrFcShort( 0x0 ), /* 0 */
/* 46 */ NdrFcShort( 0x8 ), /* 8 */
/* 48 */ 0x7, /* Oi2 Flags: srv must size, clt must size, has
return, */
0x3, /* 3 */

/* Parameter txn_in */
/* 50 */ NdrFcShort( 0x8b ), /* Flags: must size, must free, in, by val, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 52 */ NdrFcShort( 0x4 ), /* x86 Stack size/offset = 4 */
#else
NdrFcShort( 0x8 ), /* MIPS Stack
size/offset = 8 */
#endif
#else
NdrFcShort( 0x8 ), /* PPC Stack size/offset
= 8 */
#endif
#endif

```

```

NdrFcShort( 0x8 ), /* Alpha Stack
size/offset = 8 */
#endif
/* 54 */ NdrFcShort( 0x3c8 ), /* Type Offset=968 */
/* Parameter txn_out */
/* 56 */ NdrFcShort( 0x4113 ), /* Flags: must size, must free, out,
simple ref, srv alloc size=16 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 58 */ NdrFcShort( 0x14 ), /* x86 Stack size/offset = 20 */
#else
NdrFcShort( 0x18 ), /* MIPS Stack
size/offset = 24 */
#endif
#else
NdrFcShort( 0x18 ), /* PPC Stack size/offset
= 24 */
#endif
#endif
/* 60 */ NdrFcShort( 0x3da ), /* Type Offset=986 */
/* Return value */
/* 62 */ NdrFcShort( 0x70 ), /* Flags: out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 64 */ NdrFcShort( 0x18 ), /* x86 Stack size/offset = 24 */
#else
NdrFcShort( 0x1c ), /* MIPS Stack
size/offset = 28 */
#endif
#else
NdrFcShort( 0x1c ), /* PPC Stack size/offset
= 28 */
#endif
#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
#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
#endif

```

```

#else
                                NdrFcShort( 0x20 ), /* Alpha Stack
size/offset = 32 */
#endif
/* 100 */ 0x8, /* FC_LONG */
                                0x0, /* 0 */

/* Procedure StockLevel */

/* 102 */ 0x33, /* FC_AUTO_HANDLE */
                                0x6c, /* Old Flags: object,
Oi2 */
/* 104 */ NdrFcLong( 0x0 ), /* 0 */
/* 108 */ NdrFcShort( 0x6 ), /* 6 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined( _MIPS_ )
/* 110 */ NdrFcShort( 0x1c ), /* x86 Stack size/offset = 28 */
#else
                                NdrFcShort( 0x20 ), /* MIPS Stack
size/offset = 32 */
#endif
#else
                                NdrFcShort( 0x20 ), /* PPC Stack size/offset
= 32 */
#endif
#else
                                NdrFcShort( 0x28 ), /* Alpha Stack
size/offset = 40 */
#endif
/* 112 */ NdrFcShort( 0x0 ), /* 0 */
/* 114 */ NdrFcShort( 0x8 ), /* 8 */
/* 116 */ 0x7, /* Oi2 Flags: srv must size, clt must size, has
return, */
                                0x3, /* 3 */

/* Parameter txn_in */

/* 118 */ NdrFcShort( 0x8b ), /* Flags: must size, must free, in, by val, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined( _MIPS_ )
/* 120 */ NdrFcShort( 0x4 ), /* x86 Stack size/offset = 4 */
#else
                                NdrFcShort( 0x8 ), /* MIPS Stack
size/offset = 8 */
#endif
#else
                                NdrFcShort( 0x8 ), /* PPC Stack size/offset
= 8 */
#endif
#else
                                NdrFcShort( 0x8 ), /* Alpha Stack
size/offset = 8 */
#endif
/* 122 */ NdrFcShort( 0x3c8 ), /* Type Offset=968 */

/* Parameter txn_out */

/* 124 */ NdrFcShort( 0x4113 ), /* Flags: must size, must free, out,
simple ref, srv alloc size=16 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined( _MIPS_ )
/* 126 */ NdrFcShort( 0x14 ), /* x86 Stack size/offset = 20 */
#else
                                NdrFcShort( 0x18 ), /* MIPS Stack
size/offset = 24 */

```

```

#endif
#else
    = 24 */
#endif
#else
    size/offset = 24 */
#endif
/* 128 */ NdrFcShort( 0x3da ), /* Type Offset=986 */

    /* Return value */

/* 130 */ NdrFcShort( 0x70 ), /* Flags: out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 132 */ NdrFcShort( 0x18 ), /* x86 Stack size/offset = 24 */
#else
    NdrFcShort( 0x1c ), /* MIPS Stack
size/offset = 28 */
#endif
#else
    NdrFcShort( 0x1c ), /* PPC Stack size/offset
= 28 */
#endif
#else
    NdrFcShort( 0x20 ), /* Alpha Stack
size/offset = 32 */
#endif
/* 134 */ 0x8, /* FC_LONG */
0x0, /* 0 */

    /* Procedure OrderStatus */

/* 136 */ 0x33, /* FC_AUTO_HANDLE */
0x6c, /* Old Flags: object,
Oi2 */
/* 138 */ NdrFcLong( 0x0 ), /* 0 */
/* 142 */ NdrFcShort( 0x7 ), /* 7 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 144 */ NdrFcShort( 0x1c ), /* x86 Stack size/offset = 28 */
#else
    NdrFcShort( 0x20 ), /* MIPS Stack
size/offset = 32 */
#endif
#else
    NdrFcShort( 0x20 ), /* PPC Stack size/offset
= 32 */
#endif
#else
    NdrFcShort( 0x28 ), /* Alpha Stack
size/offset = 40 */
#endif
/* 146 */ NdrFcShort( 0x0 ), /* 0 */
/* 148 */ NdrFcShort( 0x8 ), /* 8 */
/* 150 */ 0x7, /* Oi2 Flags: srv must size, clt must size, has
return, */
0x3, /* 3 */

    /* Parameter txn_in */

/* 152 */ NdrFcShort( 0x8b ), /* Flags: must size, must free, in, by val, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 154 */ NdrFcShort( 0x4 ), /* x86 Stack size/offset = 4 */
#else
    NdrFcShort( 0x8 ), /* MIPS Stack
size/offset = 8 */
#endif
#else
    NdrFcShort( 0x8 ), /* PPC Stack size/offset
= 8 */
#endif
#else
    NdrFcShort( 0x8 ), /* Alpha Stack
size/offset = 8 */
#endif
/* 156 */ NdrFcShort( 0x3c8 ), /* Type Offset=968 */

    /* Parameter txn_out */

/* 158 */ NdrFcShort( 0x4113 ), /* Flags: must size, must free, out,
simple ref, srv alloc size=16 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 160 */ NdrFcShort( 0x14 ), /* x86 Stack size/offset = 20 */
#else
    NdrFcShort( 0x18 ), /* MIPS Stack
size/offset = 24 */
#endif
#else
    NdrFcShort( 0x18 ), /* PPC Stack size/offset
= 24 */
#endif
#else
    NdrFcShort( 0x18 ), /* Alpha Stack
size/offset = 24 */
#endif
/* 162 */ NdrFcShort( 0x3da ), /* Type Offset=986 */

    /* Return value */

/* 164 */ NdrFcShort( 0x70 ), /* Flags: out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 166 */ NdrFcShort( 0x18 ), /* x86 Stack size/offset = 24 */
#else
    NdrFcShort( 0x1c ), /* MIPS Stack
size/offset = 28 */
#endif
#else
    NdrFcShort( 0x1c ), /* PPC Stack size/offset
= 28 */
#endif
#else
    NdrFcShort( 0x20 ), /* Alpha Stack
size/offset = 32 */
#endif
/* 168 */ 0x8, /* FC_LONG */
0x0, /* 0 */

    /* Procedure CallSetComplete */

/* 170 */ 0x33, /* FC_AUTO_HANDLE */
0x6c, /* Old Flags: object,
Oi2 */
/* 172 */ NdrFcLong( 0x0 ), /* 0 */
/* 176 */ NdrFcShort( 0x8 ), /* 8 */
#ifndef _ALPHA_
/* 178 */ NdrFcShort( 0x8 ), /* x86, MIPS, PPC Stack size/offset = 8 */

```



```

#else
    NdrFcShort( 0x10 ), /* Alpha Stack
size/offset = 16 */
#endif
/* 180 */ NdrFcShort( 0x0 ), /* 0 */
/* 182 */ NdrFcShort( 0x8 ), /* 8 */
/* 184 */ 0x4, /* Oi2 Flags: has return, */
                /* 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 */
                /* 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( 0xff8 ), /* -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 */

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/* 282 */ 0xb, /* FC_HYPER */
/* 284 */ 0x5b, /* FC_END */
/* 286 */ NdrFcShort( 0xc ), /* FC_UP */
/* 288 */ 0x12, 0x0, /* FC_UP */
/* 290 */ NdrFcShort( 0x2 ), /* Offset= 12 (298) */
/* 292 */ 0x9, /* FC_CARRAY */
/* 294 */ NdrFcShort( 0xffffc ), /* 1 */
/* 296 */ 0x6, /* FC_SHORT */
/* 298 */ 0x5b, /* FC_END */
/* 300 */ NdrFcShort( 0x8 ), /* FC_CSTRUCT */
/* 302 */ NdrFcShort( 0xfffff2 ), /* 3 */
/* 304 */ 0x8, /* FC_LONG */
/* 306 */ 0x5c, /* FC_LONG */
/* 308 */ 0x5b, /* FC_PAD */
/* 310 */ 0x2f, /* FC_END */
/* 312 */ 0x5a, /* FC_IP */
FC_CONSTANT_IID */
/* 310 */ NdrFcLong( 0x0 ), /* 0 */
/* 314 */ NdrFcShort( 0x0 ), /* 0 */
/* 316 */ NdrFcShort( 0x0 ), /* 0 */
/* 318 */ 0xc0, /* 192 */
/* 320 */ 0x0, /* 0 */
/* 322 */ 0x0, /* 0 */
/* 324 */ 0x0, /* 0 */
/* 326 */ 0x46, /* 70 */
/* 328 */ 0x2f, /* FC_IP */
/* 330 */ 0x5a, /* FC_CONSTANT_IID */
/* 332 */ NdrFcLong( 0x20400 ), /* 132096 */
/* 334 */ NdrFcShort( 0x0 ), /* 0 */
/* 336 */ NdrFcShort( 0x0 ), /* 0 */
/* 338 */ 0xc0, /* 192 */
/* 340 */ 0x0, /* 0 */
/* 342 */ 0x0, /* 0 */
/* 344 */ 0x0, /* 0 */
/* 346 */ 0x46, /* 70 */
/* 348 */ 0x46, /* 70 */
[pointer_deref] */
/* 350 */ NdrFcShort( 0x2 ), /* Offset= 2 (348) */
/* 352 */ 0x12, 0x0, /* FC_UP */
/* 354 */ NdrFcShort( 0x1fc ), /* Offset= 508 (858) */
/* 356 */ 0x2a, /* FC_ENCAPSULATED_UNION */
/* 358 */ 0x49, /* 73 */
/* 360 */ NdrFcShort( 0x18 ), /* 24 */
/* 362 */ NdrFcShort( 0xa ), /* 10 */
/* 364 */ NdrFcLong( 0x8 ), /* 8 */
/* 366 */ NdrFcShort( 0x58 ), /* Offset= 88 (450) */
/* 368 */ NdrFcLong( 0xd ), /* 13 */
/* 370 */ NdrFcShort( 0x78 ), /* Offset= 120 (488) */
/* 372 */ NdrFcLong( 0x9 ), /* 9 */
/* 374 */ NdrFcShort( 0x94 ), /* Offset= 148 (522) */
/* 376 */ NdrFcLong( 0xc ), /* 12 */
/* 378 */ NdrFcShort( 0xbc ), /* Offset= 188 (568) */
/* 380 */ NdrFcLong( 0x24 ), /* 36 */
/* 382 */ NdrFcShort( 0x114 ), /* Offset= 276 (662) */
/* 384 */ NdrFcLong( 0x800d ), /* 32781 */
/* 386 */ NdrFcShort( 0x130 ), /* Offset= 304 (696) */
/* 388 */ NdrFcLong( 0x10 ), /* 16 */
/* 390 */ NdrFcShort( 0x148 ), /* Offset= 328 (726) */
/* 392 */ NdrFcLong( 0x2 ), /* 2 */
/* 394 */ NdrFcShort( 0x160 ), /* Offset= 352 (756) */
/* 396 */ NdrFcLong( 0x3 ), /* 3 */
/* 398 */ NdrFcShort( 0x178 ), /* Offset= 376 (786) */
/* 400 */ NdrFcLong( 0x14 ), /* 20 */
/* 402 */ NdrFcShort( 0x190 ), /* Offset= 400 (816) */
/* 404 */ NdrFcShort( 0xfffffff ), /* Offset= -1 (417) */
/* 406 */ 0x1b, /* FC_CARRAY */
/* 408 */ 0x3, /* 3 */
/* 410 */ NdrFcShort( 0x4 ), /* 4 */
/* 412 */ 0x19, /* Corr desc: field pointer, FC_ULONG */
/* 414 */ 0x0, /* 0 */
/* 416 */ NdrFcShort( 0x0 ), /* 0 */
/* 418 */ 0x4b, /* FC_PP */
/* 420 */ 0x5c, /* FC_PAD */
/* 422 */ 0x48, /* 48 */
/* 424 */ 0x49, /* 49 */
FC_VARIABLE_REPEAT */
FC_FIXED_OFFSET */
/* 426 */ NdrFcShort( 0x4 ), /* 4 */
/* 428 */ NdrFcShort( 0x0 ), /* 0 */
/* 430 */ NdrFcShort( 0x1 ), /* 1 */
/* 432 */ NdrFcShort( 0x0 ), /* 0 */
/* 434 */ NdrFcShort( 0x0 ), /* 0 */
/* 436 */ 0x12, 0x0, /* FC_UP */
/* 438 */ NdrFcShort( 0xfffff6e ), /* Offset= -146 (298) */
/* 440 */ 0x5b, /* FC_END */
/* 442 */ 0x8, /* FC_LONG */
/* 444 */ 0x5c, /* FC_PAD */
/* 446 */ 0x5b, /* FC_END */
/* 448 */ 0x16, /* FC_PSTRUCT */
/* 450 */ 0x3, /* 3 */
/* 452 */ NdrFcShort( 0x8 ), /* 8 */
/* 454 */ 0x4b, /* FC_PP */
/* 456 */ 0x5c, /* FC_PAD */
/* 458 */ 0x46, /* FC_NO_REPEAT */
/* 460 */ 0x5c, /* FC_PAD */
/* 462 */ NdrFcShort( 0x4 ), /* 4 */
/* 464 */ NdrFcShort( 0x4 ), /* 4 */
/* 466 */ 0x11, 0x0, /* FC_RP */
/* 468 */ NdrFcShort( 0xfffffd4 ), /* Offset= -44 (420) */
/* 470 */ 0x5b, /* FC_END */
/* 472 */ 0x8, /* FC_LONG */
/* 474 */ 0x5b, /* FC_END */
/* 476 */ 0x8, /* FC_LONG */
/* 478 */ 0x5b, /* FC_END */

```

FC_BOGUS_ARRAY */	0x21,	/*	FC_FIXED_OFFSET */	0x49,	/*
/* 472 */ NdrFcShort( 0x0 ),	0x3,	/* 3 */	/* 550 */ NdrFcShort( 0x4 ),	/* 4 */	
/* 474 */ 0x19,	/* 0 */		/* 552 */ NdrFcShort( 0x0 ),	/* 0 */	
	/* Corr desc: field pointer, FC_ULONG */		/* 554 */ NdrFcShort( 0x1 ),	/* 1 */	
/* 476 */ NdrFcShort( 0x0 ),	0x0,	/* */	/* 556 */ NdrFcShort( 0x0 ),	/* 0 */	
/* 478 */ NdrFcLong( 0xffffffff ),	/* -1 */		/* 558 */ NdrFcShort( 0x0 ),	/* 0 */	
/* 482 */ 0x4c,	/* FC_EMBEDDED_COMPLEX */		/* 560 */ 0x12, 0x0, /* FC_UP */		
	0x0,	/* 0 */	/* 562 */ NdrFcShort( 0x182 ),	/* Offset= 386 (948) */	
/* 484 */ NdrFcShort( 0xfffff50 ),	/* Offset= -176 (308) */		/* 564 */		
/* 486 */ 0x5c,	/* FC_PAD */			0x5b,	/* FC_END */
	0x5b,	/* FC_END */		0x8,	/* FC_LONG */
/* 488 */			/* 566 */ 0x5c,	/* FC_PAD */	
FC_BOGUS_STRUCT */	0x1a,	/*	/* 568 */	0x5b,	/* FC_END */
/* 490 */ NdrFcShort( 0x8 ),	0x3,	/* 3 */	FC_BOGUS_STRUCT */	0x1a,	/*
/* 492 */ NdrFcShort( 0x0 ),	/* 8 */		/* 570 */ NdrFcShort( 0x8 ),	/* 8 */	
/* 494 */ NdrFcShort( 0x6 ),	/* 0 */		/* 572 */ NdrFcShort( 0x0 ),	/* 0 */	
/* 496 */ 0x8,	/* Offset= 6 (500) */		/* 574 */ NdrFcShort( 0x6 ),	/* Offset= 6 (580) */	
	/* FC_LONG */		/* 576 */ 0x8,	/* FC_LONG */	
/* 498 */ 0x5c,	0x36,	/* FC_POINTER */	/* 578 */ 0x5c,	0x36,	/* FC_POINTER */
	/* FC_PAD */			/* FC_PAD */	
/* 500 */	0x5b,	/* FC_END */	/* 580 */	0x5b,	/* FC_END */
				0x11, 0x0, /* FC_RP */	
/* 502 */ NdrFcShort( 0xfffffe0 ),	/* Offset= -32 (470) */		/* 582 */ NdrFcShort( 0xfffffd4 ),	/* Offset= -44 (538) */	
/* 504 */			/* 584 */		
FC_BOGUS_ARRAY */	0x21,	/*		0x2f,	/* FC_IP */
/* 506 */ NdrFcShort( 0x0 ),	0x3,	/* 3 */		0x5a,	/*
/* 508 */ 0x19,	/* 0 */		FC_CONSTANT_IID */		
	/* Corr desc: field pointer, FC_ULONG */		/* 586 */ NdrFcLong( 0x2f ),	/* 47 */	
/* 510 */ NdrFcShort( 0x0 ),	0x0,	/* */	/* 590 */ NdrFcShort( 0x0 ),	/* 0 */	
/* 512 */ NdrFcLong( 0xffffffff ),	/* -1 */		/* 592 */ NdrFcShort( 0x0 ),	/* 0 */	
/* 516 */ 0x4c,	/* FC_EMBEDDED_COMPLEX */		/* 594 */ 0xc0,	/* 192 */	
	0x0,	/* 0 */	/* 596 */ 0x0,	/* 0 */	
/* 518 */ NdrFcShort( 0xfffff40 ),	/* Offset= -192 (326) */		/* 598 */ 0x0,	/* 0 */	
/* 520 */ 0x5c,	/* FC_PAD */		/* 600 */ 0x0,	/* 0 */	
	0x5b,	/* FC_END */	/* 602 */	0x46,	/* 70 */
/* 522 */				0x1b,	/* FC_CARRAY */
FC_BOGUS_STRUCT */	0x1a,	/*		0x0,	/* 0 */
/* 524 */ NdrFcShort( 0x8 ),	0x3,	/* 3 */	/* 604 */ NdrFcShort( 0x1 ),	/* 1 */	
/* 526 */ NdrFcShort( 0x0 ),	/* 8 */		/* 606 */ 0x19,	/* Corr desc: field pointer, FC_ULONG */	
/* 528 */ NdrFcShort( 0x6 ),	/* 0 */			/* */	
/* 530 */ 0x8,	/* Offset= 6 (534) */		/* 608 */ NdrFcShort( 0x4 ),	/* 4 */	
	/* FC_LONG */		/* 610 */ 0x1,	/* FC_BYTE */	
/* 532 */ 0x5c,	0x36,	/* FC_POINTER */	/* 612 */	0x5b,	/* FC_END */
	/* FC_PAD */			0x1a,	/*
/* 534 */	0x5b,	/* FC_END */	FC_BOGUS_STRUCT */	0x3,	/* 3 */
			/* 614 */ NdrFcShort( 0x10 ),	/* 16 */	
/* 536 */ NdrFcShort( 0xfffffe0 ),	0x11, 0x0, /* FC_RP */		/* 616 */ NdrFcShort( 0x0 ),	/* 0 */	
/* 538 */	/* Offset= -32 (504) */		/* 618 */ NdrFcShort( 0xa ),	/* Offset= 10 (628) */	
			/* 620 */ 0x8,	/* FC_LONG */	
/* 540 */ NdrFcShort( 0x4 ),	0x1b,	/* FC_CARRAY */	/* 622 */ 0x4c,	0x8,	/* FC_LONG */
/* 542 */ 0x19,	0x3,	/* 3 */		/* FC_EMBEDDED_COMPLEX */	
	/* 4 */		/* 624 */ NdrFcShort( 0xfffffd8 ),	/* 0 */	
/* 544 */ NdrFcShort( 0x0 ),	/* Corr desc: field pointer, FC_ULONG */		/* 626 */ 0x36,	/* Offset= -40 (584) */	
/* 546 */	0x0,	/* */		/* FC_POINTER */	
	/* 0 */		/* 628 */	0x5b,	/* FC_END */
/* 548 */	0x4b,	/* FC_PP */			
	0x5c,	/* FC_PAD */			
FC_VARIABLE_REPEAT */	0x48,	/*			

	0x12, 0x0, /* FC_UP */				
/* 630 */	NdrFcShort( 0xffffffe4 ),	/* Offset= -28 (602) */		/* 700 */	NdrFcShort( 0x0 ), /* 0 */
/* 632 */				/* 702 */	NdrFcShort( 0xa ), /* Offset= 10 (712) */
	0x1b,	/* FC_CARRY */		/* 704 */	0x8, /* FC_LONG */
	0x3,	/* 3 */			0x36, /* FC_POINTER */
/* 634 */	NdrFcShort( 0x4 ),	/* 4 */		/* 706 */	0x4c, /* FC_EMBEDDED_COMPLEX */
/* 636 */	0x19,	/* Corr desc: field pointer, FC_ULONG */			0x0, /* 0 */
	0x0,	/* */		/* 708 */	NdrFcShort( 0xffffffe8 ), /* Offset= -24 (684) */
/* 638 */	NdrFcShort( 0x0 ),	/* 0 */		/* 710 */	0x5c, /* FC_PAD */
/* 640 */					0x5b, /* FC_END */
	0x4b,	/* FC_PP */		/* 712 */	
	0x5c,	/* FC_PAD */			0x11, 0x0, /* FC_RP */
/* 642 */				/* 714 */	NdrFcShort( 0xfffff0c ), /* Offset= -244 (470) */
	0x48,	/*		/* 716 */	
FC_VARIABLE_REPEAT */					0x1b, /* FC_CARRY */
	0x49,	/*			0x0, /* 0 */
FC_FIXED_OFFSET */				/* 718 */	NdrFcShort( 0x1 ), /* 1 */
/* 644 */	NdrFcShort( 0x4 ),	/* 4 */		/* 720 */	0x19, /* Corr desc: field pointer, FC_ULONG */
/* 646 */	NdrFcShort( 0x0 ),	/* 0 */			0x0, /* */
/* 648 */	NdrFcShort( 0x1 ),	/* 1 */		/* 722 */	NdrFcShort( 0x0 ), /* 0 */
/* 650 */	NdrFcShort( 0x0 ),	/* 0 */		/* 724 */	0x1, /* FC_BYTE */
/* 652 */	NdrFcShort( 0x0 ),	/* 0 */			0x5b, /* FC_END */
/* 654 */	0x12, 0x0, /* FC_UP */			/* 726 */	
/* 656 */	NdrFcShort( 0xfffffd4 ),	/* Offset= -44 (612) */			0x16, /* FC_PSTRUCT */
/* 658 */					0x3, /* 3 */
	0x5b,	/* FC_END */		/* 728 */	NdrFcShort( 0x8 ), /* 8 */
	0x8,	/* FC_LONG */		/* 730 */	
/* 660 */	0x5c,	/* FC_PAD */			0x4b, /* FC_PP */
	0x5b,	/* FC_END */			0x5c, /* FC_PAD */
/* 662 */				/* 732 */	
	0x1a,	/*			0x46, /* FC_NO_REPEAT */
FC_BOGUS_STRUCT */					0x5c, /* FC_PAD */
	0x3,	/* 3 */		/* 734 */	NdrFcShort( 0x4 ), /* 4 */
/* 664 */	NdrFcShort( 0x8 ),	/* 8 */		/* 736 */	NdrFcShort( 0x4 ), /* 4 */
/* 666 */	NdrFcShort( 0x0 ),	/* 0 */		/* 738 */	0x12, 0x0, /* FC_UP */
/* 668 */	NdrFcShort( 0x6 ),	/* Offset= 6 (674) */		/* 740 */	NdrFcShort( 0xfffffe8 ), /* Offset= -24 (716) */
/* 670 */	0x8,	/* FC_LONG */		/* 742 */	
	0x36,	/* FC_POINTER */			0x5b, /* FC_END */
/* 672 */	0x5c,	/* FC_PAD */		/* 744 */	0x8, /* FC_LONG */
	0x5b,	/* FC_END */			0x5b, /* FC_END */
/* 674 */				/* 746 */	
	0x11, 0x0, /* FC_RP */				0x1b, /* FC_CARRY */
/* 676 */	NdrFcShort( 0xfffffd4 ),	/* Offset= -44 (632) */			0x1, /* 1 */
/* 678 */				/* 748 */	NdrFcShort( 0x2 ), /* 2 */
	0x1d,	/* FC_SMFARRAY */		/* 750 */	0x19, /* Corr desc: field pointer, FC_ULONG */
	0x0,	/* 0 */			0x0, /* */
/* 680 */	NdrFcShort( 0x8 ),	/* 8 */		/* 752 */	NdrFcShort( 0x0 ), /* 0 */
/* 682 */	0x1,	/* FC_BYTE */		/* 754 */	0x6, /* FC_SHORT */
	0x5b,	/* FC_END */			0x5b, /* FC_END */
/* 684 */				/* 756 */	
	0x15,	/* FC_STRUCT */			0x16, /* FC_PSTRUCT */
	0x3,	/* 3 */			0x3, /* 3 */
/* 686 */	NdrFcShort( 0x10 ),	/* 16 */		/* 758 */	NdrFcShort( 0x8 ), /* 8 */
/* 688 */	0x8,	/* FC_LONG */		/* 760 */	
	0x6,	/* FC_SHORT */			0x4b, /* FC_PP */
/* 690 */	0x6,	/* FC_SHORT */			0x5c, /* FC_PAD */
	0x4c,	/*		/* 762 */	
FC_EMBEDDED_COMPLEX */					0x46, /* FC_NO_REPEAT */
/* 692 */	0x0,	/* 0 */			0x5c, /* FC_PAD */
	NdrFcShort( 0xfffff1 ),	/* Offset=		/* 764 */	NdrFcShort( 0x4 ), /* 4 */
-15 (678) */				/* 766 */	NdrFcShort( 0x4 ), /* 4 */
	0x5b,	/* FC_END */		/* 768 */	0x12, 0x0, /* FC_UP */
/* 696 */				/* 770 */	NdrFcShort( 0xfffffe8 ), /* Offset= -24 (746) */
	0x1a,	/*		/* 772 */	
FC_BOGUS_STRUCT */					0x5b, /* FC_END */
	0x3,	/* 3 */			0x8, /* FC_LONG */
/* 698 */	NdrFcShort( 0x18 ),	/* 24 */			

/* 774 */ 0x8,	/* FC_LONG */	/* 844 */	0x1b,	/* FC_CARRAY */
/* 776 */	0x5b,	/* FC_END */	0x3,	/* 3 */
/* 778 */ NdrFcShort( 0x4 ),	/* 4 */	/* 846 */ NdrFcShort( 0x8 ),	/* 8 */	
/* 780 */ 0x19,	/* Corr desc: field pointer, FC_ULONG */	/* 848 */ 0x7,	/* Corr desc: FC_USHORT */	
/* 782 */ NdrFcShort( 0x0 ),	/* 0 */	/* 850 */ NdrFcShort( 0xffd8 ),	/* -40 */	
/* 784 */ 0x8,	/* FC_LONG */	/* 852 */ 0x4c,	/* FC_EMBEDDED_COMPLEX */	
/* 786 */	0x5b,	/* FC_END */	0x0,	/* 0 */
/* 788 */ NdrFcShort( 0x8 ),	/* 8 */	/* 854 */ NdrFcShort( 0xfffffee ),	/* Offset= -18 (836) */	
/* 790 */	0x16,	/* FC_PSTRUCT */	/* FC_PAD */	
/* 792 */	0x3,	/* 3 */	0x5b,	/* FC_END */
/* 794 */ NdrFcShort( 0x4 ),	/* 4 */	/* 858 */	0x1a,	/*
/* 796 */ NdrFcShort( 0x4 ),	/* 4 */	FC_BOGUS_STRUCT */	0x3,	/* 3 */
/* 798 */ 0x12, 0x0, /* FC_UP */	/* FC_PP */	/* 860 */ NdrFcShort( 0x28 ),	/* 40 */	
/* 800 */ NdrFcShort( 0xfffffe8 ),	/* FC_PAD */	/* 862 */ NdrFcShort( 0xfffffee ),	/* Offset= -18 (844) */	
/* 802 */	0x4b,	/* 864 */ NdrFcShort( 0x0 ),	/* Offset= 0 (864) */	
/* 804 */ 0x8,	0x5c,	/* 866 */ 0x6,	/* FC_SHORT */	
/* 806 */	0x46,	/* FC_NO_REPEAT */	0x6,	/* FC_SHORT */
/* 808 */ NdrFcShort( 0x4 ),	/* 4 */	/* FC_PAD */	/* FC_ALIGNM4 */	
/* 810 */ 0x19,	/* Corr desc: field pointer, FC_ULONG */	/* 868 */ 0x38,	0x8,	/* FC_LONG */
/* 812 */ NdrFcShort( 0x0 ),	/* 0 */	/* 870 */ 0x8,	/* FC_LONG */	
/* 814 */ 0xb,	/* FC_HYPER */	FC_EMBEDDED_COMPLEX */	0x4c,	/*
/* 816 */	0x5b,	/* FC_END */	/* 872 */ 0x0,	/* 0 */
/* 818 */ NdrFcShort( 0x8 ),	/* 8 */	/* FC_LONG */	NdrFcShort( 0xfffffd7 ),	/* Offset=
/* 820 */	0x8,	/* FC_LONG */	-521 (352) */	
/* 822 */	0x5b,	/* FC_END */	0x5b,	/* FC_END */
/* 824 */ NdrFcShort( 0x4 ),	/* 4 */	/* 876 */	0x12, 0x0, /* FC_UP */	
/* 826 */ NdrFcShort( 0x4 ),	/* 4 */	/* 878 */ NdrFcShort( 0xfffffe6 ),	/* Offset= -266 (612) */	
/* 828 */ 0x12, 0x0, /* FC_UP */	/* FC_PP */	/* 880 */	0x12, 0x8, /* FC_UP [simple_pointer] */	
/* 830 */ NdrFcShort( 0xfffffe8 ),	/* FC_PAD */	/* 882 */ 0x1,	/* FC_BYTE */	
/* 832 */	0x4b,	/* 884 */	0x5c,	/* FC_PAD */
/* 834 */ 0x8,	/* FC_LONG */	/* 886 */ 0x6,	0x12, 0x8, /* FC_UP [simple_pointer] */	
/* 836 */	0x5b,	/* FC_END */	/* FC_SHORT */	
/* 838 */ NdrFcShort( 0x8 ),	/* 8 */	/* 888 */	0x5c,	/* FC_PAD */
/* 840 */ 0x8,	/* FC_LONG */	/* 890 */ 0x8,	0x12, 0x8, /* FC_UP [simple_pointer] */	
/* 842 */ 0x5c,	/* FC_PAD */	/* 892 */	/* FC_LONG */	
/* 844 */	0x15,	/* FC_PSTRUCT */	0x5c,	/* FC_PAD */
/* 846 */	0x3,	/* 3 */	0x12, 0x8, /* FC_UP [simple_pointer] */	
/* 848 */	0x8,	/* FC_LONG */	/* FC_FLOAT */	
/* 850 */	0x8,	/* FC_LONG */	0x5c,	/* FC_PAD */
/* 852 */	0x5b,	/* FC_END */	/* 896 */	
/* 854 */	0x8,	/* FC_LONG */	/* 898 */ 0xc,	0x12, 0x8, /* FC_UP [simple_pointer] */
/* 856 */	0x5b,	/* FC_END */	/* FC_DOUBLE */	
/* 858 */	0x8,	/* FC_LONG */	0x5c,	/* FC_PAD */
/* 860 */	0x15,	/* FC_STRUCT */	/* 900 */	
/* 862 */	0x3,	/* 3 */	0x12, 0x0, /* FC_UP */	
/* 864 */	0x8,	/* FC_LONG */	/* 902 */ NdrFcShort( 0xffffd90 ),	/* Offset= -624 (278) */
/* 866 */	0x5b,	/* FC_END */	/* 904 */	
/* 868 */	0x15,	/* FC_STRUCT */	0x12, 0x10,	/* FC_UP
/* 870 */	0x3,	/* 3 */	[pointer_deref] */	
/* 872 */	0x8,	/* FC_LONG */	/* 906 */ NdrFcShort( 0xffffd92 ),	/* Offset= -622 (284) */
/* 874 */	0x5b,	/* FC_END */	/* 908 */	
/* 876 */	0x15,	/* FC_STRUCT */	0x12, 0x10,	/* FC_UP
/* 878 */	0x3,	/* 3 */	[pointer_deref] */	
/* 880 */	0x8,	/* FC_LONG */	/* 910 */ NdrFcShort( 0xffffda6 ),	/* Offset= -602 (308) */
/* 882 */	0x5b,	/* FC_END */	/* 912 */	
/* 884 */	0x15,	/* FC_STRUCT */	0x12, 0x10,	/* FC_UP
/* 886 */	0x3,	/* 3 */	[pointer_deref] */	
/* 888 */	0x8,	/* FC_LONG */	/* 914 */ NdrFcShort( 0xffffdb4 ),	/* Offset= -588 (326) */
/* 890 */	0x5b,	/* FC_END */	/* 916 */	

```

/* 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( 0xffffc42 ),          /* 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( 0xffffc32 ),          /* Offset= -974 (2) */
/* 978 */
                                0x11, 0x4, /* FC_RP [allocated_on_stack] */
/* 980 */ NdrFcShort( 0x6 ), /* Offset= 6 (986) */
/* 982 */
                                0x13, 0x0, /* FC_OP */
/* 984 */ NdrFcShort( 0xfffffdc ),          /* Offset= -36 (948) */
/* 986 */ 0xb4,          /* FC_USER_MARSHAL */
                                0x83,          /* 131 */
/* 988 */ NdrFcShort( 0x0 ), /* 0 */
/* 990 */ NdrFcShort( 0x10 ), /* 16 */
/* 992 */ NdrFcShort( 0x0 ), /* 0 */
/* 994 */ NdrFcShort( 0xfffff4 ),          /* Offset= -12 (982) */
                                0x0
}
};

const CInterfaceProxyVtbl * _tpcc_com_ps_ProxyVtblList[] =
{
    ( CInterfaceProxyVtbl *) &_ITPCCProxyVtbl,
    0
};

const CInterfaceStubVtbl * _tpcc_com_ps_StubVtblList[] =
{
    ( CInterfaceStubVtbl *) &_ITPCCStubVtbl,
    0
};

PCInterfaceName const _tpcc_com_ps_InterfaceNamesList[] =
{
    "ITPCC",
    0
};

#define _tpcc_com_ps_CHECK_IID(n)    IID_GENERIC_CHECK_IID(
    _tpcc_com_ps, pIID, n)

int __stdcall _tpcc_com_ps_IID_Lookup( const IID * pIID, int * pIndex )
{
    if(!_tpcc_com_ps_CHECK_IID(0))
    {
        *pIndex = 0;
        return 1;
    }

    return 0;
}

const ExtendedProxyFileInfo tpcc_com_ps_ProxyFileInfo =
{
    (PCInterfaceProxyVtblList *) &_tpcc_com_ps_ProxyVtblList,
    (PCInterfaceStubVtblList *) &_tpcc_com_ps_StubVtblList,
    (const PCInterfaceName *) &_tpcc_com_ps_InterfaceNamesList,
    0, // no delegation
    &_tpcc_com_ps_IID_Lookup,
    1,
    2,
    0, /* table of [async_uuid] interfaces */
    0, /* Filler1 */
    0, /* Filler2 */
    0 /* Filler3 */
};

#endif /* !defined(_M_IA64) && !defined(_M_AXP64) */

#pragma warning( disable: 4049 ) /* more than 64k source lines */

/* this ALWAYS GENERATED file contains the proxy stub code */

/* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:08 2001
*/
/* Compiler settings for .\src\tpcc_com_ps.idl:
Oicf(OptLev=i2), W1, Zp8, env=Win64 (32b run.appending), ms_ext, c_ext,
robust
error checks: allocation ref bounds_check enum stub_data

```

```

VC __declspec() decoration level:
    __declspec(uuid()), __declspec(selectany), __declspec(novtable)
    DECLSPEC_UUID(), MIDL_INTERFACE()
*/
@@@MIDL_FILE_HEADING( )

#if defined(_M_IA64) || defined(_M_AXP64)
#define USE_STUBLESS_PROXY

/* verify that the <rpcproxy.h> version is high enough to compile this file*/
#ifndef __REDQ_RPCPROXY_H_VERSION__
#define __REQUIRED_RPCPROXY_H_VERSION__ 475
#endif

#include "rpcproxy.h"
#ifndef __RPCPROXY_H_VERSION__
#error this stub requires an updated version of <rpcproxy.h>
#endif // __RPCPROXY_H_VERSION__

#include "tpcc_com_ps.h"

#define TYPE_FORMAT_STRING_SIZE 979
#define PROC_FORMAT_STRING_SIZE 253
#define TRANSMIT_AS_TABLE_SIZE 0
#define WIRE_MARSHAL_TABLE_SIZE 1

typedef struct _MIDL_TYPE_FORMAT_STRING
{
    short    Pad;
    unsigned char    Format[ TYPE_FORMAT_STRING_SIZE ];
} MIDL_TYPE_FORMAT_STRING;

typedef struct _MIDL_PROC_FORMAT_STRING
{
    short    Pad;
    unsigned char    Format[ PROC_FORMAT_STRING_SIZE ];
} MIDL_PROC_FORMAT_STRING;

extern const MIDL_TYPE_FORMAT_STRING __MIDL_TypeFormatString;
extern const MIDL_PROC_FORMAT_STRING __MIDL_ProcFormatString;

/* Standard interface: __MIDL_itf_tpcc_com_ps_0000, ver. 0.0,
GUID={0x00000000,0x0000,0x0000,{0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00}} */

/* 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={0xFEEE6AA2,0x84B1,0x11d2,{0xBA,0x47,0x00,0xC0,0x4F,0xBF,0xE0,0x8B}} */

extern const MIDL_STUB_DESC Object_StubDesc;

extern const MIDL_SERVER_INFO ITPCC_ServerInfo;

```

```

#pragma code_seg(".orpc")
static const unsigned short ITPCC_FormatStringOffsetTable[] =
{
    0,
    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,
_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
    }
};

#ifdef __RPC_WIN64__
#error Invalid build platform for this stub.
#endif

static const MIDL_PROC_FORMAT_STRING __MIDL_ProcFormatString =
{
    0,
    {
        /* Procedure NewOrder */
        0x33, /*
FC_AUTO_HANDLE */
        0x6c, /* Old Flags: object,
Oi2 */
        /* 2 */ NdrFcLong( 0x0 ), /* 0 */
        /* 6 */ NdrFcShort( 0x3 ), /* 3 */
#ifdef _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, */
#ifdef _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 */
#ifdef _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, */
#ifdef _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 */
#ifdef _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
        /* else
*/

```



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                                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, */
/* 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
/* 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 */
/* 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
/* 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 */

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#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 */
/* 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 */
/* 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 */
/* 0 */

0x0

}
};

static const MIDL_TYPE_FORMAT_STRING __MIDL_TypeFormatString =
{
    0,
    {
/* 2 */
        NdrFcShort( 0x0 ), /* 0 */
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( 0xffff ), /* -8 */
/* 12 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 14 */ NdrFcShort( 0x2 ), /* Offset= 2 (16) */
/* 16 */ NdrFcShort( 0x10 ), /* 16 */
/* 18 */ NdrFcShort( 0x2b ), /* 43 */
/* 20 */ NdrFcLong( 0x3 ), /* 3 */
/* 24 */ NdrFcShort( 0x8008 ), /* Simple arm type: FC_LONG */
/* 26 */ NdrFcLong( 0x11 ), /* 17 */
/* 30 */ NdrFcShort( 0x8001 ), /* Simple arm type: FC_BYTE */
/* 32 */ NdrFcLong( 0x2 ), /* 2 */
/* 36 */ NdrFcShort( 0x8006 ), /* Simple arm type: FC_SHORT */
/* 38 */ NdrFcLong( 0x4 ), /* 4 */
/* 42 */ NdrFcShort( 0x800a ), /* Simple arm type: FC_FLOAT */
/* 44 */ NdrFcLong( 0x5 ), /* 5 */

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/* 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( 0x2c2 ), /* 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 */
0x5a, /*
FC_CONSTANT_IID */
/* 332 */ NdrFcLong( 0x20400 ), /* 132096 */
/* 336 */ NdrFcShort( 0x0 ), /* 0 */
/* 338 */ NdrFcShort( 0x0 ), /* 0 */
/* 340 */ 0xc0, /* 192 */
0x0, /* 0 */
/* 342 */ 0x0, /* 0 */
0x0, /* 0 */
/* 344 */ 0x0, /* 0 */
0x0, /* 0 */

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/* 346 */ 0x0, /* 0 */
/* 348 */ 0x46, /* 70 */
[pointer_deref] */
/* 350 */ NdrFcShort( 0x2 ), /* Offset= 2 (352) */
/* 352 */
/* 354 */ NdrFcShort( 0x1e6 ), /* Offset= 486 (840) */
/* 356 */
FC_ENCAPSULATED_UNION */
0x2a, /*
0x89, /* 137 */
/* 358 */ NdrFcShort( 0x20 ), /* 32 */
/* 360 */ NdrFcShort( 0xa ), /* 10 */
/* 362 */ NdrFcLong( 0x8 ), /* 8 */
/* 366 */ NdrFcShort( 0x50 ), /* Offset= 80 (446) */
/* 368 */ NdrFcLong( 0xd ), /* 13 */
/* 372 */ NdrFcShort( 0x70 ), /* Offset= 112 (484) */
/* 374 */ NdrFcLong( 0x9 ), /* 9 */
/* 378 */ NdrFcShort( 0x90 ), /* Offset= 144 (522) */
/* 380 */ NdrFcLong( 0xc ), /* 12 */
/* 384 */ NdrFcShort( 0xb0 ), /* Offset= 176 (560) */
/* 386 */ NdrFcLong( 0x24 ), /* 36 */
/* 390 */ NdrFcShort( 0x104 ), /* Offset= 260 (650) */
/* 392 */ NdrFcLong( 0x800d ), /* 32781 */
/* 396 */ NdrFcShort( 0x120 ), /* Offset= 288 (684) */
/* 398 */ NdrFcLong( 0x10 ), /* 16 */
/* 402 */ NdrFcShort( 0x13a ), /* Offset= 314 (716) */
/* 404 */ NdrFcLong( 0x2 ), /* 2 */
/* 408 */ NdrFcShort( 0x150 ), /* Offset= 336 (744) */
/* 410 */ NdrFcLong( 0x3 ), /* 3 */
/* 414 */ NdrFcShort( 0x166 ), /* Offset= 358 (772) */
/* 416 */ NdrFcLong( 0x14 ), /* 20 */
/* 420 */ NdrFcShort( 0x17c ), /* Offset= 380 (800) */
/* 422 */ NdrFcShort( 0xfffffff ), /* Offset= -1 (421) */
/* 424 */
0x21, /*
FC_BOGUS_ARRAY */
0x3, /* 3 */
/* 426 */ NdrFcShort( 0x0 ), /* 0 */
/* 428 */ 0x19, /* Corr desc: field pointer, FC_ULONG */
0x0, /*
/* 430 */ NdrFcShort( 0x0 ), /* 0 */
/* 432 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 434 */ NdrFcLong( 0xfffffff ), /* -1 */
/* 438 */ NdrFcShort( 0x0 ), /* Corr flags: */
/* 440 */
0x12, 0x0, /* FC_UP */
/* 442 */ NdrFcShort( 0xfffff74 ), /* Offset= -140 (302) */
/* 444 */ 0x5c, /* FC_PAD */
0x5b, /* FC_END */
/* 446 */
0x1a, /*
FC_BOGUS_STRUCT */
0x3, /* 3 */
/* 448 */ NdrFcShort( 0x10 ), /* 16 */
/* 450 */ NdrFcShort( 0x0 ), /* 0 */
/* 452 */ NdrFcShort( 0x6 ), /* Offset= 6 (458) */
/* 454 */ 0x8, /* FC_LONG */
0x39, /* FC_ALIGNM8 */
/* 456 */ 0x36, /* FC_POINTER */
0x5b, /* FC_END */
/* 458 */
0x11, 0x0, /* FC_RP */
/* 460 */ NdrFcShort( 0xfffff4dc ), /* Offset= -36 (424) */
/* 462 */
0x21, /*
FC_BOGUS_ARRAY */
0x3, /* 3 */
/* 464 */ NdrFcShort( 0x0 ), /* 0 */
/* 466 */ 0x19, /* Corr desc: field pointer, FC_ULONG */
0x0, /*
/* 468 */ NdrFcShort( 0x0 ), /* 0 */
/* 470 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 472 */ NdrFcLong( 0xfffffff ), /* -1 */
/* 476 */ NdrFcShort( 0x0 ), /* Corr flags: */
/* 478 */ 0x4c, /* FC_EMBEDDED_COMPLEX */
0x0, /* 0 */
/* 480 */ NdrFcShort( 0xfffff58 ), /* Offset= -168 (312) */
/* 482 */ 0x5c, /* FC_PAD */
0x5b, /* FC_END */
/* 484 */
0x1a, /*
FC_BOGUS_STRUCT */
0x3, /* 3 */
/* 486 */ NdrFcShort( 0x10 ), /* 16 */
/* 488 */ NdrFcShort( 0x0 ), /* 0 */
/* 490 */ NdrFcShort( 0x6 ), /* Offset= 6 (496) */
/* 492 */ 0x8, /* FC_LONG */
0x39, /* FC_ALIGNM8 */
/* 494 */ 0x36, /* FC_POINTER */
0x5b, /* FC_END */
/* 496 */
0x11, 0x0, /* FC_RP */
/* 498 */ NdrFcShort( 0xfffff4dc ), /* Offset= -36 (462) */
/* 500 */
0x21, /*
FC_BOGUS_ARRAY */
0x3, /* 3 */
/* 502 */ NdrFcShort( 0x0 ), /* 0 */
/* 504 */ 0x19, /* Corr desc: field pointer, FC_ULONG */
0x0, /*
/* 506 */ NdrFcShort( 0x0 ), /* 0 */
/* 508 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 510 */ NdrFcLong( 0xfffffff ), /* -1 */
/* 514 */ NdrFcShort( 0x0 ), /* Corr flags: */
/* 516 */ 0x4c, /* FC_EMBEDDED_COMPLEX */
0x0, /* 0 */
/* 518 */ NdrFcShort( 0xfffff44 ), /* Offset= -188 (330) */
/* 520 */ 0x5c, /* FC_PAD */
0x5b, /* FC_END */
/* 522 */
0x1a, /*
FC_BOGUS_STRUCT */
0x3, /* 3 */
/* 524 */ NdrFcShort( 0x10 ), /* 16 */
/* 526 */ NdrFcShort( 0x0 ), /* 0 */
/* 528 */ NdrFcShort( 0x6 ), /* Offset= 6 (534) */
/* 530 */ 0x8, /* FC_LONG */
0x39, /* FC_ALIGNM8 */
/* 532 */ 0x36, /* FC_POINTER */
0x5b, /* FC_END */
/* 534 */
0x11, 0x0, /* FC_RP */
/* 536 */ NdrFcShort( 0xfffff4dc ), /* Offset= -36 (500) */
/* 538 */
0x21, /*
FC_BOGUS_ARRAY */
0x3, /* 3 */
/* 540 */ NdrFcShort( 0x0 ), /* 0 */
/* 542 */ 0x19, /* Corr desc: field pointer, FC_ULONG */
0x0, /*
/* 544 */ NdrFcShort( 0x0 ), /* 0 */
/* 546 */ NdrFcShort( 0x1 ), /* Corr flags: early, */

```

```

/* 548 */ NdrFcLong( 0xffffffff ), /* -1 */
/* 552 */ NdrFcShort( 0x0 ), /* Corr flags: */
/* 554 */
0x12, 0x0, /* FC_UP */
/* 556 */ NdrFcShort( 0x176 ), /* Offset= 374 (930) */
/* 558 */ 0x5c, /* FC_PAD */
0x5b, /* FC_END */
/* 560 */
0x1a, /*
FC_BOGUS_STRUCT */
0x3, /* 3 */
/* 562 */ NdrFcShort( 0x10 ), /* 16 */
/* 564 */ NdrFcShort( 0x0 ), /* 0 */
/* 566 */ NdrFcShort( 0x6 ), /* Offset= 6 (572) */
/* 568 */ 0x8, /* FC_LONG */
0x39, /* FC_ALIGNM8 */
/* 570 */ 0x36, /* FC_POINTER */
0x5b, /* FC_END */
/* 572 */
0x11, 0x0, /* FC_RP */
/* 574 */ NdrFcShort( 0xffffffffdc ), /* 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( 0xffffffffd6 ), /* Offset= -42 (576) */
/* 620 */ 0x39, /* FC_ALIGNM8 */
0x36, /* FC_POINTER */
/* 622 */ 0x5c, /* FC_PAD */
0x5b, /* FC_END */
/* 624 */
0x12, 0x0, /* FC_UP */
/* 626 */ NdrFcShort( 0xffffffffe0 ), /* 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( 0xffffffffd8 ), /* 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( 0xffffffffdc ), /* 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( 0xfffffffff1 ), /* Offset=
-15 (666) */
0x5b, /* FC_END */
/* 684 */
0x1a, /*
FC_BOGUS_STRUCT */
0x3, /* 3 */
/* 686 */ NdrFcShort( 0x20 ), /* 32 */
/* 688 */ NdrFcShort( 0x0 ), /* 0 */
/* 690 */ NdrFcShort( 0xa ), /* Offset= 10 (700) */
/* 692 */ 0x8, /* FC_LONG */
0x39, /* FC_ALIGNM8 */
/* 694 */ 0x36, /* FC_POINTER */
0x4c, /*
FC_EMBEDDED_COMPLEX */
/* 696 */ 0x0, /* 0 */
NdrFcShort( 0xfffffffff7 ), /* Offset=
-25 (672) */
0x5b, /* FC_END */
/* 700 */
0x11, 0x0, /* FC_RP */
/* 702 */ NdrFcShort( 0xfffffffff10 ), /* Offset= -240 (462) */
/* 704 */
0x1b, /* FC_CARRAY */
0x0, /* 0 */

```

```

/* 706 */ NdrFcShort( 0x1 ), /* 1 */
/* 708 */ 0x19, /* Corr desc: field pointer, FC_ULONG */
/* 710 */ NdrFcShort( 0x0 ), /* 0 */
/* 712 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 714 */ 0x1, /* FC_BYTE */
/* 716 */ 0x5b, /* FC_END */
FC_BOGUS_STRUCT /*
0x1a, /*
0x3, /* 3 */
/* 718 */ NdrFcShort( 0x10 ), /* 16 */
/* 720 */ NdrFcShort( 0x0 ), /* 0 */
/* 722 */ NdrFcShort( 0x6 ), /* Offset= 6 (728) */
/* 724 */ 0x8, /* FC_LONG */
/* 726 */ 0x36, /* FC_POINTER */
/* 728 */ 0x5b, /* FC_END */
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 */
/* 738 */ NdrFcShort( 0x0 ), /* 0 */
/* 740 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 742 */ 0x6, /* FC_SHORT */
/* 744 */ 0x5b, /* FC_END */
0x1a, /*
FC_BOGUS_STRUCT /*
0x3, /* 3 */
/* 746 */ NdrFcShort( 0x10 ), /* 16 */
/* 748 */ NdrFcShort( 0x0 ), /* 0 */
/* 750 */ NdrFcShort( 0x6 ), /* Offset= 6 (756) */
/* 752 */ 0x8, /* FC_LONG */
/* 754 */ 0x36, /* FC_POINTER */
/* 756 */ 0x5b, /* FC_END */
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 */
/* 766 */ NdrFcShort( 0x0 ), /* 0 */
/* 768 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 770 */ 0x8, /* FC_LONG */
/* 772 */ 0x5b, /* FC_END */
0x1a, /*
FC_BOGUS_STRUCT /*
0x3, /* 3 */
/* 774 */ NdrFcShort( 0x10 ), /* 16 */
/* 776 */ NdrFcShort( 0x0 ), /* 0 */
/* 778 */ NdrFcShort( 0x6 ), /* Offset= 6 (784) */
/* 780 */ 0x8, /* FC_LONG */
/* 782 */ 0x36, /* FC_POINTER */
/* 784 */ 0x5b, /* FC_END */
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 */
/* 794 */ NdrFcShort( 0x0 ), /* 0 */
/* 796 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 798 */ 0xb, /* FC_HYPER */
/* 800 */ 0x5b, /* FC_END */
0x1a, /*
FC_BOGUS_STRUCT /*
0x3, /* 3 */
/* 802 */ NdrFcShort( 0x10 ), /* 16 */
/* 804 */ NdrFcShort( 0x0 ), /* 0 */
/* 806 */ NdrFcShort( 0x6 ), /* Offset= 6 (812) */
/* 808 */ 0x8, /* FC_LONG */
/* 810 */ 0x36, /* FC_POINTER */
/* 812 */ 0x5b, /* FC_END */
0x12, 0x0, /* FC_UP */
/* 814 */ NdrFcShort( 0xfffffe6 ), /* Offset= -26 (788) */
/* 816 */ 0x15, /* FC_STRUCT */
0x3, /* 3 */
/* 818 */ NdrFcShort( 0x8 ), /* 8 */
/* 820 */ 0x8, /* FC_LONG */
/* 822 */ 0x5c, /* FC_PAD */
/* 824 */ 0x5b, /* FC_END */
0x1b, /* FC_CARRAY */
0x3, /* 3 */
/* 826 */ NdrFcShort( 0x8 ), /* 8 */
/* 828 */ 0x7, /* Corr desc: FC_USHORT */
/* 830 */ NdrFcShort( 0xffc8 ), /* -56 */
/* 832 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 834 */ 0x4c, /* FC_EMBEDDED_COMPLEX */
/* 836 */ NdrFcShort( 0xfffffec ), /* Offset= -20 (816) */
/* 838 */ 0x5c, /* FC_PAD */
/* 840 */ 0x5b, /* FC_END */
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 */
/* 850 */ 0x38, /* FC_ALIGNM4 */
/* 852 */ 0x8, /* FC_LONG */
/* 854 */ 0x4, /* 4 */
FC_EMBEDDED_COMPLEX /*
NdrFcShort( 0xffffe0d ), /* Offset=
-499 (356) */
0x5b, /* FC_END */
/* 858 */ 0x12, 0x0, /* FC_UP */
/* 860 */ NdrFcShort( 0xfffff02 ), /* Offset= -254 (606) */
/* 862 */

```

```

/* 864 */ 0x1,          0x12, 0x8, /* FC_UP [simple_pointer] */
/* FC_BYTE */
/* 866 */          0x5c,          /* FC_PAD */

/* 868 */ 0x6,          0x12, 0x8, /* FC_UP [simple_pointer] */
/* FC_SHORT */
/* 870 */          0x5c,          /* FC_PAD */

/* 872 */ 0x8,          0x12, 0x8, /* FC_UP [simple_pointer] */
/* FC_LONG */
/* 874 */          0x5c,          /* FC_PAD */

/* 876 */ 0xa,          0x12, 0x8, /* FC_UP [simple_pointer] */
/* FC_FLOAT */
/* 878 */          0x5c,          /* FC_PAD */

/* 880 */ 0xc,          0x12, 0x8, /* FC_UP [simple_pointer] */
/* FC_DOUBLE */
/* 882 */          0x5c,          /* FC_PAD */

/* 884 */ NdrFcShort( 0xffffda4 ), /* FC_UP */
/* 886 */          /* Offset= -604 (280) */

/* 888 */          0x12, 0x10,          /* FC_UP
[pointer_deref] */
/* 890 */ NdrFcShort( 0xffffda6 ), /* Offset= -602 (286) */
/* 892 */          0x12, 0x10,          /* FC_UP
[pointer_deref] */
/* 894 */ NdrFcShort( 0xffffdbc ), /* Offset= -580 (312) */
/* 896 */          0x12, 0x10,          /* FC_UP
[pointer_deref] */
/* 898 */ NdrFcShort( 0xffffdca ), /* Offset= -566 (330) */
/* 900 */          0x12, 0x10,          /* FC_UP
[pointer_deref] */
/* 902 */ NdrFcShort( 0xffffdd8 ), /* Offset= -552 (348) */
/* 904 */          0x12, 0x10,          /* FC_UP
[pointer_deref] */
/* 906 */ NdrFcShort( 0x2 ), /* Offset= 2 (906) */
/* 908 */          0x12, 0x0, /* FC_UP */
/* 910 */ NdrFcShort( 0x16 ), /* Offset= 22 (930) */

/* 912 */          0x15,          /* FC_STRUCT */
/* 914 */          0x7,          /* 7 */
/* 916 */ NdrFcShort( 0x10 ), /* 16 */
/* 918 */          0x6,          /* FC_SHORT */
/* 920 */          0x1,          /* FC_BYTE */
/* 922 */          0x1,          /* FC_BYTE */
/* 924 */          0x38,          /* FC_ALIGNM4 */
/* 926 */          0x8,          /* FC_LONG */
/* 928 */          0x39,          /* FC_ALIGNM8 */
/* 930 */          0xb,          /* FC_HYPER */
/* 932 */          0x5b,          /* FC_END */

/* 934 */          0x12, 0x0, /* FC_UP */
/* 936 */ NdrFcShort( 0xfffff2 ), /* Offset= -14 (910) */
/* 938 */          0x12, 0x8, /* FC_UP [simple_pointer] */
/* FC_CHAR */
/* 940 */          0x5c,          /* FC_PAD */

/* 942 */          0x1a,          /*
FC_BOGUS_STRUCT */
/* 944 */          0x7,          /* 7 */

/* 932 */ NdrFcShort( 0x20 ), /* 32 */
/* 934 */ NdrFcShort( 0x0 ), /* 0 */
/* 936 */ NdrFcShort( 0x0 ), /* Offset= 0 (936) */
/* 938 */          0x8,          /* FC_LONG */
/* 940 */          0x8,          /* FC_LONG */
/* 942 */          0x6,          /* FC_SHORT */
/* 944 */          0x6,          /* FC_SHORT */
/* 946 */          0x6,          /* FC_SHORT */
/* 948 */          0x4c,          /* FC_EMBEDDED_COMPLEX */
/* 950 */          0x0,          /* 0 */
/* 952 */ NdrFcShort( 0xffff54 ), /* Offset= -940 (6) */
/* 954 */          0x5c,          /* FC_PAD */
/* 956 */          0x5b,          /* FC_END */
/* 958 */          0xb4,          /* FC_USER_MARSHAL */
/* 960 */          0x83,          /* 131 */

/* 962 */          0x11, 0x4, /* FC_RP [allocated_on_stack] */
/* 964 */ NdrFcShort( 0x6 ), /* Offset= 6 (968) */
/* 966 */          0x13, 0x0, /* FC_OP */
/* 968 */ NdrFcShort( 0xfffffdc ), /* Offset= -36 (930) */
/* 970 */          0xb4,          /* FC_USER_MARSHAL */
/* 972 */          0x83,          /* 131 */
/* 974 */ NdrFcShort( 0x0 ), /* 0 */
/* 976 */ NdrFcShort( 0x18 ), /* 24 */
/* 978 */ NdrFcShort( 0x0 ), /* 0 */
/* 980 */ NdrFcShort( 0xfffff44 ), /* Offset= -956 (2) */
/* 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)*/

```

## ***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 DIIDDecl __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 DIIMain(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           lNativeError;
    char             szState[6];
    char             szMsg[SQL_MAX_MESSAGE_LENGTH];
    char
szTmp[6*SQL_MAX_MESSAGE_LENGTH];
    CODBCERR *pODBCErr; // not
    allocated until needed (maybe never)

    pODBCErr = new CODBCERR();

    pODBCErr->m_NativeError = 0;
    pODBCErr->m_eAction = eAction;
    pODBCErr->m_bDeadLock = FALSE;

    szTmp[0] = 0;
    while (TRUE)
    {
        rc = SQLError(henv, m_hdbc, m_hstmt, (BYTE
*)&szState, &lNativeError,
                                (BYTE *)&szMsg,
sizeof(szMsg), NULL);
        if (rc == SQL_NO_DATA)
            break;

        // check for deadlock
        if (lNativeError == 1205 || (lNativeError ==
iErrOleDbProvider &&
                                strstr(szMsg, sErrTimeoutExpired) != NULL))
            pODBCErr->m_bDeadLock = TRUE;

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

        // quit if there isn't enough room to concatenate error text
        if ( ( strlen(szMsg) + 2 ) > ( sizeof(szTmp) - strlen(szTmp) )
)
            break;

        // include line break after first error msg
        if (szTmp[0] != 0)
            strcat( szTmp, "\n");
        strcat( szTmp, szMsg );
    }

    if (pODBCErr->m_odbcerrstr != NULL)
    {
        delete [] pODBCErr->m_odbcerrstr;
        pODBCErr->m_odbcerrstr = NULL;
    }

    if (strlen(szTmp) > 0)
    {
        pODBCErr->m_odbcerrstr = new char[ strlen(szTmp)+1
];
        strcpy( pODBCErr->m_odbcerrstr, szTmp );
    }

    SQLFreeStmt(m_hstmt, SQL_CLOSE);
    throw pODBCErr;
}

void CTPCC_ODBC::InitStockLevelParams()
{
    if ( SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc,
&m_hstmtStockLevel) != SQL_SUCCESS )
        ThrowError(CODBCERR::eAllocHandle);

    m_hstmt = m_hstmtStockLevel;

    int i = 0;
    if ( SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SSHORT, SQL_SMALLINT, 0, 0, &m_txn.StockLevel.w_id, 0,
NULL) != SQL_SUCCESS
        || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.StockLevel.d_id, 0, NULL) != SQL_SUCCESS
        || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT, 0, 0,
&m_txn.StockLevel.threshold, 0, NULL) != SQL_SUCCESS
    )
        ThrowError(CODBCERR::eBindParam);

    if ( SQLBindCol(m_hstmt, 1, SQL_C_SLONG,
&m_txn.StockLevel.low_stock, 0, NULL) != SQL_SUCCESS )
        ThrowError(CODBCERR::eBindCol);
}

void CTPCC_ODBC::StockLevel()
{
    RETCODE          rc;
    int              iTryCount = 0;

    m_hstmt = m_hstmtStockLevel;

    while (TRUE)
    {
        try
        {
            rc = SQLExecDirectW(m_hstmt,
(SQLWCHAR*)" {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
        i;
        rc;

```

```

int iTryCount =
0;

// 0 1 2
// 012345678901234567890123456789
wchar_t szSqlTemplate[] =
L"{call tpcc_neworder(?,?,?,?"
L"?,???,???,???,???,???,?"
L"?,???,???,???,???,???,?"
L"?,???,???,???,???,???,?)}";

m_hstmt = m_hstmtNewOrder;

// associate the parameter and column bindings for this transaction
if ( SQLSetStmtAttrW( m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descNewOrderCols1, SQL_IS_POINTER ) != SQL_SUCCESS )
    ThrowError(CODBCERR::eSetStmtAttr);

// clip statement buffer based on number of parameters
// fixed part is 29 chars and variable part is 6 chars per line item
i = 29 + m_txn.NewOrder.o_ol_cnt*6;
wmemcpy( &szSqlTemplate[i], L"");

// check whether any order lines are for a remote warehouse
m_txn.NewOrder.o_all_local = 1;
for (i = 0; i < m_txn.NewOrder.o_ol_cnt; i++)
{
    if (m_txn.NewOrder.OL[i].ol_supply_w_id !=
m_txn.NewOrder.w_id)
    {
        m_txn.NewOrder.o_all_local = 0; // at least
one remote warehouse
        break;
    }
}

while (TRUE)
{
    try
    {
        m_BindOffset = 0;
        rc = SQLExecDirectW(m_hstmt,
(SQLWCHAR*)szSqlTemplate, SQL_NTS);
        if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)
            ThrowError(CODBCERR::eExecDirect);

        // Get order line results
        m_txn.NewOrder.total_amount = 0;
        for (i = 0; i < m_txn.NewOrder.o_ol_cnt; i++)
        {
            // set the bind offset value...
            m_BindOffset = i *
sizeof(m_txn.NewOrder.OL[0]);

            if ( SQLFetch(m_hstmt) ==
SQL_ERROR)
                ThrowError(CODBCERR::eFetch);

            // move to the next resultset
            if ( SQLMoreResults(m_hstmt) ==
SQL_ERROR )
                ThrowError(CODBCERR::eMoreResults);

            m_txn.NewOrder.total_amount +=
m_txn.NewOrder.OL[i].ol_amount;
        }
        // associate the column bindings for the
second result set
        if ( SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_APP_ROW_DESC, m_descNewOrderCols2, SQL_IS_POINTER
) != SQL_SUCCESS )
            ThrowError(CODBCERR::eSetStmtAttr);

        if ( SQLFetch(m_hstmt) == SQL_ERROR)
            ThrowError(CODBCERR::eFetch);

        SQLFreeStmt(m_hstmt, SQL_CLOSE);

        if (m_no_commit_flag == 1)
        {
            m_txn.NewOrder.total_amount *=
((1 + m_txn.NewOrder.w_tax + m_txn.NewOrder.d_tax) * (1 -
m_txn.NewOrder.c_discount));

            m_txn.NewOrder.exec_status_code = eOK;
        }
        else
            m_txn.NewOrder.exec_status_code = eInvalidItem;

        break;
    }
    catch (CODBCERR *e)
    {
        if (!(e->m_bDeadLock) || (++iTryCount >
iMaxRetries))
            throw;

        // hit deadlock; backoff for increasingly longer
period
        delete e;
        Sleep(10 * iTryCount);
    }
}

// if (iTryCount)
// throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

void CTPCC_ODBC::InitPaymentParams()
{
    if ( SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc,
&m_hstmtPayment) != SQL_SUCCESS )
        ThrowError(CODBCERR::eAllocHandle);

    m_hstmt = m_hstmtPayment;

    int i = 0;
    if ( SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SSHORT, SQL_SMALLINT, 0, 0, &m_txn.Payment.w_id, 0, NULL)
!= SQL_SUCCESS

```

```

        || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT, 0, 0,
&m_txn.Payment.c_w_id, 0, NULL) != SQL_SUCCESS
        || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_DOUBLE, SQL_NUMERIC, 6, 2,
&m_txn.Payment.h_amount, 0, NULL) != SQL_SUCCESS
        || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.Payment.d_id, 0, NULL) != SQL_SUCCESS
        || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.Payment.c_d_id, 0, NULL) != SQL_SUCCESS
        || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.Payment.c_id, 0, NULL) != SQL_SUCCESS
        || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_CHAR, SQL_CHAR,
sizeof(m_txn.Payment.c_last), 0, &m_txn.Payment.c_last,
sizeof(m_txn.Payment.c_last), NULL) != SQL_SUCCESS
    )
    ThrowError(CODBCERR::eBindParam);

    i = 0;
    if ( SQLBindCol(m_hstmt, ++i, SQL_C_SLONG,
&m_txn.Payment.c_id, 0, NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_last, sizeof(m_txn.Payment.c_last),
NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i,
SQL_C_TYPE_TIMESTAMP, &m_txn.Payment.h_date,
0, NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_street_1, sizeof(m_txn.Payment.w_street_1), NULL) !=
SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_street_2, sizeof(m_txn.Payment.w_street_2), NULL) !=
SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_city, sizeof(m_txn.Payment.w_city),
NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_state, sizeof(m_txn.Payment.w_state),
NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_zip, sizeof(m_txn.Payment.w_zip),
NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_street_1, sizeof(m_txn.Payment.d_street_1), NULL) !=
SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_street_2, sizeof(m_txn.Payment.d_street_2), NULL) !=
SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_city, sizeof(m_txn.Payment.d_city),
NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_state, sizeof(m_txn.Payment.d_state),
NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_zip, sizeof(m_txn.Payment.d_zip),
NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_first, sizeof(m_txn.Payment.c_first),
NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_middle, sizeof(m_txn.Payment.c_middle), NULL) !=
SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_street_1, sizeof(m_txn.Payment.c_street_1), NULL) !=
SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_street_2, sizeof(m_txn.Payment.c_street_2), NULL) !=
SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_city, sizeof(m_txn.Payment.c_city),
NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_state, sizeof(m_txn.Payment.c_state),
NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_zip, sizeof(m_txn.Payment.c_zip),
NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_phone, sizeof(m_txn.Payment.c_phone),
NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i,
SQL_C_TYPE_TIMESTAMP, &m_txn.Payment.c_since,
0, NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_credit, sizeof(m_txn.Payment.c_credit), NULL) !=
SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.Payment.c_credit_lim, 0, NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.Payment.c_discount, 0, NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.Payment.c_balance, 0, NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_data, sizeof(m_txn.Payment.c_data),
NULL) != SQL_SUCCESS
    )
    ThrowError(CODBCERR::eBindCol);
}

void CTPCC_ODBC::Payment()
{
    RETCODE rc;
    int iTryCount = 0;

    m_hstmt = m_hstmtPayment;

    if (m_txn.Payment.c_id != 0)
        m_txn.Payment.c_last[0] = 0;

    while (TRUE)
    {
        try
        {
            rc = SQLExecDirectW(m_hstmt,
(SQLWCHAR*)"L" {call tpcc_payment(?,?,?,?,?,?)", SQL_NTS);
            if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)
                ThrowError(CODBCERR::eExecDirect);

            if ( SQLFetch(m_hstmt) == SQL_ERROR)
                ThrowError(CODBCERR::eFetch);

            SQLFreeStmt(m_hstmt, SQL_CLOSE);

            if (m_txn.Payment.c_id == 0)
                throw new CTPCC_ODBC_ERR(
CTPCC_ODBC_ERR::ERR_INVALID_CUST);
            else

```

```

        m_txn.Payment.exec_status_code
= eOK;
        break;
    }
    catch (COBDCERR *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(COBCERR::eAllocHandle);

    m_hstmt = m_hstmtOrderStatus;

    if ( SQLSetStmtAttrW( m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descOrderStatusCols1, SQL_IS_POINTER ) != SQL_SUCCESS )
        ThrowError(COBCERR::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(COBCERR::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(COBCERR::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(COBCERR::eBindCol);

    if ( SQLSetStmtAttrW( m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descOrderStatusCols2, SQL_IS_POINTER ) != SQL_SUCCESS )
        ThrowError(COBCERR::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(COBCERR::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(COBCERR::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
        eAllocHandle, // error from
        eConnOption, // error from
        eConnect, // error from
        eAllocStmt, //
        eExecDirect, // error from
        eBindParam, //
        eBindCol, // error from
        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 dblib, so redefined here. Note: we are using the symbol
// "__SQLTYPES"
// (declared in sqltypes.h) as a way to determine if TIMESTAMP_STRUCT has
// been declared.
#ifndef __SQLTYPES
    typedef struct
    {
        SQLSMALLINT */ year;
        short */
        unsigned short */ SQLSMALLINT
        */ month;
        unsigned short */ SQLSMALLINT
        */ day;
        unsigned short */ SQLSMALLINT
        */ hour;
        unsigned short */ SQLSMALLINT
        */ minute;
        unsigned short */ SQLSMALLINT
        */ second;
        unsigned long */ SQLINTEGER */
        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[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 w_tax;
    double d_tax;
    long o_id;
    short o_commit_flag;
}

```

```

TIMESTAMP_STRUCT o_entry_d;
short o_all_local;
double total_amount;
OL_NEW_ORDER_DATA
OL[MAX_OL_NEW_ORDER_ITEMS];
} NEW_ORDER_DATA, *PNEW_ORDER_DATA;

typedef struct
{
    // input params
    short w_id;
    short d_id;
    long c_id;
    short c_d_id;
    short c_w_id;
    double h_amount;
    char c_last[LAST_NAME_LEN+1];

    // output params
    EXEC_STATUS exec_status_code;
    TIMESTAMP_STRUCT h_date;
    char w_street_1[ADDRESS_LEN+1];
    char w_street_2[ADDRESS_LEN+1];
    char w_city[ADDRESS_LEN+1];
    char w_state[STATE_LEN+1];
    char w_zip[ZIP_LEN+1];
    char d_street_1[ADDRESS_LEN+1];
    char d_street_2[ADDRESS_LEN+1];
    char d_city[ADDRESS_LEN+1];
    char d_state[STATE_LEN+1];
    char d_zip[ZIP_LEN+1];
    char c_first[FIRST_NAME_LEN+1];
    char c_middle[MIDDLE_NAME_LEN
+ 1];
    char c_street_1[ADDRESS_LEN+1]
char c_street_2[ADDRESS_LEN+1];
    char c_city[ADDRESS_LEN+1];
    char c_state[STATE_LEN+1];
    char c_zip[ZIP_LEN+1];
    char c_phone[PHONE_LEN+1];
    TIMESTAMP_STRUCT c_since;
    char c_credit[CREDIT_LEN+1];
    double c_credit_lim;
    double c_discount;
    double c_balance;
    char c_data[200+1];
} PAYMENT_DATA, *PPAYMENT_DATA;

typedef struct
{
    long ol_i_id;
    short ol_supply_w_id;
    short ol_quantity;
    double ol_amount;
    TIMESTAMP_STRUCT ol_delivery_d;
} OL_ORDER_STATUS_DATA;

typedef struct
{
    // input params
    short w_id;
    short d_id;
    long c_id;
    char c_last[LAST_NAME_LEN+1];

    // output params
    EXEC_STATUS exec_status_code;
    char c_first[FIRST_NAME_LEN+1];
    char c_middle[MIDDLE_NAME_LEN+1];
    double c_balance;
}

```

```

        long        o_id;
        TIMESTAMP_STRUCT    o_entry_d;
        short        o_carrier_id;
        OL_ORDER_STATUS_DATA
OL[MAX_OL_ORDER_STATUS_ITEMS];
        short        o_ol_cnt;
} ORDER_STATUS_DATA, *PORDER_STATUS_DATA;

```

```

typedef struct
{
    // input params
    short        w_id;
    short        o_carrier_id;

    // output params
    EXEC_STATUS    exec_status_code;
    SYSTEMTIME    queue_time;
    long        o_id[10]; //
id's of delivered orders for districts 1 to 10
} DELIVERY_DATA, *PDELIVERY_DATA;

```

```

//This structure is used for posting delivery transactions and for writing them to
the delivery server.
typedef struct _DELIVERY_TRANSACTION
{
    SYSTEMTIME    queue; //time
    delivery transaction queued
    short        w_id; //delivery
    warehouse
    short        o_carrier_id; //carrier id
} DELIVERY_TRANSACTION;

```

```

typedef struct
{
    // input params
    short        w_id;
    short        d_id;
    short        threshold;

    // output params
    EXEC_STATUS    exec_status_code;
    long        low_stock;
} STOCK_LEVEL_DATA, *PSTOCK_LEVEL_DATA;

```

## txn\_base.h

```

/*      FILE:          TXN_BASE.H
*
*      Microsoft TPC-C Kit Ver.
4.20.000
*
*      Copyright Microsoft, 1999
*
*      All Rights Reserved
*
*      Version 4.10.000 audited by
Richard Gimarc, Performance Metrics, 3/17/99
*
*      PURPOSE:      Header file for TPC-C txn class
implementation.
*
*      Change history:
*      4.20.000 - updated rev number to match kit
*/

#pragma once

// need to declare functions for import, unless define has already been created
// by the DLL's .cpp module for export.
#ifndef DllDecl
#define DllDecl __declspec( dllimport )

```

```

#endif
class DllDecl CTPCC_BASE
{
public:
    CTPCC_BASE(void) {};
    virtual ~CTPCC_BASE(void) {};

    virtual PNEW_ORDER_DATA
BuffAddr_NewOrder() = 0;
    virtual PPAYMENT_DATA
BuffAddr_Payment() = 0;
    virtual PDELIVERY_DATA
BuffAddr_Delivery() = 0;
    virtual PSTOCK_LEVEL_DATA
BuffAddr_StockLevel() = 0;
    virtual PORDER_STATUS_DATA
BuffAddr_OrderStatus() = 0;

    virtual void NewOrder() = 0;
    virtual void Payment() = 0;
    virtual void Delivery() = 0;
    virtual void StockLevel() = 0;
    virtual void OrderStatus() = 0;
};

```

## txnlog.h

```

/*      FILE:          TXNLOG.H
*
*      Microsoft TPC-C Kit Ver.
4.10.000
*
*      not yet audited
*
*      PURPOSE:      Header file for txn log class
*
*      Copyright Microsoft, 1999
*
*      All Rights Reserved
*
*/

```

```

#pragma once

```

```

typedef struct _TXN_NEWORDER
{
    BYTE        OL_Count; //range 0 to 31
    BYTE        OL_Remote_Count; //range 0 to 31
    WORD        c_id;
    int        o_id;
} TXN_NEWORDER;

```

```

typedef struct _TXN_PAYMENT
{
    BYTE        CustByName;
    BYTE        IsRemote;
} TXN_PAYMENT;

```

```

typedef struct _TXN_ORDERSTATUS
{
    BYTE        CustByName;
} TXN_ORDERSTATUS;

```

```

typedef union _TXN_DETAILS
{
    TXN_NEWORDER    NewOrder;
    TXN_PAYMENT        Payment;
    TXN_ORDERSTATUS    OrderStatus;
} TXN_DETAILS;

```

```

// Common header for all records in txn log. The TxnType field is
// a switch which identifies the particular variant.
#define TXN_REC_TYPE_TPCC 1 // TXN_REC_TYPE_TPCC
// replaces TRANSACTION_TYPE_TPCC
#define TXN_REC_TYPE_TPCC_DELIV_DEF 3 // depends on TxnType

typedef struct _TXN_RECORD_HEADER
{
    JULIAN_TIME TxnStartT0; // start of txn
    BYTE TxnType; // one of (ms)
    BYTE TxnSubType; // providing more detail for TxnStatus
} TXN_RECORD_HEADER, *PTXN_RECORD_HEADER; // warehouse ID

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_DELIV_DEF
    BYTE TxnSubType; // = 0
    // 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
    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 "Webclnt.mak" CFG="webclnt - Win32 Release"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "webclnt - Win32 Release" (based on "Win32 (x86) Application")
!MESSAGE "webclnt - Win32 Debug" (based on "Win32 (x86) Application")
!MESSAGE

# Begin Project

```

```

# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CPP=cl.exe
MTL=midl.exe
RSC=rc.exe

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

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir ".\Release"
# PROP BASE Intermediate_Dir ".\Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\Release"
# PROP Intermediate_Dir ".\Release"
# PROP Target_Dir ""
# ADD BASE CPP /nologo /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /c
# ADD CPP /nologo /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "NDEBUG" /win32
# ADD MTL /nologo /D "NDEBUG" /mktyplib203 /win32
# ADD BASE RSC /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 odbc32.lib
odbc32.lib /nologo /subsystem:windows /machine:I386
# ADD LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib odbc32.lib
/nologo /subsystem:windows /machine:I386

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

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir ".\Debug"
# PROP BASE Intermediate_Dir ".\Debug"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\Debug"
# PROP Intermediate_Dir ".\Debug"
# PROP Target_Dir ""
# ADD BASE CPP /nologo /W3 /Gm /GX /Zi /Od /D "WIN32" /D "_DEBUG"
/D "_WINDOWS" /YX /c
# ADD CPP /nologo /W3 /Gm /GX /Zi /Od /D "WIN32" /D "_DEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "_DEBUG" /win32
# ADD MTL /nologo /D "_DEBUG" /mktyplib203 /win32
# ADD BASE RSC /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 odbc32.lib
odbc32.lib /nologo /subsystem:windows /debug /machine:I386
# ADD LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib odbc32.lib
/nologo /subsystem:windows /debug /machine:I386

```

```

!ENDIF

# Begin Target

# Name "webclnt - Win32 Release"
# Name "webclnt - Win32 Debug"
# End Target
# End Project

```

## Stored Procedures

### neword.sql

```

SET QUOTED_IDENTIFIER OFF
GO
SET ANSI_NULLS ON
GO
use tpcc
go
drop proc tpcc_neworder
go

```

```
create proc tpcc_neworder
```

```

@w_id int,
@d_id tinyint,
@c_id int,
@o_ol_cnt tinyint,
@o_all_local tinyint,
@i_id1 int = 0,

```

```
@s_w_id1 int = 0, @ol_qty1 smallint = 0,
```

```
@i_id2 int = 0,
```

```
@s_w_id2 int = 0, @ol_qty2 smallint = 0,
```

```
@i_id3 int = 0,
```

```
@s_w_id3 int = 0, @ol_qty3 smallint = 0,
```

```
@i_id4 int = 0,
```

```
@s_w_id4 int = 0, @ol_qty4 smallint = 0,
```

```
@i_id5 int = 0,
```

```
@s_w_id5 int = 0, @ol_qty5 smallint = 0,
```

```
@i_id6 int = 0,
```

```
@s_w_id6 int = 0, @ol_qty6 smallint = 0,
```

```
@i_id7 int = 0,
```

```
@s_w_id7 int = 0, @ol_qty7 smallint = 0,
```

```
@i_id8 int = 0,
```

```
@s_w_id8 int = 0, @ol_qty8 smallint = 0,
```

```
@i_id9 int = 0,
```

```
@s_w_id9 int = 0, @ol_qty9 smallint = 0,
```

```
@i_id10 int = 0,
```

```
@s_w_id10 int = 0, @ol_qty10 smallint = 0,
```

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

```
@s_w_id11 int = 0, @ol_qty11 smallint = 0,
```

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

```
@s_w_id12 int = 0, @ol_qty12 smallint = 0,
```

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

```
@s_w_id13 int = 0, @ol_qty13 smallint = 0,
```

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

```
@s_w_id14 int = 0, @ol_qty14 smallint = 0,
```

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

```
@s_w_id15 int = 0, @ol_qty15 smallint = 0
```

```
as
```

```

declare @w_tax smallmoney,
@d_tax smallmoney,
@c_last char(16),
@c_credit char(2),

```

```

@c_discount smallmoney,
@i_price smallmoney,
@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
                        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 WITH (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
                    when 1 then s_dist_01
                    when 2 then s_dist_02
                    when 3 then s_dist_03
                    when 4 then s_dist_04
                    when 5 then s_dist_05
                    when 6 then s_dist_06
                    when 7 then s_dist_07
                    when 8 then s_dist_08
                    end
        end
        end

```



```

when 9 then
s_dist_09
when 10 then
s_dist_10
end
where s_i_id = @li_id and
s_w_id = @li_s_w_id
-- if there actually is a stock (and item) with these ids, go to work
if (@@rowcount > 0)
begin
-- insert order_line data (using data from item and stock)
insert into order_line values(@o_id,
@d_id,
@w_id,
@li_no,
@li_id,
"dec 31,
1899",
@i_price
@li_qty,
@li_s_w_id,
@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 WITH (repeatableread)
where c_id = @c_id and
c_w_id = @w_id and
c_d_id = @d_id
when 9 then
-- insert fresh row into orders table
insert into orders values ( @o_id,
@d_id,
@w_id,
@c_id_local,
0,
@o_ol_cnt,
@o_all_local,
@o_entry_d )
-- 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 WITH (repeatableread)
where w_id = @w_id
if (@commit_flag = 1)
commit transaction n
else
-- all that work for nuthin!!!
rollback transaction n
-- return order data to client
select @w_tax,
@d_tax,
@o_id,
@c_last,
@c_discount,
@c_credit,
@o_entry_d,
@commit_flag
end
GO
SET QUOTED_IDENTIFIER OFF
GO
SET ANSI_NULLS ON
GO
neword-rownum.sql
SET QUOTED_IDENTIFIER OFF
GO
SET ANSI_NULLS OFF
GO
-- 8666: full showplan text info (to see if rowset sharing)
dbcc traceon(8666, -1)
go
-- prevent sort over tvf
dbcc traceon(8710, -1)
go
use tpc
go

```

```

drop procedure tpcc_neworder_new
go
-- neworder_new v2.5 6/23/05 PeterCa
-- lq stock/order_line/client. upd district & ins neworder.
-- cust/warehouse select together, ins order separate
-- uses rownumber to distinct w any transform
-- uses in-memory sort for distinct on iid,wid
-- uses charindex
-- will rollback if (@i_idX,@s_w_idX pairs not unique) OR (@i_idX not
unique).
create proc tpcc_neworder_new
    @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
begin
declare @o_id int,
        @d_tax numeric(4,4),
        @o_entry_d datetime,
        @commit_flag tinyint

begin transaction n

-- get district tax and next available order id and update
-- insert corresponding row into new-order table
-- 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(),
    @commit_flag = 1
output deleted.d_next_o_id,@d_id,@w_id into new_order
where d_w_id = @w_id and
      d_id = @d_id

-- update stock from stock join (item join (params))
-- output to orderline, output to client
-- NOTE: @@rowcount != @ol_o_cnt
-- if (@i_idX,@s_w_idX pairs not unique) OR (@i_idX not unique).
update stock
set s_ytd = s_ytd + info.ol_qty,
    s_quantity = s_quantity - info.ol_qty +
    case when (s_quantity - info.ol_qty < 10) then
91 else 0 end,
    s_order_cnt = s_order_cnt + 1,

```

```

s_remote_cnt = s_remote_cnt +
case when (info.w_id = @w_id) then 0 else 1
end
output @o_id,@d_id,@w_id,info.lino,
info.i_id,info.w_id,"dec 31, 1899",
info.ol_qty,info.i_price * info.ol_qty,
case @d_id when 1 then inserted.s_dist_01
when 2 then inserted.s_dist_02
when 3 then inserted.s_dist_03
when 4 then inserted.s_dist_04
when 5 then inserted.s_dist_05
when 6 then inserted.s_dist_06
when 7 then inserted.s_dist_07
when 8 then inserted.s_dist_08
when 9 then inserted.s_dist_09
when 10 then inserted.s_dist_10
end
into order_line

output info.i_name,inserted.s_quantity,
case when ((charindex("ORIGINAL",info.i_data) > 0)
and
(charindex("ORIGINAL",inserted.s_data) > 0) )
then "B" else "G" end,
info.i_price,info.i_price*info.ol_qty

from
stock inner join

(select iid,wid,
lino,ol_qty,
i_price,
i_name,
i_data
from
(select iid,wid,lino,qty,
row_number() over (partition by iid,wid order by iid,wid)
from
(select @i_id1,@s_w_id1,1,@ol_qty1 union all
select @i_id2,@s_w_id2,2,@ol_qty2 union all
select @i_id3,@s_w_id3,3,@ol_qty3 union all
select @i_id4,@s_w_id4,4,@ol_qty4 union all
select @i_id5,@s_w_id5,5,@ol_qty5 union all
select @i_id6,@s_w_id6,6,@ol_qty6 union all
select @i_id7,@s_w_id7,7,@ol_qty7 union all
select @i_id8,@s_w_id8,8,@ol_qty8 union all
select @i_id9,@s_w_id9,9,@ol_qty9 union all
select @i_id10,@s_w_id10,10,@ol_qty10 union all
select @i_id11,@s_w_id11,11,@ol_qty11 union all
select @i_id12,@s_w_id12,12,@ol_qty12 union all
select @i_id13,@s_w_id13,13,@ol_qty13 union all
select @i_id14,@s_w_id14,14,@ol_qty14 union all
select @i_id15,@s_w_id15,15,@ol_qty15) as
uo1(iid,wid,lino,qty)
) as ol(iid,wid,lino,ol_qty,rownum)
inner join
item (repeatableread) on i_id = iid -- filters out invalid items
and rownum=1
) as info(i_id,w_id,lino,ol_qty,i_price,i_name,i_data)
on s_i_id = info.i_id and
s_w_id = info.w_id

if (@@rowcount <> @o_ol_cnt) -- must have an invalid item
select @commit_flag = 0 -- 2.4.2.3 requires rest to proceed

```

```

-- insert fresh row into orders table
insert into orders values (      @o_id,
                              @d_id,
                              @w_id,
                              @c_id,
                              @o_entry_d,
                              0,
                              @o_ol_cnt,
                              @o_all_local)

-- get customer last name, discount, and credit rating
-- get warehouse tax
-- return order_data to client

select w_tax,@d_tax,@o_id,
       c_last,c_discount,c_credit,
       @o_entry_d,@commit_flag
from
warehouse(repeatableread),customer(repeatableread)
where  w_id      = @w_id and
       c_id      = @c_id and
       c_w_id    = @w_id and
       c_d_id    = @d_id

-- @@rowcount checks that previous select found a valid customer
if ((@commit_flag = 1) and (@@rowcount = 1))
    commit transaction n
else -- all that work for nothing.
    rollback transaction n

end
go
set showplan_text on
go
{call tpcc_neworder_new(1,1,1,10,1,
1,1,1,2,1,1,3,1,1,4,1,1,5,1,1,6,1,1,7,1,1,8,1,1,9,1,1,10,1,1)}
go

```

## payment.sql

```

-- May 13, 2005 - CJL
-- Modified from Shiloh kit.
-- 1. Change numeric to money.
-- 2. Change how c_data is handled.

```

```

SET QUOTED_IDENTIFIER OFF
GO
SET ANSI_NULLS ON
GO
use tpcc
go
drop proc tpcc_payment
go

```

```

create proc tpcc_payment      @w_id      int,
                              @c_w_id   int,
                              @h_amount smallmoney,
                              @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 money,
@c_balance money,
@c_discount smallmoney,
@c_data    char(42),
@datetime  datetime,
@w_ytd     money,
@d_ytd     money,
@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 WITH (repeatableread)
where       c_last = @c_last and
           c_w_id = @c_w_id and
           c_d_id = @c_d_id

```

```

select      @val = (@cnt + 1) / 2
set         rowcount @val

```

```

select      @c_id = c_id
from        customer WITH (repeatableread)
where       c_last = @c_last and
           c_w_id = @c_w_id and
           c_d_id = @c_d_id

order      by c_last, c_first

```

```
set rowcount 0
```

```
end
```

```

-- get customer info and update balances

update customer
set @c_balance = c_balance + @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,
    @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)

-- update customer info

update customer
set c_data = @c_data + substring(c_data, 1,
458),
    @screen_data = @c_data + substring(c_data,
1, 158)
where c_id = @c_id and
      c_w_id = @c_w_id and
      c_d_id = @c_d_id

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
SET QUOTED_IDENTIFIER OFF
GO
SET ANSI_NULLS ON
GO

payment-new1.sql
-----
--

```

```

-- File: PAYMENT.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.62
-- Copyright Microsoft, 2005
--
-- Creates payment stored procedure
--
-- Interface Level: 4.20.000
--
-----
SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO

USE tpcc
GO

IF EXISTS ( SELECT name FROM sysobjects WHERE name = 'tpcc_payment'
)
  DROP PROCEDURE tpcc_payment
GO

CREATE PROCEDURE tpcc_payment
    @w_id int,
    @c_w_id int,
    @h_amount smallmoney,
    @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 money,
        @c_balance money,
        @c_discount smallmoney,
        @c_data char(42),
        @datetime datetime,
        @w_ytd money,
        @d_ytd money,
        @screen_data char(200),
        @d_id_local tinyint,
        @w_id_local int,
        @c_id_local int

SELECT @screen_data = ""

```

```

BEGIN TRANSACTION p
-- get payment date
SELECT @datetime = GETDATE()

IF (@c_id = 0)
BEGIN
    select top
        (select (count(*) + 1) / 2
         from customer(repeatableread)
         where c_last=@c_last and c_w_id=@c_w_id and
c_d_id=@c_d_id
        )
        @c_id = c_id
    from customer(repeatableread)
    where c_last=@c_last and c_w_id=@c_w_id and c_d_id=@c_d_id
    order by c_last, c_first
END

-- get customer info and update balances
UPDATE customer
SET @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,
    @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)

    -- update customer info
    UPDATE customer
    SET c_data = @c_data + substring(c_data, 1, 458),
        @screen_data = @c_data + substring(c_data, 1, 158)

    WHERE c_id = @c_id AND
          c_w_id = @c_w_id AND
          c_d_id = @c_d_id
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 TRANSACTION 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

SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO

```

## payment-new2.sql

```

-----
-- File: PAYMENT.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.62
-- Copyright Microsoft, 2005
--
-- Creates payment stored procedure
--
-- Interface Level: 4.20.000
-----

SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO

USE tpcc
GO

IF EXISTS ( SELECT name FROM sysobjects WHERE name = 'tpcc_payment' )
    DROP PROCEDURE tpcc_payment
GO

CREATE PROCEDURE tpcc_payment
    @w_id int,
    @c_w_id int,
    @h_amount smallmoney,
    @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 money,
    @c_balance money,
    @c_discount smallmoney,
    @c_data char(42),
    @datetime datetime,
    @w_ytd money,
    @d_ytd money,
    @screen_data char(200),
    @d_id_local tinyint,

```

```

        @w_id_local int,
        @c_id_local int

SELECT @screen_data = ""

BEGIN TRANSACTION p
-- get payment date
SELECT @datetime = GETDATE()

IF (@c_id = 0)
BEGIN
    select top
        (select (count(*) + 1) / 2
         from customer(repeatbleread)
         where c_last=@c_last and c_w_id=@c_w_id and
c_d_id=@c_d_id
        )
        @c_id = c_id
    from customer(repeatbleread)
    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
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,
    @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)

    -- update customer info
    UPDATE customer
    SET c_data = @c_data + substring(c_data, 1, 458),
        @screen_data = @c_data + substring(c_data, 1, 158)

    WHERE c_id = @c_id AND
          c_w_id = @c_w_id AND
          c_d_id = @c_d_id
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

OUTPUT
    @c_id_local,
    @c_d_id,
    @c_w_id,
    @d_id_local,
    @w_id_local,
    @datetime,
    @h_amount,
    @w_name + ' ' + @d_name
INTO history
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 TRANSACTION 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

SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO

```

## ordstat.sql

```

SET QUOTED_IDENTIFIER OFF
GO
SET ANSI_NULLS ON
GO
use tpcc
go
drop proc tpcc_orderstatus
go

```

```

create proc tpcc_orderstatus @w_id int,
                             @d_id tinyint,
                             @c_id int,
                             @c_last char(16) = ""

```

as

```

declare @c_balance money,
        @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 WITH (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 WITH (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

```

```

end
set rowcount 0

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 WITH (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 WITH (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 WITH (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
SET QUOTED_IDENTIFIER OFF
GO
SET ANSI_NULLS ON
GO

```

### orderstat.sql

```

SET QUOTED_IDENTIFIER OFF
GO
SET ANSI_NULLS ON
GO
use tpcc
go
drop proc tpcc_orderstatus
go

```

```

create proc tpcc_orderstatus @w_id smallint,
                             @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 WITH (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 WITH (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 WITH (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 WITH (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 WITH (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
SET QUOTED_IDENTIFIER OFF
GO
SET ANSI_NULLS ON

```

GO

## delivery.sql

```
SET QUOTED_IDENTIFIER OFF
GO
SET ANSI_NULLS ON
GO
use tpcc
go
drop proc 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     money,
        @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 WITH (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,
                       @c_id = o_c_id
```

```
and
        where    o_w_id = @w_id

and
        o_d_id = @d_id

and
        o_id = @o_id

-- set date in all lineitems for this order (and sum amounts)

        update    order_line
        set      ol_delivery_d = getdate(),
               @total = @total +

ol_amount

        where    ol_w_id = @w_id

and
        ol_d_id = @d_id

and
        ol_o_id = @o_id

-- 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
SET QUOTED_IDENTIFIER OFF
GO
SET ANSI_NULLS ON
GO
```

## stocklev.sql

```
SET QUOTED_IDENTIFIER OFF
GO
SET ANSI_NULLS ON
GO
use tpcc
go
drop proc 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
option (order group)
--option( optimize for ((@o_id_low = 20),(@o_id_high = 39)))
GO
SET QUOTED_IDENTIFIER OFF
GO
SET ANSI_NULLS ON
GO
```

## stocklev-new.sql

```
-----
--
-- File: STOCKLEV.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.62
-- Copyright Microsoft, 2005
--
-- Creates stock level stored procedure
--
-- Interface Level: 4.20.000
--
-----
SET QUOTED_IDENTIFIER OFF
GO
SET ANSI_NULLS ON
GO
USE tpcc
GO
```

```
IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_stocklevel' )
DROP PROCEDURE tpcc_stocklevel
GO
CREATE PROCEDURE tpcc_stocklevel
        @w_id int,
        @d_id tinyint,
        @threshold smallint
AS
select s.c
from
(
select (d_next_o_id - 20) as dlow,
       (d_next_o_id - 1) as dhigh
from district
where d_w_id = @w_id and
      d_id = @d_id
) as dinfo(dlow,dhigh)
cross apply
(select count(distinct(s_i_id)) as c
from stock, order_line
where ol_w_id = @w_id and
      ol_d_id = @d_id and
      ol_o_id between dinfo.dlow and dinfo.dhigh and
      s_w_id = ol_w_id and
      s_i_id = ol_i_id and
      s_quantity < @threshold
)
as s(c)
option (order group)
GO
```

```
SET QUOTED_IDENTIFIER OFF
GO
```

```
SET ANSI_NULLS ON
GO
```

## version.sql

```
-----
--
-- File: VERSION.SQL
--
-- Microsoft TPC-C Benchmark Kit Ver. 4.51
-- Copyright Microsoft, 2003
--
-- Returns version level of TPC-C stored procs --
--
-- 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.
--
--
-- Interface Level: 4.10.000
--
```

```

--
--
-----

use tpcc
go

if exists ( select name from sysobjects where name = 'tpcc_version' )
    drop procedure tpcc_version
go

create proc tpcc_version
as
declare    @version char(8)

begin
    select @version = '4.20.000'
    select @version as 'Version'
end

go

```

go

### **version10.sql**

```

-----
--
--
--      File:      VERSION.SQL
--
--      Microsoft TPC-C Benchmark Kit Ver. 4.51
--      Copyright Microsoft, 2003
--
--
--      Returns version level of TPC-C stored procs --
--
--
--      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.
--
--
--      Interface Level:      4.10.000
--
-----

```

```

use tpcc
go

if exists ( select name from sysobjects where name = 'tpcc_version' )
    drop procedure tpcc_version
go

create proc tpcc_version
as
declare    @version char(8)

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

```

# Appendix B: Database Design Scripts

## Database Build

### backup.sql

```
-- File: BACKUP.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.41
-- Copyright Microsoft, 2001
-- Purpose: Creates backup of tpcc database
```

```
declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)
```

```
dump database tpcc to tpccback1, tpccback2, tpccback3, tpccback4, tpccback5,
tpccback6, tpccback7, tpccback8, tpccback9, tpccback10 with init, stats = 1
```

```
select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)
```

Go

### backupdevb.sql

```
-- File: BACKUPDEVB.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.41
-- Copyright Microsoft, 2001
-- Purpose: Creates tpcc database Backup Devices
```

```
use master
go
```

```
exec sp_dropdevice 'tpccback1'
go
exec sp_dropdevice 'tpccback2'
go
exec sp_dropdevice 'tpccback3'
go
exec sp_dropdevice 'tpccback4'
go
exec sp_dropdevice 'tpccback5'
go
exec sp_dropdevice 'tpccback6'
go
exec sp_dropdevice 'tpccback7'
go
exec sp_dropdevice 'tpccback8'
go
exec sp_dropdevice 'tpccback9'
go
exec sp_dropdevice 'tpccback10'
go
```

```
-- create backup devices
```

```
exec sp_addumpdevice 'disk','tpccback1','G:\tpccback1.dmp'
go
```

```
exec sp_addumpdevice 'disk','tpccback2','H:\tpccback2.dmp'
go
exec sp_addumpdevice 'disk','tpccback3','I:\tpccback3.dmp'
go
exec sp_addumpdevice 'disk','tpccback4','J:\tpccback4.dmp'
go
exec sp_addumpdevice 'disk','tpccback5','K:\tpccback5.dmp'
go
exec sp_addumpdevice 'disk','tpccback6','L:\tpccback6.dmp'
go
exec sp_addumpdevice 'disk','tpccback7','M:\tpccback7.dmp'
go
exec sp_addumpdevice 'disk','tpccback8','N:\tpccback8.dmp'
go
exec sp_addumpdevice 'disk','tpccback9','O:\tpccback9.dmp'
go
exec sp_addumpdevice 'disk','tpccback10','P:\tpccback10.dmp'
Go
```

### createdb.sql

```
-----
-- File: CREATEDB.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.51
-- Copyright Microsoft, 2003
--
-----
```

```
SET ANSI_NULL_DFLT_OFF ON
go
```

```
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(), 21))
go
```

```
-----
-- create main database files
-----
```

```
CREATE DATABASE tpcc
ON PRIMARY
( NAME = MSSQL_tpcc_root,
FILENAME = 'C:\MSSQL_tpcc_root.mdf',
SIZE = 8MB,
FILEGROWTH = 0),
FILEGROUP MSSQL_misc_fg
( NAME = MSSQL_misc1,
FILENAME = 'C:\mp\m1\,
```

```

        SIZE                = 21000MB,
        FILEGROWTH          = 0),
(   NAME                  = MSSQL_misc2,
    FILENAME              = 'C:\mp\m2\',
    SIZE                  = 21000MB,
    FILEGROWTH            = 0),
(   NAME                  = MSSQL_misc3,
    FILENAME              = 'C:\mp\m3\',
    SIZE                  = 21000MB,
    FILEGROWTH            = 0),
(   NAME                  = MSSQL_misc4,
    FILENAME              = 'C:\mp\m4\',
    SIZE                  = 21000MB,
    FILEGROWTH            = 0),
(   NAME                  = MSSQL_misc5,
    FILENAME              = 'C:\mp\m5\',
    SIZE                  = 21000MB,
    FILEGROWTH            = 0),
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    FILENAME              = 'C:\mp\m6\',
    SIZE                  = 21000MB,
    FILEGROWTH            = 0),
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    SIZE                  = 21000MB,
    FILEGROWTH            = 0),
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    SIZE                  = 21000MB,
    FILEGROWTH            = 0),
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    FILEGROWTH            = 0),
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    SIZE                  = 21000MB,
    FILEGROWTH            = 0),
(   NAME                  = MSSQL_misc17,
    FILENAME              = 'C:\mp\m17\',
    SIZE                  = 21000MB,
    FILEGROWTH            = 0),
(   NAME                  = MSSQL_misc18,
    FILENAME              = 'C:\mp\m18\',

```

```

        SIZE                = 21000MB,
        FILEGROWTH          = 0),
(   NAME                  = MSSQL_misc19,
    FILENAME              = 'C:\mp\m19\',
    SIZE                  = 21000MB,
    FILEGROWTH            = 0),
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    FILENAME              = 'C:\mp\m20\',
    SIZE                  = 21000MB,
    FILEGROWTH            = 0),
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    SIZE                  = 21000MB,
    FILEGROWTH            = 0),
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    SIZE                  = 21000MB,
    FILEGROWTH            = 0),
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    FILEGROWTH            = 0),
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    FILEGROWTH            = 0),
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    FILENAME              = 'C:\mp\m31\',
    SIZE                  = 21000MB,
    FILEGROWTH            = 0),
(   NAME                  = MSSQL_misc32,
    FILENAME              = 'C:\mp\m32\',
    SIZE                  = 21000MB,
    FILEGROWTH            = 0),
FILEGROUP                MSSQL_cs_fg
(   NAME                  = MSSQL_cs1,
    FILENAME              = 'c:\mp\c1\',
    SIZE                  = 37000MB,
    FILEGROWTH            = 0),
(   NAME                  = MSSQL_cs2,
    FILENAME              = 'c:\mp\c2\',
    SIZE                  = 37000MB,
    FILEGROWTH            = 0),

```

```

(      NAME          = MSSQL_cs3,
      FILENAME       = 'c:\mp\c3\',
      SIZE           = 37000MB,
      FILEGROWTH    = 0),
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      FILENAME       = 'c:\mp\c4\',
      SIZE           = 37000MB,
      FILEGROWTH    = 0),
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      SIZE           = 37000MB,
      FILEGROWTH    = 0),
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      SIZE           = 37000MB,
      FILEGROWTH    = 0),
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      FILENAME       = 'c:\mp\c8\',
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      SIZE           = 37000MB,
      FILEGROWTH    = 0),
(      NAME          = MSSQL_cs30,
      FILENAME       = 'c:\mp\c30\',
      SIZE           = 37000MB,
      FILEGROWTH    = 0),
(      NAME          = MSSQL_cs31,
      FILENAME       = 'c:\mp\c31\',
      SIZE           = 37000MB,
      FILEGROWTH    = 0),
(      NAME          = MSSQL_cs32,
      FILENAME       = 'c:\mp\c32\',
      SIZE           = 37000MB,
      FILEGROWTH    = 0),
LOG ON
(      NAME          = MSSQL_tpcc_log,
      FILENAME       = 'E:',
      SIZE           = 548000MB,
      FILEGROWTH    = 0)

COLLATE Latin1_General_BIN
go

-----
-- Store ending time
-----
update  tpcc_timer
set     end_date  = (select convert(char(30), getdate(), 21))
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
```

### **removedb.sql**

```
-- File:   REMOVEDB.SQL
--        Microsoft TPC-C Benchmark Kit Ver. 4.41
--        Copyright Microsoft, 2001
-- Purpose: Removes tpcc database and backup files
```

```
use master
go
```

```
-- remove any existing database and backup files
```

```
exec sp_dbremove tpcc, dropdev
go
```

```
exec sp_dropdevice 'tpccback1'
exec sp_dropdevice 'tpccback2'
exec sp_dropdevice 'tpccback3'
exec sp_dropdevice 'tpccback4'
exec sp_dropdevice 'tpccback5'
exec sp_dropdevice 'tpccback6'
exec sp_dropdevice 'tpccback7'
exec sp_dropdevice 'tpccback8'
exec sp_dropdevice 'tpccback9'
exec sp_dropdevice 'tpccback10'
```

```
Go
```

### **restore.sql**

```
-- File:   RESTORE.SQL
--        Microsoft TPC-C Benchmark Kit Ver. 4.41
--        Copyright Microsoft, 2001
-- Purpose: Loads database backup from backup files
```

```
load database tpcc from tpccback1, tpccback2, tpccback3, tpccback4,
tpccback5, tpccback6, tpccback7, tpccback8, tpccback9, tpccback10 with
replace, stats = 1
```

```
go
```

### **dbop1.sql**

```
-----
--
--
-- File:   DBOPT1.SQL
--
--        Microsoft TPC-C Benchmark Kit Ver. 4.51
--        Copyright Microsoft, 2003
```

```
--
--
--           Sets database options for load
--
-----
```

```
use master
go
```

```
ALTER DATABASE tpcc SET RECOVERY BULK_LOGGED
go
```

```
exec sp_dboption tpcc,'trunc. log on chkpt.',true
go
```

```
ALTER DATABASE tpcc SET TORN_PAGE_DETECTION OFF
go
```

```
use tpcc
go
```

```
checkpoint
go
```

### **dbopt2.sql**

```
-----
--
--
-- File:   DBOPT2.SQL
--
--        Microsoft TPC-C Benchmark Kit Ver. 4.51
--        Copyright Microsoft, 2003
--
--           Sets database options after data load
--
-----
```

```
ALTER DATABASE tpcc SET RECOVERY FULL
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

DECLARE @db_id int, @tbl_id int
SET @db_id = DB_ID('tpcc')
SET @tbl_id = OBJECT_ID('tpcc..warehouse')
DBCC PINTABLE (@db_id, @tbl_id)
SET @tbl_id = OBJECT_ID('tpcc..district')
DBCC PINTABLE (@db_id, @tbl_id)
SET @tbl_id = OBJECT_ID('tpcc..new_order')
DBCC PINTABLE (@db_id, @tbl_id)
SET @tbl_id = OBJECT_ID('tpcc..item')
DBCC PINTABLE (@db_id, @tbl_id)
--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. 4.51
-- Copyright Microsoft, 2003
-- Creates clustered index on customer table
-----

use tpcc
go

declare @startdate datetime,
        @enddate datetime

select @startdate = getdate()
select 'Start date:',
       convert(varchar(30),@startdate,21)

if exists ( select name from sysindexes where name = 'customer_cl' )
drop index customer.customer_cl

create unique clustered index customer_cl on customer(c_w_id, c_d_id, c_id)
on MSSQL_cs_fg

select @enddate = getdate()
select 'End date:',
       convert(varchar(30),@enddate, 21)
select 'Elapsed time (in seconds): ',
       datediff(second, @startdate, @enddate)

go

```

## ***idxcusnc.sql***

```

-----
-- File: IDXCUSNC.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.51
-- Copyright Microsoft, 2003
-- Creates non-clustered index on customer table
-----

use tpcc
go

declare @startdate datetime,
        @enddate datetime

select @startdate = getdate()
select 'Start date:',
       convert(varchar(30),@startdate, 21)

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, 21)
select 'Elapsed time (in seconds): ',
       datediff(second, @startdate, @enddate)

```

Go

## **idxdiscl.sql**

```
-----  
-- File: IDXDISCL.SQL  
-- Microsoft TPC-C Benchmark Kit Ver. 4.51  
-- Copyright Microsoft, 2003  
--  
-- Creates clustered index on district table  
-----  
  
use tpcc  
go  
  
declare @startdate datetime,  
        @enddate datetime  
  
select @startdate = getdate()  
select 'Start date:',  
        convert(varchar(30),@startdate, 21)  
  
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, 21)  
select 'Elapsed time (in seconds): ',  
        datediff(second, @startdate, @enddate)  
  
Go
```

## **idxhiscl.sql**

```
-----  
-- File: IDXHISCL.SQL  
-- Microsoft TPC-C Benchmark Kit Ver. 4.51  
-- Copyright Microsoft, 2003  
--  
-- Creates clustered index on history table  
--  
-- CAUTION: This index is only beneficial for systems --  
-- CAUTION: with 8 or more processors. --  
-- CAUTION: It may negatively impact performance on --  
-- CAUTION: systems with less than 8 processors. --  
-----  
  
use tpcc  
go  
  
declare @startdate datetime,  
        @enddate datetime  
  
select @startdate = getdate()  
select 'Start date:',  
        convert(varchar(30),@startdate, 21)  
  
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, 21)  
select 'Elapsed time (in seconds): ',  
        datediff(second, @startdate, @enddate)  
  
go
```

## **idxitmcl.sql**

```
-----  
-- File: IDXITMCL.SQL  
-- Microsoft TPC-C Benchmark Kit Ver. 4.51  
-- Copyright Microsoft, 2003  
--  
-- Creates clustered index on item table  
-----  
  
use tpcc  
go  
  
declare @startdate datetime,  
        @enddate datetime  
  
select @startdate = getdate()  
select 'Start date:',  
        convert(varchar(30),@startdate, 21)  
  
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, 21)  
select 'Elapsed time (in seconds): ',  
        datediff(second, @startdate, @enddate)  
  
Go
```

## **idxnodcl.sql**

```
-----  
-- File: IDXNODCL.SQL  
-- Microsoft TPC-C Benchmark Kit Ver. 4.51  
-- Copyright Microsoft, 2003  
--  
-- Creates clustered index on new_order table  
-----  
  
use tpcc  
go  
  
declare @startdate datetime,  
        @enddate datetime  
  
select @startdate = getdate()  
select 'Start date:',
```

```

        convert(varchar(30),@startdate, 21)

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, 21)
select    'Elapsed time (in seconds): ',
          datediff(second, @startdate, @enddate)

Go

```

### ***idxodlcl.sql***

```

-----
--                                     --
-- File: IDXODLCL.SQL                 --
-- Microsoft TPC-C Benchmark Kit Ver. 4.51 --
-- Copyright Microsoft, 2003         --
--                                     --
-- Creates clustered index on order_line table --
-----

use tpcc
go

declare    @startdate datetime,
           @enddate datetime

select    @startdate = getdate()
select    'Start date:',
          convert(varchar(30),@startdate, 21)

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, 21)
select    'Elapsed time (in seconds): ',
          datediff(second, @startdate, @enddate)

Go

```

### ***idxordcl.sql***

```

-----
--                                     --
-- File: IDXORDCL.SQL                 --
-- Microsoft TPC-C Benchmark Kit Ver. 4.51 --
-- Copyright Microsoft, 2003         --
--                                     --
-- Creates clustered index on orders table --
-----

use tpcc
go

```

```

declare    @startdate datetime,
           @enddate datetime

select    @startdate = getdate()
select    'Start date:',
          convert(varchar(30),@startdate, 21)

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, 21)
select    'Elapsed time (in seconds): ',
          datediff(second, @startdate, @enddate)

Go

```

### ***idxordnc.sql***

```

-----
--                                     --
-- File: IDXORDNC.SQL                 --
-- Microsoft TPC-C Benchmark Kit Ver. 4.51 --
-- Copyright Microsoft, 2003         --
--                                     --
-- Creates non-clustered index on orders table --
-----

use tpcc
go

declare    @startdate datetime,
           @enddate datetime

select    @startdate = getdate()
select    'Start date:',
          convert(varchar(30),@startdate, 21)

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, 21)
select    'Elapsed time (in seconds): ',
          datediff(second, @startdate, @enddate)

go

```

### ***idxstkcl.sql***

```

-----
--                                     --
-- File: IDXSTKCL.SQL                 --
-- Microsoft TPC-C Benchmark Kit Ver. 4.51 --
-- Copyright Microsoft, 2003         --
--                                     --

```

```

--      Creates clustered index on stock table      --
-----

use tpcc
go

declare  @startdate datetime,
         @enddate  datetime

select  @startdate = getdate()
select  'Start date:',
        convert(varchar(30),@startdate, 21)

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, 21)
select  'Elapsed time (in seconds): ',
        datediff(second, @startdate, @enddate)

Go

```

### ***idxwarcl.sql***

```

-----
--      File: IDXWARCL.SQL      --
--      Microsoft TPC-C Benchmark Kit Ver. 4.51      --
--      Copyright Microsoft, 2003      --
--      --
--      Creates clustered index on warehouse table      --
-----

use tpcc
go

declare  @startdate datetime,
         @enddate  datetime

select  @startdate = getdate()
select  'Start date:',
        convert(varchar(30),@startdate, 21)

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, 21)
select  'Elapsed time (in seconds): ',
        datediff(second, @startdate, @enddate)

go

```

### ***RunSQLcfg.sql***

```

-----
--
--      File:      RUNSQLCFG.SQL
--
--      Microsoft TPC-C Benchmark Kit Ver. 4.51      --
--      Copyright Microsoft, 2003      --
--
--      Sets suggested 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. 4.51
--      Copyright Microsoft, 2003
--
--      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. 4.51
--      Copyright Microsoft, 2003
--
--      Creates TPC-C tables
--
-----
-- May 13, 2005 - CJL
-- Modified from Shiloh kit. Reorder columns; change numeric to money.
--

```

```

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_ytd               money,
    w_tax               smallmoney,
    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)
) on MSSQL_misc_fg
go

```

```

create table district
(
    d_id                tinyint,
    d_w_id              int,
    d_ytd               money,
    d_next_o_id         int,
    d_tax               smallmoney,
    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)
) on MSSQL_misc_fg
go

```

```

create table customer
(
    c_id                int,
    c_d_id              tinyint,
    c_w_id              int,
    c_discount          smallmoney,
    c_credit_lim        money,
    c_last              char(16),
    c_first             char(16),
    c_credit            char(2),
    c_balance           money,
    c_ytd_payment       money,
    c_payment_cnt       smallint,
    c_delivery_cnt      smallint,
    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_middle            char(2),
    c_data              char(500)
) on MSSQL_cs_fg
go

```

```

-- Use the following table option if using c_data varchar(max)
-- sp_tableoption 'customer','large value types out of row','1'

```

```

-- 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             smallmoney,
    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_carrier_id        tinyint,
    o_ol_cnt            tinyint,
    o_all_local          tinyint,
    o_entry_d           datetime
) 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_delivery_d        datetime,
    ol_amount            smallmoney,
    ol_supply_w_id      int,
    ol_quantity          smallint,
    ol_dist_info        char(24)
) on MSSQL_misc_fg
go

create table item
(
    i_id                int,
    i_name               char(24),
    i_price              smallmoney,
    i_data               char(50),
    i_im_id             int
) on MSSQL_misc_fg
go

create table stock
(
    s_i_id              int,
    s_w_id              int,
    s_quantity          smallint,
    s_ytd               int,
    s_order_cnt         smallint,

```

```

    s_remote_cnt       smallint,
    s_data              char(50),
    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)
) 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':
            pargs->num_warehouses =
atol(ptr+2);
            break;

        case 's':
            pargs->starting_warehouse =
atol(ptr+2);
            break;

        case 't':
            {
                pargs->tables_all =
FALSE;
                if ( strcmp(ptr+2,"item")
== 0 )
                    pargs->table_item = TRUE;
                else if
( strcmp(ptr+2,"warehouse") == 0 )
                    pargs->table_warehouse = TRUE;
            }
    }

    if ( strcmp(ptr+2,"customer") == 0 )
        pargs->table_customer = TRUE;
    else if
( strcmp(ptr+2,"orders") == 0 )
        pargs->table_orders = TRUE;
    else
    {
        printf("\nUnrecognized
command");
        GetArgsLoaderUsage();
        exit(1);
    }
    break;

    case 'f':
        pargs->loader_res_file = ptr+2;
        break;

    case 'L':
        pargs->log_path = ptr+2;
        break;

    case 'p':
        pargs->pack_size = atol(ptr+2);
        break;

    case 'i':
        pargs->build_index = atol(ptr+2);
        break;

    case 'o':
        pargs->index_order = atol(ptr+2);
        break;

    case 'c':
        pargs->scale_down = atol(ptr+2);
        break;

    case 'd':
        pargs->index_script_path = ptr+2;
        break;

    default:
        GetArgsLoaderUsage();
        exit(-1);
        break;
    }
}

/* check for required args */
if ( pargs->num_warehouses == UNDEF )
{
    printf("Number of Warehouses is required\n");
    exit(-2);
}

return;
}

//=====
//

```

```
// Function name: GetArgsLoaderUsage
//
//=====
//=====

void GetArgsLoaderUsage()
{

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

    printf("TPCCLDR:\n\n");
    printf("Parameter                Default\n");
    printf("-----\n");
    printf("-W Number of Warehouses to Load      Required\n");
    printf("-S Server                            %s\n", SERVER);
    printf("-U Username                           %s\n", USER);
    printf("-P Password                           %s\n", PASSWORD);
    printf("-D Database                           %s\n", DATABASE);
    printf("-b Batch Size                          %ld\n", (long)
BATCH);
    printf("-p TDS packet size                     %ld\n", (long)
DEFLDPACKSIZE);
    printf("-f Loader Results Output Filename      %s\n",
LOADER_RES_FILE);
    printf("-s Starting Warehouse                  %ld\n", (long)
DEF_STARTING_WAREHOUSE);
    printf("-i Build Option (data = 0, data and index = 1) %ld\n",
(long) BUILD_INDEX);
    printf("-o Cluster Index Build Order (before = 1, after = 0) %ld\n",
(long) INDEX_ORDER);
    printf("-c Build Scaled Database (normal = 0, tiny = 1) %ld\n",
(long) SCALE_DOWN);
    printf("-d Index Script Path                    %s\n",
INDEX_SCRIPT_PATH);
    printf("-t Table to Load                        all tables\n");
    printf(" [item|warehouse|customer|orders]\n");
    printf(" Notes: \n");
    printf(" - the '-t' parameter may be included multiple times to \n");
    printf(" specify multiple tables to be loaded \n");
    printf(" - 'item' loads ITEM table \n");
    printf(" - 'warehouse' loads WAREHOUSE, DISTRICT, and STOCK
tables \n");
    printf(" - 'customer' loads CUSTOMER and HISTORY tables \n");
    printf(" - 'orders' load NEW-ORDER, ORDERS, ORDER-LINE tables
\n");

    printf("\nNote: Command line switches are case sensitive.\n");

    exit(0);
}

```

## strings.c

```
//      File:                STRINGS.C
//
//                        Microsoft TPC-C Kit Ver. 4.41
//                        Copyright Microsoft, 1996, 1997,
1998, 1999, 2000, 2001
//      Purpose:   Source file for database loader string functions

// Includes
#include "tpcc.h"
#include <string.h>
#include <ctype.h>

```

```
//=====
//
// Function name: MakeAddress
//
//=====
//=====

void MakeAddress(char *street_1,
                char *street_2,
                char *city,
                char *state,
                char *zip)
{

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

    MakeAlphaString (10, 20, ADDRESS_LEN, street_1);
    MakeAlphaString (10, 20, ADDRESS_LEN, street_2);
    MakeAlphaString (10, 20, ADDRESS_LEN, city);
    MakeAlphaString ( 2,  2, STATE_LEN, state);
    MakeZipNumberString( 9, 9, ZIP_LEN, zip);

#ifdef DEBUG
    printf("[%ld]DBG: MakeAddress: street_1: %s, street_2: %s, city: %s, state:
%s, zip: %s\n",
                (int) GetCurrentThreadId(), street_1, street_2,
city, state, zip);
#endif

    return;
}

//=====
//
// Function name: LastName
//
//=====
//=====

void LastName(int num,
            char *name)
{
    static char *n[] =
    {
        "BAR", "OUGHT", "ABLE", "PRI", "PRES",
        "ESE", "ANTI", "CALLY", "ATION", "EING"
    };

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

    if ((num >= 0) && (num < 1000))
    {
        strcpy(name, n[(num/100)%10]);
        strcat(name, n[(num/10)%10]);
        strcat(name, n[(num/1)%10]);

        if (strlen(name) < LAST_NAME_LEN)
        {
            PaddString(LAST_NAME_LEN, name);
        }
    }
}

```



```

    }
}
else
{
    printf("\nError in LastName()... num <%ld> out of range
(0,999)\n", num);
    exit(-1);
}

#ifdef DEBUG
    printf("[%ld]DBG: LastName: num = [%d] ==> [%d][%d][%d]\n",
           (int) GetCurrentThreadId(), num, num/100,
           (num/10)%10, num%10);
    printf("[%ld]DBG: LastName: String = %s\n", (int)
GetCurrentThreadId(), name);
#endif

    return;
}

//=====
//
// Function name: MakeAlphaString
//
//=====

//philipdu 08/13/96 Changed MakeAlphaString to use A-Z, a-z, and 0-9 in
//accordance with spec see below:
//The spec says:
//4.3.2.2 The notation random a-string [x .. y]
//(respectively, n-string [x .. y]) represents a string of random alphanumeric
//(respectively, numeric) characters of a random length of minimum x,
maximum y,
//and mean (y+x)/2. Alphanumerics are A..Z, a..z, and 0..9. The only other
//requirement is that the character set used "must be able to represent a
minimum
//of 128 different characters". We are using 8-bit chars, so this is a non issue.
//It is completely unreasonable to stuff non-printing chars into the text fields.
//--CLevine 08/13/96

int MakeAlphaString( int x, int y, int z, char *str)
{
    int len;
    int i;
    char cc = 'a';
    static char chArray[] =
"0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz";
    static int chArrayMax = 61;

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

    len= RandomNumber(x, y);

    for (i=0; i<len; i++)
    {
        cc = chArray[RandomNumber(0, chArrayMax)];
        str[i] = cc;
    }
}

```

```

//if ( len < z )
//    memset(str+len, ' ', z - len);
str[len] = 0;

return len;
}

//=====
//
// Function name: MakeOriginalAlphaString
//
//=====

int MakeOriginalAlphaString(int x,
                           int y,
                           int z,
                           char *str,
                           int percent)
{
    int len;
    int val;
    int start;

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

    // verify 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("[%d]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 MINPRINTASCH  32
#define MAXPRINTASCH  126

```

```

// Default environment constants
#define SERVER          ""
#define DATABASE        "tpcc"
#define USER            "sa"
#define PASSWORD        ""

```

```

// Default loader arguments
#define BATCH           10000
#define DEFLOADPACKSIZE 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;
} TPCLDR_ARGS;

// String length constants
#define SERVER_NAME_LEN 20
#define DATABASE_NAME_LEN 20
#define USER_NAME_LEN 20
#define PASSWORD_LEN 20
#define TABLE_NAME_LEN 20
#define I_DATA_LEN 50
#define I_NAME_LEN 24
#define BRAND_LEN 1
#define LAST_NAME_LEN 16
#define W_NAME_LEN 10
#define ADDRESS_LEN 20
#define STATE_LEN 2
#define ZIP_LEN 9
#define S_DIST_LEN 24
#define S_DATA_LEN 50
#define D_NAME_LEN 10
#define FIRST_NAME_LEN 16
#define MIDDLE_NAME_LEN 2
#define PHONE_LEN 16
#define CREDIT_LEN 2
#define C_DATA_LEN 500
#define H_DATA_LEN 24
#define DIST_INFO_LEN 24

```

```

#define MAX_OL_NEW_ORDER_ITEMS 15
#define MAX_OL_ORDER_STATUS_ITEMS 15
#define STATUS_LEN 25
#define OL_DIST_INFO_LEN 24
#define C_SINCE_LEN

23
#define H_DATE_LEN

23
#define OL_DELIVERY_D_LEN 23
#define O_ENTRY_D_LEN 23

```

// Functions in random.c

```

void seed();
long irand();
double drand();
void WUCreate();
short WURand();
long RandomNumber(long lower, long upper);

```

// Functions in getargs.c;

```

void GetArgsLoader();
void GetArgsLoaderUsage();

```

// Functions in time.c

```

long TimeNow();

```

// Functions in strings.c

```

void MakeAddress();
void LastName();
int MakeAlphaString();
int MakeOriginalAlphaString();
int MakeNumberString();
int MakeZipNumberString();
void InitString();
void InitAddress();
void PaddString();

```

## tpccldr.c

```

// File: TPCCLDR.C
// Microsoft TPC-C Kit Ver. 4.41
// Copyright Microsoft, 1996, 1997,
1998, 1999, 2000, 2001
// Purpose: Source file for TPC-C database loader

```

// Includes

```

#include "tpcc.h"
#include "search.h"

```

// Defines

```

#define MAXITEMS 100000
#define MAXITEMS_SCALE_DOWN 100
#define CUSTOMERS_PER_DISTRICT 3000
#define CUSTOMERS_SCALE_DOWN 30
#define DISTRICT_PER_WAREHOUSE 10
#define ORDERS_PER_DISTRICT 3000
#define ORDERS_SCALE_DOWN 30
#define MAX_CUSTOMER_THREADS 2
#define MAX_ORDER_THREADS 3
#define MAX_MAIN_THREADS 4

```

// Functions declarations

```

void HandleErrorDBC (SQLHDBC hdbc1);

```

```

void CheckDataBase();

```

```

long NURand();
void LoadItem();
void LoadWarehouse();

```

```

void Stock();
void District();

```

```

void LoadCustomer();
void CustomerBufInit();
void CustomerBufLoad();
void LoadCustomerTable();
void LoadHistoryTable();

```

```

void LoadOrders();
void OrdersBufInit();
void OrdersBufLoad();
void LoadOrdersTable();
void LoadNewOrderTable();
void LoadOrderLineTable();
void GetPermutation();
void CheckForCommit();
void OpenConnections();
void BuildIndex();
void FormatDate ();

```

// Shared memory structures

```

typedef struct
{
    long ol;
    long ol_i_id;
    short ol_supply_w_id;
    short ol_quantity;
    double ol_amount;
    char ol_dist_info[DIST_INFO_LEN+1];
    char
    ol_delivery_d[OL_DELIVERY_D_LEN+1];
} ORDER_LINE_STRUCT;

```

```

typedef struct
{
    long o_id;
    short o_d_id;
    short o_w_id;
    long o_c_id;
    short o_carrier_id;
    short o_ol_cnt;
    short o_all_local;
    ORDER_LINE_STRUCT o_ol[15];
} ORDERS_STRUCT;

```

```

typedef struct
{
    long c_id;
    short c_d_id;
    short c_w_id;
    char
    c_first[FIRST_NAME_LEN+1];
    char
    c_middle[MIDDLE_NAME_LEN+1];
    char c_last[LAST_NAME_LEN+1];
    char c_street_1[ADDRESS_LEN+1];
    char c_street_2[ADDRESS_LEN+1];
    char c_city[ADDRESS_LEN+1];
    char c_state[STATE_LEN+1];
    char c_zip[ZIP_LEN+1];
}

```

```

char          c_phone[PHONE_LEN+1];
char          c_credit[CREDIT_LEN+1];
double       c_credit_lim;
double       c_discount;
// fix to avoid ODBC float to numeric conversion problem.
// double    c_balance;
char          c_balance[6];

double       c_ytd_payment;
short       c_payment_cnt;
short       c_delivery_cnt;
char        c_data[C_DATA_LEN+1];
double      h_amount;
char        h_data[H_DATA_LEN+1];
} CUSTOMER_STRUCT;

typedef struct
{
char
c_last[LAST_NAME_LEN+1];
char
c_first[FIRST_NAME_LEN+1];
long
} 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;
table
HDBC      w_hdbc1;
WAREHOUSE, DISTRICT, STOCK
HDBC      c_hdbc1;
CUSTOMER
HDBC      c_hdbc2;
HISTORY
HDBC      o_hdbc1;
ORDERS
HDBC      o_hdbc2;
NEW-ORDER
HDBC      o_hdbc3;
ORDER-LINE

HSTMT     v_hstmt;
Server version verification
HSTMT     i_hstmt1;
HSTMT     w_hstmt1;
HSTMT     c_hstmt1, c_hstmt2;
HSTMT     o_hstmt1, o_hstmt2, o_hstmt3;

ORDERS_STRUCT orders_buf[ORDERS_PER_DISTRICT];
CUSTOMER_STRUCT customer_buf[CUSTOMERS_PER_DISTRICT];
long      orders_rows_loaded;
long      new_order_rows_loaded;
long      order_line_rows_loaded;
long      history_rows_loaded;

long      customer_rows_loaded;
long      stock_rows_loaded;
long      district_rows_loaded;
long      item_rows_loaded;
long      warehouse_rows_loaded;
long      main_time_start;
long      main_time_end;
long      max_items;
long      customers_per_district;
long      orders_per_district;
long      first_new_order;
long      last_new_order;

TPCCLDR_ARGS *aptr, args;

//=====
//
// Function name: main
//
//=====

int main(int argc, char **argv)
{
DWORD      dwThreadID[MAX_MAIN_THREADS];
HANDLE     hThread[MAX_MAIN_THREADS];
FILE       *fLoader;
char       buffer[255];
int        i;

for (i=0; i<MAX_MAIN_THREADS; i++)
    hThread[i] = NULL;

printf("\n*****");
printf("\n*");
printf("\n* Microsoft SQL Server");
printf("\n*");
printf("\n* TPC-C BENCHMARK KIT: Database loader");
printf("\n* Version %s", TPCKIT_VER);
printf("\n*");

printf("\n*****\n");

// 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,
(LPPTHREAD_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,
(LPPTHREAD_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);

printf(buffer, "\nTPC-C load completed successfully in %ld minutes.\n",
        (main_time_end - main_time_start)/60);

printf("%s", buffer);
fprintf(fLoader, "%s", buffer);

fclose(fLoader);

SQLFreeEnv(henv);

exit(0);

return 0;
}

//=====
//
// Function name: LoadItem
//
//=====

void LoadItem()
{
    long        i_id;
    long        i_im_id;
    char        i_name[I_NAME_LEN+1];
    double      i_price;
    char        i_data[I_DATA_LEN+1];
    char        name[20];
    long        time_start;
    RETCODE     rc;
    DBINT       rcint;
    char        bcphint[128];
    char        err_log_path[256];

// Seed with unique number
seed(1);

```

```

printf("Loading item table...\n");

// if build index before load
if ((aptr->build_index == 1) && (aptr->index_order == 1))
    BuildIndex("idxitmc1");

InitString(i_name, I_NAME_LEN+1);
InitString(i_data, I_DATA_LEN+1);

sprintf(name, "%s.%s", aptr->database, "item");

//rc = bcp_init(i_hdbc1, name, NULL, "logs\item.err", DB_IN);
strcpy(err_log_path, aptr->log_path);
strcat(err_log_path, "item.err");
rc = bcp_init(i_hdbc1, name, NULL, err_log_path, DB_IN);
if (rc != SUCCEED)
    HandleErrorDBC(i_hdbc1);

if ((aptr->build_index == 1) && (aptr->index_order == 1))
{
    sprintf(bcphint, "tablock, order (i_id),
ROWS_PER_BATCH = 100000");
    rc = bcp_control(i_hdbc1, BCPHINTS, (void*) bcphint);
    if (rc != SUCCEED)
        HandleErrorDBC(i_hdbc1);
}

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

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

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

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

rc = bcp_bind(i_hdbc1, (BYTE *) i_data, 0, I_DATA_LEN, NULL,
0, 0, 5);
if (rc != SUCCEED)
    HandleErrorDBC(i_hdbc1);

time_start = (TimeNow() / MILLI);

item_rows_loaded = 0;

for (i_id = 1; i_id <= max_items; i_id++)
{
    i_im_id = RandomNumber(1L, 10000L);

    MakeAlphaString(14, 24, I_NAME_LEN, i_name);

    i_price = ((float) RandomNumber(100L, 10000L))/100.0;

    MakeOriginalAlphaString(26, 50, I_DATA_LEN, i_data,
10);

    rc = bcp_sendrow(i_hdbc1);

```

```

        if (rc != SUCCEED)
            HandleErrorDBC(i_hdbc1);

        item_rows_loaded++;
        CheckForCommit(i_hdbc1, i_hstmt1, item_rows_loaded,
"item", &time_start);
    }

    rcint = bcp_done(i_hdbc1);
    if (rcint < 0)
        HandleErrorDBC(i_hdbc1);

    printf("Finished loading item table.\n");

    SQLFreeStmt(i_hstmt1, SQL_DROP);
    SQLDisconnect(i_hdbc1);
    SQLFreeConnect(i_hdbc1);

    // if build index after load
    if ((aptr->build_index == 1) && (aptr->index_order == 0))
        BuildIndex("idxitmc1");
}

//=====
//
// 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    bcpint[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 != SUCCEED)
    HandleErrorDBC(w_hdbc1);

    if ((aptr->build_index == 1) && (aptr->index_order == 1))
    {
        sprintf(bcpint, "tablock, order (w_id,
ROWS_PER_BATCH = %d", aptr->num_warehouses);
        rc = bcp_control(w_hdbc1, BCPHINTS, (void*)
bcpint);

        if (rc != SUCCEED)
            HandleErrorDBC(w_hdbc1);
    }

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

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

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

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

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

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

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

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

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

    time_start = (TimeNow() / MILLI);

    warehouse_rows_loaded = 0;

```



```

        for (w_id = (short)aptr->starting_warehouse; w_id <=
aptr->num_warehouses; w_id++)
        {
            MakeAlphaString(6,10, W_NAME_LEN, w_name);

            MakeAddress(w_street_1, w_street_2, w_city, w_state,
w_zip);

            w_tax = ((float) RandomNumber(0L,2000L))/10000.00;

            w_ytd = 300000.00;

            rc = bcp_sendrow(w_hdbc1);
            if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);

            warehouse_rows_loaded++;
            CheckForCommit(w_hdbc1, i_hstmt1,
warehouse_rows_loaded, "warehouse", &time_start);
        }

        rcint = bcp_done(w_hdbc1);
        if (rcint < 0)
            HandleErrorDBC(w_hdbc1);

        printf("Finished loading warehouse table.\n");

        // if build index after load...
        if ((aptr->build_index == 1) && (aptr->index_order == 0))
            BuildIndex("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("idxdiscl");

InitString(d_name, D_NAME_LEN+1);
InitAddress(d_street_1, d_street_2, d_city, d_state, d_zip);
sprintf(name, "%s.%s", aptr->database, "district");

//rc = bcp_init(w_hdbc1, name, NULL, "logs\\district.err", DB_IN);
strcpy(err_log_path, aptr->log_path);
strcat(err_log_path, "district.err");
rc = bcp_init(w_hdbc1, name, NULL, err_log_path, DB_IN);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);

if ((aptr->build_index == 1) && (aptr->index_order == 1))
{
    sprintf(bcphint, "tablock, order (d_w_id, d_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 10));
    rc = bcp_control(w_hdbc1, BCPHINTS, (void*)
bcphint);
    if (rc != SUCCEED)
        HandleErrorDBC(w_hdbc1);
}

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

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

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

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

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

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

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

rc = bcp_bind(w_hdbc1, (BYTE *) d_zip, 0, ZIP_LEN, NULL, 0, 0,
8);

```

```

if (rc != 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 = apr->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    bcphint[128];
    char    err_log_path[256];

    // Seed with unique number
    seed(3);

    // if build index before load...
    if ((aptr->build_index == 1) && (aptr->index_order == 1))
        BuildIndex("idxstck1");

    sprintf(name, "%s.%s", apr->database, "stock");

    //rc = bcp_init(w_hdbc1, name, NULL, "logs\\stock.err", DB_IN);
    strcpy(err_log_path, apr->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(bcphint, "tablock, order (s_i_id, s_w_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 100000));
        rc = bcp_control(w_hdbc1, BCPHINTS, (void*)
bcphint);

        if (rc != 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);

    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);
len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_01);
len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_02);
len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_03);
len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_04);
len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_05);
len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_06);
len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_07);
len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_08);
len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_09);
len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_10);

len = MakeOriginalAlphaString(26,50,
S_DATA_LEN, s_data,10);

rc = bcp_sendrow(w_hdbc1);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

stock_rows_loaded++;
CheckForCommit(w_hdbc1, w_hstmt1,
stock_rows_loaded, "stock", &time_start);

    }
}

rcint = bcp_done(w_hdbc1);
if (rcint < 0)
    HandleErrorDBC(w_hdbc1);

printf("Finished loading stock table.\n");

SQLFreeStmt(w_hstmt1, SQL_DROP);
SQLDisconnect(w_hdbc1);
SQLFreeConnect(w_hdbc1);

// if build index after load...

```

```

        if((aptr->build_index == 1) && (aptr->index_order == 0))
            BuildIndex("idxstkcl");

        return;
    }

//=====
//
// Function : LoadCustomer
//
//=====

void LoadCustomer()
{
    LOADER_TIME_STRUCT customer_time_start;
    LOADER_TIME_STRUCT history_time_start;
    short w_id;

    short d_id;
    DWORD
dwThreadID[MAX_CUSTOMER_THREADS];
    HANDLE
hThread[MAX_CUSTOMER_THREADS];
    char name[20];
    RETCODE
rc;
    DBINT rcint;
    char
bcphint[128];
    char cmd[256];
    int
num_procs;
    char
err_log_path_cust[256];
    char
err_log_path_hist[256];
    // SQLRETURN rc_1;
    // SQLSMALLINT recnum,
MsgLen;
    // SQLCHAR
SqlState[6], Msg[SQL_MAX_MESSAGE_LENGTH];
    // SQLINTEGER NativeError;

    // Seed with unique number
    seed(5);

    printf("Loading customer and history tables...\n");

    // if build index before load...
    if((aptr->build_index == 1) && (aptr->index_order == 1))
    {
        BuildIndex("idxcuscl");
        // check the number of processors on this system
        // if 8 or more processors, then build index on History.
        // if less than 8 processors, do not build the index
        num_procs = atoi(getenv(
"NUMBER_OF_PROCESSORS" ));
        if ( num_procs >= 8 )
            BuildIndex("idxhiscl");
    }

    // Initialize bulk copy
    sprintf(name, "%s..%s", aptr->database, "customer");

    //rc = bcp_init(c_hdbc1, name, NULL, "logs\customer.err",
DB_IN);

```

```

strcpy(err_log_path_cust,aptr->log_path);
strcat(err_log_path_cust,"customer.err");
rc = bcp_init(c_hdbc1, name, NULL, err_log_path_cust, DB_IN);
if (rc != SUCCEEDED)
    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 != SUCCEEDED)
        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
problem.
//      customer_buf[i].c_balance = 0;
strcpy(customer_buf[i].c_balance,"");

customer_buf[i].c_ytd_payment = 0;
customer_buf[i].c_payment_cnt = 0;
customer_buf[i].c_delivery_cnt = 0;

strcpy(customer_buf[i].c_data,"");

customer_buf[i].h_amount = 0;

strcpy(customer_buf[i].h_data,"");
}

}

//=====
//
// Function : CustomerBufLoad
//
// Fills shared buffer for HISTORY and CUSTOMER
//=====

void CustomerBufLoad(int d_id, int w_id)
{
    long                i;
    CUSTOMER_SORT_STRUCT  c[CUSTOMERS_PER_DISTRICT];

    for (i=0;i<customers_per_district;i++)
    {
        if (i < 1000)
            LastName(i, c[i].c_last);
        else
            LastName(NURand(255,0,999,LOADER_NURAND_C), c[i].c_last);

        MakeAlphaString(8,16,FIRST_NAME_LEN,
c[i].c_first);

        c[i].c_id = i+1;
    }

    printf("...Loading customer buffer for: d_id = %d, w_id = %d\n",
        d_id, w_id);

    for (i=0;i<customers_per_district;i++)
    {
        customer_buf[i].c_d_id = d_id;
        customer_buf[i].c_w_id = w_id;
        customer_buf[i].h_amount = 10.0;
    }
}

```

```

customer_buf[i].c_ytd_payment = 10.0;

customer_buf[i].c_payment_cnt = 1;
customer_buf[i].c_delivery_cnt = 0;

// Generate CUSTOMER and HISTORY data

customer_buf[i].c_id = c[i].c_id;

strcpy(customer_buf[i].c_first, c[i].c_first);
strcpy(customer_buf[i].c_last, c[i].c_last);

customer_buf[i].c_middle[0] = 'O';
customer_buf[i].c_middle[1] = 'E';

MakeAddress(customer_buf[i].c_street_1,
            customer_buf[i].c_street_2,
            customer_buf[i].c_city,
            customer_buf[i].c_state,
            customer_buf[i].c_zip);

MakeNumberString(16, 16, PHONE_LEN,
customer_buf[i].c_phone);

if (RandomNumber(1L, 100L) > 10)
    customer_buf[i].c_credit[0] = 'G';
else
    customer_buf[i].c_credit[0] = 'B';
customer_buf[i].c_credit[1] = 'C';

customer_buf[i].c_credit_lim = 50000.0;
customer_buf[i].c_discount = ((float)
RandomNumber(0L, 5000L)) / 10000.0;

// fix to avoid ODBC float to numeric conversion
problem.
// customer_buf[i].c_balance = -10.0;
strcpy(customer_buf[i].c_balance,"-10.0");

MakeAlphaString(300, 500, C_DATA_LEN,
customer_buf[i].c_data);

// Generate HISTORY data
MakeAlphaString(12, 24, H_DATA_LEN,
customer_buf[i].h_data);
}

}

//=====
//
// Function : LoadCustomerTable
//
//=====

void LoadCustomerTable(LOADER_TIME_STRUCT *customer_time_start)
{
    int                i;
    long               c_id;
    short              c_d_id;
    short              c_w_id;
    char               c_first[FIRST_NAME_LEN+1];
    char               c_middle[MIDDLE_NAME_LEN+1];
    char               c_last[LAST_NAME_LEN+1];
    char               c_street_1[ADDRESS_LEN+1];
    char               c_street_2[ADDRESS_LEN+1];
}

```

```

char    c_city[ADDRESS_LEN+1];
char    c_state[STATE_LEN+1];
char    c_zip[ZIP_LEN+1];
char    c_phone[PHONE_LEN+1];
char    c_credit[CREDIT_LEN+1];
double  c_credit_lim;
double  c_discount;

    // fix to avoid ODBC float to numeric conversion problem.
    // double      c_balance;
    char          c_balance[6];

double  c_ytd_payment;
short   c_payment_cnt;
short   c_delivery_cnt;
char    c_data[C_DATA_LEN+1];
char    c_since[C_SINCE_LEN+1];
RETCODE rc;

rc = bcp_bind(c_hdbc1, (BYTE *) &c_id, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT4, 1);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) &c_d_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 2);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) &c_w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 3);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_first, 0, FIRST_NAME_LEN, NULL, 0,
0, 4);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_middle, 0,
MIDDLE_NAME_LEN, NULL, 0, 0, 5);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_last, 0, LAST_NAME_LEN, NULL, 0,
0, 6);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_street_1, 0, ADDRESS_LEN, NULL, 0,
0, 7);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_street_2, 0, ADDRESS_LEN,
NULL, 0, 0, 8);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_city, 0, ADDRESS_LEN, NULL, 0, 0,
9);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_state, 0, STATE_LEN, NULL, 0, 0, 10);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_zip, 0, ZIP_LEN, NULL, 0, 0, 11);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_phone, 0, PHONE_LEN, NULL, 0, 0,
12);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) &c_since, 0, C_SINCE_LEN,
NULL, 0, SQLCHARACTER, 13);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_credit, 0, CREDIT_LEN, NULL, 0, 0,
14);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) &c_credit_lim, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 15);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) &c_discount, 0, SQL_VARLEN_DATA,
NULL, 0, SQLFLT8, 16);
if (rc != SUCCEEDED)
    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 != SUCCEEDED)
    //     HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) c_balance, 0, 5, NULL, 0,
SQLCHARACTER, 17);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) &c_ytd_payment, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 18);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) &c_payment_cnt, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 19);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) &c_delivery_cnt, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 20);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_data, 0, 500, NULL, 0, 0, 21);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

for (i = 0; i < customers_per_district; i++)
{
    c_id = customer_buf[i].c_id;
    c_d_id = customer_buf[i].c_d_id;
    c_w_id = customer_buf[i].c_w_id;

    strcpy(c_first, customer_buf[i].c_first);

```

```

strcpy(c_middle, customer_buf[i].c_middle);
strcpy(c_last, customer_buf[i].c_last);
strcpy(c_street_1, customer_buf[i].c_street_1);
strcpy(c_street_2, customer_buf[i].c_street_2);
strcpy(c_city, customer_buf[i].c_city);
strcpy(c_state, customer_buf[i].c_state);
strcpy(c_zip, customer_buf[i].c_zip);
strcpy(c_phone, customer_buf[i].c_phone);
strcpy(c_credit, customer_buf[i].c_credit);

FormatDate(&c_since);

c_credit_lim = customer_buf[i].c_credit_lim;
c_discount = customer_buf[i].c_discount;

// fix to avoid ODBC float to numeric conversion
problem. // c_balance = customer_buf[i].c_balance;
strcpy(c_balance, customer_buf[i].c_balance);

c_ytd_payment = customer_buf[i].c_ytd_payment;
c_payment_cnt = customer_buf[i].c_payment_cnt;
c_delivery_cnt = customer_buf[i].c_delivery_cnt;

strcpy(c_data, customer_buf[i].c_data);

// Send data to server
rc = bcp_sendrow(c_hdbc1);
if (rc != SUCCEEDED)
    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 != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_d_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 2);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

```

```

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 3);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_d_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 4);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 5);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &h_date, 0, H_DATE_LEN,
NULL, 0, SQLCHARACTER, 6);
    if (rc != SUCCEEDED)
        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 != SUCCEED)
    HandleErrorDBC(o_hdbc1);

if ((aptr->build_index == 1) && (aptr->index_order == 1))
{
    sprintf(bcphint, "tablock, order (o_w_id, o_d_id, o_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 30000));
    rc = bcp_control(o_hdbc1, BCPHINTS, (void*) bcphint);

    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc1);
}

sprintf(name, "%s..%s", aptr->database, "new_order");

rc = bcp_init(o_hdbc2, name, NULL, "logs\\neword.err", DB_IN);
strcpy(err_log_path_nord, aptr->log_path);
strcat(err_log_path_nord, "neword.err");
rc = bcp_init(o_hdbc2, name, NULL, err_log_path_nord, DB_IN);
if (rc != SUCCEED)
    HandleErrorDBC(o_hdbc2);

if ((aptr->build_index == 1) && (aptr->index_order == 1))
{
    sprintf(bcphint, "tablock, order (no_w_id, no_d_id,
no_o_id), ROWS_PER_BATCH = %u", (aptr->num_warehouses * 9000));
    rc = bcp_control(o_hdbc2, BCPHINTS, (void*) bcphint);

    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc2);
}

```

```

sprintf(name, "%s..%s", aptr->database, "order_line");

rc = bcp_init(o_hdbc3, name, NULL, "logs\\ordline.err", DB_IN);
strcpy(err_log_path_ordl, aptr->log_path);
strcat(err_log_path_ordl, "ordline.err");
rc = bcp_init(o_hdbc3, name, NULL, err_log_path_ordl, DB_IN);
if (rc != SUCCEED)
    HandleErrorDBC(o_hdbc3);

if ((aptr->build_index == 1) && (aptr->index_order == 1))
{
    sprintf(bcphint, "tablock, order (ol_w_id, ol_d_id,
ol_o_id, ol_number), ROWS_PER_BATCH = %u", (aptr->num_warehouses *
300000));
    rc = bcp_control(o_hdbc3, BCPHINTS, (void*) bcphint);

    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc3);
}

orders_rows_loaded = 0;
new_order_rows_loaded = 0;
order_line_rows_loaded = 0;

OrdersBufInit();

orders_time_start.time_start = (TimeNow() / MILLI);
new_order_time_start.time_start = (TimeNow() / MILLI);
order_line_time_start.time_start = (TimeNow() / MILLI);

for (w_id = (short)aptr->starting_warehouse; w_id <=
aptr->num_warehouses; w_id++)
{
    for (d_id = 1; d_id <= DISTRICT_PER_WAREHOUSE;
d_id++)
    {
        OrdersBufLoad(d_id, w_id);

        // start parallel loading threads here...

        // start Orders table thread

        printf("...Loading Order Table for: d_id = %d,
w_id = %d\n", d_id, w_id);

        hThread[0] = CreateThread(NULL,

0,

(LPTHREAD_START_ROUTINE) LoadOrdersTable,

&orders_time_start,

0,

&dwThreadId[0]);

        if (hThread[0] == NULL)
        {
            printf("Error, failed in creating
creating thread = 0.\n");
            exit(-1);
        }

        // start NewOrder table thread

```

```

                printf("...Loading New-Order Table for: d_id
= %d, w_id = %d\n", d_id, w_id);
                hThread[1] = CreateThread(NULL,
0,
(LPTHREAD_START_ROUTINE) LoadNewOrderTable,
&new_order_time_start,
0,
&dwThreadID[1]);
                if (hThread[1] == NULL)
                {
                    printf("Error, failed in creating
creating thread = 1.\n");
                    exit(-1);
                }
                // start Order-Line table thread
                printf("...Loading Order-Line Table for: d_id
= %d, w_id = %d\n", d_id, w_id);
                hThread[2] = CreateThread(NULL,
0,
(LPTHREAD_START_ROUTINE) LoadOrderLineTable,
&order_line_time_start,
0,
&dwThreadID[2]);
                if (hThread[2] == NULL)
                {
                    printf("Error, failed in creating
creating thread = 2.\n");
                    exit(-1);
                }
                WaitForSingleObject( hThread[0], INFINITE
);
                WaitForSingleObject( hThread[1], INFINITE
);
                WaitForSingleObject( hThread[2], INFINITE
);
                if (CloseHandle(hThread[0]) == FALSE)
                {
                    printf("Error, failed in closing
Orders thread handle with errno: %d\n", GetLastError());
                }
                if (CloseHandle(hThread[1]) == FALSE)
                {
                    printf("Error, failed in closing
NewOrder thread handle with errno: %d\n", GetLastError());
                }
                if (CloseHandle(hThread[2]) == FALSE)
                {

```

```

                printf("Error, failed in closing
OrderLine thread handle with errno: %d\n", GetLastError());
            }
        }
        printf("Finished loading orders.\n");
    }
    return;
}
//=====
//
// Function : OrdersBufInit
//
// Clears shared buffer for ORDERS, NEWORDER, and ORDERLINE
//
//=====
void OrdersBufInit()
{
    int i;
    int j;
    for (i=0;i<orders_per_district;i++)
    {
        orders_buf[i].o_id = 0;
        orders_buf[i].o_d_id = 0;
        orders_buf[i].o_w_id = 0;
        orders_buf[i].o_c_id = 0;
        orders_buf[i].o_carrier_id = 0;
        orders_buf[i].o_ol_cnt = 0;
        orders_buf[i].o_all_local = 0;
        for (j=0;j<=14;j++)
        {
            orders_buf[i].o_ol[j].ol = 0;
            orders_buf[i].o_ol[j].ol_i_id = 0;
            orders_buf[i].o_ol[j].ol_supply_w_id = 0;
            orders_buf[i].o_ol[j].ol_quantity = 0;
            orders_buf[i].o_ol[j].ol_amount = 0;
            strcpy(orders_buf[i].o_ol[j].ol_dist_info,"");
        }
    }
}
//=====
//
// Function : OrdersBufLoad
//
// Fills shared buffer for ORDERS, NEWORDER, and ORDERLINE
//
//=====
void OrdersBufLoad(int d_id, int w_id)
{

```

```

int cust[ORDERS_PER_DISTRICT+1];
long o_id;
short ol;

printf("...Loading Order Buffer for: d_id = %d, w_id = %d\n",
      d_id, w_id);

GetPermutation(cust, orders_per_district);

for (o_id=0;o_id<orders_per_district;o_id++)
{
    // Generate ORDER and NEW-ORDER data

    orders_buf[o_id].o_d_id = d_id;
    orders_buf[o_id].o_w_id = w_id;
    orders_buf[o_id].o_id = o_id+1;
    orders_buf[o_id].o_c_id = cust[o_id+1];
    orders_buf[o_id].o_ol_cnt = (short)RandomNumber(5L,
15L);

    if (o_id < first_new_order)
    {
        orders_buf[o_id].o_carrier_id =
(short)RandomNumber(1L, 10L);
        orders_buf[o_id].o_all_local = 1;
    }
    else
    {
        orders_buf[o_id].o_carrier_id = 0;
        orders_buf[o_id].o_all_local = 1;
    }

    for (ol=0; ol<orders_buf[o_id].o_ol_cnt; ol++)
    {
        orders_buf[o_id].o_ol[ol].ol = ol+1;
        orders_buf[o_id].o_ol[ol].ol_i_id =
RandomNumber(1L, max_items);
        orders_buf[o_id].o_ol[ol].ol_supply_w_id =
w_id;
        orders_buf[o_id].o_ol[ol].ol_quantity = 5;
        MakeAlphaString(24, 24,
OL_DIST_INFO_LEN, &orders_buf[o_id].o_ol[ol].ol_dist_info);

        // Generate ORDER-LINE data
        if (o_id < first_new_order)
        {

orders_buf[o_id].o_ol[ol].ol_amount = 0;
// Added to insure ol_delivery_d
set properly during load

FormatDate(&orders_buf[o_id].o_ol[ol].ol_delivery_d);

        }
        else
        {

orders_buf[o_id].o_ol[ol].ol_amount = RandomNumber(1,999999)/100.0;

// Added to insure ol_delivery_d
set properly during load

// odbc datetime format

strcpy(orders_buf[o_id].o_ol[ol].ol_delivery_d,"1899-12-31 00:00:00.000");

        }
    }
}

//=====
//
// Function : LoadOrdersTable
//
//=====

void LoadOrdersTable(LOADER_TIME_STRUCT *orders_time_start)
{
    int i;
    long o_id;
    short o_d_id;
    short o_w_id;
    long o_c_id;
    short o_carrier_id;
    short o_ol_cnt;
    short o_all_local;
    char o_entry_d[O_ENTRY_D_LEN+1];
    RETCODE rc;
    DBINT rcint;

    // bind ORDER data
    rc = bcp_bind(o_hdbc1, (BYTE *) &o_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 1);
    if (rc != 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 == aptr->num_warehouses) && (o_d_id == 10))
{
    rcint = bcp_done(o_hdbc1);
    if (rcint < 0)
        HandleErrorDBC(o_hdbc1);

    SQLFreeStmt(o_hstmt1, SQL_DROP);
    SQLDisconnect(o_hdbc1);
    SQLFreeConnect(o_hdbc1);

    // if build index after load...
    if ((aptr->build_index == 1) && (aptr->index_order ==
0))
        BuildIndex("idxordcl");

    // build non-clustered index
    if (aptr->build_index == 1)
        BuildIndex("idxordnc");
}
}

//=====
//
// Function : LoadNewOrderTable
//
//=====

void LoadNewOrderTable(LOADER_TIME_STRUCT *new_order_time_start)
{
    int    i;
    long   o_id;
    short  o_d_id;
    short  o_w_id;

```

```

RETCODE    rc;
DBINT      rcint;

// Bind NEW-ORDER data

rc = bcp_bind(o_hdbc2, (BYTE *) &o_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 1);
if (rc != 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 == aptr->num_warehouses) && (o_d_id == 10))
{
    rcint = bcp_done(o_hdbc2);
    if (rcint < 0)
        HandleErrorDBC(o_hdbc2);

    SQLFreeStmt(o_hstmt2, SQL_DROP);
    SQLDisconnect(o_hdbc2);
    SQLFreeConnect(o_hdbc2);

    // if build index after load...
    if ((aptr->build_index == 1) && (aptr->index_order ==
0))
        BuildIndex("idxnodcl");
}
}

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

void LoadOrderLineTable(LOADER_TIME_STRUCT *order_line_time_start)

```

```

{
    int    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 == apr->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 ((apr->build_index == 1) && (apr->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 );
}

```

<pre> if (rc != SUCCEED)     HandleErrorDBC(i_hdbc1);  // Connection 2  sprintf( szDriverString , "DRIVER={SQL Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" , aptr-&gt;server,  aptr-&gt;password,  aptr-&gt;database );  rc = SQLSetConnectOption (w_hdbc1, SQL_PACKET_SIZE, aptr-&gt;pack_size); if (rc != SUCCEED)     HandleErrorDBC(w_hdbc1);  rc = SQLDriverConnect ( w_hdbc1,  NULL,  (SQLCHAR*)&amp;szDriverString[0] ,  SQL_NTS,  (SQLCHAR*)&amp;szDriverStringOut[0],  sizeof(szDriverStringOut),  &amp;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-&gt;server,  aptr-&gt;password,  aptr-&gt;database );  rc = SQLSetConnectOption (c_hdbc1, SQL_PACKET_SIZE, aptr-&gt;pack_size); if (rc != SUCCEED)     HandleErrorDBC(c_hdbc1);  rc = SQLDriverConnect ( c_hdbc1,  NULL,  (SQLCHAR*)&amp;szDriverString[0] ,  SQL_NTS,  (SQLCHAR*)&amp;szDriverStringOut[0],  sizeof(szDriverStringOut),  &amp;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-&gt;server,  aptr-&gt;password,  aptr-&gt;database );  rc = SQLSetConnectOption (c_hdbc2, SQL_PACKET_SIZE, aptr-&gt;pack_size); if (rc != SUCCEED)     HandleErrorDBC(c_hdbc2);  rc = SQLDriverConnect ( c_hdbc2,  NULL,  (SQLCHAR*)&amp;szDriverString[0] ,  SQL_NTS,  (SQLCHAR*)&amp;szDriverStringOut[0],  sizeof(szDriverStringOut),  &amp;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-&gt;server,  aptr-&gt;password,  aptr-&gt;database );  rc = SQLSetConnectOption (o_hdbc1, SQL_PACKET_SIZE, aptr-&gt;pack_size); if (rc != SUCCEED)     HandleErrorDBC(o_hdbc1);  rc = SQLDriverConnect ( o_hdbc1,  NULL,  (SQLCHAR*)&amp;szDriverString[0] ,  SQL_NTS,  (SQLCHAR*)&amp;szDriverStringOut[0],  sizeof(szDriverStringOut), </pre>	<pre> 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-&gt;server,  aptr-&gt;password,  aptr-&gt;database );  rc = SQLSetConnectOption (c_hdbc2, SQL_PACKET_SIZE, aptr-&gt;pack_size); if (rc != SUCCEED)     HandleErrorDBC(c_hdbc2);  rc = SQLDriverConnect ( c_hdbc2,  NULL,  (SQLCHAR*)&amp;szDriverString[0] ,  SQL_NTS,  (SQLCHAR*)&amp;szDriverStringOut[0],  sizeof(szDriverStringOut),  &amp;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-&gt;server,  aptr-&gt;password,  aptr-&gt;database );  rc = SQLSetConnectOption (o_hdbc1, SQL_PACKET_SIZE, aptr-&gt;pack_size); if (rc != SUCCEED)     HandleErrorDBC(o_hdbc1);  rc = SQLDriverConnect ( o_hdbc1,  NULL,  (SQLCHAR*)&amp;szDriverString[0] ,  SQL_NTS,  (SQLCHAR*)&amp;szDriverStringOut[0],  sizeof(szDriverStringOut), </pre>
---	--

```

&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);

    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],

```

aptr->user,

aptr->user,

```

sizeof(szDriverStringOut),
&cbDriverStringOut,
SQL_DRIVER_NOPROMPT );
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc3);
}

//=====
//
// Function name: BuildIndex
//
//=====

void BuildIndex(char *index_script)
{
    char    cmd[256];

    printf("Starting index creation: %s\n",index_script);

    sprintf(cmd, "osql -S%s -U%s -P%s -e -i%s\\%s.sql > %s%s.log",
        aptr->server,
        aptr->user,
        aptr->password,
        aptr->index_script_path,
        index_script,
        aptr->log_path,
        index_script);

    system(cmd);

    printf("Finished index creation: %s\n",index_script);
}

void HandleErrorDBC (SQLHDBC hdbc1)
{
    SQLCHAR          SqlState[6],
    Msg[SQL_MAX_MESSAGE_LENGTH];
    SQLINTEGER NativeError;
    SQLSMALLINT i, MsgLen;
    SQLRETURN rc2;
    char             timebuf[128];
    char             datebuf[128];
    char             err_log_path[256];
    FILE             *fp1;

    i = 1;
    while (( rc2 = SQLGetDiagRec(SQL_HANDLE_DBC , hdbc1, i,
    SqlState , &NativeError,
    Msg, sizeof(Msg) , &MsgLen ))
    != SQL_NO_DATA )
    {
        printf( 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 )
    {
        printf( 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_UIINTEGER );

```

```

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);

TPCC
// if the number of tables is less than 9, select all the user tables in
if (TabCount != 9)
{
    SQLFreeHandle(SQL_HANDLE_STMT, v_hstmt);

    SQLAllocHandle(SQL_HANDLE_STMT, v_hdbc ,
&v_hstmt);

    if ( SQLBindCol(v_hstmt, 1, SQL_C_CHAR,
&TabName, sizeof(TabName), &TabNameInd) != SQL_SUCCESS )
        HandleErrorSTMT(v_hstmt);

    // select the list of user tables into a result set
    rc = SQLExecDirect(v_hstmt, "select * from sysobjects
where xtype = 'U'", SQL_NTS);

```

```

if ((rc != SQL_SUCCESS) && (rc !=
SQL_SUCCESS_WITH_INFO))
    HandleErrorSTMT(v_hstmt);

// go through the result set and set the bitmap for each
found table
// set the bitmap to '1' if the table name is found
while ((rc = SQLFetch(v_hstmt)) != SQL_NO_DATA)
{
    switch( TabName[0] )
    {
        case 'w':
            TablesBitMap[0] = '1';
            break;

        case 'd':
            TablesBitMap[1] = '1';
            break;

        case 'c':
            TablesBitMap[2] = '1';
            break;

        case 'h':
            TablesBitMap[3] = '1';
            break;

        case 'n':
            TablesBitMap[4] = '1';
            break;

        case 'o':
            if (TabName[5] = 's')
                TablesBitMap[5] = '1';
            if (TabName[5] = '_')
                TablesBitMap[6] = '1';
            break;

        case 'i':
            TablesBitMap[7] = '1';
            break;

        case 's':
            TablesBitMap[8] = '1';
            break;
    }
}

// a '0' ExitFlag means do NOT exit the loader early, a '1'
means exit the loader early
ExitFlag = 0;

// 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_RAND0=\
".\src\tpcc.h"\
"mssql\dblib\include\sqldb.h"\
"mssql\dblib\include\sqlfront.h"

"$ (INTDIR)\random.obj" : $(SOURCE) $(DEP_CPP_RAND0) "$ (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. 4.51
--      Copyright Microsoft, 2003
--
--      Performs series of TPCC database checks to --
--      verify that database load completed correctly--
--
-----
print      ''
select    convert(char(30), getdate(), 21)
print    ''

use tpcc
go

-----
-- Check rows per table
-----
print      'WAREHOUSE TABLE'
select    count_big(*)
from      warehouse
go

print      'DISTRICT TABLE = (10 * No of warehouses)'
select    count_big(*)
from      district
go

print      'ITEM TABLE = 100,000'
select    count_big(*)
from      item
go

print      'CUSTOMER TABLE = (30,000 * No of warehouses)'
select    count_big(*)
from      customer
go

print      'ORDERS TABLE = (30,000 * No of warehouses)'
select    count_big(*)
from      orders
go

print      'HISTORY TABLE = (30,000 * No of warehouses)'
select    count_big(*)
from      history
go

print      'STOCK TABLE = (100,000 * No of warehouses)'
select    count_big(*)
from      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    count_big(*)
from      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. 4.51      --
--      Copyright Microsoft, 2003                    --
--
--      Extracts current version of SQL Server      --
--
-----
use master
go

SELECT  CONVERT(char(20), SERVERPROPERTY('ProductVersion')),
        CONVERT(char(20), SERVERPROPERTY('ProductLevel')),
        CONVERT(char(29), SERVERPROPERTY('Edition'))

go

SELECT  CONVERT(char(30), getdate(), 21)
go

```



# Appendix C: Tunable Parameters

## Microsoft SQL Server 2005 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 " "

-----
Sep 6 2005 2:03:43:010PM

(1 row affected)

1> 2> 3>
select @@version

-----
-----
-----
-----
-----
Microsoft SQL Server 2005 - 9.00.1258 (X64)
Jul 18 2005 22:50:24 2000.090.12
58.65 built by v-jamhu
Copyright (c) 1988-2005 Microsoft Corporation

Beta Edition (64-bit) on Windows NT 5.2 (Build 3790:
Service Pack 1)

(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 " "

-----
Sep 6 2005 2:03:43:133PM

(1 row affected)

1> 2> 3> 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		
Ad Hoc Distributed Queries		0	1	0	0	
affinity I/O mask	-2147483648	2147483647		0	0	
affinity mask	-2147483648	2147483647	65535		65535	
affinity64 I/O mask	-2147483648	2147483647		0	0	
affinity64 mask	-2147483648	2147483647		0	0	
Agent XPs	0	1	0		0	
allow updates	0	1	0		0	
awe enabled	0	1	0		0	
blocked process threshold		0	86400		0	
c2 audit mode	0	1	0		0	
clr enabled	0	1	0		0	
cost threshold for parallelism		0	32767		5	5
cross db ownership chaining		0	1		0	0
cursor threshold	-1	2147483647	-1		-1	-1
Database Mail XPs	0	1	0		0	0
default full-text language		0	2147483647		1033	1033
default language	0	9999	0		0	0
default trace enabled	0	1	1		1	1
disallow results from triggers		0	1		0	0
fill factor (%)	0	100	0		0	0
ft crawl bandwidth (max)		0	32767		100	100
ft crawl bandwidth (min)		0	32767		0	0
ft notify bandwidth (max)		0	32767		100	100
ft notify bandwidth (min)		0	32767		0	0
in-doubt xact resolution		0	2		0	0
index create memory (KB)		704	2147483647		0	0
lightweight pooling		0	1		1	1
locks	5000	2147483647			0	0
max degree of parallelism		0	64		1	1
max full-text crawl range		0	256		4	4
max server memory (MB)		16	2147483647		125750	125750
max text repl size (B)		0	2147483647		65536	65536
max worker threads		128	32767		500	500
media retention	0	365	0		0	0
min memory per query (KB)		512	2147483647		1024	1024
min server memory (MB)		0	2147483647		0	0
nested triggers	0	1	1		1	1
network packet size (B)		512	32767		4096	4096
Ole Automation Procedures		0	1		0	0
open objects	0	2147483647			0	0
PH timeout (s)	1	3600	60		60	60
precompute rank	0	1	0		0	0
priority boost	0	1	1		1	1
query governor cost limit		0	2147483647		0	0
query wait (s)	-1	2147483647	-1		-1	-1
recovery interval (min)		0	32767		32767	32767
remote access	0	1	1		1	1
remote admin connections		0	1		0	0
remote login timeout (s)		0	2147483647		0	0
remote proc trans	0	1	0		0	0
remote query timeout (s)		0	2147483647		0	0
Replication XPs	0	1	0		0	0
scan for startup procs	0	1	0		0	0
server trigger recursion	0	1	1		1	1
set working set size	0	1	0		0	0
show advanced options		0	1		1	1
SMO and DMO XPs		0	1		1	1
SQL Mail XPs	0	1	0		0	0
transform noise words	0	1	0		0	0
two digit year cutoff	1753	9999	2049		2049	2049
user connections	0	32767	0		0	0
user options	0	32767	0		0	0
Web Assistant Procedures		0	1		0	0



```
xp_cmdshell          0      1      0      0
```

```
1>
```

## Microsoft Windows Server 2003 Enterprise x64 Edition

### Changes to the SUT

Changes made to the default installation Windows Server 2003 x64 SP1 Enterprise Edition on the SUT

All services were left in their default setup.

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

Control Panel - System - Advanced - Performance Options - Advanced - Memory usage - Adjust for best performance of: Programs

```
c:\boot.ini added /noexecute=optout /fastdetect
```

```
gpedit.msc - Computer Configuration - Windows Settings - Security Settings - Local Policies - User Rights Assignments - policy 'Lock pages in memory' added group 'Administrators'
```

#### Microsoft SQL Server Startup Parameters

```
C:\Program Files\Microsoft SQL Server\MSSQL.1\MSSQL\Binn\sqlservr -c -x -T661 -T677 -T697 -T820 -T827 -T834 -T1229 -T3502 -T8710 -T8011 -T8012 -T8018 -T8019 -T8020 -T8193 -T8744
```

where:

- c Start SQL Server independent of the Service Control Manager
- x Disable the keeping of CPU time and cache hit ratio statistic
- T661 - Disable the ghost record removal process
- T677 - Disable checks in Access Methods, flag not needed in RTM, disabled by default.
- T697 - Enable schema latch super latch, flag not needed in RTM, enabled by default.
- T820 - Allow raw names for devices – no performance benefit
- T827 - Display latch promotions in errorlog
- T834 - Use Large Pages
- T1229 - Disable lock partitioning
- T3502 - Display checkpoint information in errorlog
- T8710 - Disable HP spools
- T8011 - Disable ring buffer for resource monitor
- T8012 - Disable ring buffer for schedulers
- T8018 - Disable exception ring buffer
- T8019 - Disable stack collection for exception ring buffers
- T8020 - Disable working set trimming
- T8193 - Enable Large pages support
- T8744 - Disable pre-fetch

#### Server Registry Parameters:

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration]
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node0]  
"CPUMask"=dword:00000003
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node1]  
"CPUMask"=dword:0000000c
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node2]  
"CPUMask"=dword:00000030
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node3]  
"CPUMask"=dword:000000c0
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node4]  
"CPUMask"=dword:00000300
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node5]  
"CPUMask"=dword:0000c000
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node6]  
"CPUMask"=dword:00003000
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node7]  
"CPUMask"=dword:0000c000
```

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```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Tcp\IPAll]  
"TcpPort"="1433,1434[1],1436[2],1438[4],1440[8],1442[16],1444[32],1446[4],1448[128]"  
"TcpDynamicPorts"=""  
"DisplayName"="Any IP Address"
```

```
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: 1/23/2003 - 2:44 PM
```

```
Value 0  
Name: ClearPageFileAtShutdown  
Type: REG_DWORD  
Data: 0
```

```
Value 1  
Name: DisablePagingExecutive  
Type: REG_DWORD  
Data: 0
```

```
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: 0x33000

Value 9  
 Name: PagingFiles  
 Type: REG\_MULTI\_SZ  
 Data: c:\pagefile.sys 2046 4092

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\I/O System  
 Class Name: <NO CLASS>  
 Last Write Time: 1/23/2003 - 1:41 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: 3/18/2004 - 9:53 AM

Value 0  
 Name: ErrorControl  
 Type: REG\_DWORD  
 Data: 0x1

Value 1  
 Name: start  
 Type: REG\_DWORD  
 Data: 0x2

Value 2  
 Name: type  
 Type: REG\_DWORD  
 Data: 0x1

Value 3  
 Name: Tag  
 Type: REG\_DWORD  
 Data: 0x1

Value 4  
 Name: group  
 Type: REG\_SZ  
 Data: MVIA

Value 5  
 Name: ImagePath  
 Type: REG\_EXPAND\_SZ  
 Data: system32\DRIVERS\qlvika.sys

Key Name:  
 HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Ada  
 pters  
 Class Name: <NO CLASS>  
 Last Write Time: 5/19/2003 - 4:13 PM

Key Name:  
 HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Ada  
 pters\210000E08B0723B0  
 Class Name: <NO CLASS>  
 Last Write Time: 4/16/2003 - 1:13 PM

Value 0  
 Name: IPAddress  
 Type: REG\_MULTI\_SZ  
 Data: 192.168.191.1

Value 1  
 Name: VIDeviceNumber  
 Type: REG\_DWORD  
 Data: 0

Key Name:  
 HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Ada  
 pters\210000E08B07E5AF  
 Class Name: <NO CLASS>  
 Last Write Time: 4/16/2003 - 1:13 PM

Value 0  
 Name: IPAddress  
 Type: REG\_MULTI\_SZ  
 Data: 192.168.195.1

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

Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08b09315a  
Class Name: <NO CLASS>  
Last Write Time: 4/16/2003 - 1:13 PM

Value 0  
Name: IPAddress  
Type: REG\_MULTI\_SZ  
Data: 192.168.193.1

Value 1  
Name: VIDeviceNumber  
Type: REG\_DWORD  
Data: 0x2

Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08b09335a  
Class Name: <NO CLASS>  
Last Write Time: 4/16/2003 - 1:13 PM

Value 0  
Name: IPAddress  
Type: REG\_MULTI\_SZ  
Data: 192.168.197.1

Value 1  
Name: VIDeviceNumber  
Type: REG\_DWORD  
Data: 0x3

Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B09A05A  
Class Name: Key  
Last Write Time: 5/19/2003 - 4:17 PM

Value 0  
Name: IPAddress  
Type: REG\_MULTI\_SZ  
Data: 192.168.199.1

Value 1  
Name: VIDeviceNumber  
Type: REG\_DWORD  
Data: 0x6

Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B0BCEf0  
Class Name: Key  
Last Write Time: 5/19/2003 - 2:03 PM

Value 0  
Name: IPAddress  
Type: REG\_MULTI\_SZ  
Data: 192.168.192.1

Value 1  
Name: VIDeviceNumber  
Type: REG\_DWORD  
Data: 0x4

Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B0BCFF0

Class Name: Key  
Last Write Time: 5/19/2003 - 2:02 PM

Value 0  
Name: IPAddress  
Type: REG\_MULTI\_SZ  
Data: 192.168.194.1

Value 1  
Name: VIDeviceNumber  
Type: REG\_DWORD  
Data: 0x5

Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B0BD1F0  
Class Name: Key  
Last Write Time: 5/19/2003 - 2:02 PM

Value 0  
Name: IPAddress  
Type: REG\_MULTI\_SZ  
Data: 192.168.198.1

Value 1  
Name: VIDeviceNumber  
Type: REG\_DWORD  
Data: 0x7

Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Parameters  
Class Name: <NO CLASS>  
Last Write Time: 10/1/2003 - 1:56 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: 0

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

Key Name:  
 HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Security  
 Class Name: <NO CLASS>  
 Last Write Time: 4/16/2003 - 1:09 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 .`.....y...  
 00000040 01 01 00 00 00 00 00 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 .....y...  
 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\Enum  
 Class Name: <NO CLASS>  
 Last Write Time: 3/18/2004 - 9:53 AM

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

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[HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration]

[HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node0]  
 "CPUMask"=dword:00000003

[HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node1]  
 "CPUMask"=dword:0000000c

[HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node2]  
 "CPUMask"=dword:00000030

[HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node3]  
 "CPUMask"=dword:000000c0

[HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node4]  
 "CPUMask"=dword:00000300

[HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node5]  
 "CPUMask"=dword:00000c00

[HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node6]  
 "CPUMask"=dword:00003000

[HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node7]  
 "CPUMask"=dword:0000c000

Windows Registry Editor Version 5.00

[HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Tcp\IPAll]  
 "TcpPort"="1433,1434[1],1436[2],1438[4],1440[8],1442[16],1444[32],1446[64],1448[128]"  
 "TcpDynamicPorts"=""  
 "DisplayName"="Any IP Address"

### SUT System Information Report

System Information report written at: 09/06/05 14:21:00

System Name: IBMSERV4

[System Summary]

Item	Value
OS Name	Microsoft(R) Windows(R) Server 2003 Enterprise x64 Edition
Version	5.2.3790 Service Pack 1 Build 3790
Other OS Description	Not Available



		0x00000000-0x00001FFF	PCI bus	OK
I/O Port 0x00003400-0x000035FF	PCI bus	0x00000000-0x00001FFF	Direct memory access controller	OK
I/O Port 0x00003400-0x000035FF	QLogic Fibre Channel Adapter	0x00001800-0x000018FF (Microsoft Corporation)	Radeon 7000 / RADEON VE Family	OK
I/O Port 0x00002C00-0x00002DFF	PCI bus	0x000003B0-0x000003BB (Microsoft Corporation)	Radeon 7000 / RADEON VE Family	OK
I/O Port 0x00002C00-0x00002DFF	QLogic Fibre Channel Adapter	0x000003C0-0x000003DF (Microsoft Corporation)	Radeon 7000 / RADEON VE Family	OK
I/O Port 0x00002800-0x000029FF	PCI bus	0x00000700-0x0000070F	Standard Dual Channel PCI IDE Controller	OK
I/O Port 0x00002800-0x000029FF	QLogic Fibre Channel Adapter	0x000001F0-0x000001F7	Primary IDE Channel	OK
		0x000003F6-0x000003F6	Primary IDE Channel	OK
Memory Address 0xEE900000-0xEE9FFFFF	PCI bus	0x00000170-0x00000177	Secondary IDE Channel	OK
Memory Address 0xEE900000-0xEE9FFFFF SAS Controller	Adaptec AIC-9410w	0x00000376-0x00000376	Secondary IDE Channel	OK
		0x00000060-0x00000060 PS/2 Keyboard	Standard 101/102-Key or Microsoft Natural	OK
Memory Address 0xA0000-0xBFFFF	PCI bus	0x00000064-0x00000064 PS/2 Keyboard	Standard 101/102-Key or Microsoft Natural	OK
Memory Address 0xA0000-0xBFFFF Family (Microsoft Corporation)	Radeon 7000 / RADEON VE	0x000003F8-0x000003FF	Communications Port (COM1)	OK
		0x000002F8-0x000002FF	Communications Port (COM2)	OK
Memory Address 0xF8000000-0xF80FFFFF	PCI bus	0x00000020-0x00000021	Advanced programmable interrupt controller	OK
Memory Address 0xF8000000-0xF80FFFFF Adaptec AIC-9410w SAS Controller		0x000000A0-0x000000A1	Advanced programmable interrupt controller	OK
		0x00000080-0x0000008F	Direct memory access controller	OK
I/O Port 0x00003A00-0x00003BFF	PCI bus	0x000000C0-0x000000DF	Direct memory access controller	OK
I/O Port 0x00003A00-0x00003BFF	QLogic Fibre Channel Adapter	0x00000040-0x00000043	System timer	OK
		0x00000070-0x00000073	System CMOS/real time clock	OK
I/O Port 0x00003600-0x000037FF	PCI bus	0x00000061-0x00000061	System speaker	OK
I/O Port 0x00003600-0x000037FF	QLogic Fibre Channel Adapter	0x000000F0-0x000000FF	Numeric data processor	OK
		0x0000002E-0x0000002F	Motherboard resources	OK
[DMA]		0x0000004E-0x0000004F	Motherboard resources	OK
Resource Device Status		0x00000052-0x00000053	Motherboard resources	OK
Channel 4 Direct memory access controller	OK	0x00000092-0x00000092	Motherboard resources	OK
[Forced Hardware]		0x00000094-0x0000009F	Motherboard resources	OK
Device PNP Device ID		0x000000A8-0x000000A9	Motherboard resources	OK
[I/O]		0x00000400-0x0000047F	Motherboard resources	OK
Resource Device Status		0x00000480-0x000004FF	Motherboard resources	OK

0x0000500-0x000055F	Motherboard resources	OK
0x0000600-0x0000600	Motherboard resources	OK
0x0000800-0x0000803	Motherboard resources	OK
0x0000C00-0x0000CDF	Motherboard resources	OK
0x0000F50-0x0000F5F	Motherboard resources	OK
0x00002000-0x000027FF	PCI bus	OK
0x00002000-0x000027FF	Adaptec AIC-9410w SAS Controller	OK
0x00002800-0x000029FF	PCI bus	OK
0x00002800-0x000029FF	QLogic Fibre Channel Adapter	OK
0x00002A00-0x00002BFF	PCI bus	OK
0x00002A00-0x00002BFF	QLogic Fibre Channel Adapter	OK
0x00002C00-0x00002DFF	PCI bus	OK
0x00002C00-0x00002DFF	QLogic Fibre Channel Adapter	OK
0x00002E00-0x00002FFF	PCI bus	OK
0x00002E00-0x00002FFF	QLogic Fibre Channel Adapter	OK
0x00003000-0x000031FF	PCI bus	OK
0x00003200-0x000033FF	PCI bus	OK
0x00003200-0x000033FF	Adaptec AIC-9410w SAS Controller	OK
0x00004000-0x00004FFF	PCI bus	OK
0x00003400-0x000035FF	PCI bus	OK
0x00003400-0x000035FF	QLogic Fibre Channel Adapter	OK
0x00003600-0x000037FF	PCI bus	OK
0x00003600-0x000037FF	QLogic Fibre Channel Adapter	OK
0x00003800-0x000039FF	PCI bus	OK
0x00003800-0x000039FF	QLogic Fibre Channel Adapter	OK
0x00005000-0x00005FFF	PCI bus	OK
0x00003A00-0x00003BFF	PCI bus	OK
0x00003A00-0x00003BFF	QLogic Fibre Channel Adapter	OK

[IRQs]

Resource	Device	Status
IRQ 9	Microsoft ACPI-Compliant System	OK
IRQ 16	Radeon 7000 / RADEON VE Family (Microsoft Corporation)	OK
IRQ 20	NEC PCI to USB Open Host Controller	OK

IRQ 14	Primary IDE Channel	OK
IRQ 1	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard	OK
IRQ 12	PS/2 Compatible Mouse	OK
IRQ 4	Communications Port (COM1)	OK
IRQ 3	Communications Port (COM2)	OK
IRQ 0	System timer	OK
IRQ 8	System CMOS/real time clock	OK
IRQ 13	Numeric data processor	OK
IRQ 28	Broadcom NetXtreme Gigabit Ethernet #2	OK
IRQ 25	Adaptec AIC-9410w SAS Controller	OK
IRQ 18	QLogic Fibre Channel Adapter	OK
IRQ 19	QLogic Fibre Channel Adapter	OK
IRQ 51	QLogic Fibre Channel Adapter	OK
IRQ 52	QLogic Fibre Channel Adapter	OK
IRQ 53	IBM ServeRAID 6M Controller	OK
IRQ 54	IBM ServeRAID 6M Controller	OK
IRQ 90	NEC PCI to USB Open Host Controller	OK
IRQ 98	Broadcom NetXtreme Gigabit Ethernet #4	OK
IRQ 95	Adaptec AIC-9410w SAS Controller	OK
IRQ 89	QLogic Fibre Channel Adapter	OK
IRQ 121	QLogic Fibre Channel Adapter	OK
IRQ 122	QLogic Fibre Channel Adapter	OK
IRQ 124	QLogic Fibre Channel Adapter	OK

[Memory]

Resource	Device	Status
0xA0000-0xBFFFF	PCI bus	OK
0xA0000-0xBFFFF	Radeon 7000 / RADEON VE Family (Microsoft Corporation)	OK
0xF0000000-0xF7FFFFFF	PCI bus	OK
0xF0000000-0xF7FFFFFF	Radeon 7000 / RADEON VE Family (Microsoft Corporation)	OK
0xF8100000-0xF81FFFFFF	PCI bus	OK
0xF8100000-0xF81FFFFFF	Radeon 7000 / RADEON VE Family (Microsoft Corporation)	OK

0xF8111000-0xF8111FFF NEC PCI to USB Open Host Controller OK

0x0400-0x04FF System board OK

0x100000-0x7FFFFFFF Memory Module OK

0xF8000000-0xF80FFFFFF PCI bus OK

0xF8000000-0xF80FFFFFF Adaptec AIC-9410w SAS Controller OK

0xF8200000-0xF82FFFFFF PCI bus OK

0xF82D0000-0xF82DFFFF Broadcom NetXtreme Gigabit Ethernet #2 OK

0xF8280000-0xF82BFFFF Adaptec AIC-9410w SAS Controller OK

0xF8300000-0xF83FFFFFF PCI bus OK

0xF8320000-0xF8320FFF QLogic Fibre Channel Adapter OK

0xF8400000-0xF84FFFFFF PCI bus OK

0xF8420000-0xF8420FFF QLogic Fibre Channel Adapter OK

0xF8500000-0xF85FFFFFF PCI bus OK

0xF8520000-0xF8520FFF QLogic Fibre Channel Adapter OK

0xF8600000-0xF86FFFFFF PCI bus OK

0xF8620000-0xF8620FFF QLogic Fibre Channel Adapter OK

0xF8700000-0xF87FFFFFF PCI bus OK

0xF8700000-0xF87FFFFFF PCI standard PCI-to-PCI bridge OK

0xF8780000-0xF8780FFF IBM ServeRAID 6M Controller OK

0xF8800000-0xF88FFFFFF PCI bus OK

0xF8800000-0xF88FFFFFF PCI standard PCI-to-PCI bridge OK

0xF8880000-0xF8880FFF IBM ServeRAID 6M Controller OK

0xEE800000-0xEE8FFFFFF PCI bus OK

0xEE801000-0xEE801FFF NEC PCI to USB Open Host Controller OK

0xEE900000-0xEE9FFFFFF PCI bus OK

0xEE900000-0xEE9FFFFFF Adaptec AIC-9410w SAS Controller OK

0xEF800000-0xEF8FFFFFF PCI bus OK

0xEF800000-0xEF8FFFFFF Adaptec AIC-9410w SAS Controller OK

0xEE950000-0xEE95FFFF Broadcom NetXtreme Gigabit Ethernet #4 OK

0xEE000000-0xEE3FFFFFF PCI bus OK

0xEF000000-0xEF3FFFFFF PCI bus OK

0xEEA00000-0xEEAFFFFFF PCI bus OK

0xEEA20000-0xEEA20FFF QLogic Fibre Channel Adapter OK

0xEEB00000-0xEEBFFFFFF PCI bus OK

0xEEB20000-0xEEB20FFF QLogic Fibre Channel Adapter OK

0xEEC00000-0xEECFFFFFF PCI bus OK

0xEEC20000-0xEEC20FFF QLogic Fibre Channel Adapter OK

0xEE400000-0xEE7FFFFFF PCI bus OK

0xEF400000-0xEF7FFFFFF PCI bus OK

0xEED00000-0xEEDFFFFFF PCI bus OK

0xEED20000-0xEED20FFF QLogic Fibre Channel Adapter OK

[Components]

[Multimedia]

[Audio Codecs]

CODEC Version	Manufacturer Size	Description Creation Date	Status	File
OK	C:\WINDOWS\system32\MSG711.ACM (srv03_sp1_rtm.050324-1447)	Microsoft Corporation 13.50 KB (13,824 bytes)	5.2.3790.1830	3/25/2005 7:00 AM
OK	C:\WINDOWS\system32\IMAADP32.ACM (srv03_sp1_rtm.050324-1447)	Microsoft Corporation 24.00 KB (24,576 bytes)	5.2.3790.1830	3/25/2005 7:00 AM
OK	C:\WINDOWS\system32\TSSOFT32.ACM	DSP GROUP, INC. 1.01 (13,824 bytes)	1.01	3/25/2005 7:00 AM
OK	C:\WINDOWS\system32\MSGSM32.ACM (srv03_sp1_rtm.050324-1447)	Microsoft Corporation 34.50 KB (35,328 bytes)	5.2.3790.1830	3/25/2005 7:00 AM
OK	C:\WINDOWS\system32\MSADP32.ACM (srv03_sp1_rtm.050324-1447)	Microsoft Corporation 23.50 KB (24,064 bytes)	5.2.3790.1830	3/25/2005 7:00 AM
OK	C:\WINDOWS\system32\MSYUV.DLL (srv03_sp1_rtm.050324-1447)	Microsoft Corporation 21.00 KB (21,504 bytes)	5.2.3790.1830	3/24/2005 12:21 PM
OK	C:\WINDOWS\system32\MSVIDC32.DLL	Microsoft Corporation 5.2.3790.1830		



(srv03\_sp1\_rtm.050324-1447) 43.00 KB (44,032 bytes) 3/25/2005 7:00 AM

c:\windows\system32\iyuv\_32.dll Microsoft Corporation  
OK C:\WINDOWS\system32\IYUV\_32.DLL 5.2.3790.1830  
(srv03\_sp1\_rtm.050324-1447) 52.50 KB (53,760 bytes) 3/24/2005 12:19 PM

c:\windows\system32\msrle32.dll Microsoft Corporation  
OK C:\WINDOWS\system32\MSRLE32.DLL 5.2.3790.1830  
(srv03\_sp1\_rtm.050324-1447) 15.50 KB (15,872 bytes) 3/25/2005 7:00 AM

c:\windows\system32\tsbyuv.dll Microsoft Corporation  
OK C:\WINDOWS\system32\TSBYUV.DLL 5.2.3790.1830  
(srv03\_sp1\_rtm.050324-1447) 12.50 KB (12,800 bytes) 3/24/2005 12:34 PM

[CD-ROM]

Item Value

Drive D:

Description CD-ROM Drive

Media Loaded No

Media Type CD-ROM

Name MATSHITA DVD-ROM SR-8178

Manufacturer (Standard CD-ROM drives)

Status OK

Transfer Rate Not Available

SCSI Target ID 0

PNP Device ID  
IDE\CDROMMATSHITA\_DVD-ROM\_SR-8178\_PJ22\_5&A8D2D22&0&0.0

Driver c:\windows\system32\drivers\cdrom.sys (5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447), 75.50 KB (77,312 bytes), 3/25/2005 7:00 AM)

[Sound Device]

Item Value

[Display]

Item Value

Name Radeon 7000 / RADEON VE Family (Microsoft Corporation)

PNP Device ID  
PCI\VEN\_1002&DEV\_5159&SUBSYS\_02C81014&REV\_003&267A616A&0&08

Adapter Type ATI display adapter (0x5159), ATI Technologies Inc. compatible

Adapter Description Radeon 7000 / RADEON VE Family (Microsoft Corporation)

Adapter RAM 16.00 MB (16,777,216 bytes)

Installed Drivers ati2dvag.dll

Driver Version 6.14.10.6509

INF File atiixpag.inf (ati2mtag\_RV100 section)

Color Planes 1

Color Table Entries 4294967296

Resolution 1024 x 768 x 60 hertz

Bits/Pixel 32

Memory Address 0xF0000000-0xF7FFFFFF

I/O Port 0x00001800-0x000018FF

Memory Address 0xF8100000-0xF81FFFFFF

IRQ Channel IRQ 16

I/O Port 0x000003B0-0x000003BB

I/O Port 0x000003C0-0x000003DF

Memory Address 0xA0000-0xBFFFF

Driver c:\windows\system32\drivers\ati2mtag.sys (6.14.10.6509, 1.39 MB (1,452,544 bytes), 5/2/2005 2:03 PM)

[Infrared]

Item Value

[Input]

[Keyboard]

Item Value

Description USB Human Interface Device

Name Enhanced (101- or 102-key)

Layout 00000409

PNP Device ID  
USB\VID\_04B3&PID\_4001&MI\_006&91D87B8&0&0000

Number of Function Keys 12

Driver c:\windows\system32\drivers\hidusb.sys (5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447), 18.50 KB (18,944 bytes), 3/25/2005 7:00 AM)

Description Standard 101/102-Key or Microsoft Natural PS/2 Keyboard

Name Enhanced (101- or 102-key)

Layout 00000409

PNP Device ID ACPI\PNP03034&13245C1&0

Number of Function Keys 12

I/O Port 0x00000060-0x00000060  
I/O Port 0x00000064-0x00000064  
IRQ Channel IRQ 1  
Driver c:\windows\system32\drivers\i8042prt.sys (5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447), 91.00 KB (93,184 bytes), 3/25/2005 7:00 AM)

Description USB Human Interface Device

Name Enhanced (101- or 102-key)

Layout 00000409

PNP Device ID  
USB\VID\_04B3&PID\_4001&MI\_00\6&91D87B8&0&0000

Number of Function Keys 12

Driver c:\windows\system32\drivers\hidusb.sys (5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447), 18.50 KB (18,944 bytes), 3/25/2005 7:00 AM)

[Pointing Device]

Item Value

Hardware Type USB Human Interface Device

Number of Buttons 3

Status OK

PNP Device ID  
USB\VID\_04B3&PID\_4001&MI\_01\6&91D87B8&0&0001

Power Management Supported No

Double Click Threshold 6

Handedness Right Handed Operation

Driver c:\windows\system32\drivers\hidusb.sys (5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447), 18.50 KB (18,944 bytes), 3/25/2005 7:00 AM)

Hardware Type PS/2 Compatible Mouse

Number of Buttons 3

Status OK

PNP Device ID ACPI\PNP0F13\4&13245C1&0

Power Management Supported No

Double Click Threshold 6

Handedness Right Handed Operation

IRQ Channel IRQ 12

Driver c:\windows\system32\drivers\i8042prt.sys (5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447), 91.00 KB (93,184 bytes), 3/25/2005 7:00 AM)

Hardware Type USB Human Interface Device

Number of Buttons 3

Status OK

PNP Device ID  
USB\VID\_04B3&PID\_4001&MI\_01\6&91D87B8&0&0001

Power Management Supported No

Double Click Threshold 6

Handedness Right Handed Operation

Driver c:\windows\system32\drivers\hidusb.sys (5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447), 18.50 KB (18,944 bytes), 3/25/2005 7:00 AM)

[Modem]

Item Value

[Network]

[Adapter]

Item Value

Name [00000001] Broadcom NetXtreme Gigabit Ethernet

Adapter Type Not Available

Product Type Broadcom NetXtreme Gigabit Ethernet

Installed Yes

PNP Device ID  
PCI\VEN\_14E4&DEV\_1648&SUBSYS\_02E71014&REV\_10\3&13C0B0C5&0&08

Last Reset 9/4/2005 2:42 PM

Index 1

Service Name b57nd

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

Driver c:\windows\system32\drivers\b57amd64.sys (7.98.0.0 built by: WinDDK, 187.00 KB (191,488 bytes), 5/2/2005 2:04 PM)

Name [00000002] Broadcom NetXtreme Gigabit Ethernet

Adapter Type Ethernet 802.3

Product Type Broadcom NetXtreme Gigabit Ethernet

Installed Yes

PNP Device ID  
PCI\VEN\_14E4&DEV\_1648&SUBSYS\_02E71014&REV\_10\3&13C0B0C5&0&09

Last Reset 9/4/2005 2:42 PM

Index 2

Service Name b57nd

IP Address 192.168.40.230

IP Subnet 255.255.255.0

Default IP Gateway Not Available

DHCP Enabled No

DHCP Server Not Available

DHCP Lease Expires Not Available

DHCP Lease Obtained Not Available

MAC Address 00:0D:60:98:11:03

Memory Address 0xF82D0000-0xF82DFFFF

IRQ Channel IRQ 28

Driver c:\windows\system32\drivers\b57amd64.sys (7.98.0.0 built by: WinDDK, 187.00 KB (191,488 bytes), 5/2/2005 2:04 PM)

Name [00000003] RAS Async Adapter

Adapter Type Not Available

Product Type RAS Async Adapter

Installed Yes

PNP Device ID Not Available

Last Reset 9/4/2005 2:42 PM

Index 3

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 [00000004] WAN Miniport (L2TP)

Adapter Type Not Available

Product Type WAN Miniport (L2TP)

Installed Yes

PNP Device ID ROOT\MS\_L2TPMINIPOINT\0000

Last Reset 9/4/2005 2:42 PM

Index 4

Service Name Rasl2tp

IP Address Not Available

IP Subnet Not Available

Default IP Gateway Not Available

DHCP Enabled No

DHCP Server Not Available

DHCP Lease Expires Not Available

DHCP Lease Obtained Not Available

MAC Address Not Available

Driver c:\windows\system32\drivers\rasl2tp.sys (5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447), 132.00 KB (135,168 bytes), 3/25/2005 7:00 AM)

Name [00000005] 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 9/4/2005 2:42 PM

Index 5

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\rasptp.sys (5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447), 117.50 KB (120,320 bytes), 3/25/2005 7:00 AM)

Name [00000006] 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 9/4/2005 2:42 PM

Index 6  
 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 (5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447), 67.50 KB (69,120 bytes), 3/25/2005 7:00 AM)

Name [00000007] Direct Parallel  
 Adapter Type Not Available  
 Product Type Direct Parallel  
 Installed Yes  
 PNP Device ID ROOT\MS\_PTMINIPOINT\0000  
 Last Reset 9/4/2005 2:42 PM

Index 7  
 Service Name Raspti  
 IP Address Not Available  
 IP Subnet Not Available  
 Default IP Gateway Not Available  
 DHCP Enabled No  
 DHCP Server Not Available  
 DHCP Lease Expires Not Available  
 DHCP Lease Obtained Not Available  
 MAC Address Not Available  
 Driver c:\windows\system32\drivers\raspti.sys (5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447), 30.50 KB (31,232 bytes), 3/25/2005 7:00 AM)

Name [00000008] WAN Miniport (IP)  
 Adapter Type Not Available  
 Product Type WAN Miniport (IP)  
 Installed Yes  
 PNP Device ID ROOT\MS\_NDISWANIP\0000  
 Last Reset 9/4/2005 2:42 PM

Index 8  
 Service Name NdisWan  
 IP Address Not Available  
 IP Subnet Not Available  
 Default IP Gateway Not Available  
 DHCP Enabled No  
 DHCP Server Not Available  
 DHCP Lease Expires Not Available  
 DHCP Lease Obtained Not Available  
 MAC Address Not Available

Driver c:\windows\system32\drivers\ndiswan.sys (5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447), 157.50 KB (161,280 bytes), 3/25/2005 7:00 AM)

Name [00000009] Broadcom NetXtreme Gigabit Ethernet  
 Adapter Type Not Available  
 Product Type Broadcom NetXtreme Gigabit Ethernet

Installed Yes  
 PNP Device ID  
 PCI\VEN\_14E4&DEV\_1648&SUBSYS\_02E71014&REV\_10\3&1D521019&0&08  
 Last Reset 9/4/2005 2:42 PM  
 Index 9  
 Service Name b57nd  
 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  
 Driver c:\windows\system32\drivers\b57amd64.sys (7.98.0.0 built by: WinDDK, 187.00 KB (191,488 bytes), 5/2/2005 2:04 PM)

Name [00000010] Broadcom NetXtreme Gigabit Ethernet  
 Adapter Type Ethernet 802.3  
 Product Type Broadcom NetXtreme Gigabit Ethernet

Installed Yes  
 PNP Device ID  
 PCI\VEN\_14E4&DEV\_1648&SUBSYS\_02E71014&REV\_10\3&1D521019&0&09  
 Last Reset 9/4/2005 2:42 PM  
 Index 10  
 Service Name b57nd  
 IP Address 192.168.40.231  
 IP Subnet 255.255.255.0  
 Default IP Gateway Not Available  
 DHCP Enabled No  
 DHCP Server Not Available  
 DHCP Lease Expires Not Available  
 DHCP Lease Obtained Not Available  
 MAC Address 00:0D:60:98:0F:55

Memory Address 0xEE950000-0xEE95FFFF  
 IRQ Channel IRQ 98  
 Driver c:\windows\system32\drivers\b57amd64.sys (7.98.0.0 built by: WinDDK, 187.00 KB (191,488 bytes), 5/2/2005 2:04 PM)

Name [00000011] Intel(R) PRO/1000 MT Dual Port Server Adapter  
 Adapter Type Not Available  
 Product Type Intel(R) PRO/1000 MT Dual Port Server Adapter

Installed Yes  
 PNP Device ID Not Available  
 Last Reset 9/4/2005 2:42 PM

Index 11  
 Service Name E1000

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 [00000012] Intel(R) PRO/1000 MT Dual Port Server Adapter  
 Adapter Type Not Available  
 Product Type Intel(R) PRO/1000 MT Dual Port Server Adapter

Installed Yes  
 PNP Device ID Not Available  
 Last Reset 9/4/2005 2:42 PM

Index 12  
 Service Name E1000

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 [00000013] Intel(R) PRO/1000 MT Dual Port Server Adapter  
 Adapter Type Not Available  
 Product Type Intel(R) PRO/1000 MT Dual Port Server Adapter  
 Installed Yes  
 PNP Device ID Not Available  
 Last Reset 9/4/2005 2:42 PM  
 Index 13  
 Service Name E1000  
 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 [00000014] Intel(R) PRO/1000 MT Dual Port Server Adapter  
 Adapter Type Not Available  
 Product Type Intel(R) PRO/1000 MT Dual Port Server Adapter  
 Installed Yes  
 PNP Device ID Not Available  
 Last Reset 9/4/2005 2:42 PM  
 Index 14  
 Service Name E1000  
 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

[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

[WinSock]

Item	Value
File	c:\windows\system32\wsock32.dll
Size	24.50 KB (25,088 bytes)
Version	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)

[Ports]

[Serial]

Item	Value
Name	Communications Port (COM1)
Status	OK
PNP Device ID	ACPI\PNP0501\1

Maximum Input Buffer Size 0

Maximum Output Buffer Size No

Settable Baud Rate Yes

Settable Data Bits Yes

Settable Flow Control Yes

Settable Parity Yes

Settable Parity Check Yes

Settable Stop Bits Yes

Settable RLSD Yes

Supports RLSD Yes

Supports 16 Bit Mode No

Supports Special Characters No

Baud Rate 9600

Bits/Byte 8

Stop Bits 1

Parity None  
 Busy No  
 Abort Read/Write on Error No  
 Binary Mode Enabled Yes  
 Continue XMit on XOff No  
 CTS Outflow Control No  
 Discard NULL Bytes No  
 DSR Outflow Control 0  
 DSR Sensitivity 0  
 DTR Flow Control Type Enable  
 EOF Character 0  
 Error Replace Character 0  
 Error Replacement Enabled No  
 Event Character 0  
 Parity Check Enabled No  
 RTS Flow Control Type Enable  
 XOff Character 19  
 XOffXMit Threshold 512  
 XOn Character 17  
 XOnXMit Threshold 2048  
 XOnXOff InFlow Control 0  
 XOnXOff OutFlow Control 0  
 I/O Port 0x000003F8-0x000003FF  
 IRQ Channel IRQ 4  
 Driver c:\windows\system32\drivers\serial.sys (5.2.3790.1830  
 (srv03\_sp1\_rtm.050324-1447), 118.50 KB (121,344 bytes), 3/25/2005 7:00  
 AM)

Name Communications Port (COM2)  
 Status OK  
 PNP Device ID ACPI\PNP0501\2  
 Maximum Input Buffer Size 0  
 Maximum Output Buffer Size No  
 Settable Baud Rate Yes  
 Settable Data Bits Yes

Settable Flow Control Yes  
 Settable Parity Yes  
 Settable Parity Check Yes  
 Settable Stop Bits Yes  
 Settable RLSD Yes  
 Supports RLSD Yes  
 Supports 16 Bit Mode No  
 Supports Special Characters No  
 Baud Rate 9600  
 Bits/Byte 8  
 Stop Bits 1  
 Parity None  
 Busy No  
 Abort Read/Write on Error No  
 Binary Mode Enabled Yes  
 Continue XMit on XOff No  
 CTS Outflow Control No  
 Discard NULL Bytes No  
 DSR Outflow Control 0  
 DSR Sensitivity 0  
 DTR Flow Control Type Enable  
 EOF Character 0  
 Error Replace Character 0  
 Error Replacement Enabled No  
 Event Character 0  
 Parity Check Enabled No  
 RTS Flow Control Type Enable  
 XOff Character 19  
 XOffXMit Threshold 512  
 XOn Character 17  
 XOnXMit Threshold 2048  
 XOnXOff InFlow Control 0  
 XOnXOff OutFlow Control 0  
 I/O Port 0x000002F8-0x000002FF



IRQ Channel        IRQ 3  
Driver     c:\windows\system32\drivers\serial.sys (5.2.3790.1830  
(srv03\_sp1\_rtm.050324-1447), 118.50 KB (121,344 bytes), 3/25/2005 7:00  
AM)

[Parallel]

Item     Value

[Storage]

Drives]

Item     Value

Drive    C:

Description        Local Fixed Disk

Compressed        No

File System        NTFS

Size       29.29 GB (31,453,437,952 bytes)

Free Space 10.45 GB (11,225,792,512 bytes)

Volume Name

Volume Serial Number        20F40A05

Drive    D:

Description        CD-ROM Disc

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       19.53 GB (20,971,515,904 bytes)

Free Space 19.46 GB (20,894,908,416 bytes)

Volume Name        F\_drive

Volume Serial Number        047FF9AF

Drive    G:

Description        Local Fixed Disk

Compressed        No

File System        NTFS

Size       409.67 GB (439,879,712,768 bytes)

Free Space 92.61 GB (99,436,896,256 bytes)

Volume Name        gdrive

Volume Serial Number        782723A1

Drive    H:

Description        Local Fixed Disk

Compressed        No

File System        NTFS

Size       409.67 GB (439,879,712,768 bytes)

Free Space 92.61 GB (99,433,979,904 bytes)

Volume Name        H\_drive

Volume Serial Number        44342159

Drive    I:

Description        Local Fixed Disk

Compressed        No

File System        NTFS

Size       409.67 GB (439,879,712,768 bytes)

Free Space 109.34 GB (117,402,267,648 bytes)

Volume Name        I\_drive

Volume Serial Number        1040E87B

Drive    J:

Description        Local Fixed Disk

Compressed        No

File System NTFS  
 Size 409.67 GB (439,879,712,768 bytes)  
 Free Space 92.61 GB (99,437,027,328 bytes)  
 Volume Name J\_drive  
 Volume Serial Number 584DA883

Drive K:

Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 409.67 GB (439,879,712,768 bytes)  
 Free Space 92.61 GB (99,437,027,328 bytes)  
 Volume Name K\_drive  
 Volume Serial Number F066AEE4

Drive L:

Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 409.67 GB (439,879,712,768 bytes)  
 Free Space 92.61 GB (99,437,027,328 bytes)  
 Volume Name L\_drive  
 Volume Serial Number 0CAE1656

Drive M:

Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 409.67 GB (439,879,712,768 bytes)  
 Free Space 92.61 GB (99,437,027,328 bytes)  
 Volume Name M\_drive  
 Volume Serial Number 18CBDA3B

Drive N:

Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 409.67 GB (439,879,712,768 bytes)  
 Free Space 92.61 GB (99,437,027,328 bytes)  
 Volume Name N\_drive  
 Volume Serial Number 48D362F2

Drive O:

Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 409.67 GB (439,879,712,768 bytes)  
 Free Space 92.60 GB (99,426,537,472 bytes)  
 Volume Name O\_drive  
 Volume Serial Number 94E132BA

Drive P:

Description Local Fixed Disk  
 Compressed No  
 File System NTFS  
 Size 409.19 GB (439,361,523,712 bytes)  
 Free Space 259.44 GB (278,571,479,040 bytes)  
 Volume Name P\_drive  
 Volume Serial Number ACDFDE82

Drive Z:

Description Network Connection  
 Provider Name \\192.168.40.1\drive

[Disks]

Item	Value
Description	Disk drive
Manufacturer	(Standard disk drives)
Model	IBM 1742-900 SCSI Disk Device

Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 5  
 SCSI Target ID 0  
 Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255

Partition Disk #5, Partition #0  
 Partition Size 467.61 GB (502,087,541,760 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device

Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk

Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 1

SCSI Port 5  
 SCSI Target ID 0  
 Sectors/Track 63

Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965

Tracks/Cylinder 255  
 Partition Disk #6, Partition #0  
 Partition Size 467.28 GB (501,742,080,000 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device

Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk

Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 2

SCSI Port 5  
 SCSI Target ID 0  
 Sectors/Track 63

Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965

Tracks/Cylinder 255

Partition Disk #7, Partition #0  
 Partition Size 467.61 GB (502,087,541,760 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device

Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk

Partitions 3  
 SCSI Bus 0

SCSI Logical Unit 3  
 SCSI Port 5  
 SCSI Target ID 0  
 Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255  
 Partition Disk #8, Partition #0  
 Partition Size 467.28 GB (501,742,080,000 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 3  
 SCSI Bus 0

SCSI Logical Unit 0  
 SCSI Port 8  
 SCSI Target ID 0  
 Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255  
 Partition Disk #17, Partition #0  
 Partition Size 467.61 GB (502,087,541,760 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 1  
 SCSI Port 8  
 SCSI Target ID 0  
 Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)

Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255  
 Partition Disk #18, Partition #0  
 Partition Size 467.28 GB (501,742,080,000 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 2  
 SCSI Port 8  
 SCSI Target ID 0  
 Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)

Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255  
 Partition Disk #19, Partition #0  
 Partition Size 467.28 GB (501,742,080,000 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk

Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 3  
 SCSI Port 8  
 SCSI Target ID 0  
 Sectors/Track 63

Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255

Partition Disk #20, Partition #0  
 Partition Size 467.61 GB (502,087,541,760 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes

Media Type Fixed hard disk

Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 4  
 SCSI Port 10

SCSI Target ID 0  
 Sectors/Track 63

Size 467.61 GB (502,095,767,040 bytes)

Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255

Partition Disk #25, Partition #0

Partition Size 467.28 GB (501,742,080,000 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device

Bytes/Sector 512  
 Media Loaded Yes

Media Type Fixed hard disk

Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 5  
 SCSI Port 10

SCSI Target ID 0  
 Sectors/Track 63

Size 467.61 GB (502,095,767,040 bytes)

Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255

Partition Disk #26, Partition #0

Partition Size 467.61 GB (502,087,541,760 bytes)

Partition Starting Offset 8,225,280 bytes

Description Disk drive

Manufacturer (Standard disk drives)

Model IBM 1742-900 SCSI Disk Device

Bytes/Sector 512

Media Loaded Yes

Media Type Fixed hard disk

Partitions 3

SCSI Bus 0

SCSI Logical Unit 6

SCSI Port 10

SCSI Target ID 0

Sectors/Track 63

Size 467.61 GB (502,095,767,040 bytes)

Total Cylinders 61,043

Total Sectors 980,655,795

Total Tracks 15,565,965

Tracks/Cylinder 255

Partition Disk #27, Partition #0

Partition Size 467.61 GB (502,087,541,760 bytes)

Partition Starting Offset 8,225,280 bytes

Description Disk drive

Manufacturer (Standard disk drives)

Model IBM 1742-900 SCSI Disk Device

Bytes/Sector 512

Media Loaded Yes

Media Type Fixed hard disk

Partitions 3

SCSI Bus 0

SCSI Logical Unit 7

SCSI Port 10

SCSI Target ID 0

Sectors/Track 63

Size 467.61 GB (502,095,767,040 bytes)

Total Cylinders 61,043

Total Sectors 980,655,795

Total Tracks 15,565,965

Tracks/Cylinder 255

Partition Disk #28, Partition #0

Partition Size 467.61 GB (502,087,541,760 bytes)

Partition Starting Offset 8,225,280 bytes

Description Disk drive

Manufacturer (Standard disk drives)

Model IBM 1742-900 SCSI Disk Device

Bytes/Sector 512

Media Loaded Yes

Media Type Fixed hard disk

Partitions 3

SCSI Bus 0

SCSI Logical Unit 4

SCSI Port 6

SCSI Target ID 0

Sectors/Track 63

Size 467.61 GB (502,095,767,040 bytes)

Total Cylinders 61,043

Total Sectors 980,655,795

Total Tracks 15,565,965

Tracks/Cylinder 255

Partition Disk #9, Partition #0

Partition Size 467.61 GB (502,087,541,760 bytes)

Partition Starting Offset 8,225,280 bytes

Description Disk drive

Manufacturer (Standard disk drives)

Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 5  
 SCSI Port 6  
 SCSI Target ID 0  
 Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255  
 Partition Disk #10, Partition #0  
 Partition Size 467.61 GB (502,087,541,760 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 6  
 SCSI Port 6  
 SCSI Target ID 0  
 Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795

Total Tracks 15,565,965  
 Tracks/Cylinder 255  
 Partition Disk #11, Partition #0  
 Partition Size 467.61 GB (502,087,541,760 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 7  
 SCSI Port 6  
 SCSI Target ID 0  
 Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255  
 Partition Disk #12, Partition #0  
 Partition Size 467.61 GB (502,087,541,760 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 3

SCSI Bus 0  
 SCSI Logical Unit 4  
 SCSI Port 7  
 SCSI Target ID 0  
 Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255  
 Partition Disk #13, Partition #0  
 Partition Size 467.61 GB (502,087,541,760 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 3  
 SCSI Bus 0

SCSI Logical Unit 5  
 SCSI Port 7  
 SCSI Target ID 0  
 Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255  
 Partition Disk #14, Partition #0  
 Partition Size 467.61 GB (502,087,541,760 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 6  
 SCSI Port 7  
 SCSI Target ID 0  
 Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255  
 Partition Disk #15, Partition #0  
 Partition Size 467.61 GB (502,087,541,760 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 7  
 SCSI Port 7  
 SCSI Target ID 0  
 Sectors/Track 63



Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255  
 Partition Disk #16, Partition #0  
 Partition Size 467.61 GB (502,087,541,760 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 9  
 SCSI Target ID 0  
 Sectors/Track 63

Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255  
 Partition Disk #21, Partition #0  
 Partition Size 467.61 GB (502,087,541,760 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512

Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 1  
 SCSI Port 9  
 SCSI Target ID 0

Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255  
 Partition Disk #22, Partition #0  
 Partition Size 467.61 GB (502,087,541,760 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device

Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 2  
 SCSI Port 9  
 SCSI Target ID 0

Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255

Partition Disk #23, Partition #0  
Partition Size 467.61 GB (502,087,541,760 bytes)  
Partition Starting Offset 8,225,280 bytes

Description Disk drive  
Manufacturer (Standard disk drives)  
Model IBM 1742-900 SCSI Disk Device  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 3  
SCSI Bus 0

SCSI Logical Unit 3  
SCSI Port 9  
SCSI Target ID 0  
Sectors/Track 63  
Size 467.61 GB (502,095,767,040 bytes)  
Total Cylinders 61,043  
Total Sectors 980,655,795  
Total Tracks 15,565,965  
Tracks/Cylinder 255

Partition Disk #24, Partition #0  
Partition Size 467.61 GB (502,087,541,760 bytes)  
Partition Starting Offset 8,225,280 bytes

Description Disk drive  
Manufacturer (Standard disk drives)  
Model IBM 1742-900 SCSI Disk Device  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 3  
SCSI Bus 0

SCSI Logical Unit 0

SCSI Port 4  
SCSI Target ID 0  
Sectors/Track 63  
Size 467.61 GB (502,095,767,040 bytes)

Total Cylinders 61,043  
Total Sectors 980,655,795  
Total Tracks 15,565,965  
Tracks/Cylinder 255

Partition Disk #1, Partition #0  
Partition Size 467.61 GB (502,087,541,760 bytes)  
Partition Starting Offset 8,225,280 bytes

Description Disk drive  
Manufacturer (Standard disk drives)  
Model IBM 1742-900 SCSI Disk Device  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 3  
SCSI Bus 0

SCSI Logical Unit 1  
SCSI Port 4  
SCSI Target ID 0  
Sectors/Track 63  
Size 467.61 GB (502,095,767,040 bytes)

Total Cylinders 61,043  
Total Sectors 980,655,795  
Total Tracks 15,565,965  
Tracks/Cylinder 255

Partition Disk #2, Partition #0  
Partition Size 467.61 GB (502,087,541,760 bytes)  
Partition Starting Offset 8,225,280 bytes

Description Disk drive

Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 2  
 SCSI Port 4  
 SCSI Target ID 0  
 Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255  
 Partition Disk #3, Partition #0  
 Partition Size 467.61 GB (502,087,541,760 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 3  
 SCSI Port 4  
 SCSI Target ID 0  
 Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043

Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255  
 Partition Disk #4, Partition #0  
 Partition Size 467.61 GB (502,087,541,760 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 4  
 SCSI Port 11  
 SCSI Target ID 0  
 Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)

Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255  
 Partition Disk #29, Partition #0  
 Partition Size 467.61 GB (502,087,541,760 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk

Partitions 3  
 SCSI Bus 0  
 SCSI Logical Unit 5  
 SCSI Port 11  
 SCSI Target ID 0  
 Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255  
 Partition Disk #30, Partition #0  
 Partition Size 467.61 GB (502,087,541,760 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk

Partitions 2  
 SCSI Bus 0  
 SCSI Logical Unit 6  
 SCSI Port 11  
 SCSI Target ID 0  
 Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255  
 Partition Disk #31, Partition #0  
 Partition Size 467.61 GB (502,087,541,760 bytes)

Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM 1742-900 SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk

Partitions 2  
 SCSI Bus 0  
 SCSI Logical Unit 7  
 SCSI Port 11  
 SCSI Target ID 0  
 Sectors/Track 63  
 Size 467.61 GB (502,095,767,040 bytes)  
 Total Cylinders 61,043  
 Total Sectors 980,655,795  
 Total Tracks 15,565,965  
 Tracks/Cylinder 255

Partition Disk #32, Partition #0  
 Partition Size 467.28 GB (501,742,080,000 bytes)  
 Partition Starting Offset 8,225,280 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM ServeRAID SCSI Disk Device  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk

Partitions 1  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 12  
 SCSI Target ID 0

Sectors/Track 63  
 Size 546.92 GB (587,252,090,880 bytes)  
 Total Cylinders 71,396  
 Total Sectors 1,146,976,740  
 Total Tracks 18,205,980  
 Tracks/Cylinder 255  
 Partition Disk #33, Partition #0  
 Partition Size 546.92 GB (587,252,058,624 bytes)  
 Partition Starting Offset 32,256 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM ServeRAID SCSI Disk Device

Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 1  
 SCSI Bus 0  
 SCSI Logical Unit 0  
 SCSI Port 13  
 SCSI Target ID 0

Sectors/Track 63  
 Size 546.92 GB (587,252,090,880 bytes)  
 Total Cylinders 71,396  
 Total Sectors 1,146,976,740  
 Total Tracks 18,205,980  
 Tracks/Cylinder 255  
 Partition Disk #34, Partition #0  
 Partition Size 546.92 GB (587,252,058,624 bytes)  
 Partition Starting Offset 32,256 bytes

Description Disk drive  
 Manufacturer (Standard disk drives)  
 Model IBM-ESXS ST936701SS F 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 2  
 SCSI Target ID 2

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 29.29 GB (31,453,438,464 bytes)  
 Partition Starting Offset 32,256 bytes

[SCSI]

Item	Value
Name	Adaptec AIC-9410w SAS Controller
Manufacturer	Adaptec
Status	OK
PNP Device ID	PCI\VEN_9005&DEV_041E&SUBSYS_02E71014&REV_08\3&13C0B0C5&0&10
Memory Address	0xF8280000-0xF82BFFFF
Memory Address	0xF8000000-0xF80FFFFF
I/O Port	0x00002000-0x000027FF
IRQ Channel	IRQ 25
Driver	c:\windows\system32\drivers\adp94xx.sys (1.0.315.627 built by: WinDDK, 478.50 KB (489,984 bytes), 5/2/2005 1:47 PM)

Name	Adaptec Processor Device (Pseudo)
Manufacturer	Adaptec
Status	OK

PNP Device ID  
SCSI\PROCESSOR&VEN\_ADAPTEC&PROD\_HOSTRAID&REV\_1.0\4&49  
63A81&0&77E0

Name QLogic Fibre Channel Adapter

Manufacturer QLogic

Status OK

PNP Device ID  
PCI\VEN\_1077&DEV\_2312&SUBSYS\_01001077&REV\_02\3&1070020&0  
&08

I/O Port 0x00002800-0x000029FF

Memory Address 0xF8320000-0xF8320FFF

IRQ Channel IRQ 18

Driver c:\windows\system32\drivers\ql2300.sys (9.0.1.64 Beta 3 (wx64 IP),  
715.00 KB (732,160 bytes), 5/3/2005 3:18 PM)

Name QLogic Fibre Channel Adapter

Manufacturer QLogic

Status OK

PNP Device ID  
PCI\VEN\_1077&DEV\_2312&SUBSYS\_01001077&REV\_02\3&29E81982&0  
&08

I/O Port 0x00002A00-0x00002BFF

Memory Address 0xF8420000-0xF8420FFF

IRQ Channel IRQ 19

Driver c:\windows\system32\drivers\ql2300.sys (9.0.1.64 Beta 3 (wx64 IP),  
715.00 KB (732,160 bytes), 5/3/2005 3:18 PM)

Name QLogic Fibre Channel Adapter

Manufacturer QLogic

Status OK

PNP Device ID  
PCI\VEN\_1077&DEV\_2312&SUBSYS\_01001077&REV\_02\3&172E68DD&  
0&08

I/O Port 0x00002C00-0x00002DFF

Memory Address 0xF8520000-0xF8520FFF

IRQ Channel IRQ 51

Driver c:\windows\system32\drivers\ql2300.sys (9.0.1.64 Beta 3 (wx64 IP),  
715.00 KB (732,160 bytes), 5/3/2005 3:18 PM)

Name QLogic Fibre Channel Adapter

Manufacturer QLogic

Status OK

PNP Device ID  
PCI\VEN\_1077&DEV\_2312&SUBSYS\_01001077&REV\_02\3&474B838&0  
&08

I/O Port 0x00002E00-0x00002FFF

Memory Address 0xF8620000-0xF8620FFF

IRQ Channel IRQ 52

Driver c:\windows\system32\drivers\ql2300.sys (9.0.1.64 Beta 3 (wx64 IP),  
715.00 KB (732,160 bytes), 5/3/2005 3:18 PM)

Name IBM ServeRAID 6M Controller

Manufacturer IBM Corporation

Status OK

PNP Device ID  
PCI\VEN\_9005&DEV\_0250&SUBSYS\_02791014&REV\_02\4&6924BCD&0  
&4008

Memory Address 0xF8780000-0xF8780FFF

IRQ Channel IRQ 53

Driver c:\windows\system32\drivers\infrd960.sys (7.10.53 built by: NT,  
52.00 KB (53,248 bytes), 5/10/2005 3:12 PM)

Name IBM ServeRAID 6M Controller

Manufacturer IBM Corporation

Status OK

PNP Device ID  
PCI\VEN\_9005&DEV\_0250&SUBSYS\_02791014&REV\_02\4&29C8B970&  
0&4008

Memory Address 0xF8880000-0xF8880FFF

IRQ Channel IRQ 54

Driver c:\windows\system32\drivers\infrd960.sys (7.10.53 built by: NT,  
52.00 KB (53,248 bytes), 5/10/2005 3:12 PM)

Name Adaptec AIC-9410w SAS Controller

Manufacturer Adaptec

Status OK

PNP Device ID  
PCI\VEN\_9005&DEV\_041E&SUBSYS\_02E71014&REV\_08\3&1D521019&0&10

Memory Address 0xEE900000-0xEE9FFFFF

Memory Address 0xEF800000-0xEF8FFFFF

I/O Port 0x00003200-0x000033FF

IRQ Channel IRQ 95

Driver c:\windows\system32\drivers\adp94xx.sys (1.0.315.627 built by: WinDDK, 478.50 KB (489,984 bytes), 5/2/2005 1:47 PM)

Name Adaptec Processor Device (Pseudo)

Manufacturer Adaptec

Status OK

PNP Device ID  
SCSI\PROCESSOR&VEN\_ADAPTEC&PROD\_HOSTRAID&REV\_1.0\4&37BC741F&0&77E0

Name QLogic Fibre Channel Adapter

Manufacturer QLogic

Status OK

PNP Device ID  
PCI\VEN\_1077&DEV\_2312&SUBSYS\_01001077&REV\_02\3&72AA75C&0&08

I/O Port 0x00003400-0x000035FF

Memory Address 0xEEA20000-0xEEA20FFF

IRQ Channel IRQ 89

Driver c:\windows\system32\drivers\ql2300.sys (9.0.1.64 Beta 3 (wx64 IP), 715.00 KB (732,160 bytes), 5/3/2005 3:18 PM)

Name QLogic Fibre Channel Adapter

Manufacturer QLogic

Status OK

PNP Device ID  
PCI\VEN\_1077&DEV\_2312&SUBSYS\_01001077&REV\_02\3&19E45801&0&08

I/O Port 0x00003600-0x000037FF

Memory Address 0xEEB20000-0xEEB20FFF

IRQ Channel IRQ 121

Driver c:\windows\system32\drivers\ql2300.sys (9.0.1.64 Beta 3 (wx64 IP), 715.00 KB (732,160 bytes), 5/3/2005 3:18 PM)

Name QLogic Fibre Channel Adapter

Manufacturer QLogic

Status OK

PNP Device ID  
PCI\VEN\_1077&DEV\_2312&SUBSYS\_01001077&REV\_02\3&2C9E08A6&0&08

I/O Port 0x00003800-0x000039FF

Memory Address 0xEEC20000-0xEEC20FFF

IRQ Channel IRQ 122

Driver c:\windows\system32\drivers\ql2300.sys (9.0.1.64 Beta 3 (wx64 IP), 715.00 KB (732,160 bytes), 5/3/2005 3:18 PM)

Name QLogic Fibre Channel Adapter

Manufacturer QLogic

Status OK

PNP Device ID  
PCI\VEN\_1077&DEV\_2312&SUBSYS\_01001077&REV\_02\3&36B90202&0&08

I/O Port 0x00003A00-0x00003BFF

Memory Address 0xEED20000-0xEED20FFF

IRQ Channel IRQ 124

Driver c:\windows\system32\drivers\ql2300.sys (9.0.1.64 Beta 3 (wx64 IP), 715.00 KB (732,160 bytes), 5/3/2005 3:18 PM)

Name QLogic Optimizing and Multipath Driver

Manufacturer QLogic

Status Degraded

PNP Device ID ROOT\UNKNOWN\0000

Driver c:\windows\system32\drivers\qldirect.sys (8.01.13 Beta 3 (wx64), 62.00 KB (63,488 bytes), 7/15/2005 4:54 PM)

[IDE]

Item Value

Name Standard Dual Channel PCI IDE Controller

Manufacturer (Standard IDE ATA/ATAPI controllers)

Status OK

PNP Device ID  
PCI\VEN\_1166&DEV\_0213&SUBSYS\_02121166&REV\_A0\3&267A616A&0&79

I/O Port 0x00000700-0x0000070F

Driver c:\windows\system32\drivers\pciide.sys (5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447), 6.00 KB (6,144 bytes), 3/25/2005 7:00 AM)

Name Primary IDE Channel

Manufacturer (Standard IDE ATA/ATAPI controllers)

Status OK

PNP Device ID PCIIDE\IDECHANNEL\4&101988B2&0&0

I/O Port 0x000001F0-0x000001F7

I/O Port 0x000003F6-0x000003F6

IRQ Channel IRQ 14

Driver c:\windows\system32\drivers\atapi.sys (5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447), 145.00 KB (148,480 bytes), 3/25/2005 7:00 AM)

Name Secondary IDE Channel

Manufacturer (Standard IDE ATA/ATAPI controllers)

Status OK

PNP Device ID PCIIDE\IDECHANNEL\4&101988B2&0&1

I/O Port 0x00000170-0x00000177

I/O Port 0x00000376-0x00000376

Driver c:\windows\system32\drivers\atapi.sys (5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447), 145.00 KB (148,480 bytes), 3/25/2005 7:00 AM)

[Printing]

Name Driver Port Name Server Name

[Problem Devices]

Device PNP Device ID Error Code

NEC PCI to USB Open Host Controller  
PCI\VEN\_1033&DEV\_0035&SUBSYS\_00351033&REV\_43\3&267A616A&0&18 This device is disabled.

HID SYS USB\VID\_04B3&PID\_4001&MI\_02\6&91D87B8&0&0002  
This device is disabled.

Standard Enhanced PCI to USB Host Controller  
PCI\VEN\_1033&DEV\_00E0&SUBSYS\_00E01033&REV\_04\3&267A616A&0&1A This device is disabled.

Not Available ACPI\IBM37D4\2&DABA3FF&0 This device is disabled.

Broadcom NetXtreme Gigabit Ethernet  
PCI\VEN\_14E4&DEV\_1648&SUBSYS\_02E71014&REV\_10\3&13C0B0C5&0&08 This device is disabled.

IBM SAS SES-2 DEVICE SCSI Enclosure Device  
SCSI\ENCLOSURE\VEN\_IBM&PROD\_SAS\_SES-2\_DEVICE&REV\_0.09\4&4963A81&0&500 This device is disabled.

NEC PCI to USB Open Host Controller  
PCI\VEN\_1033&DEV\_0035&SUBSYS\_00351033&REV\_43\3&A985F74&0&18 This device is disabled.

Standard Enhanced PCI to USB Host Controller  
PCI\VEN\_1033&DEV\_00E0&SUBSYS\_00E01033&REV\_04\3&A985F74&0&1A This device is disabled.

Broadcom NetXtreme Gigabit Ethernet #3  
PCI\VEN\_14E4&DEV\_1648&SUBSYS\_02E71014&REV\_10\3&1D521019&0&08 This device is disabled.

IBM SAS SES-2 DEVICE SCSI Enclosure Device  
SCSI\ENCLOSURE\VEN\_IBM&PROD\_SAS\_SES-2\_DEVICE&REV\_0.09\4&37BC741F&0&500 This device is disabled.

[USB]

Device PNP Device ID

NEC PCI to USB Open Host Controller  
PCI\VEN\_1033&DEV\_0035&SUBSYS\_00351033&REV\_43\3&267A616A&0&18

NEC PCI to USB Open Host Controller  
PCI\VEN\_1033&DEV\_0035&SUBSYS\_00351033&REV\_43\3&267A616A&0&19

Standard Enhanced PCI to USB Host Controller  
PCI\VEN\_1033&DEV\_00E0&SUBSYS\_00E01033&REV\_04\3&267A616A&0&1A

NEC PCI to USB Open Host Controller  
PCI\VEN\_1033&DEV\_0035&SUBSYS\_00351033&REV\_43\3&A985F74&0&18

NEC PCI to USB Open Host Controller  
PCI\VEN\_1033&DEV\_0035&SUBSYS\_00351033&REV\_43\3&A985F74&0&19

Standard Enhanced PCI to USB Host Controller  
PCI\VEN\_1033&DEV\_00E0&SUBSYS\_00E01033&REV\_04\3&A985F74&0&1A

[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	No
Disabled	Stopped	OK Ignore	No	No	
acpi	Microsoft ACPI Driver		Kernel Driver		Yes
Boot	Running	OK Normal	No	Yes	





fdc Driver No	Fdc No	c:\windows\system32\drivers\fdc.sys System Stopped OK Ignore	Kernel No	ipnat IP Network Address Translator c:\windows\system32\drivers\ipnat.sys Manual Stopped OK Normal No No	Kernel Driver No	No
fips Driver Yes	Fips Yes	c:\windows\system32\drivers\fips.sys System Running OK Normal	Kernel No	ipsec IPSEC driver c:\windows\system32\drivers\ipsec.sys Kernel Driver Yes System Running OK Normal No Yes	Kernel Driver Yes	Normal
flpydisk Driver No	Flpydisk No	c:\windows\system32\drivers\flpydisk.sys System Stopped OK Ignore	Kernel No	isapnp PnP ISA/EISA Bus Driver c:\windows\system32\drivers\isapnp.sys Boot Running OK Critical No Yes	Kernel Driver No	Yes
fltmgr Driver Yes	FltMgr Yes	c:\windows\system32\drivers\fltmgr.sys Boot Running OK Normal	File System No	kbdclass Keyboard Class Driver c:\windows\system32\drivers\kbdclass.sys System Running OK Normal No Yes	Kernel Driver No	Yes
ftdisk Boot	Volume Manager Driver Running OK Normal	c:\windows\system32\drivers\ftdisk.sys Kernel Driver No Yes	Yes	kbdhid Keyboard HID Driver c:\windows\system32\drivers\kbdhid.sys Kernel Driver Yes System Running OK Ignore No Yes	Kernel Driver Yes	Ignore
gpc Manual	Generic Packet Classifier Running OK Normal	c:\windows\system32\drivers\msgpc.sys Kernel Driver No Yes	Yes	ksecdd KSecDD c:\windows\system32\drivers\ksecdd.sys Driver Yes Boot Running OK Normal No Yes	Kernel No	No
hidusb Manual	Microsoft HID Class Driver Running OK Ignore	c:\windows\system32\drivers\hidusb.sys Kernel Driver No Yes	Yes	ksthunk Kernel Streaming WOW64 Thunk Service c:\windows\system32\drivers\ksthunk.sys Manual Running OK Normal No Yes	Kernel Driver No	Yes
hpciss Disabled	hpciss Stopped OK Normal	Not Available Kernel Driver No No	No	lp6nds35 Ip6nds35 Not Available OK Normal No No	Kernel Driver No	No
http Driver No	HTTP No	c:\windows\system32\drivers\http.sys Manual Stopped OK Normal	Kernel No	mnmd mnmd c:\windows\system32\drivers\mnmd.sys Driver Yes System Running OK Ignore No Yes	Kernel No	No
i2omgmt System	i2omgmt Stopped OK Normal	Not Available Kernel Driver No No	No	modem Modem c:\windows\system32\drivers\modem.sys Driver No Manual Stopped OK Ignore No No	Kernel No	No
i804prt System	i804 Keyboard and PS/2 Mouse Port Driver Running OK Normal	c:\windows\system32\drivers\i804prt.sys Kernel Driver No Yes	Yes	mouclass Mouse Class Driver c:\windows\system32\drivers\mouclass.sys Kernel Driver Yes System Running OK Normal No Yes	Kernel Driver Yes	Normal
iirsp Disabled	iirsp Stopped OK Normal	Not Available Kernel Driver No No	No	mouhid Mouse HID Driver c:\windows\system32\drivers\mouhid.sys Kernel Driver Yes Manual Running OK Ignore No Yes	Kernel Driver Yes	Ignore
imapi System	CD-Burning Filter Driver Stopped OK Normal	c:\windows\system32\drivers\imapi.sys Kernel Driver No No	No	mountmgr Mount Point Manager c:\windows\system32\drivers\mountmgr.sys Kernel Driver Yes Boot Running OK Normal No Yes	Kernel Driver Yes	Normal
intelide Disabled	IntelIde Stopped OK Normal	Not Available Kernel Driver No No	No	mraid35x mraid35x Not Available OK Normal No No Disabled Stopped	Kernel Driver No	No
intelppm Kernel Driver No	Intel Processor Driver Yes Manual Running OK Normal Yes	c:\windows\system32\drivers\intelppm.sys Kernel Driver Yes Manual Running OK Normal No Yes	Normal	mrxdav WebDav Client Redirector c:\windows\system32\drivers\mrxdav.sys Manual Stopped OK Normal No No	File System Driver No	No
ip6fw Manual	IPv6 Windows Firewall Driver Stopped OK Normal	c:\windows\system32\drivers\ip6fw.sys Kernel Driver No No	No	mrxsmb MRXSMB c:\windows\system32\drivers\mrxsmb.sys Driver Yes System Running OK Normal No Yes	File System No	No
ipfilterdriver Manual	IP Traffic Filter Driver Stopped OK Normal	c:\windows\system32\drivers\ipfltdrv.sys Kernel Driver No No	No	msfs Msfs c:\windows\system32\drivers\msfs.sys Driver Yes System Running OK Normal No Yes	File System No	No
ipinip Kernel Driver No	IP in IP Tunnel Driver No Manual Stopped OK Normal No	c:\windows\system32\drivers\ipinip.sys Kernel Driver No Manual Stopped OK Normal No No	Normal			







IPSEC driver	Not Available	LEGACYDRIVER	Not Available	Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002
Available	Not Available	Not Available	Not Available	Microsoft	volume.inf	Not Available	
Not Available	ROOT\LEGACY_IPSEC\0000			STORAGE\	VOLUME\1&30A96598&0&SIGNATURE73A3B3AC	OFFSET92872DA00LENGTH53FD06C00	
IP Network Address Translator	Not Available	LEGACYDRIVER	LEGACYDRIVER	Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002
Not Available	Not Available	Not Available	Not Available	Microsoft	volume.inf	Not Available	
Available	Not Available	ROOT\LEGACY_IPNAT\0000	ROOT\LEGACY_IPNAT\0000	STORAGE\	VOLUME\1&30A96598&0&SIGNATURE73A3B3AC	OFFSET7E0000LENGTH927F45C00	
Generic Packet Classifier	Not Available	LEGACYDRIVER	LEGACYDRIVER	Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002
Not Available	Not Available	Not Available	Not Available	Microsoft	volume.inf	Not Available	
Available	Not Available	ROOT\LEGACY_GPC\0000	ROOT\LEGACY_GPC\0000	STORAGE\	VOLUME\1&30A96598&0&SIGNATUREEE1890C3	OFFSETE6843C400LENGTH664BFCD200	
Fips	Not Available	LEGACYDRIVER	LEGACYDRIVER	Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002
Not Available	Not Available	Not Available	Not Available	Microsoft	volume.inf	Not Available	
Available	ROOT\LEGACY_FIPS\0000	ROOT\LEGACY_FIPS\0000	ROOT\LEGACY_FIPS\0000	STORAGE\	VOLUME\1&30A96598&0&SIGNATUREEE1890C3	OFFSETE6843C400LENGTH664BFCD200	
em	Not Available	LEGACYDRIVER	LEGACYDRIVER	Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002
Not Available	Not Available	Not Available	Not Available	Microsoft	volume.inf	Not Available	
Available	ROOT\LEGACY_EM\0000	ROOT\LEGACY_EM\0000	ROOT\LEGACY_EM\0000	STORAGE\	VOLUME\1&30A96598&0&SIGNATUREEE1890C3	OFFSET92872DA00LENGTH53FD06C00	
dmload	Not Available	LEGACYDRIVER	LEGACYDRIVER	Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002
Not Available	Not Available	Not Available	Not Available	Microsoft	volume.inf	Not Available	
Available	ROOT\LEGACY_DMLOAD\0000	ROOT\LEGACY_DMLOAD\0000	ROOT\LEGACY_DMLOAD\0000	STORAGE\	VOLUME\1&30A96598&0&SIGNATUREEE1890C3	OFFSET7E0000LENGTH927F45C00	
dmboot	Not Available	LEGACYDRIVER	LEGACYDRIVER	Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002
Not Available	Not Available	Not Available	Not Available	Microsoft	volume.inf	Not Available	
Available	ROOT\LEGACY_DMBOOT\0000	ROOT\LEGACY_DMBOOT\0000	ROOT\LEGACY_DMBOOT\0000	STORAGE\	VOLUME\1&30A96598&0&SIGNATURE73A3B3A2	OFFSETE6843C400LENGTH666ADFD000	
CRC Disk Filter Driver	Not Available	LEGACYDRIVER	LEGACYDRIVER	Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002
Not Available	Not Available	Not Available	Not Available	Microsoft	volume.inf	Not Available	
Available	Not Available	ROOT\LEGACY_CRCDISK\0000	ROOT\LEGACY_CRCDISK\0000	STORAGE\	VOLUME\1&30A96598&0&SIGNATURE73A3B3A2	OFFSET92872DA00LENGTH53FD06C00	
CdaD10BA	Not Available	LEGACYDRIVER	LEGACYDRIVER	Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002
Not Available	Not Available	Not Available	Not Available	Microsoft	volume.inf	Not Available	
Not Available	Not Available	ROOT\LEGACY_CDAD10BA\0000	ROOT\LEGACY_CDAD10BA\0000	STORAGE\	VOLUME\1&30A96598&0&SIGNATURE73A3B3A2	OFFSET92872DA00LENGTH53FD06C00	
CdaC15BA	Not Available	LEGACYDRIVER	LEGACYDRIVER	Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002
Not Available	Not Available	Not Available	Not Available	Microsoft	volume.inf	Not Available	
Not Available	Not Available	ROOT\LEGACY_CDAC15BA\0000	ROOT\LEGACY_CDAC15BA\0000	STORAGE\	VOLUME\1&30A96598&0&SIGNATURE73A3B3A2	OFFSET7E0000LENGTH927F45C00	
Beep	Not Available	LEGACYDRIVER	LEGACYDRIVER	Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002
Not Available	Not Available	Not Available	Not Available	Microsoft	volume.inf	Not Available	
Available	ROOT\LEGACY_BEEP\0000	ROOT\LEGACY_BEEP\0000	ROOT\LEGACY_BEEP\0000	STORAGE\	VOLUME\1&30A96598&0&SIGNATURE73A3B371	OFFSETE6843C400LENGTH666ADFD000	
AFD	Not Available	LEGACYDRIVER	LEGACYDRIVER	Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002
Not Available	Not Available	Not Available	Not Available	Microsoft	volume.inf	Not Available	
Available	ROOT\LEGACY_AFD\0000	ROOT\LEGACY_AFD\0000	ROOT\LEGACY_AFD\0000	STORAGE\	VOLUME\1&30A96598&0&SIGNATURE73A3B371	OFFSET92872DA00LENGTH53FD06C00	
Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002	Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002
Microsoft	volume.inf	Not Available		Microsoft	volume.inf	Not Available	
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE489B63F8	OFFSETE6843C400LENGTH664BFCD200		STORAGE\	VOLUME\1&30A96598&0&SIGNATURE73A3B371	OFFSET92872DA00LENGTH53FD06C00	
Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002	Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002
Microsoft	volume.inf	Not Available		Microsoft	volume.inf	Not Available	
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE489B63F8	OFFSET92872DA00LENGTH53FD06C00		STORAGE\	VOLUME\1&30A96598&0&SIGNATURE73A3B348	OFFSETE6843C400LENGTH666ADFD000	
Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002	Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002
Microsoft	volume.inf	Not Available		Microsoft	volume.inf	Not Available	
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE489B63F8	OFFSET7E0000LENGTH927F45C00		STORAGE\	VOLUME\1&30A96598&0&SIGNATURE73A3B348	OFFSET92872DA00LENGTH53FD06C00	
Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002	Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002
Microsoft	volume.inf	Not Available		Microsoft	volume.inf	Not Available	
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE73A3B3AC	OFFSETE6843C400LENGTH666ADFD000		STORAGE\	VOLUME\1&30A96598&0&SIGNATURE73A3B348	OFFSET92872DA00LENGTH53FD06C00	
Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002	Generic volume	Yes	VOLUME 5.2.3790.1830	10/1/2002
Microsoft	volume.inf	Not Available		Microsoft	volume.inf	Not Available	
STORAGE\	VOLUME\1&30A96598&0&SIGNATURE73A3B3AC	OFFSETE6843C400LENGTH666ADFD000		STORAGE\	VOLUME\1&30A96598&0&SIGNATURE73A3B348	OFFSET92872DA00LENGTH53FD06C00	









Qlogic processor device	Yes	SYSTEM	5.2.3790.1830		SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&29C1039C&0&005
10/1/2002 QLOGIC	scsidev.inf	Not Available			
SCSI\PROCESSOR&VEN_QLOGIC&PROD_PSEUDO_DEVICE&REV_4&105B12CB&0&07F0					
Disk drive	Yes	DISKDRIVE	5.2.3790.1830	10/1/2002	Disk drive
(Standard disk drives)	disk.inf	Not Available			(Standard disk drives)
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&105B12CB&0&003					SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&29C1039C&0&004
Disk drive	Yes	DISKDRIVE	5.2.3790.1830	10/1/2002	QLogic Fibre Channel Adapter
(Standard disk drives)	disk.inf	Not Available			No
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&105B12CB&0&002					SCSIADAPTER
Disk drive	Yes	DISKDRIVE	5.2.3790.1830	10/1/2002	2/18/2005 QLogic
(Standard disk drives)	disk.inf	Not Available			oem1.inf
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&105B12CB&0&001					Not Available
Disk drive	Yes	DISKDRIVE	5.2.3790.1830	10/1/2002	PCI\VEN_1077&DEV_2312&SUBSYS_01001077&REV_02\3&2C9E08A6&0&08
(Standard disk drives)	disk.inf	Not Available			
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&105B12CB&0&000					PCI standard host CPU bridge
QLogic Fibre Channel Adapter	No	SCSIADAPTER	9.0.1.64		Yes
2/18/2005 QLogic	oem1.inf	Not Available			SYSTEM
PCI\VEN_1077&DEV_2312&SUBSYS_01001077&REV_02\3&36B90202&0&08					5.2.3790.1830
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)
10/1/2002 (Standard system devices)	machine.inf	Not Available			machine.inf
Available					Not
PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_02\3&36B90202&0&00					Available
PCI bus	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)
(Standard system devices)	machine.inf	Not Available			machine.inf
ACPI\PNP0A03\17					Not Available
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)
10/1/2002 (Standard system devices)	machine.inf	Not Available			machine.inf
Available					Not
PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_02\3&3BCEF44&0&00					Available
PCI bus	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)
(Standard system devices)	machine.inf	Not Available			machine.inf
ACPI\PNP0A03\16					Not Available
Qlogic processor device	Yes	SYSTEM	5.2.3790.1830		SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&29C1039C&0&07F0
10/1/2002 QLOGIC	scsidev.inf	Not Available			
SCSI\PROCESSOR&VEN_QLOGIC&PROD_PSEUDO_DEVICE&REV_4&29C1039C&0&07F0					
Disk drive	Yes	DISKDRIVE	5.2.3790.1830	10/1/2002	Disk drive
(Standard disk drives)	disk.inf	Not Available			(Standard disk drives)
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&29C1039C&0&007					disk.inf
Disk drive	Yes	DISKDRIVE	5.2.3790.1830	10/1/2002	(Standard disk drives)
(Standard disk drives)	disk.inf	Not Available			disk.inf
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&29C1039C&0&006					Not Available
Disk drive	Yes	DISKDRIVE	5.2.3790.1830	10/1/2002	QLogic Fibre Channel Adapter
(Standard disk drives)	disk.inf	Not Available			No
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&A64063C&0&07F0					SCSIADAPTER
Disk drive	Yes	DISKDRIVE	5.2.3790.1830	10/1/2002	2/18/2005 QLogic
(Standard disk drives)	disk.inf	Not Available			oem1.inf
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&A64063C&0&007					Not Available
					PCI\VEN_1077&DEV_2312&SUBSYS_01001077&REV_02\3&19E45801&0&08
					PCI standard host CPU bridge
					Yes
					SYSTEM
					5.2.3790.1830
					(Standard system devices)
					machine.inf
					Not
					Available
					PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_02\3&19E45801&0&00
					PCI bus
					Yes
					SYSTEM
					5.2.3790.1830
					(Standard system devices)
					machine.inf
					Not
					Available
					ACPI\PNP0A03\14
					Qlogic processor device
					Yes
					SYSTEM
					5.2.3790.1830
					(Standard system devices)
					machine.inf
					Not
					Available
					PCI\VEN_1077&DEV_2312&SUBSYS_01001077&REV_02\3&19E45801&0&08
					Qlogic processor device
					Yes
					SYSTEM
					5.2.3790.1830
					(Standard system devices)
					machine.inf
					Not
					Available
					PCI\VEN_1077&DEV_2312&SUBSYS_01001077&REV_02\3&19E45801&0&08
					Qlogic processor device
					Yes
					SYSTEM
					5.2.3790.1830
					(Standard system devices)
					machine.inf
					Not
					Available
					PCI\VEN_1077&DEV_2312&SUBSYS_01001077&REV_02\3&19E45801&0&08
					Qlogic processor device
					Yes
					SYSTEM
					5.2.3790.1830
					(Standard system devices)
					machine.inf
					Not
					Available
					PCI\VEN_1077&DEV_2312&SUBSYS_01001077&REV_02\3&19E45801&0&08

Disk drive Yes (Standard disk drives) disk.inf Not Available	DISKDRIVE	5.2.3790.1830	10/1/2002	PCI bus Yes (Standard system devices) machine.inf Not Available	SYSTEM 5.2.3790.1830	10/1/2002 (Standard system devices)	ACPI\PNP0A03\11
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&A64063C&0&006				Serverworks Champion CSB6 - SouthBridge 6 LPC 5.2.3790.1830 10/1/2002 ServerWorks (RCC) machine.inf	Yes SYSTEM		
Disk drive Yes (Standard disk drives) disk.inf Not Available	DISKDRIVE	5.2.3790.1830	10/1/2002	Not Available			
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&A64063C&0&005				PCI\VEN_1166&DEV_0227&SUBSYS_00000000&REV_00\3&A985F74&0&7B			
Disk drive Yes (Standard disk drives) disk.inf Not Available	DISKDRIVE	5.2.3790.1830	10/1/2002	ServerWorks Champion CSB6 - SouthBridge 6 5.2.3790.1830 10/1/2002 ServerWorks (RCC) machine.inf	Yes SYSTEM		
SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&A64063C&0&004				Not Available			
QLogic Fibre Channel Adapter 2/18/2005 QLogic oem1.inf Not Available	No SCSIADAPTER	9.0.1.64		PCI\VEN_1166&DEV_0203&SUBSYS_00000000&REV_A0\3&A985F74&0&78			
PCI\VEN_1077&DEV_2312&SUBSYS_01001077&REV_02\3&72AA75C&0&08				Standard Enhanced PCI to USB Host Controller 5.2.3790.1830 10/1/2002 (Standard USB Host Controller) usbport.inf	Yes USB		
PCI standard host CPU bridge 10/1/2002 (Standard system devices) Available	Yes SYSTEM machine.inf	5.2.3790.1830	Not Available	Not Available			
PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_02\3&72AA75C&0&00				PCI\VEN_1033&DEV_00E0&SUBSYS_00E01033&REV_04\3&A985F74&0&1A			
PCI bus 10/1/2002 (Standard system devices) Available	Yes SYSTEM machine.inf	5.2.3790.1830	10/1/2002 (Standard system devices)	HID SYS Not Available Not Available Not Available			
ACPI\PNP0A03\13				Not Available Not Available Not Available			
PCI standard host CPU bridge 10/1/2002 (Standard system devices) Available	Yes SYSTEM machine.inf	5.2.3790.1830	Not Available	Available USB\VID_04B3&PID_4001&MI_02\6&2F17CBFC&0&0002			
PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_02\3&300BC0BE&0&00				HID-compliant mouse 5.2.3790.1830 10/1/2002 Microsoft msmouse.inf	Yes MOUSE		
PCI bus 10/1/2002 (Standard system devices) Available	Yes SYSTEM machine.inf	5.2.3790.1830	10/1/2002 (Standard system devices)	HID\VID_04B3&PID_4001&MI_01\7&D59EB82&0&0000			
ACPI\PNP0A03\12				USB Human Interface Device 5.2.3790.1830 10/1/2002 (Standard system devices) input.inf	Yes HIDCLASS		
Adaptec Processor Device (Pseudo) 1.0.315.627 3/18/2005 Adaptec oem0.inf Not Available	No SCSIADAPTER			Not Available			
SCSI\PROCESSOR&VEN_ADAPTEC&PROD_HOSTRAID&REV_1.0\4&37BC741F&0&77E0				USB\VID_04B3&PID_4001&MI_01\6&2F17CBFC&0&0001			
IBM SAS SES-2 DEVICE Not Available	SCSI Enclosure Device	Not Available		HID Keyboard Device 5.2.3790.1830 10/1/2002 (Standard keyboards) keyboard.inf	Yes KEYBOARD		
Not Available	Not Available	Not Available	Not Available	Not Available			
Available	Not Available	Not Available	Not Available	HID\VID_04B3&PID_4001&MI_00\7&31312944&0&0000			
SCSI\ENCLOSURE&VEN_IBM&PROD_SAS_SES-2_DEVICE&REV_0.09\4&37BC741F&0&500				USB Human Interface Device 5.2.3790.1830 10/1/2002 (Standard system devices) input.inf	Yes HIDCLASS		
Adaptec AIC-9410w SAS Controller 1.0.315.627 3/18/2005 Adaptec oem0.inf Not Available	No SCSIADAPTER			Not Available			
PCI\VEN_9005&DEV_041E&SUBSYS_02E71014&REV_08\3&1D521019&0&10				USB\VID_04B3&PID_4001&MI_00\6&2F17CBFC&0&0000			
Broadcom NetXtreme Gigabit Ethernet 10/1/2002 Broadcom net57amd.inf	Yes NET	7.98.0.0		USB Composite Device 10/1/2002 (Standard USB Host Controller) usb.inf	Yes USB	5.2.3790.1830	
Not Available	Not Available			Not Available			
PCI\VEN_14E4&DEV_1648&SUBSYS_02E71014&REV_10\3&1D521019&0&09				USB\VID_04B3&PID_4001\000D6046D97A			
Broadcom NetXtreme Gigabit Ethernet 10/1/2002 Broadcom net57amd.inf	Yes NET	7.98.0.0		USB Root Hub (Standard USB Host Controller) usbport.inf	Yes USB	5.2.3790.1830	10/1/2002
Not Available	Not Available			Not Available			
PCI\VEN_14E4&DEV_1648&SUBSYS_02E71014&REV_10\3&1D521019&0&08				USB\ROOT_HUB\4&14A79F01&0			
PCI standard host CPU bridge 10/1/2002 (Standard system devices) Available	Yes SYSTEM machine.inf	5.2.3790.1830	Not Available	NEC PCI to USB Open Host Controller 5.2.3790.1830 10/1/2002 NEC usbport.inf	Yes USB		
Not Available	Not Available			Not Available			
PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_02\3&1D521019&0&00				PCI\VEN_1033&DEV_0035&SUBSYS_00351033&REV_43\3&A985F74&0&19			
				NEC PCI to USB Open Host Controller 5.2.3790.1830 10/1/2002 NEC usbport.inf	Yes USB		
				Not Available			
				PCI\VEN_1033&DEV_0035&SUBSYS_00351033&REV_43\3&A985F74&0&18			
				PCI standard host CPU bridge 10/1/2002 (Standard system devices) Available	Yes SYSTEM machine.inf	5.2.3790.1830	Not Available

PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_02\3&A985F74&0&00					PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002 (Standard system devices)	machine.inf	Not Available
PCI bus Yes SYSTEM 5.2.3790.1830 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\10					PCI\VEN_1014&DEV_01A7&SUBSYS_00000000&REV_02\3&20FEA912&0&08						
Memory Module Yes MEMORY5.2.3790.1830 10/1/2002 Microsoft memory.inf Not Available ACPI\PNP0C80\2					PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002 (Standard system devices)	machine.inf	Not Available
Intel Processor Yes PROCESSOR 5.2.3790.1830 10/1/2002 Intel cpu.inf Not Available ACPI\GENUINEINTEL_-_EM64T_FAMILY_15_MODEL_4\15					PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_02\3&20FEA912&0&00						
Intel Processor Yes PROCESSOR 5.2.3790.1830 10/1/2002 Intel cpu.inf Not Available ACPI\GENUINEINTEL_-_EM64T_FAMILY_15_MODEL_4\14					PCI bus Yes SYSTEM 5.2.3790.1830 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\7						
Intel Processor Yes PROCESSOR 5.2.3790.1830 10/1/2002 Intel cpu.inf Not Available ACPI\GENUINEINTEL_-_EM64T_FAMILY_15_MODEL_4\13					IBM Dummy Device Yes SYSTEM 5.2.3790.1830 10/1/2002 IBM scsidev.inf Not Available SCSI\BRIDGE&VEN_IBM&PROD_DUMMY_DEVICE&REV_7.10\5&2A9B2238&0&300						
Intel Processor Yes PROCESSOR 5.2.3790.1830 10/1/2002 Intel cpu.inf Not Available ACPI\GENUINEINTEL_-_EM64T_FAMILY_15_MODEL_4\12					SCSI Processor Device Yes SYSTEM 5.2.3790.1830 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP400___S320&REV_D110\5&2A9B2238&0&2F0						
Intel Processor Yes PROCESSOR 5.2.3790.1830 10/1/2002 Intel cpu.inf Not Available ACPI\GENUINEINTEL_-_EM64T_FAMILY_15_MODEL_4\11					SCSI Processor Device Yes SYSTEM 5.2.3790.1830 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP400___S320&REV_D110\5&2A9B2238&0&1F0						
Intel Processor Yes PROCESSOR 5.2.3790.1830 10/1/2002 Intel cpu.inf Not Available ACPI\GENUINEINTEL_-_EM64T_FAMILY_15_MODEL_4\10					Disk drive Yes DISKDRIVE 5.2.3790.1830 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.10\5&2A9B2238&0&000						
Intel Processor Yes PROCESSOR 5.2.3790.1830 10/1/2002 Intel cpu.inf Not Available ACPI\GENUINEINTEL_-_EM64T_FAMILY_15_MODEL_4\9					IBM ServeRAID 6M Controller Yes SCSIADAPTER 5.2.3790.1830 10/1/2002 IBM Corporation pnpscsi.inf Not Available						
Intel Processor Yes PROCESSOR 5.2.3790.1830 10/1/2002 Intel cpu.inf Not Available ACPI\GENUINEINTEL_-_EM64T_FAMILY_15_MODEL_4\8					PCI\VEN_9005&DEV_0250&SUBSYS_02791014&REV_02\4&6924BCD&0&4008						
IBM Dummy Device Yes SYSTEM 5.2.3790.1830 10/1/2002 IBM scsidev.inf Not Available SCSI\BRIDGE&VEN_IBM&PROD_DUMMY_DEVICE&REV_7.10\5&804C5&0&300					PCI standard PCI-to-PCI bridge Yes SYSTEM 5.2.3790.1830 10/1/2002 (Standard system devices) machine.inf Not Available						
SCSI Processor Device Yes SYSTEM 5.2.3790.1830 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP400___S320&REV_D110\5&804C5&0&2F0					PCI\VEN_1014&DEV_01A7&SUBSYS_00000000&REV_02\3&E44F86D&0&08						
SCSI Processor Device Yes SYSTEM 5.2.3790.1830 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP400___S320&REV_D110\5&804C5&0&1F0					PCI standard host CPU bridge Yes SYSTEM 5.2.3790.1830 10/1/2002 (Standard system devices) machine.inf Not Available						
Disk drive Yes DISKDRIVE 5.2.3790.1830 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_SERVERAID&REV_6.10\5&804C5&0&000					PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_02\3&E44F86D&0&00						
IBM ServeRAID 6M Controller Yes SCSIADAPTER 5.2.3790.1830 10/1/2002 IBM Corporation pnpscsi.inf Not Available					PCI bus Yes SYSTEM 5.2.3790.1830 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\6						
PCI\VEN_9005&DEV_0250&SUBSYS_02791014&REV_02\4&29C8B970&0&4008					Qlogic processor device Yes SYSTEM 5.2.3790.1830 10/1/2002 QLOGIC scsidev.inf Not Available SCSI\PROCESSOR&VEN_QLOGIC&PROD_PSEUDO_DEVICE&REV_4&1D1C1BB3&0&07F0						
					Disk drive Yes DISKDRIVE 5.2.3790.1830 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&1D1C1BB3&0&007						

Disk drive Yes (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&1D1C1BB3&0&006	DISKDRIVE	5.2.3790.1830	10/1/2002	PCI bus Yes (Standard system devices) machine.inf Not Available ACPI\PNP0A03\4	SYSTEM 5.2.3790.1830	10/1/2002 (Standard system devices)
Disk drive Yes (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&1D1C1BB3&0&005	DISKDRIVE	5.2.3790.1830	10/1/2002	Qlogic processor device Yes 10/1/2002 QLOGIC scsidev.inf Not Available SCSI\PROCESSOR&VEN_QLOGIC&PROD_PSEUDO_DEVICE&REV_4&232FAFE&0&07F0	SYSTEM 5.2.3790.1830	
Disk drive Yes (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&1D1C1BB3&0&004	DISKDRIVE	5.2.3790.1830	10/1/2002	Disk drive Yes (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&232FAFE&0&007	DISKDRIVE	5.2.3790.1830 10/1/2002
QLogic Fibre Channel Adapter No 2/18/2005 QLogic oem1.inf Not Available PCI\VEN_1077&DEV_2312&SUBSYS_01001077&REV_02\3&474B838&0&08	SCSIADAPTER	9.0.1.64		Disk drive Yes (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&232FAFE&0&006	DISKDRIVE	5.2.3790.1830 10/1/2002
PCI standard host CPU bridge Yes 10/1/2002 (Standard system devices) Available PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_02\3&474B838&0&00	SYSTEM	5.2.3790.1830	10/1/2002 (Standard system devices)	Disk drive Yes (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&232FAFE&0&005	SYSTEM	5.2.3790.1830
PCI bus Yes (Standard system devices) machine.inf Not Available ACPI\PNP0A03\5	SYSTEM	5.2.3790.1830	10/1/2002 (Standard system devices)	Disk drive Yes (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&232FAFE&0&004	SYSTEM	5.2.3790.1830
Qlogic processor device Yes 10/1/2002 QLOGIC scsidev.inf Not Available SCSI\PROCESSOR&VEN_QLOGIC&PROD_PSEUDO_DEVICE&REV_4&17455A85&0&07F0	SYSTEM	5.2.3790.1830		QLogic Fibre Channel Adapter No 2/18/2005 QLogic oem1.inf Not Available PCI\VEN_1077&DEV_2312&SUBSYS_01001077&REV_02\3&29E81982&0&08	SCSIADAPTER	9.0.1.64
Disk drive Yes (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&17455A85&0&003	DISKDRIVE	5.2.3790.1830	10/1/2002	PCI standard host CPU bridge Yes 10/1/2002 (Standard system devices) Available PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_02\3&29E81982&0&00	SYSTEM	5.2.3790.1830
Disk drive Yes (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&17455A85&0&002	DISKDRIVE	5.2.3790.1830	10/1/2002	PCI bus Yes (Standard system devices) machine.inf Not Available ACPI\PNP0A03\3	SYSTEM	5.2.3790.1830
Disk drive Yes (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&17455A85&0&001	DISKDRIVE	5.2.3790.1830	10/1/2002	Qlogic processor device Yes 10/1/2002 QLOGIC scsidev.inf Not Available SCSI\PROCESSOR&VEN_QLOGIC&PROD_PSEUDO_DEVICE&REV_4&3B4E3515&0&07F0	SYSTEM	5.2.3790.1830
Disk drive Yes (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&17455A85&0&000	DISKDRIVE	5.2.3790.1830	10/1/2002	Disk drive Yes (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&3B4E3515&0&003	DISKDRIVE	5.2.3790.1830 10/1/2002
QLogic Fibre Channel Adapter No 2/18/2005 QLogic oem1.inf Not Available PCI\VEN_1077&DEV_2312&SUBSYS_01001077&REV_02\3&172E68DD&0&08	SCSIADAPTER	9.0.1.64		Disk drive Yes (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&3B4E3515&0&002	DISKDRIVE	5.2.3790.1830 10/1/2002
PCI standard host CPU bridge Yes 10/1/2002 (Standard system devices) Available PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_02\3&172E68DD&0&00	SYSTEM	5.2.3790.1830	10/1/2002 (Standard system devices)	Disk drive Yes (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&3B4E3515&0&001	SYSTEM	5.2.3790.1830
				Disk drive Yes (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM&PROD_1742-900&REV_0520\4&3B4E3515&0&000	DISKDRIVE	5.2.3790.1830 10/1/2002
				QLogic Fibre Channel Adapter No 2/18/2005 QLogic oem1.inf Not Available	SCSIADAPTER	9.0.1.64

PCI\VEN_1077&DEV_2312&SUBSYS_01001077&REV_02\3&1070020&0&08					Intel Processor	Yes	PROCESSOR	5.2.3790.1830	
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	Intel	cpu.inf	Not Available		
(Standard system devices)		machine.inf		Not Available	ACPI\GENUINEINTEL_-_EM64T_FAMILY_15_MODEL_4_4				
Available									
PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_02\3&1070020&0&00					Intel Processor	Yes	PROCESSOR	5.2.3790.1830	
PCI bus	Yes	SYSTEM	5.2.3790.1830	10/1/2002	Intel	cpu.inf	Not Available		
(Standard system devices)		machine.inf		Not Available	ACPI\GENUINEINTEL_-_EM64T_FAMILY_15_MODEL_4_3				
ACPI\PNP0A03\2									
Adaptec Processor Device (Pseudo)	No	SCSIADAPTER			Intel Processor	Yes	PROCESSOR	5.2.3790.1830	
1.0.315.627	3/18/2005	Adaptec	oem0.inf	Not Available	Intel	cpu.inf	Not Available		
SCSI\PROCESSOR&VEN_ADAPTEC&PROD_HOSTRAID&REV_1.0\4&4963A81&0&77E0	ACPI\GENUINEINTEL_-_EM64T_FAMILY_15_MODEL_4_1								
IBM SAS SES-2 DEVICE SCSI Enclosure Device	Not Available				Intel Processor	Yes	PROCESSOR	5.2.3790.1830	
UNKNOWN	Not Available	Not Available	Not Available	Not Available	Intel	cpu.inf	Not Available		
Available	Not Available	Not Available	Not Available	Not Available	ACPI\GENUINEINTEL_-_EM64T_FAMILY_15_MODEL_4_0				
SCSI\ENCLOSURE&VEN_IBM&PROD_SAS_SES-2_DEVICE&REV_0.09\4&4963A81&0&500	ACPI Fixed Feature Button								
Disk drive	Yes	DISKDRIVE	5.2.3790.1830	10/1/2002	(Standard system devices)	Yes	SYSTEM	5.2.3790.1830	
(Standard disk drives)	disk.inf	Not Available			10/1/2002	machine.inf	Not Available		
SCSI\DISK&VEN_IBM-ESXS&PROD_ST936701SS___F&REV_B512\4&4963A81&0&020	Available ACPI\FIXEDBUTTON\2&DABA3FF&0								
Adaptec AIC-9410w SAS Controller	No	SCSIADAPTER			System board	Yes	SYSTEM	5.2.3790.1830	10/1/2002
1.0.315.627	3/18/2005	Adaptec	oem0.inf	Not Available	(Standard system devices)	machine.inf	Not Available		
PCI\VEN_9005&DEV_041E&SUBSYS_02E71014&REV_08\3&13C0B0C5&0&10	ACPI\PNP0C01\1								
Broadcom NetXtreme Gigabit Ethernet	Yes	NET	7.98.0.0		Not Available	Not Available	Not Available	Not Available	Not Available
10/1/2002	Broadcom	net57amd.inf	Not Available		Available	Not Available	Not Available	Not Available	Not Available
PCI\VEN_14E4&DEV_1648&SUBSYS_02E71014&REV_10\3&13C0B0C5&0&09	Not Available ACPI\IBM37D4\2&DABA3FF&0								
Broadcom NetXtreme Gigabit Ethernet	Yes	NET	7.98.0.0		Motherboard resources	Yes	SYSTEM	5.2.3790.1830	
10/1/2002	Broadcom	net57amd.inf	Not Available		10/1/2002	(Standard system devices)	machine.inf	Not Available	
PCI\VEN_14E4&DEV_1648&SUBSYS_02E71014&REV_10\3&13C0B0C5&0&08	Available ACPI\PNP0C02\3								
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830		Numeric data processor	Yes	SYSTEM	5.2.3790.1830	
10/1/2002	(Standard system devices)	machine.inf	Not Available		10/1/2002	(Standard system devices)	machine.inf	Not Available	
Available	Available ACPI\PNP0C04\4&13245C1&0								
PCI\VEN_1014&DEV_02A1&SUBSYS_00000000&REV_02\3&13C0B0C5&0&00	System speaker								
PCI bus	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)	Yes	SYSTEM	5.2.3790.1830	10/1/2002
(Standard system devices)	machine.inf	Not Available			machine.inf	Not Available			
ACPI\PNP0A03\1	ACPI\PNP0800\4&13245C1&0								
Memory Module	Yes	MEMORY	5.2.3790.1830	10/1/2002	System CMOS/real time clock	Yes	SYSTEM	5.2.3790.1830	
Microsoft	memory.inf	Not Available			10/1/2002	(Standard system devices)	machine.inf	Not Available	
Intel Processor	Yes	PROCESSOR	5.2.3790.1830		Available	ACPI\PNP0B00\4&13245C1&0			
10/1/2002	Intel	cpu.inf	Not Available		System timer	Yes	SYSTEM	5.2.3790.1830	10/1/2002
ACPI\GENUINEINTEL_-_EM64T_FAMILY_15_MODEL_4_7	(Standard system devices) machine.inf Not Available								
Intel Processor	Yes	PROCESSOR	5.2.3790.1830		ACPI\PNP0100\4&13245C1&0	Direct memory access controller			
10/1/2002	Intel	cpu.inf	Not Available		10/1/2002	(Standard system devices)	machine.inf	Not Available	
ACPI\GENUINEINTEL_-_EM64T_FAMILY_15_MODEL_4_6	Available ACPI\PNP0200\4&13245C1&0								
Intel Processor	Yes	PROCESSOR	5.2.3790.1830		Advanced programmable interrupt controller	Yes	SYSTEM		
10/1/2002	Intel	cpu.inf	Not Available		5.2.3790.1830	10/1/2002	(Standard system devices)	machine.inf	
ACPI\GENUINEINTEL_-_EM64T_FAMILY_15_MODEL_4_5	Not Available ACPI\PNP0003\4&13245C1&0								
Intel Processor	Yes	PROCESSOR	5.2.3790.1830		Communications Port	Yes	PORTS	5.2.3790.1830	10/1/2002
10/1/2002	Intel	cpu.inf	Not Available		(Standard port types)	msports.inf	Not Available		
ACPI\GENUINEINTEL_-_EM64T_FAMILY_15_MODEL_4_5	Available ACPI\PNP0501\2								
Intel Processor	Yes	PROCESSOR	5.2.3790.1830		Communications Port	Yes	PORTS	5.2.3790.1830	10/1/2002
10/1/2002	Intel	cpu.inf	Not Available		(Standard port types)	msports.inf	Not Available		
ACPI\GENUINEINTEL_-_EM64T_FAMILY_15_MODEL_4_5	Available ACPI\PNP0501\1								

PS/2 Compatible Mouse Yes MOUSE 5.2.3790.1830  
10/1/2002 Microsoft msmouse.inf Not Available  
ACPI\PNP0F13\4&13245C1&0

Standard 101/102-Key or Microsoft Natural PS/2 Keyboard Yes  
KEYBOARD 5.2.3790.1830 10/1/2002 (Standard keyboards)  
keyboard.inf Not Available ACPI\PNP0303\4&13245C1&0

Serverworks Champion CSB6 - SouthBridge 6 LPC Yes SYSTEM  
5.2.3790.1830 10/1/2002 ServerWorks (RCC) machine.inf  
Not Available  
PCI\VEN\_1166&DEV\_0227&SUBSYS\_00000000&REV\_00\3&267A616A&  
0&7B

Secondary IDE Channel Yes HDC 5.2.3790.1830  
10/1/2002 (Standard IDE ATA/ATAPI controllers) mshdc.inf Not  
Available PCI\IDE\IDECHANNEL\4&101988B2&0&1

CD-ROM Drive Yes CDROM 5.2.3790.1830 10/1/2002  
(Standard CD-ROM drives) cdrom.inf Not Available  
IDE\CDROM\MATSHITA\_DVD-ROM\_SR-8178 PJ22  
\5&A8D2D22&0&0.0.0

Primary IDE Channel Yes HDC 5.2.3790.1830 10/1/2002  
(Standard IDE ATA/ATAPI controllers) mshdc.inf Not Available  
PCI\IDE\IDECHANNEL\4&101988B2&0&0

Standard Dual Channel PCI IDE Controller Yes HDC  
5.2.3790.1830 10/1/2002 (Standard IDE ATA/ATAPI controllers)  
mshdc.inf Not Available  
PCI\VEN\_1166&DEV\_0213&SUBSYS\_02121166&REV\_A0\3&267A616A&  
0&79

ServerWorks Champion CSB6 - SouthBridge 6 Yes SYSTEM  
5.2.3790.1830 10/1/2002 ServerWorks (RCC) machine.inf  
Not Available  
PCI\VEN\_1166&DEV\_0203&SUBSYS\_00000000&REV\_A0\3&267A616A&  
0&78

Standard Enhanced PCI to USB Host Controller Yes USB  
5.2.3790.1830 10/1/2002 (Standard USB Host Controller) usbport.inf  
Not Available  
PCI\VEN\_1033&DEV\_00E0&SUBSYS\_00E01033&REV\_04\3&267A616A&  
0&1A

HID SYS Not Available UNKNOWN Not Available  
Not Available Not Available Not Available Not  
Available USB\VID\_04B3&PID\_4001&MI\_02\6&91D87B8&0&0002

HID-compliant mouse Yes MOUSE 5.2.3790.1830 10/1/2002  
Microsoft msmouse.inf Not Available  
HID\VID\_04B3&PID\_4001&MI\_01\7&1EE6F595&0&0000

USB Human Interface Device Yes HIDCLASS  
5.2.3790.1830 10/1/2002 (Standard system devices) input.inf  
Not Available  
USB\VID\_04B3&PID\_4001&MI\_01\6&91D87B8&0&0001

HID Keyboard Device Yes KEYBOARD  
5.2.3790.1830 10/1/2002 (Standard keyboards) keyboard.inf  
Not Available  
HID\VID\_04B3&PID\_4001&MI\_00\7&321711D3&0&0000

USB Human Interface Device Yes HIDCLASS  
5.2.3790.1830 10/1/2002 (Standard system devices) input.inf  
Not Available  
USB\VID\_04B3&PID\_4001&MI\_00\6&91D87B8&0&0000

USB Composite Device Yes USB 5.2.3790.1830  
10/1/2002 (Standard USB Host Controller) usb.inf Not Available  
USB\VID\_04B3&PID\_4001\000D6046D4BF

USB Root Hub Yes USB 5.2.3790.1830 10/1/2002  
(Standard USB Host Controller) usbport.inf Not Available  
USB\ROOT\_HUB\4&2DDBD7B&0

NEC PCI to USB Open Host Controller Yes USB  
5.2.3790.1830 10/1/2002 NEC usbport.inf Not Available  
PCI\VEN\_1033&DEV\_0035&SUBSYS\_00351033&REV\_43\3&267A616A&  
0&19

NEC PCI to USB Open Host Controller Yes USB  
5.2.3790.1830 10/1/2002 NEC usbport.inf Not Available  
PCI\VEN\_1033&DEV\_0035&SUBSYS\_00351033&REV\_43\3&267A616A&  
0&18

Default Monitor Yes MONITOR 5.2.3790.1830  
10/1/2002 (Standard monitor types) monitor.inf Not  
Available  
DISPLAY\DEFAULT\_MONITOR\4&36FA8DD8&0&10000000&00&01

Plug and Play Monitor Yes MONITOR  
5.2.3790.1830 10/1/2002 (Standard monitor types) monitor.inf  
Not Available  
DISPLAY\IBM029A\4&36FA8DD8&0&10000082&00&01

Radeon 7000 / RADEON VE Family (Microsoft Corporation) Yes  
DISPLAY 6.14.10.6508 12/3/2004 ATI Technologies Inc.  
atiixpag.inf Not Available  
PCI\VEN\_1002&DEV\_5159&SUBSYS\_02C81014&REV\_00\3&267A616A&  
0&08

PCI standard host CPU bridge Yes SYSTEM 5.2.3790.1830  
10/1/2002 (Standard system devices) machine.inf Not  
Available  
PCI\VEN\_1014&DEV\_02A1&SUBSYS\_00000000&REV\_02\3&267A616A&  
0&00

PCI bus Yes SYSTEM 5.2.3790.1830 10/1/2002 (Standard  
system devices) machine.inf Not Available  
ACPI\PNP0A03\0

Microsoft ACPI-Compliant System Yes SYSTEM  
5.2.3790.1830 10/1/2002 Microsoft acpi.inf Not Available  
ACPI\_HAL\PNP0C08\0

ACPI Multiprocessor x64-based PC Yes COMPUTER  
5.2.3790.1830 10/1/2002 (Standard computers) hal.inf Not  
Available ROOT\ACPI\_HAL\0000

Not Available Not Available Not Available Not  
Available Not Available Not Available Not Available  
Not Available HTREE\ROOT\0

[Environment Variables]

Variable Value User Name  
ComSpec %SystemRoot%\system32\cmd.exe <SYSTEM>

Path C:\Program Files (x86)\Microsoft SQL  
Server\90\Tools\Binn\VSShell\Common7\IDE\C:\Program Files  
(x86)\Microsoft SQL  
Server\90\DTS\Binn\;%SystemRoot%\system32;%SystemRoot%;%SystemRo  
ot%\System32\Wbem;C:\Program Files\Microsoft SQL

Server\90\Tools\binn\;C:\Program Files (x86)\Microsoft SQL  
 Server\90\Tools\binn\ <SYSTEM>

windir %SystemRoot% <SYSTEM>  
 FP\_NO\_HOST\_CHECK NO <SYSTEM>  
 OS Windows\_NT <SYSTEM>  
 PROCESSOR\_ARCHITECTURE AMD64 <SYSTEM>  
 PROCESSOR\_LEVEL 15 <SYSTEM>  
 PROCESSOR\_IDENTIFIER EM64T Family 15 Model 4 Stepping 1,  
 GenuineIntel <SYSTEM>  
 PROCESSOR\_REVISION 0401 <SYSTEM>  
 NUMBER\_OF\_PROCESSORS 16 <SYSTEM>

ClusterLog C:\WINDOWS\Cluster\cluster.log <SYSTEM>  
 PATHEXT  
 .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH <SYSTEM>

TEMP %SystemRoot%\TEMP <SYSTEM>  
 TMP %SystemRoot%\TEMP <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  
 IBMSERV4\Administrator  
 TMP %USERPROFILE%\Local Settings\Temp  
 IBMSERV4\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  
 Z: \\192.168.40.1\drive Disk Current Connection  
 IBMSERV4\Administrator

[Running Tasks]

Name	Path	Process ID	Priority	Min Working Set	Max Working Set
Working Set		Start Time	Version	Size	File Date
system idle process		Not Available		0	0
Available	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available		Not Available			
system	Not Available	4		8	0
Not Available	Not Available	Not Available		Not Available	1413120
Available					Not
smss.exe	Not Available	716		11	204800
9/4/2005 2:48 PM	Not Available	Not Available		Not Available	1413120
Available					Not
csrss.exe	Not Available	948		13	Not Available
Not Available	9/4/2005 2:48 PM	Not Available		Not Available	Not
Available	Not Available				Not
winlogon.exe	c:\windows\system32\winlogon.exe				320
13	204800	1413120	9/4/2005 2:49 PM	5.2.3790.1830	1413120
(srv03_sp1_rtm.050324-1447)	901.00 KB (922,624 bytes)				3/25/2005
7:00 AM					
services.exe	c:\windows\system32\services.exe				452
204800	1413120	9/4/2005 2:49 PM	5.2.3790.1830		9
(srv03_sp1_rtm.050324-1447)	216.50 KB (221,696 bytes)				3/25/2005
7:00 AM					
lsass.exe	c:\windows\system32\lsass.exe	444		9	204800
1413120	9/4/2005 2:49 PM	5.2.3790.1830	(srv03_sp1_rtm.050324-1447)		1413120
14.00 KB (14,336 bytes)			3/25/2005 7:00 AM		
svchost.exe	c:\windows\system32\svchost.exe				692
204800	1413120	9/4/2005 2:49 PM	5.2.3790.1830		8
(srv03_sp1_rtm.050324-1447)	24.50 KB (25,088 bytes)				3/25/2005
7:00 AM					
svchost.exe	Not Available	780		8	Not
Available	Not Available	9/4/2005 2:49 PM		Not Available	Not
Not Available	Not Available				Not
svchost.exe	Not Available	868		8	Not
Available	Not Available	9/4/2005 2:49 PM		Not Available	Not
Not Available	Not Available				Not
svchost.exe	Not Available	980		8	Not
Available	Not Available	9/4/2005 2:49 PM		Not Available	Not
Not Available	Not Available				Not
svchost.exe	c:\windows\system32\svchost.exe				1052
204800	1413120	9/4/2005 2:49 PM	5.2.3790.1830		8
(srv03_sp1_rtm.050324-1447)	24.50 KB (25,088 bytes)				3/25/2005
7:00 AM					
msdtc.exe	Not Available	1452		8	Not Available
Not Available	9/4/2005 2:49 PM			Not Available	Not
Available	Not Available				Not
svchost.exe	Not Available	1628		8	Not
Available	Not Available	9/4/2005 2:50 PM		Not Available	Not
Not Available	Not Available				Not
svchost.exe	c:\windows\system32\svchost.exe				2040
204800	1413120	9/4/2005 2:50 PM	5.2.3790.1830		8
(srv03_sp1_rtm.050324-1447)	24.50 KB (25,088 bytes)				3/25/2005
7:00 AM					



explorer.exe	c:\windows\explorer.exe	884	8							advapi32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.00 MB
204800	1413120	9/4/2005 2:50 PM	6.00.3790.1830							(1,051,136 bytes)	3/25/2005 7:00 AM	Microsoft Corporation
(srv03_sp1_rtm.050324-1447)	1.30 MB (1,364,480 bytes)									c:\windows\system32\advapi32.dll		
7:00 AM										rpert4	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.63 MB
										(1,714,176 bytes)	3/25/2005 7:00 AM	Microsoft Corporation
wmiprvse.exe	Not Available	1984	8	Not						c:\windows\system32\rpert4.dll		
Available	Not Available	9/4/2005 2:50 PM	Not Available							crypt32	5.131.3790.1830 (srv03_sp1_rtm.050324-1447)	1.36 MB
Not Available	Not Available									(1,428,992 bytes)	3/25/2005 7:00 AM	Microsoft Corporation
										c:\windows\system32\crypt32.dll		
csrss.exe	Not Available	208	13	Not Available						msasn1	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	152.50 KB
Not Available	9/5/2005 8:49 AM	Not Available	Not							(156,160 bytes)	3/25/2005 7:00 AM	Microsoft Corporation
Available	Not Available									c:\windows\system32\msasn1.dll		
										msvcrt	7.0.3790.1830 (srv03_sp1_rtm.050324-1447)	508.00 KB
winlogon.exe	c:\windows\system32\winlogon.exe		1904							(520,192 bytes)	3/25/2005 7:00 AM	Microsoft Corporation
13	204800	1413120	9/5/2005 8:49 AM	5.2.3790.1830						c:\windows\system32\msvcrt.dll		
(srv03_sp1_rtm.050324-1447)	901.00 KB (922,624 bytes)									user32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.04 MB
7:00 AM										(1,085,952 bytes)	3/25/2005 7:00 AM	Microsoft Corporation
										c:\windows\system32\user32.dll		
rdpclip.exe	c:\windows\system32\rdpclip.exe	2520	8	204800						gdi32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	592.00 KB
1413120	9/5/2005 8:49 AM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	99.00 KB (101,376 bytes)	5/2/2005 6:11 PM						(606,208 bytes)	3/25/2005 7:00 AM	Microsoft Corporation
										c:\windows\system32\gdi32.dll		
explorer.exe	c:\windows\explorer.exe		2096	8						nddeapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	25.00 KB
204800	1413120	9/5/2005 8:49 AM	6.00.3790.1830							(25,600 bytes)	3/25/2005 7:00 AM	Microsoft Corporation
(srv03_sp1_rtm.050324-1447)	1.30 MB (1,364,480 bytes)									c:\windows\system32\nddeapi.dll		
7:00 AM										profmap	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	36.00 KB
										(36,864 bytes)	3/25/2005 7:00 AM	Microsoft Corporation
taskmgr.exe	c:\windows\system32\taskmgr.exe		756							c:\windows\system32\profmap.dll		
13	204800	1413120	9/5/2005 8:49 AM	5.2.3790.1830						netapi32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	589.00 KB
(srv03_sp1_rtm.050324-1447)	231.00 KB (236,544 bytes)									(603,136 bytes)	3/25/2005 7:00 AM	Microsoft Corporation
7:00 AM										c:\windows\system32\netapi32.dll		
										userenv	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.02 MB
msftesql.exe	c:\program files\microsoft sql server\mssql.1\mssql\binn\msftesql.exe	440	8	204800						(1,069,056 bytes)	3/25/2005 7:00 AM	Microsoft Corporation
1413120	9/5/2005 9:14 AM	12.0.5211.0	146.20 KB (149,712 bytes)	4/11/2005 4:11 AM						c:\windows\system32\userenv.dll		
										psapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	29.00 KB
helpctr.exe	c:\windows\pchealth\helpctr\binaries\helpctr.exe		1508	8						(29,696 bytes)	3/25/2005 7:00 AM	Microsoft Corporation
204800	1413120	9/6/2005 2:19 PM	5.2.3790.1830							regapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	108.50 KB
(srv03_sp1_rtm.050324-1447)	1.30 MB (1,363,456 bytes)									(111,104 bytes)	3/25/2005 7:00 AM	Microsoft Corporation
6:14 PM										c:\windows\system32\regapi.dll		
										secur32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	120.00 KB
helpsvc.exe	c:\windows\pchealth\helpctr\binaries\helpsvc.exe		2076	8						(122,880 bytes)	3/25/2005 7:00 AM	Microsoft Corporation
5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.52 MB (1,591,296 bytes)									c:\windows\system32\secur32.dll		
5/2/2005 6:14 PM										setupapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.45 MB
wmiprvse.exe	Not Available	1380	8	Not						(1,523,200 bytes)	3/25/2005 7:00 AM	Microsoft Corporation
Available	Not Available	9/6/2005 2:19 PM	Not Available							c:\windows\system32\setupapi.dll		
Not Available	Not Available									version	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	28.00 KB
										(28,672 bytes)	3/25/2005 7:00 AM	Microsoft Corporation
										c:\windows\system32\version.dll		
[Loaded Modules]										winsta	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	89.00 KB
Name	Version	Size	File Date	Manufacturer	Path					(91,136 bytes)	3/25/2005 7:00 AM	Microsoft Corporation
winlogon	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	901.00 KB								c:\windows\system32\winsta.dll		
(922,624 bytes)	3/25/2005 7:00 AM	Microsoft Corporation										
c:\windows\system32\winlogon.exe												
ntdll	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.20 MB										
(1,257,472 bytes)	3/25/2005 7:00 AM	Microsoft Corporation										
c:\windows\system32\ntdll.dll												
kernel32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.43 MB										
(1,500,160 bytes)	3/25/2005 7:00 AM	Microsoft Corporation										
c:\windows\system32\kernel32.dll												

ws2_32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	176.50 KB	(180,736 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\ws2_32.dll
ws2help	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	30.50 KB	(31,232 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\ws2help.dll
msgina	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.14 MB	(1,193,472 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\msgina.dll
shsvcs	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	193.50 KB	(198,144 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\shsvcs.dll
shlwapi	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	606.50 KB	(621,056 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\shlwapi.dll
sfc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	6.00 KB	(6,144 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\sfc.dll
sfc_os	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	183.50 KB	(187,904 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\sfc_os.dll
wintrust	5.131.3790.1830 (srv03_sp1_rtm.050324-1447)	297.50 KB	(304,640 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\wintrust.dll
imagehlp	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	57.50 KB	(58,880 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\imagehlp.dll
ole32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	2.43 MB	(2,543,616 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\ole32.dll
comctl32	6.0 (srv03_sp1_rtm.050324-1447)	1.51 MB (1,584,128 bytes)		5/2/2005 1:54 PM	Microsoft Corporation	c:\windows\winsxs\amd64_microsoft.windows.common-controls_6595b64144c
winscard	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	230.00 KB	(235,520 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\winscard.dll
wtsapi32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	29.00 KB	(29,696 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\wtsapi32.dll
winmm	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	303.50 KB	(310,784 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\winmm.dll
shell32	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	10.01 MB	(10,492,416 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\shell32.dll
sxs	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.91 MB	(2,003,968 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\sxs.dll
rsaenh	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	241.96 KB	(247,768 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\rsaenh.dll
wldap32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	390.00 KB	(399,360 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\wldap32.dll
cscdll	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	151.50 KB	(155,136 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\cscdll.dll
dimsntfy	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	28.00 KB	(28,672 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\dimsntfy.dll
wlnotify	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	148.00 KB	(151,552 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\wlnotify.dll
mpr	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	115.00 KB	(117,760 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\mpr.dll
oleaut32	5.2.3790.1830	1.06 MB (1,116,160 bytes)		3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\oleaut32.dll
winspool	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	247.00 KB	(252,928 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\winspool.drv
comctl32	5.82 (srv03_sp1_rtm.050324-1447)	934.50 KB (956,928 bytes)		5/2/2005 1:54 PM	Microsoft Corporation	c:\windows\winsxs\amd64_microsoft.windows.common-controls_6595b64144c
uxtheme	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	494.50 KB	(506,368 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\uxtheme.dll
samlib	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	69.00 KB	(70,656 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\samlib.dll
csoui	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	441.00 KB	(451,584 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\csoui.dll
mprapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	154.50 KB	(158,208 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\mprapi.dll
activeds	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	348.50 KB	(356,864 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\activeds.dll
adslidpc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	240.50 KB	(246,272 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\adslidpc.dll
credui	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	202.00 KB	(206,848 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\credui.dll
atl	3.05.2284	96.50 KB (98,816 bytes)		3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\atl.dll
rtutils	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	66.00 KB	(67,584 bytes)	3/25/2005 7:00 AM	Microsoft Corporation	c:\windows\system32\rtutils.dll

clbcattq 2001.12.4720.1830 (srv03_sp1_rtm.050324-1447) 865.00 KB (885,760 bytes) 5/2/2005 6:11 PM Microsoft Corporation c:\windows\system32\clbcattq.dll	scesrv 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 594.50 KB (608,768 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\scesrv.dll
comres 2001.12.4720.1830 (srv03_sp1_rtm.050324-1447) 779.50 KB (798,208 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\comres.dll	authz 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 167.00 KB (171,008 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\authz.dll
ntmarta 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 222.50 KB (227,840 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\ntmarta.dll	umpnpgmr 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 205.00 KB (209,920 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\umpnpgmr.dll
xpsp2res 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 2.77 MB (2,899,456 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\xpsp2res.dll	eventlog 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 127.00 KB (130,048 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\eventlog.dll
wbemprox 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 38.00 KB (38,912 bytes) 5/2/2005 6:11 PM Microsoft Corporation c:\windows\system32\wbem\wbemprox.dll	lsass 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 14.00 KB (14,336 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\lsass.exe
wbemcomn 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 524.00 KB (536,576 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\wbem\wbemcomn.dll	lsasrv 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 1.50 MB (1,568,256 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\lsasrv.dll
wbemsvc 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 58.00 KB (59,392 bytes) 5/2/2005 6:11 PM Microsoft Corporation c:\windows\system32\wbem\wbemsvc.dll	samsrv 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 1.01 MB (1,059,328 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\samsrv.dll
fastprox 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 866.50 KB (887,296 bytes) 5/2/2005 6:11 PM Microsoft Corporation c:\windows\system32\wbem\fastprox.dll	cryptdll 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 47.00 KB (48,128 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\cryptdll.dll
msvcp60 7.0.3790.1830 (srv03_sp1_rtm.050324-1447) 919.50 KB (941,568 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\msvcp60.dll	msprivs 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 47.50 KB (48,640 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\msprivs.dll
ntdsapi 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 127.50 KB (130,560 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\ntdsapi.dll	kerberos 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 698.00 KB (714,752 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\kerberos.dll
dnsapi 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 297.50 KB (304,640 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\dnsapi.dll	msv1_0 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 253.00 KB (259,072 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\msv1_0.dll
scredir 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 38.50 KB (39,424 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\scredir.dll	iphlpapi 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 177.00 KB (181,248 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\iphlpapi.dll
rdpsnd 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 25.00 KB (25,600 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\rdpsnd.dll	netlogon 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 666.00 KB (681,984 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\netlogon.dll
msacm32 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 31.00 KB (31,744 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\msacm32.drv	w32time 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 400.50 KB (410,112 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\w32time.dll
msacm32 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 112.00 KB (114,688 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\msacm32.dll	schannel 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 248.00 KB (253,952 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\schannel.dll
services 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 216.50 KB (221,696 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\services.exe	wdigest 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 130.50 KB (133,632 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\wdigest.dll
ncobjapi 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 80.00 KB (81,920 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\ncobjapi.dll	rassfm 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 36.00 KB (36,864 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\rassfm.dll

kdcsvc 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 409.00 KB (418,816 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\kdcsvc.dll	certcli 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 372.00 KB (380,928 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\certcli.dll
ntdsa 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 2.81 MB (2,948,096 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\ntdsa.dll	vssapi 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 1.26 MB (1,320,960 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\vssapi.dll
esent 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 2.26 MB (2,366,976 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\esent.dll	dmserver 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 36.50 KB (37,376 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\dmserver.dll
ntdsatq 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 51.00 KB (52,224 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\ntdsatq.dll	es 2001.12.4720.1830 (srv03_sp1_rtm.050324-1447) 357.00 KB (365,568 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\es.dll
msocket 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 478.00 KB (489,472 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\msocket.dll	pchsvc 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 76.00 KB (77,824 bytes) 5/2/2005 6:14 PM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\pchsvc.dll
scecli 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 308.00 KB (315,392 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\scecli.dll	seclogon 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 27.50 KB (28,160 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\seclogon.dll
ws03res 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 794.00 KB (813,056 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\ws03res.dll	srsvcs 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 156.50 KB (160,256 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\srsvcs.dll
hnetcfg 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 561.00 KB (574,464 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\hnetcfg.dll	wmisvc 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 227.00 KB (232,448 bytes) 5/2/2005 6:11 PM Microsoft Corporation c:\windows\system32\wbem\wmisvc.dll
wshtcpip 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 29.00 KB (29,696 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\wshtcpip.dll	wuauerv 5.7.3790.1830 (srv03_sp1_rtm.050324-1447) 12.00 KB (12,288 bytes) 5/2/2005 6:14 PM Microsoft Corporation c:\windows\system32\wuauerv.dll
dsenh 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 226.96 KB (232,408 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\dsenh.dll	wuaueng 5.7.3790.1830 (srv03_sp1_rtm.050324-1447) 2.17 MB (2,270,720 bytes) 5/2/2005 6:14 PM Microsoft Corporation c:\windows\system32\wuaueng.dll
svchost 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 24.50 KB (25,088 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\svchost.exe	advpack 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 146.00 KB (149,504 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\advpack.dll
rpsvc 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 672.00 KB (688,128 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\rpsvc.dll	cabinet 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 138.50 KB (141,824 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\cabinet.dll
schedsvc 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 308.50 KB (315,904 bytes) 5/2/2005 6:13 PM Microsoft Corporation c:\windows\system32\schedsvc.dll	mshpatch 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 48.00 KB (49,152 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\mshpatch.dll
msidle 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 9.00 KB (9,216 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\msidle.dll	shfolder 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 34.00 KB (34,816 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\shfolder.dll
wkssvc 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 221.00 KB (226,304 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\wkssvc.dll	winhttp 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 508.50 KB (520,704 bytes) 5/2/2005 1:54 PM Microsoft Corporation c:\windows\winsxs\amd64_microsoft.windows.winhttp_6595b64144ccf1df_5.1.3790.1830_x-ww_a61ef4db\winhttp.dll
wiarpc 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 57.00 KB (58,368 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\wiarpc.dll	sens 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 63.50 KB (65,024 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\sens.dll
cryptsvc 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 114.00 KB (116,736 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\cryptsvc.dll	trkwks 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 177.50 KB (181,760 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\trkwks.dll

browser 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 125.50 KB (128,512 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\browser.dll	wmiprvsd 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 743.00 KB (760,832 bytes) 5/2/2005 6:11 PM Microsoft Corporation c:\windows\system32\wbem\wmiprvsd.dll
netrap 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 26.00 KB (26,624 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\netrap.dll	wbemess 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 532.50 KB (545,280 bytes) 5/2/2005 6:11 PM Microsoft Corporation c:\windows\system32\wbem\wbemess.dll
netman 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 457.00 KB (467,968 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\netman.dll	rasdlg 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 859.50 KB (880,128 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\rasdlg.dll
netshell 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 2.32 MB (2,437,120 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\netshell.dll	ncprov 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 73.00 KB (74,752 bytes) 5/2/2005 6:11 PM Microsoft Corporation c:\windows\system32\wbem\ncprov.dll
clusapi 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 127.00 KB (130,048 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\clusapi.dll	rasadhlp 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 12.00 KB (12,288 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\rasadhlp.dll
rasapi32 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 410.00 KB (419,840 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\rasapi32.dll	termsrv 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 354.50 KB (363,008 bytes) 5/2/2005 6:11 PM Microsoft Corporation c:\windows\system32\termsrv.dll
rasman 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 95.50 KB (97,792 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\rasman.dll	icaapi 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 27.50 KB (28,160 bytes) 5/2/2005 6:11 PM Microsoft Corporation c:\windows\system32\icaapi.dll
tapi32 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 332.50 KB (340,480 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\tapi32.dll	mstlsapi 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 187.00 KB (191,488 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\mstlsapi.dll
wininet 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 1.13 MB (1,186,304 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\wininet.dll	rdpwsx 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 170.13 KB (174,216 bytes) 5/2/2005 6:11 PM Microsoft Corporation c:\windows\system32\rdpwsx.dll
wzcsapi 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 49.00 KB (50,176 bytes) 3/24/2005 12:35 PM Microsoft Corporation c:\windows\system32\wzcsapi.dll	explorer 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 1.30 MB (1,364,480 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\explorer.exe
wzcsvc 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 492.00 KB (503,808 bytes) 3/24/2005 12:35 PM Microsoft Corporation c:\windows\system32\wzcsvc.dll	browseui 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 1.53 MB (1,601,536 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\browseui.dll
wmi 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 5.50 KB (5,632 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\wmi.dll	shdocvw 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 2.30 MB (2,416,128 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\shdocvw.dll
dhcpcsvc 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 219.00 KB (224,256 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\dhcpcsvc.dll	cryptui 5.131.3790.1830 (srv03_sp1_rtm.050324-1447) 705.50 KB (722,432 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\cryptui.dll
wbemcore 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 1.24 MB (1,299,968 bytes) 5/2/2005 6:11 PM Microsoft Corporation c:\windows\system32\wbem\wbemcore.dll	apphelp 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 241.00 KB (246,784 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\apphelp.dll
esscli 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 626.50 KB (641,536 bytes) 5/2/2005 6:11 PM Microsoft Corporation c:\windows\system32\wbem\esscli.dll	themeui 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 530.50 KB (543,232 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\themeui.dll
wmiutils 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 171.00 KB (175,104 bytes) 5/2/2005 6:11 PM Microsoft Corporation c:\windows\system32\wbem\wmiutils.dll	msimg32 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 6.50 KB (6,656 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\msimg32.dll
repdrvfs 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 353.50 KB (361,984 bytes) 5/2/2005 6:11 PM Microsoft Corporation c:\windows\system32\wbem\repdrvfs.dll	actxprxy 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 220.50 KB (225,792 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\actxprxy.dll

linkinfo 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 30.00 KB (30,720 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\linkinfo.dll	comdlg32 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 446.50 KB (457,216 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\comdlg32.dll
ntshrui 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 184.00 KB (188,416 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\ntshrui.dll	netmsg 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 179.00 KB (183,296 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\netmsg.dll
urlmon 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 1.02 MB (1,074,176 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32?urlmon.dll	netplwiz 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 938.50 KB (961,024 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\netplwiz.dll
webcheck 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 439.00 KB (449,536 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\webcheck.dll	shimgvw 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 618.50 KB (633,344 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\shimgvw.dll
wsock32 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 24.50 KB (25,088 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\wsock32.dll	gdiplus 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 2.74 MB (2,876,416 bytes) 5/2/2005 1:54 PM Microsoft Corporation c:\windows\winsxs\amd64_microsoft.windows.gdiplus_6595b64144ccf1df_1.0.3790.1830_x-ww_56cdf238\gdiplus.dll
stobject 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 142.50 KB (145,920 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\stobject.dll	mydocs 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 101.00 KB (103,424 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\mydocs.dll
batmeter 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 41.50 KB (42,496 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\batmeter.dll	imaadp32 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 24.00 KB (24,576 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\imaadp32.acm
powrprof 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 32.50 KB (33,280 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\powrprof.dll	msadp32 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 23.50 KB (24,064 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\msadp32.acm
drprov 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 24.00 KB (24,576 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\drprov.dll	msg711 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 13.50 KB (13,824 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\msg711.acm
ntlanman 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 71.50 KB (73,216 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\ntlanman.dll	msgsm32 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 34.50 KB (35,328 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\msgsm32.acm
netui0 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 130.00 KB (133,120 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\netui0.dll	tssoft32 1.01 13.50 KB (13,824 bytes) 3/25/2005 7:00 AM DSP GROUP, INC. c:\windows\system32\tssoft32.acm
netui1 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 338.50 KB (346,624 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\netui1.dll	tsd32 1.03 24.50 KB (25,088 bytes) 3/25/2005 7:00 AM DSP GROUP, INC. c:\windows\system32\tsd32.dll
davclnt 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 38.00 KB (38,912 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\davclnt.dll	rdpclip 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 99.00 KB (101,376 bytes) 5/2/2005 6:11 PM Microsoft Corporation c:\windows\system32\rdpclip.exe
browsecl 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 63.00 KB (64,512 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\browsecl.dll	taskmgr 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 231.00 KB (236,544 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\taskmgr.exe
shdoclc 6.00.3790.1830 (srv03_sp1_rtm.050324-1447) 589.50 KB (603,648 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\shdoclc.dll	utildll 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 37.00 KB (37,888 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\utildll.dll
mprui 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 67.50 KB (69,120 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\mprui.dll	msftesql 12.0.5211.0 146.20 KB (149,712 bytes) 4/11/2005 4:11 AM Microsoft Corporation c:\program files\microsoft sql server\mssql.1\mssql\bin\msftesql.exe
netui2 5.2.3790.1830 (srv03_sp1_rtm.050324-1447) 542.00 KB (555,008 bytes) 3/25/2005 7:00 AM Microsoft Corporation c:\windows\system32\netui2.dll	msfte 12.0.5211.0 3.61 MB (3,784,400 bytes) 4/11/2005 4:11 AM Microsoft Corporation c:\program files\microsoft sql server\mssql.1\mssql\bin\msfte.dll

dbghelp 5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447) 1.22 MB  
(1,274,368 bytes) 3/25/2005 7:00 AM Microsoft Corporation  
c:\windows\system32\dbghelp.dll

msftpxy 12.0.5211.0 73.70 KB (75,472 bytes) 4/11/2005  
4:11 AM Microsoft Corporation c:\program files\microsoft sql  
server\mssql.1\mssql\bin\msftpxy.dll

helpctr 5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447) 1.30 MB  
(1,363,456 bytes) 5/2/2005 6:14 PM Microsoft Corporation  
c:\windows\pchealth\helpctr\binaries\helpctr.exe

hcappres 5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447) 7.50 KB  
(7,680 bytes) 5/2/2005 6:14 PM Microsoft Corporation  
c:\windows\pchealth\helpctr\binaries\hcappres.dll

itss 5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447) 208.00 KB  
(212,992 bytes) 3/25/2005 7:00 AM Microsoft Corporation  
c:\windows\system32\itss.dll

msxml3 8.70.1104.0 2.04 MB (2,141,184 bytes) 3/25/2005  
7:00 AM Microsoft Corporation c:\windows\system32\msxml3.dll

pchshell 5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447) 155.00 KB  
(158,720 bytes) 5/2/2005 6:14 PM Microsoft Corporation  
c:\windows\pchealth\helpctr\binaries\pchshell.dll

mlang 6.00.3790.1830 (srv03\_sp1\_rtm.050324-1447) 686.00 KB  
(702,464 bytes) 3/25/2005 7:00 AM Microsoft Corporation  
c:\windows\system32\mlang.dll

mshtml 6.00.3790.1830 (srv03\_sp1\_rtm.050324-1447) 5.65 MB  
(5,928,448 bytes) 3/25/2005 7:00 AM Microsoft Corporation  
c:\windows\system32\mshtml.dll

mssl31 3.10.349.0 357.00 KB (365,568 bytes) 3/25/2005 7:00 AM  
Microsoft Corporation c:\windows\system32\mssl31.dll

msimtf 5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447) 380.50 KB  
(389,632 bytes) 3/25/2005 7:00 AM Microsoft Corporation  
c:\windows\system32\msimtf.dll

msctf 5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447) 617.50 KB  
(632,320 bytes) 3/25/2005 7:00 AM Microsoft Corporation  
c:\windows\system32\msctf.dll

jscript 5.6.0.8827 974.50 KB (997,888 bytes) 3/25/2005 7:00 AM  
Microsoft Corporation c:\windows\system32\jscript.dll

imm32 5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447) 208.00 KB  
(212,992 bytes) 3/25/2005 7:00 AM Microsoft Corporation  
c:\windows\system32\imm32.dll

mshtml 6.00.3790.1830 (srv03\_sp1\_rtm.050324-1447) 905.50 KB  
(927,232 bytes) 3/25/2005 7:00 AM Microsoft Corporation  
c:\windows\system32\mshtml.dll

vbscript 5.6.0.8827 646.50 KB (662,016 bytes) 3/25/2005 7:00 AM  
Microsoft Corporation c:\windows\system32\vbscript.dll

msinfo 5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447) 636.00 KB  
(651,264 bytes) 5/2/2005 6:14 PM Microsoft Corporation  
c:\windows\pchealth\helpctr\binaries\msinfo.dll

mfc42u 6.50.9146.0 1.39 MB (1,462,272 bytes) 3/25/2005  
7:00 AM Microsoft Corporation c:\windows\system32\mfc42u.dll

riched32 5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447) 7.00 KB  
(7,168 bytes) 3/25/2005 7:00 AM Microsoft Corporation  
c:\windows\system32\riched32.dll

riched20 5.31.23.1224 1.10 MB (1,157,120 bytes) 3/25/2005  
7:00 AM Microsoft Corporation c:\windows\system32\riched20.dll

helpsvc 5.2.3790.1830 (srv03\_sp1\_rtm.050324-1447) 1.52 MB  
(1,591,296 bytes) 5/2/2005 6:14 PM Microsoft Corporation  
c:\windows\pchealth\helpctr\binaries\helpsvc.exe

[Services]

Display Name	Name	State	Start Mode	Service Type
Path	Error Control	Start Name	Tag ID	
Application Experience Lookup Service		Stopped		
Disabled	Share Process		c:\windows\system32\svchost.exe -k netsvcs	
Normal	LocalSystem	0		
Alerter	Alerter	Stopped	Disabled	Share Process
c:\windows\system32\svchost.exe -k localservice			Normal	NT
AUTHORITY\LocalService		0		
Application Layer Gateway Service		Stopped	ALG	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		
ASP.NET State Service	aspnet_state	Stopped	Manual	
Own Process				
c:\windows\microsoft.net\framework64\v2.0.50215\aspnet_state.exe				
Normal	NT AUTHORITY\NetworkService	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	Running	Auto	Share Process
c:\windows\system32\svchost.exe -k netsvcs			Normal	LocalSystem
				0
Indexing Service	CiSvc	Stopped	Disabled	Share Process
c:\windows\system32\cisvc.exe			Normal	LocalSystem
				0
ClipBook	ClipSrv	Stopped	Disabled	Own Process
c:\windows\system32\clipsrv.exe			Normal	LocalSystem
				0
.NET Runtime Optimization Service v2.0.50215_X86		Stopped	Manual	Own Process
clr_optimization_v2.0.50215_32				
c:\windows\microsoft.net\framework\v2.0.50215\mscorsvw.exe				Ignore
LocalSystem		0		
.NET Runtime Optimization Service v2.0.50215_x64		Stopped	Manual	Own Process
clr_optimization_v2.0.50215_64				
c:\windows\microsoft.net\framework64\v2.0.50215\mscorsvw.exe				Ignore
LocalSystem		0		
COM+ System Application	COMSysApp	Stopped	Manual	
Own Process	c:\windows\system32\dlhhost.exe			
/processid:{02d4b3f1-fd88-11d1-960d-00805fc79235}			Normal	
LocalSystem		0		





Plug and Play c:\windows\system32\services.exe	PlugPlay	Running	Auto	Share Process	0	Shell Hardware Detection Share Process LocalSystem	ShellHWDetection	Running	Auto	Ignore	0
IPSEC Services Process c:\windows\system32\lsass.exe	PolicyAgent	Stopped	Disabled	Share LocalSystem	0	Print Spooler c:\windows\system32\spoolsv.exe	Spooler	Stopped	Disabled	Own Process LocalSystem	0
Protected Storage Process c:\windows\system32\lsass.exe	ProtectedStorage	Stopped	Disabled	Share LocalSystem	0	SQL Server Browser Process "c:\program files (x86)\microsoft sql server\90\shared\sqlbrowser.exe"	SQLBrowser	Stopped	Disabled	Own Process NT AUTHORITY\LOCAL SERVICE	0
Remote Access Share Process LocalSystem	Auto Connection Manager c:\windows\system32\svchost.exe -k netsvcs	0	RasAuto	Stopped	Manual Normal	SQL Server Agent (MSSQLSERVER) Stopped LocalSystem	SQLSERVERAGENT	Stopped	Disabled	Own Process Normal	0
Remote Access Share Process LocalSystem	Connection Manager c:\windows\system32\svchost.exe -k netsvcs	0	RasMan	Stopped	Manual Normal	SQL Server VSS Writer Process "c:\program files\microsoft sql server\90\shared\sqlwriter.exe"	SQLWriter	Stopped	Disabled	Own Process LocalSystem	0
Remote Desktop Manual Normal	Help Session Manager c:\windows\system32\sessmgr.exe	0	RDSessMgr	Stopped	Manual LocalSystem	Windows Image Acquisition (WIA) Share Process LocalSystem	stisvc	Stopped	Disabled	Own Process Normal	0
Routing and Remote Share Process LocalSystem	Access c:\windows\system32\svchost.exe -k netsvcs	0	RemoteAccess	Stopped	Disabled Normal	Microsoft Software Shadow Copy Provider Own Process LocalSystem	swprv	Stopped	Manual Normal	0	
Remote Registry Process AUTHORITY\LocalService	RemoteRegistry c:\windows\system32\svchost.exe -k regsvc	0	Running	Auto	Share Normal	Performance Logs and Alerts Own Process NT Authority\NetworkService	SysmonLog	Stopped	Auto Normal	0	
Remote Procedure Call (RPC) Manual NT AUTHORITY\NetworkService	Locator c:\windows\system32\locator.exe	0	RpcLocator	Stopped	Normal	Telephony TapiSrv c:\windows\system32\svchost.exe -k tapisrv		Stopped	Manual	Share Process Normal LocalSystem	0
Remote Procedure Call (RPC) Process AUTHORITY\NetworkService	RpcSs c:\windows\system32\svchost.exe -k rpcss	0	Running	Auto	Share Normal	Terminal Services Process LocalSystem	TermService	Running	Manual	Share Process Normal LocalSystem	0
Resultant Set of Policy Process LocalSystem	Provider c:\windows\system32\rsopprov.exe	0	Stopped	Manual	Share Normal	Themes c:\windows\system32\svchost.exe -k netsvcs		Stopped	Disabled	Share Process Normal LocalSystem	0
Special Administration Share Process LocalSystem	Console Helper c:\windows\system32\svchost.exe -k netsvcs	0	sacsrv	Stopped	Manual Normal	Telnet c:\windows\system32\tlntsvr.exe	TlntSvr	Stopped	Disabled	Own Process NT AUTHORITY\LocalService	0
Security Accounts Process c:\windows\system32\lsass.exe	Manager SamSs	Running	Auto	Share LocalSystem	0	Distributed Link Tracking Server Process LocalSystem	TrkSvr	Stopped	Disabled	Share Process Normal LocalSystem	0
Smart Card c:\windows\system32\scardsvr.exe	SCardSvr	Stopped	Manual	Share Process	0	Distributed Link Tracking Client Process LocalSystem	TrkWks	Running	Auto	Share Process Normal LocalSystem	0
Task Scheduler c:\windows\system32\svchost.exe -k netsvcs	Schedule	Running	Auto	Share Process	0	Terminal Services Session Directory Own Process LocalSystem	Tssdis	Stopped	Disabled	Normal	0
Secondary Logon c:\windows\system32\svchost.exe -k netsvcs	seclogon	Running	Auto	Share Process	0	Windows User Mode Driver Framework Own Process NT AUTHORITY\LocalService	UMWdf	Stopped	Manual	Own Process Normal LocalSystem	0
System Event Notification Process LocalSystem	SENS c:\windows\system32\svchost.exe -k netsvcs	0	Running	Auto	Share Normal	Uninterruptible Power Supply Process c:\windows\system32\ups.exe	UPS	Stopped	Manual	Own Process LocalSystem	0
Windows Firewall/Internet Stopped -k netsvcs	Connection Sharing (ICS) Share Process LocalSystem	0	SharedAccess	Share Process	0	Virtual Disk Service c:\windows\system32\vds.exe	vds	Stopped	Manual	Own Process LocalSystem	0

Volume Shadow Copy Process	VSS	Stopped	Manual	Own	0	Accessories\System Tools	All Users:Accessories\System Tools
c:\windows\system32\vssvc.exe		Normal	LocalSystem			All Users	
Windows Time	W32Time	Stopped	Manual	Share Process		Administrative Tools	All Users:Administrative Tools All Users
c:\windows\system32\svchost.exe -k localservice			Normal	NT			
AUTHORITY\LocalService		0					
WebClient	WebClient	Stopped	Disabled	Share Process		Debugging Tools for Windows 64-bit	All Users:Debugging Tools for Windows 64-bit All Users
c:\windows\system32\svchost.exe -k localservice			Normal	NT		All Users	
AUTHORITY\LocalService		0					
WinHTTP	Web Proxy Auto-Discovery Service			WinHttpAutoProxySvc		Microsoft SQL Server 2005 CTP	All Users:Microsoft SQL Server 2005 CTP All Users
Stopped	Manual	Share Process		c:\windows\system32\svchost.exe -k localservice		Microsoft SQL Server 2005 CTP\Analysis Services	All Users:Microsoft SQL Server 2005 CTP\Analysis Services All Users
Normal	NT	AUTHORITY\LocalService		0			
Windows Management Instrumentation	Instrumentation	winmgmt	Running	Auto		Microsoft SQL Server 2005 CTP\Configuration Tools	All Users:Microsoft SQL Server 2005 CTP\Configuration Tools All Users
Share Process		c:\windows\system32\svchost.exe -k netsvcs		Ignore		Microsoft SQL Server 2005 CTP\Performance Tools	All Users:Microsoft SQL Server 2005 CTP\Performance Tools All Users
LocalSystem		0				All Users	
Portable Media Serial Number Service		WmdmPmSN	Stopped			ServeRAID Manager	All Users:ServeRAID Manager All Users
Manual	Share Process			c:\windows\system32\svchost.exe -k netsvcs			
Normal	LocalSystem			0		Startup	All Users:Startup All Users
Windows Management Instrumentation Driver Extensions				Wmi		Accessories	NT AUTHORITY\SYSTEM:Accessories NT AUTHORITY\SYSTEM
Stopped	Manual	Share Process		c:\windows\system32\svchost.exe -k netsvcs		NT AUTHORITY\SYSTEM:Accessories\Accessibility	NT AUTHORITY\SYSTEM
Normal	LocalSystem			0			
WMI Performance Adapter		WmiApSrv	Stopped	Manual		Accessories\Entertainment	NT AUTHORITY\SYSTEM:Accessories\Entertainment NT AUTHORITY\SYSTEM
Own Process		c:\windows\system32\wbem\wmiapsrv.exe		Normal		NT AUTHORITY\SYSTEM:Accessories\Entertainment	NT AUTHORITY\SYSTEM
LocalSystem		0				Startup	NT AUTHORITY\SYSTEM:Startup NT AUTHORITY\SYSTEM
Automatic Updates	wuauerv	Running	Auto	Share Process		Accessories	IBMSERV4\Administrator:Accessories IBMSERV4\Administrator
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0		Accessories\Accessibility	IBMSERV4\Administrator:Accessories\Accessibility IBMSERV4\Administrator
Wireless Configuration		WZCSVC	Stopped	Disabled	Share	Accessories\Entertainment	IBMSERV4\Administrator:Accessories\Entertainment IBMSERV4\Administrator
Process		c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	NT AUTHORITY\SYSTEM:Startup	NT AUTHORITY\SYSTEM
LocalSystem		0				Accessories	IBMSERV4\Administrator:Accessories IBMSERV4\Administrator
Network Provisioning Service	xmlprov	Stopped	Manual	Share		Accessories\Accessibility	IBMSERV4\Administrator:Accessories\Accessibility IBMSERV4\Administrator
Process		c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	NT AUTHORITY\SYSTEM:Startup	NT AUTHORITY\SYSTEM
LocalSystem		0				Accessories	IBMSERV4\Administrator:Accessories IBMSERV4\Administrator
[Program Groups]						Accessories\Entertainment	IBMSERV4\Administrator:Accessories\Entertainment IBMSERV4\Administrator
Group Name	Name	User Name				Administrative Tools	IBMSERV4\Administrator:Administrative Tools IBMSERV4\Administrator
Accessories	Default User:Accessories	Default User				Startup	IBMSERV4\Administrator:Startup IBMSERV4\Administrator
Accessories\Accessibility	Default User:Accessories\Accessibility	Default User				[Startup Programs]	
Default User						Program	Command User NameLocation
Accessories\Entertainment	Default User:Accessories\Entertainment	Default User				desktop	desktop.ini NT AUTHORITY\SYSTEM Startup
Default User						desktop	desktop.ini IBMSERV4\Administrator Startup
Startup	Default User:Startup	Default User				Shortcut to synctime	shortcut to synctime.lnk IBMSERV4\Administrator Startup
Accessories	All Users:Accessories	All Users				desktop	desktop.ini.DEFAULT Startup
Accessories\Accessibility	All Users:Accessories\Accessibility	All Users					
All Users							
Accessories\Communications	All Users:Accessories\Communications	All Users					
All Users							
Accessories\Entertainment	All Users:Accessories\Entertainment	All Users					
All Users							

desktop desktop.ini All Users Common Startup

[OLE Registration]

Object Local Server

Sound (OLE2) sndrec32.exe

Media Clip mplay32.exe

Video Clip mplay32.exe /avi

MIDI Sequence mplay32.exe /mid

Sound Not Available

Media Clip Not Available

WordPad Document "%programfiles%\windows nt\accessories\wordpad.exe"

Bitmap Image mspaint.exe

[Windows Error Reporting]

Time Type Details

[Internet Settings]

[Internet Explorer]

[ Following are sub-categories of this main category ]

[Summary]

Item Value

Version 6.0.3790.1830

Build 63790.1830

Application Path C:\Program Files\Internet Explorer

Language English (United States)

Active Printer Not Available

Cipher Strength 128-bit

Content Advisor Disabled

IEAK Install No

[File Versions]

File	Version	Size	Date	Path	Company
actxprxy.dll	6.0.3790.1830	221 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
advpack.dll	6.0.3790.1830	146 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
asctrls.ocx	6.0.3790.1830	147 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation

browsecl.dll	6.0.3790.1830	63 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
browseui.dll	6.0.3790.1830	1,564 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
cdfview.dll	6.0.3790.1830	216 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
comctl32.dll	5.82.3790.1830	935 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
dxtrans.dll	6.3.3790.1830	320 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
dxtmsft.dll	6.3.3790.1830	549 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
iecont.dll	<File Missing>	Not Available	Not Available	Not Available	Not Available
iecontlc.dll	<File Missing>	Not Available	Not Available	Not Available	Not Available
iedkcs32.dll	16.0.3790.1830	417 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
iepeers.dll	6.0.3790.1830	361 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
iesetup.dll	6.0.3790.1830	71 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
ieuinit.inf	Not Available	24 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Not Available
ieexplore.exe	6.0.3790.1830	94 KB	3/25/2005 8:00:00 AM	C:\Program Files\Internet Explorer	Microsoft Corporation
imgutil.dll	6.0.3790.1830	61 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
inetctl.cpl	6.0.3790.1830	428 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
inetctl.dll	6.0.3790.1830	110 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
inseng.dll	6.0.3790.1830	147 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
mlang.dll	6.0.3790.1830	686 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
msencode.dll	<File Missing>	Not Available	Not Available	Not Available	Not Available
mshta.exe	6.0.3790.1830	38 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
mshtml.dll	6.0.3790.1830	5,790 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
mshtml.tlb	6.0.3790.1830	1,320 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
mshtmlled.dll	6.0.3790.1830	906 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation

mshtml.dll	6.0.3790.1830	56 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation	AutoProxyDetectMode	Disabled
msident.dll	6.0.3790.1830	69 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation	AutoConfigURL	
msidntld.dll	6.0.3790.1830	16 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation	Proxy	Disabled
msieftp.dll	6.0.3790.1830	369 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation	ProxyServer	
msrating.dll	6.0.3790.1830	240 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation	ProxyOverride	
mstime.dll	6.0.3790.1830	878 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation	[Cache]	
occache.dll	6.0.3790.1830	126 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation	[ Following are sub-categories of this main category ]	
proctexe.ocx	<File Missing>	Not Available	Not	Available	Not Available	[Summary]	
sendmail.dll	6.0.3790.1830	64 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation	Item	Value
shdocl.dll	6.0.3790.1830	590 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation	Page Refresh Type	Automatic
shdocvw.dll	6.0.3790.1830	2,360 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation	Temporary Internet Files Folder	C:\Documents and Settings\Administrator\Local Settings\Temporary Internet Files
shfolder.dll	6.0.3790.1830	34 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation	Total Disk Space	Not Available
shlwapi.dll	6.0.3790.1830	607 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation	Available Disk Space	Not Available
tdc.ocx	1.3.0.3130	91 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation	Maximum Cache Size	Not Available
url.dll	6.0.3790.1830	40 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation	Available Cache Size	Not Available
urlmon.dll	6.0.3790.1830	1,049 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation	[List of Objects]	
webcheck.dll	6.0.3790.1830	439 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation	Program File	Status CodeBase
wininet.dll	6.0.3790.1830	1,159 KB	3/25/2005 8:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation	No cached object information available	
[Connectivity]						[Content]	
Item	Value					[ Following are sub-categories of this main category ]	
Connection Preference	Never dial					[Summary]	
LAN Settings						Item	Value
AutoConfigProxy	wininet.dll					Content Advisor	Disabled
						[Personal Certificates]	
						Issued To	Issued By Validity Signature Algorithm
						No personal certificate information available	
						[Other People Certificates]	
						Issued To	Issued By Validity Signature Algorithm
						No other people certificate information available	
						[Publishers]	
						Name	
						No publisher information available	
						[Security]	

Zone	Security Level
My Computer	Custom
Local intranet	Custom
Trusted sites	Custom
Internet	High
Restricted sites	Custom

## ServeRAID-6M Disk Controller Configuration Parameters

September 6, 2005 3:01:56 PM EDT

### Configuration summary

Server name.....ibmserv4  
 ServeRAID Manager agent.....6.10.26 (1253)  
 ServeRAID Manager console.....6.10.26 (1253)  
 Number of controllers.....2  
 Operating system.....Windows 2003

### Configuration information for controller 1

Controller type.....ServeRAID-6M  
 SCSI backend type.....AIC-7902  
 SCSI backend revision.....16  
 Controller FRU.....02R0985  
 Battery FRU.....02R0986  
 Serial number.....80B8F594  
 Part number.....32P0033  
 Physical slot.....5  
 BIOS version.....7.10.18  
 Firmware version.....7.10.18  
 Device driver version.....7.10.53  
 Battery-backup cache.....Installed  
 Battery temperature.....Normal  
 Battery charge level.....100 %  
 Battery-backup cache size.....128 MB  
 Read-ahead cache mode.....Adaptive  
 Stripe-unit size.....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)...1/0 2/0  
 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)...2/6 1/6  
 Number of physical drives.....2

Array identifier.....H  
 Array size.....140012 MB  
 Stripe order (channel/device)...2/8 1/8  
 Number of physical drives.....2

### Physical drives in array A

Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST373453  
 FRU part number.....32P0737  
 Serial number.....3HW157NV  
 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.....3HW14ZMR  
 Firmware level.....B85B  
 Channel.....2  
 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.....3HW150Q0
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.....3HW14ZHV
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.....3HW158WT
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.....3HW158K0
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.....3HW14ZGG

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.....3HW157XL
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.....3HW14ZDN
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.....3HW151TK
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.....ST373453
FRU part number.....32P0737
Serial number.....3HW14Z83
Firmware level.....B85B
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.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW14KG9  
Firmware level.....B85B  
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.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW158WW  
Firmware level.....B85B  
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.....3HW1HPBM  
Firmware level.....B85D  
Channel.....1  
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.....3HW14Z21  
Firmware level.....B85B  
Channel.....2  
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.....3HW158VY  
Firmware level.....B85B  
Channel.....1  
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.....09/01/2005  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

SCSI channel 1

Number of drives.....8  
SCSI transfer speed.....Optimal  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW157NV  
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.....3HW150Q0  
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.....3HW158WT  
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.....3HW14ZGG  
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.....3HW14ZDN  
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.....3HW14Z83  
Firmware level.....B85B  
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.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW1HPBM  
Firmware level.....B85D  
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.....3HW158VY  
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.....23B1536  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4865  
FRU serial number.....13CX06G

FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4866  
FRU serial number.....1R0433CX06F  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665  
FRU serial number.....1R0453CX06B  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665  
FRU serial number.....1R0453CX06C  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4869  
FRU serial number.....1R0443CX06D  
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.....Optimal  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW14ZMR  
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.....3HW14ZHV  
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.....3HW158K0  
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.....3HW157XL  
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.....3HW151TK  
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.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW14KG9  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....70006 MB  
State.....Online  
Array letter.....F  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW158WW  
Firmware level.....B85B  
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.....3HW14Z21  
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.....23B1574  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4865  
FRU serial number.....13CX0DV  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4866  
FRU serial number.....1R0433CX0DT  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665  
FRU serial number.....1R0453CX0DP  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665  
FRU serial number.....1R0453CX0DN  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4869  
FRU serial number.....1R0443CX0DR  
Channel.....2  
SCSI ID.....15  
Enclosure ID.....0  
Enclosure status.....Okay  
Fan 1 status.....Okay  
Fan 2 status.....Okay  
Power supply 1 status.....Okay  
Power supply 2 status.....Okay  
Temperature status.....Normal

End of the configuration information for controller 1

-----  
Configuration information for controller 2

-----  
Controller type.....ServeRAID-6M  
SCSI backend type.....AIC-7902  
SCSI backend revision.....16  
Controller FRU.....02R0985  
Battery FRU.....02R0986  
Serial number.....00B772BF  
Part number.....32P0033  
Physical slot.....6  
BIOS version.....7.10.18  
Firmware version.....7.10.18  
Device driver version.....7.10.53  
Battery-backup cache.....Installed  
Battery temperature.....Normal  
Battery charge level.....100 %  
Battery-backup cache size.....128 MB  
Read-ahead cache mode.....Adaptive  
Stripe-unit size.....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)...1/0 2/0  
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.....3HW1HDZC  
Firmware level.....B85E  
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.....3HW14LVC  
Firmware level.....B85B  
Channel.....2  
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.....3HW1HLC9  
Firmware level.....B85E  
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.....3HW1HLD4  
Firmware level.....B85D  
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.....3HW1HLP5  
Firmware level.....B85E  
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.....3HW1HFPM  
Firmware level.....B85D  
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.....3HW1HHVT  
Firmware level.....B85E  
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.....3HW1GYFZ  
Firmware level.....B85D  
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.....3HW1HFE0  
Firmware level.....B85E  
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.....3HW1HWKH  
Firmware level.....B85D  
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.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW1HXXW  
Firmware level.....B85E  
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.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW1HMM1  
Firmware level.....B85D  
Channel.....2  
SCSI ID.....5  
Size.....70006 MB  
State.....Online  
Array letter.....F  
PFA error.....No

Physical drives in array G

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW1CB1Z  
Firmware level.....B85E  
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.....3HW1HFQJ  
Firmware level.....B85D  
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.....3HW1HMEH  
Firmware level.....B85D  
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.....ST373307  
FRU part number.....32P0730  
Serial number.....3HZ1SLVE  
Firmware level.....B25E  
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.....08/26/2005  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

SCSI channel 1

-----  
Number of drives.....8  
SCSI transfer speed.....Optimal  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW1HDZC  
Firmware level.....B85E  
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.....3HW1HLC9  
Firmware level.....B85E  
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.....3HW1HLP5  
Firmware level.....B85E  
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.....3HW1HHVT  
Firmware level.....B85E  
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.....3HW1HFEO  
Firmware level.....B85E  
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.....3HW1HXXW  
Firmware level.....B85E  
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.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW1CB1Z  
Firmware level.....B85E  
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.....3HW1HMEH  
Firmware level.....B85D  
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.....23B1510  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4865  
FRU serial number.....13CX036  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4866  
FRU serial number.....1R0433CX035  
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.....11/2003  
FRU part number.....55P3200  
FRU serial number.....1R0453BF07M  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665  
FRU serial number.....1R0453CP0T9  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4869  
FRU serial number.....1R0443CX033  
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.....Optimal  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW14LVC  
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.....3HW1HLD4  
Firmware level.....B85D  
Channel.....2  
SCSI ID.....1  
Size.....70006 MB  
State.....Online  
Array letter.....B  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW1HFPM  
Firmware level.....B85D  
Channel.....2  
SCSI ID.....2  
Size.....70006 MB  
State.....Online  
Array letter.....C  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW1GYFZ  
Firmware level.....B85D  
Channel.....2  
SCSI ID.....3  
Size.....70006 MB  
State.....Online  
Array letter.....D  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW1HWKH  
Firmware level.....B85D  
Channel.....2  
SCSI ID.....4  
Size.....70006 MB  
State.....Online  
Array letter.....E  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW1HMM1  
Firmware level.....B85D  
Channel.....2  
SCSI ID.....5  
Size.....70006 MB

State.....Online  
Array letter.....F  
PFA error.....No  
  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW1HFQJ  
Firmware level.....B85D  
Channel.....2  
SCSI ID.....6  
Size.....70006 MB  
State.....Online  
Array letter.....G  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373307  
FRU part number.....32P0730  
Serial number.....3HZ1SLVE  
Firmware level.....B25E  
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.....23B1428  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4865  
FRU serial number.....13CP0TE  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4866  
FRU serial number.....1R0433CP0TC  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665  
FRU serial number.....1R0453CP0TA  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2004  
FRU part number.....14J0665  
FRU serial number.....1R1454CD03X  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4869  
FRU serial number.....1R0443CP0TB  
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 2  
-----

September 6, 2005 3:02:02 PM EDT

Configuration summary  
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Server name.....ibmserv4  
ServeRAID Manager agent.....6.10.26 (1253)  
ServeRAID Manager console.....6.10.26 (1253)  
Number of controllers.....2  
Operating system.....Windows 2003

Configuration information for controller 1  
-----

Controller type.....ServeRAID-6M  
SCSI backend type.....AIC-7902  
SCSI backend revision.....16  
Controller FRU.....02R0985  
Battery FRU.....02R0986  
Serial number.....80B8F594  
Part number.....32P0033  
Physical slot.....5  
BIOS version.....7.10.18  
Firmware version.....7.10.18  
Device driver version.....7.10.53  
Battery-backup cache.....Installed  
Battery temperature.....Normal  
Battery charge level.....100 %  
Battery-backup cache size.....128 MB  
Read-ahead cache mode.....Adaptive  
Stripe-unit size.....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)...1/0 2/1  
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)...2/6 1/6  
Number of physical drives.....2

Array identifier.....H  
Array size.....140012 MB  
Stripe order (channel/device)...2/8 1/8  
Number of physical drives.....2

Physical drives in array A

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW157NV  
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.....3HW14ZMR  
Firmware level.....B85B  
Channel.....2  
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.....3HW150Q0

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.....3HW14ZHV  
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.....3HW158WT  
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.....3HW158K0  
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.....3HW14ZGG  
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.....3HW157XL  
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.....3HW14ZDN  
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.....3HW151TK  
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.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW14Z83  
Firmware level.....B85B  
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.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW14KG9  
Firmware level.....B85B  
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.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW158WW  
Firmware level.....B85B  
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.....3HW1HPBM  
Firmware level.....B85D  
Channel.....1  
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.....3HW14Z21  
Firmware level.....B85B  
Channel.....2  
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.....3HW158VY  
Firmware level.....B85B  
Channel.....1  
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.....09/01/2005  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

SCSI channel 1

-----  
Number of drives.....8  
SCSI transfer speed.....Optimal  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW157NV  
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.....3HW150Q0  
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.....3HW158WT  
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.....3HW14ZGG  
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.....3HW14ZDN  
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.....3HW14Z83  
Firmware level.....B85B  
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.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW1HPBM  
Firmware level.....B85D  
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.....3HW158VY  
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.....23B1536  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4865  
FRU serial number.....13CX06G  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4866  
FRU serial number.....1R0433CX06F  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665  
FRU serial number.....1R0453CX06B

FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665  
FRU serial number.....1R0453CX06C  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4869  
FRU serial number.....1R0443CX06D  
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.....Optimal  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW14ZMR  
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.....3HW14ZHV  
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.....3HW158K0  
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.....3HW157XL  
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.....3HW151TK  
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.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW14KG9  
Firmware level.....B85B  
Channel.....2  
SCSI ID.....5  
Size.....70006 MB  
State.....Online  
Array letter.....F  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW158WW  
Firmware level.....B85B  
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.....3HW14Z21  
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.....23B1574  
Firmware level.....D110  
FRU type.....MIDPLANE

```

FRU vendor.....IBM
FRU date of manufacture.....12/2003
FRU part number.....59P4865
FRU serial number.....13CX0DV
FRU type.....CARD
FRU vendor.....IBM
FRU date of manufacture.....12/2003
FRU part number.....59P4866
FRU serial number.....1R0433CX0DT
FRU type.....Power
FRU vendor.....IBM
FRU date of manufacture.....12/2003
FRU part number.....14J0665
FRU serial number.....1R0453CX0DP
FRU type.....Power
FRU vendor.....IBM
FRU date of manufacture.....12/2003
FRU part number.....14J0665
FRU serial number.....1R0453CX0DN
FRU type.....CARD
FRU vendor.....IBM
FRU date of manufacture.....12/2003
FRU part number.....59P4869
FRU serial number.....1R0443CX0DR
Channel.....2
SCSI ID.....15
Enclosure ID.....0
Enclosure status.....Okay
Fan 1 status.....Okay
Fan 2 status.....Okay
Power supply 1 status.....Okay
Power supply 2 status.....Okay
Temperature status.....Normal

```

End of the configuration information for controller 1

Controller event logs:

ServeRAID device event log for controller controller 1

Channel	SCSI ID	Parity_Event	Soft_Event	PFA	Hard_Event	Misc
1	0	0	No 0	0		
1	1	0	No 0	0		
1	2	0	No 0	0		
1	3	0	No 0	0		
1	4	0	No 0	0		
1	5	0	No 0	0		
1	6	0	No 0	0		
1	7	0	No 0	0		
1	8	0	No 0	0		
1	9	0	No 0	0		
1	10	0	No 0	0		
1	11	0	No 0	0		
1	12	0	No 0	0		
1	13	0	No 0	0		
1	14	0	No 0	0		
1	15	0	No 0	0		
2	0	0	No 0	0		
2	1	0	No 0	0		
2	2	0	No 0	0		
2	3	0	No 0	0		
2	4	0	No 0	0		
2	5	0	No 0	0		
2	6	0	No 0	0		

2	7	0	0	No 0	0
2	8	0	0	No 0	0
2	9	0	0	No 0	0
2	10	0	0	No 0	0
2	11	0	0	No 0	0
2	12	0	0	No 0	0
2	13	0	0	No 0	0
2	14	0	0	No 0	0
2	15	0	0	No 0	0

ServeRAID soft event log for controller controller 1 (0 entries):

ServeRAID hard event log for controller controller 1 (0 entries):

ServeRAID defunct drive event log for controller controller 1 (0 entries):

Date and time	Serial number
Correlation ID	Failure code:Description

ServeRAID bad stripe count per logical drive

```

LD1: 0x00000000
LD2: 0x00000000
LD3: 0x00000000
LD4: 0x00000000
LD5: 0x00000000
LD6: 0x00000000
LD7: 0x00000000
LD8: 0x00000000

```

September 6, 2005 3:02:02 PM EDT

Configuration summary

```

Server name.....ibmserv4
ServeRAID Manager agent.....6.10.26 (1253)
ServeRAID Manager console.....6.10.26 (1253)
Number of controllers.....2
Operating system.....Windows 2003

```

Configuration information for controller 2

```

Controller type.....ServeRAID-6M
SCSI backend type.....AIC-7902
SCSI backend revision.....16
Controller FRU.....02R0985
Battery FRU.....02R0986
Serial number.....00B772BF
Part number.....32P0033
Physical slot.....6
BIOS version.....7.10.18
Firmware version.....7.10.18
Device driver version.....7.10.53
Battery-backup cache.....Installed
Battery temperature.....Normal
Battery charge level.....100 %
Battery-backup cache size.....128 MB
Read-ahead cache mode.....Adaptive
Stripe-unit size.....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)... 1/0 2/0  
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..... 3HW1HDZC  
Firmware level..... B85E  
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..... 3HW14LVC  
Firmware level..... B85B  
Channel..... 2  
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..... 3HW1HLC9  
Firmware level..... B85E  
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..... 3HW1HLD4  
Firmware level..... B85D  
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..... 3HW1HLP5  
Firmware level..... B85E  
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.....3HW1HFPM  
Firmware level.....B85D  
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.....3HW1HHVT  
Firmware level.....B85E  
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.....3HW1GYFZ  
Firmware level.....B85D  
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.....3HW1HFE0  
Firmware level.....B85E  
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.....3HW1HWKH  
Firmware level.....B85D  
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.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW1HXXW  
Firmware level.....B85E  
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.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW1HMM1  
Firmware level.....B85D  
Channel.....2  
SCSI ID.....5  
Size.....70006 MB  
State.....Online  
Array letter.....F  
PFA error.....No

Physical drives in array G

-----  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW1CB1Z  
Firmware level.....B85E  
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.....3HW1HFQJ  
Firmware level.....B85D  
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.....3HW1HMEH

Firmware level.....B85D  
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.....ST373307  
FRU part number.....32P0730  
Serial number.....3HZ1SLVE  
Firmware level.....B25E  
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.....08/26/2005  
Write-cache mode.....Write through  
Merge-group number.....207  
Merge-group state.....Non-shared

SCSI channel 1

-----  
Number of drives.....8  
SCSI transfer speed.....Optimal  
SCSI initiator ID.....7

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW1HDZC  
Firmware level.....B85E  
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.....3HW1HLC9  
Firmware level.....B85E  
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.....3HW1HLP5  
Firmware level.....B85E  
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.....3HW1HHVT  
Firmware level.....B85E  
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.....3HW1HFE0  
Firmware level.....B85E  
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.....3HW1HXXW  
Firmware level.....B85E  
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.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW1CB1Z  
Firmware level.....B85E  
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.....3HW1HMEH  
 Firmware level.....B85D  
 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.....23B1510  
 Firmware level.....D110  
 FRU type.....MIDPLANE  
 FRU vendor.....IBM  
 FRU date of manufacture.....12/2003  
 FRU part number.....59P4865  
 FRU serial number.....13CX036  
 FRU type.....CARD  
 FRU vendor.....IBM  
 FRU date of manufacture.....12/2003  
 FRU part number.....59P4866  
 FRU serial number.....1R0433CX035  
 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.....11/2003  
 FRU part number.....55P3200  
 FRU serial number.....1R0453BF07M  
 FRU type.....Power  
 FRU vendor.....IBM  
 FRU date of manufacture.....12/2003  
 FRU part number.....14J0665  
 FRU serial number.....1R0453CP0T9  
 FRU type.....CARD  
 FRU vendor.....IBM  
 FRU date of manufacture.....12/2003  
 FRU part number.....59P4869  
 FRU serial number.....1R0443CX033  
 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.....Optimal  
 SCSI initiator ID.....7  
  
 Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST373453  
 FRU part number.....32P0737  
 Serial number.....3HW14LVC  
 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.....3HW1HLD4  
 Firmware level.....B85D  
 Channel.....2  
 SCSI ID.....1  
 Size.....70006 MB  
 State.....Online  
 Array letter.....B  
 PFA error.....No  
  
 Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST373453  
 FRU part number.....32P0737  
 Serial number.....3HW1HFPM  
 Firmware level.....B85D  
 Channel.....2  
 SCSI ID.....2  
 Size.....70006 MB  
 State.....Online  
 Array letter.....C  
 PFA error.....No  
  
 Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST373453  
 FRU part number.....32P0737  
 Serial number.....3HW1GYFZ  
 Firmware level.....B85D  
 Channel.....2  
 SCSI ID.....3  
 Size.....70006 MB  
 State.....Online  
 Array letter.....D  
 PFA error.....No  
  
 Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST373453  
 FRU part number.....32P0737  
 Serial number.....3HW1HWKH  
 Firmware level.....B85D  
 Channel.....2  
 SCSI ID.....4  
 Size.....70006 MB  
 State.....Online  
 Array letter.....E  
 PFA error.....No  
  
 Type.....Hard disk drive  
 Vendor.....IBM-ESXS  
 Product or model number.....ST373453  
 FRU part number.....32P0737  
 Serial number.....3HW1HMM1  
 Firmware level.....B85D  
 Channel.....2  
 SCSI ID.....5  
 Size.....70006 MB  
 State.....Online

Array letter.....F  
PFA error.....No  
  
Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373453  
FRU part number.....32P0737  
Serial number.....3HW1HFQJ  
Firmware level.....B85D  
Channel.....2  
SCSI ID.....6  
Size.....70006 MB  
State.....Online  
Array letter.....G  
PFA error.....No

Type.....Hard disk drive  
Vendor.....IBM-ESXS  
Product or model number.....ST373307  
FRU part number.....32P0730  
Serial number.....3HZ1SLVE  
Firmware level.....B25E  
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.....23B1428  
Firmware level.....D110  
FRU type.....MIDPLANE  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4865  
FRU serial number.....13CP0TE  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4866  
FRU serial number.....1R0433CP0TC  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....14J0665  
FRU serial number.....1R0453CP0TA  
FRU type.....Power  
FRU vendor.....IBM  
FRU date of manufacture.....12/2004  
FRU part number.....14J0665  
FRU serial number.....1R1454CD03X  
FRU type.....CARD  
FRU vendor.....IBM  
FRU date of manufacture.....12/2003  
FRU part number.....59P4869  
FRU serial number.....1R0443CP0TB  
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 2

Controller event logs:

ServeRAID device event log for controller controller 2

Channel	SCSI ID	Parity_Event	Soft_Event	PFA	Hard_Event	Misc
1	0	0	No 0	0		
1	1	0	No 0	0		
1	2	0	No 0	0		
1	3	0	No 0	0		
1	4	0	No 0	0		
1	5	0	No 0	0		
1	6	0	No 0	0		
1	7	0	No 0	0		
1	8	0	No 0	0		
1	9	0	No 0	0		
1	10	0	No 0	0		
1	11	0	No 0	0		
1	12	0	No 0	0		
1	13	0	No 0	0		
1	14	0	No 0	0		
1	15	0	No 0	0		
2	0	0	No 0	0		
2	1	0	No 0	0		
2	2	0	No 0	0		
2	3	0	No 0	0		
2	4	0	No 0	0		
2	5	0	No 0	0		
2	6	0	No 0	0		
2	7	0	No 0	0		
2	8	0	No 0	0		
2	9	0	No 0	0		
2	10	0	No 0	0		
2	11	0	No 0	0		
2	12	0	No 0	0		
2	13	0	No 0	0		
2	14	0	No 0	0		
2	15	0	No 0	0		

ServeRAID soft event log for controller controller 2 (0 entries):

ServeRAID hard event log for controller controller 2 (0 entries):

ServeRAID defunct drive event log for controller controller 2 (0 entries):

Date and time	Serial number
Correlation ID	Failure code:Description

ServeRAID bad stripe count per logical drive

LD1: 0x00000000  
LD2: 0x00000000  
LD3: 0x00000000  
LD4: 0x00000000  
LD5: 0x00000000  
LD6: 0x00000000  
LD7: 0x00000000  
LD8: 0x00000000



## DS4500 Disk Subsystem Configuration

PROFILE FOR STORAGE SUBSYSTEM: Flute2\_900 (9/6/05 2:17:31 PM)

### SUMMARY-----

Number of controllers: 2  
Number of arrays: 8  
Total number of logical drives (includes an access logical drive): 9 of 2048 used  
Number of standard logical drives: 8  
Number of access logical drives: 1  
Number of drives: 112  
Supported drive types: Fibre (112)  
Total hot spare drives: 0  
Standby: 0  
In use: 0  
Access logical drive: None mapped  
Default host type: Windows 2000/Server 2003 Non-Clustered (Host type index 2)  
Current configuration  
Firmware version: 06.12.03.00  
NVS RAM version: N1742F900R912V06  
Pending configuration  
Staged firmware download supported?: Yes  
Firmware version: None  
NVS RAM version: None  
Transferred on: None  
NVS RAM configured for batteries?: Yes  
Start cache flushing at (in percentage): 8  
Stop cache flushing at (in percentage): 8  
Cache block size (in KB): 16  
Media scan frequency (in days): Disabled  
Failover alert delay (in minutes): 5  
Feature enable identifier: 3936323531003936323537003D786B6B  
Storage Subsystem worldwide name (ID): 600A0B8000135CC40000000041DD89D8

### CONTROLLERS-----

Number of controllers: 2

#### Controller in Slot A

Status: Online

##### Current configuration

Firmware version: 06.12.03.00  
Appware version: 06.12.03.00  
Bootware version: 06.10.04.00  
NVS RAM version: N1742F900R912V06

##### Pending configuration

Firmware version: None  
Appware version: None  
Bootware version: None  
NVS RAM version: None  
Transferred on: None

Board ID: 5884

Product ID: 1742-900

Product revision: 0520

Serial number: 1T40562074

Date of manufacture: February 10, 2004

Cache/processor size (MB): 1024/128

Date/Time: Tue Sep 06 14:16:42 EDT 2005

Associated Logical Drives (\* = Preferred Owner):

flute2\_lun1\*, flute2\_lun2\*, flute2\_lun3\*, flute2\_lun4\*

Ethernet port: 1

MAC address: 00:a0:b8:13:5c:c4

Host name: Fast2\_900A  
Network configuration: Static  
IP address: 192.168.128.210  
Subnet mask: 255.255.255.0  
Gateway: 0.0.0.0  
Remote login: Disabled

#### Drive interface: Fibre

Channel: 1  
Current ID: 123/0x4  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Data rate control: Switch  
Link status: Up

#### Drive interface: Fibre

Channel: 2  
Current ID: 123/0x4  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Data rate control: Switch  
Link status: Up

#### Drive interface: Fibre

Channel: 3  
Current ID: 125/0x1  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Data rate control: Switch  
Link status: Up

#### Drive interface: Fibre

Channel: 4  
Current ID: 125/0x1  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Data rate control: Switch  
Link status: Up

#### Host interface: Fibre

Port: 1  
Current ID: 0/0xEF  
Preferred ID: 0/0xEF  
NL-Port ID: 0x0000EF  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Data rate control: Switch  
Link status: Up  
Topology: Arbitrated Loop - Private  
World-wide port name: 20:02:00:a0:b8:13:5c:c5  
World-wide node name: 20:02:00:a0:b8:13:5c:c4  
Part type: HPFC-5400 revision 6

#### Host interface: Fibre

Port: 2  
Current ID: Not applicable/0xFFFFFFFF  
Preferred ID: 1/0xE8  
NL-Port ID: 0x000000  
Maximum data rate: 2 Gbps  
Current data rate: 1 Gbps  
Data rate control: Switch  
Link status: Down  
Topology: Not available  
World-wide port name: 20:02:00:a0:b8:13:5c:c6  
World-wide node name: 20:02:00:a0:b8:13:5c:c4  
Part type: HPFC-5400 revision 6

#### Controller in Slot B

Status: Online

##### Current configuration

Firmware version: 06.12.03.00  
Appware version: 06.12.03.00  
Bootware version: 06.10.04.00

NVSRAM version: N1742F900R912V06  
 Pending configuration  
 Firmware version: None  
 Appware version: None  
 Bootware version: None  
 NVSRAM version: None  
 Transferred on: None  
 Board ID: 5884  
 Product ID: 1742-900  
 Product revision: 0520  
 Serial number: 1T40561980  
 Date of manufacture: February 10, 2004  
 Cache/processor size (MB): 1024/128  
 Date/Time: Tue Sep 06 14:16:45 EDT 2005  
 Associated Logical Drives (\* = Preferred Owner):  
 flute2\_lun5\*, flute2\_lun6\*, flute2\_lun7\*, flute2\_lun8\*  
 Ethernet port: 1  
 MAC address: 00:a0:b8:13:5b:e3  
 Host name: Fast2\_900B  
 Network configuration: Static  
 IP address: 192.168.128.211  
 Subnet mask: 255.255.255.0  
 Gateway: 0.0.0.0  
 Remote login: Disabled

Drive interface: Fibre  
 Channel: 1  
 Current ID: 124/0x2  
 Maximum data rate: 2 Gbps  
 Current data rate: 2 Gbps  
 Data rate control: Switch  
 Link status: Up

Drive interface: Fibre  
 Channel: 2  
 Current ID: 124/0x2  
 Maximum data rate: 2 Gbps  
 Current data rate: 2 Gbps  
 Data rate control: Switch  
 Link status: Up

Drive interface: Fibre  
 Channel: 3  
 Current ID: 124/0x2  
 Maximum data rate: 2 Gbps  
 Current data rate: 2 Gbps  
 Data rate control: Switch  
 Link status: Up

Drive interface: Fibre  
 Channel: 4  
 Current ID: 124/0x2  
 Maximum data rate: 2 Gbps  
 Current data rate: 2 Gbps  
 Data rate control: Switch  
 Link status: Up

Host interface: Fibre  
 Port: 1  
 Current ID: 2/0xE4  
 Preferred ID: 2/0xE4  
 NL-Port ID: 0x0000E4  
 Maximum data rate: 2 Gbps  
 Current data rate: 2 Gbps  
 Data rate control: Switch  
 Link status: Up  
 Topology: Arbitrated Loop - Private  
 World-wide port name: 20:03:00:a0:b8:13:5c:c5  
 World-wide node name: 20:03:00:a0:b8:13:5c:c4  
 Part type: HPFC-5400 revision 6

Host interface: Fibre  
 Port: 2

Current ID: Not applicable/0xFFFFFFFF  
 Preferred ID: 3/0xE2  
 NL-Port ID: 0x000000  
 Maximum data rate: 2 Gbps  
 Current data rate: 1 Gbps  
 Data rate control: Switch  
 Link status: Down  
 Topology: Not available  
 World-wide port name: 20:03:00:a0:b8:13:5c:c6  
 World-wide node name: 20:03:00:a0:b8:13:5c:c4  
 Part type: HPFC-5400 revision 6

ARRAYS-----

Number of arrays: 8

Array 1 (RAID 0)  
 Status: Online  
 Drive type: Fibre Channel  
 Enclosure loss protection: No  
 Current owner: Controller in slot A  
 Associated logical drives and free capacities:  
 flute2\_lun1 (467.619 GB)

Associated drives (in piece order):

Drive at Enclosure 20, Slot 1  
 Drive at Enclosure 20, Slot 2  
 Drive at Enclosure 20, Slot 3  
 Drive at Enclosure 20, Slot 4  
 Drive at Enclosure 20, Slot 5  
 Drive at Enclosure 20, Slot 6  
 Drive at Enclosure 20, Slot 7  
 Drive at Enclosure 20, Slot 8  
 Drive at Enclosure 20, Slot 9  
 Drive at Enclosure 20, Slot 10  
 Drive at Enclosure 20, Slot 11  
 Drive at Enclosure 20, Slot 12  
 Drive at Enclosure 20, Slot 13  
 Drive at Enclosure 20, Slot 14

Array 2 (RAID 0)  
 Status: Online  
 Drive type: Fibre Channel  
 Enclosure loss protection: No  
 Current owner: Controller in slot A  
 Associated logical drives and free capacities:  
 flute2\_lun2 (467.619 GB)

Associated drives (in piece order):

Drive at Enclosure 21, Slot 1  
 Drive at Enclosure 21, Slot 2  
 Drive at Enclosure 21, Slot 3  
 Drive at Enclosure 21, Slot 4  
 Drive at Enclosure 21, Slot 5  
 Drive at Enclosure 21, Slot 6  
 Drive at Enclosure 21, Slot 7  
 Drive at Enclosure 21, Slot 8  
 Drive at Enclosure 21, Slot 9  
 Drive at Enclosure 21, Slot 10  
 Drive at Enclosure 21, Slot 11  
 Drive at Enclosure 21, Slot 12  
 Drive at Enclosure 21, Slot 13  
 Drive at Enclosure 21, Slot 14

Array 3 (RAID 0)  
 Status: Online  
 Drive type: Fibre Channel  
 Enclosure loss protection: No  
 Current owner: Controller in slot A  
 Associated logical drives and free capacities:  
 flute2\_lun3 (467.619 GB)

Associated drives (in piece order):

Drive at Enclosure 22, Slot 1

Drive at Enclosure 22, Slot 2  
 Drive at Enclosure 22, Slot 3  
 Drive at Enclosure 22, Slot 4  
 Drive at Enclosure 22, Slot 5  
 Drive at Enclosure 22, Slot 6  
 Drive at Enclosure 22, Slot 7  
 Drive at Enclosure 22, Slot 8  
 Drive at Enclosure 22, Slot 9  
 Drive at Enclosure 22, Slot 10  
 Drive at Enclosure 22, Slot 11  
 Drive at Enclosure 22, Slot 12  
 Drive at Enclosure 22, Slot 13  
 Drive at Enclosure 22, Slot 14

Array 4 (RAID 0)

Status: Online  
 Drive type: Fibre Channel  
 Enclosure loss protection: No  
 Current owner: Controller in slot A  
 Associated logical drives and free capacities:  
 flute2\_lun4 (467.619 GB)

Associated drives (in piece order):

Drive at Enclosure 23, Slot 1  
 Drive at Enclosure 23, Slot 2  
 Drive at Enclosure 23, Slot 3  
 Drive at Enclosure 23, Slot 4  
 Drive at Enclosure 23, Slot 5  
 Drive at Enclosure 23, Slot 6  
 Drive at Enclosure 23, Slot 7  
 Drive at Enclosure 23, Slot 8  
 Drive at Enclosure 23, Slot 9  
 Drive at Enclosure 23, Slot 10  
 Drive at Enclosure 23, Slot 11  
 Drive at Enclosure 23, Slot 12  
 Drive at Enclosure 23, Slot 13  
 Drive at Enclosure 23, Slot 14

Array 5 (RAID 0)

Status: Online  
 Drive type: Fibre Channel  
 Enclosure loss protection: No  
 Current owner: Controller in slot B  
 Associated logical drives and free capacities:  
 flute2\_lun5 (467.619 GB)

Associated drives (in piece order):

Drive at Enclosure 24, Slot 1  
 Drive at Enclosure 24, Slot 2  
 Drive at Enclosure 24, Slot 3  
 Drive at Enclosure 24, Slot 4  
 Drive at Enclosure 24, Slot 5  
 Drive at Enclosure 24, Slot 6  
 Drive at Enclosure 24, Slot 7  
 Drive at Enclosure 24, Slot 8  
 Drive at Enclosure 24, Slot 9  
 Drive at Enclosure 24, Slot 10  
 Drive at Enclosure 24, Slot 11  
 Drive at Enclosure 24, Slot 12  
 Drive at Enclosure 24, Slot 13  
 Drive at Enclosure 24, Slot 14

Array 6 (RAID 0)

Status: Online  
 Drive type: Fibre Channel  
 Enclosure loss protection: No  
 Current owner: Controller in slot B  
 Associated logical drives and free capacities:  
 flute2\_lun6 (467.619 GB)

Associated drives (in piece order):

Drive at Enclosure 25, Slot 1  
 Drive at Enclosure 25, Slot 2  
 Drive at Enclosure 25, Slot 3

Drive at Enclosure 25, Slot 4  
 Drive at Enclosure 25, Slot 5  
 Drive at Enclosure 25, Slot 6  
 Drive at Enclosure 25, Slot 7  
 Drive at Enclosure 25, Slot 8  
 Drive at Enclosure 25, Slot 9  
 Drive at Enclosure 25, Slot 10  
 Drive at Enclosure 25, Slot 11  
 Drive at Enclosure 25, Slot 12  
 Drive at Enclosure 25, Slot 13  
 Drive at Enclosure 25, Slot 14

Array 7 (RAID 0)

Status: Online  
 Drive type: Fibre Channel  
 Enclosure loss protection: No  
 Current owner: Controller in slot B  
 Associated logical drives and free capacities:  
 flute2\_lun7 (467.619 GB)

Associated drives (in piece order):

Drive at Enclosure 26, Slot 1  
 Drive at Enclosure 26, Slot 2  
 Drive at Enclosure 26, Slot 3  
 Drive at Enclosure 26, Slot 4  
 Drive at Enclosure 26, Slot 5  
 Drive at Enclosure 26, Slot 6  
 Drive at Enclosure 26, Slot 7  
 Drive at Enclosure 26, Slot 8  
 Drive at Enclosure 26, Slot 9  
 Drive at Enclosure 26, Slot 10  
 Drive at Enclosure 26, Slot 11  
 Drive at Enclosure 26, Slot 12  
 Drive at Enclosure 26, Slot 13  
 Drive at Enclosure 26, Slot 14

Array 8 (RAID 0)

Status: Online  
 Drive type: Fibre Channel  
 Enclosure loss protection: No  
 Current owner: Controller in slot B  
 Associated logical drives and free capacities:  
 flute2\_lun8 (467.619 GB)

Associated drives (in piece order):

Drive at Enclosure 27, Slot 1  
 Drive at Enclosure 27, Slot 2  
 Drive at Enclosure 27, Slot 3  
 Drive at Enclosure 27, Slot 4  
 Drive at Enclosure 27, Slot 5  
 Drive at Enclosure 27, Slot 6  
 Drive at Enclosure 27, Slot 7  
 Drive at Enclosure 27, Slot 8  
 Drive at Enclosure 27, Slot 9  
 Drive at Enclosure 27, Slot 10  
 Drive at Enclosure 27, Slot 11  
 Drive at Enclosure 27, Slot 12  
 Drive at Enclosure 27, Slot 13  
 Drive at Enclosure 27, Slot 14

STANDARD LOGICAL DRIVES-----

SUMMARY

Number of standard logical drives: 8  
 See other Logical Drives sub-tabs for premium feature information.

NAME	STATUS	CAPACITY	RAID LEVEL	ARRAY
flute2_lun1	Optimal	467.619 GB	0	1
flute2_lun2	Optimal	467.619 GB	0	2
flute2_lun3	Optimal	467.619 GB	0	3
flute2_lun4	Optimal	467.619 GB	0	4
flute2_lun5	Optimal	467.619 GB	0	5

flute2\_lun6 Optimal 467.619 GB 0 6  
flute2\_lun7 Optimal 467.619 GB 0 7  
flute2\_lun8 Optimal 467.619 GB 0 8

#### DETAILS

Logical Drive name: flute2\_lun1  
Logical Drive ID: 60:0a:0b:80:00:13:5c:c4:00:00:20:42:80:b1:e0  
Subsystem ID (SSID): 0  
Status: Optimal  
Drive type: Fibre Channel  
Enclosure loss protection: No  
Preferred owner: Controller in slot A  
Current owner: Controller in slot A  
Capacity: 467.619 GB  
RAID level: 0  
Segment size: 64 KB  
Modification priority: High  
Associated array: 1  
Read cache: Enabled  
Write cache: Disabled  
Write cache without batteries: Disabled  
Write cache with mirroring: Disabled  
Flush write cache after (in seconds): 10.00  
Cache read ahead multiplier: 1  
Enable background media scan: Disabled  
Media scan with redundancy check: Disabled

Logical Drive name: flute2\_lun2  
Logical Drive ID: 60:0a:0b:80:00:13:5c:c4:00:00:16:41:de:87:c8  
Subsystem ID (SSID): 1  
Status: Optimal  
Drive type: Fibre Channel  
Enclosure loss protection: No  
Preferred owner: Controller in slot A  
Current owner: Controller in slot A  
Capacity: 467.619 GB  
RAID level: 0  
Segment size: 64 KB  
Modification priority: High  
Associated array: 2  
Read cache: Enabled  
Write cache: Disabled  
Write cache without batteries: Disabled  
Write cache with mirroring: Disabled  
Flush write cache after (in seconds): 10.00  
Cache read ahead multiplier: 1  
Enable background media scan: Enabled  
Media scan with redundancy check: Disabled

Logical Drive name: flute2\_lun3  
Logical Drive ID: 60:0a:0b:80:00:13:5c:c4:00:00:18:41:de:87:ec  
Subsystem ID (SSID): 2  
Status: Optimal  
Drive type: Fibre Channel  
Enclosure loss protection: No  
Preferred owner: Controller in slot A  
Current owner: Controller in slot A  
Capacity: 467.619 GB  
RAID level: 0  
Segment size: 64 KB  
Modification priority: High  
Associated array: 3  
Read cache: Enabled  
Write cache: Disabled  
Write cache without batteries: Disabled  
Write cache with mirroring: Disabled  
Flush write cache after (in seconds): 10.00  
Cache read ahead multiplier: 1

Enable background media scan: Enabled  
Media scan with redundancy check: Disabled

Logical Drive name: flute2\_lun4  
Logical Drive ID: 60:0a:0b:80:00:13:5c:c4:00:00:1a:41:de:88:0c  
Subsystem ID (SSID): 3  
Status: Optimal  
Drive type: Fibre Channel  
Enclosure loss protection: No  
Preferred owner: Controller in slot A  
Current owner: Controller in slot A  
Capacity: 467.619 GB  
RAID level: 0  
Segment size: 64 KB  
Modification priority: High  
Associated array: 4  
Read cache: Enabled  
Write cache: Disabled  
Write cache without batteries: Disabled  
Write cache with mirroring: Disabled  
Flush write cache after (in seconds): 10.00  
Cache read ahead multiplier: 1  
Enable background media scan: Enabled  
Media scan with redundancy check: Disabled

Logical Drive name: flute2\_lun5  
Logical Drive ID: 60:0a:0b:80:00:13:5b:e3:00:00:0c:41:de:88:dd  
Subsystem ID (SSID): 4  
Status: Optimal  
Drive type: Fibre Channel  
Enclosure loss protection: No  
Preferred owner: Controller in slot B  
Current owner: Controller in slot B  
Capacity: 467.619 GB  
RAID level: 0  
Segment size: 64 KB  
Modification priority: High  
Associated array: 5  
Read cache: Enabled  
Write cache: Disabled  
Write cache without batteries: Disabled  
Write cache with mirroring: Disabled  
Flush write cache after (in seconds): 10.00  
Cache read ahead multiplier: 1  
Enable background media scan: Enabled  
Media scan with redundancy check: Disabled

Logical Drive name: flute2\_lun6  
Logical Drive ID: 60:0a:0b:80:00:13:5b:e3:00:00:0e:41:de:89:19  
Subsystem ID (SSID): 5  
Status: Optimal  
Drive type: Fibre Channel  
Enclosure loss protection: No  
Preferred owner: Controller in slot B  
Current owner: Controller in slot B  
Capacity: 467.619 GB  
RAID level: 0  
Segment size: 64 KB  
Modification priority: High  
Associated array: 6  
Read cache: Enabled  
Write cache: Disabled  
Write cache without batteries: Disabled  
Write cache with mirroring: Disabled  
Flush write cache after (in seconds): 10.00  
Cache read ahead multiplier: 1  
Enable background media scan: Enabled  
Media scan with redundancy check: Disabled

Logical Drive name: flute2\_lun7  
 Logical Drive ID: 60:0a:0b:80:00:13:5b:e3:00:00:00:10:41:de:89:37  
 Subsystem ID (SSID): 6  
 Status: Optimal  
 Drive type: Fibre Channel  
 Enclosure loss protection: No  
 Preferred owner: Controller in slot B  
 Current owner: Controller in slot B  
 Capacity: 467.619 GB  
 RAID level: 0  
 Segment size: 64 KB  
 Modification priority: High  
 Associated array: 7  
 Read cache: Enabled  
 Write cache: Disabled  
 Write cache without batteries: Disabled  
 Write cache with mirroring: Disabled  
 Flush write cache after (in seconds): 10.00  
 Cache read ahead multiplier: 1  
 Enable background media scan: Enabled  
 Media scan with redundancy check: Disabled

Logical Drive name: flute2\_lun8  
 Logical Drive ID: 60:0a:0b:80:00:13:5b:e3:00:00:00:12:41:de:89:59  
 Subsystem ID (SSID): 7  
 Status: Optimal  
 Drive type: Fibre Channel  
 Enclosure loss protection: No  
 Preferred owner: Controller in slot B  
 Current owner: Controller in slot B  
 Capacity: 467.619 GB  
 RAID level: 0  
 Segment size: 64 KB  
 Modification priority: High  
 Associated array: 8  
 Read cache: Enabled  
 Write cache: Disabled  
 Write cache without batteries: Disabled  
 Write cache with mirroring: Disabled  
 Flush write cache after (in seconds): 10.00  
 Cache read ahead multiplier: 1  
 Enable background media scan: Enabled  
 Media scan with redundancy check: Disabled

MISSING LOGICAL DRIVES-----  
 Number of missing logical drives: 0

DRIVES-----

SUMMARY  
 Number of drives: 112  
 Supported drive types: Fibre (112)

BASIC:

TRAY, SLOT	STATUS	CAPACITY	CURRENT DATA RATE
PRODUCT ID	FIRMWARE	VERSION	
20, 1	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
20, 2	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
20, 3	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
20, 4	Optimal	33.902 GB 2 Gbps	ST336753FC F B954

20, 5	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
20, 6	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
20, 7	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
20, 8	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
20, 9	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
20, 10	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
20, 11	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
20, 12	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
20, 13	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
20, 14	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
21, 1	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
21, 2	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
21, 3	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
21, 4	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
21, 5	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
21, 6	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
21, 7	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
21, 8	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
21, 9	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
21, 10	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
21, 11	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
21, 12	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
21, 13	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
21, 14	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
22, 1	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
22, 2	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
22, 3	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
22, 4	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
22, 5	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
22, 6	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
22, 7	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
22, 8	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
22, 9	Optimal	33.902 GB 2 Gbps	ST336753FC F B954
22, 10	Optimal	33.902 GB 2 Gbps	ST336753FC F B954



27, 9	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954
27, 10	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954
27, 11	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954
27, 12	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954
27, 13	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954
27, 14	Optimal	33.902 GB	2 Gbps	ST336753FC	F	B954

DRIVE CHANNELS:

TRAY, SLOT PREFERRED CHANNEL REDUNDANT CHANNEL

20, 1	4	3
20, 2	3	4
20, 3	4	3
20, 4	3	4
20, 5	4	3
20, 6	3	4
20, 7	4	3
20, 8	3	4
20, 9	4	3
20, 10	3	4
20, 11	4	3
20, 12	3	4
20, 13	4	3
20, 14	3	4
21, 1	4	3
21, 2	3	4
21, 3	4	3
21, 4	3	4
21, 5	4	3
21, 6	3	4
21, 7	4	3
21, 8	3	4
21, 9	4	3
21, 10	3	4
21, 11	4	3
21, 12	3	4
21, 13	4	3
21, 14	3	4
22, 1	4	3
22, 2	3	4
22, 3	4	3
22, 4	3	4
22, 5	4	3
22, 6	3	4
22, 7	4	3
22, 8	3	4
22, 9	4	3
22, 10	3	4
22, 11	4	3
22, 12	3	4
22, 13	4	3
22, 14	3	4
23, 1	4	3
23, 2	3	4
23, 3	4	3
23, 4	3	4
23, 5	4	3
23, 6	3	4
23, 7	4	3
23, 8	3	4
23, 9	4	3
23, 10	3	4

23, 11	4	3
23, 12	3	4
23, 13	4	3
23, 14	3	4
24, 1	2	1
24, 2	1	2
24, 3	2	1
24, 4	1	2
24, 5	2	1
24, 6	1	2
24, 7	2	1
24, 8	1	2
24, 9	2	1
24, 10	1	2
24, 11	2	1
24, 12	1	2
24, 13	2	1
24, 14	1	2
25, 1	2	1
25, 2	1	2
25, 3	2	1
25, 4	1	2
25, 5	2	1
25, 6	1	2
25, 7	2	1
25, 8	1	2
25, 9	2	1
25, 10	1	2
25, 11	2	1
25, 12	1	2
25, 13	2	1
25, 14	1	2
26, 1	2	1
26, 2	1	2
26, 3	2	1
26, 4	1	2
26, 5	2	1
26, 6	1	2
26, 7	2	1
26, 8	1	2
26, 9	2	1
26, 10	1	2
26, 11	2	1
26, 12	1	2
26, 13	2	1
26, 14	1	2
27, 1	2	1
27, 2	1	2
27, 3	2	1
27, 4	1	2
27, 5	2	1
27, 6	1	2
27, 7	2	1
27, 8	1	2
27, 9	2	1
27, 10	1	2
27, 11	2	1
27, 12	1	2
27, 13	2	1
27, 14	1	2

HOT SPARE COVERAGE:

The following arrays are not protected: 6, 1, 3, 4, 7, 8, 2, 5

Total hot spare drives: 0

Standby: 0

In use: 0

## DETAILS

### Drive at Enclosure 20, Slot 1

Drive port: 1, Channel: 4, ID: 0/0xEF  
Drive port: 2, Channel: 3, ID: 0/0xEF  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HM51000073392DTW  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e8:5b  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 1

### Drive at Enclosure 20, Slot 2

Drive port: 1, Channel: 3, ID: 1/0xE8  
Drive port: 2, Channel: 4, ID: 1/0xE8  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0K79200007339TZ0V  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e6:0d  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 1

### Drive at Enclosure 20, Slot 3

Drive port: 1, Channel: 4, ID: 2/0xE4  
Drive port: 2, Channel: 3, ID: 2/0xE4  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX3HJ2C00007527H3ED  
Vendor: IBM-ESXS  
Date of manufacture: January 21, 2005  
World-wide name: 20:00:00:11:c6:63:5f:87  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 1

### Drive at Enclosure 20, Slot 4

Drive port: 1, Channel: 3, ID: 3/0xE2  
Drive port: 2, Channel: 4, ID: 3/0xE2  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954

Serial number: 3HX0HM0B000073405A36  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e8:0a  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 1

### Drive at Enclosure 20, Slot 5

Drive port: 1, Channel: 4, ID: 4/0xE1  
Drive port: 2, Channel: 3, ID: 4/0xE1  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HMC4000073392DYQ  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e2:bc  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 1

### Drive at Enclosure 20, Slot 6

Drive port: 1, Channel: 3, ID: 5/0xE0  
Drive port: 2, Channel: 4, ID: 5/0xE0  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HT550000734058BL  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e7:b8  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 1

### Drive at Enclosure 20, Slot 7

Drive port: 1, Channel: 4, ID: 6/0xDC  
Drive port: 2, Channel: 3, ID: 6/0xDC  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HT250000734058G2  
Vendor: IBM-ESXS  
Date of manufacture: April 4, 2003  
World-wide name: 20:00:00:04:cf:f9:e7:dc  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 1

### Drive at Enclosure 20, Slot 8

Drive port: 1, Channel: 3, ID: 7/0xDA



Drive port: 2, Channel: 4, ID: 7/0xDA  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HNNP000073409KC2  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:db:04  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 1

Drive at Enclosure 20, Slot 9

Drive port: 1, Channel: 4, ID: 80/0x55  
Drive port: 2, Channel: 3, ID: 80/0x55  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HRPB0000734058BX  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e8:04  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 1

Drive at Enclosure 20, Slot 10

Drive port: 1, Channel: 3, ID: 96/0x3A  
Drive port: 2, Channel: 4, ID: 96/0x3A  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HT7500007339TYEX  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e8:46  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 1

Drive at Enclosure 20, Slot 11

Drive port: 1, Channel: 4, ID: 64/0x72  
Drive port: 2, Channel: 3, ID: 64/0x72  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HMSN000073392DXB  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003

World-wide name: 20:00:00:04:cf:f9:e8:58  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 1

Drive at Enclosure 20, Slot 12

Drive port: 1, Channel: 3, ID: 72/0x67  
Drive port: 2, Channel: 4, ID: 72/0x67  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0K6CQ00007339TYB4  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:ea:93  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 1

Drive at Enclosure 20, Slot 13

Drive port: 1, Channel: 4, ID: 88/0x4B  
Drive port: 2, Channel: 3, ID: 88/0x4B  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HT1T000073405A7Z  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e4:a9  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 1

Drive at Enclosure 20, Slot 14

Drive port: 1, Channel: 3, ID: 104/0x2E  
Drive port: 2, Channel: 4, ID: 104/0x2E  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HMFD00007339RG9V  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e4:fd  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 1

Drive at Enclosure 21, Slot 1

Drive port: 1, Channel: 4, ID: 8/0xD9  
Drive port: 2, Channel: 3, ID: 8/0xD9  
Drive path redundancy: OK  
Status: Optimal

Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HMF00007340X558  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e5:a6  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 2

Drive at Enclosure 21, Slot 2  
Drive port: 1, Channel: 3, ID: 9/0xD6  
Drive port: 2, Channel: 4, ID: 9/0xD6  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HT2C000073409KW6  
Vendor: IBM-ESXS  
Date of manufacture: April 4, 2003  
World-wide name: 20:00:00:04:cf:f9:e5:4a  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 2

Drive at Enclosure 21, Slot 3  
Drive port: 1, Channel: 4, ID: 10/0xD5  
Drive port: 2, Channel: 3, ID: 10/0xD5  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HT5600007340X4YT  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e5:57  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 2

Drive at Enclosure 21, Slot 4  
Drive port: 1, Channel: 3, ID: 11/0xD4  
Drive port: 2, Channel: 4, ID: 11/0xD4  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HMF00007340WVGM  
Vendor: IBM-ESXS  
Date of manufacture: April 4, 2003  
World-wide name: 20:00:00:04:cf:f9:e6:c8  
Drive type: Fibre Channel  
Speed: 15015 RPM

Mode: Assigned  
Associated array: 2

Drive at Enclosure 21, Slot 5  
Drive port: 1, Channel: 4, ID: 12/0xD3  
Drive port: 2, Channel: 3, ID: 12/0xD3  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HMAV00007340WVFX  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e6:de  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 2

Drive at Enclosure 21, Slot 6  
Drive port: 1, Channel: 3, ID: 13/0xD2  
Drive port: 2, Channel: 4, ID: 13/0xD2  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HSTJ00007339TY5  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e6:34  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 2

Drive at Enclosure 21, Slot 7  
Drive port: 1, Channel: 4, ID: 14/0xD1  
Drive port: 2, Channel: 3, ID: 14/0xD1  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HRJN0000734058EY  
Vendor: IBM-ESXS  
Date of manufacture: April 4, 2003  
World-wide name: 20:00:00:04:cf:f9:e8:13  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 2

Drive at Enclosure 21, Slot 8  
Drive port: 1, Channel: 3, ID: 15/0xCE  
Drive port: 2, Channel: 4, ID: 15/0xCE  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps

Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0K7K20000734058GD  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e8:0e  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 2

Drive at Enclosure 21, Slot 9  
Drive port: 1, Channel: 4, ID: 81/0x54  
Drive port: 2, Channel: 3, ID: 81/0x54  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0K6VE00007339TYA3  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:eb:0e  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 2

Drive at Enclosure 21, Slot 10  
Drive port: 1, Channel: 3, ID: 97/0x39  
Drive port: 2, Channel: 4, ID: 97/0x39  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HT93000073392DZ2  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e8:5d  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 2

Drive at Enclosure 21, Slot 11  
Drive port: 1, Channel: 4, ID: 65/0x71  
Drive port: 2, Channel: 3, ID: 65/0x71  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HSSP00007339TZ10  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e4:92  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 2

Drive at Enclosure 21, Slot 12  
Drive port: 1, Channel: 3, ID: 73/0x66  
Drive port: 2, Channel: 4, ID: 73/0x66  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HRN00000734058BZ  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e7:ad  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 2

Drive at Enclosure 21, Slot 13  
Drive port: 1, Channel: 4, ID: 89/0x4A  
Drive port: 2, Channel: 3, ID: 89/0x4A  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HT0M00007338WARU  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e3:d3  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 2

Drive at Enclosure 21, Slot 14  
Drive port: 1, Channel: 3, ID: 105/0x2D  
Drive port: 2, Channel: 4, ID: 105/0x2D  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0JCYF000073409K0V  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:db:63  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 2

Drive at Enclosure 22, Slot 1  
Drive port: 1, Channel: 4, ID: 16/0xCD  
Drive port: 2, Channel: 3, ID: 16/0xCD  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HMEZ00007339TYP8

Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e6:71  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 3

Drive at Enclosure 22, Slot 2

Drive port: 1, Channel: 3, ID: 17/0xCC  
Drive port: 2, Channel: 4, ID: 17/0xCC  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0K67N00007340WW1C  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:ff:03:e5  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 3

Drive at Enclosure 22, Slot 3

Drive port: 1, Channel: 4, ID: 18/0xCB  
Drive port: 2, Channel: 3, ID: 18/0xCB  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0K7JP00007339TYP5  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:ff:05:22  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 3

Drive at Enclosure 22, Slot 4

Drive port: 1, Channel: 3, ID: 19/0xCA  
Drive port: 2, Channel: 4, ID: 19/0xCA  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0K1A300007339FG7E  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:ff:03:08  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 3

Drive at Enclosure 22, Slot 5

Drive port: 1, Channel: 4, ID: 20/0xC9  
Drive port: 2, Channel: 3, ID: 20/0xC9

Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HNC2000073409K6Y  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:da:d0  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 3

Drive at Enclosure 22, Slot 6

Drive port: 1, Channel: 3, ID: 21/0xC7  
Drive port: 2, Channel: 4, ID: 21/0xC7  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HLZ4000073409KSK  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:dc:e8  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 3

Drive at Enclosure 22, Slot 7

Drive port: 1, Channel: 4, ID: 22/0xC6  
Drive port: 2, Channel: 3, ID: 22/0xC6  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HCT8000073409KWS  
Vendor: IBM-ESXS  
Date of manufacture: April 4, 2003  
World-wide name: 20:00:00:04:cf:f9:e5:49  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 3

Drive at Enclosure 22, Slot 8

Drive port: 1, Channel: 3, ID: 23/0xC5  
Drive port: 2, Channel: 4, ID: 23/0xC5  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0H0EB00007339TYNH  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e8:28

Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 3

Drive at Enclosure 22, Slot 9

Drive port: 1, Channel: 4, ID: 82/0x53  
Drive port: 2, Channel: 3, ID: 82/0x53  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HRHT0000734058BR  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e7:de  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 3

Drive at Enclosure 22, Slot 10

Drive port: 1, Channel: 3, ID: 98/0x36  
Drive port: 2, Channel: 4, ID: 98/0x36  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0JNTB00007340WVZR  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:ff:03:e4  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 3

Drive at Enclosure 22, Slot 11

Drive port: 1, Channel: 4, ID: 66/0x6E  
Drive port: 2, Channel: 3, ID: 66/0x6E  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HM2S000073409KEW  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:dc:ed  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 3

Drive at Enclosure 22, Slot 12

Drive port: 1, Channel: 3, ID: 74/0x65  
Drive port: 2, Channel: 4, ID: 74/0x65  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB

Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0H0F700007339TYGM  
Vendor: IBM-ESXS  
Date of manufacture: April 4, 2003  
World-wide name: 20:00:00:04:cf:f9:d0:fc  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 3

Drive at Enclosure 22, Slot 13

Drive port: 1, Channel: 4, ID: 90/0x49  
Drive port: 2, Channel: 3, ID: 90/0x49  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HRM30000734058G3  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e8:19  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 3

Drive at Enclosure 22, Slot 14

Drive port: 1, Channel: 3, ID: 106/0x2C  
Drive port: 2, Channel: 4, ID: 106/0x2C  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0K480000073405FZ5  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:fb:78  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 3

Drive at Enclosure 23, Slot 1

Drive port: 1, Channel: 4, ID: 24/0xC3  
Drive port: 2, Channel: 3, ID: 24/0xC3  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HT7M0000734058E3  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e7:90  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned

Associated array: 4

Drive at Enclosure 23, Slot 2

Drive port: 1, Channel: 3, ID: 25/0xBC  
Drive port: 2, Channel: 4, ID: 25/0xBC  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0K89N0000734058CP  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e7:96  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 4

Drive at Enclosure 23, Slot 3

Drive port: 1, Channel: 4, ID: 26/0xBA  
Drive port: 2, Channel: 3, ID: 26/0xBA  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HQEV00007340WVZW  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:ff:03:d7  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 4

Drive at Enclosure 23, Slot 4

Drive port: 1, Channel: 3, ID: 27/0xB9  
Drive port: 2, Channel: 4, ID: 27/0xB9  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HT1C000073393G3J  
Vendor: IBM-ESXS  
Date of manufacture: April 4, 2003  
World-wide name: 20:00:00:04:cf:f9:e4:9b  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 4

Drive at Enclosure 23, Slot 5

Drive port: 1, Channel: 4, ID: 28/0xB6  
Drive port: 2, Channel: 3, ID: 28/0xB6  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F

Firmware version: B954  
Serial number: 3HX0HSZB00007340X4RW  
Vendor: IBM-ESXS  
Date of manufacture: April 4, 2003  
World-wide name: 20:00:00:04:cf:f9:e5:96  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 4

Drive at Enclosure 23, Slot 6

Drive port: 1, Channel: 3, ID: 29/0xB5  
Drive port: 2, Channel: 4, ID: 29/0xB5  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0J6PV000073409KLW  
Vendor: IBM-ESXS  
Date of manufacture: April 4, 2003  
World-wide name: 20:00:00:04:cf:f9:e5:6d  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 4

Drive at Enclosure 23, Slot 7

Drive port: 1, Channel: 4, ID: 30/0xB4  
Drive port: 2, Channel: 3, ID: 30/0xB4  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HT17000073409KWG  
Vendor: IBM-ESXS  
Date of manufacture: April 4, 2003  
World-wide name: 20:00:00:04:cf:f9:e5:69  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 4

Drive at Enclosure 23, Slot 8

Drive port: 1, Channel: 3, ID: 31/0xB3  
Drive port: 2, Channel: 4, ID: 31/0xB3  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HRLF0000734058BQ  
Vendor: IBM-ESXS  
Date of manufacture: April 4, 2003  
World-wide name: 20:00:00:04:cf:f9:e7:f6  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 4

Drive at Enclosure 23, Slot 9

Drive port: 1, Channel: 4, ID: 83/0x52  
Drive port: 2, Channel: 3, ID: 83/0x52  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0K7K500007340WVF4  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e6:e2  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 4

Drive at Enclosure 23, Slot 10

Drive port: 1, Channel: 3, ID: 99/0x35  
Drive port: 2, Channel: 4, ID: 99/0x35  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HM0J000073409K2F  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:dc:d7  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 4

Drive at Enclosure 23, Slot 11

Drive port: 1, Channel: 4, ID: 67/0x6D  
Drive port: 2, Channel: 3, ID: 67/0x6D  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0K1KZ000073393FTN  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:ff:02:fl  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 4

Drive at Enclosure 23, Slot 12

Drive port: 1, Channel: 3, ID: 75/0x63  
Drive port: 2, Channel: 4, ID: 75/0x63  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HSX400007340X5HP  
Vendor: IBM-ESXS

Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e7:54  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 4

Drive at Enclosure 23, Slot 13

Drive port: 1, Channel: 4, ID: 91/0x47  
Drive port: 2, Channel: 3, ID: 91/0x47  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HRGS00007339TYCC  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e6:49  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 4

Drive at Enclosure 23, Slot 14

Drive port: 1, Channel: 3, ID: 107/0x2B  
Drive port: 2, Channel: 4, ID: 107/0x2B  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0JMNR00007340X5J1  
Vendor: IBM-ESXS  
Date of manufacture: April 6, 2003  
World-wide name: 20:00:00:04:cf:ff:0d:43  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 4

Drive at Enclosure 24, Slot 1

Drive port: 1, Channel: 2, ID: 32/0xB2  
Drive port: 2, Channel: 1, ID: 0/0xEF  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0JXZN000073409KB8  
Vendor: IBM-ESXS  
Date of manufacture: April 6, 2003  
World-wide name: 20:00:00:04:cf:ff:0d:50  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 5

Drive at Enclosure 24, Slot 2

Drive port: 1, Channel: 1, ID: 1/0xE8  
Drive port: 2, Channel: 2, ID: 33/0xB1  
Drive path redundancy: OK

Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0K2FX00007339PQ5Q  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:ff:02:80  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 5

Drive at Enclosure 24, Slot 3  
Drive port: 1, Channel: 2, ID: 34/0xAE  
Drive port: 2, Channel: 1, ID: 2/0xE4  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0KCK1000073410HPD  
Vendor: IBM-ESXS  
Date of manufacture: April 6, 2003  
World-wide name: 20:00:00:04:cf:ff:12:ac  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 5

Drive at Enclosure 24, Slot 4  
Drive port: 1, Channel: 1, ID: 3/0xE2  
Drive port: 2, Channel: 2, ID: 35/0xAD  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0JRGG00007339RGE9  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:da:a7  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 5

Drive at Enclosure 24, Slot 5  
Drive port: 1, Channel: 2, ID: 36/0xAC  
Drive port: 2, Channel: 1, ID: 4/0xE1  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0KCLD000073405FW1  
Vendor: IBM-ESXS  
Date of manufacture: April 6, 2003  
World-wide name: 20:00:00:04:cf:ff:0d:61  
Drive type: Fibre Channel

Speed: 15015 RPM  
Mode: Assigned  
Associated array: 5

Drive at Enclosure 24, Slot 6  
Drive port: 1, Channel: 1, ID: 5/0xE0  
Drive port: 2, Channel: 2, ID: 37/0xAB  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0KCLS000073405G61  
Vendor: IBM-ESXS  
Date of manufacture: April 6, 2003  
World-wide name: 20:00:00:04:cf:ff:0d:83  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 5

Drive at Enclosure 24, Slot 7  
Drive port: 1, Channel: 2, ID: 38/0xAA  
Drive port: 2, Channel: 1, ID: 6/0xDC  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0C7QW00007339FS8  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:fc:1e  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 5

Drive at Enclosure 24, Slot 8  
Drive port: 1, Channel: 1, ID: 7/0xDA  
Drive port: 2, Channel: 2, ID: 39/0xA9  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0K5BE00007339TYM4  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:f5:aa  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 5

Drive at Enclosure 24, Slot 9  
Drive port: 1, Channel: 2, ID: 84/0x51  
Drive port: 2, Channel: 1, ID: 8/0xD9  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB



Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0J3HV00007340X5K3  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e6:db  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 5

Drive at Enclosure 24, Slot 10

Drive port: 1, Channel: 1, ID: 9/0xD6  
Drive port: 2, Channel: 2, ID: 100/0x34  
Drive path redundancy: OK

Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps

Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HT2400007339LX80  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e4:05  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 5

Drive at Enclosure 24, Slot 11

Drive port: 1, Channel: 2, ID: 68/0x6C  
Drive port: 2, Channel: 1, ID: 10/0xD5  
Drive path redundancy: OK

Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps

Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HLYF00007340WVG0  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:dd:95  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 5

Drive at Enclosure 24, Slot 12

Drive port: 1, Channel: 1, ID: 11/0xD4  
Drive port: 2, Channel: 2, ID: 76/0xD5  
Drive path redundancy: OK

Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps

Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HSZ6000073392DZJ  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e2:e8  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 5

Drive at Enclosure 24, Slot 13

Drive port: 1, Channel: 2, ID: 92/0x46  
Drive port: 2, Channel: 1, ID: 12/0xD3  
Drive path redundancy: OK

Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps

Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HSJE00007339LXHR  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e4:a7  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 5

Drive at Enclosure 24, Slot 14

Drive port: 1, Channel: 1, ID: 13/0xD2  
Drive port: 2, Channel: 2, ID: 108/0x2A  
Drive path redundancy: OK

Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps

Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HSVN00007339TYG3  
Vendor: IBM-ESXS  
Date of manufacture: April 4, 2003  
World-wide name: 20:00:00:04:cf:f9:e4:6d  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 5

Drive at Enclosure 25, Slot 1

Drive port: 1, Channel: 2, ID: 40/0xA7  
Drive port: 2, Channel: 1, ID: 40/0xA7  
Drive path redundancy: OK

Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps

Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HMAY00007340X5K6  
Vendor: IBM-ESXS  
Date of manufacture: April 4, 2003  
World-wide name: 20:00:00:04:cf:f9:e5:88  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 6

Drive at Enclosure 25, Slot 2

Drive port: 1, Channel: 1, ID: 41/0xA6  
Drive port: 2, Channel: 2, ID: 41/0xA6  
Drive path redundancy: OK

Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps

Product ID: ST336753FC F  
Firmware version: B954

Serial number: 3HX0H0J000007339TYGH  
Vendor: IBM-ESXS  
Date of manufacture: April 4, 2003  
World-wide name: 20:00:00:04:cf:f9:d0:ec  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 6

Drive at Enclosure 25, Slot 3

Drive port: 1, Channel: 2, ID: 42/0xA5  
Drive port: 2, Channel: 1, ID: 42/0xA5  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0K50Q00007340GTTB  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:f5:fc  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 6

Drive at Enclosure 25, Slot 4

Drive port: 1, Channel: 1, ID: 43/0xA3  
Drive port: 2, Channel: 2, ID: 43/0xA3  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0K89500007339TYJJ  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e2:a0  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 6

Drive at Enclosure 25, Slot 5

Drive port: 1, Channel: 2, ID: 44/0x9F  
Drive port: 2, Channel: 1, ID: 44/0x9F  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HQVZ000073392DX6  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e2:73  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 6

Drive at Enclosure 25, Slot 6

Drive port: 1, Channel: 1, ID: 45/0x9E

Drive port: 2, Channel: 2, ID: 45/0x9E  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HMPG00007339SNY2  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:f5:1f  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 6

Drive at Enclosure 25, Slot 7

Drive port: 1, Channel: 2, ID: 46/0x9D  
Drive port: 2, Channel: 1, ID: 46/0x9D  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HSNH00007339RGSB  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e1:f2  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 6

Drive at Enclosure 25, Slot 8

Drive port: 1, Channel: 1, ID: 47/0x9B  
Drive port: 2, Channel: 2, ID: 47/0x9B  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HJCC00007339GMHM  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e1:fc  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 6

Drive at Enclosure 25, Slot 9

Drive port: 1, Channel: 2, ID: 85/0x4F  
Drive port: 2, Channel: 1, ID: 85/0x4F  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HM1L000073405A6T  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003

World-wide name: 20:00:00:04:cf:f9:fc:04  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 6

Drive at Enclosure 25, Slot 10

Drive port: 1, Channel: 1, ID: 101/0x33  
Drive port: 2, Channel: 2, ID: 101/0x33  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0K54W00007339SP69  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:f5:17  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 6

Drive at Enclosure 25, Slot 11

Drive port: 1, Channel: 2, ID: 69/0x6B  
Drive port: 2, Channel: 1, ID: 69/0x6B  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0HRK0000734058EG  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e7:a9  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 6

Drive at Enclosure 25, Slot 12

Drive port: 1, Channel: 1, ID: 77/0x5A  
Drive port: 2, Channel: 2, ID: 77/0x5A  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0K78N00007340X5JU  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:e6:ae  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 6

Drive at Enclosure 25, Slot 13

Drive port: 1, Channel: 2, ID: 93/0x45  
Drive port: 2, Channel: 1, ID: 93/0x45  
Drive path redundancy: OK  
Status: Optimal

Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0JRKD00007340GTWU  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:f5:f2  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 6

Drive at Enclosure 25, Slot 14

Drive port: 1, Channel: 1, ID: 109/0x29  
Drive port: 2, Channel: 2, ID: 109/0x29  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0JR9S00007340GTX7  
Vendor: IBM-ESXS  
Date of manufacture: April 5, 2003  
World-wide name: 20:00:00:04:cf:f9:f5:d5  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 6

Drive at Enclosure 26, Slot 1

Drive port: 1, Channel: 2, ID: 0/0xEF  
Drive port: 2, Channel: 1, ID: 32/0xB2  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0D60V000073368HZC  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:60:80  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 7

Drive at Enclosure 26, Slot 2

Drive port: 1, Channel: 1, ID: 33/0xB1  
Drive port: 2, Channel: 2, ID: 1/0xE8  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0CVJA000073341F89  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:57:f4  
Drive type: Fibre Channel  
Speed: 15015 RPM

Mode: Assigned  
Associated array: 7

Drive at Enclosure 26, Slot 3

Drive port: 1, Channel: 2, ID: 2/0xE4  
Drive port: 2, Channel: 1, ID: 34/0xAE  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0H46B000073393G4Y  
Vendor: IBM-ESXS  
Date of manufacture: March 31, 2003  
World-wide name: 20:00:00:04:cf:f9:47:1d  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 7

Drive at Enclosure 26, Slot 4

Drive port: 1, Channel: 1, ID: 35/0xAD  
Drive port: 2, Channel: 2, ID: 3/0xE2  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0ALFK00007335SYNO  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:60:93  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 7

Drive at Enclosure 26, Slot 5

Drive port: 1, Channel: 2, ID: 4/0xE1  
Drive port: 2, Channel: 1, ID: 36/0xAC  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0CSYB00007335SYMN  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:5d:73  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 7

Drive at Enclosure 26, Slot 6

Drive port: 1, Channel: 1, ID: 37/0xAB  
Drive port: 2, Channel: 2, ID: 5/0xE0  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps

Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0D92W00007335SYKE  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:60:f4  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 7

Drive at Enclosure 26, Slot 7

Drive port: 1, Channel: 2, ID: 6/0xDC  
Drive port: 2, Channel: 1, ID: 38/0xAA  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0D7SA000073368NXX  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:5b:b4  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 7

Drive at Enclosure 26, Slot 8

Drive port: 1, Channel: 1, ID: 39/0xA9  
Drive port: 2, Channel: 2, ID: 7/0xDA  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0CVBA00007335SYFE  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:5c:09  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 7

Drive at Enclosure 26, Slot 9

Drive port: 1, Channel: 2, ID: 8/0xD9  
Drive port: 2, Channel: 1, ID: 84/0x51  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0CTGE00007335SYBX  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:5b:c7  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 7

Drive at Enclosure 26, Slot 10  
Drive port: 1, Channel: 1, ID: 100/0x34  
Drive port: 2, Channel: 2, ID: 9/0xD6  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0C62H00007335SYJU  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:5d:ff  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 7

Drive at Enclosure 26, Slot 11  
Drive port: 1, Channel: 2, ID: 10/0xD5  
Drive port: 2, Channel: 1, ID: 68/0x6C  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0D60W000073368NWZ  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:60:5c  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 7

Drive at Enclosure 26, Slot 12  
Drive port: 1, Channel: 1, ID: 76/0x5C  
Drive port: 2, Channel: 2, ID: 11/0xD4  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0CV5D00007335SY9K  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:5c:08  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 7

Drive at Enclosure 26, Slot 13  
Drive port: 1, Channel: 2, ID: 12/0xD3  
Drive port: 2, Channel: 1, ID: 92/0xD6  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0ALF900007335SYJ6

Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:60:67  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 7

Drive at Enclosure 26, Slot 14  
Drive port: 1, Channel: 1, ID: 108/0x2A  
Drive port: 2, Channel: 2, ID: 13/0xD2  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX08GQ00007335SY7J  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:59:d9  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 7

Drive at Enclosure 27, Slot 1  
Drive port: 1, Channel: 2, ID: 56/0x80  
Drive port: 2, Channel: 1, ID: 56/0x80  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0DCPL000073368NYJ  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:60:2a  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 8

Drive at Enclosure 27, Slot 2  
Drive port: 1, Channel: 1, ID: 57/0x7C  
Drive port: 2, Channel: 2, ID: 57/0x7C  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0D814000073356JYR  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:5d:b5  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 8

Drive at Enclosure 27, Slot 3  
Drive port: 1, Channel: 2, ID: 58/0x7A  
Drive port: 2, Channel: 1, ID: 58/0x7A

Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0DLM700007335MFX2  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:62:eb  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 8

Drive at Enclosure 27, Slot 4  
Drive port: 1, Channel: 1, ID: 59/0x79  
Drive port: 2, Channel: 2, ID: 59/0x79  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HXOCT2000007335SYUH  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:5b:39  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 8

Drive at Enclosure 27, Slot 5  
Drive port: 1, Channel: 2, ID: 60/0x76  
Drive port: 2, Channel: 1, ID: 60/0x76  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0DLVB000073368NWE  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:64:2b  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 8

Drive at Enclosure 27, Slot 6  
Drive port: 1, Channel: 1, ID: 61/0x75  
Drive port: 2, Channel: 2, ID: 61/0x75  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0D89E00007335SYRL  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:5b:3e

Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 8

Drive at Enclosure 27, Slot 7  
Drive port: 1, Channel: 2, ID: 62/0x74  
Drive port: 2, Channel: 1, ID: 62/0x74  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0841S0000733524LX  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:60:4f  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 8

Drive at Enclosure 27, Slot 8  
Drive port: 1, Channel: 1, ID: 63/0x73  
Drive port: 2, Channel: 2, ID: 63/0x73  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0CSRV000073368NVY  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:59:68  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 8

Drive at Enclosure 27, Slot 9  
Drive port: 1, Channel: 2, ID: 87/0x4C  
Drive port: 2, Channel: 1, ID: 87/0x4C  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0DLX700007335MG0S  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:62:ee  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 8

Drive at Enclosure 27, Slot 10  
Drive port: 1, Channel: 1, ID: 103/0x31  
Drive port: 2, Channel: 2, ID: 103/0x31  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB

Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0CNRE000073368HX3  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:64:87  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 8

Drive at Enclosure 27, Slot 11

Drive port: 1, Channel: 2, ID: 71/0x69  
Drive port: 2, Channel: 1, ID: 71/0x69  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0DC04000073340TQD  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:60:bf  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 8

Drive at Enclosure 27, Slot 12

Drive port: 1, Channel: 1, ID: 79/0x56  
Drive port: 2, Channel: 2, ID: 79/0x56  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0D9AY000073368HTG  
Vendor: IBM-ESXS  
Date of manufacture: March 4, 2003  
World-wide name: 20:00:00:04:cf:42:60:a1  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 8

Drive at Enclosure 27, Slot 13

Drive port: 1, Channel: 2, ID: 95/0x3C  
Drive port: 2, Channel: 1, ID: 95/0x3C  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX0T9SW00007345DYU4  
Vendor: IBM-ESXS  
Date of manufacture: May 16, 2003  
World-wide name: 20:00:00:0c:50:20:9b:52  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned

Associated array: 8

Drive at Enclosure 27, Slot 14

Drive port: 1, Channel: 1, ID: 111/0x26  
Drive port: 2, Channel: 2, ID: 111/0x26  
Drive path redundancy: OK  
Status: Optimal  
Raw capacity: 33.902 GB  
Usable capacity: 33.402 GB  
Current data rate: 2 Gbps  
Product ID: ST336753FC F  
Firmware version: B954  
Serial number: 3HX33WLK000075173S80  
Vendor: IBM-ESXS  
Date of manufacture: October 29, 2004  
World-wide name: 20:00:00:11:c6:23:db:ec  
Drive type: Fibre Channel  
Speed: 15015 RPM  
Mode: Assigned  
Associated array: 8

DRIVE CHANNEL INFORMATION - Channel 1

SUMMARY-----

Channel 1 status: Optimal  
Controller A link status: Up  
Controller B link status: Up

CUMULATIVE ERROR COUNTS-----

Controller A Cumulative Error Counts  
Baseline time set: 9/2/05 11:06:01 AM  
Sample period (days, hh:mm:ss): 4 days, 03:11:10  
Controller detected errors: 0  
Drive detected errors: 0  
Timeout errors: 0  
Link down errors: 2  
Total I/O count: 432838  
Controller B Cumulative Error Counts  
Baseline time set: 9/2/05 11:06:01 AM  
Sample period (days, hh:mm:ss): 4 days, 03:11:10  
Controller detected errors: 0  
Drive detected errors: 0  
Timeout errors: 0  
Link down errors: 2  
Total I/O count: 177907747

DRIVE CHANNEL INFORMATION - Channel 2

SUMMARY-----

Channel 2 status: Optimal  
Controller A link status: Up  
Controller B link status: Up

CUMULATIVE ERROR COUNTS-----

Controller A Cumulative Error Counts  
Baseline time set: 9/2/05 11:06:03 AM  
Sample period (days, hh:mm:ss): 4 days, 03:11:08  
Controller detected errors: 0  
Drive detected errors: 0  
Timeout errors: 0  
Link down errors: 2  
Total I/O count: 220336  
Controller B Cumulative Error Counts  
Baseline time set: 9/2/05 11:06:03 AM  
Sample period (days, hh:mm:ss): 4 days, 03:11:08  
Controller detected errors: 0  
Drive detected errors: 0  
Timeout errors: 0

Link down errors: 2  
Total I/O count: 178423483

DRIVE CHANNEL INFORMATION - Channel 3

SUMMARY-----

Channel 3 status: Optimal  
Controller A link status: Up  
Controller B link status: Up

CUMULATIVE ERROR COUNTS-----

Controller A Cumulative Error Counts  
Baseline time set: 9/2/05 11:06:03 AM  
Sample period (days, hh:mm:ss): 4 days, 03:11:08  
Controller detected errors: 0  
Drive detected errors: 0  
Timeout errors: 0  
Link down errors: 2  
Total I/O count: 177984265  
Controller B Cumulative Error Counts  
Baseline time set: 9/2/05 11:06:03 AM  
Sample period (days, hh:mm:ss): 4 days, 03:11:08  
Controller detected errors: 0  
Drive detected errors: 0  
Timeout errors: 0  
Link down errors: 2  
Total I/O count: 216218

DRIVE CHANNEL INFORMATION - Channel 4

SUMMARY-----

Channel 4 status: Optimal  
Controller A link status: Up  
Controller B link status: Up

CUMULATIVE ERROR COUNTS-----

Controller A Cumulative Error Counts  
Baseline time set: 9/2/05 11:06:03 AM  
Sample period (days, hh:mm:ss): 4 days, 03:11:08  
Controller detected errors: 0  
Drive detected errors: 0  
Timeout errors: 0  
Link down errors: 2  
Total I/O count: 178152377  
Controller B Cumulative Error Counts  
Baseline time set: 9/2/05 11:06:03 AM  
Sample period (days, hh:mm:ss): 4 days, 03:11:08  
Controller detected errors: 0  
Drive detected errors: 0  
Timeout errors: 0  
Link down errors: 2  
Total I/O count: 435952

ENCLOSURES-----

Controller Enclosure Overall Component Information

Minihub data rate mismatch: No  
Fan canister  
Status: Optimal  
Fan canister  
Status: Optimal  
Battery status: Optimal  
Age: 897 day(s)  
Days until replacement: 182 day(s)  
Power supply canister  
Status: Optimal  
Power supply canister  
Status: Optimal  
Temperature: Optimal

Host mini-hub canister

Status: Optimal  
Location: Controller B - Port 1  
Serial number: SN 1T14556446  
Part number: PN 19K1270  
Vendor: VN IBM  
Date of manufacture: November 1, 2001  
SFP

Status: Optimal  
Location: In connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode  
62.5m(M6)

IEEE company ID: 00 01 9c  
Revision:  
Part number: JSP-21S0AA1  
Serial number: F337435017B1  
Vendor: JDS UNIPHASE  
Date of manufacture: September 11, 2003

Host mini-hub canister

Status: Optimal  
Location: Controller A - Port 1  
Serial number: SN 1T23664050  
Part number: PN 19K1270  
Vendor: VN IBM  
Date of manufacture: September 1, 2002  
SFP

Status: Optimal  
Location: In connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode  
62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P1476006A1C  
Vendor: IBM  
Date of manufacture: April 13, 2002

Drive mini-hub canister

Status: Optimal  
Location: Channel 1  
Serial number: SN 1T24601126  
Part number: PN 19K1270  
Vendor: VN IBM  
Date of manufacture: December 1, 2002  
SFP

Status: Optimal  
Location: In connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode  
62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P147600FRM  
Vendor: IBM  
Date of manufacture: October 17, 2002

Drive mini-hub canister

Status: Optimal



Location: Channel 2  
Serial number: SN 1T35121160  
Part number: PN 348-0046285  
Vendor: VN LSILOGIC  
Date of manufacture: December 1, 2003  
SFP  
Status: Optimal  
Location: Out connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode  
62.5m(M6)  
IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P14760069RE  
Vendor: IBM  
Date of manufacture: April 13, 2002  
Drive mini-hub canister  
Status: Optimal  
Location: Channel 3  
Serial number: SN 1T14253240  
Part number: PN 19K1270  
Vendor: VN IBM  
Date of manufacture: November 1, 2001  
SFP  
Status: Optimal  
Location: In connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode  
62.5m(M6)  
IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P14760002RT  
Vendor: IBM  
Date of manufacture: December 2, 2001  
Drive mini-hub canister  
Status: Optimal  
Location: Channel 4  
Serial number: SN 1T14252971  
Part number: PN 19K1270  
Vendor: VN IBM  
Date of manufacture: November 1, 2001  
SFP  
Status: Optimal  
Location: Out connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode  
62.5m(M6)  
IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P14760002PT  
Vendor: IBM  
Date of manufacture: December 2, 2001  
Drive Enclosure 20 Overall Component Information  
Drive technology: Fibre channel  
Part number: PN 19K1288

Serial number: SN 23A1713  
Vendor: VN IBM  
Date of manufacture: September 1, 2002  
Enclosure path redundancy: OK  
Fan canister  
Location: Left  
Status: Optimal  
Fan canister  
Location: Right  
Status: Optimal  
Power supply canister  
Location: Left  
Status: Optimal  
Part number: PN 19K1289  
Serial number: SN A6844400MH0E  
Vendor: VN IBM  
Date of manufacture: Not available  
Power supply canister  
Location: Right  
Status: Optimal  
Part number: PN 19K1289  
Serial number: SN A6844400MF0E  
Vendor: VN IBM  
Date of manufacture: Not available  
Temperature: Optimal  
Temperature: Optimal  
ESM card  
Status: Optimal  
Firmware version: 9327  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Location: A (left canister)  
Card communication: OK  
Product ID: EXP700  
Part number: PN 19K1287  
Serial number: SN 1T23251686  
Vendor: IBM  
Date of manufacture: August 1, 2002  
SFP  
Status: Optimal  
Location: In connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode  
62.5m(M6)  
IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P1476009T2P  
Vendor: IBM  
Date of manufacture: June 29, 2002  
SFP  
Status: Optimal  
Location: Out connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode  
62.5m(M6)  
IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P1476006A89  
Vendor: IBM  
Date of manufacture: April 13, 2002

ESM card  
Status: Optimal  
Firmware version: 9327  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Location: B (right canister)  
Card communication: OK  
Product ID: EXP700  
Part number: PN 19K1287  
Serial number: SN 1T23772127  
Vendor: IBM  
Date of manufacture: September 1, 2002  
SFP

Status: Optimal  
Location: Out connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P1476009TPT  
Vendor: IBM  
Date of manufacture: June 29, 2002

Drive Enclosure 21 Overall Component Information

Drive technology: Fibre channel  
Part number: PN 19K1288  
Serial number: SN 23A1714  
Vendor: VN IBM  
Date of manufacture: September 1, 2002  
Enclosure path redundancy: OK

Fan canister  
Location: Left  
Status: Optimal

Fan canister  
Location: Right  
Status: Optimal

Power supply canister  
Location: Left  
Status: Optimal  
Part number: PN 19K1289  
Serial number: SN A6844400PR0E  
Vendor: VN IBM  
Date of manufacture: Not available

Power supply canister  
Location: Right  
Status: Optimal  
Part number: PN 19K1289  
Serial number: SN A6844400PA0E  
Vendor: VN IBM  
Date of manufacture: Not available

Temperature: Optimal  
Temperature: Optimal

ESM card  
Status: Optimal  
Firmware version: 9327  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Location: A (left canister)  
Card communication: OK  
Product ID: EXP700  
Part number: PN 19K1287  
Serial number: SN 1T23251624  
Vendor: IBM

Date of manufacture: August 1, 2002  
SFP  
Status: Optimal  
Location: In connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P14760069ET  
Vendor: IBM  
Date of manufacture: April 13, 2002

SFP

Status: Optimal  
Location: Out connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P147600037H  
Vendor: IBM  
Date of manufacture: December 1, 2001

ESM card

Status: Optimal  
Firmware version: 9327  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Location: B (right canister)  
Card communication: OK  
Product ID: EXP700  
Part number: PN 19K1287  
Serial number: SN 1T23251689  
Vendor: IBM  
Date of manufacture: August 1, 2002  
SFP

Status: Optimal  
Location: In connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P1476006A2W  
Vendor: IBM  
Date of manufacture: April 13, 2002

SFP

Status: Optimal  
Location: Out connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a

Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P14760069JF  
Vendor: IBM  
Date of manufacture: April 13, 2002

#### Drive Enclosure 22 Overall Component Information

Drive technology: Fibre channel  
Part number: PN 19K1288  
Serial number: SN 23A1722  
Vendor: VN IBM  
Date of manufacture: September 1, 2002  
Enclosure path redundancy: OK  
Fan canister

Location: Left  
Status: Optimal

Fan canister  
Location: Right  
Status: Optimal

Power supply canister  
Location: Left  
Status: Optimal  
Part number: PN 19K1289  
Serial number: SN A6844400JS0E  
Vendor: VN IBM  
Date of manufacture: Not available

Power supply canister  
Location: Right  
Status: Optimal  
Part number: PN 19K1289  
Serial number: SN A6844400KZ0E  
Vendor: VN IBM  
Date of manufacture: Not available

Temperature: Optimal  
Temperature: Optimal

ESM card  
Status: Optimal  
Firmware version: 9327  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Location: A (left canister)  
Card communication: OK  
Product ID: EXP700  
Part number: PN 19K1287  
Serial number: SN 1T23251634  
Vendor: IBM  
Date of manufacture: August 1, 2002

SFP  
Status: Optimal  
Location: In connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P1476009E36  
Vendor: IBM  
Date of manufacture: June 29, 2002

SFP  
Status: Optimal  
Location: Out connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC

Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P1476009TRC  
Vendor: IBM  
Date of manufacture: June 29, 2002

ESM card

Status: Optimal  
Firmware version: 9327  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Location: B (right canister)  
Card communication: OK  
Product ID: EXP700  
Part number: PN 19K1287  
Serial number: SN 1T23252023  
Vendor: IBM  
Date of manufacture: August 1, 2002

SFP

Status: Optimal  
Location: In connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P14760069XP  
Vendor: IBM  
Date of manufacture: April 13, 2002

SFP

Status: Optimal  
Location: Out connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P1476006A3S  
Vendor: IBM  
Date of manufacture: April 13, 2002

#### Drive Enclosure 23 Overall Component Information

Drive technology: Fibre channel  
Part number: PN 19K1288  
Serial number: SN 1T1321417490  
Vendor: VN IBM  
Date of manufacture: September 1, 2001  
Enclosure path redundancy: OK

Fan canister  
Location: Left  
Status: Optimal

Fan canister  
Location: Right  
Status: Optimal

Power supply canister  
Location: Left  
Status: Optimal

Part number: PN 19K1289  
Serial number: SN A6842G00WJ0B  
Vendor: VN IBM  
Date of manufacture: August 1, 2001

Power supply canister

Location: Right  
Status: Optimal  
Part number: PN 19K1289  
Serial number: SN A6842G00EK0B  
Vendor: VN IBM  
Date of manufacture: August 1, 2001

Temperature: Optimal

Temperature: Optimal

ESM card

Status: Optimal  
Firmware version: 9327  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Location: A (left canister)  
Card communication: OK  
Product ID: EXP700  
Part number: PN 19K1287  
Serial number: SN 1T20789074  
Vendor: IBM  
Date of manufacture: March 1, 2002

SFP

Status: Optimal  
Location: In connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P147600033C  
Vendor: IBM  
Date of manufacture: December 1, 2001

ESM card

Status: Optimal  
Firmware version: 9327  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Location: B (right canister)  
Card communication: OK  
Product ID: EXP700  
Part number: PN 19K1287  
Serial number: SN 1T20789634  
Vendor: IBM  
Date of manufacture: March 1, 2002

SFP

Status: Optimal  
Location: In connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P14760069PE  
Vendor: IBM  
Date of manufacture: April 13, 2002

SFP

Status: Optimal

Location: Out connection

Supported data rate(s): 1 Gbps, 2 Gbps

Link length: Intermediate

Connector: LC

Transmitter type: Shortwave Laser w/o OFC

Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P1476000397  
Vendor: IBM  
Date of manufacture: December 2, 2001

Drive Enclosure 24 Overall Component Information

Drive technology: Fibre channel

Part number: PN 19K1288

Serial number: SN 1T1321417472

Vendor: VN IBM

Date of manufacture: September 1, 2001

Enclosure path redundancy: OK

Fan canister

Location: Left

Status: Optimal

Fan canister

Location: Right

Status: Optimal

Power supply canister

Location: Left

Status: Optimal

Part number: PN 19K1289

Serial number: SN A6842G00EC0B

Vendor: VN IBM

Date of manufacture: August 1, 2001

Power supply canister

Location: Right

Status: Optimal

Part number: PN 19K1289

Serial number: SN A6842G00UN0B

Vendor: VN IBM

Date of manufacture: August 1, 2001

Temperature: Optimal

Temperature: Optimal

ESM card

Status: Optimal

Firmware version: 9327

Maximum data rate: 2 Gbps

Current data rate: 2 Gbps

Location: A (left canister)

Card communication: OK

Product ID: EXP700

Part number: PN 19K1287

Serial number: SN 1T20789597

Vendor: IBM

Date of manufacture: March 1, 2002

SFP

Status: Optimal

Location: In connection

Supported data rate(s): 1 Gbps, 2 Gbps

Link length: Intermediate

Connector: LC

Transmitter type: Shortwave Laser w/o OFC

Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY

Serial number: 53P1476006A2Q  
Vendor: IBM  
Date of manufacture: April 13, 2002  
SFP  
Status: Optimal  
Location: Out connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P14760069VN  
Vendor: IBM  
Date of manufacture: April 13, 2002

ESM card

Status: Optimal  
Firmware version: 9327  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Location: B (right canister)  
Card communication: OK  
Product ID: EXP700  
Part number: PN 19K1287  
Serial number: SN 1T20789286  
Vendor: IBM

Date of manufacture: March 1, 2002

SFP

Status: Optimal  
Location: Out connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P14760069WG  
Vendor: IBM  
Date of manufacture: April 13, 2002

Drive Enclosure 25 Overall Component Information

Drive technology: Fibre channel  
Part number: PN 19K1288  
Serial number: SN 1T1281412332  
Vendor: VN IBM  
Date of manufacture: September 1, 2001  
Enclosure path redundancy: OK

Fan canister

Location: Left  
Status: Optimal

Fan canister

Location: Right  
Status: Optimal

Power supply canister

Location: Left  
Status: Optimal  
Part number: PN 19K1289  
Serial number: SN A6842C004X0A  
Vendor: VN IBM  
Date of manufacture: July 1, 2001

Power supply canister

Location: Right

Status: Optimal  
Part number: PN 19K1289  
Serial number: SN A6842C004W0A  
Vendor: VN IBM  
Date of manufacture: July 1, 2001

Temperature: Optimal

Temperature: Optimal

ESM card

Status: Optimal  
Firmware version: 9327  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Location: A (left canister)  
Card communication: OK  
Product ID: EXP700  
Part number: PN 19K1287  
Serial number: SN 1T20789143  
Vendor: IBM

Date of manufacture: March 1, 2002

SFP

Status: Optimal  
Location: In connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC

Transmitter type: Shortwave Laser w/o OFC

Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P14760069K9  
Vendor: IBM  
Date of manufacture: April 13, 2002

SFP

Status: Optimal  
Location: Out connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC

Transmitter type: Shortwave Laser w/o OFC

Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P14760069S9  
Vendor: IBM  
Date of manufacture: April 13, 2002

ESM card

Status: Optimal  
Firmware version: 9327  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Location: B (right canister)  
Card communication: OK  
Product ID: EXP700  
Part number: PN 19K1287  
Serial number: SN 1T20789379  
Vendor: IBM

Date of manufacture: March 1, 2002

SFP

Status: Optimal  
Location: In connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC

Transmitter type: Shortwave Laser w/o OFC

Transmission media: TM Multi-mode 50m(M5) TM Multi-mode  
62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P1476006A19  
Vendor: IBM  
Date of manufacture: April 13, 2002

SFP

Status: Optimal  
Location: Out connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P14760068J1  
Vendor: IBM  
Date of manufacture: April 13, 2002

#### Drive Enclosure 26 Overall Component Information

Drive technology: Fibre channel  
Part number: PN 19K1288  
Serial number: SN 23F1759  
Vendor: VN IBM  
Date of manufacture: November 1, 2004  
Enclosure path redundancy: OK

Fan canister

Location: Left  
Status: Optimal

Fan canister

Location: Right  
Status: Optimal

Power supply canister

Location: Left  
Status: Optimal  
Part number: PN 19K1289  
Serial number: SN A6844400HS0E  
Vendor: VN IBM  
Date of manufacture: Not available

Power supply canister

Location: Right  
Status: Optimal  
Part number: PN 19K1289  
Serial number: SN A6844400JF0E  
Vendor: VN IBM  
Date of manufacture: Not available

Temperature: Optimal

Temperature: Optimal

ESM card

Status: Optimal  
Firmware version: 9327  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Location: A (left canister)  
Card communication: OK  
Product ID: EXP700  
Part number: PN 19K1287  
Serial number: SN 1T20789339  
Vendor: IBM  
Date of manufacture: March 1, 2002

SFP

Status: Optimal  
Location: In connection

Supported data rate(s): 1 Gbps, 2 Gbps

Link length: Intermediate

Connector: LC

Transmitter type: Shortwave Laser w/o OFC

Transmission media: TM Multi-mode 50m(M5) TM Multi-mode  
62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P14760003M4  
Vendor: IBM  
Date of manufacture: December 2, 2001

SFP

Status: Optimal  
Location: Out connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P1476006A4H  
Vendor: IBM  
Date of manufacture: April 13, 2002

ESM card

Status: Optimal  
Firmware version: 9327  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Location: B (right canister)  
Card communication: OK  
Product ID: EXP700  
Part number: PN 19K1287  
Serial number: SN 1T20789445  
Vendor: IBM  
Date of manufacture: March 1, 2002

SFP

Status: Optimal  
Location: In connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P14760069PR  
Vendor: IBM  
Date of manufacture: April 13, 2002

SFP

Status: Optimal  
Location: Out connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)

IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P14760069EW  
Vendor: IBM

Date of manufacture: April 13, 2002

Drive Enclosure 27 Overall Component Information

Drive technology: Fibre channel  
Part number: PN 19K1288  
Serial number: SN 1T1321417618  
Vendor: VN IBM  
Date of manufacture: September 1, 2001  
Enclosure path redundancy: OK

Fan canister  
Location: Left  
Status: Optimal

Fan canister  
Location: Right  
Status: Optimal

Power supply canister  
Location: Left  
Status: Optimal  
Part number: PN 19K1289  
Serial number: SN A6842G00WL0B  
Vendor: VN IBM  
Date of manufacture: August 1, 2001

Power supply canister  
Location: Right  
Status: Optimal  
Part number: PN 19K1289  
Serial number: SN A6842G00US0B  
Vendor: VN IBM  
Date of manufacture: August 1, 2001

Temperature: Optimal  
Temperature: Optimal

ESM card  
Status: Optimal  
Firmware version: 9327  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Location: A (left canister)  
Card communication: OK  
Product ID: EXP700  
Part number: PN 19K1287  
Serial number: SN 1T20789266  
Vendor: IBM  
Date of manufacture: March 1, 2002

SFP  
Status: Optimal  
Location: In connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)  
IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P14760069Y4  
Vendor: IBM  
Date of manufacture: April 13, 2002

ESM card  
Status: Optimal  
Firmware version: 9327  
Maximum data rate: 2 Gbps  
Current data rate: 2 Gbps  
Location: B (right canister)  
Card communication: OK  
Product ID: EXP700  
Part number: PN 19K1287  
Serial number: SN 1T23252166

Vendor: IBM  
Date of manufacture: August 1, 2002  
SFP  
Status: Optimal  
Location: In connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)  
IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P14760069KJ  
Vendor: IBM  
Date of manufacture: April 13, 2002

SFP  
Status: Optimal  
Location: Out connection  
Supported data rate(s): 1 Gbps, 2 Gbps  
Link length: Intermediate  
Connector: LC  
Transmitter type: Shortwave Laser w/o OFC  
Transmission media: TM Multi-mode 50m(M5) TM Multi-mode

62.5m(M6)  
IEEE company ID: 08 00 5a  
Revision: AA10  
Part number: IBM42P21SNY  
Serial number: 53P14760069KN  
Vendor: IBM  
Date of manufacture: April 13, 2002

MAPPINGS (Storage Partitioning - Disabled)-----

VOLUME NAME LUN CONTROLLER ACCESSIBLE BY VOLUME STATUS

VOLUME NAME	LUN	CONTROLLER	ACCESSIBLE BY	VOLUME STATUS
flute2_lun1	0	A	Default Group	Optimal
flute2_lun2	1	A	Default Group	Optimal
flute2_lun3	2	A	Default Group	Optimal
flute2_lun4	3	A	Default Group	Optimal
flute2_lun5	4	B	Default Group	Optimal
flute2_lun6	5	B	Default Group	Optimal
flute2_lun7	6	B	Default Group	Optimal
flute2_lun8	7	B	Default Group	Optimal

TOPOLOGY DEFINITIONS

DEFAULT GROUP  
Default type: Windows 2000/Server 2003 Non-Clustered  
Host Port: 21:00:00:e0:8b:08:a3:c8  
Host Port: 21:00:00:e0:8b:09:a8:6d

NVSRAM HOST TYPE INDEX DEFINITIONS

INDEX	ADT	STATUS	TYPE
0	Disabled	Windows NT	Non-Clustered (SP5 or higher)
1	Disabled	Windows NT	Clustered (SP5 or higher)
2 (Default)	Disabled	Windows 2000/Server 2003	Non-Clustered
3	Disabled	Windows 2000/Server 2003	Clustered
4	Disabled	NetWare-IBMSAN	
5	Disabled	Linux	
6	Disabled	AIX	
7	Disabled	HP-UX	
8	Disabled	Solaris	

9 Disabled Windows 2000/Server 2003 Non-Clustered (supports D  
 10 Disabled Irix  
 11 Disabled Network Failover  
 12 Disabled IBM TS SAN VCE  
 13 Disabled LNXCL  
 14 Disabled Solaris (with Veritas DMP)  
 15 Disabled Windows 2000/Server 2003 Clustered (supports DMP)

## Client Configuration Parameters

### Microsoft Windows 2000 Client System Information Report

Following is the System Information report for Client 1. Clients 2 - 7 were configured similarly to Client 1. The report for Client 8 follows Client 1's report.

System Information report written at: 09/06/2005 02:22:27 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 FCLIENT10

System Manufacturer IBM

System Model IBM eServer x226-[86482BU]-

System Type X86-based PC

Processor x86 Family 15 Model 3 Stepping 4 GenuineIntel ~3200 Mhz

Processor x86 Family 15 Model 3 Stepping 4 GenuineIntel ~3200 Mhz

Processor x86 Family 15 Model 3 Stepping 4 GenuineIntel ~3200 Mhz

Processor x86 Family 15 Model 3 Stepping 4 GenuineIntel ~3200 Mhz

BIOS Version PhoenixBIOS 4.0 Release 6.1.U

Windows Directory C:\WINNT

System Directory C:\WINNT\System32

Boot Device \Device\Harddisk0\Partition1

Locale United States

User Name FCLIENT10\Administrator

Time Zone Eastern Daylight Time

Total Physical Memory 2,620,316 KB

Available Physical Memory 2,389,896 KB

Total Virtual Memory 6,653,012 KB

Available Virtual Memory 6,346,580 KB

Page File Space 4,032,696 KB

Page File C:\pagefile.sys

[Hardware Resources]

[ Following are sub-categories of this main category ]

[Conflicts/Sharing]

Resource Device

IRQ 16 Intel(R) E7525/E7520/E7320 PCI Express Root Port A0 - 3595

IRQ 16 Broadcom NetXtreme Gigabit Ethernet #2

IRQ 16 Intel(R) E7525/E7520/E7320 PCI Express Root Port A1 - 3596

IRQ 16 Intel(R) E7525/E7520 PCI Express Root Port B0 - 3597

IRQ 16 Intel(R) 82801EB USB Universal Host Controller - 24D2

IRQ 16 Intel(R) 82801EB USB Universal Host Controller - 24DE

[DMA]

Channel Device Status

4 Direct memory access controller OK

2 Standard floppy disk controller OK

3 ECP Printer Port (LPT1) OK

[Forced Hardware]

Device PNP Device ID

No Forced Hardware

[I/O]

Address Range Device Status

0x0000-0x0CF7 PCI bus OK

0x0000-0x0CF7 Direct memory access controller OK

0x0D00-0xFFFF PCI bus OK

0x2000-0x4FFF Intel(R) E7525/E7520/E7320 PCI Express Root Port A1 - 3596 OK

0x2000-0x4FFF Intel(R) 6700PXH PCI Express-to-PCI Bridge A - 0329 OK

0x2000-0x4FFF QLogic Fibre Channel Adapter OK



0x3400-0x343F OK	Intel(R) PRO/1000 MT Dual Port Server Adapter #3		0x0080-0x0080	Motherboard resources	OK
0x3440-0x347F OK	Intel(R) PRO/1000 MT Dual Port Server Adapter #4		0x0090-0x009F	Motherboard resources	OK
0x2800-0x28FF	Adaptec AIC-7902B - Ultra320 SCSI	OK	0x00A4-0x00A5	Motherboard resources	OK
0x2400-0x24FF	Adaptec AIC-7902B - Ultra320 SCSI	OK	0x00A8-0x00A9	Motherboard resources	OK
0x3000-0x30FF	Adaptec AIC-7902B - Ultra320 SCSI	OK	0x00AC-0x00AD	Motherboard resources	OK
0x2C00-0x2CFF	Adaptec AIC-7902B - Ultra320 SCSI	OK	0x00B0-0x00B5	Motherboard resources	OK
0x4000-0x4FFF OK	Intel(R) 6700PXH PCI Express-to-PCI Bridge B - 032A		0x00B8-0x00B9	Motherboard resources	OK
0x4000-0x4FFF OK	Intel(R) PRO/1000 MT Dual Port Server Adapter		0x00BC-0x00BD	Motherboard resources	OK
0x4040-0x407F OK	Intel(R) PRO/1000 MT Dual Port Server Adapter #2		0x04D0-0x04D1	Motherboard resources	OK
0x1400-0x141F OK	Intel(R) 82801EB USB Universal Host Controller - 24D2		0x1000-0x107F	Motherboard resources	OK
0x1420-0x143F OK	Intel(R) 82801EB USB Universal Host Controller - 24D4		0x1180-0x118C	Motherboard resources	OK
0x1440-0x145F OK	Intel(R) 82801EB USB Universal Host Controller - 24D7		0x118D-0x118D	Motherboard resources	OK
0x1460-0x147F OK	Intel(R) 82801EB USB Universal Host Controller - 24DE		0x118F-0x118F	Motherboard resources	OK
0x5000-0x50FF	RADEON 7000M (on board)	OK	0x1190-0x11BF	Motherboard resources	OK
0x03B0-0x03BB	RADEON 7000M (on board)	OK	0x0800-0x082F	Motherboard resources	OK
0x03C0-0x03DF	RADEON 7000M (on board)	OK	0xFE00-0xFE00	Motherboard resources	OK
0x0A79-0x0A79	ISAPNP Read Data Port	OK	0x0081-0x008F	Direct memory access controller	OK
0x0279-0x0279	ISAPNP Read Data Port	OK	0x00C0-0x00DF	Direct memory access controller	OK
0x0274-0x0277	ISAPNP Read Data Port	OK	0x00F0-0x00FE	Numeric data processor	OK
0x0010-0x001F	Motherboard resources	OK	0x0020-0x0021	Programmable interrupt controller	OK
0x0024-0x0025	Motherboard resources	OK	0x00A0-0x00A1	Programmable interrupt controller	OK
0x0028-0x0029	Motherboard resources	OK	0x0070-0x0071	System CMOS/real time clock	OK
0x002C-0x002D	Motherboard resources	OK	0x0061-0x0061	System speaker	OK
0x002E-0x002F	Motherboard resources	OK	0x0040-0x0043	System timer	OK
0x0030-0x0031	Motherboard resources	OK	0x118E-0x118E	Not Available	OK
0x0034-0x0035	Motherboard resources	OK	0x03F0-0x03F5	Standard floppy disk controller	OK
0x0038-0x0039	Motherboard resources	OK	0x03F7-0x03F7	Standard floppy disk controller	OK
0x003C-0x003D	Motherboard resources	OK	0x0378-0x037F	ECP Printer Port (LPT1)	OK
0x0050-0x0053	Motherboard resources	OK	0x0778-0x077F	ECP Printer Port (LPT1)	OK
0x0072-0x0077	Motherboard resources	OK	0x03F8-0x03FF	Communications Port (COM1)	OK
			0x02F8-0x02FF	Communications Port (COM2)	OK
			0x0060-0x0060	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard	OK
			0x0064-0x0064	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard	OK

0x14A0-0x14AF Intel(R) 82801EB Ultra ATA Storage Controllers OK  
 0x01F0-0x01F7 Primary IDE Channel OK  
 0x03F6-0x03F6 Primary IDE Channel OK  
 0x0170-0x0177 Secondary IDE Channel OK  
 0x0376-0x0376 Secondary IDE Channel OK  
 0x1100-0x111F Intel(R) 82801EB SMBus Controller - 24D3 OK

[IRQs]

IRQ Number	Device
9	Microsoft ACPI-Compliant System
16	Intel(R) E7525/E7520/E7320 PCI Express Root Port A0 - 3595
16	Broadcom NetXtreme Gigabit Ethernet #2
16	Intel(R) E7525/E7520/E7320 PCI Express Root Port A1 - 3596
16	Intel(R) E7525/E7520 PCI Express Root Port B0 - 3597
16	Intel(R) 82801EB USB Universal Host Controller - 24D2
16	Intel(R) 82801EB USB Universal Host Controller - 24DE
28	Intel(R) PRO/1000 MT Dual Port Server Adapter #3
29	Intel(R) PRO/1000 MT Dual Port Server Adapter #4
24	QLogic Fibre Channel Adapter
30	Adaptec AIC-7902B - Ultra320 SCSI
31	Adaptec AIC-7902B - Ultra320 SCSI
48	Intel(R) PRO/1000 MT Dual Port Server Adapter
49	Intel(R) PRO/1000 MT Dual Port Server Adapter #2
19	Intel(R) 82801EB USB Universal Host Controller - 24D4
18	Intel(R) 82801EB USB Universal Host Controller - 24D7
22	RADEON 7000M (on board)
13	Numeric data processor
8	System CMOS/real time clock
6	Standard floppy disk controller
4	Communications Port (COM1)
3	Communications Port (COM2)
12	PS/2 Compatible Mouse
1	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
14	Primary IDE Channel

15 Secondary IDE Channel  
 10 Intel(R) 82801EB SMBus Controller - 24D3

[Memory]

Range	Device	Status
0xA0000-0xBFFFF	PCI bus	OK
0xA0000-0xBFFFF	RADEON 7000M (on board)	OK
0xD8000-0xDBFFF	PCI bus	OK
0xDC000-0xDFFFF	PCI bus	OK
0xA0000000-0xFEFFFFFFF	PCI bus	OK
0xD0100000-0xD01FFFFFFF	Intel(R) E7525/E7520/E7320 PCI Express Root Port A0 - 3595	OK
0xD0100000-0xD01FFFFFFF	Broadcom NetXtreme Gigabit Ethernet #2	OK
0xD0200000-0xD04FFFFFFF	Intel(R) E7525/E7520/E7320 PCI Express Root Port A1 - 3596	OK
0xD0200000-0xD04FFFFFFF	Intel(R) 6700PXH I/OxAPIC Interrupt Controller A - 0326	OK
0xD0300000-0xD03FFFFFFF	Intel(R) 6700PXH PCI Express-to-PCI Bridge A - 0329	OK
0xD0300000-0xD03FFFFFFF	Adaptec AIC-7902B - Ultra320 SCSI	OK
0xD0320000-0xD033FFFFFFF	Intel(R) PRO/1000 MT Dual Port Server Adapter #3	OK
0xD0340000-0xD037FFFFFFF	Intel(R) PRO/1000 MT Dual Port Server Adapter #3	OK
0xD0380000-0xD039FFFFFFF	Intel(R) PRO/1000 MT Dual Port Server Adapter #4	OK
0xD0304000-0xD0304FFF	QLogic Fibre Channel Adapter	OK
0xD0302000-0xD0303FFF	Adaptec AIC-7902B - Ultra320 SCSI	OK
0xD0400000-0xD04FFFFFFF	Intel(R) 6700PXH PCI Express-to-PCI Bridge B - 032A	OK
0xD0400000-0xD04FFFFFFF	Intel(R) PRO/1000 MT Dual Port Server Adapter	OK
0xD0440000-0xD045FFFFFFF	Intel(R) PRO/1000 MT Dual Port Server Adapter	OK
0xD0460000-0xD047FFFFFFF	Intel(R) PRO/1000 MT Dual Port Server Adapter #2	OK
0xD0201000-0xD0201FFF	Intel(R) 6700PXH I/OxAPIC Interrupt Controller B - 0327	OK
0xD8000000-0xDFFFFFFF	RADEON 7000M (on board)	OK
0xD0500000-0xD050FFFFFFF	RADEON 7000M (on board)	OK

0xE0000000-0xEFFFFFFF	Motherboard resources	OK
0xFEE00000-0xFEE0FFFF	Motherboard resources	OK
0xFEC81000-0xFEC81FFF	Motherboard resources	OK
0xFEC81400-0xFEC823FF	Motherboard resources	OK
0xFEBFFC00-0xFEBFFFFFFF	Intel(R) 82801EB Ultra ATA Storage Controllers	OK

[Components]

[ Following are sub-categories of this main category ]

[Multimedia]

[ Following are sub-categories of this main category ]

[Audio Codecs]

Codec Version	Manufacturer Size	Description Creation Date	Status	File
c:\winnt\system32\iac25_32.ax	Intel Corporation	Indeo® audio software	2.05.53	195.00 KB
OK	C:\WINNT\System32\IAC25_32.AX	12/7/1999 7:00:00 AM		

c:\winnt\system32\lhacm.acm	Microsoft Corporation		4.4.3385	33.27 KB
OK	C:\WINNT\System32\LHACM.ACM	1/13/2005 5:08:30 PM		

c:\winnt\system32\msg723.acm	Microsoft Corporation		4.4.3385	106.77 KB
OK	C:\WINNT\System32\MSG723.ACM	1/13/2005 5:08:29 PM		

c:\winnt\system32\tssoft32.acm	DSP GROUP, INC.		1.01	9.27 KB (9,488 bytes)
OK	C:\WINNT\System32\TSSOFT32.ACM	12/7/1999 7:00:00 AM		

c:\winnt\system32\msgsm32.acm	Microsoft Corporation		5.00.2134.1	22.27 KB (22,800 bytes)
OK	C:\WINNT\System32\MSGSM32.ACM	12/7/1999 7:00:00 AM		

c:\winnt\system32\msg711.acm	Microsoft Corporation		5.00.2134.1	10.27 KB (10,512 bytes)
OK	C:\WINNT\System32\MSG711.ACM	12/7/1999 7:00:00 AM		

c:\winnt\system32\msadp32.acm	Microsoft Corporation		5.00.2134.1	14.77 KB (15,120 bytes)
OK	C:\WINNT\System32\MSADP32.ACM	12/7/1999 7:00:00 AM		

c:\winnt\system32\imaadp32.acm	Microsoft Corporation		5.00.2134.1	16.27 KB (16,656 bytes)
OK	C:\WINNT\System32\IMAADP32.ACM	12/7/1999 7:00:00 AM		

[Video Codecs]

Codec Version	Manufacturer Size	Description Creation Date	Status	File
c:\winnt\system32\msyuv.dll	Microsoft Corporation		5.00.2134.1	14.77 KB (15,120 bytes)
OK	C:\WINNT\System32\MSYUV.DLL	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		4.4.3385	163.77 KB
OK	C:\WINNT\System32\MSH261.DRV	1/13/2005 5:08:29 PM		

c:\winnt\system32\msh263.drv	Microsoft Corporation		4.4.3385	252.27 KB
OK	C:\WINNT\System32\MSH263.DRV	1/13/2005 5:08:12 PM		

c:\winnt\system32\msvidc32.dll	Microsoft Corporation		5.00.2134.1	27.27 KB (27,920 bytes)
OK	C:\WINNT\System32\MSVIDC32.DLL	12/7/1999 7:00:00 AM		

c:\winnt\system32\msrle32.dll	Microsoft Corporation		5.00.2134.1	10.77 KB (11,024 bytes)
OK	C:\WINNT\System32\MSRLE32.DLL	12/7/1999 7:00:00 AM		

c:\winnt\system32\iccvld.dll	Radius Inc.		1.10.0.6	108.00 KB (110,592 bytes)
OK	C:\WINNT\System32\ICCVLD.DLL	12/7/1999 7:00:00 AM		

c:\winnt\system32\ir32_32.dll	Intel(R) Corporation		Not Available	194.50 KB
OK	C:\WINNT\System32\IR32_32.DLL	12/7/1999 7:00:00 AM		

[CD-ROM]

Item	Value
Drive	D:
Description	CD-ROM Drive
Media Loaded	False
Media Type	CD-ROM
Name	SAMSUNG CD-ROM SC-148A
Manufacturer	(Standard CD-ROM drives)
Status	OK
Transfer Rate	Not Available
SCSI Target ID	0
PNP Device ID	IDE\CDROMSAMSUNG_CD-ROM_SC-148A_____B401_____5&2AC42E8E&0&0.0.0

[Sound Device]

Item	Value
No sound devices	

[Display]

Item	Value
Name	RADEON 7000M (on board)

PNP Device ID  
PCI\VEN\_1002&DEV\_5159&SUBSYS\_02C81014&REV\_00\4&AE5993B&0  
&20F0

Adapter Type RADEON 7000 (0x5159), ATI Technologies Inc.  
compatible

Adapter Description RADEON 7000M (on board)

Adapter RAM 16.00 MB (16,777,216 bytes)

Installed Drivers ati2dvag.dll

Driver Version 5.2.3790.2

INF File oem20.inf (ati2mtag\_RV100 section)

Color Planes 1

Color Table Entries 65536

Resolution 1024 x 768 x 85 hertz

Bits/Pixel 16

[Infrared]

Item Value

No infrared devices

[Input]

[ Following are sub-categories of this main category ]

[Keyboard]

Item Value

Description Standard 101/102-Key or Microsoft Natural PS/2  
Keyboard

Name Enhanced (101- or 102-key)

Layout 00000409

PNP Device ID ACPI\PNP0303\5&9583612&1

NumberOfFunctionKeys 12

[Pointing Device]

Item Value

Hardware Type PS/2 Compatible Mouse

Number of Buttons 3

Status OK

PNP Device ID ACPI\PNP0F13\5&9583612&1

Power Management Supported False

Double Click Threshold 6

Handedness Right Handed Operation

[Modem]

Item Value

No modems

[Network]

[ Following are sub-categories of this main category ]

[Adapter]

Item Value

Name [00000000] RAS Async Adapter

Adapter Type Not Available

Product Name RAS Async Adapter

Installed True

PNP Device ID Not Available

Last Reset 9/4/2005 10:30:39 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\_L2TPMINIPOINT\0000

Last Reset 9/4/2005 10:30:39 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\_PPTP\MINI\PORT\0000  
 Last Reset 9/4/2005 10:30:39 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\_PT\MINI\PORT\0000  
 Last Reset 9/4/2005 10:30:39 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\_NDIS\WANIP\0000  
 Last Reset 9/4/2005 10:30:39 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 Not Available

Product Name Broadcom NetXtreme Gigabit Ethernet

Installed True

PNP Device ID Not Available

Last Reset 9/4/2005 10:30:39 AM

Index 5

Service Name b57w2k

IP Address 192.168.40.10

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 00:0E:0C:36:7A:C5

Service Name Not Available

Name [00000006] Intel(R) PRO/1000 MT Dual Port Server Adapter

Adapter Type Ethernet 802.3

Product Name Intel(R) PRO/1000 MT Dual Port Server Adapter

Installed True

PNP Device ID  
PCI\VEN\_8086&DEV\_1079&SUBSYS\_117A8086&REV\_03\5&33948D71&0&080218

Last Reset 9/4/2005 10:30:39 AM

Index 6

Service Name E1000

IP Address 192.168.110.99

IP Subnet 255.255.255.0

Default IP Gateway Not Available

DHCP Enabled False

DHCP Server Not Available

DHCP Lease Expires Not Available

DHCP Lease Obtained Not Available

MAC Address 00:0E:0C:35:80:30

Service Name E1000

IRQ Number 48

I/O Port 0x4000-0x4FFF

Driver c:\winnt\system32\drivers\e1000nt5.sys (174608, 8.1.8.0)

Name [00000007] Intel(R) PRO/1000 MT Dual Port Server Adapter

Adapter Type Ethernet 802.3

Product Name Intel(R) PRO/1000 MT Dual Port Server Adapter

Installed True

PNP Device ID  
PCI\VEN\_8086&DEV\_1079&SUBSYS\_117A8086&REV\_03\5&33948D71&0&090218

Last Reset 9/4/2005 10:30:39 AM

Index 7

Service Name E1000

IP Address 192.168.111.99

IP Subnet 255.255.255.0

Default IP Gateway Not Available

DHCP Enabled False

DHCP Server Not Available

DHCP Lease Expires Not Available

DHCP Lease Obtained Not Available

MAC Address 00:0E:0C:35:80:31

Service Name E1000

IRQ Number 49

I/O Port 0x4040-0x407F

Driver c:\winnt\system32\drivers\e1000nt5.sys (174608, 8.1.8.0)

Name [00000008] Broadcom NetXtreme Gigabit Ethernet

Adapter Type Ethernet 802.3

Product Name Broadcom NetXtreme Gigabit Ethernet

Installed True

PNP Device ID  
PCI\VEN\_14E4&DEV\_1659&SUBSYS\_02C61014&REV\_10V4&1E33A7FD  
&0&0010

Last Reset 9/4/2005 10:30:39 AM

Index 8

Service Name b57w2k

IP Address

IP Subnet

Default IP Gateway Not Available

DHCP Enabled True

DHCP Server

DHCP Lease Expires Not Available

DHCP Lease Obtained Not Available

MAC Address 00:0D:60:15:03:F5

Service Name b57w2k

IRQ Number 16

Driver c:\winnt\system32\drivers\b57w2k.sys (122616, 7.86.0.0)

Name [00000009] Intel(R) PRO/1000 MT Dual Port Server Adapter

Adapter Type Ethernet 802.3

Product Name Intel(R) PRO/1000 MT Dual Port Server Adapter

Installed True

PNP Device ID  
PCI\VEN\_8086&DEV\_1079&SUBSYS\_117A8086&REV\_03\5&37B3111&0  
&080018

Last Reset 9/4/2005 10:30:39 AM

Index 9

Service Name E1000

IP Address 192.168.112.99

IP Subnet 255.255.255.0

Default IP Gateway Not Available

DHCP Enabled False

DHCP Server Not Available

DHCP Lease Expires Not Available

DHCP Lease Obtained Not Available

MAC Address 00:0E:0C:36:7A:C4

Service Name E1000

IRQ Number 28

I/O Port 0x3400-0x343F

Driver c:\winnt\system32\drivers\e1000nt5.sys (174608, 8.1.8.0)

Name [00000010] Intel(R) PRO/1000 MT Dual Port Server Adapter

Adapter Type Ethernet 802.3

Product Name Intel(R) PRO/1000 MT Dual Port Server Adapter

Installed True

PNP Device ID  
PCI\VEN\_8086&DEV\_1079&SUBSYS\_117A8086&REV\_03\5&37B3111&0  
&090018

Last Reset 9/4/2005 10:30:39 AM

Index 10

Service Name E1000

IP Address 192.168.40.10

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 00:0E:0C:36:7A:C5

Service Name E1000

IRQ Number 29

I/O Port 0x3440-0x347F

Driver c:\winnt\system32\drivers\e1000nt5.sys (174608, 8.1.8.0)

[Protocol]

Item Value

Name MSAFD Tcpip [TCP/IP]

ConnectionlessService False

GuaranteesDelivery True

GuaranteesSequencing True

MaximumAddressSize 16 bytes

MaximumMessageSize 0 bytes  
 MessageOriented False  
 MinimumAddressSize 16 bytes  
 PseudoStreamOriented False  
 SupportsBroadcasting False  
 SupportsConnectData False  
 SupportsDisconnectData False  
 SupportsEncryption False  
 SupportsExpeditedData True  
 SupportsGracefulClosing True  
 SupportsGuaranteedBandwidth False  
 SupportsMulticasting False

Name MSAFD Tcpip [UDP/IP]

ConnectionlessService True  
 GuaranteesDelivery False  
 GuaranteesSequencing False  
 MaximumAddressSize 16 bytes  
 MaximumMessageSize 65467 bytes  
 MessageOriented True  
 MinimumAddressSize 16 bytes  
 PseudoStreamOriented False  
 SupportsBroadcasting True  
 SupportsConnectData False  
 SupportsDisconnectData False  
 SupportsEncryption False  
 SupportsExpeditedData False  
 SupportsGracefulClosing False  
 SupportsGuaranteedBandwidth False  
 SupportsMulticasting True

Name RSVP UDP Service Provider

ConnectionlessService True  
 GuaranteesDelivery False

GuaranteesSequencing False  
 MaximumAddressSize 16 bytes  
 MaximumMessageSize 65467 bytes  
 MessageOriented True  
 MinimumAddressSize 16 bytes  
 PseudoStreamOriented False  
 SupportsBroadcasting True  
 SupportsConnectData False  
 SupportsDisconnectData False  
 SupportsEncryption True  
 SupportsExpeditedData False  
 SupportsGracefulClosing False  
 SupportsGuaranteedBandwidth False  
 SupportsMulticasting True

Name RSVP TCP Service Provider

ConnectionlessService False  
 GuaranteesDelivery True  
 GuaranteesSequencing True  
 MaximumAddressSize 16 bytes  
 MaximumMessageSize 0 bytes  
 MessageOriented False  
 MinimumAddressSize 16 bytes  
 PseudoStreamOriented False  
 SupportsBroadcasting False  
 SupportsConnectData False  
 SupportsDisconnectData False  
 SupportsEncryption True  
 SupportsExpeditedData True  
 SupportsGracefulClosing True  
 SupportsGuaranteedBandwidth False  
 SupportsMulticasting False



Name MSAFD NetBIOS  
[\Device\NetBT\_Tcpip\_{08412761-9A82-4BA6-A62B-A98D9EB5925E}]  
SEQPACKET 7

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\_{08412761-9A82-4BA6-A62B-A98D9EB5925E}]  
DATAGRAM 7

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\_{2910F5FC-798A-44F0-A7B8-7D13D678D2C3}]  
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\_{2910F5FC-798A-44F0-A7B8-7D13D678D2C3}]  
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_{D67415A2-34DC-4EF1-AD0E-3F8520665921}] 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_{D67415A2-34DC-4EF1-AD0E-3F8520665921}] 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_{9726764A-163E-43CF-836B-CEF1FBDC4F09}] SEQPACKET 4	
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_{9726764A-163E-43CF-836B-CEF1FBDC4F09}] DATAGRAM 4	
ConnectionlessService	True

GuaranteesDelivery False  
 GuaranteesSequencing False  
 MaximumAddressSize 20 bytes  
 MaximumMessageSize 64000 bytes  
 MessageOriented True  
 MinimumAddressSize20 bytes  
 PseudoStreamOriented False  
 SupportsBroadcasting True  
 SupportsConnectData False  
 SupportsDisconnectData False  
 SupportsEncryption False  
 SupportsExpeditedData False  
 SupportsGracefulClosing False  
 SupportsGuaranteedBandwidth False  
 SupportsMulticasting False

Name MSAFD NetBIOS  
 [\Device\NetBT\_Tcpip\_{C7788F23-C676-42D3-807D-00D00D0C84F9}]  
 SEQPACKET 3

ConnectionlessService False  
 GuaranteesDelivery True  
 GuaranteesSequencing True  
 MaximumAddressSize 20 bytes  
 MaximumMessageSize 64000 bytes  
 MessageOriented True  
 MinimumAddressSize20 bytes  
 PseudoStreamOriented False  
 SupportsBroadcasting False  
 SupportsConnectData False  
 SupportsDisconnectData False  
 SupportsEncryption False  
 SupportsExpeditedData False  
 SupportsGracefulClosing False  
 SupportsGuaranteedBandwidth False  
 SupportsMulticasting False

Name MSAFD NetBIOS  
 [\Device\NetBT\_Tcpip\_{C7788F23-C676-42D3-807D-00D00D0C84F9}]  
 DATAGRAM 3

ConnectionlessService True  
 GuaranteesDelivery False  
 GuaranteesSequencing False  
 MaximumAddressSize 20 bytes  
 MaximumMessageSize 64000 bytes  
 MessageOriented True  
 MinimumAddressSize20 bytes  
 PseudoStreamOriented False  
 SupportsBroadcasting True  
 SupportsConnectData False  
 SupportsDisconnectData False  
 SupportsEncryption False  
 SupportsExpeditedData False  
 SupportsGracefulClosing False  
 SupportsGuaranteedBandwidth False  
 SupportsMulticasting False

Name MSAFD NetBIOS  
 [\Device\NetBT\_Tcpip\_{BF6A26E8-3210-46EE-A818-F9EC97D7B87A}]  
 SEQPACKET 0

ConnectionlessService False  
 GuaranteesDelivery True  
 GuaranteesSequencing True  
 MaximumAddressSize 20 bytes  
 MaximumMessageSize 64000 bytes  
 MessageOriented True  
 MinimumAddressSize20 bytes  
 PseudoStreamOriented False  
 SupportsBroadcasting False  
 SupportsConnectData False  
 SupportsDisconnectData False  
 SupportsEncryption False

SupportsExpeditedData False

SupportsGracefulClosing False

SupportsGuaranteedBandwidth False

SupportsMulticasting False

Name MSAFD NetBIOS  
 [\Device\NetBT\_Tcpip\_{BF6A26E8-3210-46EE-A818-F9EC97D7B87A}]  
 DATAGRAM 0

ConnectionlessService True

GuaranteesDelivery False

GuaranteesSequencing False

MaximumAddressSize 20 bytes

MaximumMessageSize 64000 bytes

MessageOriented True

MinimumAddressSize20 bytes

PseudoStreamOriented False

SupportsBroadcasting True

SupportsConnectData False

SupportsDisconnectData False

SupportsEncryption False

SupportsExpeditedData False

SupportsGracefulClosing False

SupportsGuaranteedBandwidth False

SupportsMulticasting False

Name MSAFD NetBIOS  
 [\Device\NetBT\_Tcpip\_{E4642D43-676A-4938-B902-1D94A9E14871}]  
 SEQPACKET 1

ConnectionlessService False

GuaranteesDelivery True

GuaranteesSequencing True

MaximumAddressSize 20 bytes

MaximumMessageSize 64000 bytes

MessageOriented True

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\_{E4642D43-676A-4938-B902-1D94A9E14871}]  
 DATAGRAM 1

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\_{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 RLSA	True
Supports RLSA	True
Supports 16 Bit Mode	False
Supports Special Characters	False
Baud Rate	9600
Bits/Byte	8
Stop Bits	1
Parity	None
Busy	0
Abort Read/Write on Error	0

Binary Mode Enabled -1  
 Continue XMit on XOff 0  
 CTS Outflow Control 0  
 Discard NULL Bytes 0  
 DSR Outflow Control 0  
 DSR Sensitivity 0  
 DTR Flow Control Type Enable  
 EOF Character 0  
 Error Replace Character 0  
 Error Replacement Enabled 0  
 Event Character 0  
 Parity Check Enabled 0  
 RTS Flow Control Type Enable  
 XOff Character 19  
 XOffXMit Threshold 512  
 XOn Character 17  
 XOnXMit Threshold 2048  
 XOnXOff InFlow Control 0  
 XOnXOff OutFlow Control 0  
 IRQ Number 4  
 I/O Port 0x03F8-0x03FF  
 Driver c:\winnt\system32\drivers\serial.sys (62512, 5.00.2195.5080)

Name COM2  
 Status OK  
 PNP Device ID ACPI\PNP0501\2  
 Maximum Input Buffer Size 0  
 Maximum Output Buffer Size False  
 Settable Baud Rate True  
 Settable Data Bits True  
 Settable Flow Control True  
 Settable Parity True  
 Settable Parity Check True  
 Settable Stop Bits True

Settable RLSD True  
 Supports RLSD True  
 Supports 16 Bit Mode False  
 Supports Special Characters False  
 Baud Rate 9600  
 Bits/Byte 8  
 Stop Bits 1  
 Parity None  
 Busy 0  
 Abort Read/Write on Error 0  
 Binary Mode Enabled -1  
 Continue XMit on XOff 0  
 CTS Outflow Control 0  
 Discard NULL Bytes 0  
 DSR Outflow Control 0  
 DSR Sensitivity 0  
 DTR Flow Control Type Enable  
 EOF Character 0  
 Error Replace Character 0  
 Error Replacement Enabled 0  
 Event Character 0  
 Parity Check Enabled 0  
 RTS Flow Control Type Enable  
 XOff Character 19  
 XOffXMit Threshold 512  
 XOn Character 17  
 XOnXMit Threshold 2048  
 XOnXOff InFlow Control 0  
 XOnXOff OutFlow Control 0  
 IRQ Number 3  
 I/O Port 0x02F8-0x02FF  
 Driver c:\winnt\system32\drivers\serial.sys (62512, 5.00.2195.5080)

[Parallel]

Item Value

Name LPT1

PNP Device ID ACPI\PNP0401\5&9583612&1

[Storage]

[ Following are sub-categories of this main category ]

[Drives]

Item Value

Drive A:

Description 3 1/2 Inch Floppy Drive

Drive C:

Description Local Fixed Disk

Compressed False

File System NTFS

Size 8.47 GB (9,097,125,888 bytes)

Free Space 2.30 GB (2,467,913,728 bytes)

Volume Name C\_Drive

Volume Serial Number 5C29133F

Partition Disk #0, Partition #0

Partition Size 8.47 GB (9,097,127,424 bytes)

Starting Offset 32256 bytes

Drive Description Disk drive

Drive Manufacturer (Standard disk drives)

Drive Model IBM-PSG ST39103LC !# 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 3

Drive SCSI Target Id 0

Drive SectorsPerTrack 63

Drive Size 9097159680 bytes

Drive TotalCylinders 1106

Drive TotalSectors 17767890

Drive TotalTracks 282030

Drive TracksPerCylinder 255

[SCSI]

Item Value

Name QLogic Fibre Channel Adapter

Caption QLogic Fibre Channel Adapter

Driver ql2300

Status OK

PNP Device ID

PCI\VEN\_1077&DEV\_2312&SUBSYS\_010C1077&REV\_02\5&37B3111&0&100018

Device ID

PCI\VEN\_1077&DEV\_2312&SUBSYS\_010C1077&REV\_02\5&37B3111&0&100018

Device Map Not Available

Index Not Available

Max Number Controlled Not Available

IRQ Number 24

I/O Port 0x2000-0x4FFF

Driver c:\winnt\system32\drivers\ql2300.sys (471118, 8.2.3.66 (w32 VI))

Name Adaptec AIC-7902B - Ultra320 SCSI

Caption Adaptec AIC-7902B - Ultra320 SCSI

Driver adpu320

Status OK

PNP Device ID

PCI\VEN\_9005&DEV\_801D&SUBSYS\_02CC1014&REV\_10\5&37B3111&0&180018

Device ID

PCI\VEN\_9005&DEV\_801D&SUBSYS\_02CC1014&REV\_10\5&37B3111&0&180018

Device Map Not Available

Index Not Available

Max Number Controlled Not Available  
 IRQ Number 30  
 I/O Port 0x2800-0x28FF  
 I/O Port 0x2400-0x24FF  
 Driver c:\winnt\system32\drivers\adpu320.sys (132608, 3.0.000.000 built by: WinDDK)

Name Adaptec AIC-7902B - Ultra320 SCSI  
 Caption Adaptec AIC-7902B - Ultra320 SCSI  
 Driver adpu320  
 Status OK  
 PNP Device ID  
 PCI\VEN\_9005&DEV\_801D&SUBSYS\_02CC1014&REV\_10\5&37B3111&0&190018

Device ID  
 PCI\VEN\_9005&DEV\_801D&SUBSYS\_02CC1014&REV\_10\5&37B3111&0&190018

Device Map Not Available

Index Not Available

Max Number Controlled Not Available

IRQ Number 31

I/O Port 0x3000-0x30FF

I/O Port 0x2C00-0x2CFF

Driver c:\winnt\system32\drivers\adpu320.sys (132608, 3.0.000.000 built by: WinDDK)

[Printing]

Name Port Name Server Name

No printing information

[Problem Devices]

Device	PNP Device ID	Error Code
Not Available	ACPI\ASF0001\2&DABA3FF&1	28
Intel(R) 82801EB USB2 Enhanced Host Controller - 24DD PCI\VEN_8086&DEV_24DD&SUBSYS_02ED1014&REV_02\3&18D45AA6&0&EF 10		
Not Available	ACPI\IBM3737\4&1244EBE3&0	28

[USB]

Device	PNP Device ID				
Intel(R) 82801EB USB Universal Host Controller - 24D2	PCI\VEN_8086&DEV_24D2&SUBSYS_02ED1014&REV_02\3&18D45AA6&0&E8				
USB Root Hub	USB\ROOT_HUB\4&1C9550AF&0				
Intel(R) 82801EB USB Universal Host Controller - 24D4	PCI\VEN_8086&DEV_24D4&SUBSYS_02ED1014&REV_02\3&18D45AA6&0&E9				
USB Root Hub	USB\ROOT_HUB\4&2E9CD9B8&0				
Intel(R) 82801EB USB Universal Host Controller - 24D7	PCI\VEN_8086&DEV_24D7&SUBSYS_02ED1014&REV_02\3&18D45AA6&0&EA				
USB Root Hub	USB\ROOT_HUB\4&2B462076&0				
Intel(R) 82801EB USB Universal Host Controller - 24DE	PCI\VEN_8086&DEV_24DE&SUBSYS_02ED1014&REV_02\3&18D45AA6&0&EB				
USB Root Hub	USB\ROOT_HUB\4&37241A76&0				
Intel(R) 82801EB USB2 Enhanced Host Controller - 24DD	PCI\VEN_8086&DEV_24DD&SUBSYS_02ED1014&REV_02\3&18D45AA6&0&EF				
[Software Environment]					
[ Following are sub-categories of this main category ]					
[Drivers]					
Name	Description	File	Type	Started	Start Mode
State	Status	Error Control	Accept Pause	Accept Pause	Accept Stop
abiosdsk Disabled	Abiosdsk Stopped	Not Available OK Ignore	Kernel Driver	False	False
abp480n5 Disabled	abp480n5 Stopped	Not Available OK Normal	Kernel Driver	False	False
acpi	Microsoft ACPI Driver		c:\winnt\system32\drivers\acpi.sys	Running	OK Normal
Kernel Driver	True	Boot			
acpiec	ACPIEC		c:\winnt\system32\drivers\acpiec.sys	OK	Normal
Driver	False	Disabled	Stopped	OK	Normal
False	True				
adptsf	Adaptec DuraLAN PCI Ethernet/Fast Ethernet driver for Windows 2000		c:\winnt\system32\drivers\adptsf50.sys	Kernel Driver	
False	Manual	Stopped	OK	Normal	False
adpu160m	adpu160m	Not Available	Kernel Driver	False	False
Disabled	Stopped	OK	Normal	False	False
adpu320	adpu320		c:\winnt\system32\drivers\adpu320.sys	Kernel Driver	
Driver	True	Boot	Running	OK	Normal
True					
aeaudio	aeaudio		c:\winnt\system32\drivers\aeaudio.sys	Kernel Driver	
Driver	False	Manual	Stopped	OK	Normal
False					



afd	AFD Networking Support Environment																			
c:\winnt\system32\drivers\afd.sys	Kernel Driver	True	Auto	Running	OK	Normal	False	True												
agp440	Intel AGP Bus Filter	c:\winnt\system32\drivers\agp440.sys	Kernel Driver	True	Boot	Running	OK	Normal	False	True										
aha154x	Aha154x	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False										
aic116x	aic116x	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False										
aic78u2	aic78u2	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False										
aic78xx	aic78xx	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False										
ami0nt	ami0nt	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False										
amsint	amsint	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False										
asc	asc	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False										
asc3350p	asc3350p	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False										
asc3550	asc3550	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False										
asynmac	RAS Asynchronous Media Driver																			
c:\winnt\system32\drivers\asynmac.sys	Kernel Driver	False	Manual	Stopped	OK	Normal	False	False												
atapi	Standard IDE/ESDI Hard Disk Controller																			
c:\winnt\system32\drivers\atapi.sys	Kernel Driver	True	Boot	Running	OK	Normal	False	True												
atdisk	Atdisk	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Ignore	False	False										
ati2mpad	ati2mpad	c:\winnt\system32\drivers\ati2mpad.sys	Kernel Driver	False	Driver	False	Manual	Stopped	OK	Ignore										
ati2mtag	ati2mtag	c:\winnt\system32\drivers\ati2mtag.sys	Kernel Driver	False	Driver	True	Manual	Running	OK	Ignore										
atirage3	atirage3	c:\winnt\system32\drivers\atimpab.sys	Kernel Driver	False	Driver	False	Manual	Stopped	OK	Ignore										
atmarpc	ATM ARP Client Protocol																			
c:\winnt\system32\drivers\atmarpc.sys	Kernel Driver	False	Manual	Stopped	OK	Normal	False	False												
audstub	Audio Stub Driver	c:\winnt\system32\drivers\audstub.sys	Kernel Driver	False	Kernel Driver	True	Manual	Running	OK	Normal										
b57w2k	Broadcom NetXtreme Gigabit Ethernet																			
c:\winnt\system32\drivers\b57w2k.sys	Kernel Driver	True	Manual	Running	OK	Normal	False	True												
beep	Beep	c:\winnt\system32\drivers\beep.sys	Kernel Driver	False	Driver	True	System	Running	OK	Normal										
buslogic	BusLogic	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False										
cd20xrnt	cd20xrnt	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False										
cdaudio	Cdaudio	c:\winnt\system32\drivers\cdaudio.sys	Kernel Driver	False	Driver	False	System	Stopped	OK	Ignore										
cdfs	Cdfs	c:\winnt\system32\drivers\cdfs.sys	File System Driver	True	Driver	True	Disabled	Running	OK	Normal										
cdrom	CD-ROM Driver	c:\winnt\system32\drivers\cdrom.sys	Kernel Driver	True	Kernel Driver	True	System	Running	OK	Normal										
changer	Changer	Not Available	Kernel Driver	False	System	Stopped	OK	Ignore	False	False										
cpqarray	Cpqarray	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False										
cpqarry2	cpqarry2	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False										
cpqfcalm	cpqfcalm	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False										
cpqfws2e	cpqfws2e	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False										
dac960nt	dac960nt	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False										
deckzpsx	deckzpsx	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False										
dfsdriver	DfsDriver	c:\winnt\system32\drivers\dfs.sys	File System Driver	True	Driver	True	Boot	Running	OK	Normal										
disk	Disk Driver	c:\winnt\system32\drivers\disk.sys	Kernel Driver	True	Kernel Driver	True	Boot	Running	OK	Normal										
diskperf	Diskperf	c:\winnt\system32\drivers\diskperf.sys	Kernel Driver	True	Driver	True	Boot	Running	OK	Normal										
dmboot	dmboot	c:\winnt\system32\drivers\dmboot.sys	Kernel Driver	False	Driver	False	Disabled	Stopped	OK	Normal										
dmio	Logical Disk Manager Driver																			
c:\winnt\system32\drivers\dmio.sys	Kernel Driver	True	Boot	Running	OK	Normal	False	True												

dmload	dmload	c:\winnt\system32\drivers\dmload.sys	Kernel Driver	True	Boot	Running	OK	Normal	False	ipfilterdriver	IP Traffic Filter Driver	c:\winnt\system32\drivers\ipfltldr.sys	Kernel Driver	Manual	Stopped	OK	Normal	False	False	
dmusic	Microsoft DirectMusic SW Synth (WDM)	c:\winnt\system32\drivers\dmusic.sys	Kernel Driver	Manual	Stopped	OK	Normal	False	False	ipinip	IP in IP Tunnel Driver	c:\winnt\system32\drivers\ipinip.sys	Kernel Driver	False	Manual	Stopped	OK	Normal	False	False
e1000	Intel(R) PRO/1000 Network Connection Driver	c:\winnt\system32\drivers\e1000nt5.sys	Kernel Driver	Manual	Running	OK	Normal	False	True	ipnat	IP Network Address Translator	c:\winnt\system32\drivers\ipnat.sys	Kernel Driver	False	Manual	Stopped	OK	Normal	False	False
e100b	Intel(R) PRO Adapter Driver	c:\winnt\system32\drivers\e100bnt5.sys	Kernel Driver	Manual	Stopped	OK	Normal	False	False	ipsec	IPSEC driver	c:\winnt\system32\drivers\ipsec.sys	Kernel Driver	True	Manual	Running	OK	Normal	False	True
efs	EFS	c:\winnt\system32\drivers\efs.sys	File System Driver	True	Disabled	Running	OK	Normal	False	ipsraidn	ipsraidn	Not Available	Kernel Driver	Disabled	Stopped	OK	Normal	False	False	False
fastfat	Fastfat	c:\winnt\system32\drivers\fastfat.sys	File System Driver	True	Disabled	Running	OK	Normal	False	irenum	IR Enumerator Service	c:\winnt\system32\drivers\irenum.sys	Kernel Driver	Manual	Stopped	OK	Normal	False	False	False
fd16_700	Fd16_700	Not Available	Kernel Driver	Disabled	Stopped	OK	Normal	False	False	isapnp	PnP ISA/EISA Bus Driver	c:\winnt\system32\drivers\isapnp.sys	Kernel Driver	Boot	Running	OK	Critical	False	True	True
fdc	Floppy Disk Controller Driver	c:\winnt\system32\drivers\fdc.sys	Kernel Driver	False	True	Manual	Running	OK	Normal	kbdclass	Keyboard Class Driver	c:\winnt\system32\drivers\kbdclass.sys	Kernel Driver	System	Running	OK	Normal	False	True	True
fiddrv	fiddrv	\\?\c:\winnt\system32\drivers\fiddrv.sys	Kernel Driver	False	False	Manual	Stopped	OK	Normal	kmixer	Microsoft Kernel Wave Audio Mixer	c:\winnt\system32\drivers\kmixer.sys	Kernel Driver	Manual	Stopped	OK	Normal	False	False	False
fips	Fips	c:\winnt\system32\drivers\fips.sys	Kernel Driver	True	True	Auto	Running	OK	Normal	ksecdd	KSecDD	c:\winnt\system32\drivers\ksecdd.sys	Kernel Driver	Driver	True	Boot	Running	OK	Normal	False
fireport	fireport	Not Available	Kernel Driver	Disabled	Stopped	OK	Normal	False	False	lbrtfdc	lbrtfdc	Not Available	Kernel Driver	System	Stopped	OK	Ignore	False	False	False
flashpnt	flashpnt	Not Available	Kernel Driver	Disabled	Stopped	OK	Normal	False	False	lp6nds35	lp6nds35	Not Available	Kernel Driver	Disabled	Stopped	OK	Normal	False	False	False
flpydisk	Floppy Disk Driver	c:\winnt\system32\drivers\flpydisk.sys	Kernel Driver	False	True	True	Manual	Running	OK	mnmdd	mnmdd	c:\winnt\system32\drivers\mnmdd.sys	Kernel Driver	Driver	True	System	Running	OK	Ignore	False
ftdisk	Volume Manager Driver	c:\winnt\system32\drivers\ftdisk.sys	Kernel Driver	Boot	Running	OK	Normal	False	True	modem	Modem	c:\winnt\system32\drivers\modem.sys	Kernel Driver	Driver	False	Manual	Stopped	OK	Ignore	False
gpc	Generic Packet Classifier	c:\winnt\system32\drivers\msgpc.sys	Kernel Driver	Manual	Running	OK	Normal	False	True	mouclass	Mouse Class Driver	c:\winnt\system32\drivers\mouclass.sys	Kernel Driver	False	True	System	Running	OK	Normal	Normal
i8042prt	i8042 Keyboard and PS/2 Mouse Port Driver	c:\winnt\system32\drivers\i8042prt.sys	Kernel Driver	System	Running	OK	Normal	False	True	mountmgr	MountMgr	c:\winnt\system32\drivers\mountmgr.sys	Kernel Driver	Driver	True	Boot	Running	OK	Normal	False
ini910u	ini910u	Not Available	Kernel Driver	Disabled	Stopped	OK	Normal	False	False	mrraid35x	mrraid35x	Not Available	Kernel Driver	Disabled	Stopped	OK	Normal	False	False	False
intellide	IntellIde	Not Available	Kernel Driver	Disabled	Stopped	OK	Normal	False	False	mrx smb	MRXSMB	c:\winnt\system32\drivers\mrx smb.sys	File System Driver	Driver	True	System	Running	OK	Normal	False

msfs Driver True	Msfs True	c:\winnt\system32\drivers\msfs.sys System Running OK Normal	File System False	nwlnkflt IPX Traffic Filter Driver c:\winnt\system32\drivers\nwlnkflt.sys Kernel Driver Manual Stopped OK Normal False False
mksksrv Manual Stopped OK Normal False False	Microsoft Streaming Service Proxy True	c:\winnt\system32\drivers\mksksrv.sys Kernel Driver Manual Stopped OK Normal False False	Kernel Driver False	nwlnkfld IPX Traffic Forwarder Driver c:\winnt\system32\drivers\nwlnkfld.sys Kernel Driver Manual Stopped OK Normal False False
mspclock Manual Stopped OK Normal False False	Microsoft Streaming Clock Proxy True	c:\winnt\system32\drivers\mspclock.sys Kernel Driver Manual Stopped OK Normal False False	Kernel Driver False	parallel Parallel class driver c:\winnt\system32\drivers\parallel.sys Kernel Driver True Manual Running OK Normal False True
mispqm Manual Stopped OK Normal False False	Microsoft Streaming Quality Manager Proxy True	c:\winnt\system32\drivers\mispqm.sys Kernel Driver Manual Stopped OK Normal False False	Kernel Driver False	parport Parallel port driver c:\winnt\system32\drivers\parport.sys Kernel Driver True System Running OK Ignore False True
mup Driver True	Mup True	c:\winnt\system32\drivers\mup.sys Boot Running OK Normal	File System False	partmgr PartMgr c:\winnt\system32\drivers\partmgr.sys Kernel Driver True True Boot Running OK Normal False
nal Kernel Driver False	Nal Service False	\\?\c:\winnt\system32\drivers\iqvw32.sys Manual Stopped OK Normal	Kernel Driver False	parvdm ParVdm c:\winnt\system32\drivers\parvdm.sys Kernel Driver True Auto Running OK Ignore False
nrc710 Disabled	Nrc710 Stopped	Not Available OK Normal	Kernel Driver False	pci PCI Bus Driver c:\winnt\system32\drivers\pci.sys Kernel Driver True True Boot Running OK Critical False
ndis Kernel Driver False	NDIS System Driver True	c:\winnt\system32\drivers\ndis.sys Boot Running OK Normal	Kernel Driver Normal	pcidump PCIDump Not Available Kernel Driver System Stopped OK Ignore False False
ndistapi Manual Running OK Normal False True	Remote Access NDIS TAPI Driver True	c:\winnt\system32\drivers\ndistapi.sys Kernel Driver Manual Running OK Normal False True	Kernel Driver True	pciide PCIIde c:\winnt\system32\drivers\pciide.sys Kernel Driver True True Boot Running OK Normal False
ndiswan Manual Running OK Normal False True	Remote Access NDIS WAN Driver True	c:\winnt\system32\drivers\ndiswan.sys Kernel Driver Manual Running OK Normal False True	Kernel Driver True	pcmcia Pcmcia c:\winnt\system32\drivers\pcmcia.sys Kernel Driver False False Disabled Stopped OK Normal False
ndproxy Kernel Driver False	NDIS Proxy True	c:\winnt\system32\drivers\ndproxy.sys Manual Running OK Normal	Kernel Driver Normal	pdcomp PDCOMP Not Available Kernel Driver Manual Stopped OK Ignore False False
netbios File System Driver False	NetBIOS Interface True	c:\winnt\system32\drivers\netbios.sys System Running OK Normal	Kernel Driver Normal	pdframe PDFRAME Not Available Kernel Driver False Manual Stopped OK Ignore False False
netbt Kernel Driver False	NetBios over Tcpip True	c:\winnt\system32\drivers\netbt.sys System Running OK Normal	Kernel Driver Normal	pdreli PDRELI Not Available Kernel Driver Manual Stopped OK Ignore False False
netdetect Driver False	NetDetect False	c:\winnt\system32\drivers\netdetect.sys Manual Stopped OK Normal	Kernel False	pdrframe PDRFRAME Not Available Kernel Driver False Manual Stopped OK Ignore False False
npfs Driver True	Npfs True	c:\winnt\system32\drivers\npfs.sys System Running OK Normal	File System False	pptpminiport WAN Miniport (PPTP) c:\winnt\system32\drivers\raspptp.sys Kernel Driver Manual Running OK Normal False True
ntfs Driver True	Ntfs True	c:\winnt\system32\drivers\ntfs.sys Disabled Running OK Normal	File System False	ptilink Direct Parallel Link Driver c:\winnt\system32\drivers\ptilink.sys Kernel Driver Manual Running OK Normal False True
null Driver True	Null True	c:\winnt\system32\drivers\null.sys System Running OK Normal	Kernel False	q11080 q11080 Not Available Kernel Driver Disabled Stopped OK Normal False False
				q110wnt Q110wnt Not Available Kernel Driver Disabled Stopped OK Normal False False
				q11240 q11240 Not Available Kernel Driver Disabled Stopped OK Normal False False

ql2100 Disabled	ql2100 Stopped	Not Available OK	Normal	Kernel Driver False	False		smwdm Driver False	smwdm False	c:\winnt\system32\drivers\smwdm.sys	Manual	Stopped	OK	Normal	Kernel False
ql2300 Driver True	ql2300 True	c:\winnt\system32\drivers\ql2300.sys	Boot Running	OK Normal	Kernel False		sparrow Disabled	Sparrow Stopped	Not Available OK	Normal	Kernel Driver False	False	False	False
ql2300vi Driver True	ql2300vi True	c:\winnt\system32\drivers\ql2300vi.sys	Boot Running	OK Normal	Kernel False		spud Kernel Driver False	Special Purpose Utility Driver True	c:\winnt\system32\drivers\spud.sys	Manual	Running	OK	Normal	Normal
qlvika Driver False	qlvika False	c:\winnt\system32\drivers\qlvika.sys	Auto Stopped	OK Normal	Kernel False		srv True	Srv Manual	c:\winnt\system32\drivers\srv.sys	File System Driver	Running	OK	Normal	False True
rasacd c:\winnt\system32\drivers\rasacd.sys	Remote Access Auto Connection Driver System	Kernel Driver	Running	OK	Normal	False	swenum Kernel Driver False	Software Bus Driver True	c:\winnt\system32\drivers\swenum.sys	Manual	Running	OK	Normal	Normal
rasl2tp c:\winnt\system32\drivers\rasl2tp.sys	WAN Miniport (L2TP) Manual	Kernel Driver	Running	OK	Normal	False	swmidi Manual	Microsoft Kernel GS Wavetable Synthesizer Stopped	c:\winnt\system32\drivers\swmidi.sys	Kernel Driver	OK	Normal	False	False
raspti Kernel Driver False	Direct Parallel True	c:\winnt\system32\drivers\raspti.sys	Manual	Running	OK	Normal	symc810 Disabled	symc810 Stopped	Not Available OK	Normal	Kernel Driver False	False	False	False
rca c:\winnt\system32\drivers\rca.sys	Microsoft Streaming Network Raw Channel Access Stopped	Kernel Driver	OK	Normal	False	Manual	symc8xx Disabled	symc8xx Stopped	Not Available OK	Normal	Kernel Driver False	False	False	False
rdbss Driver True	Rdbss True	c:\winnt\system32\drivers\rdbss.sys	System	Running	OK	Normal	symmpi Driver False	symmpi False	c:\winnt\system32\drivers\symmpi.sys	Disabled	Stopped	OK	Normal	Kernel False
rdpdr c:\winnt\system32\drivers\rdpdr.sys	Terminal Server Device Redirector Driver Manual	Kernel Driver	Running	OK	Normal	True	sym_hi Disabled	sym_hi Stopped	Not Available OK	Normal	Kernel Driver False	False	False	False
rdpwd Driver True	RDPWD True	c:\winnt\system32\drivers\rdpwd.sys	Manual	Running	OK	Ignore	sysaudio Manual	Microsoft System Audio Device Stopped	c:\winnt\system32\drivers\sysaudio.sys	Kernel Driver	OK	Normal	False	False
redbook c:\winnt\system32\drivers\redbook.sys	Digital CD Audio Playback Filter Driver System	Kernel Driver	Stopped	OK	Normal	False	tcpip Kernel Driver False	TCP/IP Protocol Driver True	c:\winnt\system32\drivers\tcpip.sys	True	System	Running	OK	Normal
serenum Kernel Driver False	Serenum Filter Driver True	c:\winnt\system32\drivers\serenum.sys	Manual	Running	OK	Normal	tdasync Kernel Driver False	TDASYNC False	c:\winnt\system32\drivers\tdasync.sys	Manual	Stopped	OK	Ignore	Ignore
serial Kernel Driver False	Serial port driver True	c:\winnt\system32\drivers\serial.sys	System	Running	OK	Ignore	tdipx Driver False	TDIPX False	c:\winnt\system32\drivers\tdipx.sys	Manual	Stopped	OK	Ignore	Kernel False
sfloppy Driver False	Sfloppy False	c:\winnt\system32\drivers\sfloppy.sys	System	Stopped	OK	Ignore	tdnetb Driver False	TDNETB False	c:\winnt\system32\drivers\tdnetb.sys	Manual	Stopped	OK	Ignore	Kernel False
sglfb Driver False	sglfb False	c:\winnt\system32\drivers\sglfb.sys	System	Stopped	OK	Normal	tdpipe Driver False	TDPIPE False	c:\winnt\system32\drivers\tdpipe.sys	Manual	Stopped	OK	Ignore	Kernel False
simbad Disabled	Simbad Stopped	Not Available OK	Normal	Kernel Driver False	False		tdspx Driver False	TDSPX False	c:\winnt\system32\drivers\tdspx.sys	Manual	Stopped	OK	Ignore	Kernel False
							tdtcp Driver True	TDTCP True	c:\winnt\system32\drivers\tdtcp.sys	Manual	Running	OK	Ignore	Kernel False

```

termdd Terminal Device Driver
c:\winnt\system32\drivers\termdd.sys Kernel Driver True
Auto Running OK Normal False True

tga tga Not Available Kernel Driver False
System Stopped OK Ignore False False

udfs Udfs c:\winnt\system32\drivers\udfs.sys File System
Driver False Disabled Stopped OK Normal False
False

uhcd Microsoft USB Universal Host Controller Driver
c:\winnt\system32\drivers\uhcd.sys Kernel Driver True
Manual Running OK Normal False True

ultra66 ultra66 Not Available Kernel Driver False
Disabled Stopped OK Normal False False

update Microcode Update Driver
c:\winnt\system32\drivers\update.sys Kernel Driver True
Manual Running OK Normal False True

usbehci Microsoft USB 2.0 Enhanced Host Controller Miniport Driver
c:\winnt\system32\drivers\usbehci.sys Kernel Driver False
Manual Stopped OK Normal False False

usbhub Microsoft USB Standard Hub Driver
c:\winnt\system32\drivers\usbhub.sys Kernel Driver True
Manual Running OK Normal False True

usbhub20 USB 2.0 Root Hub Support
c:\winnt\system32\drivers\usbhub20.sys Kernel Driver False
Manual Stopped OK Normal False False

vgasave VgaSave c:\winnt\system32\drivers\vga.sys Kernel
Driver True System Running OK Ignore False
True

wanarp Remote Access IP ARP Driver
c:\winnt\system32\drivers\wanarp.sys Kernel Driver True
Manual Running OK Normal False True

wdica WDICA Not Available Kernel Driver False
Manual Stopped OK Ignore False False

wdmaud Microsoft WINMM WDM Audio Compatibility Driver
c:\winnt\system32\drivers\wdmaud.sys Kernel Driver False
Manual Stopped OK Normal False False

[Environment Variables]

Variable Value User Name

ComSpec %SystemRoot%\system32\cmd.exe <SYSTEM>

NUMBER_OF_PROCESSORS 4 <SYSTEM>

OS Windows_NT <SYSTEM>

Os2LibPath %SystemRoot%\system32\os2\dll; <SYSTEM>

Path
%SystemRoot%\system32;%SystemRoot%;%SystemRoot%\system32\WBEM;
C:\Program Files\Microsoft SQL
Server\80\Tools\BINN;c:\batfiles;c:\tools;C:\Program Files\Intel\DMIX
<SYSTEM>

```

```

PATHEXT
.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH <SYSTEM>

PROCESSOR_ARCHITECTURE x86 <SYSTEM>

PROCESSOR_IDENTIFIER x86 Family 15 Model 3 Stepping 4,
GenuineIntel <SYSTEM>

PROCESSOR_LEVEL 15 <SYSTEM>

PROCESSOR_REVISION 0304 <SYSTEM>

TEMP %SystemRoot%\TEMP <SYSTEM>

TMP %SystemRoot%\TEMP <SYSTEM>

windir %SystemRoot% <SYSTEM>

TEMP %USERPROFILE%\Local Settings\Temp
FCLIENT10\Administrator

TMP %USERPROFILE%\Local Settings\Temp
FCLIENT10\Administrator

[Jobs]

[ Following are sub-categories of this main category ]

[Print]

Document Size Owner Notify Status Time Submitted
Start Time Until TimeElapsed Time Pages Printed Job ID
Priority ParametersDriver Name Print Processor Host Print
Queue Data Type Name

Unknown Unknown Unknown Unknown Unknown Unknown Unknown
Unknown Unknown Unknown Unknown Unknown Unknown Unknown
Unknown Unknown Unknown Unknown

[Network Connections]

Local Name Remote Name Type Status User Name

No network connections information

[Running Tasks]

Name Path Process ID Priority Min Working Set Max
Working Set Start Time Version Size File Date

system idle process Not Available 0 0 Not
Available Not Available Not Available Unknown Unknown
Unknown

system Not Available 8 8 0 1413120
Not Available Unknown Unknown Unknown

smss.exe c:\winnt\system32\smss.exe 188 11 204800
1413120 9/4/2005 2:31:33 PM 5.00.2195.5382 44.77 KB (45,840
bytes) 12/7/1999 7:00:00 AM

csrss.exe Not Available 212 13 Not Available
Not Available 9/4/2005 2:31:37 PM Unknown Unknown Unknown

winlogon.exe c:\winnt\system32\winlogon.exe 208 13
204800 1413120 9/4/2005 2:31:38 PM 5.00.2195.5731 174.77 KB
(178,960 bytes) 5/3/2002 12:31:24 PM

```

services.exe	c:\winnt\system32\services.exe	264	9						mmc.exe	c:\winnt\system32\mmc.exe	780	8	204800						
204800	1413120	9/4/2005 2:31:40 PM	5.00.2195.3940	86.77 KB	(88,848 bytes)	12/7/1999 7:00:00 AM			1413120	9/6/2005 2:20:55 PM	5.00.2195.4933	8	589.27 KB	(603,408 bytes)	1/14/2005 10:50:06 AM				
lsass.exe	c:\winnt\system32\lsass.exe	276	9	204800					rsrvp.exe	c:\winnt\system32\rsrvp.exe	836	8	204800						
1413120	9/4/2005 2:31:40 PM	5.00.2195.5430	32.77 KB	(33,552 bytes)	12/7/1999 7:00:00 AM				1413120	9/6/2005 2:22:13 PM	5.00.2167.1	8	172.77 KB	(176,912 bytes)	12/7/1999 7:00:00 AM				
termsrv.exe	c:\winnt\system32\termsrv.exe	392	10						[Loaded Modules]										
204800	1413120	9/4/2005 2:31:41 PM	5.00.2195.5276	138.77 KB	(142,096 bytes)	1/14/2005 10:50:12 AM			Name	Version	Size	File Date	Manufacturer	Path					
svchost.exe	c:\winnt\system32\svchost.exe	500	8						traffic.dll	5.00.2139.1	30.77 KB	(31,504 bytes)	12/7/1999						
204800	1413120	9/4/2005 2:31:43 PM	5.00.2134.1	7.77 KB	(7,952 bytes)	12/7/1999 7:00:00 AM			7:00:00 AM		Microsoft Corporation								
msdtc.exe	c:\winnt\system32\msdtc.exe	524	8	204800					rsrvp.exe	5.00.2167.1	172.77 KB	(176,912 bytes)	12/7/1999						
1413120	9/4/2005 2:31:44 PM	1999.9.3421.3	6.77 KB	(6,928 bytes)	2/12/2003 7:52:40 AM				7:00:00 AM		Microsoft Corporation								
svchost.exe	c:\winnt\system32\svchost.exe	696	8						c:\winnt\system32\rsrvp.exe										
204800	1413120	9/4/2005 2:31:47 PM	5.00.2134.1	7.77 KB	(7,952 bytes)	12/7/1999 7:00:00 AM			wbemprox.dll	1.50.1085.0045	40.08 KB	(41,040 bytes)	8/29/2002						
llssrv.exe	c:\winnt\system32\llssrv.exe	724	9	204800					1/14/2005 10:50:15 AM		Microsoft Corporation								
1413120	9/4/2005 2:31:47 PM	5.00.2195.4907	81.27 KB	(83,216 bytes)	7/22/2002 1:05:04 PM				mlang.dll	6.00.2800.1106	561.50 KB	(574,976 bytes)	8/29/2002						
regsvc.exe	c:\winnt\system32\regsvc.exe	800	8	204800					8:14:40 AM		Microsoft Corporation								
1413120	9/4/2005 2:31:48 PM	5.00.2195.3649	65.27 KB	(66,832 bytes)	1/14/2005 10:50:10 AM				c:\winnt\system32\mlang.dll										
rsys.exe	Not Available	924	8	Not Available					cabinet.dll	5.00.2147.1	54.77 KB	(56,080 bytes)	12/7/1999						
Not Available	9/4/2005 2:31:58 PM	Unknown	Unknown	Unknown					7:00:00 AM		Microsoft Corporation								
mstask.exe	c:\winnt\system32\mstask.exe	936	8	204800					c:\winnt\system32\cabinet.dll										
1413120	9/4/2005 2:31:58 PM	4.71.2195.1	115.77 KB	(118,544 bytes)	1/14/2005 10:50:08 AM				msinfo32.dll	5.00.2195.4601	312.27 KB	(319,760 bytes)	8/29/2002						
tcpsvcs.exe	c:\winnt\system32\tcpsvcs.exe	976	8						1/14/2005 10:50:17 AM		Microsoft Corporation								
204800	1413120	9/4/2005 2:31:58 PM	5.00.2134.1	24.77 KB	(25,360 bytes)	12/7/1999 7:00:00 AM			files\common files\microsoft shared\msinfo\msinfo32.dll										
winmgmt.exe	c:\winnt\system32\wbem\winmgmt.exe	1016	8						mmcmdmgr.dll	5.00.2195.5352	816.27 KB	(835,856 bytes)	8/29/2002						
204800	1413120	9/4/2005 2:31:58 PM	1.50.1085.0070	192.08 KB	(196,685 bytes)	1/14/2005 10:50:15 AM			1/14/2005 10:50:06 AM		Microsoft Corporation								
inetinfo.exe	c:\winnt\system32\inetinfo.exe	1036	8						c:\winnt\system32\mmcmdmgr.dll										
204800	1413120	9/4/2005 2:31:58 PM	5.00.0984	14.27 KB	(14,608 bytes)	1/14/2005 10:50:21 AM			mmc.exe	5.00.2195.4933	589.27 KB	(603,408 bytes)	1/14/2005						
dfssvc.exe	c:\winnt\system32\dfssvc.exe	1024	8	204800					10:50:06 AM		Microsoft Corporation								
1413120	9/4/2005 2:32:03 PM	5.00.2195.3649	88.27 KB	(90,384 bytes)	1/14/2005 10:50:02 AM				c:\winnt\system32\mmc.exe										
explorer.exe	c:\winnt\explorer.exe	1284	8	204800					tapisrv.dll	5.00.2195.5227	169.27 KB	(173,328 bytes)	1/14/2005						
1413120	9/4/2005 2:32:25 PM	5.00.3502.5321	237.27 KB	(242,960 bytes)	1/14/2005 10:50:14 AM				10:50:12 AM		Microsoft Corporation								
bmlisten.exe	c:\slave\bmlisten.exe	1400	8	204800					c:\winnt\system32\tapisrv.dll										
1413120	9/4/2005 2:32:29 PM	2, 1, 0, 2	156.00 KB	(159,744 bytes)	7/22/2004 4:52:24 PM				bmlisten.exe	2, 1, 0, 2	156.00 KB	(159,744 bytes)	7/22/2004						
svchost.exe	c:\winnt\system32\svchost.exe	1404	8						4:52:24 PM		IBM xSeries Server Performance								
204800	1413120	9/4/2005 2:32:30 PM	5.00.2134.1	7.77 KB	(7,952 bytes)	12/7/1999 7:00:00 AM			shdoclc.dll	6.00.2800.1106	521.00 KB	(533,504 bytes)	8/29/2002						
									8:14:40 AM		Microsoft Corporation								
									c:\winnt\system32\shdoclc.dll										
									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										

msacm32.dll	5.00.2134.1	65.27 KB (66,832 bytes)	
12/7/1999 7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\msacm32.dll			
avifil32.dll	5.00.2134.1	76.27 KB (78,096 bytes)	12/7/1999
7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\avifil32.dll			
msvfw32.dll	5.00.2134.1	113.77 KB (116,496 bytes)	
12/7/1999 7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\msvfw32.dll			
docprop2.dll	5.00.2178.1	297.77 KB (304,912 bytes)	
12/7/1999 7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\docprop2.dll			
powrprof.dll	5.00.3502.5305	13.27 KB (13,584 bytes)	
1/14/2005 10:50:10 AM	Microsoft Corporation		
c:\winnt\system32\powrprof.dll			
batmeter.dll	5.00.3502.5305	20.27 KB (20,752 bytes)	
1/14/2005 10:50:00 AM	Microsoft Corporation		
c:\winnt\system32\batmeter.dll			
stobject.dll	5.00.2195.4455	79.27 KB (81,168 bytes)	1/14/2005
10:50:12 AM	Microsoft Corporation		
c:\winnt\system32\stobject.dll			
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			
msi.dll	2.0.2600.1	1.90 MB (1,991,168 bytes)	1/14/2005 10:50:07
AM	Microsoft Corporation		
c:\winnt\system32\msi.dll			
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			
mydocs.dll	5.00.3315.4065	55.27 KB (56,592 bytes)	1/14/2005
10:50:08 AM	Microsoft Corporation		
c:\winnt\system32\mydocs.dll			
hhsetup.dll	4.74.8702	66.27 KB (67,856 bytes)	12/7/1999 7:00:00 AM
Microsoft Corporation			
c:\winnt\system32\hhsetup.dll			
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)	
1/14/2005 10:50:14 AM	Microsoft Corporation		
c:\winnt\explorer.exe			
dfssvc.exe	5.00.2195.3649	88.27 KB (90,384 bytes)	1/14/2005
10:50:02 AM	Microsoft Corporation		
c:\winnt\system32\dfssvc.exe			
iislog.dll	5.00.0984	75.27 KB (77,072 bytes)	1/14/2005 10:50:21
AM	Microsoft Corporation		
c:\winnt\system32\inetrv\iislog.dll			
ntfsdrv.dll	5.00.0984	37.27 KB (38,160 bytes)	1/14/2005 10:50:21
AM	Microsoft Corporation		
c:\winnt\system32\inetrv\ntfsdrv.dll			
httpext.dll	5.00.0984	240.27 KB (246,032 bytes)	1/14/2005 10:50:21
AM	Microsoft Corporation		
c:\winnt\system32\inetrv\httpext.dll			
rpcproxy.dll	5.00.2195.5419	16.27 KB (16,656 bytes)	
1/14/2005 10:50:19 AM	Microsoft Corporation		
c:\winnt\system32\rpcproxy\rpcproxy.dll			
fpexedll.dll	4.0.2.5526	20.06 KB (20,541 bytes)	1/14/2005
10:50:18 AM	Microsoft Corporation		
c:\program files\common files\microsoft shared\web server extensions\40\bin\fpexedll.dll			
md5filt.dll	5.00.0984	32.77 KB (33,552 bytes)	1/14/2005 10:50:21
AM	Microsoft Corporation		
c:\winnt\system32\inetrv\md5filt.dll			
aqueue.dll	5.00.0984	313.77 KB (321,296 bytes)	1/14/2005 10:50:18
AM	Microsoft Corporation		
c:\winnt\system32\inetrv\aqueue.dll			
gzip.dll	5.00.0984	30.27 KB (30,992 bytes)	1/14/2005 10:50:20
AM	Microsoft Corporation		
c:\winnt\system32\inetrv\gzip.dll			
compfilt.dll	5.00.0984	22.77 KB (23,312 bytes)	1/14/2005
10:50:20 AM	Microsoft Corporation		
c:\winnt\system32\inetrv\compfilt.dll			
sspifilt.dll	5.00.0984	42.77 KB (43,792 bytes)	1/14/2005 10:50:21
AM	Microsoft Corporation		
c:\winnt\system32\inetrv\sspifilt.dll			
seo.dll	5.00.0984	229.27 KB (234,768 bytes)	1/14/2005 10:50:21
AM	Microsoft Corporation		
c:\winnt\system32\inetrv\seo.dll			
iscomlog.dll	5.00.0984	24.27 KB (24,848 bytes)	1/14/2005
10:50:21 AM	Microsoft Corporation		
c:\winnt\system32\inetrv\iscomlog.dll			
lonsint.dll	5.00.0984	11.77 KB (12,048 bytes)	1/14/2005 10:50:21
AM	Microsoft Corporation		
c:\winnt\system32\inetrv\lonsint.dll			
inetsloc.dll	5.00.0984	20.27 KB (20,752 bytes)	1/14/2005 10:50:04
AM	Microsoft Corporation		
c:\winnt\system32\inetsloc.dll			
w3svc.dll	5.00.0984	335.27 KB (343,312 bytes)	1/14/2005 10:50:22
AM	Microsoft Corporation		
c:\winnt\system32\inetrv\w3svc.dll			
staxmem.dll	5.00.0984	8.27 KB (8,464 bytes)	1/14/2005 10:50:12
AM	Microsoft Corporation		
c:\winnt\system32\staxmem.dll			
exstrace.dll	5.00.0984	13.77 KB (14,096 bytes)	1/13/2005
5:06:47 PM	Microsoft Corporation		
c:\winnt\system32\exstrace.dll			
rwnh.dll	5.00.0984	10.77 KB (11,024 bytes)	1/14/2005 10:50:11
AM	Microsoft Corporation		
c:\winnt\system32\rwnh.dll			
fcachdll.dll	5.00.0984	43.77 KB (44,816 bytes)	1/14/2005
10:50:03 AM	Microsoft Corporation		
c:\winnt\system32\fcachdll.dll			

iisfecnv.dll	5.00.0984	7.27 KB (7,440 bytes)	1/13/2005 5:06:46 PM	Microsoft Corporation	c:\winnt\system32\inetrv\iisfecnv.dll
isatq.dll	5.00.0984	60.77 KB (62,224 bytes)	1/14/2005 10:50:21 AM	Microsoft Corporation	c:\winnt\system32\inetrv\isatq.dll
infocomm.dll	5.00.0984	240.77 KB (246,544 bytes)	1/14/2005 10:50:21 AM	Microsoft Corporation	c:\winnt\system32\inetrv\infocomm.dll
smtpsvc.dll	5.00.0984	428.27 KB (438,544 bytes)	1/14/2005 10:50:21 AM	Microsoft Corporation	c:\winnt\system32\inetrv\smtpsvc.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
svcxct.dll	5.00.0984	39.77 KB (40,720 bytes)	1/14/2005 10:50:21 AM	Microsoft Corporation	c:\winnt\system32\inetrv\svcxct.dll
admexs.dll	5.00.0984	27.77 KB (28,432 bytes)	1/14/2005 10:50:20 AM	Microsoft Corporation	c:\winnt\system32\inetrv\admexs.dll
wamreg.dll	5.00.0984	45.77 KB (46,864 bytes)	1/14/2005 10:50:22 AM	Microsoft Corporation	c:\winnt\system32\inetrv\wamreg.dll
metadata.dll	5.00.0984	68.77 KB (70,416 bytes)	1/14/2005 10:50:21 AM	Microsoft Corporation	c:\winnt\system32\inetrv\metadata.dll
iismap.dll	5.00.0984	55.77 KB (57,104 bytes)	1/14/2005 10:50:04 AM	Microsoft Corporation	c:\winnt\system32\iismap.dll
nsepm.dll	5.00.0984	43.27 KB (44,304 bytes)	1/14/2005 10:50:21 AM	Microsoft Corporation	c:\winnt\system32\inetrv\nsepm.dll
admwprox.dll	5.00.0984	31.77 KB (32,528 bytes)	1/13/2005 5:06:47 PM	Microsoft Corporation	c:\winnt\system32\admwprox.dll
coadmin.dll	5.00.0984	39.77 KB (40,720 bytes)	1/14/2005 10:50:20 AM	Microsoft Corporation	c:\winnt\system32\inetrv\coadmin.dll
iisadmin.dll	5.00.0984	15.27 KB (15,632 bytes)	1/14/2005 10:50:21 AM	Microsoft Corporation	c:\winnt\system32\inetrv\iisadmin.dll
rpref.dll	5.00.0984	4.27 KB (4,368 bytes)	1/14/2005 10:50:21 AM	Microsoft Corporation	c:\winnt\system32\inetrv\rpref.dll
iisrtl.dll	5.00.0984	119.77 KB (122,640 bytes)	1/14/2005 10:50:04 AM	Microsoft Corporation	c:\winnt\system32\iisrtl.dll
inetinfo.exe	5.00.0984	14.27 KB (14,608 bytes)	1/14/2005 10:50:21 AM	Microsoft Corporation	c:\winnt\system32\inetrv\inetinfo.exe
netui1.dll	5.00.2134.1	210.27 KB (215,312 bytes)	12/7/1999 7:00:00 AM	Microsoft Corporation	c:\winnt\system32\netui1.dll
netui0.dll	5.00.2195.4874	70.77 KB (72,464 bytes)	1/14/2005 10:50:09 AM	Microsoft Corporation	c:\winnt\system32\netui0.dll
ntlanman.dll	5.00.2195.5428	35.27 KB (36,112 bytes)	12/7/1999 7:00:00 AM	Microsoft Corporation	c:\winnt\system32\ntlanman.dll
ntmarta.dll	5.00.2195.4836	99.77 KB (102,160 bytes)	1/14/2005 10:50:09 AM	Microsoft Corporation	c:\winnt\system32\ntmarta.dll
provthrd.dll	1.50.1085.0000	68.07 KB (69,708 bytes)	1/13/2005 5:08:21 PM	Microsoft Corporation	c:\winnt\system32\wbem\provthrd.dll
ntevt.dll	1.50.1085.0072	192.06 KB (196,671 bytes)	1/14/2005 10:50:15 AM	Microsoft Corporation	c:\winnt\system32\wbem\ntevt.dll
perfos.dll	5.00.2155.1	21.27 KB (21,776 bytes)	12/7/1999 7:00:00 AM	Microsoft Corporation	c:\winnt\system32\perfos.dll
psapi.dll	5.00.2134.1	28.27 KB (28,944 bytes)	12/7/1999 7:00:00 AM	Microsoft Corporation	c:\winnt\system32\psapi.dll
framedyn.dll	1.50.1085.0076	164.07 KB (168,009 bytes)	1/14/2005 10:50:15 AM	Microsoft Corporation	c:\winnt\system32\wbem\framedyn.dll
cimwin32.dll	1.50.1085.0073	1.04 MB (1,085,520 bytes)	1/14/2005 10:50:15 AM	Microsoft Corporation	c:\winnt\system32\wbem\cimwin32.dll
wbemsvc.dll	1.50.1085.0007	40.07 KB (41,036 bytes)	1/14/2005 10:50:15 AM	Microsoft Corporation	c:\winnt\system32\wbem\wbemsvc.dll
wbemess.dll	1.50.1085.0074	364.07 KB (372,804 bytes)	1/14/2005 10:50:15 AM	Microsoft Corporation	c:\winnt\system32\wbem\wbemess.dll
fastprox.dll	1.50.1085.0056	144.08 KB (147,536 bytes)	1/14/2005 10:50:15 AM	Microsoft Corporation	c:\winnt\system32\wbem\fastprox.dll
wbemcore.dll	1.50.1085.0085	628.07 KB (643,146 bytes)	1/14/2005 10:50:15 AM	Microsoft Corporation	c:\winnt\system32\wbem\wbemcore.dll
wbemcomn.dll	1.50.1085.0077	692.07 KB (708,675 bytes)	1/14/2005 10:50:15 AM	Microsoft Corporation	c:\winnt\system32\wbem\wbemcomn.dll
winmgmt.exe	1.50.1085.0070	192.08 KB (196,685 bytes)	1/14/2005 10:50:15 AM	Microsoft Corporation	c:\winnt\system32\wbem\winmgmt.exe
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 Microsoft Corporation	6.27 KB (6,416 bytes)	12/7/1999 7:00:00 AM	iaspipe.dll 5.00.2134.1 Microsoft Corporation	41.77 KB (42,768 bytes)	12/7/1999 7:00:00 AM
mstask.exe 4.71.2195.1 Microsoft Corporation	115.77 KB (118,544 bytes)	1/14/2005 10:50:08 AM	c:\winnt\system32\iaspipe.dll		
regsvx.exe 5.00.2195.3649 Microsoft Corporation	65.27 KB (66,832 bytes)	1/14/2005 10:50:10 AM	expsrv.dll 6.72.9414 Microsoft Corporation	371.77 KB (380,688 bytes)	1/14/2005 10:50:03 AM
c:\winnt\system32\regsvx.exe			c:\winnt\system32\expsrv.dll		
llsrpc.dll 5.00.2195.4907 Microsoft Corporation	47.77 KB (48,912 bytes)	12/7/1999 7:00:00 AM	vbajet32.dll 6.1.8268 Microsoft Corporation	30.27 KB (30,992 bytes)	1/14/2005 10:50:13 AM
c:\winnt\system32\llsrpc.dll			c:\winnt\system32\vbajet32.dll		
llssrv.exe 5.00.2195.4907 Microsoft Corporation	81.27 KB (83,216 bytes)	7/22/2002 1:05:04 PM	msjtes40.dll 4.00.5914.0 Microsoft Corporation	236.27 KB (241,936 bytes)	1/14/2005 10:50:07 AM
c:\winnt\system32\llssrv.exe			c:\winnt\system32\msjtes40.dll		
ntmsdba.dll 5.00.2195.5279 Microsoft Corporation	169.27 KB (173,328 bytes)	1/14/2005 10:50:09 AM	oledb32r.dll 2.70.9001.0 built by: Lab06_N(dagbuild) Microsoft Corporation	64.00 KB (65,536 bytes)	1/13/2005 5:09:52 PM
c:\winnt\system32\ntmsdba.dll			c:\program files\common files\system\ole db\oledb32r.dll		
rasdlg.dll 5.00.2195.5438 Microsoft Corporation	515.77 KB (528,144 bytes)	12/7/1999 7:00:00 AM	comdlg32.dll 5.00.3315.3727 Microsoft Corporation	221.27 KB (226,576 bytes)	12/7/1999 7:00:00 AM
c:\winnt\system32\rasdlg.dll			c:\winnt\system32\comdlg32.dll		
netcfgx.dll 5.00.2195.4874 Microsoft Corporation	534.77 KB (547,600 bytes)	1/14/2005 10:50:08 AM	msdart.dll 2.71.9031.4 built by: Lab06_N(dagbuild) Microsoft Corporation	124.00 KB (126,976 bytes)	1/13/2005 5:09:51 PM
c:\winnt\system32\netcfgx.dll			c:\winnt\system32\msdart.dll		
rasmans.dll 5.00.2195.5436 Microsoft Corporation	149.27 KB (152,848 bytes)	1/14/2005 10:50:10 AM	oledb32.dll 2.71.9031.4 built by: Lab06_N(dagbuild) Microsoft Corporation	408.00 KB (417,792 bytes)	1/13/2005 5:09:51 PM
c:\winnt\system32\rasmans.dll			c:\program files\common files\system\ole db\oledb32.dll		
wmi.dll 5.00.2191.1 Microsoft Corporation	6.27 KB (6,416 bytes)	12/7/1999 7:00:00 AM	msjint40.dll 4.00.2927.2 Microsoft Corporation	148.27 KB (151,824 bytes)	1/14/2005 10:50:07 AM
c:\winnt\system32\wmi.dll			c:\winnt\system32\msjint40.dll		
netshell.dll 5.00.2195.5431 Microsoft Corporation	457.77 KB (468,752 bytes)	1/14/2005 10:50:09 AM	msjter40.dll 4.00.2927.2 Microsoft Corporation	52.27 KB (53,520 bytes)	1/14/2005 10:50:07 AM
c:\winnt\system32\netshell.dll			c:\winnt\system32\msjter40.dll		
netman.dll 5.00.2195.5282 Microsoft Corporation	89.27 KB (91,408 bytes)	1/14/2005 10:50:08 AM	mswstr10.dll 4.00.3829.2 Microsoft Corporation	600.27 KB (614,672 bytes)	1/14/2005 10:50:08 AM
c:\winnt\system32\netman.dll			c:\winnt\system32\mswstr10.dll		
sens.dll 5.00.2163.1 Microsoft Corporation	36.77 KB (37,648 bytes)	12/7/1999 7:00:00 AM	msjjet40.dll 4.00.6218.0 Microsoft Corporation	1.43 MB (1,503,504 bytes)	1/14/2005 10:50:07 AM
c:\winnt\system32\sens.dll			c:\winnt\system32\msjjet40.dll		
iashlpr.dll 5.00.2184.1 Microsoft Corporation	33.27 KB (34,064 bytes)	12/7/1999 7:00:00 AM	msjetoledb40.dll 4.00.5919.0 Microsoft Corporation	340.27 KB (348,432 bytes)	1/14/2005 10:50:07 AM
c:\winnt\system32\iaslpr.dll			c:\winnt\system32\msjetoledb40.dll		
iasacct.dll 5.00.2195.4115 Microsoft Corporation	28.27 KB (28,944 bytes)	1/14/2005 10:50:04 AM	iasrad.dll 5.00.2195.4841 Microsoft Corporation	94.77 KB (97,040 bytes)	1/14/2005 10:50:04 AM
c:\winnt\system32\iasacct.dll			c:\winnt\system32\iasrad.dll		
iasuser.dll 5.00.2195.4609 Microsoft Corporation	19.77 KB (20,240 bytes)	12/7/1999 7:00:00 AM	iassam.dll 5.00.2195.5427 Microsoft Corporation	98.27 KB (100,624 bytes)	1/14/2005 10:50:04 AM
c:\winnt\system32\iasuser.dll			c:\winnt\system32\iassam.dll		
iasnap.dll 5.00.2195.4115 Microsoft Corporation	58.77 KB (60,176 bytes)	1/14/2005 10:50:04 AM	iasads.dll 5.00.2195.5080 Microsoft Corporation	73.77 KB (75,536 bytes)	1/14/2005 10:50:04 AM
c:\winnt\system32\iasnap.dll			c:\winnt\system32\iasads.dll		
			iaspolcy.dll 5.00.2134.1 Microsoft Corporation	25.27 KB (25,872 bytes)	12/7/1999 7:00:00 AM
			c:\winnt\system32\iaspolcy.dll		

iasvcs.dll	5.00.2195.4916	58.77 KB (60,176 bytes)	1/14/2005	svchost.exe	5.00.2134.1	7.77 KB (7,952 bytes)	12/7/1999
10:50:04 AM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\iasvcs.dll				c:\winnt\system32\svchost.exe			
iasdo.dll	5.00.2195.4115	263.27 KB (269,584 bytes)	1/14/2005	rdpwsx.dll	5.00.2195.5243	97.90 KB (100,248 bytes)	1/14/2005
10:50:04 AM	Microsoft Corporation			10:50:10 AM	Microsoft Corporation		
c:\winnt\system32\iasdo.dll				c:\winnt\system32\rdpwsx.dll			
ntmssvc.dll	5.00.2195.5254	391.77 KB (401,168 bytes)		ntlsapi.dll	5.00.2195.4907	6.77 KB (6,928 bytes)	12/7/1999 7:00:00 AM
1/14/2005 10:50:09 AM	Microsoft Corporation			Microsoft Corporation			
c:\winnt\system32\ntmssvc.dll				c:\winnt\system32\ntlsapi.dll			
ias.dll	5.00.2134.1	7.27 KB (7,440 bytes)	12/7/1999 7:00:00 AM	mstlsapi.dll	5.00.2195.3895	25.77 KB (26,384 bytes)	
Microsoft Corporation				1/14/2005 10:50:08 AM	Microsoft Corporation		
c:\winnt\system32\ias.dll				c:\winnt\system32\mstlsapi.dll			
es.dll	2000.2.3497.0	225.27 KB (230,672 bytes)	1/14/2005	icaapi.dll	5.00.2195.3895	122.77 KB (125,712 bytes)	1/14/2005
10:50:03 AM	Microsoft Corporation			10:50:04 AM	Microsoft Corporation		
c:\winnt\system32\es.dll				c:\winnt\system32\icaapi.dll			
mtxoci.dll	2000.2.3497.0	103.77 KB (106,256 bytes)	1/14/2005	regapi.dll	5.00.2195.5201	35.27 KB (36,112 bytes)	1/14/2005
10:50:08 AM	Microsoft Corporation			10:50:10 AM	Microsoft Corporation		
c:\winnt\system32\mtxoci.dll				c:\winnt\system32\regapi.dll			
resutils.dll	5.00.2195.5339	39.77 KB (40,720 bytes)	1/14/2005	termsrv.exe	5.00.2195.5276	138.77 KB (142,096 bytes)	
10:50:11 AM	Microsoft Corporation			1/14/2005 10:50:12 AM	Microsoft Corporation		
c:\winnt\system32\resutils.dll				c:\winnt\system32\termsrv.exe			
clusapi.dll	5.00.2195.4678	54.27 KB (55,568 bytes)	1/14/2005	dsenh.dll	5.00.2195.3665	142.77 KB (146,192 bytes)	3/6/2003
10:50:01 AM	Microsoft Corporation			1:54:23 PM	Microsoft Corporation		
c:\winnt\system32\clusapi.dll				c:\winnt\system32\dsenh.dll			
msvcp50.dll	5.00.7051	552.50 KB (565,760 bytes)	12/7/1999	oakley.dll	5.00.2195.5326	382.27 KB (391,440 bytes)	1/14/2005
7:00:00 AM	Microsoft Corporation			10:50:09 AM	Microsoft Corporation		
c:\winnt\system32\msvcp50.dll				c:\winnt\system32\oakley.dll			
xolehlp.dll	1999.9.3421.3	17.27 KB (17,680 bytes)	2/12/2003	mfc42u.dll	6.00.8665.0	972.05 KB (995,384 bytes)	12/7/1999
7:52:40 AM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\xolehlp.dll				c:\winnt\system32\mfc42u.dll			
msdtclog.dll	2000.2.3497.0	86.77 KB (88,848 bytes)		polagent.dll	5.00.2195.5428	94.77 KB (97,040 bytes)	
1/14/2005 10:50:06 AM	Microsoft Corporation			1/14/2005 10:50:10 AM	Microsoft Corporation		
c:\winnt\system32\msdtclog.dll				c:\winnt\system32\polagent.dll			
mtxclu.dll	2000.2.3497.0	51.27 KB (52,496 bytes)	1/14/2005	scecli.dll	5.00.2195.4874	109.27 KB (111,888 bytes)	1/14/2005
10:50:08 AM	Microsoft Corporation			10:50:11 AM	Microsoft Corporation		
c:\winnt\system32\mtxclu.dll				c:\winnt\system32\scecli.dll			
msdtcprx.dll	2000.2.3497.0	683.77 KB (700,176 bytes)		atl.dll	3.00.9435	73.06 KB (74,810 bytes)	1/14/2005 10:50:00 AM
1/14/2005 10:50:06 AM	Microsoft Corporation			Microsoft Corporation			
c:\winnt\system32\msdtcprx.dll				c:\winnt\system32\atl.dll			
txfaux.dll	2000.2.3497.0	383.27 KB (392,464 bytes)	1/14/2005	certcli.dll	5.00.2195.3649	130.27 KB (133,392 bytes)	1/14/2005
10:50:13 AM	Microsoft Corporation			10:50:01 AM	Microsoft Corporation		
c:\winnt\system32\txfaux.dll				c:\winnt\system32\certcli.dll			
msdtctm.dll	2000.2.3497.0	1.08 MB (1,128,208 bytes)		esent.dll	6.0.3940.25	1.09 MB (1,137,936 bytes)	1/14/2005
1/14/2005 10:50:06 AM	Microsoft Corporation			10:50:03 AM	Microsoft Corporation		
c:\winnt\system32\msdtctm.dll				c:\winnt\system32\esent.dll			
msdtc.exe	1999.9.3421.3	6.77 KB (6,928 bytes)	2/12/2003 7:52:40 AM	ntdsatq.dll	5.00.2195.5246	31.27 KB (32,016 bytes)	1/14/2005
Microsoft Corporation				10:50:09 AM	Microsoft Corporation		
c:\winnt\system32\msdtc.exe				c:\winnt\system32\ntdsatq.dll			
rpss.dll	5.00.2195.5429	231.27 KB (236,816 bytes)	1/14/2005	ntdsa.dll	5.00.2195.5438	1002.27 KB (1,026,320 bytes)	1/14/2005
10:50:11 AM	Microsoft Corporation			10:50:09 AM	Microsoft Corporation		
c:\winnt\system32\rpss.dll				c:\winnt\system32\ntdsa.dll			

kdcsvc.dll	5.00.2195.5246	141.77 KB (145,168 bytes)	1/14/2005	10:50:05 AM	Microsoft Corporation	c:\winnt\system32\kdcsvc.dll
sfmapi.dll	5.00.2134.1	38.77 KB (39,696 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\sfmapi.dll
rassfm.dll	5.00.2195.4874	21.27 KB (21,776 bytes)	1/14/2005	10:50:10 AM	Microsoft Corporation	c:\winnt\system32\rassfm.dll
rsabase.dll	5.00.2195.3839	128.27 KB (131,344 bytes)	7/22/2002	1:05:04 PM	Microsoft Corporation	c:\winnt\system32\rsabase.dll
schannel.dll	5.00.2195.5284	139.27 KB (142,608 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\schannel.dll
netlogon.dll	5.00.2195.5400	362.77 KB (371,472 bytes)	1/14/2005	10:50:08 AM	Microsoft Corporation	c:\winnt\system32\netlogon.dll
msv1_0.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
kerberos.dll	5.00.2195.5246	202.77 KB (207,632 bytes)	1/14/2005	10:50:05 AM	Microsoft Corporation	c:\winnt\system32\kerberos.dll
msprivs.dll	5.00.2154.1	41.50 KB (42,496 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\msprivs.dll
samsrv.dll	5.00.2195.5201	374.27 KB (383,248 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\samsrv.dll
lsasrv.dll	5.00.2195.5430	500.27 KB (512,272 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\lsasrv.dll
lsass.exe	5.00.2195.5430	32.77 KB (33,552 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\lsass.exe
wmicore.dll	5.00.2195.3649	72.27 KB (74,000 bytes)	1/14/2005	10:50:14 AM	Microsoft Corporation	c:\winnt\system32\wmicore.dll
alrsvc.dll	5.00.2134.1	17.77 KB (18,192 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\alrsvc.dll
trkwks.dll	5.00.2195.4874	88.77 KB (90,896 bytes)	1/14/2005	10:50:13 AM	Microsoft Corporation	c:\winnt\system32\trkwks.dll
seclogon.dll	5.00.2195.5201	17.27 KB (17,680 bytes)	1/14/2005	10:50:11 AM	Microsoft Corporation	c:\winnt\system32\seclogon.dll
psbase.dll	5.00.2195.4822	111.77 KB (114,448 bytes)	1/14/2005	10:50:10 AM	Microsoft Corporation	c:\winnt\system32\psbase.dll
cryptsvc.dll	5.00.2195.4368	73.27 KB (75,024 bytes)	1/14/2005	10:50:02 AM	Microsoft Corporation	c:\winnt\system32\cryptsvc.dll
cryptdll.dll	5.00.2135.1	41.27 KB (42,256 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\cryptdll.dll
wkssvc.dll	5.00.2195.4874	95.27 KB (97,552 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\wkssvc.dll
srvsvc.dll	5.00.2195.5400	81.77 KB (83,728 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\srvsvc.dll
cfgmgr32.dll	5.00.2134.1	16.77 KB (17,168 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\cfgmgr32.dll
dmserver.dll	2195.3649.297.3	12.27 KB (12,560 bytes)	1/14/2005	10:50:02 AM	VERITAS Software Corp.	c:\winnt\system32\dmserver.dll
lmhsvc.dll	5.00.2195.4874	9.77 KB (10,000 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\lmhsvc.dll
dnssrslvr.dll	5.00.2195.5354	89.77 KB (91,920 bytes)	1/14/2005	10:50:02 AM	Microsoft Corporation	c:\winnt\system32\dnssrslvr.dll
eventlog.dll	5.00.2195.5336	44.27 KB (45,328 bytes)	1/14/2005	10:50:03 AM	Microsoft Corporation	c:\winnt\system32\eventlog.dll
ntdsapi.dll	5.00.2195.4827	56.27 KB (57,616 bytes)	1/14/2005	10:50:09 AM	Microsoft Corporation	c:\winnt\system32\ntdsapi.dll
scesrv.dll	5.00.2195.5316	242.77 KB (248,592 bytes)	1/14/2005	10:50:11 AM	Microsoft Corporation	c:\winnt\system32\scesrv.dll
umpnpmgr.dll	5.00.2182.1	86.27 KB (88,336 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\umpnpmgr.dll
services.exe	5.00.2195.3940	86.77 KB (88,848 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\services.exe
clbcatq.dll	2000.2.3497.0	497.77 KB (509,712 bytes)	1/14/2005	10:50:01 AM	Microsoft Corporation	c:\winnt\system32\clbcatq.dll
cscui.dll	5.00.2195.4104	233.77 KB (239,376 bytes)	1/14/2005	10:50:02 AM	Microsoft Corporation	c:\winnt\system32\cscui.dll
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
wshnetbs.dll	5.00.2134.1	7.77 KB (7,952 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\wshnetbs.dll

winnr.dll	5.00.2160.1	18.77 KB (19,216 bytes)	12/7/1999	winscard.dll	5.00.2134.1	77.27 KB (79,120 bytes)	12/7/1999
7:00:00 AM	Microsoft Corporation			12/7/1999 7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\winnr.dll				c:\winnt\system32\winscard.dll			
dhcpcsvc.dll	5.00.2195.4874	87.77 KB (89,872 bytes)	12/7/1999	wlnotify.dll	5.00.2195.5377	54.27 KB (55,568 bytes)	1/14/2005
7:00:00 AM	Microsoft Corporation			1/14/2005 10:50:14 AM	Microsoft Corporation		
c:\winnt\system32\dhcpcsvc.dll				c:\winnt\system32\wlnotify.dll			
tapi32.dll	5.00.2182.1	123.27 KB (126,224 bytes)	12/7/1999	cscdll.dll	5.00.2195.5434	98.77 KB (101,136 bytes)	1/14/2005
7:00:00 AM	Microsoft Corporation			10:50:02 AM	Microsoft Corporation		
c:\winnt\system32\tapi32.dll				c:\winnt\system32\cscdll.dll			
rasman.dll	5.00.2195.5292	54.77 KB (56,080 bytes)	12/7/1999	lz32.dll	5.00.2134.1	9.77 KB (10,000 bytes)	12/7/1999
7:00:00 AM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\rasman.dll				c:\winnt\system32\lz32.dll			
rasapi32.dll	5.00.2195.5438	191.77 KB (196,368 bytes)	12/7/1999	version.dll	5.00.2134.1	15.77 KB (16,144 bytes)	12/7/1999
12/7/1999 7:00:00 AM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\rasapi32.dll				c:\winnt\system32\version.dll			
icmp.dll	5.00.2134.1	7.27 KB (7,440 bytes)	12/7/1999	rsaenh.dll	5.00.2195.3839	130.77 KB (133,904 bytes)	3/6/2003
7:00:00 AM	Microsoft Corporation			1:54:23 PM	Microsoft Corporation		
c:\winnt\system32\icmp.dll				c:\winnt\system32\rsaenh.dll			
iphlpapi.dll	5.00.2195.2	68.27 KB (69,904 bytes)	1/14/2005	mecat32.dll	5.131.2134.1	7.77 KB (7,952 bytes)	12/7/1999
10:50:05 AM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\iphlpapi.dll				c:\winnt\system32\meat32.dll			
rnrt20.dll	5.00.2195.4874	35.77 KB (36,624 bytes)	1/14/2005	ole32.dll	5.00.2195.5400	968.27 KB (991,504 bytes)	1/14/2005
10:50:11 AM	Microsoft Corporation			10:50:10 AM	Microsoft Corporation		
c:\winnt\system32\rnrt20.dll				c:\winnt\system32\ole32.dll			
wshtcpip.dll	5.00.2195.4874	17.27 KB (17,680 bytes)	1/14/2005	imagehlp.dll	5.00.2195.5242	125.77 KB (128,784 bytes)	12/7/1999
10:50:14 AM	Microsoft Corporation			12/7/1999 7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\wshtcpip.dll				c:\winnt\system32\imagehlp.dll			
msafd.dll	5.00.2195.4874	103.27 KB (105,744 bytes)	1/14/2005	msasn1.dll	5.00.2195.4067	51.27 KB (52,496 bytes)	12/7/1999
10:50:06 AM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\msafd.dll				c:\winnt\system32\msasn1.dll			
mswsock.dll	5.00.2195.4874	62.77 KB (64,272 bytes)	1/14/2005	crypt32.dll	5.131.2195.4558	464.27 KB (475,408 bytes)	1/14/2005
10:50:08 AM	Microsoft Corporation			10:50:02 AM	Microsoft Corporation		
c:\winnt\system32\mswsock.dll				c:\winnt\system32\crypt32.dll			
rtutils.dll	5.00.2168.1	43.77 KB (44,816 bytes)	12/7/1999	wintrust.dll	5.131.2195.3775	162.27 KB (166,160 bytes)	1/14/2005
7:00:00 AM	Microsoft Corporation			1/14/2005 10:50:14 AM	Microsoft Corporation		
c:\winnt\system32\rtutils.dll				c:\winnt\system32\wintrust.dll			
adslrpc.dll	5.00.2195.5400	127.77 KB (130,832 bytes)	1/14/2005	mpr.dll	5.00.2195.3649	53.77 KB (55,056 bytes)	1/14/2005
10:50:00 AM	Microsoft Corporation			10:50:06 AM	Microsoft Corporation		
c:\winnt\system32\adslrpc.dll				c:\winnt\system32\mpr.dll			
activeds.dll	5.00.2195.5312	175.27 KB (179,472 bytes)	1/14/2005	shlwapi.dll	6.00.2800.1106	386.00 KB (395,264 bytes)	8/29/2002
10:49:58 AM	Microsoft Corporation			8:14:40 AM	Microsoft Corporation		
c:\winnt\system32\activeds.dll				c:\winnt\system32\shlwapi.dll			
oleaut32.dll	2.40.4518	612.27 KB (626,960 bytes)	12/7/1999	shell32.dll	5.00.3502.5436	2.26 MB (2,374,416 bytes)	1/14/2005
7:00:00 AM	Microsoft Corporation			10:50:11 AM	Microsoft Corporation		
c:\winnt\system32\oleaut32.dll				c:\winnt\system32\shell32.dll			
mprapi.dll	5.00.2181.1	79.27 KB (81,168 bytes)	12/7/1999	msgina.dll	5.00.2195.4733	324.77 KB (332,560 bytes)	12/7/1999
7:00:00 AM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\mprapi.dll				c:\winnt\system32\msgina.dll			
winspool.drv	5.00.2195.5225	111.27 KB (113,936 bytes)	12/7/1999	comctl32.dll	5.81	517.27 KB (529,680 bytes)	8/29/2002
7:00:00 AM	Microsoft Corporation			8:14:40 AM	Microsoft Corporation		
c:\winnt\system32\winspool.drv				c:\winnt\system32\comctl32.dll			

setupapi.dll	5.00.2195.5400	553.77 KB (567,056 bytes)		gdi32.dll	5.00.2195.5907	217.77 KB (222,992 bytes)	12/7/1999		
12/7/1999 7:00:00 AM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation				
c:\winnt\system32\setupapi.dll				c:\winnt\system32\gdi32.dll					
winnm.dll	5.00.2161.1	184.77 KB (189,200 bytes)	12/7/1999	rpert4.dll	5.00.2195.5419	440.27 KB (450,832 bytes)	1/14/2005		
7:00:00 AM	Microsoft Corporation			10:50:11 AM	Microsoft Corporation				
c:\winnt\system32\winnm.dll				c:\winnt\system32\rpert4.dll					
winsta.dll	5.00.2195.4655	36.77 KB (37,648 bytes)	1/14/2005	advapi32.dll	5.00.2195.5385	358.77 KB (367,376 bytes)			
10:50:13 AM	Microsoft Corporation			12/7/1999 7:00:00 AM	Microsoft Corporation				
c:\winnt\system32\winsta.dll				c:\winnt\system32\advapi32.dll					
wsock32.dll	5.00.2195.4874	21.27 KB (21,776 bytes)		kernel32.dll	5.00.2195.5400	716.77 KB (733,968 bytes)			
1/14/2005 10:50:14 AM	Microsoft Corporation			12/7/1999 7:00:00 AM	Microsoft Corporation				
c:\winnt\system32\wsock32.dll				c:\winnt\system32\kernel32.dll					
dnsapi.dll	5.00.2195.5354	131.27 KB (134,416 bytes)	1/14/2005	msvcr.dll	6.10.9359.0	284.05 KB (290,869 bytes)	7/22/2002		
10:50:02 AM	Microsoft Corporation			1:05:04 PM	Microsoft Corporation				
c:\winnt\system32\dnsapi.dll				c:\winnt\system32\msvcr.dll					
wldap32.dll	5.00.2195.5400	158.77 KB (162,576 bytes)		winlogon.exe	5.00.2195.5731	174.77 KB (178,960 bytes)			
1/14/2005 10:50:14 AM	Microsoft Corporation			5/3/2002 12:31:24 PM	Microsoft Corporation				
c:\winnt\system32\wldap32.dll				c:\winnt\system32\winlogon.exe					
ws2help.dll	5.00.2134.1	17.77 KB (18,192 bytes)		sfcfiles.dll	5.00.2195.5426	951.27 KB (974,096 bytes)	1/14/2005		
12/7/1999 7:00:00 AM	Microsoft Corporation			10:50:11 AM	Microsoft Corporation				
c:\winnt\system32\ws2help.dll				c:\winnt\system32\sfcfiles.dll					
ws2_32.dll	5.00.2195.4874	66.77 KB (68,368 bytes)	1/14/2005	ntdll.dll	5.00.2195.5400	479.27 KB (490,768 bytes)	12/7/1999		
10:50:14 AM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation				
c:\winnt\system32\ws2_32.dll				c:\winnt\system32\ntdll.dll					
samlib.dll	5.00.2195.4827	49.77 KB (50,960 bytes)	12/7/1999	smss.exe	5.00.2195.5382	44.77 KB (45,840 bytes)	12/7/1999		
7:00:00 AM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation				
c:\winnt\system32\samlib.dll				c:\winnt\system32\smss.exe					
netrap.dll	5.00.2134.1	11.27 KB (11,536 bytes)	12/7/1999	[Services]					
7:00:00 AM	Microsoft Corporation			Display Name Name State Start ModeService Type					
c:\winnt\system32\netrap.dll				Path Error Control Start NameTag ID					
netapi32.dll	5.00.2195.5427	305.27 KB (312,592 bytes)		Alerter	Alerter	Running	Auto	Share Process	
1/14/2005 10:50:08 AM	Microsoft Corporation			c:\winnt\system32\services.exe		Normal	LocalSystem	0	
c:\winnt\system32\netapi32.dll				Application Management AppMgmt Stopped Manual Share					
profmap.dll	5.00.2181.1	29.27 KB (29,968 bytes)		Process	c:\winnt\system32\services.exe	Normal	LocalSystem	0	
12/7/1999 7:00:00 AM	Microsoft Corporation			Background Intelligent Transfer Service BITS Stopped Manual					
c:\winnt\system32\profmap.dll				Share Process c:\winnt\system32\svchost.exe -k bitsgroup Normal					
secur32.dll	5.00.2195.4587	47.27 KB (48,400 bytes)	1/14/2005	LocalSystem	0				
10:50:11 AM	Microsoft Corporation			Computer Browser Browser Stopped Manual Share Process					
c:\winnt\system32\secur32.dll				c:\winnt\system32\services.exe Normal LocalSystem 0					
sfc.dll	5.00.2195.3649	92.11 KB (94,320 bytes)	1/14/2005	Indexing Service	cisvc	Stopped	Manual	Share Process	
10:50:11 AM	Microsoft Corporation			c:\winnt\system32\cisvc.exe		Normal	LocalSystem	0	
c:\winnt\system32\sfc.dll				ClipBook ClipSrv Stopped Manual Own Process					
nddeapi.dll	5.00.2195.4509	15.77 KB (16,144 bytes)	1/14/2005	c:\winnt\system32\clipsrv.exe		Normal	LocalSystem	0	
10:50:08 AM	Microsoft Corporation			Distributed File System Dfs Running Auto Own					
c:\winnt\system32\nddeapi.dll				Process c:\winnt\system32\dfsrv.exe Normal LocalSystem 0					
userenv.dll	5.00.2195.5968	361.27 KB (369,936 bytes)	12/7/1999	DHCP Client Dhcp Stopped Manual Share Process					
7:00:00 AM	Microsoft Corporation			c:\winnt\system32\services.exe		Normal	LocalSystem	0	
c:\winnt\system32\userenv.dll				c:\winnt\system32\services.exe Normal LocalSystem 0					
user32.dll	5.00.2195.5931	370.77 KB (379,664 bytes)	12/7/1999						
7:00:00 AM	Microsoft Corporation								
c:\winnt\system32\user32.dll									



Group Name	Name	User Name
Accessories	Default User:Accessories	Default User
Accessories\Accessibility	Default User:Accessories\Accessibility	Default User
Accessories\Entertainment	Default User:Accessories\Entertainment	Default User
Accessories\System Tools	Default User:Accessories\System Tools	Default User
Startup	Default User:Startup	Default User
Accessories	All Users:Accessories	All Users
Accessories\Accessibility	All Users:Accessories\Accessibility	All Users
Accessories\Communications	All Users:Accessories\Communications	All Users
Accessories\Entertainment	All Users:Accessories\Entertainment	All Users
Accessories\Games	All Users:Accessories\Games	All Users
Accessories\System Tools	All Users:Accessories\System Tools	All Users
Administrative Tools	All Users:Administrative Tools	All Users
Microsoft SQL Server	All Users:Microsoft SQL Server	All Users
Startup	All Users:Startup	All Users
Accessories	FCLIENT10\Administrator:Accessories	FCLIENT10\Administrator
Accessories\Accessibility	FCLIENT10\Administrator:Accessories\Accessibility	FCLIENT10\Administrator
Accessories\Entertainment	FCLIENT10\Administrator:Accessories\Entertainment	FCLIENT10\Administrator
Accessories\System Tools	FCLIENT10\Administrator:Accessories\System Tools	FCLIENT10\Administrator
Administrative Tools	FCLIENT10\Administrator:Administrative Tools	FCLIENT10\Administrator
Benchcraft	FCLIENT10\Administrator:Benchcraft	FCLIENT10\Administrator
QLogic Corporation	FCLIENT10\Administrator:QLogic Corporation	FCLIENT10\Administrator
QLogic Corporation\SANblade Control VIX	FCLIENT10\Administrator:QLogic Corporation\SANblade Control VIX	FCLIENT10\Administrator
Startup	FCLIENT10\Administrator:Startup	FCLIENT10\Administrator
RunAs Service	seclogon	Running
c:\winnt\system32\services.exe	Ignore	Auto
System Event Notification	SENS	Running
Process	c:\winnt\system32\svchost.exe -k netsvcs	Auto
LocalSystem	0	Share
Internet Connection Sharing	SharedAccess	Stopped
Share Process	c:\winnt\system32\svchost.exe -k netsvcs	Manual
LocalSystem	0	Normal
Simple TCP/IP Services	SimpTcp	Running
Process	c:\winnt\system32\tpcsvcs.exe	Auto
LocalSystem	0	Share
Simple Mail Transport Protocol (SMTP)	SMTPSVC	Running
Auto	Share Process	c:\winnt\system32\inetrv\inetinfo.exe
Normal	LocalSystem	0
Print Spooler	Spooler	Stopped
c:\winnt\system32\spoolsv.exe	Normal	Manual
LocalSystem	0	Own Process
Performance Logs and Alerts	SysmonLog	Stopped
Own Process	c:\winnt\system32\smlogsvc.exe	Manual
LocalSystem	0	Normal
Telephony TapiSrv	Running	Manual
c:\winnt\system32\svchost.exe -k tapisrv	Normal	Share Process
LocalSystem	0	LocalSystem
Terminal Services	TermService	Running
Process	c:\winnt\system32\termsrv.exe	Auto
LocalSystem	0	Own
Telnet	TlntSvr	Stopped
c:\winnt\system32\tlntsvr.exe	Normal	Manual
LocalSystem	0	Own Process
Distributed Link Tracking Server	TrkSvr	Stopped
Process	c:\winnt\system32\services.exe	Manual
LocalSystem	0	Share
Distributed Link Tracking Client	TrkWks	Running
Process	c:\winnt\system32\services.exe	Normal
LocalSystem	0	Auto
Uninterruptible Power Supply	UPS	Stopped
Process	c:\winnt\system32\ups.exe	Manual
LocalSystem	0	Own
Utility Manager	UtilMan	Stopped
c:\winnt\system32\utilman.exe	Normal	Manual
LocalSystem	0	Own Process
Windows Time	W32Time	Stopped
c:\winnt\system32\services.exe	Normal	Manual
LocalSystem	0	Share Process
World Wide Web Publishing Service	W3SVC	Running
Share Process	c:\winnt\system32\inetrv\inetinfo.exe	Auto
LocalSystem	0	Normal
Windows Management Instrumentation	WinMgmt	Running
Own Process	c:\winnt\system32\wbem\winmgmt.exe	Auto
LocalSystem	0	Ignore
Windows Management Instrumentation Driver Extensions	Wmi	Running
Normal	Manual	Share Process
LocalSystem	0	c:\winnt\system32\services.exe
Automatic Updates	wuauerv	Stopped
c:\winnt\system32\svchost.exe -k wugroup	Normal	Manual
LocalSystem	0	Share Process

[Program Groups]

[Startup Programs]

Program	Command	User Name	Location
BMListen.exe	c:\slave\bmlisten.exe	FCLIENT10\Administrator	Startup
synctime	synctime.cmd	All Users	Common Startup

[OLE Registration]

Object	Local Server
Sound (OLE2)	sndrec32.exe
Media Clip	mplay32.exe
Video Clip	mplay32.exe /avi
MIDI Sequence	mplay32.exe /mid
Sound	Not Available
Media Clip	Not Available
Image Document	"C:\Program Files\Windows NT\Accessories\ImageVue\KodakImg.exe"
WordPad Document	"%ProgramFiles%\Windows NT\Accessories\WORDPAD.EXE"
Windows Media Services DRM Storage object	Not Available
Bitmap Image	C:\WINNT\System32\mspaint.exe

[Internet Explorer]

[ Following are sub-categories of this main category ]

[Summary]

Item	Value
Version	6.0.2800.1106
Build	62800.1106
Product ID	51876-270-6336674-05075
Application Path	C:\Program Files\Internet Explorer
Language	English (United States)
Active Printer	Not Available
Cipher Strength	128-bit
Content Advisor	Disabled
Update Versions	;SP1;
Java VM Version	5.0.3805.0
IEAK Install	No

[File Versions]

File	Version	Size	Date	Path	Company
advapi32.dll	5.0.2195.5385	359 KB	7/22/2002 1:05:04 PM	C:\WINNT\system32	Microsoft Corporation
advpack.dll	6.0.2800.1106	89 KB	8/29/2002 8:14:40 AM	C:\WINNT\system32	Microsoft Corporation
browsecl.dll	6.0.2800.1106	62 KB	8/29/2002 8:14:40 AM	C:\WINNT\system32	Microsoft Corporation
browseui.dll	6.0.2800.1106	1002 KB	8/29/2002 8:14:40 AM	C:\WINNT\system32	Microsoft Corporation
ckenv.exe	5.0.2189.1	9 KB	12/7/1999 8:00:00 AM	C:\WINNT\system32	Microsoft Corporation
comctl32.dll	5.81.4916.400	517 KB	8/29/2002 8:14:40 AM	C:\WINNT\system32	Microsoft Corporation
crypt32.dll	5.131.2195.4558	464 KB	7/22/2002 1:05:04 PM	C:\WINNT\system32	Microsoft Corporation
enhsg.dll	File not present	Not Available	Not Available	Not Available	Not Available
iemigrat.dll	Available	File not present	Not Available	Not Available	Not Available
iesetup.dll	6.0.2800.1106	57 KB	8/29/2002 8:14:40 AM	C:\WINNT\system32	Microsoft Corporation
ieexplore.exe	6.0.2800.1106	89 KB	8/29/2002 8:14:40 AM	C:\Program Files\Internet Explorer	Microsoft Corporation
imagehlp.dll	5.0.2195.5242	126 KB	7/22/2002 1:05:04 PM	C:\WINNT\system32	Microsoft Corporation
inseng.dll	6.0.2800.1106	68 KB	8/29/2002 8:14:40 AM	C:\WINNT\system32	Microsoft Corporation
jobexec.dll	5.0.0.1	47 KB	12/7/1999 8:00:00 AM	C:\WINNT\system32	Microsoft Corporation
jscrip.dll	5.6.0.6626	576 KB	6/26/2001 5:36:02 PM	C:\WINNT\system32	Microsoft Corporation
jsproxy.dll	6.0.2800.1106	12 KB	8/29/2002 8:14:40 AM	C:\WINNT\system32	Microsoft Corporation
mshtml.dll	6.0.2800.1106	2722 KB	8/29/2002 8:14:40 AM	C:\WINNT\system32	Microsoft Corporation
msjava.dll	5.0.3805.0	924 KB	7/22/2002 1:05:04 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 1:05:04 PM	C:\WINNT\system32	Microsoft Corporation
occache.dll	6.0.2800.1106	86 KB	8/29/2002 8:14:40 AM	C:\WINNT\system32	Microsoft Corporation



ole32.dll	5.0.2195.5400	968 KB	7/22/2002 1:05:04 PM
C:\WINNT\system32 Microsoft Corporation			
oleaut32.dll	2.40.4518.0	612 KB	7/22/2002 1:05:04 PM
C:\WINNT\system32 Microsoft Corporation			
olepro32.dll	5.0.4518.0	160 KB	7/22/2002 1:05:04 PM
C:\WINNT\system32 Microsoft Corporation			
rsabase.dll	5.0.2195.3839	128 KB	7/22/2002 1:05:04 PM
C:\WINNT\system32 Microsoft Corporation			
rsaenh.dll	5.0.2195.3839	131 KB	7/22/2002 1:05:04 PM
C:\WINNT\system32 Microsoft Corporation			
rasapi32.dll	5.0.2195.5438	192 KB	7/22/2002 1:05:04 PM
C:\WINNT\system32 Microsoft Corporation			
rsasig.dll	File not present	Not Available	Not Available
Not Available			
schannel.dll	5.1.2195.0	139 KB	7/22/2002 1:05:04 PM
C:\WINNT\system32 Microsoft Corporation			
shdoc401.dll	File not present	Not Available	Not Available
Available Not Available			
shdocvw.dll	6.0.2800.1106	1307 KB	8/29/2002 8:14:40 AM
C:\WINNT\system32 Microsoft Corporation			
shell32.dll	5.0.3502.5436	2319 KB	7/22/2002 1:05:04 PM
C:\WINNT\system32 Microsoft Corporation			
shlwapi.dll	6.0.2800.1106	386 KB	8/29/2002 8:14:40 AM
C:\WINNT\system32 Microsoft Corporation			
url.dll	6.0.2800.1106	104 KB	8/29/2002 8:14:40 AM
C:\WINNT\system32 Microsoft Corporation			
urlmon.dll	6.0.2800.1106	472 KB	8/29/2002 8:14:40 AM
C:\WINNT\system32 Microsoft Corporation			
vbscript.dll	5.6.0.7426	452 KB	2/26/2002 4:58:06 PM
C:\WINNT\system32 Microsoft Corporation			
webcheck.dll	6.0.2800.1106	252 KB	8/29/2002 8:14:40 AM
C:\WINNT\system32 Microsoft Corporation			
win.com	5.0.2134.1	24 KB	12/7/1999 8:00:00 AM
C:\WINNT\system32 Microsoft Corporation			
wininet.dll	6.0.2800.1106	572 KB	8/29/2002 8:14:40 AM
C:\WINNT\system32 Microsoft Corporation			
winsock.dll	3.10.0.103	3 KB	12/7/1999 8:00:00 AM
C:\WINNT\system32 Microsoft Corporation			
wintrust.dll	5.131.2195.3775	162 KB	7/22/2002 1:05:04 PM
C:\WINNT\system32 Microsoft Corporation			
wsock.vxd	File not present	Not Available	Not Available
Not Available			
wsock32.dll	5.0.2195.4874	21 KB	7/22/2002 1:05:04 PM
C:\WINNT\system32 Microsoft Corporation			
wsock32n.dll	File not present	Not Available	Not Available
Available Not Available			

[Connectivity]

Item	Value
Connection Preference	Never dial
EnableHttp1.1	1
ProxyHttp1.1	0

LAN Settings

AutoConfigProxy	wininet.dll
AutoProxyDetectMode	Disabled
AutoConfigURL	
Proxy	Disabled
ProxyServer	192.168.122.250:6588

[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	8675 MB
Available Disk Space	2353 MB
Maximum Cache Size	541 MB
Available Cache Size	531 MB

[List of Objects]

Program File	Status	Version	CodeBase
Update Class	Installed	5,4,3790,14	http://v4.windowsupdate.microsoft.com/CAB/x86/unicode/iuctl.CAB?38366.3912615741

[Content]

[ Following are sub-categories of this main category ]

[Summary]

Item	Value
Content Advisor	Disabled

[Personal Certificates]

Issued To	Issued By	Validity	Signature Algorithm
Administrator sha1RSA	Administrator	2/12/2003 to 1/19/2103	

[Other People Certificates]

Issued To	Issued By	Validity	Signature Algorithm
No other people certificate information available			

[Publishers]

Name

No publisher information available

[Security]

Zone	Security Level
Local intranet	Custom
Trusted sites	Custom
Internet	Custom
Restricted sites	Custom

### Client 8

System Information report written at: 09/06/2005 02:28:22 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	FCLIENT80
System Manufacturer	IBM
System Model	IBM eServer x226-[84886BU]-
System Type	X86-based PC
Processor	x86 Family 15 Model 4 Stepping 3 GenuineIntel ~3400 Mhz
Processor	x86 Family 15 Model 4 Stepping 3 GenuineIntel ~3400 Mhz
Processor	x86 Family 15 Model 4 Stepping 3 GenuineIntel ~3400 Mhz
Processor	x86 Family 15 Model 4 Stepping 3 GenuineIntel ~3400 Mhz
BIOS Version	PhoenixBIOS 4.0 Release 6.1.U
Windows Directory	C:\WINNT

System Directory C:\WINNT\System32

Boot Device \Device\Harddisk0\Partition1

Locale United States

User NameFCLIENT80\Administrator

Time ZoneEastern Daylight Time

Total Physical Memory 2,096,092 KB

Available Physical Memory 1,869,656 KB

Total Virtual Memory5,607,244 KB

Available Virtual Memory 5,304,576 KB

Page File Space 3,511,152 KB

Page File C:\pagefile.sys

[Hardware Resources]

[ Following are sub-categories of this main category ]

[Conflicts/Sharing]

Resource	Device
IRQ 16	Intel(R) E7525/E7520/E7320 PCI Express Root Port A0 - 3595
IRQ 16	Intel(R) E7525/E7520/E7320 PCI Express Root Port A1 - 3596
IRQ 16	Intel(R) E7525/E7520 PCI Express Root Port B0 - 3597
IRQ 16	Intel(R) 82801EB USB Universal Host Controller - 24D2
IRQ 16	Intel(R) 82801EB USB Universal Host Controller - 24DE

[DMA]

Channel	Device	Status
4	Direct memory access controller	OK
2	Standard floppy disk controller	OK
3	ECP Printer Port (LPT1)	OK

[Forced Hardware]

Device PNP Device ID

No Forced Hardware

[I/O]

Address Range	Device	Status
0x0000-0x0CF7	PCI bus	OK
0x0000-0x0CF7	Direct memory access controller	OK
0x0D00-0xFFFF	PCI bus	OK

0x2000-0x4FFF - 3596 OK	Intel(R) E7525/E7520/E7320 PCI Express Root Port A1	0x0034-0x0035	Motherboard resources	OK
0x2000-0x4FFF OK	Intel(R) 6700PXH PCI Express-to-PCI Bridge A - 0329	0x0038-0x0039	Motherboard resources	OK
0x2000-0x4FFF OK	QLogic QLA235x PCI Fibre Channel Adapter	0x003C-0x003D	Motherboard resources	OK
0x3400-0x343F OK	Intel(R) PRO/1000 MT Dual Port Server Adapter #5	0x0050-0x0053	Motherboard resources	OK
0x3440-0x347F OK	Intel(R) PRO/1000 MT Dual Port Server Adapter #6	0x0072-0x0077	Motherboard resources	OK
0x2800-0x28FF	Adaptec AIC-7902B - Ultra320 SCSI OK	0x0080-0x0080	Motherboard resources	OK
0x2400-0x24FF	Adaptec AIC-7902B - Ultra320 SCSI OK	0x0090-0x009F	Motherboard resources	OK
0x3000-0x30FF	Adaptec AIC-7902B - Ultra320 SCSI OK	0x00A4-0x00A5	Motherboard resources	OK
0x2C00-0x2CFF	Adaptec AIC-7902B - Ultra320 SCSI OK	0x00A8-0x00A9	Motherboard resources	OK
0x4000-0x4FFF OK	Intel(R) 6700PXH PCI Express-to-PCI Bridge B - 032A	0x00AC-0x00AD	Motherboard resources	OK
0x4000-0x4FFF OK	Intel(R) PRO/1000 MT Dual Port Server Adapter #7	0x00B0-0x00B5	Motherboard resources	OK
0x4040-0x407F OK	Intel(R) PRO/1000 MT Dual Port Server Adapter #8	0x00B8-0x00B9	Motherboard resources	OK
0x1400-0x141F OK	Intel(R) 82801EB USB Universal Host Controller - 24D2	0x00BC-0x00BD	Motherboard resources	OK
0x1420-0x143F OK	Intel(R) 82801EB USB Universal Host Controller - 24D4	0x04D0-0x04D1	Motherboard resources	OK
0x1440-0x145F OK	Intel(R) 82801EB USB Universal Host Controller - 24D7	0x1000-0x107F	Motherboard resources	OK
0x1460-0x147F OK	Intel(R) 82801EB USB Universal Host Controller - 24DE	0x1180-0x118C	Motherboard resources	OK
0x5000-0x50FF	RADEON 7000M (on board) OK	0x118D-0x118D	Motherboard resources	OK
0x03B0-0x03BB	RADEON 7000M (on board) OK	0x118F-0x118F	Motherboard resources	OK
0x03C0-0x03DF	RADEON 7000M (on board) OK	0x1190-0x11BF	Motherboard resources	OK
0x0A79-0x0A79	ISAPNP Read Data Port OK	0x0800-0x082F	Motherboard resources	OK
0x0279-0x0279	ISAPNP Read Data Port OK	0xFE00-0xFE00	Motherboard resources	OK
0x0274-0x0277	ISAPNP Read Data Port OK	0x0081-0x008F	Direct memory access controller	OK
0x0010-0x001F	Motherboard resources OK	0x00C0-0x00DF	Direct memory access controller	OK
0x0024-0x0025	Motherboard resources OK	0x00F0-0x00FE	Numeric data processor	OK
0x0028-0x0029	Motherboard resources OK	0x0020-0x0021	Programmable interrupt controller	OK
0x002C-0x002D	Motherboard resources OK	0x00A0-0x00A1	Programmable interrupt controller	OK
0x002E-0x002F	Motherboard resources OK	0x0070-0x0071	System CMOS/real time clock	OK
0x0030-0x0031	Motherboard resources OK	0x0061-0x0061	System speaker	OK
		0x0040-0x0043	System timer	OK
		0x118E-0x118E	Not Available	OK
		0x03F0-0x03F5	Standard floppy disk controller	OK
		0x03F7-0x03F7	Standard floppy disk controller	OK
		0x0378-0x037F	ECP Printer Port (LPT1)	OK
		0x0778-0x077F	ECP Printer Port (LPT1)	OK

0x03F8-0x03FF Communications Port (COM1) OK  
 0x02F8-0x02FF Communications Port (COM2) OK  
 0x0060-0x0060 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard OK  
 0x0064-0x0064 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard OK  
 0x14A0-0x14AF Intel(R) 82801EB Ultra ATA Storage Controllers OK  
 0x01F0-0x01F7 Primary IDE Channel OK  
 0x03F6-0x03F6 Primary IDE Channel OK  
 0x0170-0x0177 Secondary IDE Channel OK  
 0x0376-0x0376 Secondary IDE Channel OK  
 0x1100-0x111F Intel(R) 82801EB SMBus Controller - 24D3 OK

[IRQs]

IRQ Number	Device
9	Microsoft ACPI-Compliant System
16	Intel(R) E7525/E7520/E7320 PCI Express Root Port A0 - 3595
16	Intel(R) E7525/E7520/E7320 PCI Express Root Port A1 - 3596
16	Intel(R) E7525/E7520 PCI Express Root Port B0 - 3597
16	Intel(R) 82801EB USB Universal Host Controller - 24D2
16	Intel(R) 82801EB USB Universal Host Controller - 24DE
28	Intel(R) PRO/1000 MT Dual Port Server Adapter #5
29	Intel(R) PRO/1000 MT Dual Port Server Adapter #6
24	QLogic QLA235x PCI Fibre Channel Adapter
30	Adaptec AIC-7902B - Ultra320 SCSI
31	Adaptec AIC-7902B - Ultra320 SCSI
48	Intel(R) PRO/1000 MT Dual Port Server Adapter #7
49	Intel(R) PRO/1000 MT Dual Port Server Adapter #8
19	Intel(R) 82801EB USB Universal Host Controller - 24D4
18	Intel(R) 82801EB USB Universal Host Controller - 24D7
22	RADEON 7000M (on board)
13	Numeric data processor
8	System CMOS/real time clock
6	Standard floppy disk controller
4	Communications Port (COM1)
3	Communications Port (COM2)

12 PS/2 Compatible Mouse  
 1 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard  
 14 Primary IDE Channel  
 15 Secondary IDE Channel  
 10 Intel(R) 82801EB SMBus Controller - 24D3

[Memory]

Range	Device	Status
0xA0000-0xBFFFF	PCI bus	OK
0xA0000-0xBFFFF	RADEON 7000M (on board)	OK
0xD8000-0xDBFFF	PCI bus	OK
0xDC000-0xDFFFF	PCI bus	OK
0x80000000-0xFEBFFFFF	PCI bus	OK
0xD0100000-0xD01FFFFF	Intel(R) E7525/E7520/E7320 PCI Express Root Port A0 - 3595	OK
0xD0200000-0xD04FFFFF	Intel(R) E7525/E7520/E7320 PCI Express Root Port A1 - 3596	OK
0xD0200000-0xD04FFFFF	Intel(R) 6700PXH I/OxAPIC Interrupt Controller A - 0326	OK
0xD0300000-0xD03FFFFF	Intel(R) 6700PXH PCI Express-to-PCI Bridge A - 0329	OK
0xD0300000-0xD03FFFFF	Adaptec AIC-7902B - Ultra320 SCSI	OK
0xD0320000-0xD033FFFF	Intel(R) PRO/1000 MT Dual Port Server Adapter #5	OK
0xD0340000-0xD037FFFF	Intel(R) PRO/1000 MT Dual Port Server Adapter #5	OK
0xD0380000-0xD039FFFF	Intel(R) PRO/1000 MT Dual Port Server Adapter #6	OK
0xD0304000-0xD0304FFF	QLogic QLA235x PCI Fibre Channel Adapter	OK
0xD0302000-0xD0303FFF	Adaptec AIC-7902B - Ultra320 SCSI	OK
0xD0400000-0xD04FFFFF	Intel(R) 6700PXH PCI Express-to-PCI Bridge B - 032A	OK
0xD0400000-0xD04FFFFF	Intel(R) PRO/1000 MT Dual Port Server Adapter #7	OK
0xD0440000-0xD045FFFF	Intel(R) PRO/1000 MT Dual Port Server Adapter #7	OK
0xD0460000-0xD047FFFF	Intel(R) PRO/1000 MT Dual Port Server Adapter #8	OK

0xD0201000-0xD0201FFF Intel(R) 6700PXH I/OxAPIC Interrupt  
Controller B - 0327 OK

0xD8000000-0xDFFFFFFF RADEON 7000M (on board) OK

0xD0500000-0xD050FFFF RADEON 7000M (on board) OK

0xE0000000-0xEFFFFFFF Motherboard resources OK

0xFEE00000-0xFEE0FFFF Motherboard resources OK

0xFEC81000-0xFEC81FFF Motherboard resources OK

0xFEC81400-0xFEC823FF Motherboard resources OK

0xFEBFFC00-0xFEBFFFFF Intel(R) 82801EB Ultra ATA Storage  
Controllers OK

[Components]

[ Following are sub-categories of this main category ]

[Multimedia]

[ Following are sub-categories of this main category ]

[Audio Codecs]

Codec Version	Manufacturer Size	Description Creation Date	Status	File
OK		c:\winnt\system32\iac25_32.ax Intel Corporation C:\WINNT\System32\IAC25_32.AX	2.05.53	Indeo® audio software 195.00 KB (199,680 bytes) 12/7/1999 7:00:00 AM
OK		c:\winnt\system32\msg723.acm Microsoft Corporation C:\WINNT\System32\MSG723.ACM	4.4.3385	106.77 KB (109,328 bytes) 1/13/2005 5:08:29 PM
OK		c:\winnt\system32\lhacm.acm Microsoft Corporation C:\WINNT\System32\LHACM.ACM	4.4.3385	33.27 KB (34,064 bytes) 1/13/2005 5:08:30 PM
OK		c:\winnt\system32\tssoft32.acm DSP GROUP, INC. C:\WINNT\System32\TSSOFT32.ACM	1.01	9.27 KB (9,488 bytes) 12/7/1999 7:00:00 AM
OK		c:\winnt\system32\msgsm32.acm Microsoft Corporation C:\WINNT\System32\MSGSM32.ACM	5.00.2134.1	22.27 KB (22,800 bytes) 12/7/1999 7:00:00 AM
OK		c:\winnt\system32\msg711.acm Microsoft Corporation C:\WINNT\System32\MSG711.ACM	5.00.2134.1	10.27 KB (10,512 bytes) 12/7/1999 7:00:00 AM
OK		c:\winnt\system32\msadp32.acm Microsoft Corporation C:\WINNT\System32\MSADP32.ACM	5.00.2134.1	14.77 KB (15,120 bytes) 12/7/1999 7:00:00 AM
OK		c:\winnt\system32\imaadp32.acm Microsoft Corporation 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 Version	Manufacturer Size	Description Creation Date	Status	File
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OK		c:\winnt\system32\ir50_32.dll Intel Corporation C:\WINNT\System32\IR50_32.DLL	Indeo® video 5.10 R.5.10.15.2.55	737.50 KB (755,200 bytes) 12/7/1999 7:00:00 AM
OK		c:\winnt\system32\msyuv.dll Microsoft Corporation C:\WINNT\System32\MSYUV.DLL	5.00.2134.1	14.77 KB (15,120 bytes) 2/12/2003 2:09:29 PM
OK		c:\winnt\system32\msh261.drv Microsoft Corporation C:\WINNT\System32\MSH261.DRV	4.4.3385	163.77 KB (167,696 bytes) 1/13/2005 5:08:29 PM
OK		c:\winnt\system32\msh263.drv Microsoft Corporation C:\WINNT\System32\MSH263.DRV	4.4.3385	252.27 KB (258,320 bytes) 1/13/2005 5:08:12 PM
OK		c:\winnt\system32\msvidc32.dll Microsoft Corporation C:\WINNT\System32\MSVIDC32.DLL	5.00.2134.1	27.27 KB (27,920 bytes) 12/7/1999 7:00:00 AM
OK		c:\winnt\system32\ir32_32.dll Intel(R) Corporation C:\WINNT\System32\IR32_32.DLL	Not Available	194.50 KB (199,168 bytes) 12/7/1999 7:00:00 AM
OK		c:\winnt\system32\iccvid.dll Radius Inc. C:\WINNT\System32\ICCVID.DLL	1.10.0.6	108.00 KB (110,592 bytes) 12/7/1999 7:00:00 AM
OK		c:\winnt\system32\msrle32.dll Microsoft Corporation C:\WINNT\System32\MSRLE32.DLL	5.00.2134.1	10.77 KB (11,024 bytes) 12/7/1999 7:00:00 AM

[CD-ROM]

Item	Value
Drive	D:
Description	CD-ROM Drive
Media Loaded	False
Media Type	CD-ROM
Name	HL-DT-ST CD-ROM GCR-8482B
Manufacturer	(Standard CD-ROM drives)
Status	OK
Transfer Rate	Not Available
SCSI Target ID	0
PNP Device ID	IDE\CDROMHL-DT-ST_CD-ROM_GCR-8482B_1.06_5&2AC42E8E&0&0.0.0

[Sound Device]

Item	Value
No sound devices	

[Display]

Item Value

Name RADEON 7000M (on board)

PNP Device ID  
PCI\VEN\_1002&DEV\_5159&SUBSYS\_02C81014&REV\_00\4&AE5993B&0  
&20F0

Adapter Type RADEON 7000 (0x5159), ATI Technologies Inc.  
compatible

Adapter Description RADEON 7000M (on board)

Adapter RAM 16.00 MB (16,777,216 bytes)

Installed Drivers ati2dvag.dll

Driver Version 5.2.3790.2

INF File oem20.inf (ati2mtag\_RV100 section)

Color Planes 1

Color Table Entries 65536

Resolution 1024 x 768 x 85 hertz

Bits/Pixel 16

[Infrared]

Item Value

No infrared devices

[Input]

[ Following are sub-categories of this main category ]

[Keyboard]

Item Value

Description Standard 101/102-Key or Microsoft Natural PS/2  
Keyboard

Name Enhanced (101- or 102-key)

Layout 00000409

PNP Device ID ACPI\PNP0303\5&9583612&1

NumberOfFunctionKeys 12

[Pointing Device]

Item Value

Hardware Type PS/2 Compatible Mouse

Number of Buttons 3

Status OK

PNP Device ID ACPI\PNP0F13\5&9583612&1

Power Management Supported False

Double Click Threshold 6

Handedness Right Handed Operation

[Modem]

Item Value

No modems

[Network]

[ Following are sub-categories of this main category ]

[Adapter]

Item Value

Name [00000000] RAS Async Adapter

Adapter Type Not Available

Product Name RAS Async Adapter

Installed True

PNP Device ID Not Available

Last Reset 9/4/2005 10:30:33 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\_L2TPMINIPOINT\0000  
 Last Reset 9/4/2005 10:30:33 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\_PPTPMINIPOINT\0000  
 Last Reset 9/4/2005 10:30:33 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\rasptp.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\_PTMINIPOINT\0000  
 Last Reset 9/4/2005 10:30:33 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 9/4/2005 10:30:33 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 Not Available  
 Product Name Broadcom NetXtreme Gigabit Ethernet  
 Installed True  
 PNP Device ID Not Available  
 Last Reset 9/4/2005 10:30:33 AM  
 Index 5  
 Service Name b57w2k  
 IP Address 192.168.40.80  
 IP Subnet 255.255.255.0  
 Default IP Gateway Not Available  
 DHCP Enabled False  
 DHCP Server Not Available  
 DHCP Lease Expires Not Available  
 DHCP Lease Obtained Not Available  
 MAC Address 00:0E:0C:36:7A:B5  
 Service Name Not Available  
  
 Name [00000006] Intel(R) PRO/1000 MT Dual Port Server Adapter  
 Adapter Type Not Available  
 Product Name Intel(R) PRO/1000 MT Dual Port Server Adapter  
 Installed True  
 PNP Device ID Not Available  
 Last Reset 9/4/2005 10:30:33 AM  
 Index 6  
 Service Name E1000  
 IP Address 192.168.180.99  
 IP Subnet 255.255.255.0  
 Default IP Gateway Not Available

DHCP Enabled False  
 DHCP Server Not Available  
 DHCP Lease Expires Not Available  
 DHCP Lease Obtained Not Available  
 MAC Address 00:0E:0C:35:7E:C4  
 Service Name Not Available  
  
 Name [00000007] Intel(R) PRO/1000 MT Dual Port Server Adapter  
 Adapter Type Not Available  
 Product Name Intel(R) PRO/1000 MT Dual Port Server Adapter  
 Installed True  
 PNP Device ID Not Available  
 Last Reset 9/4/2005 10:30:33 AM  
 Index 7  
 Service Name E1000  
 IP Address 192.168.181.99  
 IP Subnet 255.255.255.0  
 Default IP Gateway Not Available  
 DHCP Enabled False  
 DHCP Server Not Available  
 DHCP Lease Expires Not Available  
 DHCP Lease Obtained Not Available  
 MAC Address 00:0E:0C:35:7E:C5  
 Service Name Not Available  
  
 Name [00000008] Broadcom NetXtreme Gigabit Ethernet  
 Adapter Type Not Available  
 Product Name Broadcom NetXtreme Gigabit Ethernet  
 Installed True  
 PNP Device ID Not Available  
 Last Reset 9/4/2005 10:30:33 AM  
 Index 8  
 Service Name b57w2k  
 IP Address Not Available



IP Subnet Not Available  
Default IP Gateway Not Available  
DHCP Enabled True  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address Not Available  
Service Name Not Available

Name [00000009] Intel(R) PRO/1000 MT Dual Port Server Adapter  
Adapter Type Not Available  
Product Name Intel(R) PRO/1000 MT Dual Port Server Adapter  
Installed True  
PNP Device ID Not Available

Last Reset 9/4/2005 10:30:33 AM  
Index 9  
Service Name E1000  
IP Address 192.168.182.99  
IP Subnet 255.255.255.0  
Default IP Gateway Not Available  
DHCP Enabled False  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address 00:0E:0C:36:7A:B4  
Service Name Not Available

Name [00000010] Intel(R) PRO/1000 MT Dual Port Server Adapter  
Adapter Type Not Available  
Product Name Intel(R) PRO/1000 MT Dual Port Server Adapter  
Installed True  
PNP Device ID Not Available  
Last Reset 9/4/2005 10:30:33 AM  
Index 10

Service Name E1000  
IP Address 192.168.40.80  
IP Subnet 255.255.255.0  
Default IP Gateway Not Available  
DHCP Enabled False  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address 00:0E:0C:36:7A:B5

Service Name Not Available  
Name [00000011] Broadcom NetXtreme Gigabit Ethernet  
Adapter Type Not Available  
Product Name Broadcom NetXtreme Gigabit Ethernet  
Installed True  
PNP Device ID  
PCI\VEN\_14E4&DEV\_1659&SUBSYS\_02C61014&REV\_11\4&1234A539&0&0010

Last Reset 9/4/2005 10:30:33 AM  
Index 11  
Service Name b57w2k  
IP Address Not Available  
IP Subnet Not Available  
Default IP Gateway Not Available  
DHCP Enabled True  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address Not Available

Service Name b57w2k  
Driver c:\winnt\system32\drivers\b57w2k.sys (122616, 7.86.0.0)  
Name [00000012] Intel(R) PRO/1000 MT Dual Port Server Adapter  
Adapter Type Ethernet 802.3  
Product Name Intel(R) PRO/1000 MT Dual Port Server Adapter

Installed True  
 PNP Device ID  
 PCI\VEN\_8086&DEV\_1079&SUBSYS\_117A8086&REV\_03\5&1AF24789&0&080018  
 Last Reset 9/4/2005 10:30:33 AM  
 Index 12  
 Service Name E1000  
 IP Address 192.168.182.99  
 IP Subnet 255.255.255.0  
 Default IP Gateway Not Available  
 DHCP Enabled False  
 DHCP Server Not Available  
 DHCP Lease Expires Not Available  
 DHCP Lease Obtained Not Available  
 MAC Address 00:0E:0C:36:7A:B4  
 Service Name E1000  
 IRQ Number 28  
 I/O Port 0x3400-0x343F  
 Driver c:\winnt\system32\drivers\e1000nt5.sys (174608, 8.1.8.0)  
 Name [00000013] Intel(R) PRO/1000 MT Dual Port Server Adapter  
 Adapter Type Ethernet 802.3  
 Product Name Intel(R) PRO/1000 MT Dual Port Server Adapter  
 Installed True  
 PNP Device ID  
 PCI\VEN\_8086&DEV\_1079&SUBSYS\_117A8086&REV\_03\5&1AF24789&0&090018  
 Last Reset 9/4/2005 10:30:33 AM  
 Index 13  
 Service Name E1000  
 IP Address 192.168.40.80  
 IP Subnet 255.255.255.0  
 Default IP Gateway Not Available  
 DHCP Enabled False  
 DHCP Server Not Available  
 DHCP Lease Expires Not Available

DHCP Lease Obtained Not Available  
 MAC Address 00:0E:0C:36:7A:B5  
 Service Name E1000  
 IRQ Number 29  
 I/O Port 0x3440-0x347F  
 Driver c:\winnt\system32\drivers\e1000nt5.sys (174608, 8.1.8.0)  
 Name [00000014] Intel(R) PRO/1000 MT Dual Port Server Adapter  
 Adapter Type Ethernet 802.3  
 Product Name Intel(R) PRO/1000 MT Dual Port Server Adapter  
 Installed True  
 PNP Device ID  
 PCI\VEN\_8086&DEV\_1079&SUBSYS\_117A8086&REV\_03\5&1F7D530E&0&080218  
 Last Reset 9/4/2005 10:30:33 AM  
 Index 14  
 Service Name E1000  
 IP Address 192.168.180.99  
 IP Subnet 255.255.255.0  
 Default IP Gateway Not Available  
 DHCP Enabled False  
 DHCP Server Not Available  
 DHCP Lease Expires Not Available  
 DHCP Lease Obtained Not Available  
 MAC Address 00:0E:0C:35:7E:C4  
 Service Name E1000  
 IRQ Number 48  
 I/O Port 0x4000-0x4FFF  
 Driver c:\winnt\system32\drivers\e1000nt5.sys (174608, 8.1.8.0)  
 Name [00000015] Intel(R) PRO/1000 MT Dual Port Server Adapter  
 Adapter Type Ethernet 802.3  
 Product Name Intel(R) PRO/1000 MT Dual Port Server Adapter  
 Installed True

PNP Device ID  
PCI\VEN\_8086&DEV\_1079&SUBSYS\_117A8086&REV\_03\5&1F7D530E&  
0&090218

Last Reset 9/4/2005 10:30:33 AM

Index 15

Service Name E1000

IP Address 192.168.181.99

IP Subnet 255.255.255.0

Default IP Gateway Not Available

DHCP Enabled False

DHCP Server Not Available

DHCP Lease Expires Not Available

DHCP Lease Obtained Not Available

MAC Address 00:0E:0C:35:7E:C5

Service Name E1000

IRQ Number 49

I/O Port 0x4040-0x407F

Driver c:\winnt\system32\drivers\e1000nt5.sys (174608, 8.1.8.0)

[Protocol]

Item Value

Name MSAFD Tcip [TCP/IP]

ConnectionlessService False

GuaranteesDelivery True

GuaranteesSequencing True

MaximumAddressSize 16 bytes

MaximumMessageSize 0 bytes

MessageOriented False

MinimumAddressSize 16 bytes

PseudoStreamOriented False

SupportsBroadcasting False

SupportsConnectData False

SupportsDisconnectData False

SupportsEncryption False

SupportsExpeditedData True

SupportsGracefulClosing True

SupportsGuaranteedBandwidth False

SupportsMulticasting False

Name MSAFD Tcip [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	SupportsBroadcasting	False
SupportsExpeditedData	False	SupportsConnectData	False
SupportsGracefulClosing	False	SupportsDisconnectData	False
SupportsGuaranteedBandwidth	False	SupportsEncryption	False
SupportsMulticasting	True	SupportsExpeditedData	False
		SupportsGracefulClosing	False
Name	RSVP TCP Service Provider	SupportsGuaranteedBandwidth	False
ConnectionlessService	False	SupportsMulticasting	False
GuaranteesDelivery	True		
GuaranteesSequencing	True	Name	MSAFD NetBIOS
MaximumAddressSize	16 bytes	[\Device\NetBT_Tcpip_{9C31F48A-25C9-4257-99E9-89DD0067B381}]	
MaximumMessageSize	0 bytes	DATAGRAM 12	
MessageOriented	False	ConnectionlessService	True
MinimumAddressSize	16 bytes	GuaranteesDelivery	False
PseudoStreamOriented	False	GuaranteesSequencing	False
SupportsBroadcasting	False	MaximumAddressSize	20 bytes
SupportsConnectData	False	MaximumMessageSize	64000 bytes
SupportsDisconnectData	False	MessageOriented	True
SupportsEncryption	True	MinimumAddressSize	20 bytes
SupportsExpeditedData	True	PseudoStreamOriented	False
SupportsGracefulClosing	True	SupportsBroadcasting	True
SupportsGuaranteedBandwidth	False	SupportsConnectData	False
SupportsMulticasting	False	SupportsDisconnectData	False
		SupportsEncryption	False
Name	MSAFD NetBIOS	SupportsExpeditedData	False
[\Device\NetBT_Tcpip_{9C31F48A-25C9-4257-99E9-89DD0067B381}]		SupportsGracefulClosing	False
SEQPACKET 12		SupportsGuaranteedBandwidth	False
ConnectionlessService	False	SupportsMulticasting	False
GuaranteesDelivery	True		
GuaranteesSequencing	True	Name	MSAFD NetBIOS
MaximumAddressSize	20 bytes	[\Device\NetBT_Tcpip_{842D2D66-2F57-4242-B6B7-8C45F13568B9}]	
MaximumMessageSize	64000 bytes	SEQPACKET 11	
MessageOriented	True	ConnectionlessService	False
MinimumAddressSize	20 bytes	GuaranteesDelivery	True
PseudoStreamOriented	False	GuaranteesSequencing	True
		MaximumAddressSize	20 bytes

MaximumMessageSize	64000 bytes	ConnectionlessService	False
MessageOriented	True	GuaranteesDelivery	True
MinimumAddressSize	20 bytes	GuaranteesSequencing	True
PseudoStreamOriented	False	MaximumAddressSize	20 bytes
SupportsBroadcasting	False	MaximumMessageSize	64000 bytes
SupportsConnectData	False	MessageOriented	True
SupportsDisconnectData	False	MinimumAddressSize	20 bytes
SupportsEncryption	False	PseudoStreamOriented	False
SupportsExpeditedData	False	SupportsBroadcasting	False
SupportsGracefulClosing	False	SupportsConnectData	False
SupportsGuaranteedBandwidth	False	SupportsDisconnectData	False
SupportsMulticasting	False	SupportsEncryption	False
Name	MSAFD NetBIOS [\Device\NetBT_Tcpip_{842D2D66-2F57-4242-B6B7-8C45F13568B9}] DATAGRAM 11	SupportsExpeditedData	False
ConnectionlessService	True	SupportsGracefulClosing	False
GuaranteesDelivery	False	SupportsGuaranteedBandwidth	False
GuaranteesSequencing	False	SupportsMulticasting	False
MaximumAddressSize	20 bytes	Name	MSAFD NetBIOS [\Device\NetBT_Tcpip_{14E52EA2-E20F-4120-B47A-12EB48850C4D}] DATAGRAM 10
MaximumMessageSize	64000 bytes	ConnectionlessService	True
MessageOriented	True	GuaranteesDelivery	False
MinimumAddressSize	20 bytes	GuaranteesSequencing	False
PseudoStreamOriented	False	MaximumAddressSize	20 bytes
SupportsBroadcasting	True	MaximumMessageSize	64000 bytes
SupportsConnectData	False	MessageOriented	True
SupportsDisconnectData	False	MinimumAddressSize	20 bytes
SupportsEncryption	False	PseudoStreamOriented	False
SupportsExpeditedData	False	SupportsBroadcasting	True
SupportsGracefulClosing	False	SupportsConnectData	False
SupportsGuaranteedBandwidth	False	SupportsDisconnectData	False
SupportsMulticasting	False	SupportsEncryption	False
Name	MSAFD NetBIOS [\Device\NetBT_Tcpip_{14E52EA2-E20F-4120-B47A-12EB48850C4D}] SEQPACKET 10	SupportsExpeditedData	False
ConnectionlessService	True	SupportsGracefulClosing	False
GuaranteesDelivery	False	SupportsGuaranteedBandwidth	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		

SupportsMulticasting False

Name MSAFD NetBIOS  
[\Device\NetBT\_Tcpip\_{BE0365CC-DB68-480E-AC84-CAFFE4BA3BBF}]  
SEQPACKET 9

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\_{BE0365CC-DB68-480E-AC84-CAFFE4BA3BBF}]  
DATAGRAM 9

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\_{FC3EA590-17FB-4539-A523-1B7978AD7BA1}]  
SEQPACKET 8

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\_{FC3EA590-17FB-4539-A523-1B7978AD7BA1}]  
DATAGRAM 8

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_{9E99CB4F-61D8-4331-BF43-DDB2216ACFDE}] SEQPACKET 7	
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_{9E99CB4F-61D8-4331-BF43-DDB2216ACFDE}] DATAGRAM 7	
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_{2C1E5085-324A-40D2-B8B8-CCB2BFE6DA7D}] SEQPACKET 6	
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\_{2C1E5085-324A-40D2-B8B8-CCB2BFE6DA7D}]  
 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\_{6CB1814C-9083-4B65-851A-D765EB7A31E0}]  
 SEQPACKET 5

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\_{6CB1814C-9083-4B65-851A-D765EB7A31E0}]  
 DATAGRAM 5

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\_{9726764A-163E-43CF-836B-CEF1FBDC4F09}]  
 SEQPACKET 4

ConnectionlessService False  
 GuaranteesDelivery True  
 GuaranteesSequencing True  
 MaximumAddressSize 20 bytes  
 MaximumMessageSize 64000 bytes  
 MessageOriented True  
 MinimumAddressSize20 bytes  
 PseudoStreamOriented False  
 SupportsBroadcasting False



SupportsConnectData False  
 SupportsDisconnectData False  
 SupportsEncryption False  
 SupportsExpeditedData False  
 SupportsGracefulClosing False  
 SupportsGuaranteedBandwidth False  
 SupportsMulticasting False

Name MSAFD NetBIOS  
 [\Device\NetBT\_Tcpip\_{9726764A-163E-43CF-836B-CEF1FBDC4F09}]  
 DATAGRAM 4

ConnectionlessService True  
 GuaranteesDelivery False  
 GuaranteesSequencing False  
 MaximumAddressSize 20 bytes  
 MaximumMessageSize 64000 bytes  
 MessageOriented True  
 MinimumAddressSize20 bytes  
 PseudoStreamOriented False  
 SupportsBroadcasting True  
 SupportsConnectData False  
 SupportsDisconnectData False  
 SupportsEncryption False  
 SupportsExpeditedData False  
 SupportsGracefulClosing False  
 SupportsGuaranteedBandwidth False  
 SupportsMulticasting False

Name MSAFD NetBIOS  
 [\Device\NetBT\_Tcpip\_{C7788F23-C676-42D3-807D-00D00D0C84F9}]  
 SEQPACKET 3

ConnectionlessService False  
 GuaranteesDelivery True  
 GuaranteesSequencing True  
 MaximumAddressSize 20 bytes  
 MaximumMessageSize 64000 bytes

MessageOriented True  
 MinimumAddressSize20 bytes  
 PseudoStreamOriented False  
 SupportsBroadcasting False  
 SupportsConnectData False  
 SupportsDisconnectData False  
 SupportsEncryption False  
 SupportsExpeditedData False  
 SupportsGracefulClosing False  
 SupportsGuaranteedBandwidth False  
 SupportsMulticasting False

Name MSAFD NetBIOS  
 [\Device\NetBT\_Tcpip\_{C7788F23-C676-42D3-807D-00D00D0C84F9}]  
 DATAGRAM 3

ConnectionlessService True  
 GuaranteesDelivery False  
 GuaranteesSequencing False  
 MaximumAddressSize 20 bytes  
 MaximumMessageSize 64000 bytes  
 MessageOriented True  
 MinimumAddressSize20 bytes  
 PseudoStreamOriented False  
 SupportsBroadcasting True  
 SupportsConnectData False  
 SupportsDisconnectData False  
 SupportsEncryption False  
 SupportsExpeditedData False  
 SupportsGracefulClosing False  
 SupportsGuaranteedBandwidth False  
 SupportsMulticasting False

Name MSAFD NetBIOS  
 [\Device\NetBT\_Tcpip\_{BF6A26E8-3210-46EE-A818-F9EC97D7B87A}]  
 SEQPACKET 0

ConnectionlessService False

GuaranteesDelivery True  
 GuaranteesSequencing True  
 MaximumAddressSize 20 bytes  
 MaximumMessageSize 64000 bytes  
 MessageOriented True  
 MinimumAddressSize20 bytes  
 PseudoStreamOriented False  
 SupportsBroadcasting False  
 SupportsConnectData False  
 SupportsDisconnectData False  
 SupportsEncryption False  
 SupportsExpeditedData False  
 SupportsGracefulClosing False  
 SupportsGuaranteedBandwidth False  
 SupportsMulticasting False

Name MSAFD NetBIOS  
 [\Device\NetBT\_Tcpip\_{BF6A26E8-3210-46EE-A818-F9EC97D7B87A}]  
 DATAGRAM 0

ConnectionlessService True  
 GuaranteesDelivery False  
 GuaranteesSequencing False  
 MaximumAddressSize 20 bytes  
 MaximumMessageSize 64000 bytes  
 MessageOriented True  
 MinimumAddressSize20 bytes  
 PseudoStreamOriented False  
 SupportsBroadcasting True  
 SupportsConnectData False  
 SupportsDisconnectData False  
 SupportsEncryption False  
 SupportsExpeditedData False  
 SupportsGracefulClosing False  
 SupportsGuaranteedBandwidth False  
 SupportsMulticasting False

Name MSAFD NetBIOS  
 [\Device\NetBT\_Tcpip\_{E4642D43-676A-4938-B902-1D94A9E14871}]  
 SEQPACKET 1

ConnectionlessService False  
 GuaranteesDelivery True  
 GuaranteesSequencing True  
 MaximumAddressSize 20 bytes  
 MaximumMessageSize 64000 bytes  
 MessageOriented True  
 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\_{E4642D43-676A-4938-B902-1D94A9E14871}]  
 DATAGRAM 1

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\_{7A1A1C49-720E-4C27-ADCC-2C8703574F7C}]  
 SEQPACKET 2

ConnectionlessService False

GuaranteesDelivery True

GuaranteesSequencing True

MaximumAddressSize 20 bytes

MaximumMessageSize 64000 bytes

MessageOriented True

MinimumAddressSize 20 bytes

PseudoStreamOriented False

SupportsBroadcasting False

SupportsConnectData False

SupportsDisconnectData False

SupportsEncryption False

SupportsExpeditedData False

SupportsGracefulClosing False

SupportsGuaranteedBandwidth False

SupportsMulticasting False

Name MSAFD NetBIOS  
 [\Device\NetBT\_Tcpip\_{7A1A1C49-720E-4C27-ADCC-2C8703574F7C}]  
 DATAGRAM 2

ConnectionlessService True

GuaranteesDelivery False

GuaranteesSequencing False

MaximumAddressSize 20 bytes

MaximumMessageSize 64000 bytes

MessageOriented True

MinimumAddressSize 20 bytes

PseudoStreamOriented False

SupportsBroadcasting True

SupportsConnectData False

SupportsDisconnectData False

SupportsEncryption False

SupportsExpeditedData False

SupportsGracefulClosing False

SupportsGuaranteedBandwidth False

SupportsMulticasting False

[WinSock]

Item	Value
File	c:\winnt\system32\winsock.dll
Version	3.10
Size	2.80 KB (2,864 bytes)
File	c:\winnt\system32\wsock32.dll
Version	5.00.2195.4874
Size	21.27 KB (21,776 bytes)

[Ports]

[ Following are sub-categories of this main category ]

[Serial]

Item	Value
Name	COM1
Status	OK
PNP Device ID	ACPI\PNP0501\1
Maximum Input Buffer Size	0
Maximum Output Buffer Size	False
Settable Baud Rate	True
Settable Data Bits	True
Settable Flow Control	True
Settable Parity	True
Settable Parity Check	True
Settable Stop Bits	True

Settable RLSD True  
 Supports RLSD True  
 Supports 16 Bit Mode False  
 Supports Special Characters False  
 Baud Rate 9600  
 Bits/Byte 8  
 Stop Bits 1  
 Parity None  
 Busy 0  
 Abort Read/Write on Error 0  
 Binary Mode Enabled -1  
 Continue XMit on XOff 0  
 CTS Outflow Control 0  
 Discard NULL Bytes 0  
 DSR Outflow Control 0  
 DSR Sensitivity 0  
 DTR Flow Control Type Enable  
 EOF Character 0  
 Error Replace Character 0  
 Error Replacement Enabled 0  
 Event Character 0  
 Parity Check Enabled 0  
 RTS Flow Control Type Enable  
 XOff Character 19  
 XOffXMit Threshold 512  
 XOn Character 17  
 XOnXMit Threshold 2048  
 XOnXOff InFlow Control 0  
 XOnXOff OutFlow Control 0  
 IRQ Number 4  
 I/O Port 0x03F8-0x03FF  
 Driver c:\winnt\system32\drivers\serial.sys (62512, 5.00.2195.5080)  
 Name COM2

Status OK  
 PNP Device ID ACPI\PNP0501\2  
 Maximum Input Buffer Size 0  
 Maximum Output Buffer Size False  
 Settable Baud Rate True  
 Settable Data Bits True  
 Settable Flow Control True  
 Settable Parity True  
 Settable Parity Check True  
 Settable Stop Bits True  
 Settable RLSD True  
 Supports RLSD True  
 Supports 16 Bit Mode False  
 Supports Special Characters False  
 Baud Rate 9600  
 Bits/Byte 8  
 Stop Bits 1  
 Parity None  
 Busy 0  
 Abort Read/Write on Error 0  
 Binary Mode Enabled -1  
 Continue XMit on XOff 0  
 CTS Outflow Control 0  
 Discard NULL Bytes 0  
 DSR Outflow Control 0  
 DSR Sensitivity 0  
 DTR Flow Control Type Enable  
 EOF Character 0  
 Error Replace Character 0  
 Error Replacement Enabled 0  
 Event Character 0  
 Parity Check Enabled 0  
 RTS Flow Control Type Enable  
 XOff Character 19

XOffXMit Threshold 512  
 XOn Character 17  
 XOnXMit Threshold 2048  
 XOnXOff InFlow Control 0  
 XOnXOff OutFlow Control 0  
 IRQ Number 3  
 I/O Port 0x02F8-0x02FF  
 Driver c:\winnt\system32\drivers\serial.sys (62512, 5.00.2195.5080)

[Parallel]

Item	Value
Name	LPT1
PNP Device ID	ACPI\PNP0401\5&9583612&1

[Storage]

[ Following are sub-categories of this main category ]

[Drives]

Item	Value
Drive	A:
Description	3 1/2 Inch Floppy Drive
Drive	C:
Description	Local Fixed Disk
Compressed	False
File System	NTFS
Size	33.90 GB (36,396,830,720 bytes)
Free Space	27.86 GB (29,916,135,424 bytes)
Volume Name	C_Drive
Volume Serial Number	5C29133F
Partition	Disk #0, Partition #0
Partition Size	33.90 GB (36,396,831,744 bytes)
Starting Offset	32256 bytes
Drive Description	Disk drive
Drive Manufacturer	(Standard disk drives)

Drive Model IBM-ESXS ST336753LC FN SCSI Disk Device

Drive BytesPerSector 512  
 Drive MediaLoaded True  
 Drive MediaType Fixed hard disk media  
 Drive Partitions 1  
 Drive SCsIBus 0  
 Drive SCsILogicalUnit 0  
 Drive SCsIPort 3  
 Drive SCsITargetId 0  
 Drive SectorsPerTrack 63  
 Drive Size 36396864000 bytes  
 Drive TotalCylinders 4425  
 Drive TotalSectors 71087625  
 Drive TotalTracks 1128375  
 Drive TracksPerCylinder 255

[SCSI]

Item	Value
Name	QLogic QLA235x PCI Fibre Channel Adapter
Caption	QLogic QLA235x PCI Fibre Channel Adapter
Driver	ql2300vi
Status	OK
PNP Device ID	PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\5&1AF24789&0&100018
Device ID	PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\5&1AF24789&0&100018
Device Map	Not Available
Index	Not Available
Max Number Controlled	Not Available
IRQ Number	24
I/O Port	0x2000-0x4FFF
Driver	c:\winnt\system32\drivers\ql2300vi.sys (468033, 8.2.3.10 (w32 VI))
Name	Adaptec AIC-7902B - Ultra320 SCSI

Caption Adaptec AIC-7902B - Ultra320 SCSI

Driver adpu320

Status OK

PNP Device ID  
PCI\VEN\_9005&DEV\_801D&SUBSYS\_02CC1014&REV\_10\5&1AF24789  
&0&180018

Device ID  
PCI\VEN\_9005&DEV\_801D&SUBSYS\_02CC1014&REV\_10\5&1AF24789  
&0&180018

Device Map Not Available

Index Not Available

Max Number Controlled Not Available

IRQ Number 30

I/O Port 0x2800-0x28FF

I/O Port 0x2400-0x24FF

Driver c:\winnt\system32\drivers\adpu320.sys (132608, 3.0.000.000 built  
by: WinDDK)

Name Adaptec AIC-7902B - Ultra320 SCSI

Caption Adaptec AIC-7902B - Ultra320 SCSI

Driver adpu320

Status OK

PNP Device ID  
PCI\VEN\_9005&DEV\_801D&SUBSYS\_02CC1014&REV\_10\5&1AF24789  
&0&190018

Device ID  
PCI\VEN\_9005&DEV\_801D&SUBSYS\_02CC1014&REV\_10\5&1AF24789  
&0&190018

Device Map Not Available

Index Not Available

Max Number Controlled Not Available

IRQ Number 31

I/O Port 0x3000-0x30FF

I/O Port 0x2C00-0x2CFF

Driver c:\winnt\system32\drivers\adpu320.sys (132608, 3.0.000.000 built  
by: WinDDK)

[Printing]

Name Port Name Server Name

No printing information

[Problem Devices]

Device	PNP Device ID	Error Code
Not Available	ACPI\ASF0001\2&DABA3FF&1	28

Broadcom NetXtreme Gigabit Ethernet #3		
PCI\VEN_14E4&DEV_1659&SUBSYS_02C61014&REV_11\4&1234A539& &0&0010	22	

Intel(R) 82801EB USB2 Enhanced Host Controller - 24DD		
PCI\VEN_8086&DEV_24DD&SUBSYS_02ED1014&REV_02\3&18D45AA6 &0&EF	10	

Not Available	ACPI\IBM3737\4&1244EBE3&0	28
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[USB]

Device	PNP Device ID
Intel(R) 82801EB USB Universal Host Controller - 24D2	
PCI\VEN_8086&DEV_24D2&SUBSYS_02ED1014&REV_02\3&18D45AA6 &0&E8	

USB Root Hub	USB\ROOT_HUB\4&1C9550AF&0
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Intel(R) 82801EB USB Universal Host Controller - 24D4	
PCI\VEN_8086&DEV_24D4&SUBSYS_02ED1014&REV_02\3&18D45AA6 &0&E9	

USB Root Hub	USB\ROOT_HUB\4&2E9CD9B8&0
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Intel(R) 82801EB USB Universal Host Controller - 24D7	
PCI\VEN_8086&DEV_24D7&SUBSYS_02ED1014&REV_02\3&18D45AA6 &0&EA	

USB Root Hub	USB\ROOT_HUB\4&2B462076&0
--------------	---------------------------

Intel(R) 82801EB USB Universal Host Controller - 24DE	
PCI\VEN_8086&DEV_24DE&SUBSYS_02ED1014&REV_02\3&18D45AA6 &0&EB	

USB Root Hub	USB\ROOT_HUB\4&37241A76&0
--------------	---------------------------

Intel(R) 82801EB USB2 Enhanced Host Controller - 24DD	
PCI\VEN_8086&DEV_24DD&SUBSYS_02ED1014&REV_02\3&18D45AA6 &0&EF	

[Software Environment]

[ Following are sub-categories of this main category ]

[Drivers]

Name	Description	File	Type	Started	Start Mode
State	Status	Error Control	Accept Pause	Accept	Stop
abiosdsk	Abiosdsk	Not Available	Kernel Driver	False	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	Running	OK Normal
Kernel Driver	True	Boot	Running	OK	Normal
False	True				



disk	Disk Driver	c:\winnt\system32\drivers\disk.sys										
Kernel Driver	True	Boot	Running	OK	Normal							
False	True											
diskperf	Diskperf	c:\winnt\system32\drivers\diskperf.sys					Kernel					
Driver	True	Boot	Running	OK	Normal	False						
True												
dmboot	dmboot	c:\winnt\system32\drivers\dmboot.sys					Kernel					
Driver	False	Disabled	Stopped	OK	Normal	False						
False												
dmio	Logical Disk Manager Driver		c:\winnt\system32\drivers\dmio.sys					Kernel Driver	True			
Boot	Running	OK	Normal	False	True							
dmload	dmload	c:\winnt\system32\drivers\dmload.sys					Kernel					
Driver	True	Boot	Running	OK	Normal	False						
True												
dmusic	Microsoft DirectMusic SW Synth (WDM)		c:\winnt\system32\drivers\dmusic.sys					Kernel Driver	False			
Manual	Stopped	OK	Normal	False	False							
e1000	Intel(R) PRO/1000 Network Connection Driver		c:\winnt\system32\drivers\e1000nt5.sys					Kernel Driver	True			
Manual	Running	OK	Normal	False	True							
e100b	Intel(R) PRO Adapter Driver		c:\winnt\system32\drivers\e100bnt5.sys					Kernel Driver	False			
Manual	Stopped	OK	Normal	False	False							
efs	EFS	c:\winnt\system32\drivers\efs.sys					File System Driver					
True	Disabled	Running	OK	Normal	False	True						
fastfat	Fastfat	c:\winnt\system32\drivers\fastfat.sys					File System	False				
Driver	True	Disabled	Running	OK	Normal	False						
True												
fd16_700	Fd16_700	Not Available		Kernel Driver			False					
Disabled	Stopped	OK	Normal	False	False							
fdc	Floppy Disk Controller Driver		c:\winnt\system32\drivers\fdc.sys					Kernel Driver	True			
Kernel Driver	True	Manual	Running	OK	Normal							
False	True											
fiddrv	fiddrv	\\?\c:\winnt\system32\drivers\fiddrv.sys					Kernel					
Driver	False	Manual	Stopped	OK	Normal	False						
False												
fips	Fips	c:\winnt\system32\drivers\fips.sys					Kernel					
Driver	True	Auto	Running	OK	Normal	False						
True												
fireport	fireport	Not Available		Kernel Driver			False					
Disabled	Stopped	OK	Normal	False	False							
flashpnt	flashpnt	Not Available		Kernel Driver			False					
Disabled	Stopped	OK	Normal	False	False							
flpydisk	Floppy Disk Driver		c:\winnt\system32\drivers\flpydisk.sys					Kernel Driver	True			
Kernel Driver	True	Manual	Running	OK	Normal							
False	True											
ftdisk	Volume Manager Driver		c:\winnt\system32\drivers\ftdisk.sys					Kernel Driver	True			
Boot	Running	OK	Normal	False	True							
gpc	Generic Packet Classifier		c:\winnt\system32\drivers\msgpc.sys					Kernel Driver	True			
Manual	Running	OK	Normal	False	True							
i8042prt	i8042 Keyboard and PS/2 Mouse Port Driver		c:\winnt\system32\drivers\i8042prt.sys					Kernel Driver	True			
System	Running	OK	Normal	False	True							
ini910u	ini910u	Not Available		Kernel Driver			False					
Disabled	Stopped	OK	Normal	False	False							
intelide	IntelIde	Not Available		Kernel Driver			False					
Disabled	Stopped	OK	Normal	False	False							
ipfilterdriver	IP Traffic Filter Driver		c:\winnt\system32\drivers\ipfltdrv.sys					Kernel Driver	False			
Manual	Stopped	OK	Normal	False	False							
ipinip	IP in IP Tunnel Driver		c:\winnt\system32\drivers\ipinip.sys					Kernel Driver	False			
Kernel Driver	False	Manual	Stopped	OK	Normal							
False	False											
ipnat	IP Network Address Translator		c:\winnt\system32\drivers\ipnat.sys					Kernel Driver	False			
Kernel Driver	False	Manual	Stopped	OK	Normal							
False	False											
ipsec	IPSEC driver		c:\winnt\system32\drivers\ipsec.sys					Kernel Driver	True			
Kernel Driver	True	Manual	Running	OK	Normal							
False	True											
ipsraidn	ipsraidn	Not Available		Kernel Driver			False					
Disabled	Stopped	OK	Normal	False	False							
irenum	IR Enumerator Service		c:\winnt\system32\drivers\irenum.sys					Kernel Driver	False			
Manual	Stopped	OK	Normal	False	False							
isapnp	PnP ISA/EISA Bus Driver		c:\winnt\system32\drivers\isapnp.sys					Kernel Driver	True			
Boot	Running	OK	Critical	False	True							
kbdclass	Keyboard Class Driver		c:\winnt\system32\drivers\kbdclass.sys					Kernel Driver	True			
System	Running	OK	Normal	False	True							
kmixer	Microsoft Kernel Wave Audio Mixer		c:\winnt\system32\drivers\kmixer.sys					Kernel Driver	False			
Manual	Stopped	OK	Normal	False	False							
ksecdd	KSecDD	c:\winnt\system32\drivers\ksecdd.sys					Kernel					
Driver	True	Boot	Running	OK	Normal	False						
True												
lbtrfdc	lbtrfdc	Not Available		Kernel Driver			False					
System	Stopped	OK	Ignore	False	False							
lp6nds35	lp6nds35	Not Available		Kernel Driver			False					
Disabled	Stopped	OK	Normal	False	False							
mnmd	mnmd	c:\winnt\system32\drivers\mnmd.sys					Kernel					
Driver	True	System	Running	OK	Ignore	False						
True												
modem	Modem	c:\winnt\system32\drivers\modem.sys					Kernel					
Driver	False	Manual	Stopped	OK	Ignore	False						
False												



mouclass	Mouse Class Driver	c:\winnt\system32\drivers\mouclass.sys	Kernel Driver	True	System	Running	OK	Normal	False	True
mountmgr	MountMgr	c:\winnt\system32\drivers\mountmgr.sys	Kernel Driver	True	Boot	Running	OK	Normal	False	True
mraid35x	mraid35x	Not Available	Kernel Driver	Disabled	Stopped	OK	Normal	False	False	False
mrxsmbr	MRXSMB	c:\winnt\system32\drivers\mrxsmbr.sys	File System Driver	True	System	Running	OK	Normal	False	True
msfs	Msfs	c:\winnt\system32\drivers\msfs.sys	File System Driver	True	System	Running	OK	Normal	False	True
mkserv	Microsoft Streaming Service Proxy	c:\winnt\system32\drivers\mkserv.sys	Kernel Driver	Manual	Stopped	OK	Normal	False	False	False
mshpclock	Microsoft Streaming Clock Proxy	c:\winnt\system32\drivers\mshpclock.sys	Kernel Driver	Manual	Stopped	OK	Normal	False	False	False
mshpqm	Microsoft Streaming Quality Manager Proxy	c:\winnt\system32\drivers\mshpqm.sys	Kernel Driver	Manual	Stopped	OK	Normal	False	False	False
mup	Mup	c:\winnt\system32\drivers\mup.sys	File System Driver	True	Boot	Running	OK	Normal	False	True
nal	Nal Service	\\?\c:\winnt\system32\drivers\iqvw32.sys	Kernel Driver	False	Manual	Stopped	OK	Normal	False	False
ncrc710	Nrc710	Not Available	Kernel Driver	Disabled	Stopped	OK	Normal	False	False	False
ndis	NDIS System Driver	c:\winnt\system32\drivers\ndis.sys	Kernel Driver	True	Boot	Running	OK	Normal	False	True
ndistapi	Remote Access NDIS TAPI Driver	c:\winnt\system32\drivers\ndistapi.sys	Kernel Driver	Manual	Running	OK	Normal	False	True	True
ndiswan	Remote Access NDIS WAN Driver	c:\winnt\system32\drivers\ndiswan.sys	Kernel Driver	Manual	Running	OK	Normal	False	True	True
ndproxy	NDIS Proxy	c:\winnt\system32\drivers\ndproxy.sys	Kernel Driver	True	Manual	Running	OK	Normal	False	True
netbios	NetBIOS Interface	c:\winnt\system32\drivers\netbios.sys	File System Driver	True	System	Running	OK	Normal	False	True
netbt	NetBios over Tcpip	c:\winnt\system32\drivers\netbt.sys	Kernel Driver	True	System	Running	OK	Normal	False	True
netdetect	NetDetect	c:\winnt\system32\drivers\netdetect.sys	Kernel Driver	False	Manual	Stopped	OK	Normal	False	False
npfs	Npfs	c:\winnt\system32\drivers\npfs.sys	File System Driver	True	System	Running	OK	Normal	False	True
ntfs	Ntfs	c:\winnt\system32\drivers\ntfs.sys	File System Driver	True	Disabled	Running	OK	Normal	False	True
null	Null	c:\winnt\system32\drivers\null.sys	Kernel Driver	True	System	Running	OK	Normal	False	True
nwlkflt	IPX Traffic Filter Driver	c:\winnt\system32\drivers\nwlkflt.sys	Kernel Driver	Manual	Stopped	OK	Normal	False	False	False
nwlkfw	IPX Traffic Forwarder Driver	c:\winnt\system32\drivers\nwlkfw.sys	Kernel Driver	Manual	Stopped	OK	Normal	False	False	False
parallel	Parallel class driver	c:\winnt\system32\drivers\parallel.sys	Kernel Driver	False	True	Manual	Running	OK	Normal	True
parport	Parallel port driver	c:\winnt\system32\drivers\parport.sys	Kernel Driver	False	True	System	Running	OK	Ignore	True
partmgr	PartMgr	c:\winnt\system32\drivers\partmgr.sys	Kernel Driver	True	Boot	Running	OK	Normal	False	True
parvdm	ParVdm	c:\winnt\system32\drivers\parvdm.sys	Kernel Driver	True	Auto	Running	OK	Ignore	False	True
pci	PCI Bus Driver	c:\winnt\system32\drivers\pci.sys	Kernel Driver	True	Boot	Running	OK	Critical	False	True
pcidump	PCIDump	Not Available	Kernel Driver	System	Stopped	OK	Ignore	False	False	False
pciide	PCIIde	c:\winnt\system32\drivers\pciide.sys	Kernel Driver	True	Boot	Running	OK	Normal	False	True
pcmcia	Pcmcia	c:\winnt\system32\drivers\pcmcia.sys	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
pdcomp	PDCOMP	Not Available	Kernel Driver	Manual	Stopped	OK	Ignore	False	False	False
pdframe	PDFRAME	Not Available	Kernel Driver	False	Manual	Stopped	OK	Ignore	False	False
pdreli	PDRELI	Not Available	Kernel Driver	Manual	Stopped	OK	Ignore	False	False	False
pdframe	PDRFRAME	Not Available	Kernel Driver	False	Manual	Stopped	OK	Ignore	False	False



tdnetb Driver False	TDNETB	c:\winnt\system32\drivers\tdnetb.sys	Kernel False	False	Manual	Stopped	OK	Ignore
tdpipe Driver False	TDPIPE	c:\winnt\system32\drivers\tdpipe.sys	Kernel False	False	Manual	Stopped	OK	Ignore
tdspix Driver False	TDSPX	c:\winnt\system32\drivers\tdspix.sys	Kernel False	False	Manual	Stopped	OK	Ignore
tdtcp Driver True	TDTCP	c:\winnt\system32\drivers\tdtcp.sys	Kernel False	False	Manual	Running	OK	Ignore
termdd Auto	Terminal Device Driver	c:\winnt\system32\drivers\termdd.sys	Kernel Driver True	True	Running	OK	Normal	False True
tga System	tga	Not Available	Kernel Driver False	False	Stopped	OK	Ignore	False False
udfs Driver False	Udfs	c:\winnt\system32\drivers\udfs.sys	File System False	False	Disabled	Stopped	OK	Normal
uhcd Manual	Microsoft USB Universal Host Controller Driver	c:\winnt\system32\drivers\uhcd.sys	Kernel Driver True	True	Running	OK	Normal	False True
ultra66 Disabled	ultra66	Not Available	Kernel Driver False	False	Stopped	OK	Normal	False False
update Manual	Microcode Update Driver	c:\winnt\system32\drivers\update.sys	Kernel Driver True	True	Running	OK	Normal	False True
usbehci Manual	Microsoft USB 2.0 Enhanced Host Controller Miniport Driver	c:\winnt\system32\drivers\usbehci.sys	Kernel Driver False	False	Stopped	OK	Normal	False False
usbhub Manual	Microsoft USB Standard Hub Driver	c:\winnt\system32\drivers\usbhub.sys	Kernel Driver True	True	Running	OK	Normal	False True
usbhub20 Manual	USB 2.0 Root Hub Support	c:\winnt\system32\drivers\usbhub20.sys	Kernel Driver False	False	Stopped	OK	Normal	False False
vgasave Driver True	VgaSave	c:\winnt\system32\drivers\vga.sys	Kernel False	False	True	System	Running	OK Ignore
wanarp Manual	Remote Access IP ARP Driver	c:\winnt\system32\drivers\wanarp.sys	Kernel Driver True	True	Running	OK	Normal	False True
wdica Manual	WDICA	Not Available	Kernel Driver False	False	Stopped	OK	Ignore	False False
wdmaud Manual	Microsoft WINMM WDM Audio Compatibility Driver	c:\winnt\system32\drivers\wdmaud.sys	Kernel Driver False	False	Stopped	OK	Normal	False False
[Environment Variables]								
Variable	Value	User Name						

ComSpec	%SystemRoot%\system32\cmd.exe	<SYSTEM>
NUMBER_OF_PROCESSORS	4	<SYSTEM>
OS	Windows_NT	<SYSTEM>
Os2LibPath	%SystemRoot%\system32\os2\dll;	<SYSTEM>
Path	%SystemRoot%\system32;%SystemRoot%;%SystemRoot%\system32\WBEM; C:\Program Files\Microsoft SQL Server\80\Tools\BINN;c:\batfiles;c:\tools;C:\Program Files\Intel\DMIX	<SYSTEM>
PATHEXT	.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH	<SYSTEM>
PROCESSOR_ARCHITECTURE	x86	<SYSTEM>
PROCESSOR_IDENTIFIER	x86 Family 15 Model 4 Stepping 3, GenuineIntel	<SYSTEM>
PROCESSOR_LEVEL	15	<SYSTEM>
PROCESSOR_REVISION	0403	<SYSTEM>
TEMP	%SystemRoot%\TEMP	<SYSTEM>
TMP	%SystemRoot%\TEMP	<SYSTEM>
windir	%SystemRoot%	<SYSTEM>
TEMP	%USERPROFILE%\Local Settings\Temp FCLIENT80\Administrator	
TMP	%USERPROFILE%\Local Settings\Temp FCLIENT80\Administrator	
[Jobs]		
[ Following are sub-categories of this main category ]		
[Print]		
Document Size	Owner	Notify
Start Time	Until Time	Elapsed Time
Priority	Parameters	Driver Name
Queue	Data Type	Name
Unknown	Unknown	Unknown
Unknown	Unknown	Unknown
Unknown	Unknown	Unknown
Unknown	Unknown	Unknown
Unknown	Unknown	Unknown
Unknown	Unknown	Unknown
Unknown	Unknown	Unknown
Unknown	Unknown	Unknown
[Network Connections]		
Local Name	Remote Name	Type
		Status
		User Name
No network connections information		
[Running Tasks]		
Name	Path	Process ID
Working Set	Start Time	Priority
	Version	Min Working Set
	Size	File Date
system	idle process	Not Available
Available	Not Available	Not Available
Unknown	Unknown	Unknown
Unknown	Unknown	Unknown
Unknown	Unknown	Unknown

system	Not Available	8	8	0	1413120	dfssvc.exe	c:\winnt\system32\dfssvc.exe	772	8	204800	
Not Available	Unknown	Unknown	Unknown			1413120	9/4/2005 2:32:09 PM	5.00.2195.3649	88.27 KB	(90,384 bytes)	
smss.exe	c:\winnt\system32\smss.exe	188	11	204800		explorer.exe	c:\winnt\explorer.exe	1296	8	204800	
1413120	9/4/2005 2:31:44 PM	5.00.2195.5382	44.77 KB	(45,840 bytes)	12/7/1999 7:00:00 AM	1413120	9/4/2005 2:32:27 PM	5.00.3502.5321	237.27 KB	(242,960 bytes)	
csrss.exe	Not Available	212	13	Not Available		bmlisten.exe	c:\slave\bmlisten.exe	1408	8	204800	
Not Available	9/4/2005 2:31:47 PM	Unknown	Unknown	Unknown		1413120	9/4/2005 2:32:28 PM	2, 1, 0, 2	156.00 KB	(159,744 bytes)	
winlogon.exe	c:\winnt\system32\winlogon.exe	208	13			7/22/2004 4:52:24 PM					
204800	1413120	9/4/2005 2:31:48 PM	5.00.2195.5731	174.77 KB	(178,960 bytes)	5/3/2002 12:31:24 PM					
services.exe	c:\winnt\system32\services.exe	264	9			svchost.exe	c:\winnt\system32\svchost.exe	1428	8		
204800	1413120	9/4/2005 2:31:49 PM	5.00.2195.3940	86.77 KB	(88,848 bytes)	12/7/1999 7:00:00 AM	204800	1413120	9/4/2005 2:32:29 PM	5.00.2134.1	
lsass.exe	c:\winnt\system32\lsass.exe	276	9	204800		(7,952 bytes)	12/7/1999 7:00:00 AM				
1413120	9/4/2005 2:31:49 PM	5.00.2195.5430	32.77 KB	(33,552 bytes)	12/7/1999 7:00:00 AM	mmc.exe	c:\winnt\system32\mmc.exe	1280	8	204800	
termsrv.exe	c:\winnt\system32\termsrv.exe	396	10			1413120	9/6/2005 2:27:28 PM	5.00.2195.4933	589.27 KB	(603,408 bytes)	
204800	1413120	9/4/2005 2:31:50 PM	5.00.2195.5276	138.77 KB	(142,096 bytes)	1/14/2005 10:50:06 AM					
svchost.exe	c:\winnt\system32\svchost.exe	496	8			rsvp.exe	c:\winnt\system32\rsvp.exe	1220	8	204800	
204800	1413120	9/4/2005 2:31:52 PM	5.00.2134.1	7.77 KB	(7,952 bytes)	12/7/1999 7:00:00 AM	1413120	9/6/2005 2:28:09 PM	5.00.2167.1	172.77 KB	
msdtc.exe	c:\winnt\system32\msdtc.exe	524	8	204800		[Loaded Modules]					
1413120	9/4/2005 2:31:52 PM	1999.9.3421.3	6.77 KB	(6,928 bytes)	2/12/2003 7:52:40 AM	Name	Version	Size	File Date	Manufacturer	Path
svchost.exe	c:\winnt\system32\svchost.exe	692	8			traffic.dll	5.00.2139.1	30.77 KB	(31,504 bytes)	12/7/1999	
204800	1413120	9/4/2005 2:31:53 PM	5.00.2134.1	7.77 KB	(7,952 bytes)	7:00:00 AM				Microsoft Corporation	c:\winnt\system32\traffic.dll
llssrv.exe	c:\winnt\system32\llssrv.exe	724	9	204800		rsvp.exe	5.00.2167.1	172.77 KB	(176,912 bytes)	12/7/1999	
1413120	9/4/2005 2:31:53 PM	5.00.2195.4907	81.27 KB	(83,216 bytes)	7/22/2002 1:05:04 PM	7:00:00 AM				Microsoft Corporation	c:\winnt\system32\rsvp.exe
regsvc.exe	c:\winnt\system32\regsvc.exe	796	8	204800		mlang.dll	6.00.2800.1106	561.50 KB	(574,976 bytes)	8/29/2002	
1413120	9/4/2005 2:31:54 PM	5.00.2195.3649	65.27 KB	(66,832 bytes)	1/14/2005 10:50:10 AM	8:14:40 AM				Microsoft Corporation	c:\winnt\system32\mlang.dll
rsys.exe	Not Available	868	8	Not Available		wbemprox.dll	1.50.1085.0045	40.08 KB	(41,040 bytes)	1/14/2005	
Not Available	9/4/2005 2:31:55 PM	Unknown	Unknown	Unknown		1/14/2005 10:50:15 AM				Microsoft Corporation	c:\winnt\system32\wbem\wbemprox.dll
mstask.exe	c:\winnt\system32\mstask.exe	928	8	204800		mofd.dll	1.50.1085.0065	136.07 KB	(139,332 bytes)	1/14/2005	
1413120	9/4/2005 2:32:01 PM	4.71.2195.1	115.77 KB	(118,544 bytes)	1/14/2005 10:50:08 AM	10:50:15 AM				Microsoft Corporation	c:\winnt\system32\wbem\mofd.dll
tcpsvcs.exe	c:\winnt\system32\tcpsvcs.exe	968	8			cabinet.dll	5.00.2147.1	54.77 KB	(56,080 bytes)	12/7/1999	
204800	1413120	9/4/2005 2:32:01 PM	5.00.2134.1	24.77 KB	(25,360 bytes)	7:00:00 AM				Microsoft Corporation	c:\winnt\system32\cabinet.dll
winmgmt.exe	c:\winnt\system32\wbem\winmgmt.exe	1012	8			msinfo32.dll	5.00.2195.4601	312.27 KB	(319,760 bytes)	1/14/2005	
204800	1413120	9/4/2005 2:32:01 PM	1.50.1085.0070	192.08 KB	(196,685 bytes)	1/14/2005 10:50:17 AM				Microsoft Corporation	c:\program files\common files\microsoft shared\msinfo\msinfo32.dll
inetinfo.exe	c:\winnt\system32\inetrv\inetinfo.exe	1028	8			mmcndmgr.dll	5.00.2195.5352	816.27 KB	(835,856 bytes)	1/14/2005	
204800	1413120	9/4/2005 2:32:01 PM	5.00.0984	14.27 KB	(14,608 bytes)	1/14/2005 10:50:06 AM				Microsoft Corporation	c:\winnt\system32\mmcndmgr.dll
tapisrv.dll	5.00.2195.5227	169.27 KB	(173,328 bytes)	1/14/2005		mmc.exe	5.00.2195.4933	589.27 KB	(603,408 bytes)	1/14/2005	
						10:50:06 AM				Microsoft Corporation	c:\winnt\system32\mmc.exe
						tapisrv.dll	5.00.2195.5227	169.27 KB	(173,328 bytes)	1/14/2005	
						10:50:12 AM				Microsoft Corporation	c:\winnt\system32\tapisrv.dll

bmlisten.exe	2, 1, 0, 2	156.00 KB (159,744 bytes)	7/22/2004	browseui.dll	6.00.2800.1106	1002.00 KB (1,026,048 bytes)	8/29/2002 8:14:40 AM
4:52:24 PM		IBM xSeries Server Performance c:\slave\bmlisten.exe		8/29/2002 8:14:40 AM		Microsoft Corporation	
shdoclc.dll	6.00.2800.1106	521.00 KB (533,504 bytes)	8/29/2002	c:\winnt\system32\browseui.dll			
8:14:40 AM		Microsoft Corporation		shdocvw.dll	6.00.2800.1106	1.28 MB (1,338,368 bytes)	8/29/2002 8:14:40 AM
c:\winnt\system32\shdoclc.dll				8/29/2002 8:14:40 AM		Microsoft Corporation	
wininet.dll	6.00.2800.1106	572.00 KB (585,728 bytes)	8/29/2002	c:\winnt\system32\shdocvw.dll			
8:14:40 AM		Microsoft Corporation		explorer.exe	5.00.3502.5321	237.27 KB (242,960 bytes)	1/14/2005 10:50:14 AM
c:\winnt\system32\wininet.dll				1/14/2005 10:50:14 AM		Microsoft Corporation	
linkinfo.dll	5.00.2134.1	15.77 KB (16,144 bytes)	12/7/1999	c:\winnt\explorer.exe			
7:00:00 AM		Microsoft Corporation		dfssvc.exe	5.00.2195.3649	88.27 KB (90,384 bytes)	1/14/2005
c:\winnt\system32\linkinfo.dll				10:50:02 AM		Microsoft Corporation	
faxshell.dll	5.00.2134.1	8.27 KB (8,464 bytes)	12/7/1999 7:00:00 AM	c:\winnt\system32\dfssvc.exe			
Microsoft Corporation				iislog.dll	5.00.0984	75.27 KB (77,072 bytes)	1/14/2005 10:50:21 AM
c:\winnt\system32\faxshell.dll				AM		Microsoft Corporation	c:\winnt\system32\inetsrv\iislog.dll
msacm32.dll	5.00.2134.1	65.27 KB (66,832 bytes)	12/7/1999 7:00:00 AM	ntfsdrv.dll	5.00.0984	37.27 KB (38,160 bytes)	1/14/2005 10:50:21 AM
12/7/1999 7:00:00 AM		Microsoft Corporation		AM		Microsoft Corporation	
c:\winnt\system32\msacm32.dll				c:\winnt\system32\inetsrv\ntfsdrv.dll			
avifil32.dll	5.00.2134.1	76.27 KB (78,096 bytes)	12/7/1999	httpext.dll	5.00.0984	240.27 KB (246,032 bytes)	1/14/2005 10:50:21 AM
7:00:00 AM		Microsoft Corporation		AM		Microsoft Corporation	
c:\winnt\system32\avifil32.dll				c:\winnt\system32\inetsrv\httpext.dll			
msvfw32.dll	5.00.2134.1	113.77 KB (116,496 bytes)	12/7/1999 7:00:00 AM	rpcproxy.dll	5.00.2195.5419	16.27 KB (16,656 bytes)	1/14/2005 10:50:19 AM
12/7/1999 7:00:00 AM		Microsoft Corporation		1/14/2005 10:50:19 AM		Microsoft Corporation	
c:\winnt\system32\msvfw32.dll				c:\winnt\system32\rpcproxy\rpcproxy.dll			
docprop2.dll	5.00.2178.1	297.77 KB (304,912 bytes)	12/7/1999 7:00:00 AM	fpexedll.dll	4.0.2.5526	20.06 KB (20,541 bytes)	1/14/2005 10:50:18 AM
12/7/1999 7:00:00 AM		Microsoft Corporation		10:50:18 AM		Microsoft Corporation	c:\program files\common files\microsoft shared\web server extensions\40\bin\fpexedll.dll
c:\winnt\system32\docprop2.dll				aqueue.dll	5.00.0984	313.77 KB (321,296 bytes)	1/14/2005 10:50:18 AM
msi.dll	2.0.2600.1	1.90 MB (1,991,168 bytes)	1/14/2005 10:50:07 AM	AM		Microsoft Corporation	
Microsoft Corporation				c:\winnt\system32\inetsrv\aqueue.dll			
c:\winnt\system32\msi.dll				md5filt.dll	5.00.0984	32.77 KB (33,552 bytes)	1/14/2005 10:50:21 AM
powrprof.dll	5.00.3502.5305	13.27 KB (13,584 bytes)	1/14/2005 10:50:10 AM	AM		Microsoft Corporation	
1/14/2005 10:50:10 AM		Microsoft Corporation		c:\winnt\system32\inetsrv\md5filt.dll			
c:\winnt\system32\powrprof.dll				gzip.dll	5.00.0984	30.27 KB (30,992 bytes)	1/14/2005 10:50:20 AM
batmeter.dll	5.00.3502.5305	20.27 KB (20,752 bytes)	1/14/2005 10:50:00 AM	AM		Microsoft Corporation	c:\winnt\system32\inetsrv\gzip.dll
1/14/2005 10:50:00 AM		Microsoft Corporation		compfilt.dll	5.00.0984	22.77 KB (23,312 bytes)	1/14/2005 10:50:20 AM
c:\winnt\system32\batmeter.dll				10:50:20 AM		Microsoft Corporation	
stobject.dll	5.00.2195.4455	79.27 KB (81,168 bytes)	1/14/2005 10:50:12 AM	c:\winnt\system32\inetsrv\compfilt.dll			
10:50:12 AM		Microsoft Corporation		seo.dll	5.00.0984	229.27 KB (234,768 bytes)	1/14/2005 10:50:21 AM
c:\winnt\system32\stobject.dll				AM		Microsoft Corporation	c:\winnt\system32\inetsrv\seo.dll
webcheck.dll	6.00.2800.1106	252.00 KB (258,048 bytes)	8/29/2002 8:14:40 AM	sspifilt.dll	5.00.0984	42.77 KB (43,792 bytes)	1/14/2005 10:50:21 AM
8/29/2002 8:14:40 AM		Microsoft Corporation		AM		Microsoft Corporation	
c:\winnt\system32\webcheck.dll				c:\winnt\system32\inetsrv\sspifilt.dll			
ntshrui.dll	5.00.2134.1	46.77 KB (47,888 bytes)	12/7/1999 7:00:00 AM	iscomlog.dll	5.00.0984	24.27 KB (24,848 bytes)	1/14/2005 10:50:21 AM
7:00:00 AM		Microsoft Corporation		10:50:21 AM		Microsoft Corporation	
c:\winnt\system32\ntshrui.dll				c:\winnt\system32\inetsrv\iscomlog.dll			
mydocs.dll	5.00.3315.4065	55.27 KB (56,592 bytes)	1/14/2005 10:50:08 AM	lonsint.dll	5.00.0984	11.77 KB (12,048 bytes)	1/14/2005 10:50:21 AM
10:50:08 AM		Microsoft Corporation		AM		Microsoft Corporation	
c:\winnt\system32\mydocs.dll				c:\winnt\system32\inetsrv\lonsint.dll			
hhsetup.dll	4.74.8702	66.27 KB (67,856 bytes)	12/7/1999 7:00:00 AM	inetsloc.dll	5.00.0984	20.27 KB (20,752 bytes)	1/14/2005 10:50:04 AM
12/7/1999 7:00:00 AM		Microsoft Corporation		AM		Microsoft Corporation	
c:\winnt\system32\hhsetup.dll				c:\winnt\system32\inetsloc.dll			
mmshext.dll	5.00.2153.1	24.27 KB (24,848 bytes)	12/7/1999 7:00:00 AM				
12/7/1999 7:00:00 AM		Microsoft Corporation					
c:\winnt\system32\mmshext.dll							

w3svc.dll	5.00.0984	335.27 KB (343,312 bytes)	1/14/2005 10:50:22 AM	Microsoft Corporation	c:\winnt\system32\inetsrv\w3svc.dll
staxmem.dll	5.00.0984	8.27 KB (8,464 bytes)	1/14/2005 10:50:12 AM	Microsoft Corporation	c:\winnt\system32\staxmem.dll
extrace.dll	5.00.0984	13.77 KB (14,096 bytes)	1/13/2005 5:06:47 PM	Microsoft Corporation	c:\winnt\system32\extrace.dll
rwnh.dll	5.00.0984	10.77 KB (11,024 bytes)	1/14/2005 10:50:11 AM	Microsoft Corporation	c:\winnt\system32\rwnh.dll
fcachdll.dll	5.00.0984	43.77 KB (44,816 bytes)	1/14/2005 10:50:03 AM	Microsoft Corporation	c:\winnt\system32\fcachdll.dll
iisfecnv.dll	5.00.0984	7.27 KB (7,440 bytes)	1/13/2005 5:06:46 PM	Microsoft Corporation	c:\winnt\system32\inetsrv\iisfecnv.dll
isatq.dll	5.00.0984	60.77 KB (62,224 bytes)	1/14/2005 10:50:21 AM	Microsoft Corporation	c:\winnt\system32\inetsrv\isatq.dll
infocomm.dll	5.00.0984	240.77 KB (246,544 bytes)	1/14/2005 10:50:21 AM	Microsoft Corporation	c:\winnt\system32\inetsrv\infocomm.dll
smtpsvc.dll	5.00.0984	428.27 KB (438,544 bytes)	1/14/2005 10:50:21 AM	Microsoft Corporation	c:\winnt\system32\inetsrv\smtpsvc.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
svcxext.dll	5.00.0984	39.77 KB (40,720 bytes)	1/14/2005 10:50:21 AM	Microsoft Corporation	c:\winnt\system32\inetsrv\svcxext.dll
admexs.dll	5.00.0984	27.77 KB (28,432 bytes)	1/14/2005 10:50:20 AM	Microsoft Corporation	c:\winnt\system32\inetsrv\admexs.dll
wamreg.dll	5.00.0984	45.77 KB (46,864 bytes)	1/14/2005 10:50:22 AM	Microsoft Corporation	c:\winnt\system32\inetsrv\wamreg.dll
metadata.dll	5.00.0984	68.77 KB (70,416 bytes)	1/14/2005 10:50:21 AM	Microsoft Corporation	c:\winnt\system32\inetsrv\metadata.dll
iismap.dll	5.00.0984	55.77 KB (57,104 bytes)	1/14/2005 10:50:04 AM	Microsoft Corporation	c:\winnt\system32\iismap.dll
nsepm.dll	5.00.0984	43.27 KB (44,304 bytes)	1/14/2005 10:50:21 AM	Microsoft Corporation	c:\winnt\system32\inetsrv\nsepm.dll
admwprox.dll	5.00.0984	31.77 KB (32,528 bytes)	1/13/2005 5:06:47 PM	Microsoft Corporation	c:\winnt\system32\admwprox.dll
coadmin.dll	5.00.0984	39.77 KB (40,720 bytes)	1/14/2005 10:50:20 AM	Microsoft Corporation	c:\winnt\system32\inetsrv\coadmin.dll
iisadmin.dll	5.00.0984	15.27 KB (15,632 bytes)	1/14/2005 10:50:21 AM	Microsoft Corporation	c:\winnt\system32\inetsrv\iisadmin.dll
rpref.dll	5.00.0984	4.27 KB (4,368 bytes)	1/14/2005 10:50:21 AM	Microsoft Corporation	c:\winnt\system32\inetsrv\rpref.dll
iisrtl.dll	5.00.0984	119.77 KB (122,640 bytes)	1/14/2005 10:50:04 AM	Microsoft Corporation	c:\winnt\system32\iisrtl.dll
inetinfo.exe	5.00.0984	14.27 KB (14,608 bytes)	1/14/2005 10:50:21 AM	Microsoft Corporation	c:\winnt\system32\inetsrv\inetinfo.exe
netui1.dll	5.00.2134.1	210.27 KB (215,312 bytes)	12/7/1999 7:00:00 AM	Microsoft Corporation	c:\winnt\system32\netui1.dll
netui0.dll	5.00.2195.4874	70.77 KB (72,464 bytes)	1/14/2005 10:50:09 AM	Microsoft Corporation	c:\winnt\system32\netui0.dll
ntlanman.dll	5.00.2195.5428	35.27 KB (36,112 bytes)	12/7/1999 7:00:00 AM	Microsoft Corporation	c:\winnt\system32\ntlanman.dll
wshnetbs.dll	5.00.2134.1	7.77 KB (7,952 bytes)	12/7/1999 7:00:00 AM	Microsoft Corporation	c:\winnt\system32\wshnetbs.dll
ntmarta.dll	5.00.2195.4836	99.77 KB (102,160 bytes)	1/14/2005 10:50:09 AM	Microsoft Corporation	c:\winnt\system32\ntmarta.dll
provthrd.dll	1.50.1085.0000	68.07 KB (69,708 bytes)	1/13/2005 5:08:21 PM	Microsoft Corporation	c:\winnt\system32\wbem\provthrd.dll
ntevt.dll	1.50.1085.0072	192.06 KB (196,671 bytes)	1/14/2005 10:50:15 AM	Microsoft Corporation	c:\winnt\system32\wbem\ntevt.dll
perfos.dll	5.00.2155.1	21.27 KB (21,776 bytes)	12/7/1999 7:00:00 AM	Microsoft Corporation	c:\winnt\system32\perfos.dll
psapi.dll	5.00.2134.1	28.27 KB (28,944 bytes)	12/7/1999 7:00:00 AM	Microsoft Corporation	c:\winnt\system32\psapi.dll
framedyn.dll	1.50.1085.0076	164.07 KB (168,009 bytes)	1/14/2005 10:50:15 AM	Microsoft Corporation	c:\winnt\system32\wbem\framedyn.dll
cimwin32.dll	1.50.1085.0073	1.04 MB (1,085,520 bytes)	1/14/2005 10:50:15 AM	Microsoft Corporation	c:\winnt\system32\wbem\cimwin32.dll
wbemsvc.dll	1.50.1085.0007	40.07 KB (41,036 bytes)	1/14/2005 10:50:15 AM	Microsoft Corporation	c:\winnt\system32\wbem\wbemsvc.dll
wbemess.dll	1.50.1085.0074	364.07 KB (372,804 bytes)	1/14/2005 10:50:15 AM	Microsoft Corporation	c:\winnt\system32\wbem\wbemess.dll

fastprox.dll	1.50.1085.0056	144.08 KB (147,536 bytes)	
1/14/2005 10:50:15 AM Microsoft Corporation			
c:\winnt\system32\wbem\fastprox.dll			
wbemcore.dll	1.50.1085.0085	628.07 KB (643,146 bytes)	
1/14/2005 10:50:15 AM Microsoft Corporation			
c:\winnt\system32\wbem\wbemcore.dll			
wbemcomn.dll	1.50.1085.0077	692.07 KB (708,675 bytes)	
1/14/2005 10:50:15 AM Microsoft Corporation			
c:\winnt\system32\wbem\wbemcomn.dll			
winmgmt.exe	1.50.1085.0070	192.08 KB (196,685 bytes)	
1/14/2005 10:50:15 AM Microsoft Corporation			
c:\winnt\system32\wbem\winmgmt.exe			
simptcp.dll	5.00.2134.1	19.27 KB (19,728 bytes)	2/12/2003
7:52:36 AM Microsoft Corporation			
c:\winnt\system32\simptcp.dll			
tcpsvcs.exe	5.00.2134.1	24.77 KB (25,360 bytes)	
12/7/1999 7:00:00 AM Microsoft Corporation			
c:\winnt\system32\tcpsvcs.exe			
msidle.dll	5.00.2920.0000	6.27 KB (6,416 bytes)	12/7/1999 7:00:00 AM
Microsoft Corporation			
c:\winnt\system32\msidle.dll			
mstask.exe	4.71.2195.1	115.77 KB (118,544 bytes)	1/14/2005
10:50:08 AM Microsoft Corporation			
c:\winnt\system32\mstask.exe			
regsvcs.exe	5.00.2195.3649	65.27 KB (66,832 bytes)	1/14/2005
10:50:10 AM Microsoft Corporation			
c:\winnt\system32\regsvcs.exe			
llsrpc.dll	5.00.2195.4907	47.77 KB (48,912 bytes)	12/7/1999
7:00:00 AM Microsoft Corporation			
c:\winnt\system32\llsrpc.dll			
llssrv.exe	5.00.2195.4907	81.27 KB (83,216 bytes)	7/22/2002
1:05:04 PM Microsoft Corporation			
c:\winnt\system32\llssrv.exe			
ntmsdba.dll	5.00.2195.5279	169.27 KB (173,328 bytes)	
1/14/2005 10:50:09 AM Microsoft Corporation			
c:\winnt\system32\ntmsdba.dll			
rasdlg.dll	5.00.2195.5438	515.77 KB (528,144 bytes)	12/7/1999
7:00:00 AM Microsoft Corporation			
c:\winnt\system32\rasdlg.dll			
netcfgx.dll	5.00.2195.4874	534.77 KB (547,600 bytes)	1/14/2005
10:50:08 AM Microsoft Corporation			
c:\winnt\system32\netcfgx.dll			
rasmans.dll	5.00.2195.5436	149.27 KB (152,848 bytes)	
1/14/2005 10:50:10 AM Microsoft Corporation			
c:\winnt\system32\rasmans.dll			
wmi.dll	5.00.2191.1	6.27 KB (6,416 bytes)	12/7/1999 7:00:00 AM
Microsoft Corporation			
c:\winnt\system32\wmi.dll			
netshell.dll	5.00.2195.5431	457.77 KB (468,752 bytes)	1/14/2005
10:50:09 AM Microsoft Corporation			
c:\winnt\system32\netshell.dll			
netman.dll	5.00.2195.5282	89.27 KB (91,408 bytes)	1/14/2005
10:50:08 AM Microsoft Corporation			
c:\winnt\system32\netman.dll			
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)	1/14/2005
10:50:04 AM Microsoft Corporation			
c:\winnt\system32\iasacct.dll			
iasuser.dll	5.00.2195.4609	19.77 KB (20,240 bytes)	12/7/1999
7:00:00 AM Microsoft Corporation			
c:\winnt\system32\iasuser.dll			
iasnap.dll	5.00.2195.4115	58.77 KB (60,176 bytes)	1/14/2005
10:50:04 AM Microsoft Corporation			
c:\winnt\system32\iasnap.dll			
iaspipe.dll	5.00.2134.1	41.77 KB (42,768 bytes)	12/7/1999
7:00:00 AM Microsoft Corporation			
c:\winnt\system32\iaspipe.dll			
expsrv.dll	6.72.9414	371.77 KB (380,688 bytes)	1/14/2005 10:50:03 AM
Microsoft Corporation			
c:\winnt\system32\expsrv.dll			
vbajet32.dll	6.1.8268	30.27 KB (30,992 bytes)	1/14/2005
10:50:13 AM Microsoft Corporation			
c:\winnt\system32\vbajet32.dll			
msjtes40.dll	4.00.5914.0	236.27 KB (241,936 bytes)	
1/14/2005 10:50:07 AM Microsoft Corporation			
c:\winnt\system32\msjtes40.dll			
oledb32r.dll	2.70.9001.0	built by: Lab06_N(dagbuild)	64.00 KB (65,536 bytes)
1/13/2005 5:09:52 PM Microsoft Corporation			
c:\program files\common files\system\ole db\oledb32r.dll			
comdlg32.dll	5.00.3315.3727	221.27 KB (226,576 bytes)	
12/7/1999 7:00:00 AM Microsoft Corporation			
c:\winnt\system32\comdlg32.dll			
msdart.dll	2.71.9031.4	built by: Lab06_N(dagbuild)	124.00 KB (126,976 bytes)
1/13/2005 5:09:51 PM Microsoft Corporation			
c:\winnt\system32\msdart.dll			
oledb32.dll	2.71.9031.4	built by: Lab06_N(dagbuild)	408.00 KB (417,792 bytes)
1/13/2005 5:09:51 PM Microsoft Corporation			
c:\program files\common files\system\ole db\oledb32.dll			
msjint40.dll	4.00.2927.2	148.27 KB (151,824 bytes)	
1/14/2005 10:50:07 AM Microsoft Corporation			
c:\winnt\system32\msjint40.dll			
msjter40.dll	4.00.2927.2	52.27 KB (53,520 bytes)	
1/14/2005 10:50:07 AM Microsoft Corporation			
c:\winnt\system32\msjter40.dll			
mswstr10.dll	4.00.3829.2	600.27 KB (614,672 bytes)	
1/14/2005 10:50:08 AM Microsoft Corporation			
c:\winnt\system32\mswstr10.dll			

msjet40.dll 4.00.6218.0 10:50:07 AM Microsoft Corporation c:\winnt\system32\msjet40.dll	1.43 MB (1,503,504 bytes)	1/14/2005	mtxclu.dll 2000.2.3497.0 10:50:08 AM Microsoft Corporation c:\winnt\system32\mtxclu.dll	51.27 KB (52,496 bytes)	1/14/2005
msjetoledb40.dll 4.00.5919.0 1/14/2005 10:50:07 AM Microsoft Corporation c:\winnt\system32\msjetoledb40.dll	340.27 KB (348,432 bytes)		msdtcprx.dll 2000.2.3497.0 1/14/2005 10:50:06 AM Microsoft Corporation c:\winnt\system32\msdtcprx.dll	683.77 KB (700,176 bytes)	
iasrad.dll 5.00.2195.4841 10:50:04 AM Microsoft Corporation c:\winnt\system32\iasrad.dll	94.77 KB (97,040 bytes)	1/14/2005	txfaux.dll 2000.2.3497.0 10:50:13 AM Microsoft Corporation c:\winnt\system32\txfaux.dll	383.27 KB (392,464 bytes)	1/14/2005
iasdam.dll 5.00.2195.5427 10:50:04 AM Microsoft Corporation c:\winnt\system32\iasdam.dll	98.27 KB (100,624 bytes)	1/14/2005	msdtctm.dll 2000.2.3497.0 1/14/2005 10:50:06 AM Microsoft Corporation c:\winnt\system32\msdtctm.dll	1.08 MB (1,128,208 bytes)	
iasads.dll 5.00.2195.5080 10:50:04 AM Microsoft Corporation c:\winnt\system32\iasads.dll	73.77 KB (75,536 bytes)	1/14/2005	msdtc.exe 1999.9.3421.3 Microsoft Corporation c:\winnt\system32\msdtc.exe	6.77 KB (6,928 bytes)	2/12/2003 7:52:40 AM
ntmssvc.dll 5.00.2195.5254 1/14/2005 10:50:09 AM Microsoft Corporation c:\winnt\system32\ntmssvc.dll	391.77 KB (401,168 bytes)		rasadhlp.dll 5.00.2168.1 7:00:00 AM Microsoft Corporation c:\winnt\system32\rasadhlp.dll	7.27 KB (7,440 bytes)	12/7/1999
iaspolcy.dll 5.00.2134.1 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\iaspolcy.dll	25.27 KB (25,872 bytes)		winnr.dll 5.00.2160.1 7:00:00 AM Microsoft Corporation c:\winnt\system32\winnr.dll	18.77 KB (19,216 bytes)	12/7/1999
iasvcs.dll 5.00.2195.4916 10:50:04 AM Microsoft Corporation c:\winnt\system32\iasvcs.dll	58.77 KB (60,176 bytes)	1/14/2005	rpss.dll 5.00.2195.5429 10:50:11 AM Microsoft Corporation c:\winnt\system32\rpss.dll	231.27 KB (236,816 bytes)	1/14/2005
iasdo.dll 5.00.2195.4115 10:50:04 AM Microsoft Corporation c:\winnt\system32\iasdo.dll	263.27 KB (269,584 bytes)	1/14/2005	svchost.exe 5.00.2134.1 7:00:00 AM Microsoft Corporation c:\winnt\system32\svchost.exe	7.77 KB (7,952 bytes)	12/7/1999
ias.dll 5.00.2134.1 Microsoft Corporation c:\winnt\system32\ias.dll	7.27 KB (7,440 bytes)	12/7/1999 7:00:00 AM	rdpwsx.dll 5.00.2195.5243 10:50:10 AM Microsoft Corporation c:\winnt\system32\rdpwsx.dll	97.90 KB (100,248 bytes)	1/14/2005
es.dll 2000.2.3497.0 10:50:03 AM Microsoft Corporation c:\winnt\system32\es.dll	225.27 KB (230,672 bytes)	1/14/2005	ntlsapi.dll 5.00.2195.4907 Microsoft Corporation c:\winnt\system32\ntlsapi.dll	6.77 KB (6,928 bytes)	12/7/1999 7:00:00 AM
mtxoci.dll 2000.2.3497.0 10:50:08 AM Microsoft Corporation c:\winnt\system32\mtxoci.dll	103.77 KB (106,256 bytes)	1/14/2005	mstlsapi.dll 5.00.2195.3895 1/14/2005 10:50:08 AM Microsoft Corporation c:\winnt\system32\mstlsapi.dll	25.77 KB (26,384 bytes)	
resutils.dll 5.00.2195.5339 10:50:11 AM Microsoft Corporation c:\winnt\system32\resutils.dll	39.77 KB (40,720 bytes)	1/14/2005	icaapi.dll 5.00.2195.3895 10:50:04 AM Microsoft Corporation c:\winnt\system32\icaapi.dll	122.77 KB (125,712 bytes)	1/14/2005
clusapi.dll 5.00.2195.4678 10:50:01 AM Microsoft Corporation c:\winnt\system32\clusapi.dll	54.27 KB (55,568 bytes)	1/14/2005	regapi.dll 5.00.2195.5201 10:50:10 AM Microsoft Corporation c:\winnt\system32\regapi.dll	35.27 KB (36,112 bytes)	1/14/2005
msvcp50.dll 5.00.7051 7:00:00 AM Microsoft Corporation c:\winnt\system32\msvcp50.dll	552.50 KB (565,760 bytes)	12/7/1999	termsrv.exe 5.00.2195.5276 1/14/2005 10:50:12 AM Microsoft Corporation c:\winnt\system32\termsrv.exe	138.77 KB (142,096 bytes)	
xolehlp.dll 1999.9.3421.3 7:52:40 AM Microsoft Corporation c:\winnt\system32\xolehlp.dll	17.27 KB (17,680 bytes)	2/12/2003	dssenh.dll 5.00.2195.3665 1:54:23 PM Microsoft Corporation c:\winnt\system32\dssenh.dll	142.77 KB (146,192 bytes)	3/6/2003
msdtclog.dll 2000.2.3497.0 1/14/2005 10:50:06 AM Microsoft Corporation c:\winnt\system32\msdtclog.dll	86.77 KB (88,848 bytes)		wshtcepip.dll 5.00.2195.4874 1/14/2005 10:50:14 AM Microsoft Corporation c:\winnt\system32\wshtcepip.dll	17.27 KB (17,680 bytes)	



msafd.dll	5.00.2195.4874	103.27 KB (105,744 bytes)	1/14/2005	msv1_0.dll	5.00.2195.4745	112.27 KB (114,960 bytes)	12/7/1999
10:50:06 AM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\msafd.dll				c:\winnt\system32\msv1_0.dll			
oakley.dll	5.00.2195.5326	382.27 KB (391,440 bytes)	1/14/2005	kerberos.dll	5.00.2195.5246	202.77 KB (207,632 bytes)	
10:50:09 AM	Microsoft Corporation			1/14/2005 10:50:05 AM	Microsoft Corporation		
c:\winnt\system32\oakley.dll				c:\winnt\system32\kerberos.dll			
mfc42u.dll	6.00.8665.0	972.05 KB (995,384 bytes)	12/7/1999	msprivs.dll	5.00.2154.1	41.50 KB (42,496 bytes)	12/7/1999
7:00:00 AM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\mfc42u.dll				c:\winnt\system32\msprivs.dll			
polagent.dll	5.00.2195.5428	94.77 KB (97,040 bytes)		samsrv.dll	5.00.2195.5201	374.27 KB (383,248 bytes)	12/7/1999
1/14/2005 10:50:10 AM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\polagent.dll				c:\winnt\system32\samsrv.dll			
scecli.dll	5.00.2195.4874	109.27 KB (111,888 bytes)	1/14/2005	lsasrv.dll	5.00.2195.5430	500.27 KB (512,272 bytes)	12/7/1999
10:50:11 AM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\scecli.dll				c:\winnt\system32\lsasrv.dll			
atl.dll	3.00.9435	73.06 KB (74,810 bytes)	1/14/2005 10:50:00 AM	lsass.exe	5.00.2195.5430	32.77 KB (33,552 bytes)	12/7/1999
Microsoft Corporation				7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\atl.dll				c:\winnt\system32\lsass.exe			
certcli.dll	5.00.2195.3649	130.27 KB (133,392 bytes)	1/14/2005	rnrc20.dll	5.00.2195.4874	35.77 KB (36,624 bytes)	1/14/2005
10:50:01 AM	Microsoft Corporation			10:50:11 AM	Microsoft Corporation		
c:\winnt\system32\certcli.dll				c:\winnt\system32\rnrc20.dll			
esent.dll	6.0.3940.25	1.09 MB (1,137,936 bytes)	1/14/2005	wmicore.dll	5.00.2195.3649	72.27 KB (74,000 bytes)	
10:50:03 AM	Microsoft Corporation			1/14/2005 10:50:14 AM	Microsoft Corporation		
c:\winnt\system32\esent.dll				c:\winnt\system32\wmicore.dll			
msocket.dll	5.00.2195.4874	62.77 KB (64,272 bytes)		alrsvc.dll	5.00.2134.1	17.77 KB (18,192 bytes)	12/7/1999
1/14/2005 10:50:08 AM	Microsoft Corporation			7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\msocket.dll				c:\winnt\system32\alrsvc.dll			
ntdsatq.dll	5.00.2195.5246	31.27 KB (32,016 bytes)	1/14/2005	trkwks.dll	5.00.2195.4874	88.77 KB (90,896 bytes)	1/14/2005
10:50:09 AM	Microsoft Corporation			10:50:13 AM	Microsoft Corporation		
c:\winnt\system32\ntdsatq.dll				c:\winnt\system32\trkwks.dll			
ntdsapi.dll	5.00.2195.5438	1002.27 KB (1,026,320 bytes)	1/14/2005	seclogon.dll	5.00.2195.5201	17.27 KB (17,680 bytes)	
10:50:09 AM	Microsoft Corporation			1/14/2005 10:50:11 AM	Microsoft Corporation		
c:\winnt\system32\ntdsapi.dll				c:\winnt\system32\seclogon.dll			
kdcsvc.dll	5.00.2195.5246	141.77 KB (145,168 bytes)	1/14/2005	psbase.dll	5.00.2195.4822	111.77 KB (114,448 bytes)	1/14/2005
10:50:05 AM	Microsoft Corporation			10:50:10 AM	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			1/14/2005 10:50:02 AM	Microsoft Corporation		
c:\winnt\system32\sfmapi.dll				c:\winnt\system32\cryptsvc.dll			
rassfm.dll	5.00.2195.4874	21.27 KB (21,776 bytes)	1/14/2005	cryptdll.dll	5.00.2135.1	41.27 KB (42,256 bytes)	12/7/1999
10:50:10 AM	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
12/7/1999 7:00:00 AM	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)	
1/14/2005 10:50:08 AM	Microsoft Corporation			12/7/1999 7:00:00 AM	Microsoft Corporation		
c:\winnt\system32\netlogon.dll				c:\winnt\system32\cfgmgr32.dll			

dmsvr.dll	2195.3649.297.3	12.27 KB (12,560 bytes)	
1/14/2005 10:50:02 AM VERITAS Software Corp.			
c:\winnt\system32\dmsvr.dll			
dhcpcsvc.dll	5.00.2195.4874	87.77 KB (89,872 bytes)	
12/7/1999 7:00:00 AM Microsoft Corporation			
c:\winnt\system32\dhcpcsvc.dll			
tapi32.dll	5.00.2182.1	123.27 KB (126,224 bytes)	12/7/1999
7:00:00 AM Microsoft Corporation			
c:\winnt\system32\tapi32.dll			
rasman.dll	5.00.2195.5292	54.77 KB (56,080 bytes)	12/7/1999
7:00:00 AM Microsoft Corporation			
c:\winnt\system32\rasman.dll			
rasapi32.dll	5.00.2195.5438	191.77 KB (196,368 bytes)	
12/7/1999 7:00:00 AM Microsoft Corporation			
c:\winnt\system32\rasapi32.dll			
rtutils.dll	5.00.2168.1	43.77 KB (44,816 bytes)	12/7/1999
7:00:00 AM Microsoft Corporation			
c:\winnt\system32\rtutils.dll			
adslrpc.dll	5.00.2195.5400	127.77 KB (130,832 bytes)	1/14/2005
10:50:00 AM Microsoft Corporation			
c:\winnt\system32\adslrpc.dll			
activeds.dll	5.00.2195.5312	175.27 KB (179,472 bytes)	
1/14/2005 10:49:58 AM Microsoft Corporation			
c:\winnt\system32\activeds.dll			
mprapi.dll	5.00.2181.1	79.27 KB (81,168 bytes)	12/7/1999
7:00:00 AM Microsoft Corporation			
c:\winnt\system32\mprapi.dll			
iphlpapi.dll	5.00.2195.2	68.27 KB (69,904 bytes)	
1/14/2005 10:50:05 AM Microsoft Corporation			
c:\winnt\system32\iphlpapi.dll			
icmp.dll	5.00.2134.1	7.27 KB (7,440 bytes)	12/7/1999
7:00:00 AM Microsoft Corporation			
c:\winnt\system32\icmp.dll			
lmhsvc.dll	5.00.2195.4874	9.77 KB (10,000 bytes)	12/7/1999
7:00:00 AM Microsoft Corporation			
c:\winnt\system32\lmhsvc.dll			
dnssrslvr.dll	5.00.2195.5354	89.77 KB (91,920 bytes)	
1/14/2005 10:50:02 AM Microsoft Corporation			
c:\winnt\system32\dnssrslvr.dll			
eventlog.dll	5.00.2195.5336	44.27 KB (45,328 bytes)	
1/14/2005 10:50:03 AM Microsoft Corporation			
c:\winnt\system32\eventlog.dll			
ntdsapi.dll	5.00.2195.4827	56.27 KB (57,616 bytes)	1/14/2005
10:50:09 AM Microsoft Corporation			
c:\winnt\system32\ntdsapi.dll			
scesrv.dll	5.00.2195.5316	242.77 KB (248,592 bytes)	1/14/2005
10:50:11 AM Microsoft Corporation			
c:\winnt\system32\scesrv.dll			
umpnpmgr.dll	5.00.2182.1	86.27 KB (88,336 bytes)	
12/7/1999 7:00:00 AM Microsoft Corporation			
c:\winnt\system32\umpnpmgr.dll			
services.exe	5.00.2195.3940	86.77 KB (88,848 bytes)	
12/7/1999 7:00:00 AM Microsoft Corporation			
c:\winnt\system32\services.exe			
clbcatq.dll	2000.2.3497.0	497.77 KB (509,712 bytes)	1/14/2005
10:50:01 AM Microsoft Corporation			
c:\winnt\system32\clbcatq.dll			
oleaut32.dll	2.40.4518	612.27 KB (626,960 bytes)	12/7/1999
7:00:00 AM Microsoft Corporation			
c:\winnt\system32\oleaut32.dll			
csoui.dll	5.00.2195.4104	233.77 KB (239,376 bytes)	1/14/2005
10:50:02 AM Microsoft Corporation			
c:\winnt\system32\csoui.dll			
winspool.drv	5.00.2195.5225	111.27 KB (113,936 bytes)	
12/7/1999 7:00:00 AM Microsoft Corporation			
c:\winnt\system32\winspool.drv			
winscard.dll	5.00.2134.1	77.27 KB (79,120 bytes)	
12/7/1999 7:00:00 AM Microsoft Corporation			
c:\winnt\system32\winscard.dll			
wlnotify.dll	5.00.2195.5377	54.27 KB (55,568 bytes)	
1/14/2005 10:50:14 AM Microsoft Corporation			
c:\winnt\system32\wlnotify.dll			
csdll.dll	5.00.2195.5434	98.77 KB (101,136 bytes)	1/14/2005
10:50:02 AM Microsoft Corporation			
c:\winnt\system32\csdll.dll			
lz32.dll	5.00.2134.1	9.77 KB (10,000 bytes)	12/7/1999
7:00:00 AM Microsoft Corporation			
c:\winnt\system32\lz32.dll			
version.dll	5.00.2134.1	15.77 KB (16,144 bytes)	12/7/1999
7:00:00 AM Microsoft Corporation			
c:\winnt\system32\version.dll			
rsaenh.dll	5.00.2195.3839	130.77 KB (133,904 bytes)	3/6/2003
1:54:23 PM Microsoft Corporation			
c:\winnt\system32\rsaenh.dll			
mscat32.dll	5.131.2134.1	7.77 KB (7,952 bytes)	12/7/1999
7:00:00 AM Microsoft Corporation			
c:\winnt\system32\mscat32.dll			
ole32.dll	5.00.2195.5400	968.27 KB (991,504 bytes)	1/14/2005
10:50:10 AM Microsoft Corporation			
c:\winnt\system32\ole32.dll			
imagehlp.dll	5.00.2195.5242	125.77 KB (128,784 bytes)	
12/7/1999 7:00:00 AM Microsoft Corporation			
c:\winnt\system32\imagehlp.dll			
msasn1.dll	5.00.2195.4067	51.27 KB (52,496 bytes)	12/7/1999
7:00:00 AM Microsoft Corporation			
c:\winnt\system32\msasn1.dll			
crypt32.dll	5.131.2195.4558	464.27 KB (475,408 bytes)	1/14/2005
10:50:02 AM Microsoft Corporation			
c:\winnt\system32\crypt32.dll			
wintrust.dll	5.131.2195.3775	162.27 KB (166,160 bytes)	
1/14/2005 10:50:14 AM Microsoft Corporation			
c:\winnt\system32\wintrust.dll			

mpr.dll	5.00.2195.3649	53.77 KB (55,056 bytes)	1/14/2005	10:50:06 AM	Microsoft Corporation	c:\winnt\system32\mpr.dll	secur32.dll	5.00.2195.4587	47.27 KB (48,400 bytes)	1/14/2005	10:50:11 AM	Microsoft Corporation	c:\winnt\system32\secur32.dll
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	sfc.dll	5.00.2195.3649	92.11 KB (94,320 bytes)	1/14/2005	10:50:11 AM	Microsoft Corporation	c:\winnt\system32\sfc.dll
shell32.dll	5.00.3502.5436	2.26 MB (2,374,416 bytes)	1/14/2005	10:50:11 AM	Microsoft Corporation	c:\winnt\system32\shell32.dll	nddeapi.dll	5.00.2195.4509	15.77 KB (16,144 bytes)	1/14/2005	10:50:08 AM	Microsoft Corporation	c:\winnt\system32\nddeapi.dll
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	userenv.dll	5.00.2195.5968	361.27 KB (369,936 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\userenv.dll
comctl32.dll	5.81	517.27 KB (529,680 bytes)	8/29/2002	8:14:40 AM	Microsoft Corporation	c:\winnt\system32\comctl32.dll	user32.dll	5.00.2195.5931	370.77 KB (379,664 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\user32.dll
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	gdi32.dll	5.00.2195.5907	217.77 KB (222,992 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\gdi32.dll
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	rpct4.dll	5.00.2195.5419	440.27 KB (450,832 bytes)	1/14/2005	10:50:11 AM	Microsoft Corporation	c:\winnt\system32\rpct4.dll
winsta.dll	5.00.2195.4655	36.77 KB (37,648 bytes)	1/14/2005	10:50:13 AM	Microsoft Corporation	c:\winnt\system32\winsta.dll	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
wsock32.dll	5.00.2195.4874	21.27 KB (21,776 bytes)	1/14/2005	10:50:14 AM	Microsoft Corporation	c:\winnt\system32\wsock32.dll	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
dnsapi.dll	5.00.2195.5354	131.27 KB (134,416 bytes)	1/14/2005	10:50:02 AM	Microsoft Corporation	c:\winnt\system32\dnsapi.dll	msvrt.dll	6.10.9359.0	284.05 KB (290,869 bytes)	7/22/2002	1:05:04 PM	Microsoft Corporation	c:\winnt\system32\msvrt.dll
wldap32.dll	5.00.2195.5400	158.77 KB (162,576 bytes)	1/14/2005	10:50:14 AM	Microsoft Corporation	c:\winnt\system32\wldap32.dll	winlogon.exe	5.00.2195.5731	174.77 KB (178,960 bytes)	5/3/2002	12:31:24 PM	Microsoft Corporation	c:\winnt\system32\winlogon.exe
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	sfcfiles.dll	5.00.2195.5426	951.27 KB (974,096 bytes)	1/14/2005	10:50:11 AM	Microsoft Corporation	c:\winnt\system32\sfcfiles.dll
ws2_32.dll	5.00.2195.4874	66.77 KB (68,368 bytes)	1/14/2005	10:50:14 AM	Microsoft Corporation	c:\winnt\system32\ws2_32.dll	ntdll.dll	5.00.2195.5400	479.27 KB (490,768 bytes)	12/7/1999	7:00:00 AM	Microsoft Corporation	c:\winnt\system32\ntdll.dll
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	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
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	[Services]						
netapi32.dll	5.00.2195.5427	305.27 KB (312,592 bytes)	1/14/2005	10:50:08 AM	Microsoft Corporation	c:\winnt\system32\netapi32.dll	Display Name	Name	State	Start Mode	Service Type		
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	Path	Error Control		Start Name	Tag ID		
							Alerter	Alerter	Running	Auto	Share	Process	0
							c:\winnt\system32\services.exe	Normal	LocalSystem				
							Application Management	AppMgmt	Stopped	Manual	Share		
							Process	c:\winnt\system32\services.exe	Normal	LocalSystem		0	

Background Intelligent Transfer Service	BITS	Stopped	Manual	Share Process	0	Messenger Messenger	Stopped	Manual	Share Process	0
Share Process	c:\winnt\system32\svchost.exe -k bitsgroup	Normal	LocalSystem	0		c:\winnt\system32\services.exe	Normal	LocalSystem	0	
Computer Browser	Browser	Stopped	Manual	Share Process	0	NetMeeting Remote Desktop Sharing	mnmsrvc	Stopped	Manual	
c:\winnt\system32\services.exe		Normal	LocalSystem	0		c:\winnt\system32\mnmsrvc.exe	Normal	LocalSystem	0	
Indexing Service	cisvc	Stopped	Manual	Share Process	0	Distributed Transaction Coordinator	MSDTC	Running	Auto	
c:\winnt\system32\cisvc.exe		Normal	LocalSystem	0		c:\winnt\system32\msdtc.exe	Normal	LocalSystem	1	
ClipBook ClipSrv	Stopped	Manual	Own Process	0	Windows Installer	MSIServer	Stopped	Manual	Share Process	0
c:\winnt\system32\clipsrv.exe		Normal	LocalSystem	0	c:\winnt\system32\msiexec.exe /v		Normal	LocalSystem	0	
Distributed File System	Dfs	Running	Auto	Own	0	Network DDE	NetDDE	Stopped	Manual	Share Process
Process	c:\winnt\system32\dfsrv.exe	Normal	LocalSystem	0		c:\winnt\system32\netdde.exe	Normal	LocalSystem	0	
DHCP Client	Dhcp	Stopped	Manual	Share Process	0	Network DDE DSDM	NetDDEsdm	Stopped	Manual	Share
c:\winnt\system32\services.exe		Normal	LocalSystem	0		c:\winnt\system32\netdde.exe	Normal	LocalSystem	0	
Logical Disk Manager Administrative Service		dmadmin	Stopped	Manual	Share Process	Net Logon	Netlogon	Stopped	Manual	Share Process
Manual	c:\winnt\system32\dmadmin.exe /com	Normal	LocalSystem	0		c:\winnt\system32\lsass.exe	Normal	LocalSystem	0	
Logical Disk Manager	dmserver	Running	Auto	Share Process	0	Network Connections	Netman	Running	Manual	Share Process
c:\winnt\system32\services.exe		Normal	LocalSystem	0		c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
DNS Client	Dnscache	Running	Auto	Share Process	0	File Replication	NtFrs	Stopped	Manual	Own Process
c:\winnt\system32\services.exe		Normal	LocalSystem	0		c:\winnt\system32\ntfrs.exe	Ignore	LocalSystem	0	
Event Log	Eventlog	Running	Auto	Share Process	0	NT LM Security Support Provider		NtLmSsp	Stopped	Manual
c:\winnt\system32\services.exe		Normal	LocalSystem	0		Share Process	c:\winnt\system32\lsass.exe	Normal	LocalSystem	0
COM+ Event System	EventSystem	Running	Manual	Share	0	Removable Storage	NtmsSvc	Running	Auto	Share Process
Process	c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0		c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
Fax Service	Fax	Stopped	Manual	Own Process	0	Plug and Play	PlugPlay	Running	Auto	Share Process
c:\winnt\system32\faxsvc.exe		Normal	LocalSystem	0		c:\winnt\system32\services.exe	Normal	LocalSystem	0	
Internet Authentication Service	IAS	Running	Auto	Share	0	IPSEC Policy Agent	PolicyAgent	Running	Auto	Share
Process	c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0		Process	c:\winnt\system32\lsass.exe	Normal	LocalSystem	0
IIS Admin Service	IISADMIN	Running	Auto	Share	0	Protected Storage	ProtectedStorage	Running	Auto	Share
Process	c:\winnt\system32\inetrv\inetinfo.exe	Normal	LocalSystem	0		Process	c:\winnt\system32\services.exe	Normal	LocalSystem	0
Intersite Messaging	IsmServ	Stopped	Disabled	Own Process	0	Remote Access Auto Connection Manager	RasAuto	Stopped	Manual	Share Process
c:\winnt\system32\ismserv.exe		Normal	LocalSystem	0		Share Process	c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0
Kerberos Key Distribution Center	kdc	Stopped	Disabled	Share Process	0	Remote Access Connection Manager	RasMan	Stopped	Manual	Share Process
Share Process	c:\winnt\system32\lsass.exe	Normal	LocalSystem	0		Share Process	c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0
Server	lanmanserver	Running	Auto	Share Process	0	Routing and Remote Access	RemoteAccess	Stopped	Disabled	Share Process
c:\winnt\system32\services.exe		Normal	LocalSystem	0		Share Process	c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0
Workstation	lanmanworkstation	Running	Auto	Share	0	Remote Registry Service	RemoteRegistry	Running	Auto	Own Process
Process	c:\winnt\system32\services.exe	Normal	LocalSystem	0		Own Process	c:\winnt\system32\regsvc.exe	Normal	LocalSystem	0
License Logging Service	LicenseService	Running	Auto	Own Process	0	Remote Command Service	RMSYS	Running	Auto	Own
LocalSystem	c:\winnt\system32\llssrv.exe	Normal	LocalSystem	0		Process	c:\program files\benchcraft\rsys.exe	Normal	LocalSystem	0
TCP/IP NetBIOS Helper Service	LmHosts	Running	Auto	Share	0	Remote Procedure Call (RPC) Locator	RpcLocator	Stopped	Manual	Own Process
Process	c:\winnt\system32\services.exe	Normal	LocalSystem	0		LocalSystem	c:\winnt\system32\locator.exe	Normal	LocalSystem	0

Remote Procedure Call (RPC) Process	RpcSs	Running	Auto	Share	0
c:\winnt\system32\svchost -k rpcss LocalSystem					
QoS RSVP	RSVP	Running	Manual	Own Process	0
c:\winnt\system32\rsvp.exe -s Normal LocalSystem					
Security Accounts Manager Process	SamSs	Running	Auto	Share	0
c:\winnt\system32\lsass.exe Normal LocalSystem					
Smart Card Helper	SCardDrv	Stopped	Manual	Share Process	0
c:\winnt\system32\scardsvr.exe Ignore LocalSystem					
Smart Card	SCardSvr	Stopped	Manual	Share Process	0
c:\winnt\system32\scardsvr.exe Ignore LocalSystem					
Task Scheduler	Schedule	Running	Auto	Share Process	0
c:\winnt\system32\mstask.exe Normal LocalSystem					
RunAs Service	seclogon	Running	Auto	Share Process	0
c:\winnt\system32\services.exe Ignore LocalSystem					
System Event Notification Process	SENS	Running	Auto	Share	0
c:\winnt\system32\svchost.exe -k netsvc Normal LocalSystem					
Internet Connection Sharing Share Process	SharedAccess	Stopped	Manual	Normal	0
c:\winnt\system32\svchost.exe -k netsvc LocalSystem					
Simple TCP/IP Services Process	SimpTcp	Running	Auto	Share	0
c:\winnt\system32\tcpsvc.exe Normal LocalSystem					
Simple Mail Transport Protocol (SMTP) Auto Normal	SMTPSVC	Running	Auto	Share	0
c:\winnt\system32\inetrv\inetinfo.exe LocalSystem					
Print Spooler	Spooler	Stopped	Manual	Own Process	0
c:\winnt\system32\spoolsv.exe Normal LocalSystem					
Performance Logs and Alerts Own Process	SysmonLog	Stopped	Manual	Normal	0
c:\winnt\system32\smlogsvc.exe LocalSystem					
Telephony TapiSrv	Running	Manual	Share Process	0	
c:\winnt\system32\svchost.exe -k tapisrv Normal LocalSystem					
Terminal Services Process	TermService	Running	Auto	Own	0
c:\winnt\system32\termsrv.exe Normal LocalSystem					
Telnet	TlntSvr	Stopped	Manual	Own Process	0
c:\winnt\system32\tlntsvr.exe Normal LocalSystem					
Distributed Link Tracking Server Process	TrkSvr	Stopped	Manual	Share	0
c:\winnt\system32\services.exe Normal LocalSystem					
Distributed Link Tracking Client Process	TrkWks	Running	Auto	Share	0
c:\winnt\system32\services.exe Normal LocalSystem					
Uninterruptible Power Supply Process	UPS	Stopped	Manual	Own	0
c:\winnt\system32\ups.exe Normal LocalSystem					
Utility Manager	UtilMan	Stopped	Manual	Own Process	0
c:\winnt\system32\utilman.exe Normal LocalSystem					
Windows Time	W32Time	Stopped	Manual	Share Process	0
c:\winnt\system32\services.exe Normal LocalSystem					

World Wide Web Publishing Service Share Process	W3SVC	Running	Auto	Normal	0
c:\winnt\system32\inetrv\inetinfo.exe LocalSystem					
Windows Management Instrumentation Own Process	WinMgmt	Running	Auto	Ignore	0
c:\winnt\system32\wbem\winmgmt.exe LocalSystem					
Windows Management Instrumentation Driver Extensions Running	Wmi	Manual	Share Process	0	
c:\winnt\system32\services.exe Normal LocalSystem					
Automatic Updates	wuauerv	Stopped	Manual	Share Process	0
c:\winnt\system32\svchost.exe -k wugroup Normal LocalSystem					
[Program Groups]					
Group Name	Name	User Name			
Accessories	Default User:Accessories	Default User			
Accessories\Accessibility	Default User:Accessories\Accessibility	Default User			
Accessories\Entertainment	Default User:Accessories\Entertainment	Default User			
Accessories\System Tools	Default User:Accessories\System Tools	Default User			
Startup	Default User:Startup	Default User			
Accessories	All Users:Accessories	All Users			
Accessories\Accessibility	All Users:Accessories\Accessibility	All Users			
Accessories\Communications	All Users:Accessories\Communications	All Users			
Accessories\Entertainment	All Users:Accessories\Entertainment	All Users			
Accessories\Games	All Users:Accessories\Games	All Users			
Accessories\System Tools	All Users:Accessories\System Tools	All Users			
Administrative Tools	All Users:Administrative Tools	All Users			
Microsoft SQL Server	All Users:Microsoft SQL Server	All Users			
Startup	All Users:Startup	All Users			
Accessories	FCLIENT80\Administrator:Accessories	FCLIENT80\Administrator			
Accessories\Accessibility	FCLIENT80\Administrator:Accessories\Accessibility	FCLIENT80\Administrator			
Accessories\Entertainment	FCLIENT80\Administrator:Accessories\Entertainment	FCLIENT80\Administrator			

Accessories\System Tools  
 FCLIENT80\Administrator:Accessories\System Tools  
 FCLIENT80\Administrator

Administrative Tools FCLIENT80\Administrator:Administrative Tools  
 FCLIENT80\Administrator

QLogic Corporation FCLIENT80\Administrator:QLogic Corporation  
 FCLIENT80\Administrator

QLogic Corporation\SANblade Control VIX  
 FCLIENT80\Administrator:QLogic Corporation\SANblade Control VIX  
 FCLIENT80\Administrator

Startup FCLIENT80\Administrator:Startup  
 FCLIENT80\Administrator

[Startup Programs]

Program	Command	User Name	Location
BMListen.exe	c:\slave\bmlisten.exe	FCLIENT80\Administrator	Startup
synctime	synctime.cmd	All Users	Common Startup

[OLE Registration]

Object	Local Server
Sound (OLE2)	sndrec32.exe
Media Clip	mplay32.exe
Video Clip	mplay32.exe /avi
MIDI Sequence	mplay32.exe /mid
Sound	Not Available
Media Clip	Not Available
Image Document	"C:\Program Files\Windows NT\Accessories\ImageVue\KodakImg.exe"
WordPad Document	"%ProgramFiles%\Windows NT\Accessories\WORDPAD.EXE"
Windows Media Services DRM Storage object	Not Available
Bitmap Image	C:\WINNT\System32\mspaint.exe

[Internet Explorer]

[ Following are sub-categories of this main category ]

[Summary]

Item	Value
Version	6.0.2800.1106
Build	62800.1106
Product ID	51876-270-6336674-05075
Application Path	C:\Program Files\Internet Explorer

Language English (United States)

Active Printer Not Available

Cipher Strength 128-bit

Content Advisor Disabled

Update Versions ;SP1;

Java VM Version 5.0.3805.0

IEAK Install No

[File Versions]

File	Version	Size	Date	Path	Company
advapi32.dll	5.0.2195.5385	359 KB	7/22/2002 1:05:04 PM	C:\WINNT\system32	Microsoft Corporation
advpack.dll	6.0.2800.1106	89 KB	8/29/2002 8:14:40 AM	C:\WINNT\system32	Microsoft Corporation
browsecl.dll	6.0.2800.1106	62 KB	8/29/2002 8:14:40 AM	C:\WINNT\system32	Microsoft Corporation
browseui.dll	6.0.2800.1106	1002 KB	8/29/2002 8:14:40 AM	C:\WINNT\system32	Microsoft Corporation
ckcnv.exe	5.0.2189.1	9 KB	12/7/1999 8:00:00 AM	C:\WINNT\system32	Microsoft Corporation
comctl32.dll	5.81.4916.400	517 KB	8/29/2002 8:14:40 AM	C:\WINNT\system32	Microsoft Corporation
crypt32.dll	5.131.2195.4558	464 KB	7/22/2002 1:05:04 PM	C:\WINNT\system32	Microsoft Corporation
enhsig.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 8:14:40 AM	C:\WINNT\system32	Microsoft Corporation
iexplore.exe	6.0.2800.1106	89 KB	8/29/2002 8:14:40 AM	C:\Program Files\Internet Explorer	Microsoft Corporation
imagehlp.dll	5.0.2195.5242	126 KB	7/22/2002 1:05:04 PM	C:\WINNT\system32	Microsoft Corporation
inseng.dll	6.0.2800.1106	68 KB	8/29/2002 8:14:40 AM	C:\WINNT\system32	Microsoft Corporation
jobexec.dll	5.0.0.1	47 KB	12/7/1999 8:00:00 AM	C:\WINNT\system32	Microsoft Corporation
jscrip.dll	5.6.0.6626	576 KB	6/26/2001 5:36:02 PM	C:\WINNT\system32	Microsoft Corporation
jsproxy.dll	6.0.2800.1106	12 KB	8/29/2002 8:14:40 AM	C:\WINNT\system32	Microsoft Corporation

mshtml.dll 6.0.2800.1106 2722 KB 8/29/2002 8:14:40 AM  
C:\WINNT\system32 Microsoft Corporation

msjava.dll 5.0.3805.0 924 KB 7/22/2002 1:05:04 PM  
C:\WINNT\system32 Microsoft Corporation

msoss.dll File not present Not Available Not Available  
Not Available

msxml.dll 8.0.6730.0 494 KB 7/22/2002 1:05:04 PM  
C:\WINNT\system32 Microsoft Corporation

occache.dll 6.0.2800.1106 86 KB 8/29/2002 8:14:40 AM  
C:\WINNT\system32 Microsoft Corporation

ole32.dll 5.0.2195.5400 968 KB 7/22/2002 1:05:04 PM  
C:\WINNT\system32 Microsoft Corporation

oleaut32.dll 2.40.4518.0 612 KB 7/22/2002 1:05:04 PM  
C:\WINNT\system32 Microsoft Corporation

olepro32.dll 5.0.4518.0 160 KB 7/22/2002 1:05:04 PM  
C:\WINNT\system32 Microsoft Corporation

rsabase.dll 5.0.2195.3839 128 KB 7/22/2002 1:05:04 PM  
C:\WINNT\system32 Microsoft Corporation

rsaenh.dll 5.0.2195.3839 131 KB 7/22/2002 1:05:04 PM  
C:\WINNT\system32 Microsoft Corporation

rasapi32.dll 5.0.2195.5438 192 KB 7/22/2002 1:05:04 PM  
C:\WINNT\system32 Microsoft Corporation

rsasig.dll File not present Not Available Not Available  
Not Available

schannel.dll 5.1.2195.0 139 KB 7/22/2002 1:05:04 PM  
C:\WINNT\system32 Microsoft Corporation

shdoc401.dll File not present Not Available Not  
Available

shdocvw.dll 6.0.2800.1106 1307 KB 8/29/2002 8:14:40 AM  
C:\WINNT\system32 Microsoft Corporation

shell32.dll 5.0.3502.5436 2319 KB 7/22/2002 1:05:04 PM  
C:\WINNT\system32 Microsoft Corporation

shlwapi.dll 6.0.2800.1106 386 KB 8/29/2002 8:14:40 AM  
C:\WINNT\system32 Microsoft Corporation

url.dll 6.0.2800.1106 104 KB 8/29/2002 8:14:40 AM  
C:\WINNT\system32 Microsoft Corporation

urlmon.dll 6.0.2800.1106 472 KB 8/29/2002 8:14:40 AM  
C:\WINNT\system32 Microsoft Corporation

vbscript.dll 5.6.0.7426 452 KB 2/26/2002 4:58:06 PM  
C:\WINNT\system32 Microsoft Corporation

webcheck.dll 6.0.2800.1106 252 KB 8/29/2002 8:14:40 AM  
C:\WINNT\system32 Microsoft Corporation

win.com 5.0.2134.1 24 KB 12/7/1999 8:00:00 AM  
C:\WINNT\system32 Microsoft Corporation

wininet.dll 6.0.2800.1106 572 KB 8/29/2002 8:14:40 AM  
C:\WINNT\system32 Microsoft Corporation

winsock.dll 3.10.0.103 3 KB 12/7/1999 8:00:00 AM  
C:\WINNT\system32 Microsoft Corporation

witrust.dll 5.131.2195.3775 162 KB 7/22/2002 1:05:04 PM  
C:\WINNT\system32 Microsoft Corporation

wsock.vxd File not present Not Available Not Available  
Not Available

wsock32.dll 5.0.2195.4874 21 KB 7/22/2002 1:05:04 PM  
C:\WINNT\system32 Microsoft Corporation

wsock32n.dll File not present Not Available Not  
Available

[Connectivity]

Item	Value
Connection Preference	Never dial
EnableHttp1.1	1
ProxyHttp1.1	0

LAN Settings

AutoConfigProxy	wininet.dll
AutoProxyDetectMode	Disabled
AutoConfigURL	
Proxy	Disabled
ProxyServer	192.168.122.250:6588
ProxyOverride	

[Cache]

[ Following are sub-categories of this main category ]

[Summary]

Item	Value
Page Refresh Type	Automatic
Temporary Internet Files Folder	C:\Documents and Settings\Administrator\Local Settings\Temporary Internet Files
Total Disk Space	34710 MB
Available Disk Space	28530 MB
Maximum Cache Size	541 MB
Available Cache Size	531 MB

[List of Objects]

Program File	Status	Version	CodeBase
Update Class	Installed	5,4,3790,14	
http://v4.windowsupdate.microsoft.com/CAB/x86/unicode/iuctl.CAB?38366.3912615741			

[Content]

[ Following are sub-categories of this main category ]

[Summary]

Item	Value
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Content Advisor	Disabled
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[Personal Certificates]

Issued To	Issued By	Validity	Signature Algorithm
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Administrator	Administrator	2/12/2003 to 1/19/2103	sha1RSA
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[Other People Certificates]

Issued To	Issued By	Validity	Signature Algorithm
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No other people certificate information available

[Publishers]

Name
------

No publisher information available

[Security]

Zone	Security Level
------	----------------

Local intranet	Custom
----------------	--------

Trusted sites	Custom
---------------	--------

Internet	Custom
----------	--------

Restricted sites	Custom
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## Microsoft Windows 2000 Client Registry Parameters

Client Configuration Parameters

COM+ Settings

TPCC.AllTxns:

Activation:

Enable Object Pooling selected

Minimum Pool Size: 70

Maximum Pool Size: 70

Creating Timeout: 60,000

Enable Object Construction

Enable Just in Time Activation

Component supports events and Statistics

Concurrency:

Concurrency Required

Client Registry Settings:

Windows Registry Editor Version 5.00

[HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\TPCC]

"Path"="c:\\inetpub\\wwwroot\\"

"NumberOfDeliveryThreads"=dword:00000012

"MaxConnections"=dword:0000abe0

"MaxPendingDeliveries"=dword:00001130

"DB\_Protocol"="ODBC"

"TxnMonitor"="COM"

"DbServer"="ibmserv4a1"

"DbName"="tpcc"

"DbUser"="sa"

"DbPassword"=""

"COM\_SinglePool"="YES"

"CallNoDuplicatesNewOrder"=dword:00000001

Inet info registry parameters:

Windows Registry Editor Version 5.00

[HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo]

[HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Parameters]

"ListenBackLog"=dword:00000096

"DispatchEntries"=hex(7):4c,00,44,00,41,00,50,00,53,00,56,00,43,00,00,00,53,00,\

4d,00,54,00,50,00,53,00,56,00,43,00,00,00,00,00

"PoolThreadLimit"=dword:00000ffe

"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:00000f14

"Last Help"=dword:00000f15

"First Counter"=dword:00000ed4

"First Help"=dword:00000ed5

"Library Validation

Code"=hex:4c,15,17,b7,50,fa,c4,01,10,25,00,00,00,00,00,00

World Wide Web Service Registry Parameters

Windows Registry Editor Version 5.00

[HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC]

"Type"=dword:00000020

"Start"=dword:00000002

"ErrorControl"=dword:00000001

"ImagePath"=hex(2):43,00,3a,00,5c,00,57,00,49,00,4e,00,4e,00,54,00,5c,00,53,00,\

79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,69,00,6e,00,65,00,74,00,73,\

00,72,00,76,00,5c,00,69,00,6e,00,65,00,74,00,69,00,6e,00,66,00,6f,00,2e,00,\

65,00,78,00,65,00,00,00

"DisplayName"="World Wide Web Publishing Service"

"DependOnService"=hex(7):49,00,49,00,53,00,41,00,44,00,4d,00,49,00,4e,00,00,\

00,00





Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte10e  
Description: frte10e  
Directory: c:\rtelogs\frte10e.log  
Machine: frte10  
Parameter Set: smartTHINK  
Index: 175000000  
Seed: 61478  
Configured Users: 4160  
Pipe Name: DRIVER582083062  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte10f  
Description: frte10f  
Directory: c:\rtelogs\frte10f.log  
Machine: frte10  
Parameter Set: smartTHINK  
Index: 218750000  
Seed: 61478  
Configured Users: 4160  
Pipe Name: DRIVER64934500  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte20a  
Description: frte20a  
Directory: c:\rtelogs\frte20a.log  
Machine: frte20  
Parameter Set: smartTHINK  
Index: 262500000  
Seed: 61478  
Configured Users: 3900  
Pipe Name: DRIVER710052925  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte20b  
Description: frte20b  
Directory: C:\rtelogs\frte20b.log  
Machine: frte20  
Parameter Set: smartTHINK  
Index: 306250000  
Seed: 61478  
Configured Users: 3900  
Pipe Name: DRIVER810087224

Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte20c  
Description: frte20c  
Directory: c:\rtelogs\frte20c.log  
Machine: frte20  
Parameter Set: smartTHINK  
Index: 350000000  
Seed: 61478  
Configured Users: 3900  
Pipe Name: DRIVER910114724  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte20d  
Description: frte20d  
Directory: c:\rtelogs\frte20d.log  
Machine: frte20  
Parameter Set: smartTHINK  
Index: 393750000  
Seed: 61478  
Configured Users: 3900  
Pipe Name: DRIVER1010152047  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte20e  
Description: frte20e  
Directory: c:\rtelogs\frte20e.log  
Machine: frte20  
Parameter Set: smartTHINK  
Index: 437500000  
Seed: 61478  
Configured Users: 3900  
Pipe Name: DRIVER1110175731  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte20f  
Description: frte20f  
Directory: c:\rtelogs\frte20f.log  
Machine: frte20  
Parameter Set: smartTHINK  
Index: 481250000  
Seed: 61478  
Configured Users: 3900  
Pipe Name: DRIVER1210204343

Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte30a  
Description: frte30a  
Directory: c:\rtelogs\frte30a.log  
Machine: frte30  
Parameter Set: smartTHINK  
Index: 525000000  
Seed: 61478  
Configured Users: 3960  
Pipe Name: DRIVER720052925  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte30b  
Description: frte30b  
Directory: C:\rtelogs\frte30b.log  
Machine: frte30  
Parameter Set: smartTHINK  
Index: 568750000  
Seed: 61478  
Configured Users: 3960  
Pipe Name: DRIVER820087224  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte30c  
Description: frte30c  
Directory: c:\rtelogs\frte30c.log  
Machine: frte30  
Parameter Set: smartTHINK  
Index: 612500000  
Seed: 61478  
Configured Users: 3960  
Pipe Name: DRIVER920114724  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte30d  
Description: frte30d  
Directory: c:\rtelogs\frte30d.log  
Machine: frte30  
Parameter Set: smartTHINK  
Index: 656250000  
Seed: 61478  
Configured Users: 3960  
Pipe Name: DRIVER1210152047

Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte30e  
Description: frte30e  
Directory: c:\rtelogs\frte30e.log  
Machine: frte30  
Parameter Set: smartTHINK  
Index: 700000000  
Seed: 61478  
Configured Users: 3960  
Pipe Name: DRIVER1210175731  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte30f  
Description: frte30f  
Directory: c:\rtelogs\frte30f.log  
Machine: frte30  
Parameter Set: smartTHINK  
Index: 743750000  
Seed: 61478  
Configured Users: 3960  
Pipe Name: DRIVER1310204343  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte40a  
Description: frte40a  
Directory: c:\rtelogs\frte40a.log  
Machine: frte40  
Parameter Set: smartTHINK  
Index: 787500000  
Seed: 61478  
Configured Users: 4000  
Pipe Name: DRIVER727052925  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte40b  
Description: frte40b  
Directory: C:\rtelogs\frte40b.log  
Machine: frte40  
Parameter Set: smartTHINK  
Index: 831250000  
Seed: 61478  
Configured Users: 4000  
Pipe Name: DRIVER827087224

Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte40c  
Description: frte40c  
Directory: c:\rtelogs\frte40c.log  
Machine: frte40  
Parameter Set: smartTHINK  
Index: 875000000  
Seed: 61478  
Configured Users: 4000  
Pipe Name: DRIVER927114724  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte40d  
Description: frte40d  
Directory: c:\rtelogs\frte40d.log  
Machine: frte40  
Parameter Set: smartTHINK  
Index: 918750000  
Seed: 61478  
Configured Users: 4000  
Pipe Name: DRIVER1270152047  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte40e  
Description: frte40e  
Directory: c:\rtelogs\frte40e.log  
Machine: frte40  
Parameter Set: smartTHINK  
Index: 962500000  
Seed: 61478  
Configured Users: 4000  
Pipe Name: DRIVER1270175731  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte40f  
Description: frte40f  
Directory: c:\rtelogs\frte40f.log  
Machine: frte40  
Parameter Set: smartTHINK  
Index: 1006250000  
Seed: 61478  
Configured Users: 4000  
Pipe Name: DRIVER1370204343

Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte50a  
Description: frte50a  
Directory: c:\rtelogs\frte50a.log  
Machine: frte50  
Parameter Set: smartTHINK  
Index: 1050000000  
Seed: 61478  
Configured Users: 4000  
Pipe Name: DRIVER726052925  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte50b  
Description: frte50b  
Directory: C:\rtelogs\frte50b.log  
Machine: frte50  
Parameter Set: smartTHINK  
Index: 1093750000  
Seed: 61478  
Configured Users: 4000  
Pipe Name: DRIVER826087224  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte50c  
Description: frte50c  
Directory: c:\rtelogs\frte50c.log  
Machine: frte50  
Parameter Set: smartTHINK  
Index: 1137500000  
Seed: 61478  
Configured Users: 4000  
Pipe Name: DRIVER926114724  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte50d  
Description: frte50d  
Directory: c:\rtelogs\frte50d.log  
Machine: frte50  
Parameter Set: smartTHINK  
Index: 1181250000  
Seed: 61478  
Configured Users: 4000  
Pipe Name: DRIVER1260152047

Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte50e  
Description: frte50e  
Directory: c:\rtelogs\frte50e.log  
Machine: frte50  
Parameter Set: smartTHINK  
Index: 1225000000  
Seed: 61478  
Configured Users: 4000  
Pipe Name: DRIVER1260175731  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte50f  
Description: frte50f  
Directory: c:\rtelogs\frte50f.log  
Machine: frte50  
Parameter Set: smartTHINK  
Index: 1268750000  
Seed: 61478  
Configured Users: 4000  
Pipe Name: DRIVER1360204343  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte60a  
Description: frte60a  
Directory: c:\rtelogs\frte60a.log  
Machine: frte60  
Parameter Set: smartTHINK  
Index: 1312500000  
Seed: 61478  
Configured Users: 4000  
Pipe Name: DRIVER728052925  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte60b  
Description: frte60b  
Directory: C:\rtelogs\frte60b.log  
Machine: frte60  
Parameter Set: smartTHINK  
Index: 1356250000  
Seed: 61478  
Configured Users: 4000  
Pipe Name: DRIVER828087224

Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte60c  
Description: frte60c  
Directory: c:\rtelogs\frte60c.log  
Machine: frte60  
Parameter Set: smartTHINK  
Index: 1400000000  
Seed: 61478  
Configured Users: 4000  
Pipe Name: DRIVER928114724  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte60d  
Description: frte60d  
Directory: c:\rtelogs\frte60d.log  
Machine: frte60  
Parameter Set: smartTHINK  
Index: 1443750000  
Seed: 61478  
Configured Users: 4000  
Pipe Name: DRIVER1280152047  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte60e  
Description: frte60e  
Directory: c:\rtelogs\frte60e.log  
Machine: frte60  
Parameter Set: smartTHINK  
Index: 1487500000  
Seed: 61478  
Configured Users: 4000  
Pipe Name: DRIVER1280175731  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte60f  
Description: frte60f  
Directory: c:\rtelogs\frte60f.log  
Machine: frte60  
Parameter Set: smartTHINK  
Index: 1531250000  
Seed: 61478  
Configured Users: 4000  
Pipe Name: DRIVER1380204343

Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte70a  
Description: frte70a  
Directory: c:\rtelogs\frte70a.log  
Machine: frte70  
Parameter Set: smartTHINK  
Index: 1575000000  
Seed: 61478  
Configured Users: 4280  
Pipe Name: DRIVER724852925  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte70b  
Description: frte70b  
Directory: C:\rtelogs\frte70b.log  
Machine: frte70  
Parameter Set: smartTHINK  
Index: 1618750000  
Seed: 61478  
Configured Users: 4280  
Pipe Name: DRIVER824887224  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte70c  
Description: frte70c  
Directory: c:\rtelogs\frte70c.log  
Machine: frte70  
Parameter Set: smartTHINK  
Index: 1662500000  
Seed: 61478  
Configured Users: 4280  
Pipe Name: DRIVER924814724  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte70d  
Description: frte70d  
Directory: c:\rtelogs\frte70d.log  
Machine: frte70  
Parameter Set: smartTHINK  
Index: 1706250000  
Seed: 61478  
Configured Users: 4280  
Pipe Name: DRIVER1248152047

Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte70e  
Description: frte70e  
Directory: c:\rtelogs\frte70e.log  
Machine: frte70  
Parameter Set: smartTHINK  
Index: 1750000000  
Seed: 61478  
Configured Users: 4280  
Pipe Name: DRIVER1248175731  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte70f  
Description: frte70f  
Directory: c:\rtelogs\frte70f.log  
Machine: frte70  
Parameter Set: smartTHINK  
Index: 1793750000  
Seed: 61478  
Configured Users: 4280  
Pipe Name: DRIVER1348204343  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte80a  
Description: frte80a  
Directory: c:\rtelogs\frte80a.log  
Machine: frte80  
Parameter Set: smartTHINK  
Index: 1837500000  
Seed: 61478  
Configured Users: 4160  
Pipe Name: DRIVER726752925  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte80b  
Description: frte80b  
Directory: C:\rtelogs\frte80b.log  
Machine: frte80  
Parameter Set: smartTHINK  
Index: 1881250000  
Seed: 61478  
Configured Users: 4160  
Pipe Name: DRIVER826787224

Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte80c  
Description: frte80c  
Directory: c:\rtelogs\frte80c.log  
Machine: frte80  
Parameter Set: smartTHINK  
Index: 1925000000  
Seed: 61478  
Configured Users: 4160  
Pipe Name: DRIVER926714724  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte80d  
Description: frte80d  
Directory: c:\rtelogs\frte80d.log  
Machine: frte80  
Parameter Set: smartTHINK  
Index: 1968750000  
Seed: 61478  
Configured Users: 4160  
Pipe Name: DRIVER1267152047  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte80e  
Description: frte80e  
Directory: c:\rtelogs\frte80e.log  
Machine: frte80  
Parameter Set: smartTHINK  
Index: 2012500000  
Seed: 61478  
Configured Users: 4160  
Pipe Name: DRIVER1267175731  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Name: frte80f  
Description: frte80f  
Directory: c:\rtelogs\frte80f.log  
Machine: frte80  
Parameter Set: smartTHINK  
Index: 2056250000  
Seed: 61478  
Configured Users: 4160  
Pipe Name: DRIVER1367204343

Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 1  
Additional Options:

Name: frte10a  
Description: frte10a  
Directory: c:\rtelogs\frte10a.log  
Machine: frte10  
Parameter Set: smartTHINK  
Index: 505032704  
Seed: 61478  
Configured Users: 4160  
Pipe Name: DRIVER494921015  
Connect Rate: 1500  
Start Rate: 428  
Max. Concurrency: 428  
Concurrency Rate: 428  
CLIENT\_NURAND: 233  
CPU: 0  
Additional Options:

Number of User groups: 48

Driver Engine: frte10a  
IIS Server: fclient10a  
SQL Server: ibmserv4a1  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 1 - 416  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4160  
District id: 1  
Scale Down: No

Driver Engine: frte10b  
IIS Server: fclient10b  
SQL Server: ibmserv4a2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 417 - 832  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4160  
District id: 1  
Scale Down: No

Driver Engine: frte10c  
IIS Server: fclient10c  
SQL Server: ibmserv4a3  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 833 - 1248  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4160  
District id: 1  
Scale Down: No

Driver Engine: frte10d  
IIS Server: fclient10a  
SQL Server: ibmserv4a4  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 1249 - 1664  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4160  
District id: 1  
Scale Down: No

Driver Engine: frte10e  
IIS Server: fclient10b  
SQL Server: ibmserv4a5  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 1665 - 2080  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4160  
District id: 1  
Scale Down: No

Driver Engine: frte10f  
IIS Server: fclient10c  
SQL Server: ibmserv4a6  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 2081 - 2496  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4160  
District id: 1  
Scale Down: No

Driver Engine: frte20a  
IIS Server: fclient20a  
SQL Server: ibmserv4a1  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 2497 - 2886  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: frte20b  
IIS Server: fclient20b  
SQL Server: ibmserv4a2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 2887 - 3276  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 3900

District id: 1  
Scale Down: No

Driver Engine: frte20c  
IIS Server: fclient20c  
SQL Server: ibmserv4a3  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 3277 - 3666  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: frte20d  
IIS Server: fclient20a  
SQL Server: ibmserv4a4  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 3667 - 4056  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: frte20e  
IIS Server: fclient20b  
SQL Server: ibmserv4a5  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 4057 - 4446  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: frte20f  
IIS Server: fclient20c  
SQL Server: ibmserv4a6  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 4447 - 4836  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 3900  
District id: 1  
Scale Down: No

Driver Engine: frte30a  
IIS Server: fclient30a  
SQL Server: ibmserv4a1  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 4837 - 5232  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476



Scale: Normal  
User Count: 3960  
District id: 1  
Scale Down: No  
  
Driver Engine: frt30b  
IIS Server: fclient30b  
SQL Server: ibmserv4a2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 5233 - 5628  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 3960  
District id: 1  
Scale Down: No

Driver Engine: frt30c  
IIS Server: fclient30c  
SQL Server: ibmserv4a3  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 5629 - 6024  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 3960  
District id: 1  
Scale Down: No

Driver Engine: frt30d  
IIS Server: fclient30a  
SQL Server: ibmserv4a4  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 6025 - 6420  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 3960  
District id: 1  
Scale Down: No

Driver Engine: frt30e  
IIS Server: fclient30b  
SQL Server: ibmserv4a5  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 6421 - 6816  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 3960  
District id: 1  
Scale Down: No

Driver Engine: frt30f  
IIS Server: fclient30c  
SQL Server: ibmserv4a6  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 6817 - 7212

w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 3960  
District id: 1  
Scale Down: No

Driver Engine: frt40a  
IIS Server: fclient40a  
SQL Server: ibmserv4a1  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 7213 - 7612  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4000  
District id: 1  
Scale Down: No

Driver Engine: frt40b  
IIS Server: fclient40b  
SQL Server: ibmserv4a2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 7613 - 8012  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4000  
District id: 1  
Scale Down: No

Driver Engine: frt40c  
IIS Server: fclient40c  
SQL Server: ibmserv4a3  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 8013 - 8412  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4000  
District id: 1  
Scale Down: No

Driver Engine: frt40d  
IIS Server: fclient40a  
SQL Server: ibmserv4a4  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 8413 - 8812  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4000  
District id: 1  
Scale Down: No

Driver Engine: frt40e  
IIS Server: fclient40b  
SQL Server: ibmserv4a5  
Database: tpcc  
User: sa

Protocol: HTML  
w\_id Range: 8813 - 9212  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4000  
District id: 1  
Scale Down: No

Driver Engine: frte40f  
IIS Server: fclient40c  
SQL Server: ibmserv4a6  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 9213 - 9612  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4000  
District id: 1  
Scale Down: No

Driver Engine: frte50a  
IIS Server: fclient50a  
SQL Server: ibmserv4a1  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 9613 - 10012  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4000  
District id: 1  
Scale Down: No

Driver Engine: frte50b  
IIS Server: fclient50b  
SQL Server: ibmserv4a2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 10013 - 10412  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4000  
District id: 1  
Scale Down: No

Driver Engine: frte50c  
IIS Server: fclient50c  
SQL Server: ibmserv4a3  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 10413 - 10812  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4000  
District id: 1  
Scale Down: No

Driver Engine: frte50d  
IIS Server: fclient50a  
SQL Server: ibmserv4a4

Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 10813 - 11212  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4000  
District id: 1  
Scale Down: No

Driver Engine: frte50e  
IIS Server: fclient50b  
SQL Server: ibmserv4a5  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 11213 - 11612  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4000  
District id: 1  
Scale Down: No

Driver Engine: frte50f  
IIS Server: fclient50c  
SQL Server: ibmserv4a6  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 11613 - 12012  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4000  
District id: 1  
Scale Down: No

Driver Engine: frte60a  
IIS Server: fclient60a  
SQL Server: ibmserv4a1  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 12013 - 12412  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4000  
District id: 1  
Scale Down: No

Driver Engine: frte60b  
IIS Server: fclient60b  
SQL Server: ibmserv4a2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 12413 - 12812  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4000  
District id: 1  
Scale Down: No

Driver Engine: frte60c

IIS Server: fclient60c  
SQL Server: ibmserv4a3  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 12813 - 13212  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4000  
District id: 1  
Scale Down: No

Driver Engine: frte60d  
IIS Server: fclient60a  
SQL Server: ibmserv4a4  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 13213 - 13612  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4000  
District id: 1  
Scale Down: No

Driver Engine: frte60e  
IIS Server: fclient60b  
SQL Server: ibmserv4a5  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 13613 - 14012  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4000  
District id: 1  
Scale Down: No

Driver Engine: frte60f  
IIS Server: fclient60c  
SQL Server: ibmserv4a6  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 14013 - 14412  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4000  
District id: 1  
Scale Down: No

Driver Engine: frte70a  
IIS Server: fclient70a  
SQL Server: ibmserv4a1  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 14413 - 14840  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4280  
District id: 1  
Scale Down: No

Driver Engine: frte70b  
IIS Server: fclient70b  
SQL Server: ibmserv4a2  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 14841 - 15268  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4280  
District id: 1  
Scale Down: No

Driver Engine: frte70c  
IIS Server: fclient70c  
SQL Server: ibmserv4a3  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 15269 - 15696  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4280  
District id: 1  
Scale Down: No

Driver Engine: frte70d  
IIS Server: fclient70a  
SQL Server: ibmserv4a4  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 15697 - 16124  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4280  
District id: 1  
Scale Down: No

Driver Engine: frte70e  
IIS Server: fclient70b  
SQL Server: ibmserv4a5  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 16125 - 16552  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4280  
District id: 1  
Scale Down: No

Driver Engine: frte70f  
IIS Server: fclient70c  
SQL Server: ibmserv4a6  
Database: tpcc  
User: sa  
Protocol: HTML  
w\_id Range: 16553 - 16980  
w\_id Min Warehouse: 1  
w\_id Max Warehouse: 19476  
Scale: Normal  
User Count: 4280

District id: 1  
 Scale Down: No  
  
 Driver Engine: frte80a  
 IIS Server: fclient80a  
 SQL Server: ibmserv4a1  
 Database: tpcc  
 User: sa  
 Protocol: HTML  
 w\_id Range: 16981 - 17396  
 w\_id Min Warehouse: 1  
 w\_id Max Warehouse: 19476  
 Scale: Normal  
 User Count: 4160  
 District id: 1  
 Scale Down: No

Driver Engine: frte80b  
 IIS Server: fclient80b  
 SQL Server: ibmserv4a2  
 Database: tpcc  
 User: sa  
 Protocol: HTML  
 w\_id Range: 17397 - 17812  
 w\_id Min Warehouse: 1  
 w\_id Max Warehouse: 19476  
 Scale: Normal  
 User Count: 4160  
 District id: 1  
 Scale Down: No

Driver Engine: frte80c  
 IIS Server: fclient80c  
 SQL Server: ibmserv4a3  
 Database: tpcc  
 User: sa  
 Protocol: HTML  
 w\_id Range: 17813 - 18228  
 w\_id Min Warehouse: 1  
 w\_id Max Warehouse: 19476  
 Scale: Normal  
 User Count: 4160  
 District id: 1  
 Scale Down: No

Driver Engine: frte80d  
 IIS Server: fclient80a  
 SQL Server: ibmserv4a4  
 Database: tpcc  
 User: sa  
 Protocol: HTML  
 w\_id Range: 18229 - 18644  
 w\_id Min Warehouse: 1  
 w\_id Max Warehouse: 19476  
 Scale: Normal  
 User Count: 4160  
 District id: 1  
 Scale Down: No

Driver Engine: frte80e  
 IIS Server: fclient80b  
 SQL Server: ibmserv4a5  
 Database: tpcc  
 User: sa  
 Protocol: HTML  
 w\_id Range: 18645 - 19060  
 w\_id Min Warehouse: 1  
 w\_id Max Warehouse: 19476

Scale: Normal  
 User Count: 4160  
 District id: 1  
 Scale Down: No

Driver Engine: frte80f  
 IIS Server: fclient80c  
 SQL Server: ibmserv4a6  
 Database: tpcc  
 User: sa  
 Protocol: HTML  
 w\_id Range: 19061 - 19476  
 w\_id Min Warehouse: 1  
 w\_id Max Warehouse: 19476  
 Scale: Normal  
 User Count: 4160  
 District id: 1  
 Scale Down: No

Number of Parameter Sets: 3

~Default		Default Parameter Set					
		Txn Weight	Think Time	Key Time	RT Delay	RT Fence	Menu Delay
5.00	0.10	New Order	10.00	12.05	18.01		0.10
5.00	0.10	Payment	10.00	12.05	3.01		0.10
5.00	0.10	Delivery	1.00	5.05	2.01		0.10
20.00	0.10	Stock Level	1.00	5.05	2.01		0.10
5.00	0.10	Order Status	1.00	10.05	2.01		0.10
		NoThink					
		Batch run parameters					
		Txn Weight	Think Time	Key Time	RT Delay	RT Fence	Menu Delay
0.00	0.00	New Order	10.00	0.00	0.00		0.00
0.00	0.00	Payment	9.61	0.00	0.00		0.00
0.00	0.00	Delivery	0.90	0.00	0.00		0.00
0.00	0.00	Stock Level	0.90	0.00	0.00		0.00
0.00	0.00	Order Status	0.90	0.00	0.00		0.00
		smartTHINK					
		Txn Weight	Think Time	Key Time	RT Delay	RT Fence	Menu Delay
5.00	0.10	New Order	10.09	12.05	18.01		0.10
5.00	0.10	Payment	9.66	12.05	3.01		0.10
5.00	0.10	Delivery	0.90	5.05	2.01		0.10
20.00	0.10	Stock Level	0.90	5.05	2.01		0.10
5.00	0.10	Order Status	0.90	10.05	2.01		0.10



# Appendix D: 60-Day Space

Note : Numbers are in KBytes unless otherwise specified						
<b>Warehouses</b>	19476	<b>tpmC</b>	241300.71	<b>tpmC/W</b>	12.39	
<b>Table</b>	<b>Rows</b>	<b>Data</b>	<b>Index</b>	<b>5% Space</b>	<b>8H Space</b>	<b>Total Space</b>
Warehouse	20,008	2,136	216	117.60		2,469.60
District	200,080	22,232	304	1,126.80		23,662.80
Item	100,000	9,416	280	484.80		10,180.80
New-order	180,072,000	3,208,416	8,200		1,600,640	4,817,256.00
History	600,240,000	35,050,512	131,056		6,788,754.37	41,970,322.37
Orders	600,240,000	19,599,680	9,560,888		5,626,921.84	34,787,489.84
Customer	600,240,000	436,538,184	27,237,256	23,188,772.00		486,964,212.00
Order-line	6,002,383,465	393,598,920	927,152		76,129,085.40	470,655,157.40
Stock	2,000,800,000	640,256,000	1,350,224	32,080,311.20		673,686,535.20
<b>Totals</b>		1,528,285,496	39,215,576	55,270,812.40	90,145,401.60	1,712,917,286.00
<b>Segment</b>	<b>LogDev Cnt.</b>	<b>Seg. Size</b>	<b>Needed</b>	<b>Overhead</b>		<b>Not Needed</b>
misc	32	688,128,000	552,266,539	5,522,665		130,338,795.81
big	32	1,212,416,000	1,160,650,747	11,606,507		40,158,745.33
master_msdb_model	1	13,312	13,312			-
tpcc_root	1	8,192	8,192			-
tempdb	1	8,704	8,704			-
<b>Totals</b>		1,900,574,208.00	1,712,947,494.00	17,129,172.86		170,497,541.14
<b>Dynamic space</b>	448,249,112.00	Sum of Data for Order, Order-Line and History				
<b>Static space</b>	1,191,651,945.26	Data + Index + 5% Space + Overhead - Dynamic space				
<b>Free space</b>	90,175,609.60	Total Seg. Size - Dynamic Space - Static Space - Not Needed				
<b>Daily growth</b>	86,495,664.92	Dynamic space/(Wc * 62.5)* tpmC				
<b>Daily spread</b>	(39,567,887.78)	Free space - 1.5 * Daily growth (zero if negative)				
<b>60 day (KB)</b>	6,381,391,840.46	Static space + 60* (daily growth + daily spread)				
<b>60 day (GB)</b>	6,085.77	60-day space in GB (excludes OS, Paging and RDBMS logs)				
<b>Available (GB)</b>	15,169.28	The total storage configured and available for the database, minus logs, in a RAID RAID 0 Configuration				
<b>Log File Storage Requirement:</b>						
<b>Log size (MB)</b>	548,000.00	Total size of log file				
<b>% Log Used</b>	44.4464	% of log file used during entire run				
<b>Total N-O Txn</b>	39,195,794	Total count of new order transactions during entire run				
<b>Log per N-O txn</b>	6.36	KB of log storage used per New Order transaction				
<b>8 Hour Log (GB)</b>	702.87	8-hour log storage required				
<b>Log configured (GB)</b>	1,174.40					
<b>Disk Capacity</b>	<b>MB</b>	<b>GB</b>				
18GB-15K RPM	17736	16.93				
36GB-15K RPM	35472	33.86				
73.4GB-15K RPM	75161.6	73.40				
			<b>Disks Priced</b>			
<b>Space Usage</b>	<b>GB Needed</b>			<b>GB Priced</b>	<b>GB Usable</b>	
60-Day (Raid 0)	6,085.77	448	36GB-15K RPM	15,169.28	15,169.28	
				Total DB	15,169.28	
8hr Log (RAID-1)	702.87	32	73.4GB-15K RPM	2,348.80	1,174.40	
				Total Log	1,174.40	
OS, SQL Server	8.00	1	36.4GB-10K RPM	33.86	33.86	
Total Space	6,796.64	481		17,551.94	16,377.54	

---

## 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 # : 1W460\_090905  
DATE: September 9, 2005

## IBM x460 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>x226 SERVER</b>						
8872-3RU	xSeries 460 with 2 x 3.33GHz/8MB L3 Cache Intel Xeon Processor MP	1	\$24,999	\$24,999.00	\$20,499.18	\$20,499.18
96P2688	3 YR onsite repair 24x7x4 hour (x460)	1	\$3,390	\$3,390.00	\$2,983.20	\$2,983.20
8874-1RU	MXE-460 (0 Processors, 0 Memory, 2 Memory Cards)	1	\$6,999	\$6,999.00	\$5,739.18	\$5,739.18
96P2688	3 YR onsite repair 24x7x4 hour (MXE-x460)	1	\$3,390	\$3,390.00	\$2,983.20	\$2,983.20
30R5145	8GB (2x4GB) PC2-3200 CL3 2RX4 ECC DDR2 SDRAM RDIMM	16	\$17,879	\$286,064.00	\$15,733.52	\$251,736.32
13M7409	Active Memory 4-Slot Memory Expansion Card	4	\$499	\$1,996.00	\$439.12	\$1,756.48
13N0713	xSeries 3.33GHz/8MB L3 Cache Intel Xeon Processor MP	6	\$5,699	\$34,194.00	\$5,015.12	\$30,090.72
13M7414	Scalability Cable 2.3.M	2	\$299	\$598.00	\$263.12	\$526.24
26K5654	IBM 36.4GB 10K 2.5 inch SAS Drive	1	\$419.00	\$419.00	\$368.72	\$368.72
32P0033	IBM ServeRAID-6M Ultra320 SCSI Adapter	2	\$879.00	\$1,758.00	\$773.52	\$1,547.04
633147N	E54 15" Colour Monitor (Stealth Grey)/MPRII	1	\$139.00	\$139.00	\$122.32	\$122.32
30L9183	3 YR onsite exch. 24x7x4 hour (E54 Monitor)	1	\$90.00	\$90.00	\$79.20	\$79.20
25R6968	IBM Preferred Pro Full-Size Keyboard PS/2	1	\$29.00	\$29.00	\$25.52	\$25.52
90P0742	Optical 3-Button ScrollPoing Mouse	1	\$25.00	\$25.00	\$22.00	\$22.00
<b>EXP710(s)</b>						
24P0960	IBM TotalStorage DS4000 Host Bus Adapter	8	\$1,485	\$11,880.00	\$1,306.80	\$10,454.40
174290U	IBM TotalStorage DS4500 Midrange Disk Subsystem	4	\$49,900	\$199,600.00	\$40,918.00	\$163,672.00
96P2062	3 YR onsite repair 24x7x4 hour (DS4500)	4	\$1,087	\$4,348.00	\$956.56	\$3,826.24
19K1269	IBM DS4000 Mini Hub	8	\$899	\$7,192.00	\$791.12	\$6,328.96
19K1271	IBM Short Wave SFP Module	136	\$499	\$67,864.00	\$439.12	\$59,720.32
19K1247	IBM 1m LC-LC Fibre Channel Cable	64	\$79	\$5,056.00	\$69.52	\$4,449.28
19K1248	IBM 5m LC-LC Fibre Channel Cable	8	\$129	\$1,032.00	\$113.52	\$908.16
1740710	IBM TotalStorage DS4000 EXP710 Storage Exp. Unit	32	\$6,000	\$192,000.00	\$5,280.00	\$168,960.00
41L2768	3 YR onsite repair 24x7x4 hour (EXP710)	32	\$760	\$24,320.00	\$668.80	\$21,401.60
06P5772	2Gbps FC 36.4GB 15K Hot-Swap HDD	448	\$1,115	\$499,520.00	\$981.20	\$439,577.60
<b>EXP400(s)</b>						
17331RU	IBM EXP400 Storage Expansion Enclosure	4	\$3,099.00	\$12,396.00	\$2,541.18	\$10,164.72
41L2768	3 YR onsite repair 24x7x4 hour (EXP400)	4	\$760.00	\$3,040.00	\$668.80	\$2,675.20
21301TX	IBM UPS 750TLV	1	\$299.00	\$299.00	\$263.12	\$263.12
90P1381	73.4GB 15K Ultra320 SCSI Hot-Swap HDD	32	\$499.00	\$15,968.00	\$439.12	\$14,051.84
93074SX	IBM S2 42U Standard Rack	5	\$1,489.00	\$7,445.00	\$1,310.32	\$6,551.60
41L2760	3 YR onsite exch. 24x7x4 hour (Rack)	5	\$300.00	\$1,500.00	\$264.00	\$1,320.00
<b>x226 SERVER(s)</b>						
8648-6AU	x226 with 3.4GHz/2MB Xeon DP, 512MB (2x256MB) Memory	8	\$1,939	\$15,512.00	\$1,589.98	\$12,719.84
13N0674	3.4GHz/2MB Xeon DP Processor Upgrade	8	\$1,049	\$8,392.00	\$923.12	\$7,384.96
73P3522	1GB (2x512MB) PC-3200 DDR2 ECC SDRAM RDIMM	16	\$399	\$6,384.00	\$351.12	\$5,617.92
90P1380	36.4GB 15K Ultra320 SCSI Drive	8	\$299	\$2,392.00	\$263.12	\$2,104.96
73P2701	PRO/1000 MT Dual-Port Server Adapter	24	\$249	\$5,976.00	\$219.12	\$5,258.88
633147N	E54 15" (13.8" Viewable) Color Monitor	8	\$139	\$1,112.00	\$122.32	\$978.56
96P2250	ServicePac for 3-Year 24x7x4 Support (x226)	8	\$586	\$4,688.00	\$515.68	\$4,125.44
30L9183	ServicePac for 3-Year 24x7x4 Support (Monitor)	8	\$90	\$720.00	\$79.20	\$633.60
<b>TOTAL =</b>				<b>\$1,462,726.00</b>	<b>TOTAL =</b>	<b>\$1,271,628.52</b>

**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.



Microsoft Corporation  
One Microsoft Way  
Redmond, WA 98052-6399

Tel 425 882 8080  
Fax 425 936 7329  
<http://www.microsoft.com/>

**Microsoft**

October 13, 2005

IBM Corporation  
Chris King  
3079 Cornwallis Road  
Durham, NC 27709

Ms. King:

Here is the information you requested regarding pricing for several Microsoft products to be used in conjunction with your TPC-C benchmark testing.

All pricing shown is in US Dollars (\$).

Part Number	Description	Unit Price	Quantity	Price
810-03134	<b>SQL Server 2005 Enterprise x64 Edition</b> <i>Per Processor License</i> <i>Discount Schedule: Open Program - Level C</i> <i>Unit Price reflects a 6% discount from the retail unit price of \$24,999.</i>	\$23,432	8	\$187,456
P72-00274	<b>Windows Server 2003 Enterprise x64 Edition</b> <i>Server License Only - No CALs</i> <i>Discount Schedule: Open Program - No Level</i> <i>Unit Price reflects a 42% discount from the retail unit price of \$3,999.</i>	\$2,334	1	\$2,334
C11-00821	<b>Windows 2000 Server</b> <i>Server License Only - No CALs</i> <i>Discount Schedule: No Level</i> <i>Unit Price reflects a 8% discount from the retail unit price of \$799.</i>	\$738	8	\$5,904
254-00170	<b>Visual C++ Standard Edition</b> <i>No Discounts Applied</i>	\$109	1	\$109
N/A	<b>Microsoft Problem Resolution Services</b> <i>Professional Support</i> <i>(1 Incident)</i>	\$245	1	\$245

Some products may not be currently orderable but will be available through Microsoft's normal distribution channels by November 7, 2005.

Defect support is included in the purchase price. Additional support is available from Microsoft PSS on an incident by incident basis at \$245 per call.

This quote is valid for the next 90 days.



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by Netgear



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