TPC Benchmark™ C
Full Disclosure Report
for
IBM® @server™ xSeries™ 440
using
Microsoft® SQL Server 2000 Enterprise Edition
and
Microsoft Windows® Server 2003 Datacenter Edition

TPC-C Version 5.1

Submitted for Review
April 4, 2003

First Edition - April 2003

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Notes

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

Abstract

IBM Corporation conducted the TPC Benchmark™ C on the IBM® @server xSeries™ 440 configured as a client/server system. This report documents the full disclosure information required by the TPC Benchmark C Standard Specification, Revision 5.1, including the methodology used to achieve the reported results. All testing fully complied with this revision level.

The software used on the xSeries 440 system includes Microsoft® Windows® Server 2003 Datacenter Edition operating system and Microsoft SQL Server 2000 Enterprise Edition database.

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

The benchmark results are summarized in the following table.

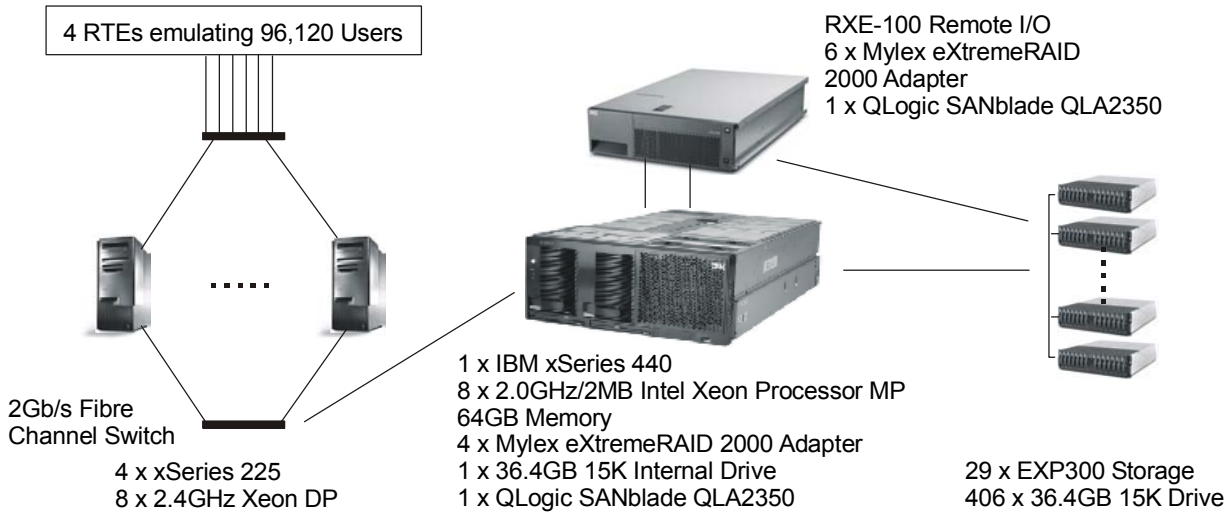
Hardware	Software	Total System Cost	tpmC	$/tpmC	Total Solution Availability Date
IBM @server xSeries 440	Microsoft SQL Server 2000 Enterprise Edition Microsoft Windows Server 2003 Datacenter Edition	$781,556	119,115.16	$6.56	Oct. 3, 2003

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

IBM	**IBM @server™ xSeries™ 440 c/s with Microsoft® SQL Server 2000**	TPC-C Rev. 5.1 Report Date: April 4, 2003

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
$781,556	**119,115.16 tpmC**	**$6.56 / tpmC**	**Oct. 3, 2003**

Processors	Database Manager	Operating System	Other Software	Number of Users
Server: 8 Intel® Xeon™ Processor MP 2.0GHz Clients: 8 Xeon DP 2.4GHz	**Microsoft SQL Server 2000 Enterprise Edition SP3 with QFE**	**Microsoft Windows® Server 2003 Datacenter Edition**	**Microsoft Visual C++ 6.0 Win32 Microsoft COM+**	**96,120**



System Component	Qty	Server:	Qty	Each of Four Clients:
Processors	**8**	**2.0GHz Xeon Processor MP w/2MB L3 Cache**	**2**	**2.4GHz Xeon DP w/512KB L2 Cache**
Memory	**32**	**2GB ECC RDIMM**	**4**	**512MB**
Disk Controllers	**10**	**Mylex eXtremeRAID 2000 Adapter**	**1**	**Ultra320 SCSI Interface**
Disk Drives	**407**	**36.4GB (15000 rpm)**	**1**	**18.2GB Hard Disk**
Total Storage		**13781.02GB**		
Tape Drive	**1**	**20/40GB SCSI Tape Drive**		

IBM Corporation	IBM @server xSeries 440 c/s with Microsoft SQL Server 2000	TPC-C Revision 5.1
		Report Date: April 4, 2003

Description	Part Number	Third Party Brand	Third Party Pricing	Unit Price	Quantity	Extended Price	3-Yr. Maint. Price
Server Hardware							
xSeries 440 with:	8687-88X	IBM	1	169,850	1	169,850	3,221
8 x 2.0GHz/2MB Xeon Processor							
32 x 2GB ECC RDIMM							0
1 x 36.4GB 15K Ultra160 SCSI Drive							0
IBM Preferred Pro Full-Size Keyboard PS/2							
IBM Sleek 2-Button Mouse							
Mylex eXtremeRAID 2000 Adapter (2 spares)	08P3438	Mylex	5	1,217	12	14,604	0
QLogic SANBlade QLA2350 FC-VI Adapter	QLA2350-BK	QLogic	4	2,095	4	8,380	0
E54 15" (13.8" Viewable) Color Monitor	633147N	IBM	2	129	1	129	90
					Subtotal	192,963	3,311
Server Storage							
IBM RXE-100 Remote Expansion Enclosure	8684-1RX	IBM	2	4,569	1	4,569	1,050
IBM Remote I/O PCI-X 6-Slot Expansion Kit	31P5998	IBM	2	1,699	1	1,699	0
IBM EXP300 Rack Storage Exp. Enclosure	35311RU	IBM	2	3,179	29	92,191	5,800
36.4GB 15K Ultra160 SCSI Hot-Swap Drive	06P5768	IBM	2	549	406	222,894	
NetBAY42S Standard Rack	9306421	IBM	2	1,439	3	4,317	504
IBM UPS 500	252277	IBM	6	102	1	102	0
20/40GB DDS/4 Tape AutoLoader	00N7991	IBM	2	769	1	769	0
Enterprise Rack Prep Fee	06P7514	IBM	1	500	3	1,500	0
Enterprise Rack Installation Fee	06P7515	IBM	1	150	3	450	0
Option Integration Fee	58P8665	IBM	1	110	1	110	0
Image Load Fee	06P7505	IBM	1	150	1	150	0
					Subtotal	328,751	7,354
Server Software							
Microsoft SQL Server 2000 Enterprise Edition	810-00846	Microsoft	3	16,541	8	132,328	
Database Software Support Package		Microsoft	3	1,950	3		5,850
IBM Preload Kit for Datacenter (1-8 Processors)	4816-1BU	IBM	1	32,999	1	32,999	41,850
IBM Software Update Subscription (1-16 Processor	4816-ADX	IBM	1	22,159	3	66,477	0
					Subtotal	231,804	47,700
Client Hardware							
x225 with 2.4GHz/512KB Xeon DP, 512MB RAM	8647-3AX	IBM	2	1,269	4	5,076	2,792
2.4GHz/512KB Xeon DP Processor Upgrade	59P5108	IBM	2	699	4	2,796	0
512MB PC2100 ECC SDRAM RDIMM	33L5038	IBM	2	389	16	6,224	0
18.2GB 10K Ultra160 SCSI Drive	06P5754	IBM	2	275	4	1,100	0
QLogic SANblade QLA 2350 FC-VI Adapter	QLA2350-BK	QLogic	4	2,095	4	8,380	0
IBM 10/100 Dual-Port Server Adapter	22P4901	IBM	2	209	8	1,672	0
Adaptec Quartet64 4-Port Adapter	1932500	Adaptec	5	511	4	2,044	0
E54 15" (13.8" Viewable) Color Monitor	633147N	IBM	2	129	4	516	360
					Subtotal	27,808	3,152
Client Software							
Microsoft Windows 2000 Server with COM+	C11-00821	Microsoft	3	738	4	2,952	0
Microsoft Visual C++ Professional 6.0	254-00170	Microsoft	3	109	1	109	0
					Subtotal	3,061	0
Network Components							
SAN Fibre Channel 8-Port Switch	3534F08	IBM	2	7,000	1	7,000	350
IBM Short Wave SFP Module	19K1271	IBM	2	499	2	998	0
IBM 5M LC-LC Fibre Channel Cable	19K1248	IBM	2	129	6	774	0
					Subtotal	8,772	350
Discount of 14% on IBM hardware.				14%	**Discount**	73,470	
					Total	719,689	61,867

1 - Call IBM at 919-254-0367; 2 - IBM List Price; 3 - Microsoft; 4 - QLogic;	**Three-Year Cost of Ownership:**	$781,556
5 - Computer Giants; 6 - PC Connection	**tpmC:**	119,115.16
Audited by Francois Raab, InfoSizing, Inc.	**$/tpmC:**	$6.56

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

Numerical Quantities Summary

MQTh, Computed Maximum Qualified Throughput: 119,115.16 tpmC

Response Times (in seconds)	90th Percentile	Average	Maximum
New-Order	0.78	0.46	5.70
Payment	0.70	0.39	3.77
Delivery	0.55	0.28	2.33
Stock Level	1.14	0.78	6.01
Order Status	0.70	0.40	5.23
Delivery (Deferred)	0.25	0.18	3.14
Menu	0.56	0.28	5.32

Response Time Delay Added for Emulated Components: 0.1 Seconds

Transaction Mix (in percent of total transactions)	Percent
New-Order	44.95
Payment	43.03
Delivery	4.01
Stock-Level	4.01
Order Status	4.00

Keying/Think Times (in seconds)	Minimum	Average	Maximum
New Order	18.00 / 0.00	18.01 / 12.05	18.05 / 120.52
Payment	3.00 / 0.00	3.02 / 12.05	3.05 / 120.52
Delivery	2.00 / 0.00	2.01 / 5.05	2.05 / 50.51
Stock Level	2.00 / 0.00	2.01 / 5.05	2.04 / 50.51
Order Status	2.00 / 0.00	2.01 / 10.04	2.04 / 100.52

Test Duration	
Ramp-up time	49 minutes 5 seconds
Measurement interval	120 minutes
Number of checkpoints	4
Checkpoint interval	30 minutes
Number of transactions (all types) completed in measurement interval	33,077,911

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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 5.1.

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

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

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

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

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

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

General Items

Benchmark Sponsor

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

This benchmark was sponsored by International Business Machines Corporation.

Application Code Disclosure and Definition Statements

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

Appendix A contains all source code implemented in this benchmark.

Parameter Settings

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

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

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

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

Configuration Diagrams

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

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

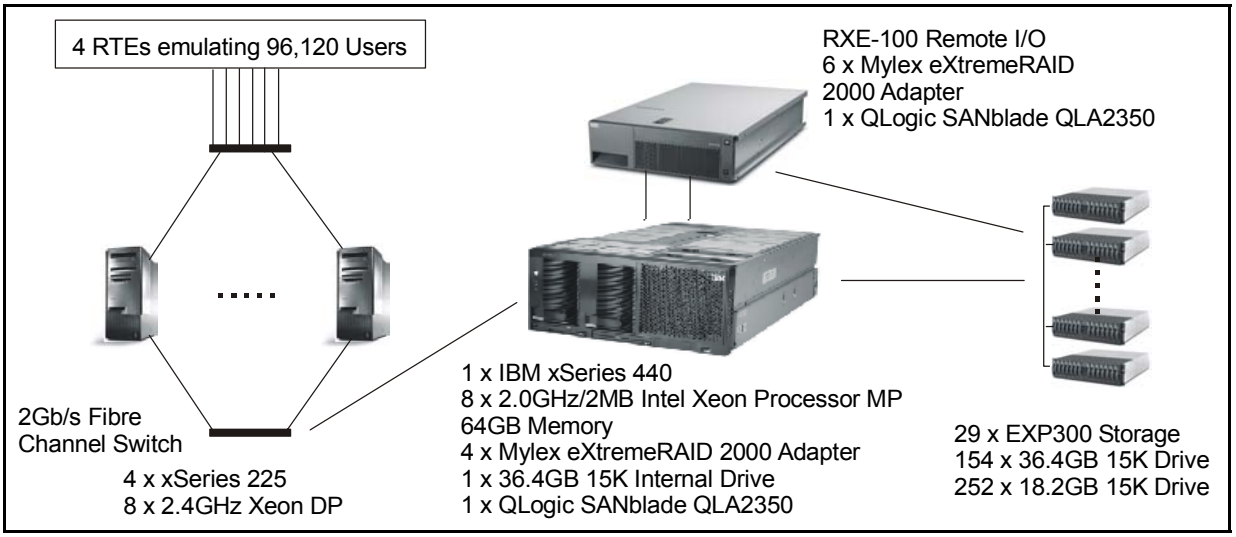
The Remote Terminal Emulator (RTE) used for these TPC Benchmark C tests is the Microsoft BenchCraft RTE. Under Version 5.0, the components of the configuration being emulated by the RTE are the workstations . Appendix C contains a listing of the RTE scripts and inputs used in the benchmark testing.

The measured configuration used four IBM xSeries 225 systems, each configured with two 2.4GHz Xeon DP processors, as clients, which executed the terminal I/O and submitted transactions to COM+ servers, which were also running on the clients. These COM+ servers forwarded the transaction requests to the server, and returned the results to the RTE. Microsoft SQL Server 2000 Enterprise Edition was the DBMS executing on the server.

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

Controller	PCI Slot Location
Mylex eXtremeRAID 2000	Server Slot 1
Mylex eXtremeRAID 2000	Server Slot 2
Mylex eXtremeRAID 2000	Server Slot 4
Mylex eXtremeRAID 2000	Server Slot 5
QLogic 2350 FC -VI Adapter	Server Slot 6
QLogic 2350 FC -VI Adapter	RXE-100 Slot 12
Mylex eXtremeRAID 2000	RXE-100 Slot 3
Mylex eXtremeRAID 2000	RXE-100 Slot 4
Mylex eXtremeRAID 2000	RXE-100 Slot 5
Mylex eXtremeRAID 2000	RXE-100 Slot 9
Mylex eXtremeRAID 2000	RXE-100 Slot 10
Mylex eXtremeRAID 2000	RXE-100 Slot 11

Measured Configuration



See the Executive Summary for the priced configuration.

The measured and priced configurations differed as described below. Disk substitution was used to replace 252 18.2GB 15K disk drives with the priced 36.4GB 15K disk drives. Data was provided to the auditor which showed that the priced disks performed at least as well as the disks that were substituted. Following is a list of where the priced and substituted disks were located.

- Controller 1: 1 x 36.4GB 150K rpm disk for the OS (priced disk)
- Controller 2: 28 x 36.4GB 15K rpm disks for the database log (priced disks)
- Controller 3: 42 x 18.2GB 15K rpm disks for the database tables (substituted disks)
- Controller 4: 42 x 18.2GB 15K rpm disks for the database tables (substituted disks)
- Controller 5: 42 x 36.4GB 15K rpm disks for the database tables (priced disks)
- Controller 6: 42 x 36.4GB 15K rpm disks for the database tables (priced disks)
- Controller 7: 42 x 18.2GB 15K rpm disks for the database tables (substituted disks)
- Controller 8: 42 x 18.2GB 15K rpm disks for the database tables (substituted disks)
- Controller 9: 42 x 18.2GB 15K rpm disks for the database tables (substituted disks)
- Controller 10: 42 x 18.2GB 15K rpm disks for the database tables (substituted disks)
- Controller 11: 42 x 36.4GB 15K rpm disks for the database tables (priced disks)

Clause 1: Logical Database Design Related Items

Table Definitions

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

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

Physical Organization of the Database

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

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

Insert and Delete Operations

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

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

Horizontal or Vertical Partitioning

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

Partitioning was not used in this benchmark.

Replication

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

Replication was not used in this benchmark.

Table Attributes

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

No additional attributes were used in this benchmark.

Clause 2: Transaction and Terminal Profiles Related Items

Random Number Generation

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

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

Screen Layout

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

All screen layouts followed the TPC Benchmark C Standard Specification. .

Terminal Verification

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

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

Intelligent Terminals

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

The terminals emulated in the priced configuration are IBM PC desktop computer systems. All processing of the input/output screens was handled by the xSeries 225 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 440 database server.

Transaction Profiles

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

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

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

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

Table 2-1. Transaction Statistics

New Order	Value (%)
Home warehouse order lines	99.00
Remote warehouse order lines	1.00
Rolled back transactions	1.00
Average number of items per order	10.00
Payment	
Home warehouse payment transactions	0.85
Remote warehouse payment transactions	0.15
Non-Primary Key Access	
Payment transactions using C_LAST	60.01
Order-Status transactions using C_LAST	60.07
Delivery	
Delivery transactions skipped	0
Transaction Mix	
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 deferred delivery operation is queued by making an entry in an array within the application process (tpcc.dll) running on the client. Background threads within the application asynchronously process the queued delivery transactions.

The source code is listed in Appendix A.

Clause 3: Transaction and System Properties Related Items

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

Atomicity Requirements

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

All ACID tests were conducted according to specification.

Completed Transactions

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

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

Aborted Transactions

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

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

Consistency Requirements

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

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

Isolation Requirements

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

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

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

Case A was followed for Isolation test seven.

Durability Requirements

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

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

Loss of Data Test

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

1. The contents of the database were backed up to several database dump devices during the initial database load. There were no dump devices on the disk array from which a drive was removed as part of this test.
2. The current count of the total number of orders was determined by the sum of D_NEXT_O_ID for all rows in the district table giving SUM1.
3. A test was started with 9,620 users submitting transactions.
4. A disk containing a portion of each of the tables in the tpcc database was removed causing SQL Server to report errors accessing that device.
5. The run was aborted and SQL Server was restarted. Upon restart, the database tpcc reported numerous errors relating to the failed database device.
6. The transaction log was dumped to disk and the failed disk was replaced with a spare disk and was recovered.
7. The database was recovered and restored from the backup dump devices. Afterwards, the transaction log was applied to the database.
8. Step 2 was repeated to obtain the current count of the total number of orders giving SUM2.
9. It was verified that the sum of D_NEXT _O_ID after the database is recovered is greater than or equal to the sum of D_NEXT_O_ID before the run, plus all new order transactions completed during the run minus any rollback transactions.
10. Consistency Condition 3 was verified.

Loss of System (Instantaneous Interruption and Loss of Memory)

1. The current count of the total number of orders was determined by the sum of D_NEXT_O_ID for all rows in the district table gving SUM1.
2. A test was started under full load with all users submitting transactions.
3. The test continued and the system continued to run for another 7 minutes after all users were connected to the server.
4. The server under test was powered off, which removed power from the system and the memory.
5. The server was powered on again.

6. SQL Server was started to initiate automatic recovery from its log.
7. Step 1 was repeated to obtain the current count of the total number of orders giving SUM2.
8. 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.

Loss of Log

1. The current count of the total number of orders was determined by the sum of D_NEXT_O_ID for all rows in the district table gving SUM1.
2. This test was executed on a full-scale benchmark run.
3. The test continued with a checkpoint issued and completed.
4. One disk from the log array was removed. Since the disk was RAID-1 mirrored, SQL Server continued to process transactions without interruption.
5. The test continued to run for another 7 minutes.
6. Step 1 was repeated to obtain the current count of the total number of orders giving SUM2.
7. It was verified that the sum of D_NEXT_O_ID after the database is stopped 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.

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 9,612 warehouses and the audited run used all 9,612 warehouses.

Table 4-1. Initial Cardinality of Tables

Table Name	Rows
Warehouse	9,612
District	96,120
Item	100,000
New Order	86,508,000
History	288,360,000
Orders	288,360,000
Customer	288,360,000
Order Line	2,883,595,034
Stock	961,200,000
Inactive Warehouses	0

Distribution of Tables and Logs

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

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

Figure 4-2. Data Distribution for the Benchmarked Configuration

Disk #	Drives	Partition	Size	Use
1	28 - 36.4GB (Priced and Actual)	E: F:	257.33GB 216.54GB (NTFS)	Logfile MDF File
2	42 - 36.4GB (Priced) 42 - 18.2GB (Actual)	C:\mp\c1 G:	78.62GB 631.94GB (NTFS)	Customer and Stock Backup files
3	42 - 36.4GB (Priced) 42 - 18.2GB (Actual)	C:\mp\c2 H:	78.62GB 631.84GB (NTFS)	Customer and Stock Backup files
4	42 - 36.4GB (Priced and Actual)	C:\mp\c3 I:	78.62GB 1343.96GB (NTFS)	Customer and Stock Backup files
5	42 -36.4GB (Priced and Actual)	C:\mp\m1 J:	149.90GB 1272.68GB (NTFS)	Miscellaneous Backup files
6	42 - 36.4GB (Priced) 42 - 18.2GB (Actual)	C:\mp\m2 K:	149.91GB 560.65GB (NTFS)	Miscellaneous Backup files
7	42 - 36.4GB (Priced) 42 - 18.2GB (Actual)	C:\mp\c4 L:	78.62GB 631.94GB (NTFS	Customer and Stock Backup files
8	42 - 36.4GB (Priced) 42 - 18.2GB (Actual)	c:\mp\c5 M:	78.62GB 631.94GB (NTFS)	Customer and Stock Backup files
9	42 - 36.4GB (Priced) 42 - 18.2GB (Actual)	C:\mp\c6 N:	78.62GB 631.94GB (NTFS)	Customer and Stock Backup files
10	42 - 36.4GB (Priced and Actual)	C:\mp\c7 O:	78.62GB 1343.96GB (NTFS)	Customer and Stock Backup files

Database Model Implemented

A statement must be provided that describes:

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

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

Partitions/Replications Mapping

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

The database was neither partitioned nor replicated.

60-Day Space Requirement

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

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

Clause 5: Performance Metrics and Response Time Related Items

Measured tpmC

Measured tpmC must be reported.

Measured tpmC: 119,115.16 tpmC
Price per tpmC: $6.56 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	0.46	5.70	0.78
Payment	0.39	3.77	0.70
Delivery	0.28	2.33	0.55
Stock Level	0.78	6.01	1.14
Order Status	0.40	5.23	0.70
Delivery (Deferred)	0.18	3.14	0.25
Menu	0.28	5.32	0.56

Keying/Think Times

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

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

Table 5-2. Keying/Think Times

Transaction Type	Average	Minimum	Maximum
New-Order	18.01 / 12.05	18.00 / 0.00	18.05 / 120.52
Payment	3.02 / 12.05	3.00 / 0.00	3.05 / 120.52
Delivery	2.01 / 5.05	2.00 / 0.00	2.05 / 50.51
Stock Level	2.01 / 5.05	2.00 / 0.00	2.04 / 50.51
Order Status	2.01 / 10.04	2.00 / 0.00	2.04 / 100.52

Response Time Frequency Distribution Curves

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

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

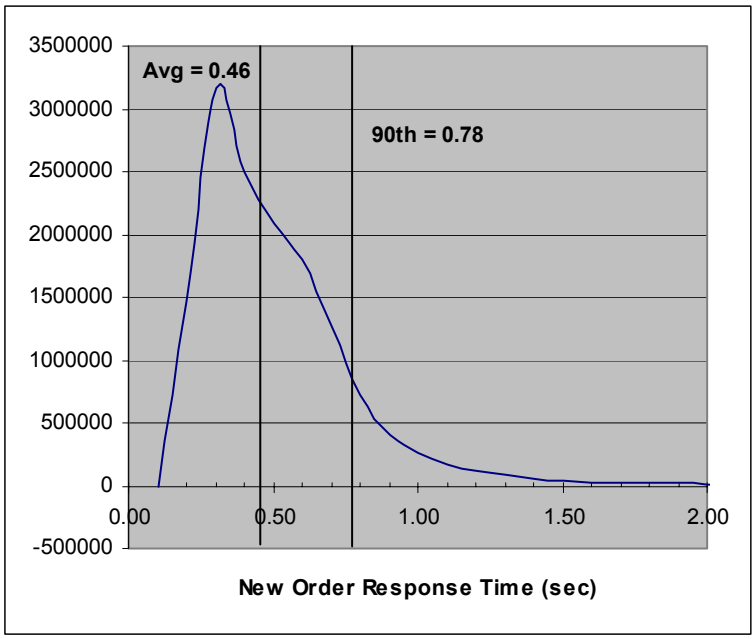


Figure 5-2. Payment Transaction - Response Time Frequency Distribution

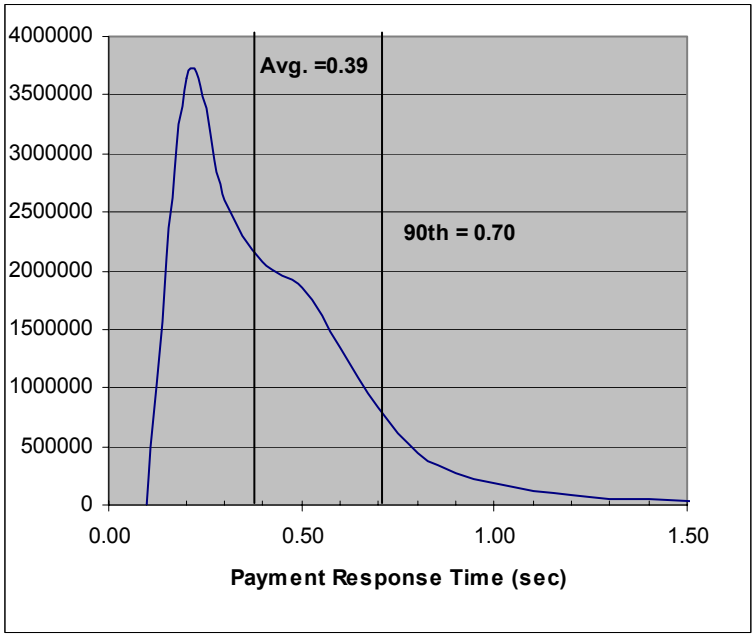


Figure 5-3. Order-Status Transaction - Response Time Frequency Distribution

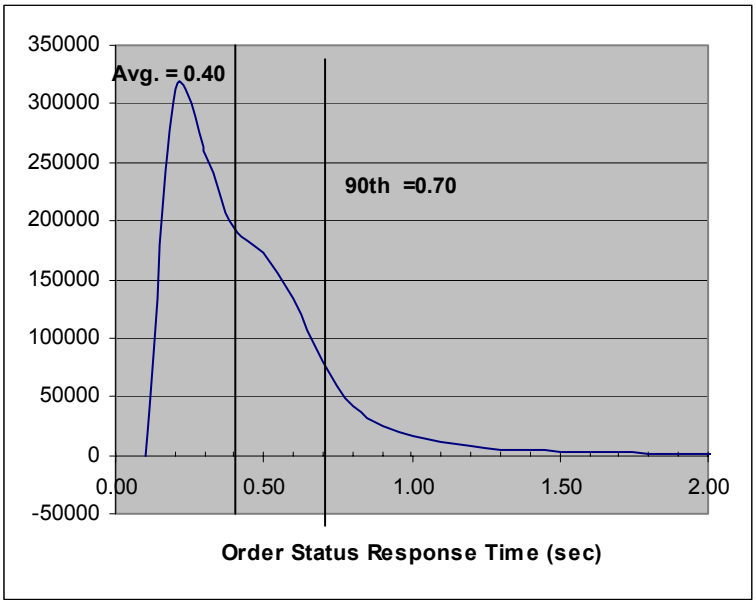
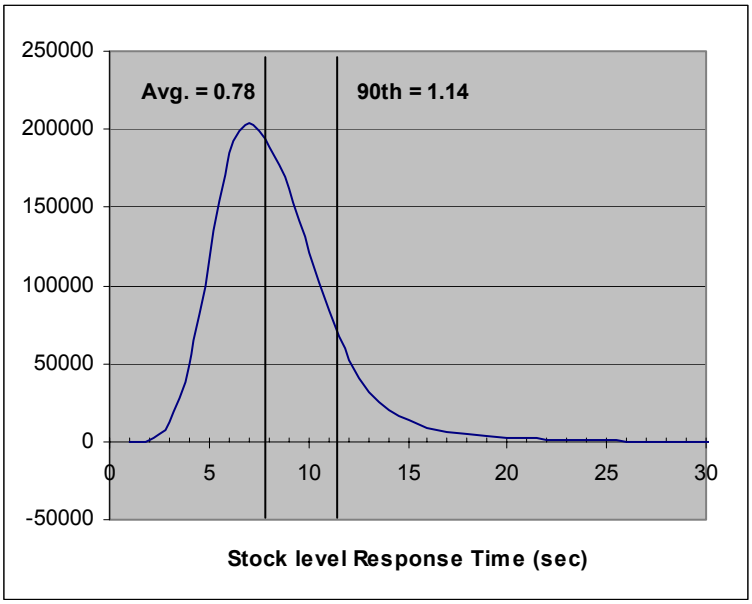


Figure 5-4. Delivery Transaction - Response Time Frequency Distribution

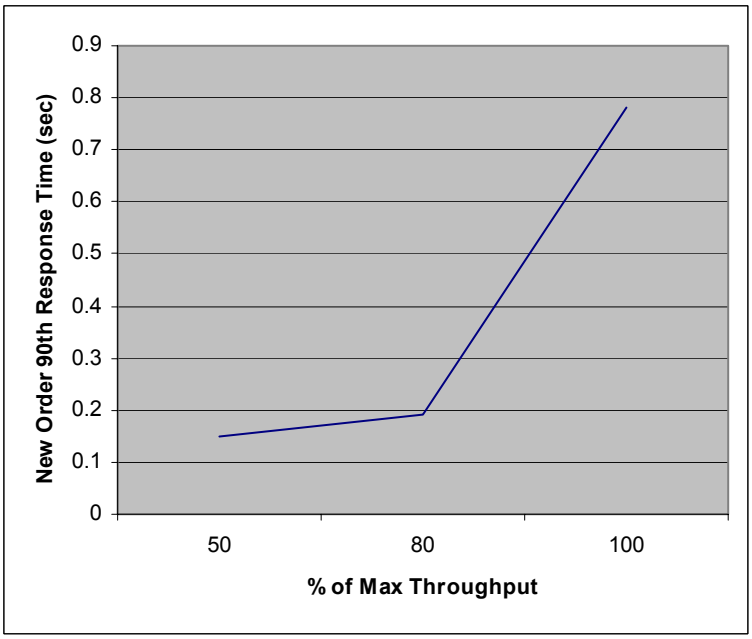
Figure 5-5. Stock-Level Transaction - Response Time Frequency Distribution



Performance Curve for Response Time vs. Throughput

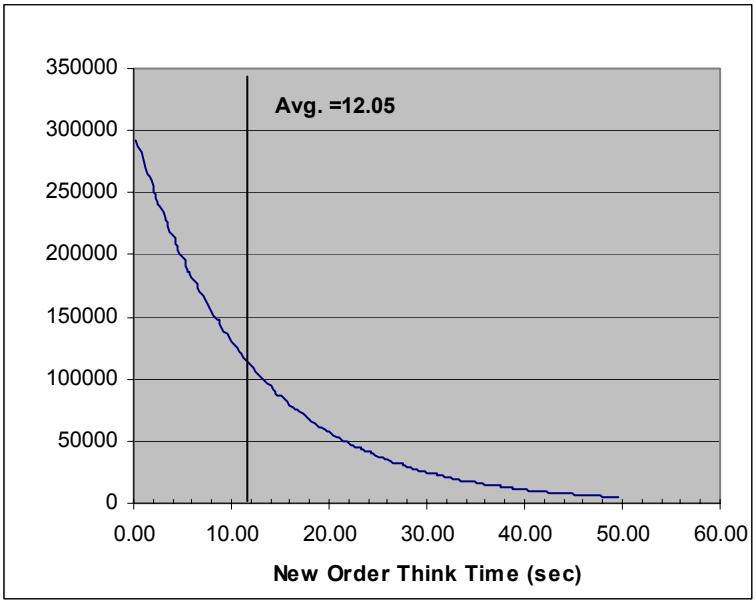
The performance curve for response time vs. throughput (see Clause 5.6.2) must be reported for the New-Order transaction.

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



New Order Think Time Distribution

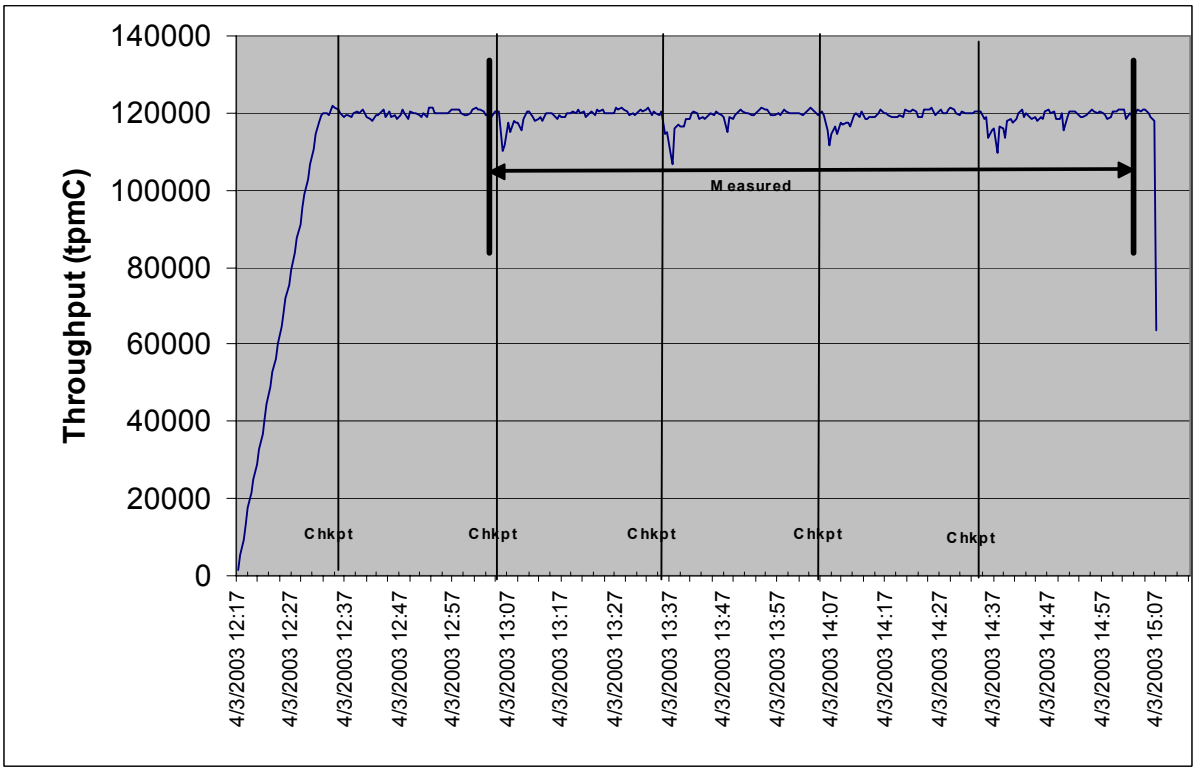
Figure 5-7. New-Order Think Time Distribution



Throughput vs. Elapsed Time

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

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



Steady State Methodology

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

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

Work Performed during Steady State

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

Transaction Flow

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

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

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

Checkpoints

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

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

Measurement Interval

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

The measurement interval was 120 minutes.

Transaction Mix

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

See Table 5-3.

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

Percentage of Total Mix

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

See Table 5-3.

Table 5-3. Transaction Statistics and Transaction Mix

New Order	Value (%)
Home warehouse order lines	99.00
Remote warehouse order lines	1.00
Rolled back transactions	1.00
Average number of items per order	10.00
Payment	
Home warehouse payment transactions	0.85
Remote warehouse payment transactions	0.15
Non-Primary Key Access	
Payment transactions using C_LAST	60.01
Order-Status transactions using C_LAST	60.07
Delivery	
Delivery transactions skipped	0
Transaction Mix	
New-Order	44.95
Payment	43.03
Delivery	4.01
Stock Level	4.01
Order-Status	4.00

Number of Checkpoints

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

Checkpoints were performed during the ramp-up period and during each measured run interval. The first measurement interval checkpoint started 28 seconds after the start of the measurement interval. The four checkpoints in the measured interval are shown in Table 5-4.

Table 5-4. Checkpoint Start Time and Duration

Checkpoint	Start Time	Duration
1	01:05:58 p.m.	28 minutes
2	01:35:55 p.m.	28 minutes
3	02:05:52 p.m.	28 minutes
4	02:35:49 p.m.	28 minutes

The checkpoint interval was 30 minutes.

Clause 6: SUT, Driver and Communication Definition Related Items

Description of RTE

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

The RTE used was Microsoft BenchCraft RTE. Benchcraft is a proprietary tool provided by Microsoft and is not commercially available. The RTE input is listed in Appendix C.

Emulated Components

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

No components were emulated.

Benchmarked and Targeted System Configuration Diagrams

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

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

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

Network Configuration

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

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

Network Bandwidth

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

The Ethernet used in the LAN connecting the clients and driver RTEs complies with the IEEE.802.3 standard. The Ethernet LAN had a bandwidth of 100Mbps. The LAN that connected the clients to the server was a Fibre Channel network whose bandwidth was 2Gb/s.

Operator Intervention

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

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

Clause 7: Pricing Related Items

Hardware and Software Components

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

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

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

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

Availability Date

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

The total system as priced will be available October 3, 2003.

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: 119,115.16 tpmC
- Price per tpmC: $6.56 per tpmC
- Three-year cost of ownership: $781,556

Country-Specific Pricing

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

The configuration is priced for the United States of America.

Usage Pricing

For any usage pricing, the sponsor must disclose:

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

The component pricing based on usage is shown below:

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

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

System Pricing

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

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

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 Franois Raab of InfoSizing, Inc. The auditor's attestation letter is provided in this section.

Availability of the Full Disclosure Report

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

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

INFO SIZING

TPC TRANSACTION PROCESSING PERFORMANCE COUNCIL CERTIFIED AUDITOR

Benchmark Sponsor: Chitra Balachandran
Manager, xSeries Performance
IBM Systems Group
3039 Cornwallis Road
Research Triangle Park, NC 27709

April 4, 2003

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

Platform:	**IBM @server xSeries 440 c/s**
Operating system:	**Microsoft Windows Server 2003 Datacenter Edition**
Database Manager:	**Microsoft SQL Server 2000 Enterprise Edition SP3 w/QFE**
Transaction Manager:	**Microsoft COM+**

The results were:

CPU's Speed	Memory	Disks	NewOrder 90% Response Time	**tpmC**
Server: IBM @server xSeries 440				
8 x Xeon MP (2.0GHz)	64 GB Main (2 MB L3 Cache per processor)	406 x 36.4 GB ext. 1 x 36.4 GB int.	0.78 Seconds	**119,115.16**
Clients: Four (4) IBM @server xSeries 225 (Specification for each)				
2 x Xeon DP (2.4 GHz)	2 GB Main (512 KB L2 Cache per processor)	1 x 18.2 GB	n/a	n/a

In my opinion, these performance results were produced in compliance with the TPC's requirements for the benchmark.

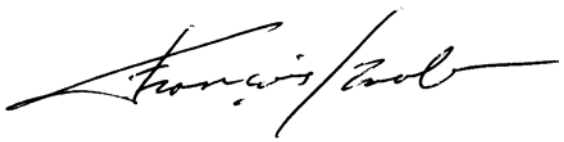
The following verification items were given special attention:

- 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 (252) 18.2GB 15Krpm disk drives, which were substituted in the priced configuration by 36.4GB 15Krpm disk drives. Based on the data collected and on the specifications of these two types of disk drives, it is my opinion that this substitution had no material impact on the results and meets the requirements of the benchmark for such substitutions.

Respectfully Yours,



François Raab, President

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Appendix A: Source Code

Web Client Source Code

db_odbc_dll.dsp

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

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

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

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

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

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

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

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

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

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

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

!ENDIF

# Begin Target

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

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

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

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

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

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

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

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

dlldata.c

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

      DO NOT ALTER THIS FILE

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

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

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


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

EXTERN_PROXY_FILE( tpcc_com_ps )


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


DLLDATA_ROUTINES( aProxyFileList, GET_DLL_CLSID )

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

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

error.h

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

#pragma once

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

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

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

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

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

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



class CBaseErr
{
public:

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


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

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



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


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

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

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

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

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

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

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

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



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


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

	//short		m_errType;
};

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

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

	Action		m_eAction;
	char		*m_szErrorText;

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

};

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

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

	Action	m_eAction;

private:
	char m_szMsg[ERR_MSG_BUF_SIZE];
```

```
};

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

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


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

        int ErrorType() {return ERR_BUF_OVERFLOW;}

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

install.c

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

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

#include "resource.h"

#define WM_INITTEXT             WM_USER+100

HICON           hIcon;
HINSTANCE       hInst;

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

// TPC-C registry settings
TPCCREGISTRYDATA        Reg;

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

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


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

BOOL install_com(char *szDllPath);

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

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

        hInst = hInstance;

        InitCommonControls();

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

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

        DestroyIcon(hIcon);
        return 0;
}

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

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

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

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

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

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

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

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

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

			ReadTPCCRegistrySettings( &Reg );
			ReadRegistrySettings();

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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


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


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

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

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

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

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

		Sleep(100);

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

		EndDialog(hwnd, rc);
		return;
}

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

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

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

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

                        RegCloseKey(hKey);
        }

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

                        RegCloseKey(hKey);
        }
}

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

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

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

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

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

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

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

                        RegFlushKey(hKey);
                        RegCloseKey(hKey);
        }

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

                        RegFlushKey(hKey);
                        RegCloseKey(hKey);
        }

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

                        RegFlushKey(hKey);
                        RegCloseKey(hKey);
        }

        return;
}

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

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

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

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

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

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

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

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

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

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

	CloseHandle(hFile);

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

	return 1;
}

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


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

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

		RegCloseKey(hKey);
	}

	return bRc;
}

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

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

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

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

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

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

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

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

	CloseServiceHandle(schService);
	return TRUE;
```

```
ServiceNotRunning:

        CloseServiceHandle(schService);
        return FALSE;
}

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

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

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

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

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

        CloseServiceHandle(schService);
        return TRUE;

StartWWWebErr:
        CloseServiceHandle(schService);
        return FALSE;
}

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

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

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

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

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

        CloseServiceHandle(schService);
        return TRUE;

StopWWWebErr:
        CloseServiceHandle(schService);
        return FALSE;
}

static void UpdateDialog(HWND hDlg)
{
        MSG msg;

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

install.dsp

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

# TARGTYPE "Win32 (x86) Application" 0x0101

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

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

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

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

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

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

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

!ENDIF

# Begin Target

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

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

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

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

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

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

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

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

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

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

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

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

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

```
# Begin Source File

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

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

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

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

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

install.h

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

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

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

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

install.rc

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

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

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

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

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

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

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

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

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

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

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


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

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

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

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

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


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

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

2 TEXTINCLUDE DISCARDABLE
```

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

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

#endif    // APSTUDIO_INVOKED


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

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

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

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

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

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

#endif    // !_MAC


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

IDR_LICENSE1            LICENSE DISCARDABLE     "license.txt"

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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


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

install_com.cpp

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

#define _WIN32_WINNT 0x0500

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

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

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

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

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


          CoInitializeEx(NULL, COINIT_MULTITHREADED);

          HRESULT hr = CoCreateInstance(CLSID_COMAdminCatalog,

          NULL,

          CLSCTX_INPROC_SERVER,

          IID_ICOMAdminCatalog,

          (void**) &pCOMAdminCat);

          if (!SUCCEEDED(hr)) goto Error;

          bstrTemp = "Applications";

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

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

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

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

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

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

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

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

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

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

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

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

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

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

	pCatalogObjectApp->Release();
	pCatalogObjectApp = NULL;

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

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


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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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


pCatalogObjectMethod->Release();
                                                pCatalogObjectMethod = NULL;

                                                lCountMethod--;
                                        }

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

                                        pCatalogObjectItf->Release();
                                        pCatalogObjectItf = NULL;

                                        lCountItf--;

                        }


                        pCatalogObjectCo->Release();
                        pCatalogObjectCo = NULL;

                        lCountCo--;
                }


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

                pCatalogCollectionApp->Release();
                pCatalogCollectionApp = NULL;

                pCatalogCollectionCo->Release();
                pCatalogCollectionCo = NULL;

                pCatalogCollectionItf->Release();
                pCatalogCollectionItf = NULL;

                pCatalogCollectionMethod->Release();
                pCatalogCollectionMethod = NULL;


Error:
                CoUninitialize();

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

                NULL,

                hr,

                MAKELANGID(LANG_NEUTRAL, SUBLANG_DEFAULT),

                (LPTSTR) &lpBuf,

                0,

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

Install.Resource.h

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

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

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

isapi_dll.dsp

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

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

CFG=isapi_dll - Win32 IceCAP
!MESSAGE This is not a valid makefile. To build this project using NMAKE,
!MESSAGE use the Export Makefile command and run
!MESSAGE
!MESSAGE NMAKE /f "isapi_dll.mak".
!MESSAGE
!MESSAGE You can specify a configuration when running NMAKE
!MESSAGE by defining the macro CFG on the command line. For example:
!MESSAGE
!MESSAGE NMAKE /f "isapi_dll.mak" CFG="isapi_dll - Win32 IceCAP"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "isapi_dll - Win32 Release" (based on "Win32 (x86)
Dynamic-Link Library")
!MESSAGE "isapi_dll - Win32 Debug" (based on "Win32 (x86) Dynamic-Link
Library")
!MESSAGE "isapi_dll - Win32 IceCAP" (based on "Win32 (x86)
Dynamic-Link Library")
!MESSAGE
# Begin Project
# PROP AllowPerConfigDependencies 0
# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CPP=cl.exe
MTL=midl.exe
RSC=rc.exe

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

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

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

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

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

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

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

!ENDIF

# Begin Target

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Isapi_dll_Resource.h

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

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

license.txt

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methods.h

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

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

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

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

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

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

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


static void WriteMessageToEventLog(LPTSTR lpszMsg);


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

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

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

        HRESULT __stdcall CallSetComplete();

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

// IObjectConstruct
        STDMETHODIMP Construct(IDispatch * pUnk);

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

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

};

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

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

};


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

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

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


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

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

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


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

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

// ITPCC
```

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


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

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

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

Null-txns.sql

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

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

create proc tpcc_delivery           @w_id          int,

                                    @o_carrier_id   smallint
as

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

declare @delaytime varchar(30)

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

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


GO

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


as
```

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

declare @delaytime varchar(30)

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

   --  process orderlines

                select @commit_flag = 1, @li_no = 0

   while (@li_no < @o_ol_cnt)
                begin

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


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

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

                end

--  return order data to client

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

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

end

GO

create proc tpcc_orderstatus        @w_id               int,
                                    @d_id               tinyint,

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

as

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

declare @delaytime varchar(30)


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

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

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

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

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

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


GO

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

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

declare @delaytime varchar(30)

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

   select @screen_data = ''


--  get customer info and update balances

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

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

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

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



--  return data to client

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


GO

create proc tpcc_stocklevel     @w_id                   int,
```

```
                                        @d_id           tinyint,
                                        @threshhold     smallint
as

declare @delaytime varchar(30)

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

   select 49

GO

create proc tpcc_version
as
declare @version        char(8)

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

GO

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

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

GO
```

ReadRegistry.cpp

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


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

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

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

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

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

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

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

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

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

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

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

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

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

		RegCloseKey(hKey);

		return FALSE;
}
```

ReadRegistry.h

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

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

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

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

BOOL ReadTPCCRegistrySettings( TPCCREGISTRYDATA *pReg );
```

restore.vbs

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

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

runsqlcfg.vbs

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

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

rtetime.h

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

//FILE: RTETIME.H

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

setup.vbs

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

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

ErrorFlag = 1

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

wScript.Echo "Syntax Error."

wScript.Echo "SQL Server Error 170."

wScript.Echo "Check CREATEDB.SQL."

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

ErrorFlag = 1

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

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

wScript.Echo "SQL Server Error 1801."

wScript.Echo "Check CREATEDB.SQL."

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

ErrorFlag = 1

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

wScript.Echo "CREATE DATABASE failed."

wScript.Echo "SQL Server Error 1802."

wScript.Echo "Check CREATEDB.SQL."

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

ErrorFlag = 1

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

wScript.Echo "CREATE INDEX failed."

wScript.Echo "SQL Server Error 1921."

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

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

wScript.Echo "BACKUP DATABASE is terminating abnormally."

wScript.Echo "SQL Server Error 3013."

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

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

wScript.Echo "Cannot open backup device."

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

wScript.Echo "SQL Server Error 3201."

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

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

wScript.Echo "Device Activation Error."

wScript.Echo "SQL Server Error 5105."

wScript.Echo "Check CREATEDB.SQL."

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

ErrorFlag = 1

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

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

wScript.Echo "SQL Server Error 5170."

wScript.Echo "Check CREATEDB.SQL."

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

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

```
wScript.Quit
                                                        End If
                                                        Flag = 0

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

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

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

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

wScript.Echo ""

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

wScript.Quit
                                                        End If
                                                        Flag = 0

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

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

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

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

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

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

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

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

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

spinlock.h

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

#ifndef _INC_Spinlock

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


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

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

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

                    public:
                              // Public functions.

                              Spinlock( void );

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

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


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

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

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

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

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


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

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

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

	#define _INC_Spinlock

#endif
```

tm_com_dll.dsp

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

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

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

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

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

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

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

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

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

!ENDIF

# Begin Target

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

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

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

tpcc.cpp

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

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

#include <sqltypes.h>

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

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

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

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

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

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


#define     LEN_ERR_STRING  256

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

char
szMyComputerName[MAX_COMPUTERNAME_LENGTH+1];

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

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

static      CRITICAL_SECTION                    TermCriticalSection;

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

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

// For deferred Delivery txns:

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

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

// configuration settings from registry
TPCCREGISTRYDATA                Reg;


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

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

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

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

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

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

GetComputerName(szMyComputerName, &dwSize);

szMyComputerName[dwSize] = 0;
                                }


DisableThreadLibraryCalls((HMODULE)hModule);

InitializeCriticalSection(&TermCriticalSection);

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

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

                                TermInit();

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

                                        // get function pointer
to wrapper for class constructor

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

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

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

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

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

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

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

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

                                                // get
function pointer to wrapper for class constructor

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

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

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

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

                                                // get
function pointer to wrapper for class constructor

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

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

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

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

                                        InitJulianTime(NULL);

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

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

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

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

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

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

throw new CWEBCLNT_ERR( ERR_DELIVERY_THREAD_FAILED );
                                                }
                                        }

                                        break;

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

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

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

                                                delete [] pDeliHandles;
                                                delete [] pDelBuff;


                                                CloseHandle(
hWorkerSemaphore );
                                                CloseHandle(
hDoneEvent );

DeleteCriticalSection(&DelBuffCriticalSection);
                                        }


DeleteCriticalSection(&TermCriticalSection);

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

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

                                        Sleep(500);
                                        break;

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

                return TRUE;
}


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

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

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

        return TRUE;
}

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

BOOL WINAPI TerminateExtension( DWORD dwFlags )
{
```

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

	TermDeleteAll();
	return TRUE;
}


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

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

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


#ifdef ICECAP
	StartCAP();
#endif

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

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

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

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


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

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

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

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

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

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

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

#ifdef ICECAP
        StopCAP();
#endif


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

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

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


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

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

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

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

      (VOID) DeregisterEventSource(hEventSource);
   }
}


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

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

        DELIVERY_TRANSACTION                    delivery;
        PDELIVERY_DATA
pDeliveryData;
        TXN_RECORD_TPCC_DELIV_DEF       txnDeliRec;

        DWORD                                                   index;
        HANDLE                                                  handles[2];

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

```
	assert(txnDelilog != NULL);

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

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

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

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

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

LeaveCriticalSection(&DelBuffCriticalSection);

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

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

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

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

				if (txnDelilog != NULL)

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

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

txnDelilog->WriteToLog(&txnDeliRec);

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

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

ErrorExit:
	delete pTxn;
	_endthread();
}

/* FUNCTION: PostDeliveryInfo
 *
```

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

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

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

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

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

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

	return bError;
}

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

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

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

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

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

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

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

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

/* FUNCTION: void WelcomeForm
 *
 */

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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


        iNewTerm = TermAdd();

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

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

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

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

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

        EnterCriticalSection(&TermCriticalSection);

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

        LeaveCriticalSection(&TermCriticalSection);

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

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

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

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

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

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

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

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

	},
		{	0,
							""

							}
	};

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

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

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

}

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

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

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

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

	*pQueryString = ptr;
	return;

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

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

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

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

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

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

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

	*pQueryString = ptr;
	return atoi(ptr0);

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

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

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

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

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

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

	LeaveCriticalSection(&TermCriticalSection);
}

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

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

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

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

	LeaveCriticalSection(&TermCriticalSection);
}

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

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

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

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

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

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

		LeaveCriticalSection(&TermCriticalSection);
		return iNewTerm;
}

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

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

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

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

			LeaveCriticalSection(&TermCriticalSection);
		}
}
```

```
/* FUNCTION: MakeErrorForm
 */

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

/* FUNCTION: MakeMainMenuForm
 */

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

```
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                        "</FORM></BODY></HTML>"
                        , MAIN_MENU_FORM, iTermId, iSyncId);
}

/* FUNCTION: MakeStockLevelForm
 *
 * PURPOSE:             This function constructs the Stock Level HTML page.
 *
 * COMMENTS:    The internal client buffer is created when the terminal id
is assigned and should not
 *                                                      be freed except when the client
terminal id is no longer needed.
 */

void MakeStockLevelForm(int iTermId, STOCK_LEVEL_DATA
*pStockLevelData, BOOL bInput, char *szForm)
{
        int             c;

        c = wsprintf(szForm,
                        "<HTML><HEAD><TITLE>TPC-C Stock
Level</TITLE></HEAD><FORM ACTION=\"tpcc.dll\"
METHOD=\"GET\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"0\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                        "<PRE><font face=\"Courier\">
Stock-Level<BR>"
                        "Warehouse: %4.4d   District: %2.2d<BR> <BR>",
                        STOCK_LEVEL_FORM, iTermId,
Term.pClientData[iTermId].iSyncId,
                        Term.pClientData[iTermId].w_id,
Term.pClientData[iTermId].d_id);

        if ( bInput )
        {
                strcpy(szForm+c,
                                "Stock Level Threshold: <INPUT
NAME=\"TT*\" SIZE=2><BR> <BR>"
                                "low stock:    </font><BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR> <BR>"
                                " <BR> <BR> <BR> <BR> <BR> <BR>
<BR></PRE><HR>"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Process\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Menu\">"
                                "</FORM></HTML>" );
        }
        else
        {
                wsprintf(szForm+c,
                                "Stock Level Threshold: %2.2d<BR> <BR>"
                                "low stock: %3.3d</font> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR>"
                                " <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> <BR></PRE><HR>"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..NewOrder..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                                "</FORM></HTML>"
                                , pStockLevelData->threshold,
pStockLevelData->low_stock);
        }
}

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

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

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

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

        c = wsprintf(szForm,
                "<HTML><HEAD><TITLE>TPC-C New
Order</TITLE></HEAD><BODY>"
                "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
                "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                "<PRE><font face=\"Courier\">
New Order<BR>"
                , bValid ? 0 : ERR_BAD_ITEM_ID,
NEW_ORDER_FORM, iTermId, Term.pClientData[iTermId].iSyncId);

        if ( bInput )
        {
                c += wsprintf(szForm+c, "Warehouse: %4.4d   ",
Term.pClientData[iTermId].w_id );

                strcpy( szForm+c,
```

```
                                "District: <INPUT NAME=\"DID*\"
SIZE=1>                 Date:<BR>"
                                "Customer:  <INPUT NAME=\"CID*\"
SIZE=4>   Name:                 Credit:     %Disc:<BR>"
                                "Order Number:          Number of Lines:
 W_tax:       D_tax:<BR> <BR>"
                                " Supp_W  Item_Id  Item Name              Qty
Stock  B/G  Price    Amount<BR>"
                                " <INPUT NAME=\"SP00*\" SIZE=4>
<INPUT NAME=\"IID00*\" SIZE=6>                  <INPUT
NAME=\"Qty00*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP01*\" SIZE=4>
<INPUT NAME=\"IID01*\" SIZE=6>                  <INPUT
NAME=\"Qty01*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP02*\" SIZE=4>
<INPUT NAME=\"IID02*\" SIZE=6>                  <INPUT
NAME=\"Qty02*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP03*\" SIZE=4>
<INPUT NAME=\"IID03*\" SIZE=6>                  <INPUT
NAME=\"Qty03*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP04*\" SIZE=4>
<INPUT NAME=\"IID04*\" SIZE=6>                  <INPUT
NAME=\"Qty04*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP05*\" SIZE=4>
<INPUT NAME=\"IID05*\" SIZE=6>                  <INPUT
NAME=\"Qty05*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP06*\" SIZE=4>
<INPUT NAME=\"IID06*\" SIZE=6>                  <INPUT
NAME=\"Qty06*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP07*\" SIZE=4>
<INPUT NAME=\"IID07*\" SIZE=6>                  <INPUT
NAME=\"Qty07*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP08*\" SIZE=4>
<INPUT NAME=\"IID08*\" SIZE=6>                  <INPUT
NAME=\"Qty08*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP09*\" SIZE=4>
<INPUT NAME=\"IID09*\" SIZE=6>                  <INPUT
NAME=\"Qty09*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP10*\" SIZE=4>
<INPUT NAME=\"IID10*\" SIZE=6>                  <INPUT
NAME=\"Qty10*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP11*\" SIZE=4>
<INPUT NAME=\"IID11*\" SIZE=6>                  <INPUT
NAME=\"Qty11*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP12*\" SIZE=4>
<INPUT NAME=\"IID12*\" SIZE=6>                  <INPUT
NAME=\"Qty12*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP13*\" SIZE=4>
<INPUT NAME=\"IID13*\" SIZE=6>                  <INPUT
NAME=\"Qty13*\" SIZE=1><BR>"
                                " <INPUT NAME=\"SP14*\" SIZE=4>
<INPUT NAME=\"IID14*\" SIZE=6>                  <INPUT
NAME=\"Qty14*\" SIZE=1><BR>"
                                "Execution Status:
Total:<BR>"
                                "</font></PRE><HR>"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Process\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Menu\">"
                                "</FORM></HTML>"
                                );
        }
        else
        {
                c += wsprintf(szForm+c, "Warehouse: %4.4d   District:
%2.2d                   Date: ",
                                pNewOrderData->w_id,
                                pNewOrderData->d_id);

                if ( bValid )
                {
                        c += wsprintf(szForm+c,
"%2.2d-%2.2d-%4.4d %2.2d:%2.2d:%2.2d",
                                pNewOrderData->o_entry_d.day,

pNewOrderData->o_entry_d.month,
                                pNewOrderData->o_entry_d.year,
                                pNewOrderData->o_entry_d.hour,

pNewOrderData->o_entry_d.minute,

pNewOrderData->o_entry_d.second);
                }

                c += wsprintf(szForm+c, "<BR>Customer:  %4.4d
Name: %-16s   Credit: %-2s   ",
                                pNewOrderData->c_id,
pNewOrderData->c_last, pNewOrderData->c_credit);

                if ( bValid )
                {
                        c += sprintf(szForm+c,
                                                                "%%Disc:
%5.2f          <BR>"
                                                                "Order
Number: %8.8d  Number of Lines: %2.2d       W_tax: %5.2f   D_tax: %5.2f
<BR> <BR>"
                                                                " Supp_W
Item_Id  Item Name              Qty  Stock  B/G  Price    Amount<BR>",

100.0*pNewOrderData->c_discount,
                                pNewOrderData->o_id,
                                pNewOrderData->o_ol_cnt,
                                100.0 * pNewOrderData->w_tax,
                                100.0 * pNewOrderData->d_tax);

                        for(i=0; i<pNewOrderData->o_ol_cnt; i++)
                        {
                                c += sprintf(szForm+c, "  %4.4d
%6.6d   %-24s  %2.2d    %3.3d    %1.1s   $%6.2f  $%7.2f  <BR>",

pNewOrderData->OL[i].ol_supply_w_id,

pNewOrderData->OL[i].ol_i_id,

pNewOrderData->OL[i].ol_i_name,

pNewOrderData->OL[i].ol_quantity,

pNewOrderData->OL[i].ol_stock,

pNewOrderData->OL[i].ol_brand_generic,

pNewOrderData->OL[i].ol_i_price,

pNewOrderData->OL[i].ol_amount );
                        }
                }
                else
                {
                        c += wsprintf(szForm+c,
                                "%Disc:<BR>"
                                "Order Number: %8.8d  Number
of Lines:          W_tax:       D_tax:<BR> <BR>"
```

```
                                        " Supp_W  Item_Id  Item Name
        Qty  Stock  B/G  Price    Amount<BR>"
                                        , pNewOrderData->o_id);

                                i = 0;
                        }

                        strncpy( szForm+c, szBR, (15-i)*5 );
                        c += (15-i)*5;

                        if ( bValid )
                                c += sprintf(szForm+c, "Execution Status:
Transaction commited.                   Total:  $%8.2f  ",
                                        pNewOrderData->total_amount);
                        else
                                c += wsprintf(szForm+c, "Execution Status:
Item number is not valid.               Total:");

                        strcpy(szForm+c,
                                " <BR></font></PRE><HR>"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..NewOrder..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                                "</FORM></HTML>"
                                );
                }
}

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

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

        c = wsprintf(szForm,
                "<HTML><HEAD><TITLE>TPC-C
Payment</TITLE></HEAD><BODY>"
                "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
                "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                "<PRE><font face=\"Courier\">
Payment<BR>"
                "Date: "
                        , PAYMENT_FORM, iTermId,
Term.pClientData[iTermId].iSyncId);

        if ( !bInput )
        {
                c += wsprintf(szForm+c, "%2.2d-%2.2d-%4.4d
%2.2d:%2.2d:%2.2d",
                        pPaymentData->h_date.day,
                        pPaymentData->h_date.month,
                        pPaymentData->h_date.year,
                        pPaymentData->h_date.hour,
                        pPaymentData->h_date.minute,
                        pPaymentData->h_date.second);
        }

        if ( bInput )
        {
                c += wsprintf(szForm+c,
                        "<BR> <BR>Warehouse: %4.4d"
                        "                District: <INPUT
NAME=\"DID*\" SIZE=1><BR> <BR> <BR> <BR> <BR>"
                        "Customer: <INPUT NAME=\"CID*\"
SIZE=4>"
                        "Cust-Warehouse: <INPUT NAME=\"CWI*\"
SIZE=4>  "
                        "Cust-District: <INPUT NAME=\"CDI*\"
SIZE=1><BR>"
                        "Name:                <INPUT
NAME=\"CLT*\" SIZE=16>          Since:<BR>"
                        "                                       Credit:<BR>"
                        "                                       Disc:<BR>"
                        "                                       Phone:<BR>
<BR>"
                        "Amount Paid:         $<INPUT
NAME=\"HAM*\" SIZE=7>     New Cust-Balance:<BR>"
                        "Credit Limit:<BR> <BR>Cust-Data: <BR>
<BR> <BR> <BR> <BR></font></PRE><HR>"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Process\"><INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Menu\">"
                        "</BODY></FORM></HTML>"
                        , Term.pClientData[iTermId].w_id);
        }
        else
        {
                c += wsprintf(szForm+c,
                        "<BR> <BR>Warehouse: %4.4d
  District: %2.2d<BR>"
                        "%-20s                  %-20s<BR>"
                        "%-20s                  %-20s<BR>"
                        "%-20s %-2s %5.5s-%4.4s       %-20s %-2s
%5.5s-%4.4s<BR> <BR>"
                        "Customer: %4.4d  Cust-Warehouse: %4.4d
Cust-District: %2.2d<BR>"
                        "Name:   %-16s %-2s %-16s     Since:
%2.2d-%2.2d-%4.4d<BR>"
                        "       %-20s                   Credit: %-2s<BR>"

                        , Term.pClientData[iTermId].w_id,
pPaymentData->d_id
                        , pPaymentData->w_street_1,
pPaymentData->d_street_1
                        , pPaymentData->w_street_2,
pPaymentData->d_street_2
                        , pPaymentData->w_city,
pPaymentData->w_state, pPaymentData->w_zip, pPaymentData->w_zip+5
                        , pPaymentData->d_city,
pPaymentData->d_state, pPaymentData->d_zip, pPaymentData->d_zip+5
```

```
                                        , pPaymentData->c_id,
pPaymentData->c_w_id,                   pPaymentData->c_d_id
                                        , pPaymentData->c_first,
pPaymentData->c_middle, pPaymentData->c_last
                                        , pPaymentData->c_since.day,
pPaymentData->c_since.month,  pPaymentData->c_since.year
                                        , pPaymentData->c_street_1,
pPaymentData->c_credit
                                        );

        c += sprintf(szForm+c,
                                        "       %-20s                   %%Disc:
%5.2f<BR>",
                                        pPaymentData->c_street_2,
100.0*pPaymentData->c_discount);

                        c += wsprintf(szForm+c,
                                        "       %-20s %-2s %5.5s-%4.4s       Phone:
%6.6s-%3.3s-%3.3s-%4.4s<BR> <BR>",
                                        pPaymentData->c_city,
pPaymentData->c_state, pPaymentData->c_zip, pPaymentData->c_zip+5,
                                        pPaymentData->c_phone,
pPaymentData->c_phone+6, pPaymentData->c_phone+9,
pPaymentData->c_phone+12 );

                        c += sprintf(szForm+c,
                                        "Amount Paid:          $%7.2f      New
Cust-Balance: $%14.2f<BR>"
                                        "Credit Limit:   $%13.2f<BR> <BR>"
                                        , pPaymentData->h_amount,
pPaymentData->c_balance
                                        , pPaymentData->c_credit_lim
                                        );

                        if ( pPaymentData->c_credit[0] == 'B' &&
pPaymentData->c_credit[1] == 'C' )
                                        c += wsprintf(szForm+c,
                                                        "Cust-Data:
%-50.50s<BR>          %-50.50s<BR>          %-50.50s<BR>
%-50.50s<BR>",
                                                        pPaymentData->c_data,
pPaymentData->c_data+50, pPaymentData->c_data+100,
pPaymentData->c_data+150 );
                        else
                                        strcpy(szForm+c, "Cust-Data: <BR> <BR>
<BR> <BR>");

                        strcat(szForm,          " <BR></font></PRE><HR>"
                                                                        "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..NewOrder..\">"
                                                                        "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Payment..\">"
                                                                        "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Delivery..\">"
                                                                        "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Order-Status..\">"
                                                                        "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Stock-Level..\">"
                                                                        "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Exit..\">"

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

}

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

void MakeOrderStatusForm(int iTermId, ORDER_STATUS_DATA
*pOrderStatusData, BOOL bInput, char *szForm)
{
                int                     i, c;
                static char szBR[] = " <BR> <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR>";

                c = wsprintf(szForm,
                                "<HTML><HEAD><TITLE>TPC-C
Order-Status</TITLE></HEAD><BODY>"
                                "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
                                "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"0\">"
                                "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                                "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                                "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                                "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                                "<PRE><font face=\"Courier\">
Order-Status<BR>"
                                "Warehouse: %4.4d   ",
                                ORDER_STATUS_FORM, iTermId,
Term.pClientData[iTermId].iSyncId, Term.pClientData[iTermId].w_id);

                if ( bInput )
                {
                                strcpy(szForm+c,
                                                "District: <INPUT NAME=\"DID*\"
SIZE=1><BR>"
                                                "Customer: <INPUT NAME=\"CID*\"
SIZE=4>   Name:                 <INPUT NAME=\"CLT*\" SIZE=23><BR>"
                                                "Cust-Balance:<BR> <BR>"
                                                "Order-Number:          Entry-Date:
   Carrier-Number:<BR>"
                                                "Supply-W     Item-Id    Qty     Amount
Delivery-Date<BR> <BR> <BR> <BR> <BR>"
                                                " <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR></font></PRE>"
                                                "<HR><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Process\"><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Menu\">"
                                                "</BODY></FORM></HTML>" );
                }
                else
                {
                                c += wsprintf(szForm+c,
                                                "District: %2.2d<BR>"
                                                "Customer: %4.4d   Name: %-16s %-2s
%-16s<BR>",
                                                pOrderStatusData->d_id,
pOrderStatusData->c_id,
                                                pOrderStatusData->c_first,
pOrderStatusData->c_middle, pOrderStatusData->c_last);

                                c += sprintf(szForm+c, "Cust-Balance: $%9.2f<BR>
<BR>",
                                                pOrderStatusData->c_balance);

                                c += wsprintf(szForm+c,
```

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                                "Order-Number: %8.8d   Entry-Date:
%2.2d-%2.2d-%4.4d %2.2d:%2.2d:%2.2d   Carrier-Number: %2.2d<BR>"
                                "Supply-W     Item-Id    Qty     Amount
Delivery-Date<BR>",
                                pOrderStatusData->o_id,
                                pOrderStatusData->o_entry_d.day,
                                pOrderStatusData->o_entry_d.month,
                                pOrderStatusData->o_entry_d.year,
                                pOrderStatusData->o_entry_d.hour,
                                pOrderStatusData->o_entry_d.minute,
                                pOrderStatusData->o_entry_d.second,
                                pOrderStatusData->o_carrier_id);

                        for(i=0; i< pOrderStatusData->o_ol_cnt; i++)
                        {
                                c += sprintf(szForm+c, "  %4.4d       %6.6d
%2.2d     $%8.2f     %2.2d-%2.2d-%4.4d<BR>",

pOrderStatusData->OL[i].ol_supply_w_id,
                                                pOrderStatusData->OL[i].ol_i_id,

pOrderStatusData->OL[i].ol_quantity,

pOrderStatusData->OL[i].ol_amount,

pOrderStatusData->OL[i].ol_delivery_d.day,

pOrderStatusData->OL[i].ol_delivery_d.month,

pOrderStatusData->OL[i].ol_delivery_d.year);
                        }

                        strncpy( szForm+c, szBR, (15-i)*5 );
                        c += (15-i)*5;

                        strcpy(szForm+c,
                                "</font></PRE><HR><INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..NewOrder..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                                "</BODY></FORM></HTML>" );
        }
}

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

void MakeDeliveryForm(int iTermId, DELIVERY_DATA *pDeliveryData,
BOOL bInput, char *szForm)
{
        int             c;

        c = wsprintf(szForm,
                        "<HTML><HEAD><TITLE>TPC-C
Delivery</TITLE></HEAD><BODY>"
                        "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                        "<PRE><font face=\"Courier\">
Delivery<BR>"
                        "Warehouse: %4.4d<BR> <BR>",
                        (!bInput && (pDeliveryData->exec_status_code !=
eOK)) ? ERR_TYPE_DELIVERY_POST : 0,
                        DELIVERY_FORM, iTermId,
Term.pClientData[iTermId].iSyncId, Term.pClientData[iTermId].w_id);

        if ( bInput )
        {
                strcpy( szForm+c,
                        "Carrier Number: <INPUT NAME=\"OCD*\"
SIZE=1><BR> <BR>"
                        "Execution Status: <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR>"
                        " <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> </font></PRE><HR>"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Process\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Menu\">"
                        "</BODY></FORM></HTML>" );
        }
        else
        {
                wsprintf( szForm+c,
                        "Carrier Number: %2.2d<BR> <BR>"
                        "Execution Status: %s <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR>"
                        " <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> </font></PRE>"
                        "<HR><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..NewOrder..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                        "</BODY></FORM></HTML>"

                        , pDeliveryData->o_carrier_id,
                        (pDeliveryData->exec_status_code == eOK) ?
"Delivery has been queued." : "Delivery Post Failed     "
                        );
        }
}

/* FUNCTION: ProcessNewOrderForm
 *
 * PURPOSE:         This function gets and validates the input data from the
new order form
```

```
 *                              filling in the required input variables. it then
calls the SQLNewOrder
 *                              transaction, constructs the output form and
writes it back to client
 *                              browser.
 */

void ProcessNewOrderForm(EXTENSION_CONTROL_BLOCK  *pECB, int
iTermId, char *szBuffer)
{
        PNEW_ORDER_DATA                 pNewOrder;

        pNewOrder =
Term.pClientData[iTermId].pTxn->BuffAddr_NewOrder();

        ZeroMemory(pNewOrder, sizeof(NEW_ORDER_DATA));
        pNewOrder->w_id = Term.pClientData[iTermId].w_id;
        GetNewOrderData(pECB->lpszQueryString, pNewOrder);

        Term.pClientData[iTermId].pTxn->NewOrder();

        pNewOrder =
Term.pClientData[iTermId].pTxn->BuffAddr_NewOrder();
        MakeNewOrderForm(iTermId, pNewOrder, OUTPUT_FORM,
szBuffer );
}

/* FUNCTION: void ProcessPaymentForm
 *
 * PURPOSE:         This function gets and validates the input data from the
payment form
 *                              filling in the required input variables. It then
calls the SQLPayment
 *                              transaction, constructs the output form and
writes it back to client
 *                              browser.
 *
 * ARGUMENTS:     EXTENSION_CONTROL_BLOCK          *pECB
passed in structure pointer from inetsrv.
 *                                      int
                iTermId     client browser terminal id
 *
 */

void ProcessPaymentForm(EXTENSION_CONTROL_BLOCK *pECB, int
iTermId, char *szBuffer)
{
        PPAYMENT_DATA pPayment;

        pPayment =
Term.pClientData[iTermId].pTxn->BuffAddr_Payment();
        ZeroMemory(pPayment, sizeof(PAYMENT_DATA));
        pPayment->w_id = Term.pClientData[iTermId].w_id;
        GetPaymentData(pECB->lpszQueryString, pPayment);

        Term.pClientData[iTermId].pTxn->Payment();

        pPayment =
Term.pClientData[iTermId].pTxn->BuffAddr_Payment();
        MakePaymentForm(iTermId, pPayment, OUTPUT_FORM,
szBuffer);
}

/* FUNCTION: ProcessOrderStatusForm
 *
 * PURPOSE:         This function gets and validates the input data from the
Order Status
 *                              form filling in the required input variables. It
then calls the
 *                              SQLOrderStatus transaction, constructs the
output form and writes it
 *                              back to client browser.
 *
 * ARGUMENTS:     EXTENSION_CONTROL_BLOCK          *pECB
passed in structure pointer from inetsrv.
 *                                      int
                iTermId     client browser terminal id
 *
 */

void ProcessOrderStatusForm(EXTENSION_CONTROL_BLOCK *pECB, int
iTermId, char *szBuffer)
{
        PORDER_STATUS_DATA      pOrderStatus;

        pOrderStatus =
Term.pClientData[iTermId].pTxn->BuffAddr_OrderStatus();
        ZeroMemory(pOrderStatus, sizeof(ORDER_STATUS_DATA));
        pOrderStatus->w_id = Term.pClientData[iTermId].w_id;
        GetOrderStatusData(pECB->lpszQueryString, pOrderStatus);

        Term.pClientData[iTermId].pTxn->OrderStatus();

        pOrderStatus =
Term.pClientData[iTermId].pTxn->BuffAddr_OrderStatus();
        MakeOrderStatusForm(iTermId, pOrderStatus, OUTPUT_FORM,
szBuffer);
}

/* FUNCTION: ProcessDeliveryForm
 *
 * PURPOSE:         This function gets and validates the input data from the
delivery form
 *                              filling in the required input variables. It then
calls the PostDeliveryInfo
 *                              Api, The client is then informed that the
transaction has been posted.
 *
 * ARGUMENTS:     EXTENSION_CONTROL_BLOCK          *pECB
passed in structure pointer from inetsrv.
 *                                      int
                iTermId     client browser terminal id
 *
 */

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

        PDELIVERY_DATA pDelivery;

        pDelivery =
Term.pClientData[iTermId].pTxn->BuffAddr_Delivery();
        ZeroMemory(pDelivery, sizeof(DELIVERY_DATA));
        pDelivery->w_id = Term.pClientData[iTermId].w_id;

        pDelivery->o_carrier_id             = GetIntKeyValue(&ptr, "OCD*",
ERR_DELIVERY_MISSING_OCD_KEY,
ERR_DELIVERY_CARRIER_INVALID);
        if ( pDelivery->o_carrier_id > 10 || pDelivery->o_carrier_id < 1 )
                throw new CWEBCLNT_ERR(
ERR_DELIVERY_CARRIER_ID_RANGE );

        if (dwNumDeliveryThreads)
```

```
	{
		//post delivery info
		if ( PostDeliveryInfo(pDelivery->w_id,
pDelivery->o_carrier_id) )
			pDelivery->exec_status_code =
eDeliveryFailed;
		else
			pDelivery->exec_status_code = eOK;
	}
	else // delivery is done synchronously if no delivery threads
configured
		Term.pClientData[iTermId].pTxn->Delivery();

	pDelivery =
Term.pClientData[iTermId].pTxn->BuffAddr_Delivery();
	MakeDeliveryForm(iTermId, pDelivery, OUTPUT_FORM,
szBuffer);
}

/* FUNCTION: ProcessStockLevelForm
 *
 * PURPOSE:		This function gets and validates the input data from the
Stock Level
 *			form filling in the required input variables. It
then calls the
 *			SQLStockLevel transaction, constructs the
output form and writes it
 *			back to client browser.
 *
 * ARGUMENTS:	EXTENSION_CONTROL_BLOCK		*pECB
passed in structure pointer from inetsrv.
 *				int
		iTermId	client browser terminal id
 *
 */

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

	PSTOCK_LEVEL_DATA	pStockLevel;

	pStockLevel =
Term.pClientData[iTermId].pTxn->BuffAddr_StockLevel();
	ZeroMemory( pStockLevel, sizeof(STOCK_LEVEL_DATA) );

	pStockLevel->w_id = Term.pClientData[iTermId].w_id;
	pStockLevel->d_id = Term.pClientData[iTermId].d_id;

	pStockLevel->threshold = GetIntKeyValue(&ptr, "TT*",
ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY,
ERR_STOCKLEVEL_THRESHOLD_INVALID);
	if ( pStockLevel->threshold >= 100 || pStockLevel->threshold < 0 )
		throw new CWEBCLNT_ERR(
ERR_STOCKLEVEL_THRESHOLD_RANGE );

	Term.pClientData[iTermId].pTxn->StockLevel();

	pStockLevel =
Term.pClientData[iTermId].pTxn->BuffAddr_StockLevel();
	MakeStockLevelForm(iTermId, pStockLevel, OUTPUT_FORM,
szBuffer);
}

/* FUNCTION: GetNewOrderData
 *
 * PURPOSE:		This function extracts and validates the new order form
data from an http command string.
 *
 * ARGUMENTS:	LPSTR				lpszQueryString
client browser http command string
 *				NEW_ORDER_DATA
*pNewOrderData		pointer to new order data structure
 *
 */

void GetNewOrderData(LPSTR lpszQueryString, NEW_ORDER_DATA
*pNewOrderData)
{
	char	szTmp[26];
	int		i;
	short	items;
	int		ol_i_id, ol_quantity;
	char	*ptr = lpszQueryString;

	static char szSP[MAX_OL_NEW_ORDER_ITEMS][6] =
		{ "SP00*", "SP01*", "SP02*", "SP03*", "SP04*",
		  "SP05*", "SP06*", "SP07*", "SP08*", "SP09*",
		  "SP10*", "SP11*", "SP12*", "SP13*", "SP14*" };
	static char szIID[MAX_OL_NEW_ORDER_ITEMS][7] =
		{ "IID00*", "IID01*", "IID02*", "IID03*", "IID04*",
		  "IID05*", "IID06*", "IID07*", "IID08*", "IID09*",
		  "IID10*", "IID11*", "IID12*", "IID13*", "IID14*" };
	static char szQty[MAX_OL_NEW_ORDER_ITEMS][7] =
		{ "Qty00*", "Qty01*", "Qty02*", "Qty03*", "Qty04*",
		  "Qty05*", "Qty06*", "Qty07*", "Qty08*", "Qty09*",
		  "Qty10*", "Qty11*", "Qty12*", "Qty13*", "Qty14*" };

	pNewOrderData->d_id = GetIntKeyValue(&ptr, "DID*",
ERR_NEWORDER_FORM_MISSING_DID,
ERR_NEWORDER_DISTRICT_INVALID);
	pNewOrderData->c_id = GetIntKeyValue(&ptr, "CID*",
ERR_NEWORDER_CUSTOMER_KEY,
ERR_NEWORDER_CUSTOMER_INVALID);

	for(i=0, items=0; i<MAX_OL_NEW_ORDER_ITEMS; i++)
	{
		GetKeyValue(&ptr, szSP[i], szTmp, sizeof(szTmp),
ERR_NEWORDER_MISSING_SUPPW_KEY);
		if ( szTmp[0] )
		{
			if ( !IsNumeric(szTmp) )
				throw new CWEBCLNT_ERR(
ERR_NEWORDER_SUPPW_INVALID );
			pNewOrderData->OL[items].ol_supply_w_id
= (short)atoi(szTmp);

			ol_i_id = pNewOrderData->OL[items].ol_i_id
=
				GetIntKeyValue(&ptr, szIID[i],
ERR_NEWORDER_MISSING_IID_KEY,
ERR_NEWORDER_ITEMID_INVALID);
			if ( ol_i_id > 999999 || ol_i_id < 1 )
				throw new CWEBCLNT_ERR(
ERR_NEWORDER_ITEMID_RANGE );

			ol_quantity =
pNewOrderData->OL[items].ol_quantity =
				GetIntKeyValue(&ptr, szQty[i],
ERR_NEWORDER_MISSING_QTY_KEY,
ERR_NEWORDER_QTY_INVALID);
			if ( ol_quantity > 99 || ol_quantity < 1 )
				throw new CWEBCLNT_ERR(
ERR_NEWORDER_QTY_RANGE );
```

```
                                items++;
                        }
                        else
                        {       // nothing entered for supply warehouse, so
item id and qty must also be blank
                                GetKeyValue(&ptr, szIID[i], szTmp,
sizeof(szTmp), ERR_NEWORDER_MISSING_IID_KEY);
                                if ( szTmp[0] )
                                        throw new CWEBCLNT_ERR(
ERR_NEWORDER_ITEMID_WITHOUT_SUPPW );

                                GetKeyValue(&ptr, szQty[i], szTmp,
sizeof(szTmp), ERR_NEWORDER_MISSING_QTY_KEY);
                                if ( szTmp[0] )
                                        throw new CWEBCLNT_ERR(
ERR_NEWORDER_QTY_WITHOUT_SUPPW );
                        }
                }
                if ( items == 0 )
                        throw new CWEBCLNT_ERR(
ERR_NEWORDER_NOITEMS_ENTERED );

                pNewOrderData->o_ol_cnt = items;
}

/* FUNCTION: GetPaymentData
 *
 * PURPOSE:             This function extracts and validates the payment form
data from an http command string.
 *
 * ARGUMENTS:   LPSTR                           lpszQueryString
client browser http command string
 *                                              PAYMENT_DATA
*pPaymentData                   pointer to payment data structure
 */

void GetPaymentData(LPSTR lpszQueryString, PAYMENT_DATA
*pPaymentData)
{
        char    szTmp[26];
        char    *ptr = lpszQueryString;
        BOOL    bCustIdBlank;

        pPaymentData->d_id = GetIntKeyValue(&ptr, "DID*",
ERR_PAYMENT_MISSING_DID_KEY,
ERR_PAYMENT_DISTRICT_INVALID);

        GetKeyValue(&ptr, "CID*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_CID_KEY);
        if ( szTmp[0] == 0 )
        {
                bCustIdBlank = TRUE;
                pPaymentData->c_id = 0;
        }
        else
        {       // parse customer id and verify that last name was NOT
entered
                bCustIdBlank = FALSE;
                if ( !IsNumeric(szTmp) )
                        throw new CWEBCLNT_ERR(
ERR_PAYMENT_CUSTOMER_INVALID );
                pPaymentData->c_id = atoi(szTmp);
        }

        pPaymentData->c_w_id = GetIntKeyValue(&ptr, "CWI*",
ERR_PAYMENT_MISSING_CWI_KEY,
ERR_PAYMENT_CWI_INVALID);

        pPaymentData->c_d_id = GetIntKeyValue(&ptr, "CDI*",
ERR_PAYMENT_MISSING_CDI_KEY, ERR_PAYMENT_CDI_INVALID);

        if ( bCustIdBlank )
        {       // customer id is blank, so last name must be entered
                GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_CLT_KEY);
                if ( szTmp[0] == 0 )
                        throw new CWEBCLNT_ERR(
ERR_PAYMENT_MISSING_CID_CLT );

                _strupr( szTmp );
                if ( strlen(pPaymentData->c_last) > LAST_NAME_LEN
)
                        throw new CWEBCLNT_ERR(
ERR_PAYMENT_LAST_NAME_TO_LONG );
                strcpy(pPaymentData->c_last, szTmp);
        }
        else
        {       // parse customer id and verify that last name was NOT
entered
                GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_CLT_KEY);
                if ( szTmp[0] != 0 )
                        throw new CWEBCLNT_ERR(
ERR_PAYMENT_CID_AND_CLT );
        }

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

/* FUNCTION: GetOrderStatusData
 *
 * PURPOSE:             This function extracts and validates the payment form
data from an http command string.
 *
 */
void GetOrderStatusData(LPSTR lpszQueryString, ORDER_STATUS_DATA
*pOrderStatusData)
{
        char    szTmp[26];
        char    *ptr = lpszQueryString;

        pOrderStatusData->d_id = GetIntKeyValue(&ptr, "DID*",
ERR_ORDERSTATUS_MISSING_DID_KEY,
ERR_ORDERSTATUS_DID_INVALID);

        GetKeyValue(&ptr, "CID*", szTmp, sizeof(szTmp),
ERR_ORDERSTATUS_MISSING_CID_KEY);
        if ( szTmp[0] == 0 )
        {       // customer id is blank, so last name must be entered
                pOrderStatusData->c_id = 0;
                GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_ORDERSTATUS_MISSING_CLT_KEY);
                if ( szTmp[0] == 0 )
                        throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_MISSING_CID_CLT );

                _strupr( szTmp );
```

```
                        if ( strlen(pOrderStatusData->c_last) >
LAST_NAME_LEN )
                                throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_CLT_RANGE );
                        strcpy(pOrderStatusData->c_last, szTmp);
                }
                else
                {       // parse customer id and verify that last name was NOT
entered
                        if ( !IsNumeric(szTmp) )
                                throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_CID_INVALID );
                        pOrderStatusData->c_id = atoi(szTmp);
                        GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_ORDERSTATUS_MISSING_CLT_KEY);
                        if ( szTmp[0] != 0 )
                                throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_CID_AND_CLT );
                }

}

/* FUNCTION: BOOL IsNumeric(char *ptr)
 *
 * PURPOSE:             This function determines if a string is numeric. It fails if
any characters other
 *                              than numeric and null terminator are present.
 *
 * ARGUMENTS:   char                            *ptr            pointer to
string to check.
 *
 * RETURNS:                     BOOL    FALSE   if string is not all
numeric
 *                                                              TRUE    if
string contains only numeric characters i.e. '0' - '9'
 */

BOOL IsNumeric(char *ptr)
{
        if ( *ptr == 0 )
                return FALSE;

        while( *ptr && isdigit(*ptr) )
                ptr++;
        return ( !*ptr );
}

/* FUNCTION: BOOL IsDecimal(char *ptr)
 *
 * PURPOSE:             This function determines if a string is a non-negative
decimal value.
 *          It fails if any characters other than a series of numbers followed by
 *                              a decimal point, another series of numbers,
and a null terminator are present.
 *
 * ARGUMENTS:   char                            *ptr            pointer to
string to check.
 *
 * RETURNS:                     BOOL    FALSE   if string is not a valid
non-negative decimal value
 *                                                              TRUE    if
string is OK
 */

BOOL IsDecimal(char *ptr)
{
        char *dotptr;
        BOOL  bValid;

        if ( *ptr == 0 )
                return FALSE;

        // find decimal point
        dotptr = strchr( ptr, '.' );
        if (dotptr == NULL)
                // no decimal point, so just check for numeric
                return IsNumeric(ptr);
        *dotptr = 0;  // temporarily replace decimal with a terminator

        if ( *ptr != 0 )
                bValid = IsNumeric(ptr);
        // string starts with decimal point
        else if (*(dotptr+1) == 0)
                return FALSE;  // nothing but a decimal point is bad
        else
                bValid = TRUE;

        if (*(dotptr+1) != 0)
                // check text after decimal point
                bValid &= IsNumeric(dotptr+1);

        *dotptr = '.';  // replace decimal point
        return bValid;
}
```

tpcc.cpp

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

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

#include <sqltypes.h>

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

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

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

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

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

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

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


#define     LEN_ERR_STRING  256

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

char
szMyComputerName[MAX_COMPUTERNAME_LENGTH+1];

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

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

static      CRITICAL_SECTION                    TermCriticalSection;

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

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

// For deferred Delivery txns:

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

HANDLE                                              hWorkerSemaphore    =
INVALID_HANDLE_VALUE;

HANDLE                                              hDoneEvent
        = INVALID_HANDLE_VALUE;
HANDLE                                              *pDeliHandles
= NULL;

// configuration settings from registry
TPCCREGISTRYDATA                    Reg;


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

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

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

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

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

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

GetComputerName(szMyComputerName, &dwSize);

szMyComputerName[dwSize] = 0;
```

```
                                        }

DisableThreadLibraryCalls((HMODULE)hModule);

InitializeCriticalSection(&TermCriticalSection);

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

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

                                        TermInit();

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

                                                // get function pointer
to wrapper for class constructor

pCTPCC_TUXEDO_new = (TYPE_CTPCC_TUXEDO*)
GetProcAddress(hLibInstanceTm,"CTPCC_TUXEDO_new");
                                                if
(pCTPCC_TUXEDO_new == NULL)
                                                        throw new
CWEBCLNT_ERR( ERR_GETPROCADDR_FAILED, szDllName,
GetLastError() );
                                        }
                                        else if (Reg.eTxnMon ==
ENCINA)
                                        {
                                                strcpy( szDllName,
Reg.szPath );
                                                strcat( szDllName,
"tpcc_encina.dll");
                                                hLibInstanceTm =
LoadLibrary( szDllName );
                                                if (hLibInstanceTm ==
NULL)
                                                        throw new
CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );
                                                // get function pointer
to wrapper for class constructor

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

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

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

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

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

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

                                                        // get
function pointer to wrapper for class constructor

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

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

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

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

                                                        // get
function pointer to wrapper for class constructor

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

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

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

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

                                                InitJulianTime(NULL);

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

Reg.szPath, Time.wYear % 100, Time.wMonth, Time.wDay, Time.wHour,
Time.wMinute );
                                                txnDelilog = new
CTxnLog(szLogFile, TXN_LOG_WRITE);

                                                //write event into txn
log for START

txnDelilog->WriteCtrlRecToLog(TXN_EVENT_START,
szMyComputerName, sizeof(szMyComputerName));

                                                // allocate structures for
delivery buffers and thread mgmt
                                                pDeliHandles = new
HANDLE[dwNumDeliveryThreads];
                                                pDelBuff = new
DELIVERY_TRANSACTION[dwDelBuffSize];
                                                // launch
DeliveryWorkerThread to perform actual delivery txns
                                                for(i=0;
i<dwNumDeliveryThreads; i++)
                                                {

pDeliHandles[i] = (HANDLE) _beginthread( DeliveryWorkerThread, 0, NULL
);
                                                        if
(pDeliHandles[i] == INVALID_HANDLE_VALUE)

throw new CWEBCLNT_ERR( ERR_DELIVERY_THREAD_FAILED );
                                                }
                                        }

                                        break;

                                case DLL_PROCESS_DETACH:
                                        if (dwNumDeliveryThreads)
                                        {
                                                if (txnDelilog !=
NULL)
                                                {
                                                        //write event
into txn log for STOP

txnDelilog->WriteCtrlRecToLog(TXN_EVENT_STOP, szMyComputerName,
sizeof(szMyComputerName));

                                                        // This will
do a clean shutdown of the delivery log file
                                                        CTxnLog
*txnDelilogLocal = txnDelilog;
                                                        txnDelilog=
NULL;
                                                        delete
txnDelilogLocal;
                                                }

                                                delete [] pDeliHandles;
                                                delete [] pDelBuff;

                                                CloseHandle(
hWorkerSemaphore );
                                                CloseHandle(
hDoneEvent );

DeleteCriticalSection(&DelBuffCriticalSection);
                                        }


DeleteCriticalSection(&TermCriticalSection);

                                        if (hLibInstanceTm != NULL)
                                                FreeLibrary(
hLibInstanceTm );
                                        hLibInstanceTm = NULL;


                                        if (hLibInstanceDb != NULL)
                                                FreeLibrary(
hLibInstanceDb );
                                        hLibInstanceDb = NULL;

                                        Sleep(500);
                                        break;

                                default:
                                        /* nothing */;
                        }
                }
                catch (CBaseErr *e)
                {
                        WriteMessageToEventLog( e->ErrorText() );
```

```
                delete e;
                TerminateExtension(0);
                return FALSE;
        }
        catch (...)
        {
                WriteMessageToEventLog(TEXT("Unhandled
exception.  DLL could not load."));
                TerminateExtension(0);
                return FALSE;
        }

        return TRUE;
}


/* FUNCTION: GetExtensionVersion
 *
 * PURPOSE:         This function is called by the inet service when the DLL
is first loaded.
 *
 * ARGUMENTS:     HSE_VERSION_INFO          *pVer       passed in
structure in which to place expected version number.
 *
 * RETURNS:                TRUE       inet service expected return value.
 */

BOOL WINAPI GetExtensionVersion(HSE_VERSION_INFO *pVer)
{
        pVer->dwExtensionVersion =
MAKELONG(HSE_VERSION_MINOR, HSE_VERSION_MAJOR);
        lstrcpyn(pVer->lpszExtensionDesc, "TPC-C Server.",
HSE_MAX_EXT_DLL_NAME_LEN);

        // TODO: why do we need this here instead of in the DLL attach?
        if (Reg.eTxnMon == ENCINA)
                pCTPCC_ENCINA_post_init();

        return TRUE;
}

/* FUNCTION: TerminateExtension
 *
 * PURPOSE:         This function is called by the inet service when the DLL
is about to be unloaded.
 *                         Release all resources in anticipation of being
unloaded.
 *
 * RETURNS:                TRUE       inet service expected return value.
 */

BOOL WINAPI TerminateExtension( DWORD dwFlags )
{
        if (pDeliHandles)
        {
                SetEvent( hDoneEvent );
                for(DWORD i=0; i<dwNumDeliveryThreads; i++)
                        WaitForSingleObject( pDeliHandles[i],
INFINITE );
        }

        TermDeleteAll();
        return TRUE;
}


/* FUNCTION: HttpExtensionProc
 *
 * PURPOSE:         This function is the main entry point for the TPCC DLL.
The internet service
 *                         calls this function passing in the http string.
 *
 * ARGUMENTS:     EXTENSION_CONTROL_BLOCK          *pECB
structure pointer to passed in internet
 *
                                service information.
 *
 * RETURNS:                DWORD   HSE_STATUS_SUCCESS
                        connection can be dropped if error
 *
HSE_STATUS_SUCCESS_AND_KEEP_CONN        keep connect valid
comment sent
 *
 * COMMENTS:       None
 *
 */

DWORD WINAPI HttpExtensionProc(EXTENSION_CONTROL_BLOCK
*pECB)
{
        int                             iCmd, FormId, TermId, iSyncId;
        char                    szBuffer[4096];

        int                             lpbSize;
        static char  szHeader[] = "200 Ok";
        DWORD                   dwSize = 6;                     // initial
value is strlen(szHeader)
        char                    szHeader1[4096];


#ifdef ICECAP
        StartCAP();
#endif

        try
        {
                //process http query
                ProcessQueryString(pECB, &iCmd, &FormId, &TermId,
&iSyncId);

                if (TermId != 0)
                {
                        if ( TermId < 0 || TermId >=
Term.iNumEntries || Term.pClientData[TermId].iNextFree != -1 )
                        {
                                // debugging...
                                char szTmp[128];
                                wsprintf( szTmp, "Invalid term ID;
TermId = %d", TermId );
                                WriteMessageToEventLog( szTmp
);

                                throw new CWEBCLNT_ERR(
ERR_INVALID_TERMID );
                        }

                        //must have a valid syncid here since termid is
valid
                        if (iSyncId !=
Term.pClientData[TermId].iSyncId)
                                throw new CWEBCLNT_ERR(
ERR_INVALID_SYNC_CONNECTION );

                        //set use time
                        Term.pClientData[TermId].iTickCount =
GetTickCount();
```

```
		}


		switch(iCmd)
		{
		case 0:
			WelcomeForm(pECB, szBuffer);
			break;
		case 1:
			switch( FormId )
			{
				case WELCOME_FORM:
				case MAIN_MENU_FORM:
					break;
				case NEW_ORDER_FORM:
ProcessNewOrderForm(pECB, TermId, szBuffer);
					break;
				case PAYMENT_FORM:
ProcessPaymentForm(pECB, TermId, szBuffer);
					break;
				case DELIVERY_FORM:
ProcessDeliveryForm(pECB, TermId, szBuffer);
					break;
				case ORDER_STATUS_FORM:
ProcessOrderStatusForm(pECB, TermId, szBuffer);
					break;
				case STOCK_LEVEL_FORM:
ProcessStockLevelForm(pECB, TermId, szBuffer);
					break;
			}
			break;
		case 2:
			// new-order selected from menu; display
new-order input form
			MakeNewOrderForm(TermId, NULL,
INPUT_FORM, szBuffer);
			break;
		case 3:
			// payment selected from menu; display
payment input form
			MakePaymentForm(TermId, NULL,
INPUT_FORM, szBuffer);
			break;
		case 4:
			// delivery selected from menu; display
delivery input form
			MakeDeliveryForm(TermId, NULL,
INPUT_FORM, szBuffer);
			break;
		case 5:
			// order-status selected from menu; display
order-status input form
			MakeOrderStatusForm(TermId, NULL,
INPUT_FORM, szBuffer);
			break;
		case 6:
			// stock-level selected from menu; display
stock-level input form
			MakeStockLevelForm(TermId, NULL,
INPUT_FORM, szBuffer);
			break;
		case 7:
			// ExitCmd
			TermDelete(TermId);
			WelcomeForm(pECB, szBuffer);
			break;
		case 8:
			SubmitCmd(pECB, szBuffer);
			break;
		case 9:
			// menu
			MakeMainMenuForm(TermId,
Term.pClientData[TermId].iSyncId, szBuffer);
			break;
		case 10:
			// CMD=Clear
			// resets all connections; should only be used
when no other connections are active
			TermDeleteAll();
			TermInit();
			WelcomeForm(pECB, szBuffer);
			break;
		case 11:	// CMD=Stats
			StatsCmd(pECB, szBuffer);
			break;
		}
	}
	catch (CBaseErr *e)
	{
		ErrorForm( pECB, e->ErrorType(), e->ErrorNum(),
TermId, iSyncId, e->ErrorText(), szBuffer );
		delete e;
	}
	catch (...)
	{
		ErrorForm( pECB, ERR_TYPE_WEBDLL, 0, TermId,
iSyncId, "Error: Unhandled exception in Web Client.", szBuffer );
	}

#ifdef ICECAP
	StopCAP();
#endif


	lpbSize = strlen(szBuffer);
	wsprintf(szHeader1,
			"Content-Type: text/html\r\n"
			"Content-Length: %d\r\n"
			"Connection: Keep-Alive\r\n\r\n" , lpbSize);
	strcat( szHeader1, szBuffer );

	(*pECB->ServerSupportFunction)(pECB->ConnID,
HSE_REQ_SEND_RESPONSE_HEADER, szHeader, (LPDWORD) &dwSize,
(LPDWORD)szHeader1);

	//finish up and keep connection
	pECB->dwHttpStatusCode = 200;
	return HSE_STATUS_SUCCESS_AND_KEEP_CONN;
}


void WriteMessageToEventLog(LPTSTR lpszMsg)
{
  TCHAR   szMsg[256];
  HANDLE  hEventSource;
  LPTSTR  lpszStrings[2];

  // Use event logging to log the error.
  //
  hEventSource = RegisterEventSource(NULL, TEXT("TPCC.DLL"));
```

```
    _stprintf(szMsg, TEXT("Error in TPCC.DLL: "));
    lpszStrings[0] = szMsg;
    lpszStrings[1] = lpszMsg;

    if (hEventSource != NULL)
            {
        ReportEvent(hEventSource, // handle of event source
            EVENTLOG_ERROR_TYPE,  // event type
            0,                    // event category
            0,                    // event ID
            NULL,                 // current user's SID
            2,                    // strings in lpszStrings
            0,                    // no bytes of raw data
            (LPCTSTR *)lpszStrings,    // array of error strings
            NULL);                // no raw data

        (VOID) DeregisterEventSource(hEventSource);
    }
}


/* FUNCTION: DeliveryWorkerThread
 *
 * PURPOSE:          This function processes deferred delivery txns.  There are typically several
 *                   threads running this routine.  The number of threads is determined by an entry
 *                   read from the registry.  The thread waits for work by waiting on semaphore.
 *                   When a delivery txn is posted, the semaphore is released.  After processing
 *                   the delivery txn, information is logged to record the txn status and execution
 *                   time.
 */

/*static*/ void DeliveryWorkerThread(void *ptr)
{
        CTPCC_BASE                      *pTxn = NULL;

        DELIVERY_TRANSACTION                    delivery;
        PDELIVERY_DATA                          pDeliveryData;
        TXN_RECORD_TPCC_DELIV_DEF       txnDeliRec;

        DWORD                                           index;
        HANDLE                                          handles[2];

        SYSTEMTIME                      trans_end;              //delivery transaction finished time
        SYSTEMTIME                      trans_start;//delivery transaction start time

        assert(txnDelilog != NULL);

        try
        {
                if (Reg.eDB_Protocol == ODBC)
                        pTxn = pCTPCC_ODBC_new( Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, szMyComputerName, Reg.szDbName );
                else if (Reg.eDB_Protocol == DBLIB)
                        pTxn = pCTPCC_DBLIB_new( Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, szMyComputerName, Reg.szDbName );
                pDeliveryData = pTxn->BuffAddr_Delivery();
        }
        catch (CBaseErr *e)
        {
                char szTmp[1024];
                wsprintf( szTmp, "Error in Delivery Txn thread.  Could not connect to database.  "
                                "%s.  Server=%s, User=%s, Password=%s, Database=%s",
                                e->ErrorText(), Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, Reg.szDbName );
                WriteMessageToEventLog( szTmp );
                delete e;
                goto ErrorExit;
        }
        catch (...)
        {
                WriteMessageToEventLog(TEXT("Unhandled exception caught in DeliveryWorkerThread."));
                goto ErrorExit;
        }

        while (TRUE)
        {
                try
                {
                        //while delivery thread running, i.e. user has not requested termination
                        while (TRUE)
                        {
                                // need to wait for multiple objects: program exit or worker semaphore;
                                handles[0] = hDoneEvent;
                                handles[1] = hWorkerSemaphore;
                                index = WaitForMultipleObjects( 2, &handles[0], FALSE, INFINITE );
                                if (index == WAIT_OBJECT_0)
                                        goto ErrorExit;


                                ZeroMemory(&txnDeliRec, sizeof(txnDeliRec));
                                txnDeliRec.TxnType = TXN_REC_TYPE_TPCC_DELIV_DEF;

                                // make a local copy of current entry from delivery buffer and increment buffer index

                                EnterCriticalSection(&DelBuffCriticalSection);
                                delivery = *(pDelBuff+dwDelBuffBusyIndex);
                                dwDelBuffFreeCount++;
                                dwDelBuffBusyIndex++;
                                if (dwDelBuffBusyIndex == dwDelBuffSize)        // wrap-around if at end of buffer
                                        dwDelBuffBusyIndex = 0;


                                LeaveCriticalSection(&DelBuffCriticalSection);

                                pDeliveryData->w_id = delivery.w_id;
                                pDeliveryData->o_carrier_id = delivery.o_carrier_id;

                                txnDeliRec.w_id = pDeliveryData->w_id;
                                txnDeliRec.o_carrier_id = pDeliveryData->o_carrier_id;
                                txnDeliRec.TxnStartT0 = Get64BitTime(&delivery.queue);
```

```
                                        GetLocalTime( &trans_start );
                                        pTxn->Delivery();
                                        GetLocalTime( &trans_end );

                                        //log txn
                                        txnDeliRec.TxnStatus =
ERR_SUCCESS;
                                        for (int i=0; i<10; i++)
                                                txnDeliRec.o_id[i] =
pDeliveryData->o_id[i];
                                        txnDeliRec.DeltaT4 =
(int)(Get64BitTime(&trans_end) - txnDeliRec.TxnStartT0);
                                        txnDeliRec.DeltaTxnExec =
(int)(Get64BitTime(&trans_end) - Get64BitTime(&trans_start));

                                        if (txnDelilog != NULL)

txnDelilog->WriteToLog(&txnDeliRec);
                                }
                        }
                        catch (CBaseErr *e)
                        {
                                char szTmp[1024];
                                wsprintf( szTmp, "Error in Delivery Txn
thread.  %s", e->ErrorText() );
                                WriteMessageToEventLog( szTmp );

                                // log the error txn
                                txnDeliRec.TxnStatus = e->ErrorType();
                                if (txnDelilog != NULL)

txnDelilog->WriteToLog(&txnDeliRec);

                                delete e;
                        }
                        catch (...)
                        {
                                // unhandled exception; shouldn't happen; not
much we can do...

WriteMessageToEventLog(TEXT("Unhandled exception caught in
DeliveryWorkerThread."));
                        }
                }

ErrorExit:
                delete pTxn;
                _endthread();
}

/* FUNCTION: PostDeliveryInfo
 *
 * PURPOSE:             This function enters the delivery txn into the deferred
delivery buffer.
 *
 * RETURNS:                     BOOL    FALSE   delivery information
posted successfully
 *                                                              TRUE
error cannot post delivery info
 */

BOOL PostDeliveryInfo(short w_id, short o_carrier_id)
{
                BOOL bError;

                EnterCriticalSection(&DelBuffCriticalSection);
                if (dwDelBuffFreeCount > 0)
                {
                        bError = FALSE;
                        (pDelBuff+dwDelBuffFreeIndex)->w_id
= w_id;
                        (pDelBuff+dwDelBuffFreeIndex)->o_carrier_id          =
o_carrier_id;

GetLocalTime(&(pDelBuff+dwDelBuffFreeIndex)->queue);

                        dwDelBuffFreeCount--;
                        dwDelBuffFreeIndex++;
                        if (dwDelBuffFreeIndex == dwDelBuffSize)
                                dwDelBuffFreeIndex = 0;                 //
wrap-around if at end of buffer
                }
                else
                        // No free buffers.  Return an error, which indicates that
the delivery buffer is full.
                        // Most likely, the number of delivery worker threads
needs to be increased to keep up
                        // with the txn rate.
                        bError = TRUE;
                LeaveCriticalSection(&DelBuffCriticalSection);

                if (!bError)
                        // increment worker semaphore to wake up a worker
thread
                        ReleaseSemaphore( hWorkerSemaphore, 1, NULL );

                return bError;
}

/* FUNCTION: ProcessQueryString
 *
 * PURPOSE:             This function extracts the relevent information out of the
http command passed in from
 *                                      the browser.
 *
 * COMMENTS:        If this is the initial connection i.e. client is at welcome
screen then
 *                                              there will not be a terminal id or
current form id.  If this is the case
 *                                              then the pTermid and pFormid
return values are undefined.
 */

void ProcessQueryString(EXTENSION_CONTROL_BLOCK *pECB, int
*pCmd, int *pFormId, int *pTermId, int *pSyncId)
{
                char *ptr = pECB->lpszQueryString;
                char szBuffer[25];
                int i;

                //allowable client command strings i.e. CMD=command
                static char *szCmds[] =
                {
                        "Process", "..NewOrder..", "..Payment..", "..Delivery..",
"..Order-Status..", "..Stock-Level..",
                        "..Exit..", "Submit", "Menu", "Clear", "Stats", ""
                };

                *pCmd      = 0;                 // default is the login screen
                *pTermId = 0;

                // if no params (i.e., empty query string), then return login screen
                if (strlen(pECB->lpszQueryString) == 0)
                        return;
```

```
	// parse FORMID, TERMID, and SYNCID
	*pFormId = GetIntKeyValue(&ptr, "FORMID", NO_ERR,
NO_ERR);
	*pTermId = GetIntKeyValue(&ptr, "TERMID", NO_ERR,
NO_ERR);
	*pSyncId = GetIntKeyValue(&ptr, "SYNCID", NO_ERR,
NO_ERR);

	// parse CMD
	GetKeyValue(&ptr, "CMD", szBuffer, sizeof(szBuffer),
ERR_COMMAND_UNDEFINED);

	// see which command it matches
	for(i=0; ; i++)
	{
		if (szCmds[i][0] == 0)
			// no more; no match; return error
			throw new CWEBCLNT_ERR(
ERR_COMMAND_UNDEFINED );
		if ( !strcmp(szCmds[i], szBuffer) )
		{
			*pCmd = i+1;
			break;
		}
	}
}

/* FUNCTION: void WelcomeForm
 *
 */

void WelcomeForm(EXTENSION_CONTROL_BLOCK *pECB, char
*szBuffer)
{
	char szTmp[1024];

	//welcome to tpc-c html form buffer, this is first form client sees.
	strcpy( szBuffer,	"<HTML><HEAD><TITLE>TPC-C Web
Client</TITLE></HEAD><BODY>"

"<B><BIG>Microsoft TPC-C Web Client (ver 4.20)</BIG></B> <BR> <BR>"
"<font
face=\"Courier New\"><PRE>"
"Compiled:
"__DATE__", "__TIME__" <BR>"
"Source:
"__FILE__" ("__TIMESTAMP__") <BR>"

"</PRE></font>"
"<FORM
ACTION=\"tpcc.dll\" METHOD=\"GET\">"
"<INPUT
TYPE=\"hidden\" NAME=\"STATUSID\" VALUE=\"0\">"
"<INPUT
TYPE=\"hidden\" NAME=\"ERROR\" VALUE=\"0\">"
"<INPUT
TYPE=\"hidden\" NAME=\"FORMID\" VALUE=\"1\">"
"<INPUT
TYPE=\"hidden\" NAME=\"TERMID\" VALUE=\"0\">"
"<INPUT
TYPE=\"hidden\" NAME=\"SYNCID\" VALUE=\"0\">"
"<INPUT
TYPE=\"hidden\" NAME=\"VERSION\" VALUE=\""
WEBCLIENT_VERSION "\">"
	);

	sprintf( szTmp,	"Configuration Settings: <BR><font
face=\"Courier New\" color=\"blue\"><PRE>"
"Txn Monitor	=
<B>%s</B><BR>"
"Database protocol
= <B>%s</B><BR>"
"Max Connections
= <B>%d</B><BR>"
"# of Delivery Threads
= <B>%d</B><BR>"
"Max Pending
Deliveries = <B>%d</B><BR>"
	, szTxnMonNames[Reg.eTxnMon],
szDBNames[Reg.eDB_Protocol],
	Reg.dwMaxConnections,
dwNumDeliveryThreads, dwDelBuffSize );
	strcat( szBuffer, szTmp);

	if (Reg.eTxnMon == COM)
	{
		sprintf( szTmp,	"COM Single Pool	=
<B>%s</B><BR>",
			Reg.bCOM_SinglePool ? "YES" : "NO" );
		strcat( szBuffer, szTmp);
	}
	strcat( szBuffer, "</PRE></font>");

	if (Reg.eTxnMon == None)
		// connection options may be specified when not using a
txn monitor
		sprintf( szTmp,	"Please enter your database options
for this connection:<BR>"
"<font
face=\"Courier New\" color=\"blue\"><PRE>"
"DB Server
 = <INPUT NAME=\"db_server\" SIZE=20 VALUE=\"%s\"><BR>"
"DB User
ID  = <INPUT NAME=\"db_user\" SIZE=20 VALUE=\"%s\"><BR>"
"DB
Password  = <INPUT NAME=\"db_passwd\" SIZE=20
VALUE=\"%s\"><BR>"
"DB Name
 = <INPUT NAME=\"db_name\" SIZE=20 VALUE=\"%s\"><BR>"

"</PRE></font>"
		, Reg.szDbServer, Reg.szDbUser,
Reg.szDbPassword, Reg.szDbName );
	else
		// if using a txn monitor, connection options are
determined from registry; can't
		// set per user.  show options fyi
		sprintf( szTmp,	"Database options which will be
used by the transaction monitor:<BR>"
"<font
face=\"Courier New\" color=\"blue\"><PRE>"
"DB Server
	= <B>%s</B><BR>"
"DB User
ID	= <B>%s</B><BR>"
"DB
Password	= <B>%s</B><BR>"
"DB Name
	= <B>%s</B><BR>"

"</PRE></font>"
		, Reg.szDbServer, Reg.szDbUser,
Reg.szDbPassword, Reg.szDbName );
	strcat( szBuffer, szTmp);
```

```
		sprintf( szTmp,		"Please enter your Warehouse and District for
this session:<BR>"
								"<font face=\"Courier
New\" color=\"blue\"><PRE>" );
		strcat( szBuffer, szTmp);
		strcat( szBuffer,		"Warehouse ID = <INPUT NAME=\"w_id\"
SIZE=4><BR>"
								"District ID
= <INPUT NAME=\"d_id\" SIZE=2><BR>"

"</PRE></font><HR>"
								"<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Submit\">"

"</FORM></BODY></HTML>");
}

/* FUNCTION: SubmitCmd
 *
 * PURPOSE:		This function allocated a new terminal id in the Term
structure array.
 *
 */

void SubmitCmd(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer)
{
		int			iNewTerm;
		char		*ptr = pECB->lpszQueryString;

		char		szVersion[32]		= { 0 };
		char		szServer[32]		= { 0 };
		char		szUser[32]		= "sa";
		char		szPassword[32]		= { 0 };
		char		szDatabase[32]		= "tpcc";

		// validate version field; the version field ensures that the RTE is
synchronized with the web client
		GetKeyValue(&ptr, "VERSION", szVersion, sizeof(szVersion),
ERR_VERSION_MISMATCH);
		if ( strcmp( szVersion, WEBCLIENT_VERSION ) )
			throw new CWEBCLNT_ERR(
ERR_VERSION_MISMATCH );

		if (Reg.eTxnMon == None)
		{
			// parse Server name
			GetKeyValue(&ptr, "db_server", szServer,
sizeof(szServer), ERR_NO_SERVER_SPECIFIED);
			// parse User name
			GetKeyValue(&ptr, "db_user", szUser, sizeof(szUser),
NO_ERR);
			// parse Password
			GetKeyValue(&ptr, "db_passwd", szPassword,
sizeof(szPassword), NO_ERR);
			// parse Database name
			GetKeyValue(&ptr, "db_name", szDatabase,
sizeof(szDatabase), NO_ERR);
		}

		// parse warehouse ID
		int w_id = GetIntKeyValue(&ptr, "w_id",
ERR_HTML_ILL_FORMED, ERR_W_ID_INVALID);
		if ( w_id < 1 )
			throw new CWEBCLNT_ERR( ERR_W_ID_INVALID
);

		// parse district ID
		int d_id = GetIntKeyValue(&ptr, "d_id",
ERR_HTML_ILL_FORMED, ERR_D_ID_INVALID);
		if ( d_id < 1 || d_id > 10 )
			throw new CWEBCLNT_ERR( ERR_D_ID_INVALID
);


		iNewTerm = TermAdd();

		Term.pClientData[iNewTerm].w_id = w_id;
		Term.pClientData[iNewTerm].d_id = d_id;

		try
		{
			if (Reg.eTxnMon == TUXEDO)
				Term.pClientData[iNewTerm].pTxn =
pCTPCC_TUXEDO_new();
			else if (Reg.eTxnMon == ENCINA)
				Term.pClientData[iNewTerm].pTxn =
pCTPCC_ENCINA_new();
			else if (Reg.eTxnMon == COM)
				Term.pClientData[iNewTerm].pTxn =
pCTPCC_COM_new( Reg.bCOM_SinglePool );
			else if (Reg.eDB_Protocol == ODBC)
				Term.pClientData[iNewTerm].pTxn =
pCTPCC_ODBC_new( szServer, szUser, szPassword, szMyComputerName,
szDatabase );
			else if (Reg.eDB_Protocol == DBLIB)
				Term.pClientData[iNewTerm].pTxn =
pCTPCC_DBLIB_new( szServer, szUser, szPassword, szMyComputerName,
szDatabase );
		}
		catch (...)
		{
			TermDelete(iNewTerm);
			throw;			// pass exception upward
		}

		MakeMainMenuForm(iNewTerm,
Term.pClientData[iNewTerm].iSyncId, szBuffer);
}

/* FUNCTION: StatsCmd
 *
 * PURPOSE:		This function returns to the browser the total number of
active terminal ids.
 *				This routine is for development/debugging
purposes.
 *
 */

void StatsCmd(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer)
{
		int i;
		int		iTotal;

		EnterCriticalSection(&TermCriticalSection);

		iTotal = 0;
		for(i=0; i<Term.iNumEntries; i++)
		{
			if (Term.pClientData[i].iNextFree == -1)
				iTotal++;
		}

		LeaveCriticalSection(&TermCriticalSection);

		wsprintf( szBuffer,
```

```
                                "<HTML><HEAD><TITLE>TPC-C Web
Client Stats</TITLE></HEAD>"
                                "<BODY><B><BIG> Total Active
Connections: %d </BIG></B><BR></BODY></HTML>"
                                , iTotal );
}

char *CWEBCLNT_ERR::ErrorText()
{
        static SERRORMSG errorMsgs[] =
        {
                {       ERR_COMMAND_UNDEFINED,
                        "Command undefined."

        },
                {       ERR_D_ID_INVALID,
                        "Invalid District ID Must be 1 to 10."
                                                        },
                {       ERR_DELIVERY_CARRIER_ID_RANGE,
        "Delivery Carrier ID out of range must be 1 - 10."
                },
                {       ERR_DELIVERY_CARRIER_INVALID,
        "Delivery Carrier ID invalid must be numeric 1 - 10."
        },
                {       ERR_DELIVERY_MISSING_OCD_KEY,
        "Delivery missing Carrier ID key \"OCD*\"."
                                        },
                {       ERR_DELIVERY_THREAD_FAILED,
                "Could not start delivery worker thread."
                                        },
                {       ERR_GETPROCADDR_FAILED,
                        "Could not map proc in DLL.  GetProcAddr
error.  DLL="                                   },
                {       ERR_HTML_ILL_FORMED,
                "Required key field is missing from HTML string."
                        },
                {       ERR_INVALID_SYNC_CONNECTION,
        "Invalid Terminal Sync ID."
                                                        },
                {       ERR_INVALID_TERMID,
                        "Invalid Terminal ID."

        },
                {       ERR_LOADDLL_FAILED,
                        "Load of DLL failed.  DLL="

},
                {       ERR_MAX_CONNECTIONS_EXCEEDED,
                "No connections available.  Max Connections is probably
too low."   },
                {       ERR_MISSING_REGISTRY_ENTRIES,
        "Required registry entries are missing.  Rerun INSTALL to correct."
},
                {
ERR_NEWORDER_CUSTOMER_INVALID,
"New Order customer id invalid data type, range = 1 to 3000."
},
                {       ERR_NEWORDER_CUSTOMER_KEY,
                "New Order missing Customer key \"CID*\"."
                                                },
                {       ERR_NEWORDER_DISTRICT_INVALID,
        "New Order District ID Invalid range 1 - 10."
                        },
                {       ERR_NEWORDER_FORM_MISSING_DID,
                "New Order missing District key \"DID*\"."
                                        },
                {       ERR_NEWORDER_ITEMID_INVALID,
        "New Order Item Id is wrong data type, must be numeric."
        },
                {       ERR_NEWORDER_ITEMID_RANGE,
                "New Order Item Id is out of range. Range = 1 to
999999."               },
                {
ERR_NEWORDER_ITEMID_WITHOUT_SUPPW,              "New Order
Item_Id field entered without a corresponding Supp_W."          },
                {       ERR_NEWORDER_MISSING_IID_KEY,
        "New Order missing Item Id key \"IID*\"."
                        },
                {       ERR_NEWORDER_MISSING_QTY_KEY,
                "New Order Missing Qty key \"Qty##*\"."
                                                },
                {
ERR_NEWORDER_MISSING_SUPPW_KEY,
"New Order missing Supp_W key \"SP##*\"."
                        },
                {       ERR_NEWORDER_NOITEMS_ENTERED,
                "New Order No order lines entered."
                                                        },
                {       ERR_NEWORDER_QTY_INVALID,
                "New Order Qty invalid must be numeric range 1 - 99."
                },
                {       ERR_NEWORDER_QTY_RANGE,
                        "New Order Qty is out of range. Range = 1 to
99."                                            },
                {
ERR_NEWORDER_QTY_WITHOUT_SUPPW,
"New Order Qty field entered without a corresponding Supp_W."
},
                {       ERR_NEWORDER_SUPPW_INVALID,
                "New Order Supp_W invalid data type must be numeric."
                        },
                {       ERR_NO_SERVER_SPECIFIED,
                "No Server name specified."

},
                {       ERR_ORDERSTATUS_CID_AND_CLT,
        "Order Status Only Customer ID or Last Name may be entered, not
both."   },
                {       ERR_ORDERSTATUS_CID_INVALID,
        "Order Status Customer ID invalid, range must be numeric 1 -
3000."   },
                {       ERR_ORDERSTATUS_CLT_RANGE,
                "Order Status Customer last name longer than 16
characters."                    },
                {       ERR_ORDERSTATUS_DID_INVALID,
        "Order Status District invalid, value must be numeric 1 - 10."
},
                {
ERR_ORDERSTATUS_MISSING_CID_CLT,                "Order
Status Either Customer ID or Last Name must be entered."
},
                {
ERR_ORDERSTATUS_MISSING_CID_KEY,                "Order
Status missing Customer key \"CID*\"."
        },
                {
ERR_ORDERSTATUS_MISSING_CLT_KEY,                "Order
Status missing Customer Last Name key \"CLT*\"."
},
                {
ERR_ORDERSTATUS_MISSING_DID_KEY,                "Order
Status missing District key \"DID*\"."
        },
```

```
                        {       ERR_PAYMENT_CDI_INVALID,
                        "Payment Customer district invalid must be numeric."
                        },
                        {       ERR_PAYMENT_CID_AND_CLT,
                        "Payment Only Customer ID or Last Name may be
entered, not both."     },
                        {       ERR_PAYMENT_CUSTOMER_INVALID,
                        "Payment Customer data type invalid, must be numeric."
                                },
                        {       ERR_PAYMENT_CWI_INVALID,
                        "Payment Customer Warehouse invalid, must be
numeric."                               },
                        {       ERR_PAYMENT_DISTRICT_INVALID,
                "Payment District ID is invalid, must be 1 - 10."
                        },
                        {       ERR_PAYMENT_HAM_INVALID,
                        "Payment Amount invalid data type must be numeric."
                                },
                        {       ERR_PAYMENT_HAM_RANGE,
                                "Payment Amount out of range, 0 - 9999.99."
                                                        },
                        {
ERR_PAYMENT_LAST_NAME_TO_LONG,
"Payment Customer last name longer than 16 characters."
                },
                        {       ERR_PAYMENT_MISSING_CDI_KEY,
                "Payment missing Customer district key \"CDI*\"."
                        },
                        {       ERR_PAYMENT_MISSING_CID_CLT,
                "Payment Either Customer ID or Last Name must be entered."
                },
                        {       ERR_PAYMENT_MISSING_CID_KEY,
                "Payment missing Customer Key \"CID*\"."
                                },
                        {       ERR_PAYMENT_MISSING_CLT_KEY,
                "Payment missing Customer Last Name key \"CLT*\"."
                        },
                        {       ERR_PAYMENT_MISSING_CWI_KEY,
                "Payment missing Customer Warehouse key \"CWI*\"."
                        },
                        {       ERR_PAYMENT_MISSING_DID_KEY,
                "Payment missing District Key \"DID*\"."
                                },
                        {       ERR_PAYMENT_MISSING_HAM_KEY,
                "Payment missing Amount key \"HAM*\"."
                                        },
                        {
ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY,           "Stock
Level; missing Threshold key \"TT*\"."
                },
                        {
ERR_STOCKLEVEL_THRESHOLD_INVALID,               "Stock
Level; Threshold value must be in the range = 1 - 99."          },
                        {
ERR_STOCKLEVEL_THRESHOLD_RANGE,
"Stock Level Threshold out of range, range must be 1 - 99."
},
                        {       ERR_VERSION_MISMATCH,
                        "Invalid version field.  RTE and Web Client are probably
out of sync." },
                        {       ERR_W_ID_INVALID,
                                "Invalid Warehouse ID."

                },
                        {       0,
                                                        ""

                                                                }
        };

        char szTmp[256];
        int i = 0;
        while (TRUE)
        {
                if (errorMsgs[i].szMsg[0] == 0)
                {
                        strcpy( szTmp, "Unknown error number." );
                        break;
                }
                if (m_Error == errorMsgs[i].iError)
                {
                        strcpy( szTmp, errorMsgs[i].szMsg );
                        break;
                }
                i++;
        }

        if (m_szTextDetail)
                strcat( szTmp, m_szTextDetail );
        if (m_SystemErr)
                wsprintf( szTmp+strlen(szTmp), "  Error=%d",
m_SystemErr );

        m_szErrorText = new char[strlen(szTmp)+1];
        strcpy( m_szErrorText, szTmp );
        return m_szErrorText;

}

/* FUNCTION: GetKeyValue
 *
 * PURPOSE:         This function parses a http formatted string for specific
key values.
 *
 * ARGUMENTS:     char                            *pQueryString
http string from client browser
 *                                      char
*pKey                           key value to look for
 *                                      char
*pValue                         character array into which to place key's value
 *                                      int
iMax                            maximum length of key value array.
 *                                      WEBERROR
err                             error value to throw
 *
 * RETURNS:                     nothing.
 *
 * ERROR:                       if (the pKey value is not found) then
 *                                              if (err == 0)
 *                                                      return
(empty string)
 *                                              else
 *                                                      throw
CWEBCLNT_ERR(err)
 *
 * COMMENTS:       http keys are formatted either KEY=value& or
KEY=value\0. This DLL formats
 *                                      TPC-C input fields in such a
manner that the keys can be extracted in the
 *                                      above manner.
 */

void GetKeyValue(char **pQueryString, char *pKey, char *pValue, int iMax,
WEBERROR err)
{
        char *ptr;
```

```
	if ( !(ptr=strstr(*pQueryString, pKey)) )
		goto ErrorExit;
	ptr += strlen(pKey);
	if ( *ptr != '=' )
		goto ErrorExit;
	ptr++;

	iMax--;  // one position is for terminating null
	while( *ptr && *ptr != '&' && iMax)
	{
		*pValue++ = *ptr++;
		iMax--;
	}
	*pValue = 0;  // terminating null

	*pQueryString = ptr;
	return;

ErrorExit:
	if (err != NO_ERR)
		throw new CWEBCLNT_ERR( err );
	*pValue = 0;  // return empty result string
}

/* FUNCTION: GetIntKeyValue
 *
 * PURPOSE:		This function parses a http formatted string for a specific
key value.
 *
 * ARGUMENTS:	char			*pQueryString
http string from client browser
 *			char
*pKey			key value to look for
 *			WEBERROR
NoKeyErr		error value to throw if key not found
 *			WEBERROR
NotIntErr		error value to throw if value not numeric
 *
 * RETURNS:		integer
 *
 * ERROR:		if (the pKey value is not found) then
 *				if (NoKeyErr !=
NO_ERR)
 *					throw
CWEBCLNT_ERR(err)
 *				else
 *					return 0
 *			else if (non-numeric char found)
then
 *				if (NotIntErr !=
NO_ERR) then
 *					throw
CWEBCLNT_ERR(err)
 *				else
 *					return 0
 *
 * COMMENTS:	http keys are formatted either KEY=value& or
KEY=value\0. This DLL formats
 *			TPC-C input fields in such a
manner that the keys can be extracted in the
 *			above manner.
 */

int GetIntKeyValue(char **pQueryString, char *pKey, WEBERROR
NoKeyErr, WEBERROR NotIntErr)
{
	char *ptr0;
	char *ptr;

	if ( !(ptr=strstr(*pQueryString, pKey)) )
		goto ErrorNoKey;
	ptr += strlen(pKey);
	if ( *ptr != '=' )
		goto ErrorNoKey;
	ptr++;

	ptr0 = ptr;		// remember starting point
	// scan string until a terminator (null or &) or a non-digit
	while( *ptr && *ptr != '&' && isdigit(*ptr) )
		ptr++;

	// make sure we stopped scanning for the right reason
	if ((ptr0 == ptr) || (*ptr && *ptr != '&'))
	{
		if (NotIntErr != NO_ERR)
			throw new CWEBCLNT_ERR( NoKeyErr );
		return 0;
	}

	*pQueryString = ptr;
	return atoi(ptr0);

ErrorNoKey:
	if (NoKeyErr != NO_ERR)
		throw new CWEBCLNT_ERR( NoKeyErr );
	return 0;
}

/* FUNCTION: TermInit
 *
 * PURPOSE:		This function initializes the client terminal structure; it is
called when the TPCC.DLL
 *				is first loaded by the inet service.
 *
 */

void TermInit(void)
{
	EnterCriticalSection(&TermCriticalSection);

	Term.iMasterSyncId  = 1;
	Term.iNumEntries    = Reg.dwMaxConnections+1;

	Term.pClientData    = NULL;
	Term.pClientData    =
(PCLIENTDATA)malloc(Term.iNumEntries * sizeof(CLIENTDATA));
	if (Term.pClientData == NULL)
	{
		LeaveCriticalSection(&TermCriticalSection);
		throw new CWEBCLNT_ERR(
ERR_MEM_ALLOC_FAILED );
	}

	ZeroMemory( Term.pClientData, Term.iNumEntries *
sizeof(CLIENTDATA) );

	Term.iFreeList			= Term.iNumEntries-1;
	// build free list
	// note: Term.pClientData[0].iNextFree gets set to -1, which marks it
as "in use".
	//	This is intentional, as the zero entry is used as an anchor and
never
	//			allocated as an actual terminal.
	for(int i=0; i<Term.iNumEntries; i++)
		Term.pClientData[i].iNextFree = i-1;
```

```
	LeaveCriticalSection(&TermCriticalSection);
}

/* FUNCTION: TermDeleteAll
 *
 * PURPOSE:		This function frees allocated resources associated with
the terminal structure.
 *
 * ARGUMENTS:	none
 *
 * RETURNS:			None
 *
 * COMMENTS:	This function is called only when the inet service unloads
the TPCC.DLL
 *
 */

void TermDeleteAll(void)
{
	EnterCriticalSection(&TermCriticalSection);

	for(int i=1; i<Term.iNumEntries; i++)
	{
		if (Term.pClientData[i].iNextFree == -1)
			delete Term.pClientData[i].pTxn;
	}

	Term.iFreeList			= 0;
	Term.iNumEntries	= 0;
	if ( Term.pClientData )
		free(Term.pClientData);
	Term.pClientData	= NULL;

	LeaveCriticalSection(&TermCriticalSection);
}

/* FUNCTION: TermAdd
 *
 * PURPOSE:		This function assigns a terminal id which is used to
identify a client browser.
 *
 * RETURNS:			int			assigned terminal id
 *
 */

int TermAdd(void)
{
	DWORD	i;
	int			iNewTerm, iTickCount;

	if (Term.iNumEntries == 0)
		return -1;

	EnterCriticalSection(&TermCriticalSection);
	if (Term.iFreeList != 0)
	{	// position is available
		iNewTerm = Term.iFreeList;
		Term.iFreeList =
Term.pClientData[iNewTerm].iNextFree;
		Term.pClientData[iNewTerm].iNextFree = -1;  //
indicates this position is in use
	}
	else
	{	// no open slots, so find the slot that hasn't been used in
the longest time and reuse it
		for(iNewTerm=1, i=1, iTickCount=0x7FFFFFFF;
i<Reg.dwMaxConnections; i++)
		{
			if (iTickCount >
Term.pClientData[i].iTickCount)
			{
				iTickCount =
Term.pClientData[i].iTickCount;
				iNewTerm = i;
			}
		}
		// if oldest term is less than one minute old, it probably
means that more connections
		// are being attempted than were specified as "Max
Connections" at install.  In this case,
		// do not bump existing connection; instead, return error
to requestor.
		if ((GetTickCount() - iTickCount) < 60000)
		{
			LeaveCriticalSection(&TermCriticalSection);
			throw new CWEBCLNT_ERR(
ERR_MAX_CONNECTIONS_EXCEEDED );
		}
	}

	Term.pClientData[iNewTerm].iTickCount = GetTickCount();
	Term.pClientData[iNewTerm].iSyncId = Term.iMasterSyncId++;
	Term.pClientData[iNewTerm].pTxn = NULL;

	LeaveCriticalSection(&TermCriticalSection);
	return iNewTerm;
}

/* FUNCTION: TermDelete
 *
 * PURPOSE:		This function makes a terminal entry in the Term array
available for reuse.
 *
 * ARGUMENTS:	int
id			Terminal id of client exiting
 *
 */

void TermDelete(int id)
{
	if ( id > 0 && id < Term.iNumEntries )
	{
		delete Term.pClientData[id].pTxn;

		// put onto free list
		EnterCriticalSection(&TermCriticalSection);

		Term.pClientData[id].iNextFree = Term.iFreeList;
		Term.iFreeList = id;

		LeaveCriticalSection(&TermCriticalSection);
	}
}


/* FUNCTION: MakeErrorForm
 */

void ErrorForm(EXTENSION_CONTROL_BLOCK *pECB, int iType, int
iErrorNum, int iTermId, int iSyncId, char *szErrorText, char *szBuffer )
{
	wsprintf(szBuffer,
		"<HTML><HEAD><TITLE>TPC-C
Error</TITLE></HEAD><BODY>"
		"<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
```

```
                        "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                        "<BOLD>An Error Occurred</BOLD><BR><BR>"
                        "%s"
                        "<BR><BR><HR>"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..NewOrder..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                        "</FORM></BODY></HTML>"
                        , iType, iErrorNum, MAIN_MENU_FORM, iTermId,
iSyncId, szErrorText );
}

/* FUNCTION: MakeMainMenuForm
 */

void MakeMainMenuForm(int iTermId, int iSyncId, char *szForm)
{
        wsprintf(szForm,
                        "<HTML><HEAD><TITLE>TPC-C Main
Menu</TITLE></HEAD><BODY>"
                        "Select Desired Transaction.<BR><HR>"
                        "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"0\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..NewOrder..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                        "</FORM></BODY></HTML>"
                        , MAIN_MENU_FORM, iTermId, iSyncId);
}

/* FUNCTION: MakeStockLevelForm
 *
 * PURPOSE:         This function constructs the Stock Level HTML page.
 *
 * COMMENTS:        The internal client buffer is created when the terminal id
is assigned and should not
 *                                                  be freed except when the client
terminal id is no longer needed.
 */

void MakeStockLevelForm(int iTermId, STOCK_LEVEL_DATA
*pStockLevelData, BOOL bInput, char *szForm)
{
        int             c;

        c = wsprintf(szForm,
                        "<HTML><HEAD><TITLE>TPC-C Stock
Level</TITLE></HEAD><FORM ACTION=\"tpcc.dll\"
METHOD=\"GET\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"0\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                        "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                        "<PRE><font face=\"Courier\">
Stock-Level<BR>"
                        "Warehouse: %4.4d   District: %2.2d<BR> <BR>",
                        STOCK_LEVEL_FORM, iTermId,
Term.pClientData[iTermId].iSyncId,
                        Term.pClientData[iTermId].w_id,
Term.pClientData[iTermId].d_id);

        if ( bInput )
        {
                strcpy(szForm+c,
                        "Stock Level Threshold: <INPUT
NAME=\"TT*\" SIZE=2><BR> <BR>"
                        "low stock:    </font><BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR> <BR>"
                        " <BR> <BR> <BR> <BR> <BR> <BR>
<BR></PRE><HR>"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Process\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Menu\">"
                        "</FORM></HTML>" );
        }
        else
        {
                wsprintf(szForm+c,
                        "Stock Level Threshold: %2.2d<BR> <BR>"
                        "low stock: %3.3d</font> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR>"
                        " <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR></PRE><HR>"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..NewOrder..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
```

```
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                                "</FORM></HTML>"
                                , pStockLevelData->threshold,
pStockLevelData->low_stock);
        }
}

/* FUNCTION: MakeNewOrderForm
 *
 * COMMENTS:    The internal client buffer is created when the terminal id
is assigned and should not
 *                                      be freed except when the client
terminal id is no longer needed.
 */

void MakeNewOrderForm(int iTermId, NEW_ORDER_DATA
*pNewOrderData, BOOL bInput, char *szForm)
{
        int                     i, c;
        BOOL    bValid;
        static  char szBR[] = " <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR>";

        if (!bInput)
                assert( pNewOrderData->exec_status_code == eOK ||
pNewOrderData->exec_status_code == eInvalidItem );

        bValid = (bInput || (pNewOrderData->exec_status_code == eOK));

        c = wsprintf(szForm,
                "<HTML><HEAD><TITLE>TPC-C New
Order</TITLE></HEAD><BODY>"
                "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
                "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                "<PRE><font face=\"Courier\">
New Order<BR>"
                , bValid ? 0 : ERR_BAD_ITEM_ID,
NEW_ORDER_FORM, iTermId, Term.pClientData[iTermId].iSyncId);

        if ( bInput )
        {
                c += wsprintf(szForm+c, "Warehouse: %4.4d   ",
Term.pClientData[iTermId].w_id );

                strcpy( szForm+c,
                        "District: <INPUT NAME=\"DID*\"
SIZE=1>                 Date:<BR>"
                        "Customer:  <INPUT NAME=\"CID*\"
SIZE=4>   Name:                 Credit:     %Disc:<BR>"
                        "Order Number:          Number of Lines:
 W_tax:        D_tax:<BR> <BR>"
                        " Supp_W  Item_Id  Item Name                Qty
Stock  B/G  Price    Amount<BR>"
                        "  <INPUT NAME=\"SP00*\" SIZE=4>
<INPUT NAME=\"IID00*\" SIZE=6>                  <INPUT
NAME=\"Qty00*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP01*\" SIZE=4>
<INPUT NAME=\"IID01*\" SIZE=6>                  <INPUT
NAME=\"Qty01*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP02*\" SIZE=4>
<INPUT NAME=\"IID02*\" SIZE=6>                  <INPUT
NAME=\"Qty02*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP03*\" SIZE=4>
<INPUT NAME=\"IID03*\" SIZE=6>                  <INPUT
NAME=\"Qty03*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP04*\" SIZE=4>
<INPUT NAME=\"IID04*\" SIZE=6>                  <INPUT
NAME=\"Qty04*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP05*\" SIZE=4>
<INPUT NAME=\"IID05*\" SIZE=6>                  <INPUT
NAME=\"Qty05*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP06*\" SIZE=4>
<INPUT NAME=\"IID06*\" SIZE=6>                  <INPUT
NAME=\"Qty06*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP07*\" SIZE=4>
<INPUT NAME=\"IID07*\" SIZE=6>                  <INPUT
NAME=\"Qty07*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP08*\" SIZE=4>
<INPUT NAME=\"IID08*\" SIZE=6>                  <INPUT
NAME=\"Qty08*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP09*\" SIZE=4>
<INPUT NAME=\"IID09*\" SIZE=6>                  <INPUT
NAME=\"Qty09*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP10*\" SIZE=4>
<INPUT NAME=\"IID10*\" SIZE=6>                  <INPUT
NAME=\"Qty10*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP11*\" SIZE=4>
<INPUT NAME=\"IID11*\" SIZE=6>                  <INPUT
NAME=\"Qty11*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP12*\" SIZE=4>
<INPUT NAME=\"IID12*\" SIZE=6>                  <INPUT
NAME=\"Qty12*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP13*\" SIZE=4>
<INPUT NAME=\"IID13*\" SIZE=6>                  <INPUT
NAME=\"Qty13*\" SIZE=1><BR>"
                        "  <INPUT NAME=\"SP14*\" SIZE=4>
<INPUT NAME=\"IID14*\" SIZE=6>                  <INPUT
NAME=\"Qty14*\" SIZE=1><BR>"
                        "Execution Status:
Total:<BR>"
                        "</font></PRE><HR>"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Process\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Menu\">"
                        "</FORM></HTML>"
                        );
        }
        else
        {
                 c += wsprintf(szForm+c, "Warehouse: %4.4d   District:
%2.2d                   Date: ",
                        pNewOrderData->w_id,
                        pNewOrderData->d_id);

                 if ( bValid )
                 {
                        c += wsprintf(szForm+c,
"%2.2d-%2.2d-%4.4d %2.2d:%2.2d:%2.2d",
                                pNewOrderData->o_entry_d.day,
pNewOrderData->o_entry_d.month,
                                pNewOrderData->o_entry_d.year,
                                pNewOrderData->o_entry_d.hour,
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pNewOrderData->o_entry_d.minute,

pNewOrderData->o_entry_d.second);
                }

                c += wsprintf(szForm+c, "<BR>Customer:  %4.4d
Name: %-16s   Credit: %-2s   ",
                        pNewOrderData->c_id,
pNewOrderData->c_last, pNewOrderData->c_credit);

                if ( bValid )
                {
                        c += sprintf(szForm+c,
                                                "%%Disc:
%5.2f          <BR>"
                                                "Order
Number: %8.8d  Number of Lines: %2.2d       W_tax: %5.2f   D_tax: %5.2f
<BR> <BR>"
                                                " Supp_W
Item_Id  Item Name              Qty  Stock  B/G  Price    Amount<BR>",

100.0*pNewOrderData->c_discount,
                                        pNewOrderData->o_id,
                                        pNewOrderData->o_ol_cnt,
                                        100.0 * pNewOrderData->w_tax,
                                        100.0 * pNewOrderData->d_tax);

                                for(i=0; i<pNewOrderData->o_ol_cnt; i++)
                                {
                                        c += sprintf(szForm+c, "  %4.4d
%6.6d   %-24s %2.2d    %3.3d    %1.1s   $%6.2f  $%7.2f  <BR>",

pNewOrderData->OL[i].ol_supply_w_id,

pNewOrderData->OL[i].ol_i_id,

pNewOrderData->OL[i].ol_i_name,

pNewOrderData->OL[i].ol_quantity,

pNewOrderData->OL[i].ol_stock,

pNewOrderData->OL[i].ol_brand_generic,

pNewOrderData->OL[i].ol_i_price,

pNewOrderData->OL[i].ol_amount );
                                }
                }
                else
                {
                        c += wsprintf(szForm+c,
                                        "%Disc:<BR>"
                                        "Order Number: %8.8d  Number
of Lines:          W_tax:       D_tax:<BR> <BR>"
                                        " Supp_W  Item_Id  Item Name
      Qty  Stock  B/G  Price    Amount<BR>"
                                        , pNewOrderData->o_id);

                        i = 0;
                }

                strncpy( szForm+c, szBR, (15-i)*5 );
                c += (15-i)*5;

                if ( bValid )
                        c += sprintf(szForm+c, "Execution Status:
Transaction commited.          Total:  $%8.2f  ",
                                        pNewOrderData->total_amount);
                else
                        c += wsprintf(szForm+c, "Execution Status:
Item number is not valid.      Total:");

                strcpy(szForm+c,
                        " <BR></font></PRE><HR>"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..NewOrder..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                        "</FORM></HTML>"
                        );
        }
}

/* FUNCTION: MakePaymentForm
 *
 * COMMENTS:      The internal client buffer is created when the terminal id
is assigned and should not
 *                                      be freed except when the client
terminal id is no longer needed.
 */

void MakePaymentForm(int iTermId, PAYMENT_DATA *pPaymentData,
BOOL bInput, char *szForm)
{
        int c;

        c = wsprintf(szForm,
                "<HTML><HEAD><TITLE>TPC-C
Payment</TITLE></HEAD><BODY>"
                "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
                "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                "<PRE><font face=\"Courier\">
Payment<BR>"
                "Date: "
                , PAYMENT_FORM, iTermId,
Term.pClientData[iTermId].iSyncId);

        if ( !bInput )
        {
                c += wsprintf(szForm+c, "%2.2d-%2.2d-%4.4d
%2.2d:%2.2d:%2.2d",
                        pPaymentData->h_date.day,
                        pPaymentData->h_date.month,
                        pPaymentData->h_date.year,
                        pPaymentData->h_date.hour,
                        pPaymentData->h_date.minute,
```

```
                                pPaymentData->h_date.second);
        }

        if ( bInput )
        {
                c += wsprintf(szForm+c,
                                "<BR> <BR>Warehouse: %4.4d"
                                "                District: <INPUT
NAME=\"DID*\" SIZE=1><BR> <BR> <BR> <BR> <BR>"
                                "Customer: <INPUT NAME=\"CID*\"
SIZE=4>"
                                "Cust-Warehouse: <INPUT NAME=\"CWI*\"
SIZE=4>  "
                                "Cust-District: <INPUT NAME=\"CDI*\"
SIZE=1><BR>"
                                "Name:                <INPUT
NAME=\"CLT*\" SIZE=16>          Since:<BR>"
                                "                                Credit:<BR>"
                                "                                Disc:<BR>"
                                "                                Phone:<BR>
<BR>"
                                "Amount Paid:        $<INPUT
NAME=\"HAM*\" SIZE=7>     New Cust-Balance:<BR>"
                                "Credit Limit:<BR> <BR>Cust-Data: <BR>
<BR> <BR> <BR> <BR></font></PRE><HR>"
                                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Process\"><INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Menu\">"
                                "</BODY></FORM></HTML>"
                                , Term.pClientData[iTermId].w_id);
        }
        else
        {
                c += wsprintf(szForm+c,
                                "<BR> <BR>Warehouse: %4.4d
  District: %2.2d<BR>"
                                "%-20s                %-20s<BR>"
                                "%-20s                %-20s<BR>"
                                "%-20s %-2s %5.5s-%4.4s       %-20s %-2s
%5.5s-%4.4s<BR> <BR>"
                                "Customer: %4.4d  Cust-Warehouse: %4.4d
Cust-District: %2.2d<BR>"
                                "Name:   %-16s %-2s %-16s     Since:
%2.2d-%2.2d-%4.4d<BR>"
                                "       %-20s                Credit: %-2s<BR>"

                                , Term.pClientData[iTermId].w_id,
pPaymentData->d_id
                                , pPaymentData->w_street_1,
pPaymentData->d_street_1
                                , pPaymentData->w_street_2,
pPaymentData->d_street_2
                                , pPaymentData->w_city,
pPaymentData->w_state, pPaymentData->w_zip, pPaymentData->w_zip+5
                                , pPaymentData->d_city,
pPaymentData->d_state, pPaymentData->d_zip, pPaymentData->d_zip+5
                                , pPaymentData->c_id,
pPaymentData->c_w_id,           pPaymentData->c_d_id
                                , pPaymentData->c_first,
pPaymentData->c_middle, pPaymentData->c_last
                                , pPaymentData->c_since.day,
pPaymentData->c_since.month,   pPaymentData->c_since.year
                                , pPaymentData->c_street_1,
pPaymentData->c_credit
                                );

      c += sprintf(szForm+c,
                                "       %-20s                %%Disc:
%5.2f<BR>",
                                pPaymentData->c_street_2,
100.0*pPaymentData->c_discount);

                c += wsprintf(szForm+c,
                                "       %-20s %-2s %5.5s-%4.4s       Phone:
%6.6s-%3.3s-%3.3s-%4.4s<BR> <BR>",
                                pPaymentData->c_city,
pPaymentData->c_state, pPaymentData->c_zip, pPaymentData->c_zip+5,
                                pPaymentData->c_phone,
pPaymentData->c_phone+6, pPaymentData->c_phone+9,
pPaymentData->c_phone+12 );

                c += sprintf(szForm+c,
                                "Amount Paid:        $%7.2f     New
Cust-Balance: $%14.2f<BR>"
                                "Credit Limit:   $%13.2f<BR> <BR>"
                                , pPaymentData->h_amount,
pPaymentData->c_balance
                                , pPaymentData->c_credit_lim
                                );

                if ( pPaymentData->c_credit[0] == 'B' &&
pPaymentData->c_credit[1] == 'C' )
                        c += wsprintf(szForm+c,
                                                "Cust-Data:
%-50.50s<BR>        %-50.50s<BR>        %-50.50s<BR>
%-50.50s<BR>",
                                                pPaymentData->c_data,
pPaymentData->c_data+50, pPaymentData->c_data+100,
pPaymentData->c_data+150 );
                else
                        strcpy(szForm+c, "Cust-Data: <BR> <BR>
<BR> <BR>");

                strcat(szForm,          " <BR></font></PRE><HR>"
                                                                "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..NewOrder..\">"
                                                                "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Payment..\">"
                                                                "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Delivery..\">"
                                                                "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Order-Status..\">"
                                                                "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Stock-Level..\">"
                                                                "<INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Exit..\">"

"</BODY></FORM></HTML>");
        }

}

/* FUNCTION: MakeOrderStatusForm
 *
 * COMMENTS:        The internal client buffer is created when the terminal id
is assigned and should not
 *                                        be freed except when the client
terminal id is no longer needed.
 */

void MakeOrderStatusForm(int iTermId, ORDER_STATUS_DATA
*pOrderStatusData, BOOL bInput, char *szForm)
{
        int                     i, c;
```

```
	static char szBR[] = " <BR> <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR>";

	c = wsprintf(szForm,
		"<HTML><HEAD><TITLE>TPC-C
Order-Status</TITLE></HEAD><BODY>"
		"<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
		"<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"0\">"
		"<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
		"<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
		"<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
		"<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
		"<PRE><font face=\"Courier\">
Order-Status<BR>"
		"Warehouse: %4.4d   ",
		ORDER_STATUS_FORM, iTermId,
Term.pClientData[iTermId].iSyncId, Term.pClientData[iTermId].w_id);

	if ( bInput )
	{
		strcpy(szForm+c,
			"District: <INPUT NAME=\"DID*\"
SIZE=1><BR>"
			"Customer: <INPUT NAME=\"CID*\"
SIZE=4>   Name:              <INPUT NAME=\"CLT*\" SIZE=23><BR>"
			"Cust-Balance:<BR> <BR>"
			"Order-Number:          Entry-Date:
   Carrier-Number:<BR>"
			"Supply-W    Item-Id   Qty    Amount
Delivery-Date<BR> <BR> <BR> <BR> <BR>"
			" <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR></font></PRE>"
			"<HR><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Process\"><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Menu\">"
			"</BODY></FORM></HTML>" );
	}
	else
	{
		c += wsprintf(szForm+c,
			"District: %2.2d<BR>"
			"Customer: %4.4d   Name: %-16s %-2s
%-16s<BR>",
			pOrderStatusData->d_id,
pOrderStatusData->c_id,
			pOrderStatusData->c_first,
pOrderStatusData->c_middle, pOrderStatusData->c_last);

		c += sprintf(szForm+c, "Cust-Balance: $%9.2f<BR>
<BR>",
			pOrderStatusData->c_balance);

		c += wsprintf(szForm+c,
			"Order-Number: %8.8d   Entry-Date:
%2.2d-%2.2d-%4.4d %2.2d:%2.2d:%2.2d   Carrier-Number: %2.2d<BR>"
			"Supply-W    Item-Id   Qty    Amount
Delivery-Date<BR>",
			pOrderStatusData->o_id,
			pOrderStatusData->o_entry_d.day,
			pOrderStatusData->o_entry_d.month,
			pOrderStatusData->o_entry_d.year,
			pOrderStatusData->o_entry_d.hour,
			pOrderStatusData->o_entry_d.minute,
			pOrderStatusData->o_entry_d.second,
			pOrderStatusData->o_carrier_id);

		for(i=0; i< pOrderStatusData->o_ol_cnt; i++)
		{
			c += sprintf(szForm+c, "  %4.4d      %6.6d
%2.2d    $%8.2f     %2.2d-%2.2d-%4.4d<BR>",

pOrderStatusData->OL[i].ol_supply_w_id,
				pOrderStatusData->OL[i].ol_i_id,

pOrderStatusData->OL[i].ol_quantity,

pOrderStatusData->OL[i].ol_amount,

pOrderStatusData->OL[i].ol_delivery_d.day,

pOrderStatusData->OL[i].ol_delivery_d.month,

pOrderStatusData->OL[i].ol_delivery_d.year);
		}

		strncpy( szForm+c, szBR, (15-i)*5 );
		c += (15-i)*5;

		strcpy(szForm+c,
			"</font></PRE><HR><INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..NewOrder..\">"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
			"<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
			"</BODY></FORM></HTML>" );
	}
}

/* FUNCTION: MakeDeliveryForm
 *
 * COMMENTS:	The internal client buffer is created when the terminal id
is assigned and should not
 *					be freed except when the client
terminal id is no longer needed.
 */

void MakeDeliveryForm(int iTermId, DELIVERY_DATA *pDeliveryData,
BOOL bInput, char *szForm)
{
	int		c;

	c = wsprintf(szForm,
		"<HTML><HEAD><TITLE>TPC-C
Delivery</TITLE></HEAD><BODY>"
		"<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
		"<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"%d\">"
		"<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
		"<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"%d\">"
		"<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"%d\">"
```

```
                        "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"%d\">"
                        "<PRE><font face=\"Courier\">
Delivery<BR>"
                        "Warehouse: %4.4d<BR> <BR>",
                        (!bInput && (pDeliveryData->exec_status_code !=
eOK)) ? ERR_TYPE_DELIVERY_POST : 0,
                        DELIVERY_FORM, iTermId,
Term.pClientData[iTermId].iSyncId, Term.pClientData[iTermId].w_id);

        if ( bInput )
        {
                strcpy( szForm+c,
                        "Carrier Number: <INPUT NAME=\"OCD*\"
SIZE=1><BR> <BR>"
                        "Execution Status: <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR>"
                        " <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> </font></PRE><HR>"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Process\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Menu\">"
                        "</BODY></FORM></HTML>" );
        }
        else
        {
                wsprintf( szForm+c,
                        "Carrier Number: %2.2d<BR> <BR>"
                        "Execution Status: %s <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR>"
                        " <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR> </font></PRE>"
                        "<HR><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..NewOrder..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"
                        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"
                        "</BODY></FORM></HTML>"

                        , pDeliveryData->o_carrier_id,
                        (pDeliveryData->exec_status_code == eOK) ?
"Delivery has been queued." : "Delivery Post Failed     "
                        );
        }
}

/* FUNCTION: ProcessNewOrderForm
 *
 * PURPOSE:          This function gets and validates the input data from the
new order form
 *                          filling in the required input variables. it then
calls the SQLNewOrder
 *                          transaction, constructs the output form and
writes it back to client
 *                          browser.
 */

void ProcessNewOrderForm(EXTENSION_CONTROL_BLOCK  *pECB, int
iTermId, char *szBuffer)
{
        PNEW_ORDER_DATA                 pNewOrder;

        pNewOrder =
Term.pClientData[iTermId].pTxn->BuffAddr_NewOrder();

        ZeroMemory(pNewOrder, sizeof(NEW_ORDER_DATA));
        pNewOrder->w_id = Term.pClientData[iTermId].w_id;
        GetNewOrderData(pECB->lpszQueryString, pNewOrder);

        Term.pClientData[iTermId].pTxn->NewOrder();

        pNewOrder =
Term.pClientData[iTermId].pTxn->BuffAddr_NewOrder();
        MakeNewOrderForm(iTermId, pNewOrder, OUTPUT_FORM,
szBuffer );
}

/* FUNCTION: void ProcessPaymentForm
 *
 * PURPOSE:          This function gets and validates the input data from the
payment form
 *                          filling in the required input variables. It then
calls the SQLPayment
 *                          transaction, constructs the output form and
writes it back to client
 *                          browser.
 *
 * ARGUMENTS:     EXTENSION_CONTROL_BLOCK          *pECB
passed in structure pointer from inetsrv.
 *                                  int
 *                      iTermId    client browser terminal id
 *
 */

void ProcessPaymentForm(EXTENSION_CONTROL_BLOCK *pECB, int
iTermId, char *szBuffer)
{
        PPAYMENT_DATA pPayment;

        pPayment =
Term.pClientData[iTermId].pTxn->BuffAddr_Payment();
        ZeroMemory(pPayment, sizeof(PAYMENT_DATA));
        pPayment->w_id = Term.pClientData[iTermId].w_id;
        GetPaymentData(pECB->lpszQueryString, pPayment);

        Term.pClientData[iTermId].pTxn->Payment();

        pPayment =
Term.pClientData[iTermId].pTxn->BuffAddr_Payment();
        MakePaymentForm(iTermId, pPayment, OUTPUT_FORM,
szBuffer);
}

/* FUNCTION: ProcessOrderStatusForm
 *
 * PURPOSE:          This function gets and validates the input data from the
Order Status
 *                          form filling in the required input variables. It
then calls the
 *                          SQLOrderStatus transaction, constructs the
output form and writes it
 *                          back to client browser.
 *
 * ARGUMENTS:     EXTENSION_CONTROL_BLOCK          *pECB
passed in structure pointer from inetsrv.
 *                                  int
 *                      iTermId    client browser terminal id
 *
```

```
 */

void ProcessOrderStatusForm(EXTENSION_CONTROL_BLOCK *pECB, int
iTermId, char *szBuffer)
{
        PORDER_STATUS_DATA      pOrderStatus;

        pOrderStatus =
Term.pClientData[iTermId].pTxn->BuffAddr_OrderStatus();
        ZeroMemory(pOrderStatus, sizeof(ORDER_STATUS_DATA));
        pOrderStatus->w_id = Term.pClientData[iTermId].w_id;
        GetOrderStatusData(pECB->lpszQueryString, pOrderStatus);

        Term.pClientData[iTermId].pTxn->OrderStatus();

        pOrderStatus =
Term.pClientData[iTermId].pTxn->BuffAddr_OrderStatus();
        MakeOrderStatusForm(iTermId, pOrderStatus, OUTPUT_FORM,
szBuffer);
}

/* FUNCTION: ProcessDeliveryForm
 *
 * PURPOSE:         This function gets and validates the input data from the
delivery form
 *                              filling in the required input variables. It then
calls the PostDeliveryInfo
 *                              Api, The client is then informed that the
transaction has been posted.
 *
 * ARGUMENTS:    EXTENSION_CONTROL_BLOCK         *pECB
passed in structure pointer from inetsrv.
 *                                      int
 *                      iTermId     client browser terminal id
 *
 */

void ProcessDeliveryForm(EXTENSION_CONTROL_BLOCK *pECB, int
iTermId, char *szBuffer)
{
        char        *ptr = pECB->lpszQueryString;

        PDELIVERY_DATA pDelivery;

        pDelivery =
Term.pClientData[iTermId].pTxn->BuffAddr_Delivery();
        ZeroMemory(pDelivery, sizeof(DELIVERY_DATA));
        pDelivery->w_id = Term.pClientData[iTermId].w_id;

        pDelivery->o_carrier_id             = GetIntKeyValue(&ptr, "OCD*",
ERR_DELIVERY_MISSING_OCD_KEY,
ERR_DELIVERY_CARRIER_INVALID);
        if ( pDelivery->o_carrier_id > 10 || pDelivery->o_carrier_id < 1 )
                throw new CWEBCLNT_ERR(
ERR_DELIVERY_CARRIER_ID_RANGE );

        if (dwNumDeliveryThreads)
        {
                //post delivery info
                if ( PostDeliveryInfo(pDelivery->w_id,
pDelivery->o_carrier_id) )
                        pDelivery->exec_status_code =
eDeliveryFailed;
                else
                        pDelivery->exec_status_code = eOK;
        }
        else // delivery is done synchronously if no delivery threads
configured
                Term.pClientData[iTermId].pTxn->Delivery();

        pDelivery =
Term.pClientData[iTermId].pTxn->BuffAddr_Delivery();
        MakeDeliveryForm(iTermId, pDelivery, OUTPUT_FORM,
szBuffer);
}

/* FUNCTION: ProcessStockLevelForm
 *
 * PURPOSE:         This function gets and validates the input data from the
Stock Level
 *                              form filling in the required input variables. It
then calls the
 *                              SQLStockLevel transaction, constructs the
output form and writes it
 *                              back to client browser.
 *
 * ARGUMENTS:    EXTENSION_CONTROL_BLOCK         *pECB
passed in structure pointer from inetsrv.
 *                                      int
 *                      iTermId     client browser terminal id
 *
 */

void ProcessStockLevelForm(EXTENSION_CONTROL_BLOCK *pECB, int
iTermId, char *szBuffer)
{
        char                *ptr = pECB->lpszQueryString;

        PSTOCK_LEVEL_DATA       pStockLevel;

        pStockLevel =
Term.pClientData[iTermId].pTxn->BuffAddr_StockLevel();
        ZeroMemory( pStockLevel, sizeof(STOCK_LEVEL_DATA) );

        pStockLevel->w_id = Term.pClientData[iTermId].w_id;
        pStockLevel->d_id = Term.pClientData[iTermId].d_id;

        pStockLevel->threshold = GetIntKeyValue(&ptr, "TT*",
ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY,
ERR_STOCKLEVEL_THRESHOLD_INVALID);
        if ( pStockLevel->threshold >= 100 || pStockLevel->threshold < 0 )
                throw new CWEBCLNT_ERR(
ERR_STOCKLEVEL_THRESHOLD_RANGE );

        Term.pClientData[iTermId].pTxn->StockLevel();

        pStockLevel =
Term.pClientData[iTermId].pTxn->BuffAddr_StockLevel();
        MakeStockLevelForm(iTermId, pStockLevel, OUTPUT_FORM,
szBuffer);
}

/* FUNCTION: GetNewOrderData
 *
 * PURPOSE:         This function extracts and validates the new order form
data from an http command string.
 *
 * ARGUMENTS:    LPSTR                           lpszQueryString
client browser http command string
 *                                      NEW_ORDER_DATA
*pNewOrderData              pointer to new order data structure
 *
 */

void GetNewOrderData(LPSTR lpszQueryString, NEW_ORDER_DATA
*pNewOrderData)
```

```
{
	char	szTmp[26];
	int		i;
	short	items;
	int		ol_i_id, ol_quantity;
	char	*ptr = lpszQueryString;

	static char szSP[MAX_OL_NEW_ORDER_ITEMS][6] =
		{ "SP00*", "SP01*", "SP02*", "SP03*", "SP04*",
		  "SP05*", "SP06*", "SP07*", "SP08*", "SP09*",
		  "SP10*", "SP11*", "SP12*", "SP13*", "SP14*" };
	static char szIID[MAX_OL_NEW_ORDER_ITEMS][7] =
		{ "IID00*", "IID01*", "IID02*", "IID03*", "IID04*",
		  "IID05*", "IID06*", "IID07*", "IID08*", "IID09*",
		  "IID10*", "IID11*", "IID12*", "IID13*", "IID14*" };
	static char szQty[MAX_OL_NEW_ORDER_ITEMS][7] =
		{ "Qty00*", "Qty01*", "Qty02*", "Qty03*", "Qty04*",
		  "Qty05*", "Qty06*", "Qty07*", "Qty08*", "Qty09*",
		  "Qty10*", "Qty11*", "Qty12*", "Qty13*", "Qty14*" };

	pNewOrderData->d_id = GetIntKeyValue(&ptr, "DID*",
ERR_NEWORDER_FORM_MISSING_DID,
ERR_NEWORDER_DISTRICT_INVALID);
	pNewOrderData->c_id = GetIntKeyValue(&ptr, "CID*",
ERR_NEWORDER_CUSTOMER_KEY,
ERR_NEWORDER_CUSTOMER_INVALID);

	for(i=0, items=0; i<MAX_OL_NEW_ORDER_ITEMS; i++)
	{
		GetKeyValue(&ptr, szSP[i], szTmp, sizeof(szTmp),
ERR_NEWORDER_MISSING_SUPPW_KEY);
		if ( szTmp[0] )
		{
			if ( !IsNumeric(szTmp) )
				throw new CWEBCLNT_ERR(
ERR_NEWORDER_SUPPW_INVALID );
			pNewOrderData->OL[items].ol_supply_w_id
= (short)atoi(szTmp);

			ol_i_id = pNewOrderData->OL[items].ol_i_id
=
				GetIntKeyValue(&ptr, szIID[i],
ERR_NEWORDER_MISSING_IID_KEY,
ERR_NEWORDER_ITEMID_INVALID);
			if ( ol_i_id > 999999 || ol_i_id < 1 )
				throw new CWEBCLNT_ERR(
ERR_NEWORDER_ITEMID_RANGE );

			ol_quantity =
pNewOrderData->OL[items].ol_quantity =
				GetIntKeyValue(&ptr, szQty[i],
ERR_NEWORDER_MISSING_QTY_KEY,
ERR_NEWORDER_QTY_INVALID);
			if ( ol_quantity > 99 || ol_quantity < 1 )
				throw new CWEBCLNT_ERR(
ERR_NEWORDER_QTY_RANGE );

			items++;
		}
		else
		{	// nothing entered for supply warehouse, so
item id and qty must also be blank
			GetKeyValue(&ptr, szIID[i], szTmp,
sizeof(szTmp), ERR_NEWORDER_MISSING_IID_KEY);
			if ( szTmp[0] )
				throw new CWEBCLNT_ERR(
ERR_NEWORDER_ITEMID_WITHOUT_SUPPW );
			GetKeyValue(&ptr, szQty[i], szTmp,
sizeof(szTmp), ERR_NEWORDER_MISSING_QTY_KEY);
			if ( szTmp[0] )
				throw new CWEBCLNT_ERR(
ERR_NEWORDER_QTY_WITHOUT_SUPPW );
		}
	}
	if ( items == 0 )
		throw new CWEBCLNT_ERR(
ERR_NEWORDER_NOITEMS_ENTERED );

	pNewOrderData->o_ol_cnt = items;
}

/* FUNCTION: GetPaymentData
 *
 * PURPOSE:		This function extracts and validates the payment form
data from an http command string.
 *
 * ARGUMENTS:	LPSTR				lpszQueryString
client browser http command string
 *				PAYMENT_DATA
*pPaymentData		pointer to payment data structure
 */

void GetPaymentData(LPSTR lpszQueryString, PAYMENT_DATA
*pPaymentData)
{
	char	szTmp[26];
	char	*ptr = lpszQueryString;
	BOOL	bCustIdBlank;

	pPaymentData->d_id = GetIntKeyValue(&ptr, "DID*",
ERR_PAYMENT_MISSING_DID_KEY,
ERR_PAYMENT_DISTRICT_INVALID);

	GetKeyValue(&ptr, "CID*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_CID_KEY);
	if ( szTmp[0] == 0 )
	{
		bCustIdBlank = TRUE;
		pPaymentData->c_id = 0;
	}
	else
	{	// parse customer id and verify that last name was NOT
entered
		bCustIdBlank = FALSE;
		if ( !IsNumeric(szTmp) )
			throw new CWEBCLNT_ERR(
ERR_PAYMENT_CUSTOMER_INVALID );
		pPaymentData->c_id = atoi(szTmp);
	}

	pPaymentData->c_w_id = GetIntKeyValue(&ptr, "CWI*",
ERR_PAYMENT_MISSING_CWI_KEY,
ERR_PAYMENT_CWI_INVALID);
	pPaymentData->c_d_id = GetIntKeyValue(&ptr, "CDI*",
ERR_PAYMENT_MISSING_CDI_KEY, ERR_PAYMENT_CDI_INVALID);

	if ( bCustIdBlank )
	{	// customer id is blank, so last name must be entered
		GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_CLT_KEY);
		if ( szTmp[0] == 0 )
			throw new CWEBCLNT_ERR(
ERR_PAYMENT_MISSING_CID_CLT );

		_strupr( szTmp );
```

```
                        if ( strlen(pPaymentData->c_last) > LAST_NAME_LEN
)
                                throw new CWEBCLNT_ERR(
ERR_PAYMENT_LAST_NAME_TO_LONG );
                        strcpy(pPaymentData->c_last, szTmp);
                }
                else
                {       // parse customer id and verify that last name was NOT
entered
                        GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_CLT_KEY);
                        if ( szTmp[0] != 0 )
                                throw new CWEBCLNT_ERR(
ERR_PAYMENT_CID_AND_CLT );
                }

                GetKeyValue(&ptr, "HAM*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_HAM_KEY);
                if (!IsDecimal(szTmp))
                        throw new CWEBCLNT_ERR(
ERR_PAYMENT_HAM_INVALID );
                pPaymentData->h_amount = atof(szTmp);
                if ( pPaymentData->h_amount >= 10000.00 ||
pPaymentData->h_amount < 0 )
                        throw new CWEBCLNT_ERR(
ERR_PAYMENT_HAM_RANGE );
}

/* FUNCTION: GetOrderStatusData
 *
 * PURPOSE:             This function extracts and validates the payment form
data from an http command string.
 *
 */
void GetOrderStatusData(LPSTR lpszQueryString, ORDER_STATUS_DATA
*pOrderStatusData)
{
                char            szTmp[26];
                char            *ptr = lpszQueryString;

                pOrderStatusData->d_id = GetIntKeyValue(&ptr, "DID*",
ERR_ORDERSTATUS_MISSING_DID_KEY,
ERR_ORDERSTATUS_DID_INVALID);

                GetKeyValue(&ptr, "CID*", szTmp, sizeof(szTmp),
ERR_ORDERSTATUS_MISSING_CID_KEY);
                if ( szTmp[0] == 0 )
                {       // customer id is blank, so last name must be entered
                        pOrderStatusData->c_id = 0;
                        GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_ORDERSTATUS_MISSING_CLT_KEY);
                        if ( szTmp[0] == 0 )
                                throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_MISSING_CID_CLT );

                        _strupr( szTmp );
                        if ( strlen(pOrderStatusData->c_last) >
LAST_NAME_LEN )
                                throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_CLT_RANGE );
                        strcpy(pOrderStatusData->c_last, szTmp);
                }
                else
                {       // parse customer id and verify that last name was NOT
entered
                        if ( !IsNumeric(szTmp) )
                                throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_CID_INVALID );
                        pOrderStatusData->c_id = atoi(szTmp);
                        GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_ORDERSTATUS_MISSING_CLT_KEY);
                        if ( szTmp[0] != 0 )
                                throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_CID_AND_CLT );
                }

}

/* FUNCTION: BOOL IsNumeric(char *ptr)
 *
 * PURPOSE:             This function determines if a string is numeric. It fails if
any characters other
 *                              than numeric and null terminator are present.
 *
 * ARGUMENTS:   char                            *ptr            pointer to
string to check.
 *
 * RETURNS:                     BOOL    FALSE   if string is not all
numeric
 *                                                                      TRUE    if
string contains only numeric characters i.e. '0' - '9'
 */

BOOL IsNumeric(char *ptr)
{
                if ( *ptr == 0 )
                        return FALSE;

                while( *ptr && isdigit(*ptr) )
                        ptr++;
                return ( !*ptr );
}

/* FUNCTION: BOOL IsDecimal(char *ptr)
 *
 * PURPOSE:             This function determines if a string is a non-negative
decimal value.
 *              It fails if any characters other than a series of numbers followed by
 *                              a decimal point, another series of numbers,
and a null terminator are present.
 *
 * ARGUMENTS:   char                            *ptr            pointer to
string to check.
 *
 * RETURNS:                     BOOL    FALSE   if string is not a valid
non-negative decimal value
 *                                                                      TRUE    if
string is OK
 */

BOOL IsDecimal(char *ptr)
{
                char *dotptr;
                BOOL  bValid;

                if ( *ptr == 0 )
                        return FALSE;

                // find decimal point
                dotptr = strchr( ptr, '.' );
                if (dotptr == NULL)
                        // no decimal point, so just check for numeric
                        return IsNumeric(ptr);
                *dotptr = 0;  // temporarily replace decimal with a terminator

                if ( *ptr != 0 )
```

```
                bValid = IsNumeric(ptr);
        // string starts with decimal point
        else if (*(dotptr+1) == 0)
                return FALSE;  // nothing but a decimal point is bad
        else
                bValid = TRUE;

        if (*(dotptr+1) != 0)
                // check text after decimal point
                bValid &= IsNumeric(dotptr+1);

        *dotptr = '.';  // replace decimal point
        return bValid;
}
```

tpcc.def

```
LIBRARY TPCC.DLL

EXPORTS

        GetExtensionVersion  @1
        HttpExtensionProc    @2
        TerminateExtension   @3
```

tpcc.h

```
//      File:           TPCC.H
//                              Microsoft TPC-C Kit Ver. 4.41
//                              Copyright Microsoft, 1996, 1997,
1998, 1999, 2000, 2001
//      Purpose:    Header file for TPC-C database loader


// Build number of TPC Benchmark Kit
#define TPCKIT_VER          "4.41"

// General headers
#include <windows.h>
#include <winbase.h>
#include <stdlib.h>
#include <stdio.h>
#include <process.h>
#include <stddef.h>
#include <stdarg.h>
#include <string.h>
#include <time.h>
#include <sys\timeb.h>
#include <sys\types.h>

// ODBC headers
#include <sql.h>
#include <sqlext.h>
#include <odbcss.h>

// General constants
#define MILLI               1000
#define FALSE                       0
#define TRUE                1
#define UNDEF                               -1
#define MINPRINTASCII                32
#define MAXPRINTASCII                126

// Default environment constants
#define SERVER                      ""
#define DATABASE                    "tpcc"
#define USER                        "sa"
#define PASSWORD                      ""

// Default loader arguments
#define BATCH                       10000
#define DEFLDPACKSIZE                       32768
#define LOADER_RES_FILE
"C:\\MSTPCC.440\\SETUP\\logs\\load.out"
#define LOG_PATH                "C:\\MSTPCC.440\\SETUP\\LOGS\\";
#define LOADER_NURAND_C                 123
#define DEF_STARTING_WAREHOUSE      1
#define BUILD_INDEX                                         1
// build both data and indexes
#define INDEX_ORDER                                         1
// build indexes before load
#define SCALE_DOWN                                          0
  // build a normal scale database
#define INDEX_SCRIPT_PATH "scripts"

typedef struct
{
   char                     *server;
   char                     *database;
   char                     *user;
   char                     *password;
        BOOL                        tables_all;
// set if loading all tables
        BOOL                        table_item;
// set if loading ITEM table specifically
        BOOL                        table_warehouse;    //
set if loading WAREHOUSE, DISTRICT, and STOCK
        BOOL                        table_customer;
// set if loading CUSTOMER and HISTORY
        BOOL                        table_orders;
// set if loading NEW-ORDER, ORDERS, ORDER-LINE
   long                     num_warehouses;
   long                     batch;
   long                     verbose;
        long                        pack_size;
        char                        *loader_res_file;
        char                        *log_path;
        char                        *synch_servername;
        long                        case_sensitivity;
        long                        starting_warehouse;
        long                        build_index;
        long                        index_order;
        long                        scale_down;
        char                        *index_script_path;
} TPCCLDR_ARGS;

// String length constants
        #define SERVER_NAME_LEN          20
        #define DATABASE_NAME_LEN        20
        #define USER_NAME_LEN            20
        #define PASSWORD_LEN             20
        #define TABLE_NAME_LEN           20
        #define I_DATA_LEN               50
        #define I_NAME_LEN               24
        #define BRAND_LEN                1
        #define LAST_NAME_LEN            16
        #define W_NAME_LEN               10
        #define ADDRESS_LEN              20
        #define STATE_LEN                2
        #define ZIP_LEN                  9
        #define S_DIST_LEN               24
        #define S_DATA_LEN               50
        #define D_NAME_LEN               10
        #define FIRST_NAME_LEN           16
```

```
#define MIDDLE_NAME_LEN            2
#define PHONE_LEN                 16
#define CREDIT_LEN                 2
#define C_DATA_LEN               500
#define H_DATA_LEN                24
#define DIST_INFO_LEN             24
#define MAX_OL_NEW_ORDER_ITEMS     15
#define MAX_OL_ORDER_STATUS_ITEMS  15
#define STATUS_LEN                25
#define OL_DIST_INFO_LEN                    24
#define C_SINCE_LEN
23
#define H_DATE_LEN
23
#define OL_DELIVERY_D_LEN                              23
#define O_ENTRY_D_LEN             23


// Functions in random.c
void        seed();
long        irand();
double      drand();
void        WUCreate();
short       WURand();
long        RandomNumber(long lower, long upper);

// Functions in getargs.c;
void        GetArgsLoader();
void        GetArgsLoaderUsage();

// Functions in time.c
long        TimeNow();

// Functions in strings.c
void        MakeAddress();
void        LastName();
int         MakeAlphaString();
int         MakeOriginalAlphaString();
int         MakeNumberString();
int         MakeZipNumberString();
void        InitString();
void        InitAddress();
void        PaddString();
```

tpcc.rc

```
//Microsoft Developer Studio generated resource script.
//
#include "resource.h"

#define APSTUDIO_READONLY_SYMBOLS
////////////////////////////////////////////////////////////////////////////
//
// Generated from the TEXTINCLUDE 2 resource.
//
#include "afxres.h"

////////////////////////////////////////////////////////////////////////////
#undef APSTUDIO_READONLY_SYMBOLS

////////////////////////////////////////////////////////////////////////////
// English (U.S.) resources

#if !defined(AFX_RESOURCE_DLL) || defined(AFX_TARG_ENU)
#ifdef _WIN32
LANGUAGE LANG_ENGLISH, SUBLANG_ENGLISH_US
#pragma code_page(1252)
#endif //_WIN32

#ifndef _MAC
////////////////////////////////////////////////////////////////////////////
//
// Version
//

VS_VERSION_INFO VERSIONINFO
 FILEVERSION 0,4,0,0
 PRODUCTVERSION 0,4,0,0
 FILEFLAGSMASK 0x3fL
#ifdef _DEBUG
 FILEFLAGS 0x1L
#else
 FILEFLAGS 0x0L
#endif
 FILEOS 0x40004L
 FILETYPE 0x2L
 FILESUBTYPE 0x0L
BEGIN
   BLOCK "StringFileInfo"
   BEGIN
      BLOCK "040904b0"
      BEGIN
         VALUE "Comments", "TPC-C HTML DLL Server (DBLIB)\0"
         VALUE "CompanyName", "Microsoft\0"
         VALUE "FileDescription", "TPC-C HTML DLL Server (DBLIB)\0"
         VALUE "FileVersion", "0, 4, 0, 0\0"
         VALUE "InternalName", "tpcc\0"
         VALUE "LegalCopyright", "Copyright © 1997\0"
         VALUE "OriginalFilename", "tpcc.dll\0"
         VALUE "ProductName", "Microsoft tpcc\0"
         VALUE "ProductVersion", "0, 4, 0, 0\0"
      END
   END
   BLOCK "VarFileInfo"
   BEGIN
      VALUE "Translation", 0x409, 1200
   END
END

#endif    // !_MAC


#ifdef APSTUDIO_INVOKED
////////////////////////////////////////////////////////////////////////////
//
// TEXTINCLUDE
//

1 TEXTINCLUDE DISCARDABLE
BEGIN
   "resource.h\0"
END

2 TEXTINCLUDE DISCARDABLE
BEGIN
   "#include ""afxres.h""\r\n"
   "\0"
END

3 TEXTINCLUDE DISCARDABLE
BEGIN
   "\r\n"
   "\0"
END
```

```
#endif    // APSTUDIO_INVOKED


//////////////////////////////////////////////////////////////////////////////
//
// Dialog
//

IDD_DIALOG1 DIALOG DISCARDABLE  0, 0, 186, 95
STYLE DS_MODALFRAME | WS_POPUP | WS_CAPTION |
WS_SYSMENU
CAPTION "Dialog"
FONT 8, "MS Sans Serif"
BEGIN
    DEFPUSHBUTTON   "OK",IDOK,129,7,50,14
    PUSHBUTTON      "Cancel",IDCANCEL,129,24,50,14
END


//////////////////////////////////////////////////////////////////////////////
//
// DESIGNINFO
//

#ifdef APSTUDIO_INVOKED
GUIDELINES DESIGNINFO DISCARDABLE
BEGIN
    IDD_DIALOG1, DIALOG
    BEGIN
        LEFTMARGIN, 7
        RIGHTMARGIN, 179
        TOPMARGIN, 7
        BOTTOMMARGIN, 88
    END
END
#endif    // APSTUDIO_INVOKED

#endif    // English (U.S.) resources
//////////////////////////////////////////////////////////////////////////////



#ifndef APSTUDIO_INVOKED
//////////////////////////////////////////////////////////////////////////////
//
// Generated from the TEXTINCLUDE 3 resource.
//


//////////////////////////////////////////////////////////////////////////////
#endif    // not APSTUDIO_INVOKED
```

tpcc_com.cpp

```
/*          FILE:                   TPCC_COM.CPP
 *                                          Microsoft TPC-C Kit Ver.
4.20.000
 *                                          Copyright Microsoft, 1999
 *          All Rights Reserved
 *
 *                                          not yet audited
 *
 *          PURPOSE:            Source file for TPC-C COM+ class
implementation.
 *          Contact:    Charles Levine (clevine@microsoft.com)
 *
 *  Change history:
 *                      4.20.000 - first version
 */

// needed for CoinitializeEx
#define _WIN32_WINNT 0x0400

#include <windows.h>

// need to declare functions for export
#define DllDecl  __declspec( dllexport )

#include "..\..\common\src\trans.h"                     //tpckit transaction
header contains defination of structures specific to TPC-C
#include "..\..\common\src\error.h"
#include "..\..\common\src\txn_base.h"
#include "tpcc_com.h"

#include "..\..\tpcc_com_ps\src\tpcc_com_ps_i.c"
#include "..\..\tpcc_com_all\src\tpcc_com_all_i.c"

// wrapper routine for class constructor
__declspec(dllexport) CTPCC_COM* CTPCC_COM_new(BOOL
bSinglePool)
{
        return new CTPCC_COM(bSinglePool);
}

CTPCC_COM::CTPCC_COM(BOOL bSinglePool)
{
        HRESULT hr = NULL;
        long lRet = 0;
        ULONG ulTmpSize = 0;

        m_pTxn                  = NULL;
        m_pNewOrder             = NULL;
        m_pPayment              = NULL;
        m_pStockLevel   = NULL;
        m_pOrderStatus  = NULL;

        m_bSinglePool   = bSinglePool;

        ulTmpSize = (ULONG) sizeof(COM_DATA);
        VariantInit(&m_vTxn);
        m_vTxn.vt = VT_SAFEARRAY;

        m_vTxn.parray = SafeArrayCreateVector(VT_UI1, ulTmpSize,
ulTmpSize);
        if (!m_vTxn.parray)
                throw new CCOMERR( E_FAIL );

        memset((void*)m_vTxn.parray->pvData,0,ulTmpSize);
        m_pTxn = (COM_DATA*)m_vTxn.parray->pvData;

        hr = CoInitializeEx(NULL, COINIT_MULTITHREADED);
        if (FAILED(hr))
        {
                throw new CCOMERR( hr );
        }

        // create components
        if (m_bSinglePool)
        {
                hr = CoCreateInstance(CLSID_TPCC, NULL,
CLSCTX_SERVER, IID_ITPCC, (void **)&m_pNewOrder);
                if (FAILED(hr))
                        throw new CCOMERR(hr);

                // all txns will use same component
```

```
                m_pPayment = m_pNewOrder;
                m_pStockLevel = m_pNewOrder;
                m_pOrderStatus = m_pNewOrder;
        }
        else
        {
                // use different components for each txn

                hr = CoCreateInstance(CLSID_NewOrder, NULL,
CLSCTX_SERVER, IID_ITPCC, (void **)&m_pNewOrder);
                if (FAILED(hr))
                        throw new CCOMERR(hr);

                hr = CoCreateInstance(CLSID_Payment, NULL,
CLSCTX_SERVER, IID_ITPCC, (void **)&m_pPayment);
                if (FAILED(hr))
                        throw new CCOMERR(hr);

                hr = CoCreateInstance(CLSID_StockLevel, NULL,
CLSCTX_SERVER, IID_ITPCC, (void **)&m_pStockLevel);
                if (FAILED(hr))
                        throw new CCOMERR(hr);

                hr = CoCreateInstance(CLSID_OrderStatus, NULL,
CLSCTX_SERVER, IID_ITPCC, (void **)&m_pOrderStatus);
                if (FAILED(hr))
                        throw new CCOMERR(hr);
        }

        // call setcomplete to release each component back into pool
        hr = m_pNewOrder->CallSetComplete();
        if (FAILED(hr))
                throw new CCOMERR(hr);

        if (!m_bSinglePool)
        {
                hr = m_pPayment->CallSetComplete();
                if (FAILED(hr))
                        throw new CCOMERR(hr);

                hr = m_pStockLevel->CallSetComplete();
                if (FAILED(hr))
                        throw new CCOMERR(hr);

                hr = m_pOrderStatus->CallSetComplete();
                if (FAILED(hr))
                        throw new CCOMERR(hr);
        }
}

CTPCC_COM::~CTPCC_COM()
{
        if (m_pTxn)
                SafeArrayDestroy(m_vTxn.parray);

        ReleaseInterface(m_pNewOrder);
        if (!m_bSinglePool)
        {
                ReleaseInterface(m_pPayment);
                ReleaseInterface(m_pStockLevel);
                ReleaseInterface(m_pOrderStatus);
        }
        CoUninitialize();
}

void CTPCC_COM::NewOrder()
{
        VARIANT   vTxn_out;

        HRESULT hr = m_pNewOrder->NewOrder(m_vTxn, &vTxn_out);
        if (FAILED(hr))
                throw new CCOMERR( hr );
        memcpy(m_pTxn, (void
*)vTxn_out.parray->pvData,vTxn_out.parray->rgsabound[0].cElements);
        SafeArrayDestroy(vTxn_out.parray);

        if ( m_pTxn->ErrorType != ERR_SUCCESS )
                throw new CCOMERR( m_pTxn->ErrorType,
m_pTxn->error );
}

void CTPCC_COM::Payment()
{
        VARIANT   vTxn_out;

        HRESULT hr = m_pPayment->Payment(m_vTxn, &vTxn_out);
        if (FAILED(hr))
                throw new CCOMERR( hr );
        memcpy(m_pTxn, (void
*)vTxn_out.parray->pvData,vTxn_out.parray->rgsabound[0].cElements);
        SafeArrayDestroy(vTxn_out.parray);

        if ( m_pTxn->ErrorType != ERR_SUCCESS )
                throw new CCOMERR( m_pTxn->ErrorType,
m_pTxn->error );
}

void CTPCC_COM::StockLevel()
{
        VARIANT   vTxn_out;

        HRESULT hr = m_pStockLevel->StockLevel(m_vTxn,
&vTxn_out);
        if (FAILED(hr))
                throw new CCOMERR( hr );
        memcpy(m_pTxn, (void
*)vTxn_out.parray->pvData,vTxn_out.parray->rgsabound[0].cElements);
        SafeArrayDestroy(vTxn_out.parray);

        if ( m_pTxn->ErrorType != ERR_SUCCESS )
                throw new CCOMERR( m_pTxn->ErrorType,
m_pTxn->error );
}

void CTPCC_COM::OrderStatus()
{
        VARIANT   vTxn_out;

        HRESULT hr = m_pOrderStatus->OrderStatus(m_vTxn,
&vTxn_out);
        if (FAILED(hr))
                throw new CCOMERR( hr );
        memcpy(m_pTxn, (void
*)vTxn_out.parray->pvData,vTxn_out.parray->rgsabound[0].cElements);
        SafeArrayDestroy(vTxn_out.parray);

        if ( m_pTxn->ErrorType != ERR_SUCCESS )
                throw new CCOMERR( m_pTxn->ErrorType,
m_pTxn->error );
}
```

tpcc_com.h

```
/*      FILE:                   TPCC_COM.H
```

```
 *                                      Microsoft TPC-C Kit Ver.
4.20.000
 *                                      Copyright Microsoft, 1999
 *          All Rights Reserved
 *
 *                                      not yet audited
 *
 *          PURPOSE:            Header file for TPC-C COM+ class
implementation.
 *
 *  Change history:
 *                      4.20.000 - first version
 */

#pragma once

#include <stdio.h>
#include "..\..\tpcc_com_ps\src\tpcc_com_ps.h"

// need to declare functions for import, unless define has already been created
// by the DLL's .cpp module for export.
#ifndef DllDecl
#define DllDecl  __declspec( dllimport )
#endif

class CCOMERR : public CBaseErr
{
        private:
                char m_szErrorText[64];

        public:
                // use this interface for genuine COM errors
                CCOMERR( HRESULT hr )
                {
                        m_hr = hr;
                        m_iErrorType = 0;
                        m_iError = 0;
                }

                // use this interface to impersonate a non-COM error type
                CCOMERR( int iErrorType, int iError )
                {
                        m_iErrorType = iErrorType;
                        m_iError = iError;
                        m_hr = S_OK;
                }

                int             m_hr;
                int             m_iErrorType;
                int             m_iError;

                // A CCOMERR class can impersonate another class,
which happens if the error
                // was not actually a COM Services error, but was simply
transmitted back via COM.
                int ErrorType()
                {
                        if (m_iErrorType == 0)
                                return ERR_TYPE_COM;
                        else
                                return m_iErrorType;
                }

                int ErrorNum() {return m_hr;}

                char *ErrorText()
                {
                        if (m_hr == S_OK)
                                sprintf( m_szErrorText, "Error:
Class %d, error # %d", m_iErrorType, m_iError );
                        else
                                sprintf( m_szErrorText, "Error:
COM HRESULT %x", m_hr );
                        return m_szErrorText;
                }
};

class DllDecl CTPCC_COM : public CTPCC_BASE
{
        private:
                BOOL m_bSinglePool;

                // COM Interface pointers
                ITPCC*                  m_pNewOrder;
                ITPCC*                  m_pPayment;
                ITPCC*                  m_pStockLevel;
                ITPCC*                  m_pOrderStatus;

                struct COM_DATA
                {
                        int ErrorType;
                        int error;
                        union
                        {
                                NEW_ORDER_DATA
NewOrder;
                                PAYMENT_DATA
Payment;
                                DELIVERY_DATA
Delivery;
                                STOCK_LEVEL_DATA
StockLevel;
                                ORDER_STATUS_DATA
OrderStatus;
                        } u;
                } *m_pTxn;

                VARIANT m_vTxn;
        public:
                CTPCC_COM(BOOL bSinglePool);
                ~CTPCC_COM(void);

                inline PNEW_ORDER_DATA
BuffAddr_NewOrder()             { return &m_pTxn->u.NewOrder;
 };
                inline PPAYMENT_DATA
BuffAddr_Payment()      { return &m_pTxn->u.Payment;    };
                inline PDELIVERY_DATA
BuffAddr_Delivery()     { return &m_pTxn->u.Delivery;   };
                inline PSTOCK_LEVEL_DATA BuffAddr_StockLevel()
{ return &m_pTxn->u.StockLevel;  };
                inline PORDER_STATUS_DATA
BuffAddr_OrderStatus()  { return &m_pTxn->u.OrderStatus; };

                void NewOrder           ();
                void Payment            ();
                void StockLevel         ();
                void OrderStatus        ();
                void Delivery           () { throw new
CCOMERR(E_NOTIMPL); }  // not supported
};


inline void ReleaseInterface(IUnknown *pUnk)
{
        if (pUnk)
```

```
	{
		pUnk->Release();
		pUnk = NULL;
	}
}


// wrapper routine for class constructor
extern "C" __declspec(dllexport) CTPCC_COM* CTPCC_COM_new(BOOL);

typedef CTPCC_COM* (TYPE_CTPCC_COM)(BOOL);
```

Tpcc_com_all.cpp

```
/*	FILE:		TPCC_COM_ALL.CPP
 *					Microsoft TPC-C Kit Ver. 4.20.000
 *					Copyright Microsoft, 1999
 *	All Rights Reserved
 *
 *					Version 4.10.000 audited by Richard Gimarc, Performance Metrics, 3/17/99
 *
 *	PURPOSE:	Implementation for TPC-C Tuxedo class.
 *	Contact:	Charles Levine (clevine@microsoft.com)
 *
 *  Change history:
 *		4.20.000 - updated rev number to match kit
 */

#define STRICT
#define _WIN32_WINNT 0x0400
#define _ATL_APARTMENT_THREADED

#include <stdio.h>
#include <atlbase.h>
//You may derive a class from CComModule and use it if you want to override
//something, but do not change the name of _Module
extern CComModule _Module;

#include <atlcom.h>
#include <initguid.h>
#include <transact.h>
#include <atlimpl.cpp>
#include <comsvcs.h>

#include <sqltypes.h>
#include <sql.h>
#include <sqlext.h>

#include "tpcc_com_ps.h"
#include "..\..\common\src\trans.h"
//tpckit transaction header contains definations of structures specific to TPC-C
#include "..\..\common\src\txn_base.h"
#include "..\..\common\src\error.h"
#include "..\..\common\src\ReadRegistry.h"
#include "..\..\db_dblib_dll\src\tpcc_dblib.h"		// DBLIB implementation of TPC-C txns
#include "..\..\db_odbc_dll\src\tpcc_odbc.h"		// ODBC implementation of TPC-C txns

#include "resource.h"
#include "tpcc_com_all.h"
#include "tpcc_com_all_i.c"
#include "Methods.h"
#include "..\..\tpcc_com_ps\src\tpcc_com_ps_i.c"
#include "..\..\common\src\ReadRegistry.cpp"


CComModule _Module;

BEGIN_OBJECT_MAP(ObjectMap)
	OBJECT_ENTRY(CLSID_TPCC, CTPCC)
	OBJECT_ENTRY(CLSID_NewOrder, CNewOrder)
	OBJECT_ENTRY(CLSID_OrderStatus, COrderStatus)
	OBJECT_ENTRY(CLSID_Payment, CPayment)
	OBJECT_ENTRY(CLSID_StockLevel, CStockLevel)
END_OBJECT_MAP()


// configuration settings from registry
TPCCREGISTRYDATA	Reg;
char szMyComputerName[MAX_COMPUTERNAME_LENGTH+1];

static  HINSTANCE hLibInstanceDb = NULL;

TYPE_CTPCC_DBLIB	*pCTPCC_DBLIB_new;
TYPE_CTPCC_ODBC		*pCTPCC_ODBC_new;


////////////////////////////////////////////////////////////////////////////
// DLL Entry Point

extern "C"
BOOL WINAPI DllMain(HINSTANCE hInstance, DWORD dwReason, LPVOID /*lpReserved*/)
{
	char szDllName[128];

	try
	{
		if (dwReason == DLL_PROCESS_ATTACH)
		{
			_Module.Init(ObjectMap, hInstance);
			DisableThreadLibraryCalls(hInstance);

			DWORD dwSize = MAX_COMPUTERNAME_LENGTH+1;
			GetComputerName(szMyComputerName, &dwSize);
			szMyComputerName[dwSize] = 0;

			if ( ReadTPCCRegistrySettings( &Reg ) )
				throw new CCOMPONENT_ERR( ERR_MISSING_REGISTRY_ENTRIES );

			if (Reg.eDB_Protocol == DBLIB)
			{
				strcpy( szDllName, Reg.szPath );
				strcat( szDllName, "tpcc_dblib.dll");
				hLibInstanceDb = LoadLibrary( szDllName );
				if (hLibInstanceDb == NULL)
					throw new CCOMPONENT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );

				// get function pointer to wrapper for class constructor
				pCTPCC_DBLIB_new = (TYPE_CTPCC_DBLIB*) GetProcAddress(hLibInstanceDb,"CTPCC_DBLIB_new");
```

```
                                        if (pCTPCC_DBLIB_new ==
NULL)
                                                throw new
CCOMPONENT_ERR( ERR_GETPROCADDR_FAILED, szDllName,
GetLastError() );
                                }
                                else if (Reg.eDB_Protocol == ODBC)
                                {
                                        strcpy( szDllName, Reg.szPath );
                                        strcat( szDllName,
"tpcc_odbc.dll");
                                        hLibInstanceDb = LoadLibrary(
szDllName );
                                        if (hLibInstanceDb == NULL)
                                                throw new
CCOMPONENT_ERR( ERR_LOADDLL_FAILED, szDllName,
GetLastError() );

                                        // get function pointer to wrapper
for class constructor
                                        pCTPCC_ODBC_new =
(TYPE_CTPCC_ODBC*)
GetProcAddress(hLibInstanceDb,"CTPCC_ODBC_new");
                                        if (pCTPCC_ODBC_new ==
NULL)
                                                throw new
CCOMPONENT_ERR( ERR_GETPROCADDR_FAILED, szDllName,
GetLastError() );
                                }
                                else
                                        throw new CCOMPONENT_ERR(
ERR_UNKNOWN_DB_PROTOCOL );
                        }
                        else if (dwReason == DLL_PROCESS_DETACH)
                                _Module.Term();

                }
                catch (CBaseErr *e)
                {
                        WriteMessageToEventLog(e->ErrorText());
                        delete e;
                        return FALSE;
                }
                catch (...)
                {
                        WriteMessageToEventLog(TEXT("Unhandled exception
in object DllMain"));
                        return FALSE;
                }

                return TRUE;            // OK
}

////////////////////////////////////////////////////////////////////////
// Used to determine whether the DLL can be unloaded by OLE

STDAPI DllCanUnloadNow(void)
{
        return (_Module.GetLockCount()==0) ? S_OK : S_FALSE;
}

////////////////////////////////////////////////////////////////////////
// Returns a class factory to create an object of the requested type

STDAPI DllGetClassObject(REFCLSID rclsid, REFIID riid, LPVOID* ppv)
{
        return _Module.GetClassObject(rclsid, riid, ppv);
}


////////////////////////////////////////////////////////////////////////
// DllRegisterServer - Adds entries to the system registry

STDAPI DllRegisterServer(void)
{
        // registers object, typelib and all interfaces in typelib
        return _Module.RegisterServer(TRUE);
}

////////////////////////////////////////////////////////////////////////
// DllUnregisterServer - Removes entries from the system registry

STDAPI DllUnregisterServer(void)
{
        _Module.UnregisterServer();
        return S_OK;
}


static void WriteMessageToEventLog(LPTSTR lpszMsg)
{
  TCHAR   szMsg[256];
  HANDLE  hEventSource;
  LPTSTR  lpszStrings[2];

  // Use event logging to log the error.
  //
  hEventSource = RegisterEventSource(NULL, TEXT("tpcc_com_all.dll"));

  _stprintf(szMsg, TEXT("Error in COM+ TPC-C Component: "));
  lpszStrings[0] = szMsg;
  lpszStrings[1] = lpszMsg;

  if (hEventSource != NULL)
        {
    ReportEvent(hEventSource, // handle of event source
      EVENTLOG_ERROR_TYPE,  // event type
      0,                    // event category
      0,                    // event ID
      NULL,                 // current user's SID
      2,                    // strings in lpszStrings
      0,                    // no bytes of raw data
      (LPCTSTR *)lpszStrings,    // array of error strings
      NULL);                // no raw data

    (VOID) DeregisterEventSource(hEventSource);
  }
}

inline void ReleaseInterface(IUnknown *pUnk)
{
        if (pUnk)
        {
                pUnk->Release();
                pUnk = NULL;
        }
}

/* FUNCTION: CCOMPONENT_ERR::ErrorText
 *
 */

char* CCOMPONENT_ERR::ErrorText(void)
{
        static SERRORMSG errorMsgs[] =
        {
```

```
		{ ERR_MISSING_REGISTRY_ENTRIES,  "Required
entries missing from registry."                                 },
		{ ERR_LOADDLL_FAILED,
"Load of DLL failed.  DLL="
		},
		{ ERR_GETPROCADDR_FAILED,
"Could not map proc in DLL.  GetProcAddr error.  DLL="          },
		{ ERR_UNKNOWN_DB_PROTOCOL,
"Unknown database protocol specified in registry."              },
		{ 0,
	""
                                                                        }

	};

	char szTmp[256];
	int i = 0;
	while (TRUE)
	{
		if (errorMsgs[i].szMsg[0] == 0)
		{
			strcpy( szTmp, "Unknown error number." );
			break;
		}
		if (m_Error == errorMsgs[i].iError)
		{
			strcpy( szTmp, errorMsgs[i].szMsg );
			break;
		}
		i++;
	}

	if (m_szTextDetail)
		strcat( szTmp, m_szTextDetail );
	if (m_SystemErr)
		wsprintf( szTmp+strlen(szTmp), "  Error=%d",
m_SystemErr );

	m_szErrorText = new char[strlen(szTmp)+1];
	strcpy( m_szErrorText, szTmp );
	return m_szErrorText;
}


CTPCC_Common::CTPCC_Common()
{
	m_pTxn = NULL;
	m_bCanBePooled = TRUE;
}

CTPCC_Common::~CTPCC_Common()
{
	if (m_pTxn)
		delete m_pTxn;
}

HRESULT CTPCC_Common::CallSetComplete()
{
	IObjectContext* pObjectContext = NULL;

	// get our object context
	HRESULT hr = CoGetObjectContext( IID_IObjectContext, (void
**)&pObjectContext );
	pObjectContext->SetComplete();
	ReleaseInterface(pObjectContext);
	return hr;
}

//
//		called by the ctor activator
//
STDMETHODIMP CTPCC_Common::Construct(IDispatch * pUnk)
{
	// Code to access construction string, if needed later...
	//		if (!pUnk)
	//			return E_UNEXPECTED;
	//		IObjectConstructString * pString = NULL;
	//		HRESULT hr =
pUnk->QueryInterface(IID_IObjectConstructString, (void **)&pString);
	//		pString->Release();

	try
	{
		if (Reg.eDB_Protocol == ODBC)
			m_pTxn = pCTPCC_ODBC_new(
Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, szMyComputerName,
Reg.szDbName );
		else if (Reg.eDB_Protocol == DBLIB)
			m_pTxn = pCTPCC_DBLIB_new(
Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, szMyComputerName,
Reg.szDbName );
	}
	catch (CBaseErr *e)
	{
		WriteMessageToEventLog(e->ErrorText());
		delete e;
		return E_FAIL;
	}
	catch (...)
	{
		WriteMessageToEventLog(TEXT("Unhandled exception
in object ::Construct"));
		return E_FAIL;
	}

	return S_OK;
}

HRESULT CTPCC_Common::NewOrder(VARIANT txn_in, VARIANT*
txn_out)
{
	PNEW_ORDER_DATA		pNewOrder;
	COM_DATA		*pData;
	try
	{
		pData = (COM_DATA*)txn_in.parray->pvData;
		pNewOrder = m_pTxn->BuffAddr_NewOrder();

		memcpy(pNewOrder, &pData->u.NewOrder,
sizeof(NEW_ORDER_DATA));

		m_pTxn->NewOrder();			// do the
actual txn

		VariantInit(txn_out);
		txn_out->vt = VT_SAFEARRAY;
		txn_out->parray = SafeArrayCreateVector(VT_UI1,

txn_in.parray->rgsabound->cElements,

txn_in.parray->rgsabound->cElements);
		pData = (COM_DATA*) txn_out->parray->pvData;

		memcpy( &pData->u.NewOrder, pNewOrder,
sizeof(NEW_ORDER_DATA));

		pData->retval = ERR_SUCCESS;
```

```
                pData->error = 0;
                return S_OK;
        }
        catch (CBaseErr *e)
        {
                // check for lost database connection; if yes, component is
toast
                if ( ((e->ErrorType() == ERR_TYPE_DBLIB) &&
(e->ErrorNum() == 10005)) ||
                        ((e->ErrorType() == ERR_TYPE_ODBC)
&& (e->ErrorNum() == 10054)) )
                        m_bCanBePooled = FALSE;

                pData->retval = e->ErrorType();
                pData->error = e->ErrorNum();
                delete e;
                return E_FAIL;
        }
        catch (...)
        {
                WriteMessageToEventLog(TEXT("Unhandled
exception."));
                pData->retval = ERR_TYPE_LOGIC;
                pData->error = 0;
                m_bCanBePooled = FALSE;
                return E_FAIL;
        }
}

HRESULT CTPCC_Common::Payment(VARIANT txn_in, VARIANT*
txn_out)
{
        PPAYMENT_DATA pPayment;
        COM_DATA                *pData;
        try
        {
                pData = (COM_DATA*)txn_in.parray->pvData;
                pPayment = m_pTxn->BuffAddr_Payment();

                memcpy(pPayment, &pData->u.Payment,
sizeof(PAYMENT_DATA));

                m_pTxn->Payment();              // do the actual txn

                VariantInit(txn_out);
                txn_out->vt = VT_SAFEARRAY;
                txn_out->parray = SafeArrayCreateVector( VT_UI1,

txn_in.parray->rgsabound->cElements,

txn_in.parray->rgsabound->cElements);
                pData = (COM_DATA*) txn_out->parray->pvData;

                memcpy( &pData->u.Payment, pPayment,
sizeof(PAYMENT_DATA));

                pData->retval = ERR_SUCCESS;
                pData->error = 0;
                return S_OK;
        }
        catch (CBaseErr *e)
        {
                // check for lost database connection; if yes, component is
toast
                if ( ((e->ErrorType() == ERR_TYPE_DBLIB) &&
(e->ErrorNum() == 10005)) ||
                        ((e->ErrorType() == ERR_TYPE_ODBC)
&& (e->ErrorNum() == 10054)) )
                        m_bCanBePooled = FALSE;

                pData->retval = e->ErrorType();
                pData->error = e->ErrorNum();
                delete e;
                return E_FAIL;
        }
        catch (...)
        {
                WriteMessageToEventLog(TEXT("Unhandled
exception."));
                pData->retval = ERR_TYPE_LOGIC;
                pData->error = 0;
                m_bCanBePooled = FALSE;
                return E_FAIL;
        }
}

HRESULT CTPCC_Common::StockLevel(VARIANT txn_in, VARIANT*
txn_out)
{
        PSTOCK_LEVEL_DATA       pStockLevel;
        COM_DATA                        *pData;

        try
        {
                pData = (COM_DATA*)txn_in.parray->pvData;
                pStockLevel = m_pTxn->BuffAddr_StockLevel();

                memcpy(pStockLevel, &pData->u.StockLevel,
sizeof(STOCK_LEVEL_DATA));

                m_pTxn->StockLevel();

                VariantInit(txn_out);
                txn_out->vt = VT_SAFEARRAY;
                txn_out->parray = SafeArrayCreateVector( VT_UI1,

txn_in.parray->rgsabound->cElements,

txn_in.parray->rgsabound->cElements);
                pData = (COM_DATA*)txn_out->parray->pvData;

                memcpy( &pData->u.StockLevel, pStockLevel,
sizeof(STOCK_LEVEL_DATA));

                pData->retval = ERR_SUCCESS;
                pData->error = 0;
                return S_OK;
        }
        catch (CBaseErr *e)
        {
                // check for lost database connection; if yes, component is
toast
                if ( ((e->ErrorType() == ERR_TYPE_DBLIB) &&
(e->ErrorNum() == 10005)) ||
                        ((e->ErrorType() == ERR_TYPE_ODBC)
&& (e->ErrorNum() == 10054)) )
                        m_bCanBePooled = FALSE;

                pData->retval = e->ErrorType();
                pData->error = e->ErrorNum();
                delete e;
                return E_FAIL;
        }
        catch (...)
        {
```

```
                        WriteMessageToEventLog(TEXT("Unhandled
exception."));
                        pData->retval = ERR_TYPE_LOGIC;
                        pData->error = 0;
                        m_bCanBePooled = FALSE;
                        return E_FAIL;
                }
}

HRESULT CTPCC_Common::OrderStatus(VARIANT txn_in, VARIANT*
txn_out)
{
                PORDER_STATUS_DATA      pOrderStatus;
                COM_DATA                                *pData;
                try
                {
                        pData = (COM_DATA*)txn_in.parray->pvData;
                        pOrderStatus = m_pTxn->BuffAddr_OrderStatus();

                        memcpy(pOrderStatus, &pData->u.OrderStatus,
sizeof(ORDER_STATUS_DATA));

                        m_pTxn->OrderStatus();

                        VariantInit(txn_out);
                        txn_out->vt = VT_SAFEARRAY;
                        txn_out->parray = SafeArrayCreateVector( VT_UI1,

txn_in.parray->rgsabound->cElements,

txn_in.parray->rgsabound->cElements);
                        pData = (COM_DATA*)txn_out->parray->pvData;

                        memcpy( &pData->u.OrderStatus, pOrderStatus,
sizeof(ORDER_STATUS_DATA));

                        pData->retval = ERR_SUCCESS;
                        pData->error = 0;
                        return S_OK;
                }
                catch (CBaseErr *e)
                {
                        // check for lost database connection; if yes, component is
toast
                        if ( ((e->ErrorType() == ERR_TYPE_DBLIB) &&
(e->ErrorNum() == 10005)) ||
                                        ((e->ErrorType() == ERR_TYPE_ODBC)
&& (e->ErrorNum() == 10054)) )
                                m_bCanBePooled = FALSE;

                        pData->retval = e->ErrorType();
                        pData->error = e->ErrorNum();
                        delete e;
                        return E_FAIL;
                }
                catch (...)
                {
                        WriteMessageToEventLog(TEXT("Unhandled
exception."));
                        pData->retval = ERR_TYPE_LOGIC;
                        pData->error = 0;
                        m_bCanBePooled = FALSE;
                        return E_FAIL;
                }
}
```

Tpcc_com_all.def

```
; tpcc_com_all.def : Declares the module parameters.

LIBRARY      "tpcc_com_all.dll"

EXPORTS
                DllCanUnloadNow     @1 PRIVATE
                DllGetClassObject   @2 PRIVATE
                DllRegisterServer   @3 PRIVATE
                DllUnregisterServer    @4 PRIVATE
```

Tpcc_com_all.dsp

```
# Microsoft Developer Studio Project File - Name="tpcc_com_all" - Package
Owner=<4>
# Microsoft Developer Studio Generated Build File, Format Version 6.00
# ** DO NOT EDIT **

# TARGTYPE "Win32 (x86) Dynamic-Link Library" 0x0102

CFG=tpcc_com_all - Win32 Debug
!MESSAGE This is not a valid makefile. To build this project using NMAKE,
!MESSAGE use the Export Makefile command and run
!MESSAGE
!MESSAGE NMAKE /f "tpcc_com_all.mak".
!MESSAGE
!MESSAGE You can specify a configuration when running NMAKE
!MESSAGE by defining the macro CFG on the command line. For example:
!MESSAGE
!MESSAGE NMAKE /f "tpcc_com_all.mak" CFG="tpcc_com_all - Win32
Debug"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "tpcc_com_all - Win32 Release" (based on "Win32 (x86)
Dynamic-Link Library")
!MESSAGE "tpcc_com_all - Win32 Debug" (based on "Win32 (x86)
Dynamic-Link Library")
!MESSAGE

# Begin Project
# PROP AllowPerConfigDependencies 0
# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CPP=cl.exe
MTL=midl.exe
RSC=rc.exe

!IF  "$(CFG)" == "tpcc_com_all - Win32 Release"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir "Release"
# PROP BASE Intermediate_Dir "Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MT /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD CPP /nologo /MT /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "NDEBUG" /mktyplib203 /o "NUL" /win32
# ADD MTL /nologo /D "NDEBUG" /mktyplib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "NDEBUG"
```

```
# ADD RSC /l 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /dll /machine:I386
# ADD LINK32 ..\db_dblib_dll\bin\tpcc_dblib.lib
..\db_odbc_dll\bin\tpcc_odbc.lib kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /dll /machine:I386

!ELSEIF  "$(CFG)" == "tpcc_com_all - Win32 Debug"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "Debug"
# PROP BASE Intermediate_Dir "Debug"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MTd /W3 /Gm /GX /Zi /Od /D "WIN32" /D
"_DEBUG" /D "_WINDOWS" /YX /FD /c
# ADD CPP /nologo /MTd /W3 /Gm /GX /ZI /Od /D "WIN32" /D "_DEBUG"
/D "_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "_DEBUG" /mktyplib203 /o "NUL" /win32
# ADD MTL /nologo /D "_DEBUG" /mktyplib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "_DEBUG"
# ADD RSC /l 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /dll /debug /machine:I386
/pdbtype:sept
# ADD LINK32 ..\db_dblib_dll\bin\tpcc_dblib.lib
..\db_odbc_dll\bin\tpcc_odbc.lib kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /dll /debug /machine:I386
/pdbtype:sept

!ENDIF

# Begin Target

# Name "tpcc_com_all - Win32 Release"
# Name "tpcc_com_all - Win32 Debug"
# Begin Group "Source"

# PROP Default_Filter "*.cpp, *.c"
# Begin Source File

SOURCE=.\src\tpcc_com_all.cpp
# SUBTRACT CPP /YX
# End Source File
# Begin Source File

SOURCE=.\src\tpcc_com_all.def
# End Source File
# Begin Source File

SOURCE=.\src\tpcc_com_all.idl

!IF  "$(CFG)" == "tpcc_com_all - Win32 Release"

# PROP Ignore_Default_Tool 1
# Begin Custom Build - Performing MIDL step
InputPath=.\src\tpcc_com_all.idl

BuildCmds= \
            midl /Oicf /h "tpcc_com_all.h" /iid "tpcc_com_all_i.c"
".\src\tpcc_com_all.idl"   /out ".\src"

".\src\tpcc_com_all.tlb" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\tpcc_com_all.h" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\tpcc_com_all_i.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)
# End Custom Build

!ELSEIF  "$(CFG)" == "tpcc_com_all - Win32 Debug"

# PROP Ignore_Default_Tool 1
# Begin Custom Build - Performing MIDL step
InputPath=.\src\tpcc_com_all.idl

BuildCmds= \
            midl /Oicf /h "tpcc_com_all.h" /iid "tpcc_com_all_i.c"
".\src\tpcc_com_all.idl"   /out ".\src"

".\src\tpcc_com_all.tlb" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\tpcc_com_all.h" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\tpcc_com_all_i.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)
# End Custom Build

!ENDIF

# End Source File
# End Group
# Begin Group "Header"

# PROP Default_Filter "*.h"
# Begin Source File

SOURCE=.\src\Methods.h
# End Source File
# Begin Source File

SOURCE=.\src\resource.h
# End Source File
# End Group
# Begin Source File

SOURCE=.\src\tpcc_com_all.rc
# End Source File
# End Target
# End Project
```

Tpcc_com_all.h

```
#pragma warning( disable: 4049 )  /* more than 64k source lines */

/* this ALWAYS GENERATED file contains the definitions for the interfaces
*/


 /* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:14 2001
 */
/* Compiler settings for .\src\tpcc_com_all.idl:
    Oicf (OptLev=i2), W1, Zp8, env=Win32 (32b run), ms_ext, c_ext
    error checks: allocation ref bounds_check enum stub_data
    VC __declspec() decoration level:
         __declspec(uuid()), __declspec(selectany), __declspec(novtable)
         DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )


/* verify that the <rpcndr.h> version is high enough to compile this file*/
#ifndef __REQUIRED_RPCNDR_H_VERSION__
#define __REQUIRED_RPCNDR_H_VERSION__ 440
#endif

#include "rpc.h"
#include "rpcndr.h"

#ifndef __tpcc_com_all_h__
#define __tpcc_com_all_h__

/* Forward Declarations */

#ifndef __TPCC_FWD_DEFINED__
#define __TPCC_FWD_DEFINED__

#ifdef __cplusplus
typedef class TPCC TPCC;
#else
typedef struct TPCC TPCC;
#endif /* __cplusplus */

#endif      /* __TPCC_FWD_DEFINED__ */


#ifndef __NewOrder_FWD_DEFINED__
#define __NewOrder_FWD_DEFINED__

#ifdef __cplusplus
typedef class NewOrder NewOrder;
#else
typedef struct NewOrder NewOrder;
#endif /* __cplusplus */

#endif      /* __NewOrder_FWD_DEFINED__ */


#ifndef __OrderStatus_FWD_DEFINED__
#define __OrderStatus_FWD_DEFINED__

#ifdef __cplusplus
typedef class OrderStatus OrderStatus;
#else
typedef struct OrderStatus OrderStatus;
#endif /* __cplusplus */

#endif      /* __OrderStatus_FWD_DEFINED__ */

#ifndef __Payment_FWD_DEFINED__
#define __Payment_FWD_DEFINED__

#ifdef __cplusplus
typedef class Payment Payment;
#else
typedef struct Payment Payment;
#endif /* __cplusplus */

#endif      /* __Payment_FWD_DEFINED__ */


#ifndef __StockLevel_FWD_DEFINED__
#define __StockLevel_FWD_DEFINED__

#ifdef __cplusplus
typedef class StockLevel StockLevel;
#else
typedef struct StockLevel StockLevel;
#endif /* __cplusplus */

#endif      /* __StockLevel_FWD_DEFINED__ */


/* header files for imported files */
#include "oaidl.h"
#include "ocidl.h"
#include "tpcc_com_ps.h"

#ifdef __cplusplus
extern "C"{
#endif

void __RPC_FAR * __RPC_USER MIDL_user_allocate(size_t);
void __RPC_USER MIDL_user_free( void __RPC_FAR * );

/* interface __MIDL_itf_tpcc_com_all_0000 */
/* [local] */


extern RPC_IF_HANDLE __MIDL_itf_tpcc_com_all_0000_v0_0_c_ifspec;
extern RPC_IF_HANDLE __MIDL_itf_tpcc_com_all_0000_v0_0_s_ifspec;


#ifndef __TPCCLib_LIBRARY_DEFINED__
#define __TPCCLib_LIBRARY_DEFINED__

/* library TPCCLib */
/* [helpstring][version][uuid] */


EXTERN_C const IID LIBID_TPCCLib;

EXTERN_C const CLSID CLSID_TPCC;

#ifdef __cplusplus

class DECLSPEC_UUID("122A3128-2520-11D3-BA71-00C04FBFE08B")
TPCC;
#endif

EXTERN_C const CLSID CLSID_NewOrder;

#ifdef __cplusplus

class DECLSPEC_UUID("975BAABF-84A7-11D2-BA47-00C04FBFE08B")
NewOrder;
#endif
```

```
EXTERN_C const CLSID CLSID_OrderStatus;

#ifdef __cplusplus

class DECLSPEC_UUID("266836AD-A50D-11D2-BA4E-00C04FBFE08B")
OrderStatus;
#endif

EXTERN_C const CLSID CLSID_Payment;

#ifdef __cplusplus

class DECLSPEC_UUID("CD02F7EF-A4FA-11D2-BA4E-00C04FBFE08B")
Payment;
#endif

EXTERN_C const CLSID CLSID_StockLevel;

#ifdef __cplusplus

class DECLSPEC_UUID("2668369E-A50D-11D2-BA4E-00C04FBFE08B")
StockLevel;
#endif
#endif /* __TPCCLib_LIBRARY_DEFINED__ */

/* Additional Prototypes for ALL interfaces */

/* end of Additional Prototypes */

#ifdef __cplusplus
}
#endif

#endif
```

Tpcc_com_all.idl

```
/*          FILE:                TPCC.IDL
 *                                        Microsoft TPC-C Kit Ver.
4.20.000
 *                                        Copyright Microsoft, 1999
 *          All Rights Reserved
 *
 *                                        not yet audited
 *
 *          PURPOSE:             IDL source for TPCC.dll.  This file is
processed by the MIDL tool to
 *                                        produce the type library
(TPCC.tlb) and marshalling code.
 *
 *  Change history:
 *                    4.20.000 - first version
 */

interface TPCC;
interface NewOrder;
interface OrderStatus;
interface Payment;
interface StockLevel;


import "oaidl.idl";
import "ocidl.idl";
import "..\tpcc_com_ps\src\tpcc_com_ps.idl";

[
        uuid(122A3117-2520-11D3-BA71-00C04FBFE08B),
        version(1.0),
        helpstring("TPC-C 1.0 Type Library")
]
library TPCCLib
{
        importlib("stdole32.tlb");
        importlib("stdole2.tlb");

        [
                uuid(122A3128-2520-11D3-BA71-00C04FBFE08B),
                helpstring("All Txns Class")
        ]
        coclass TPCC
        {
                [default] interface ITPCC;
        };


        [
                uuid(975BAABF-84A7-11D2-BA47-00C04FBFE08B),
                helpstring("NewOrder Class")
        ]
        coclass NewOrder
        {
                [default] interface ITPCC;
        };


        [
                uuid(266836AD-A50D-11D2-BA4E-00C04FBFE08B),
                helpstring("OrderStatus Class")
        ]
        coclass OrderStatus
        {
                [default] interface ITPCC;
        };


        [
                uuid(CD02F7EF-A4FA-11D2-BA4E-00C04FBFE08B),
                helpstring("Payment Class")
        ]
        coclass Payment
        {
                [default] interface ITPCC;
        };


        [
                uuid(2668369E-A50D-11D2-BA4E-00C04FBFE08B),
                helpstring("StockLevel Class")
        ]
        coclass StockLevel
        {
                [default] interface ITPCC;
        };

};
```

Tpcc_com_all.rc

```
//Microsoft Developer Studio generated resource script.
//
#include "resource.h"

#define APSTUDIO_READONLY_SYMBOLS
```

```
//////////////////////////////////////////////////////////////////////////////
//
// Generated from the TEXTINCLUDE 2 resource.
//
#include "winres.h"

//////////////////////////////////////////////////////////////////////////////
#undef APSTUDIO_READONLY_SYMBOLS

//////////////////////////////////////////////////////////////////////////////
// English (U.S.) resources

#if !defined(AFX_RESOURCE_DLL) || defined(AFX_TARG_ENU)
#ifdef _WIN32
LANGUAGE LANG_ENGLISH, SUBLANG_ENGLISH_US
#pragma code_page(1252)
#endif //_WIN32

#ifdef APSTUDIO_INVOKED
//////////////////////////////////////////////////////////////////////////////
//
// TEXTINCLUDE
//

1 TEXTINCLUDE DISCARDABLE
BEGIN
   "resource.h\0"
END

2 TEXTINCLUDE DISCARDABLE
BEGIN
   "#include ""winres.h""\r\n"
   "\0"
END

3 TEXTINCLUDE DISCARDABLE
BEGIN
   "1 TYPELIB ""tpcc_com_all.tlb""\r\n"
   "\0"
END

#endif    // APSTUDIO_INVOKED


#ifndef _MAC
//////////////////////////////////////////////////////////////////////////////
//
// Version
//

VS_VERSION_INFO VERSIONINFO
 FILEVERSION 1,0,0,1
 PRODUCTVERSION 1,0,0,1
 FILEFLAGSMASK 0x3fL
#ifdef _DEBUG
 FILEFLAGS 0x1L
#else
 FILEFLAGS 0x0L
#endif
 FILEOS 0x4L
 FILETYPE 0x2L
 FILESUBTYPE 0x0L
BEGIN
   BLOCK "StringFileInfo"
   BEGIN
      BLOCK "040904B0"
      BEGIN
         VALUE "CompanyName", "\0"
         VALUE "FileDescription", "tpcc_com_all Module\0"
         VALUE "FileVersion", "1, 0, 0, 1\0"
         VALUE "InternalName", "TPCCNEWORDER\0"
         VALUE "LegalCopyright", "Copyright 1997\0"
         VALUE "OriginalFilename", "tpcc_com_all.DLL\0"
         VALUE "ProductName", "tpcc_com_all Module\0"
         VALUE "ProductVersion", "1, 0, 0, 1\0"
         VALUE "OLESelfRegister", "\0"
      END
   END
   BLOCK "VarFileInfo"
   BEGIN
      VALUE "Translation", 0x409, 1200
   END
END

#endif    // !_MAC

//////////////////////////////////////////////////////////////////////////////
//
// REGISTRY
//

IDR_TPCC              REGISTRY DISCARDABLE    "tpcc_com_all.rgs"
IDR_NEWORDER          REGISTRY DISCARDABLE    "tpcc_com_no.rgs"
IDR_ORDERSTATUS       REGISTRY DISCARDABLE
"tpcc_com_os.rgs"
IDR_PAYMENT           REGISTRY DISCARDABLE    "tpcc_com_pay.rgs"
IDR_STOCKLEVEL        REGISTRY DISCARDABLE    "tpcc_com_sl.rgs"

//////////////////////////////////////////////////////////////////////////////
//
// String Table
//

STRINGTABLE DISCARDABLE
BEGIN
   IDS_PROJNAME          "tpcc_com_all"
END

#endif    // English (U.S.) resources
//////////////////////////////////////////////////////////////////////////////

#ifndef APSTUDIO_INVOKED
//////////////////////////////////////////////////////////////////////////////
//
// Generated from the TEXTINCLUDE 3 resource.
//
1 TYPELIB "tpcc_com_all.tlb"

//////////////////////////////////////////////////////////////////////////////
#endif    // not APSTUDIO_INVOKED
```

Tpcc_com_all.rgs

```
HKCR
{
            TPCC.AllTxns.1 = s 'All Txns Class'
            {
                        CLSID = s
'{122A3128-2520-11D3-BA71-00C04FBFE08B}'
            }
            TPCC.AllTxns = s 'TPCC Class'
            {
                        CurVer = s 'TPCC.AllTxns.1'
            }
            NoRemove CLSID
```

```
        {
                ForceRemove
{122A3128-2520-11D3-BA71-00C04FBFE08B} = s 'TPCC Class'
                {
                        ProgID = s 'TPCC.AllTxns.1'
                        VersionIndependentProgID = s
'TPCC.AllTxns'
                        InprocServer32 = s '%MODULE%'
                        {
                                val ThreadingModel = s 'Both'
                        }
                }
        }
}
```

Tpcc_com_all_i.c

```
#pragma warning( disable: 4049 )  /* more than 64k source lines */

/* this ALWAYS GENERATED file contains the IIDs and CLSIDs */

/* link this file in with the server and any clients */

 /* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:14 2001
 */
/* Compiler settings for .\src\tpcc_com_all.idl:
    Oicf (OptLev=i2), W1, Zp8, env=Win32 (32b run), ms_ext, c_ext
    error checks: allocation ref bounds_check enum stub_data
    VC __declspec() decoration level:
        __declspec(uuid()), __declspec(selectany), __declspec(novtable)
        DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#if !defined(_M_IA64) && !defined(_M_AXP64)

#ifdef __cplusplus
extern "C"{
#endif


#include <rpc.h>
#include <rpcndr.h>

#ifdef _MIDL_USE_GUIDDEF_

#ifndef INITGUID
#define INITGUID
#include <guiddef.h>
#undef INITGUID
#else
#include <guiddef.h>
#endif

#define MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8) \
        DEFINE_GUID(name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8)

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

typedef struct _IID
{
    unsigned long x;
    unsigned short s1;
    unsigned short s2;
    unsigned char  c[8];
} IID;

#endif // __IID_DEFINED__

#ifndef CLSID_DEFINED
#define CLSID_DEFINED
typedef IID CLSID;
#endif // CLSID_DEFINED

#define MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8) \
        const type name = {l,w1,w2,{b1,b2,b3,b4,b5,b6,b7,b8}}

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
LIBID_TPCCLib,0x122A3117,0x2520,0x11D3,0xBA,0x71,0x00,0xC0,0x4F,0
xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_TPCC,0x122A3128,0x2520,0x11D3,0xBA,0x71,0x00,0xC0,0x4F,0xB
F,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_NewOrder,0x975BAABF,0x84A7,0x11D2,0xBA,0x47,0x00,0xC0,0x4
F,0xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_OrderStatus,0x266836AD,0xA50D,0x11D2,0xBA,0x4E,0x00,0xC0,0x
4F,0xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_Payment,0xCD02F7EF,0xA4FA,0x11D2,0xBA,0x4E,0x00,0xC0,0x4F
,0xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_StockLevel,0x2668369E,0xA50D,0x11D2,0xBA,0x4E,0x00,0xC0,0x4
F,0xBF,0xE0,0x8B);

#undef MIDL_DEFINE_GUID

#ifdef __cplusplus
}
#endif

#endif /* !defined(_M_IA64) && !defined(_M_AXP64)*/

#pragma warning( disable: 4049 )  /* more than 64k source lines */

/* this ALWAYS GENERATED file contains the IIDs and CLSIDs */

/* link this file in with the server and any clients */


 /* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:14 2001
 */
/* Compiler settings for .\src\tpcc_com_all.idl:
    Oicf (OptLev=i2), W1, Zp8, env=Win64 (32b run,appending), ms_ext, c_ext,
robust
    error checks: allocation ref bounds_check enum stub_data
    VC __declspec() decoration level:
```

```
    __declspec(uuid()), __declspec(selectany), __declspec(novtable)
    DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#if defined(_M_IA64) || defined(_M_AXP64)

#ifdef __cplusplus
extern "C"{
#endif


#include <rpc.h>
#include <rpcndr.h>

#ifdef _MIDL_USE_GUIDDEF_

#ifndef INITGUID
#define INITGUID
#include <guiddef.h>
#undef INITGUID
#else
#include <guiddef.h>
#endif

#define MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8) \
    DEFINE_GUID(name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8)

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

typedef struct _IID
{
   unsigned long x;
   unsigned short s1;
   unsigned short s2;
   unsigned char  c[8];
} IID;

#endif // __IID_DEFINED__

#ifndef CLSID_DEFINED
#define CLSID_DEFINED
typedef IID CLSID;
#endif // CLSID_DEFINED

#define MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8) \
    const type name = {l,w1,w2,{b1,b2,b3,b4,b5,b6,b7,b8}}

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
LIBID_TPCCLib,0x122A3117,0x2520,0x11D3,0xBA,0x71,0x00,0xC0,0x4F,0
xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_TPCC,0x122A3128,0x2520,0x11D3,0xBA,0x71,0x00,0xC0,0x4F,0xB
F,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_NewOrder,0x975BAABF,0x84A7,0x11D2,0xBA,0x47,0x00,0xC0,0x4
F,0xBF,0xE0,0x8B);

MIDL_DEFINE_GUID(CLSID,
CLSID_OrderStatus,0x266836AD,0xA50D,0x11D2,0xBA,0x4E,0x00,0xC0,0x
4F,0xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_Payment,0xCD02F7EF,0xA4FA,0x11D2,0xBA,0x4E,0x00,0xC0,0x4F
,0xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_StockLevel,0x2668369E,0xA50D,0x11D2,0xBA,0x4E,0x00,0xC0,0x4
F,0xBF,0xE0,0x8B);

#undef MIDL_DEFINE_GUID

#ifdef __cplusplus
}
#endif

#endif /* defined(_M_IA64) || defined(_M_AXP64)*/
```

Tpcc_com_all_resource.h

```
//{{NO_DEPENDENCIES}}
// Microsoft Developer Studio generated include file.
// Used by tpcc_com_all.rc
//
#define IDS_PROJNAME                100
#define IDR_TPCC                    101
#define IDR_NEWORDER                102
#define IDR_ORDERSTATUS             103
#define IDR_PAYMENT                 104
#define IDR_STOCKLEVEL              105

// Next default values for new objects
//
#ifdef APSTUDIO_INVOKED
#ifndef APSTUDIO_READONLY_SYMBOLS
#define _APS_NEXT_RESOURCE_VALUE        202
#define _APS_NEXT_COMMAND_VALUE         32768
#define _APS_NEXT_CONTROL_VALUE         201
#define _APS_NEXT_SYMED_VALUE           106
#endif
#endif
```

Tpcc_com_no.rgs

```
HKCR
{
        TPCC.NewOrder.1 = s 'NewOrder Class'
        {
                CLSID = s
'{975BAABF-84A7-11D2-BA47-00C04FBFE08B}'
        }
        TPCC.NewOrder = s 'NewOrder Class'
        {
                CurVer = s 'TPCC.NewOrder.1'
        }
        NoRemove CLSID
        {
                ForceRemove
{975BAABF-84A7-11D2-BA47-00C04FBFE08B} = s 'NewOrder Class'
                {
                        ProgID = s 'TPCC.NewOrder.1'
```

```
                        VersionIndependentProgID = s
'TPCC.NewOrder'
                        InprocServer32 = s '%MODULE%'
                        {
                                val ThreadingModel = s 'Both'
                        }
                }
        }
}
```

Tpcc_com_os.rgs

```
HKCR
{
        TPCC.OrderStatus.1 = s 'OrderStatus Class'
        {
                CLSID = s
'{266836AD-A50D-11D2-BA4E-00C04FBFE08B}'
        }
        TPCC.OrderStatus = s 'OrderStatus Class'
        {
                CurVer = s 'TPCC.OrderStatus.1'
        }
        NoRemove CLSID
        {
                ForceRemove
{266836AD-A50D-11D2-BA4E-00C04FBFE08B} = s 'OrderStatus Class'
                {
                        ProgID = s 'TPCC.OrderStatus.1'
                        VersionIndependentProgID = s
'TPCC.OrderStatus'
                        InprocServer32 = s '%MODULE%'
                        {
                                val ThreadingModel = s 'Both'
                        }
                }
        }
}
```

Tpcc_com_pay.rgs

```
HKCR
{
        TPCC.Payment.1 = s 'Payment Class'
        {
                CLSID = s
'{CD02F7EF-A4FA-11D2-BA4E-00C04FBFE08B}'
        }
        TPCC.Payment = s 'Payment Class'
        {
                CurVer = s 'TPCC.Payment.1'
        }
        NoRemove CLSID
        {
                ForceRemove
{CD02F7EF-A4FA-11D2-BA4E-00C04FBFE08B} = s 'Payment Class'
                {
                        ProgID = s 'TPCC.Payment.1'
                        VersionIndependentProgID = s
'TPCC.Payment'
                        InprocServer32 = s '%MODULE%'
                        {
                                val ThreadingModel = s 'Both'
                        }
                }
        }
}
```

Tpcc_com_ps.def

```
LIBRARY      "tpcc_com_ps"

DESCRIPTION  'Proxy/Stub DLL'

EXPORTS
        DllGetClassObject       @1      PRIVATE
        DllCanUnloadNow         @2      PRIVATE
        GetProxyDllInfo         @3      PRIVATE
        DllRegisterServer               @4      PRIVATE
        DllUnregisterServer             @5      PRIVATE
```

Tpcc_com_ps.dsp

```
# Microsoft Developer Studio Project File - Name="tpcc_com_ps" - Package
Owner=<4>
# Microsoft Developer Studio Generated Build File, Format Version 6.00
# ** DO NOT EDIT **

# TARGTYPE "Win32 (x86) Application" 0x0101

CFG=tpcc_com_ps - Win32 Debug
!MESSAGE This is not a valid makefile. To build this project using NMAKE,
!MESSAGE use the Export Makefile command and run
!MESSAGE
!MESSAGE NMAKE /f "tpcc_com_ps.mak".
!MESSAGE
!MESSAGE You can specify a configuration when running NMAKE
!MESSAGE by defining the macro CFG on the command line. For example:
!MESSAGE
!MESSAGE NMAKE /f "tpcc_com_ps.mak" CFG="tpcc_com_ps - Win32
Debug"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "tpcc_com_ps - Win32 Release" (based on "Win32 (x86)
Application")
!MESSAGE "tpcc_com_ps - Win32 Debug" (based on "Win32 (x86)
Application")
!MESSAGE

# Begin Project
# PROP AllowPerConfigDependencies 0
# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CPP=cl.exe
MTL=midl.exe
RSC=rc.exe

!IF  "$(CFG)" == "tpcc_com_ps - Win32 Release"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir "Release"
# PROP BASE Intermediate_Dir "Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
```

```
# ADD BASE CPP /nologo /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD CPP /nologo /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
_WIN32_WINNT=0x0400 /D "REGISTER_PROXY_DLL" /FD /c
# SUBTRACT CPP /YX
# ADD BASE MTL /nologo /D "NDEBUG" /mktyplib203 /o "NUL" /win32
# ADD MTL /nologo /D "NDEBUG" /mktyplib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "NDEBUG"
# ADD RSC /l 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /machine:I386
# ADD LINK32 kernel32.lib rpcndr.lib rpcns4.lib rpcrt4.lib oleaut32.lib
uuid.lib /nologo /entry:"DllMain" /subsystem:windows /dll /pdb:none
/machine:I386 /def:".\src\tpcc_com_ps.def"
# Begin Custom Build - Copying tpcc_com_ps.h
InputPath=.\bin\tpcc_com_ps.dll
SOURCE="$(InputPath)"

"..\tpcc_com_all\src\tpcc_com_ps.h" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
        copy    .\src\tpcc_com_ps.h    ..\tpcc_com_all\src\

# End Custom Build

!ELSEIF  "$(CFG)" == "tpcc_com_ps - Win32 Debug"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "Debug"
# PROP BASE Intermediate_Dir "Debug"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /W3 /Gm /GX /Zi /Od /D "WIN32" /D "_DEBUG"
/D "_WINDOWS" /YX /FD /c
# ADD CPP /nologo /ZI /Od /D "WIN32" /D "_DEBUG" /D
_WIN32_WINNT=0x0400 /D "REGISTER_PROXY_DLL" /FD /c
# ADD BASE MTL /nologo /D "_DEBUG" /mktyplib203 /o "NUL" /win32
# ADD MTL /nologo /D "_DEBUG" /mktyplib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "_DEBUG"
# ADD RSC /l 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /debug /machine:I386 /pdbtype:sept
# ADD LINK32 kernel32.lib rpcndr.lib rpcns4.lib rpcrt4.lib oleaut32.lib
uuid.lib /nologo /entry:"DllMain" /dll /debug /machine:IX86
/def:".\src\tpcc_com_ps.def" /pdbtype:sept
# SUBTRACT LINK32 /pdb:none
# Begin Custom Build - Copying tpcc_com_ps.h
InputPath=.\bin\tpcc_com_ps.dll
SOURCE="$(InputPath)"

"..\tpcc_com_all\src\tpcc_com_ps.h" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
        copy    .\src\tpcc_com_ps.h    ..\tpcc_com_all\src\

# End Custom Build

!ENDIF

# Begin Target

# Name "tpcc_com_ps - Win32 Release"
# Name "tpcc_com_ps - Win32 Debug"
# Begin Group "Source"

# PROP Default_Filter ""
# Begin Source File

SOURCE=.\src\dlldata.c
# End Source File
# Begin Source File

SOURCE=.\src\tpcc_com_ps.def
# PROP Exclude_From_Build 1
# End Source File
# Begin Source File

SOURCE=.\src\tpcc_com_ps.idl

!IF  "$(CFG)" == "tpcc_com_ps - Win32 Release"

# PROP Ignore_Default_Tool 1
# Begin Custom Build
InputPath=.\src\tpcc_com_ps.idl

BuildCmds= \
        midl /Oicf /h "tpcc_com_ps.h" /iid "tpcc_com_ps_i.c"
".\src\tpcc_com_ps.idl"    /out ".\src"

".\src\tpcc_com_ps.h" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\tpcc_com_ps_i.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\dlldata.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\tpcc_com_ps_p.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)
# End Custom Build

!ELSEIF  "$(CFG)" == "tpcc_com_ps - Win32 Debug"

# PROP Ignore_Default_Tool 1
# Begin Custom Build
InputPath=.\src\tpcc_com_ps.idl

BuildCmds= \
        midl /Oicf /h "tpcc_com_ps.h" /iid "tpcc_com_ps_i.c"
".\src\tpcc_com_ps.idl"    /out ".\src"

".\src\tpcc_com_ps.h" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\tpcc_com_ps_i.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\dlldata.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)

".\src\tpcc_com_ps_p.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
  $(BuildCmds)
# End Custom Build
```

```
!ENDIF

# End Source File
# Begin Source File

SOURCE=.\src\tpcc_com_ps_i.c
# End Source File
# Begin Source File

SOURCE=.\src\tpcc_com_ps_p.c
# End Source File
# End Group
# End Target
# End Project
```

Tpcc_com_ps.h

```
#pragma warning( disable: 4049 )  /* more than 64k source lines */

/* this ALWAYS GENERATED file contains the definitions for the interfaces
*/

 /* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:08 2001
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf (OptLev=i2), W1, Zp8, env=Win32 (32b run), ms_ext, c_ext
    error checks: allocation ref bounds_check enum stub_data
    VC __declspec() decoration level:
        __declspec(uuid()), __declspec(selectany), __declspec(novtable)
        DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )


/* verify that the <rpcndr.h> version is high enough to compile this file*/
#ifndef __REQUIRED_RPCNDR_H_VERSION__
#define __REQUIRED_RPCNDR_H_VERSION__ 440
#endif

#include "rpc.h"
#include "rpcndr.h"

#ifndef __RPCNDR_H_VERSION__
#error this stub requires an updated version of <rpcndr.h>
#endif // __RPCNDR_H_VERSION__

#ifndef COM_NO_WINDOWS_H
#include "windows.h"
#include "ole2.h"
#endif /*COM_NO_WINDOWS_H*/

#ifndef __tpcc_com_ps_h__
#define __tpcc_com_ps_h__

/* Forward Declarations */

#ifndef __ITPCC_FWD_DEFINED__
#define __ITPCC_FWD_DEFINED__
typedef interface ITPCC ITPCC;
#endif       /* __ITPCC_FWD_DEFINED__ */


/* header files for imported files */
#include "oaidl.h"
#include "ocidl.h"

#ifdef __cplusplus
extern "C"{
#endif

void __RPC_FAR * __RPC_USER MIDL_user_allocate(size_t);
void __RPC_USER MIDL_user_free( void __RPC_FAR * );

/* interface __MIDL_itf_tpcc_com_ps_0000 */
/* [local] */


extern RPC_IF_HANDLE __MIDL_itf_tpcc_com_ps_0000_v0_0_c_ifspec;
extern RPC_IF_HANDLE __MIDL_itf_tpcc_com_ps_0000_v0_0_s_ifspec;

#ifndef __ITPCC_INTERFACE_DEFINED__
#define __ITPCC_INTERFACE_DEFINED__

/* interface ITPCC */
/* [unique][helpstring][uuid][oleautomation][object] */


EXTERN_C const IID IID_ITPCC;

#if defined(__cplusplus) && !defined(CINTERFACE)

    MIDL_INTERFACE("FEEE6AA2-84B1-11d2-BA47-00C04FBFE08B")
    ITPCC : public IUnknown
    {
    public:
        virtual HRESULT __stdcall NewOrder(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT __RPC_FAR *txn_out) = 0;

        virtual HRESULT __stdcall Payment(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT __RPC_FAR *txn_out) = 0;

        virtual HRESULT __stdcall Delivery(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT __RPC_FAR *txn_out) = 0;

        virtual HRESULT __stdcall StockLevel(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT __RPC_FAR *txn_out) = 0;

        virtual HRESULT __stdcall OrderStatus(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT __RPC_FAR *txn_out) = 0;

        virtual HRESULT __stdcall CallSetComplete( void) = 0;

    };

#else       /* C style interface */

    typedef struct ITPCCVtbl
    {
        BEGIN_INTERFACE

        HRESULT ( STDMETHODCALLTYPE __RPC_FAR *QueryInterface )(
            ITPCC __RPC_FAR * This,
            /* [in] */ REFIID riid,
            /* [iid_is][out] */ void __RPC_FAR *__RPC_FAR *ppvObject);

        ULONG ( STDMETHODCALLTYPE __RPC_FAR *AddRef )(
            ITPCC __RPC_FAR * This);
```

```
    ULONG ( STDMETHODCALLTYPE __RPC_FAR *Release )(
        ITPCC __RPC_FAR * This);

    HRESULT ( __stdcall __RPC_FAR *NewOrder )(
        ITPCC __RPC_FAR * This,
        /* [in] */ VARIANT txn_in,
        /* [out] */ VARIANT __RPC_FAR *txn_out);

    HRESULT ( __stdcall __RPC_FAR *Payment )(
        ITPCC __RPC_FAR * This,
        /* [in] */ VARIANT txn_in,
        /* [out] */ VARIANT __RPC_FAR *txn_out);

    HRESULT ( __stdcall __RPC_FAR *Delivery )(
        ITPCC __RPC_FAR * This,
        /* [in] */ VARIANT txn_in,
        /* [out] */ VARIANT __RPC_FAR *txn_out);

    HRESULT ( __stdcall __RPC_FAR *StockLevel )(
        ITPCC __RPC_FAR * This,
        /* [in] */ VARIANT txn_in,
        /* [out] */ VARIANT __RPC_FAR *txn_out);

    HRESULT ( __stdcall __RPC_FAR *OrderStatus )(
        ITPCC __RPC_FAR * This,
        /* [in] */ VARIANT txn_in,
        /* [out] */ VARIANT __RPC_FAR *txn_out);

    HRESULT ( __stdcall __RPC_FAR *CallSetComplete )(
        ITPCC __RPC_FAR * This);

    END_INTERFACE
  } ITPCCVtbl;

  interface ITPCC
  {
    CONST_VTBL struct ITPCCVtbl __RPC_FAR *lpVtbl;
  };

#ifdef COBJMACROS


#define ITPCC_QueryInterface(This,riid,ppvObject)    \
  (This)->lpVtbl -> QueryInterface(This,riid,ppvObject)

#define ITPCC_AddRef(This)    \
  (This)->lpVtbl -> AddRef(This)

#define ITPCC_Release(This)    \
  (This)->lpVtbl -> Release(This)


#define ITPCC_NewOrder(This,txn_in,txn_out)          \
  (This)->lpVtbl -> NewOrder(This,txn_in,txn_out)

#define ITPCC_Payment(This,txn_in,txn_out)           \
  (This)->lpVtbl -> Payment(This,txn_in,txn_out)

#define ITPCC_Delivery(This,txn_in,txn_out)          \
  (This)->lpVtbl -> Delivery(This,txn_in,txn_out)

#define ITPCC_StockLevel(This,txn_in,txn_out)        \
  (This)->lpVtbl -> StockLevel(This,txn_in,txn_out)

#define ITPCC_OrderStatus(This,txn_in,txn_out)       \
  (This)->lpVtbl -> OrderStatus(This,txn_in,txn_out)

#define ITPCC_CallSetComplete(This)      \
  (This)->lpVtbl -> CallSetComplete(This)

#endif /* COBJMACROS */


#endif      /* C style interface */

HRESULT __stdcall ITPCC_NewOrder_Proxy(
  ITPCC __RPC_FAR * This,
  /* [in] */ VARIANT txn_in,
  /* [out] */ VARIANT __RPC_FAR *txn_out);


void __RPC_STUB ITPCC_NewOrder_Stub(
  IRpcStubBuffer *This,
  IRpcChannelBuffer *_pRpcChannelBuffer,
  PRPC_MESSAGE _pRpcMessage,
  DWORD *_pdwStubPhase);


HRESULT __stdcall ITPCC_Payment_Proxy(
  ITPCC __RPC_FAR * This,
  /* [in] */ VARIANT txn_in,
  /* [out] */ VARIANT __RPC_FAR *txn_out);


void __RPC_STUB ITPCC_Payment_Stub(
  IRpcStubBuffer *This,
  IRpcChannelBuffer *_pRpcChannelBuffer,
  PRPC_MESSAGE _pRpcMessage,
  DWORD *_pdwStubPhase);


HRESULT __stdcall ITPCC_Delivery_Proxy(
  ITPCC __RPC_FAR * This,
  /* [in] */ VARIANT txn_in,
  /* [out] */ VARIANT __RPC_FAR *txn_out);


void __RPC_STUB ITPCC_Delivery_Stub(
  IRpcStubBuffer *This,
  IRpcChannelBuffer *_pRpcChannelBuffer,
  PRPC_MESSAGE _pRpcMessage,
  DWORD *_pdwStubPhase);


HRESULT __stdcall ITPCC_StockLevel_Proxy(
  ITPCC __RPC_FAR * This,
  /* [in] */ VARIANT txn_in,
  /* [out] */ VARIANT __RPC_FAR *txn_out);


void __RPC_STUB ITPCC_StockLevel_Stub(
  IRpcStubBuffer *This,
  IRpcChannelBuffer *_pRpcChannelBuffer,
  PRPC_MESSAGE _pRpcMessage,
  DWORD *_pdwStubPhase);


HRESULT __stdcall ITPCC_OrderStatus_Proxy(
  ITPCC __RPC_FAR * This,
  /* [in] */ VARIANT txn_in,
  /* [out] */ VARIANT __RPC_FAR *txn_out);


void __RPC_STUB ITPCC_OrderStatus_Stub(
  IRpcStubBuffer *This,
  IRpcChannelBuffer *_pRpcChannelBuffer,
```

```
    PRPC_MESSAGE _pRpcMessage,
    DWORD *_pdwStubPhase);


HRESULT __stdcall ITPCC_CallSetComplete_Proxy(
    ITPCC __RPC_FAR * This);

void __RPC_STUB ITPCC_CallSetComplete_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *_pRpcChannelBuffer,
    PRPC_MESSAGE _pRpcMessage,
    DWORD *_pdwStubPhase);

#endif      /* __ITPCC_INTERFACE_DEFINED__ */


/* Additional Prototypes for ALL interfaces */

unsigned long             __RPC_USER  VARIANT_UserSize(     unsigned long
__RPC_FAR *, unsigned long            , VARIANT __RPC_FAR * );
unsigned char __RPC_FAR * __RPC_USER  VARIANT_UserMarshal(
unsigned long __RPC_FAR *, unsigned char __RPC_FAR *, VARIANT
__RPC_FAR * );
unsigned char __RPC_FAR * __RPC_USER
VARIANT_UserUnmarshal(unsigned long __RPC_FAR *, unsigned char
__RPC_FAR *, VARIANT __RPC_FAR * );
void                      __RPC_USER  VARIANT_UserFree(     unsigned long
__RPC_FAR *, VARIANT __RPC_FAR * );

/* end of Additional Prototypes */

#ifdef __cplusplus
}
#endif

#endif
```

Tpcc_com_ps.idl

```
/*            FILE:                   ITPCC.IDL
 *                                          Microsoft TPC-C Kit Ver.
4.20.000
 *                                          Copyright Microsoft, 1999
 *            All Rights Reserved
 *
 *                                          not yet audited
 *
 *            PURPOSE:                Defines the interface used by TPCC. This
interface can be implemented by C++ components.
 *
 *  Change history:
 *                      4.20.000 - first version
 */

// Forward declare all types defined
interface ITPCC;
import "oaidl.idl";
import "ocidl.idl";

            [
                        object,
                        oleautomation,
                        uuid(FEEE6AA2-84B1-11d2-BA47-00C04FBFE08B),
                        helpstring("ITPCC Interface"),
                        pointer_default(unique)
            ]
            interface ITPCC : IUnknown
            {

      HRESULT _stdcall NewOrder
                                                                  (
                                                                  [in]
VARIANT  txn_in,
                                                                  [out]
VARIANT *txn_out
                                                                  );

      HRESULT _stdcall Payment
                                                                  (
                                                                  [in]
VARIANT txn_in,
                                                                  [out]
VARIANT *txn_out
                                                                  );

      HRESULT _stdcall Delivery
                                                                  (
                                                                  [in]
VARIANT txn_in,
                                                                  [out]
VARIANT *txn_out
                                                                  );

      HRESULT _stdcall StockLevel
                                                                  (
                                                                  [in]
VARIANT txn_in,
                                                                  [out]
VARIANT *txn_out
                                                                  );

      HRESULT _stdcall OrderStatus
                                                                  (
                                                                  [in]
VARIANT txn_in,
                                                                  [out]
VARIANT *txn_out
                                                                  );

      HRESULT _stdcall CallSetComplete
                                                                  (
                                                                  );

   };         // interface ITPCC
```

Tpcc_com_ps_i.c

```
#pragma warning( disable: 4049 )  /* more than 64k source lines */

/* this ALWAYS GENERATED file contains the IIDs and CLSIDs */

/* link this file in with the server and any clients */


 /* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:08 2001
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf (OptLev=i2), W1, Zp8, env=Win32 (32b run), ms_ext, c_ext
    error checks: allocation ref bounds_check enum stub_data
    VC __declspec() decoration level:
         __declspec(uuid()), __declspec(selectany), __declspec(novtable)
         DECLSPEC_UUID(), MIDL_INTERFACE()
*/
```

```
//@@MIDL_FILE_HEADING(  )

#if !defined(_M_IA64) && !defined(_M_AXP64)

#ifdef __cplusplus
extern "C"{
#endif

#include <rpc.h>
#include <rpcndr.h>

#ifdef _MIDL_USE_GUIDDEF_

#ifndef INITGUID
#define INITGUID
#include <guiddef.h>
#undef INITGUID
#else
#include <guiddef.h>
#endif

#define MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8) \
        DEFINE_GUID(name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8)

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

typedef struct _IID
{
    unsigned long x;
    unsigned short s1;
    unsigned short s2;
    unsigned char  c[8];
} IID;

#endif // __IID_DEFINED__

#ifndef CLSID_DEFINED
#define CLSID_DEFINED
typedef IID CLSID;
#endif // CLSID_DEFINED

#define MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8) \
        const type name = {l,w1,w2,{b1,b2,b3,b4,b5,b6,b7,b8}}

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
IID_ITPCC,0xFEEE6AA2,0x84B1,0x11d2,0xBA,0x47,0x00,0xC0,0x4F,0xBF,
0xE0,0x8B);

#undef MIDL_DEFINE_GUID

#ifdef __cplusplus
}
#endif


#endif /* !defined(_M_IA64) && !defined(_M_AXP64)*/


#pragma warning( disable: 4049 )  /* more than 64k source lines */

/* this ALWAYS GENERATED file contains the IIDs and CLSIDs */

/* link this file in with the server and any clients */
```

```
 /* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:08 2001
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf (OptLev=i2), W1, Zp8, env=Win64 (32b run,appending), ms_ext, c_ext,
robust
    error checks: allocation ref bounds_check enum stub_data
    VC __declspec() decoration level:
         __declspec(uuid()), __declspec(selectany), __declspec(novtable)
         DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#if defined(_M_IA64) || defined(_M_AXP64)

#ifdef __cplusplus
extern "C"{
#endif


#include <rpc.h>
#include <rpcndr.h>

#ifdef _MIDL_USE_GUIDDEF_

#ifndef INITGUID
#define INITGUID
#include <guiddef.h>
#undef INITGUID
#else
#include <guiddef.h>
#endif

#define MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8) \
        DEFINE_GUID(name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8)

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

typedef struct _IID
{
    unsigned long x;
    unsigned short s1;
    unsigned short s2;
    unsigned char  c[8];
} IID;

#endif // __IID_DEFINED__

#ifndef CLSID_DEFINED
#define CLSID_DEFINED
typedef IID CLSID;
#endif // CLSID_DEFINED

#define MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8) \
        const type name = {l,w1,w2,{b1,b2,b3,b4,b5,b6,b7,b8}}

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
IID_ITPCC,0xFEEE6AA2,0x84B1,0x11d2,0xBA,0x47,0x00,0xC0,0x4F,0xBF,
0xE0,0x8B);

#undef MIDL_DEFINE_GUID
```

```
#ifdef __cplusplus
}
#endif

#endif /* defined(_M_IA64) || defined(_M_AXP64)*/
```

Tpcc_com_ps_p.c

```
#pragma warning( disable: 4049 )  /* more than 64k source lines */

/* this ALWAYS GENERATED file contains the proxy stub code */

 /* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:08 2001
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf (OptLev=i2), W1, Zp8, env=Win32 (32b run), ms_ext, c_ext
    error checks: allocation ref bounds_check enum stub_data
    VC __declspec() decoration level:
         __declspec(uuid()), __declspec(selectany), __declspec(novtable)
         DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#if !defined(_M_IA64) && !defined(_M_AXP64)
#define USE_STUBLESS_PROXY


/* verify that the <rpcproxy.h> version is high enough to compile this file*/
#ifndef __REDQ_RPCPROXY_H_VERSION__
#define __REQUIRED_RPCPROXY_H_VERSION__ 440
#endif


#include "rpcproxy.h"
#ifndef __RPCPROXY_H_VERSION__
#error this stub requires an updated version of <rpcproxy.h>
#endif // __RPCPROXY_H_VERSION__


#include "tpcc_com_ps.h"

#define TYPE_FORMAT_STRING_SIZE   997
#define PROC_FORMAT_STRING_SIZE   193
#define TRANSMIT_AS_TABLE_SIZE    0
#define WIRE_MARSHAL_TABLE_SIZE   1

typedef struct _MIDL_TYPE_FORMAT_STRING
    {
    short          Pad;
    unsigned char  Format[ TYPE_FORMAT_STRING_SIZE ];
    } MIDL_TYPE_FORMAT_STRING;

typedef struct _MIDL_PROC_FORMAT_STRING
    {
    short          Pad;
    unsigned char  Format[ PROC_FORMAT_STRING_SIZE ];
    } MIDL_PROC_FORMAT_STRING;


extern const MIDL_TYPE_FORMAT_STRING __MIDL_TypeFormatString;
extern const MIDL_PROC_FORMAT_STRING __MIDL_ProcFormatString;


/* Standard interface: __MIDL_itf_tpcc_com_ps_0000, ver. 0.0,
GUID={0x00000000,0x0000,0x0000,{0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00}} */


/* Object interface: IUnknown, ver. 0.0,

GUID={0x00000000,0x0000,0x0000,{0xC0,0x00,0x00,0x00,0x00,0x00,0x00,0x46}} */


/* Object interface: ITPCC, ver. 0.0,

GUID={0xFEEE6AA2,0x84B1,0x11d2,{0xBA,0x47,0x00,0xC0,0x4F,0xBF,0xE0,0x8B}} */


extern const MIDL_STUB_DESC Object_StubDesc;


extern const MIDL_SERVER_INFO ITPCC_ServerInfo;

#pragma code_seg(".orpc")
static const unsigned short ITPCC_FormatStringOffsetTable[] =
    {
    0,
    34,
    68,
    102,
    136,
    170
    };

static const MIDL_SERVER_INFO ITPCC_ServerInfo =
    {
    &Object_StubDesc,
    0,
    __MIDL_ProcFormatString.Format,
    &ITPCC_FormatStringOffsetTable[-3],
    0,
    0,
    0,
    0
    };

static const MIDL_STUBLESS_PROXY_INFO ITPCC_ProxyInfo =
    {
    &Object_StubDesc,
    __MIDL_ProcFormatString.Format,
    &ITPCC_FormatStringOffsetTable[-3],
    0,
    0,
    0
    };

CINTERFACE_PROXY_VTABLE(9) _ITPCCProxyVtbl =
{
    &ITPCC_ProxyInfo,
    &IID_ITPCC,
    IUnknown_QueryInterface_Proxy,
    IUnknown_AddRef_Proxy,
    IUnknown_Release_Proxy ,
    (void *)-1 /* ITPCC::NewOrder */ ,
    (void *)-1 /* ITPCC::Payment */ ,
    (void *)-1 /* ITPCC::Delivery */ ,
    (void *)-1 /* ITPCC::StockLevel */ ,
    (void *)-1 /* ITPCC::OrderStatus */ ,
    (void *)-1 /* ITPCC::CallSetComplete */
```

```
};

const CInterfaceStubVtbl _ITPCCStubVtbl =
{
    &IID_ITPCC,
    &ITPCC_ServerInfo,
    9,
    0, /* pure interpreted */
    CStdStubBuffer_METHODS
};

extern const USER_MARSHAL_ROUTINE_QUADRUPLE
UserMarshalRoutines[ WIRE_MARSHAL_TABLE_SIZE ];

static const MIDL_STUB_DESC Object_StubDesc =
    {
    0,
    NdrOleAllocate,
    NdrOleFree,
    0,
    0,
    0,
    0,
    0,
    __MIDL_TypeFormatString.Format,
    1, /* -error bounds_check flag */
    0x20000, /* Ndr library version */
    0,
    0x5030118, /* MIDL Version 5.3.280 */
    0,
    UserMarshalRoutines,
    0,  /* notify & notify_flag routine table */
    0x1, /* MIDL flag */
    0,  /* Reserved3 */
    0,  /* Reserved4 */
    0   /* Reserved5 */
    };

#pragma data_seg(".rdata")

static const USER_MARSHAL_ROUTINE_QUADRUPLE
UserMarshalRoutines[ WIRE_MARSHAL_TABLE_SIZE ] =
        {

            {
            VARIANT_UserSize
            ,VARIANT_UserMarshal
            ,VARIANT_UserUnmarshal
            ,VARIANT_UserFree
            }

        };


#if !defined(__RPC_WIN32__)
#error  Invalid build platform for this stub.
#endif

#if !(TARGET_IS_NT40_OR_LATER)
#error You need a Windows NT 4.0 or later to run this stub because it uses
these features:
#error   -Oif or -Oicf, [wire_marshal] or [user_marshal] attribute.
#error However, your C/C++ compilation flags indicate you intend to run this
app on earlier systems.
#error This app will die there with the RPC_X_WRONG_STUB_VERSION
error.
#endif


static const MIDL_PROC_FORMAT_STRING __MIDL_ProcFormatString =
    {
        0,
        {

            /* Procedure NewOrder */

                                    0x33,               /*
FC_AUTO_HANDLE */
                                    0x6c,               /* Old Flags:  object,
Oi2 */
/*  2 */    NdrFcLong( 0x0 ),   /* 0 */
/*  6 */    NdrFcShort( 0x3 ),  /* 3 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/*  8 */    NdrFcShort( 0x1c ), /* x86 Stack size/offset = 28 */
#else
                                    NdrFcShort( 0x20 ), /*  MIPS Stack
size/offset = 32 */
#endif
#else
                                    NdrFcShort( 0x20 ), /* PPC Stack size/offset
= 32 */
#endif
#else
                                    NdrFcShort( 0x28 ), /* Alpha Stack
size/offset = 40 */
#endif
/* 10 */    NdrFcShort( 0x0 ),  /* 0 */
/* 12 */    NdrFcShort( 0x8 ),  /* 8 */
/* 14 */    0x7,                /* Oi2 Flags:  srv must size, clt must size, has
return, */
                                    0x3,                /* 3 */

            /* Parameter txn_in */

/* 16 */    NdrFcShort( 0x8b ), /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 18 */    NdrFcShort( 0x4 ),  /* x86 Stack size/offset = 4 */
#else
                                    NdrFcShort( 0x8 ),  /*  MIPS Stack
size/offset = 8 */
#endif
#else
                                    NdrFcShort( 0x8 ),  /* PPC Stack size/offset
= 8 */
#endif
#else
                                    NdrFcShort( 0x8 ),  /* Alpha Stack
size/offset = 8 */
#endif
/* 20 */    NdrFcShort( 0x3c8 ), /* Type Offset=968 */

            /* Parameter txn_out */

/* 22 */    NdrFcShort( 0x4113 ),           /* Flags:  must size, must free, out,
simple ref, srv alloc size=16 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 24 */    NdrFcShort( 0x14 ), /* x86 Stack size/offset = 20 */
#else
                                    NdrFcShort( 0x18 ), /*  MIPS Stack
size/offset = 24 */
```

```
#endif
#else
                                NdrFcShort( 0x18 ),   /* PPC Stack size/offset
= 24 */
#endif
#else
                                NdrFcShort( 0x18 ),   /* Alpha Stack
size/offset = 24 */
#endif
/* 26 */    NdrFcShort( 0x3da ), /* Type Offset=986 */

            /* Return value */

/* 28 */    NdrFcShort( 0x70 ),   /* Flags:  out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 30 */    NdrFcShort( 0x18 ),   /* x86 Stack size/offset = 24 */
#else
                                NdrFcShort( 0x1c ),   /*  MIPS Stack
size/offset = 28 */
#endif
#else
                                NdrFcShort( 0x1c ),   /* PPC Stack size/offset
= 28 */
#endif
#else
                                NdrFcShort( 0x20 ),   /* Alpha Stack
size/offset = 32 */
#endif
/* 32 */    0x8,                /* FC_LONG */
                                0x0,                  /* 0 */

            /* Procedure Payment */

/* 34 */    0x33,               /* FC_AUTO_HANDLE */
                                0x6c,                 /* Old Flags:  object,
Oi2 */
/* 36 */    NdrFcLong( 0x0 ),     /* 0 */
/* 40 */    NdrFcShort( 0x4 ),    /* 4 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 42 */    NdrFcShort( 0x1c ),   /* x86 Stack size/offset = 28 */
#else
                                NdrFcShort( 0x20 ),   /*  MIPS Stack
size/offset = 32 */
#endif
#else
                                NdrFcShort( 0x20 ),   /* PPC Stack size/offset
= 32 */
#endif
#else
                                NdrFcShort( 0x28 ),   /* Alpha Stack
size/offset = 40 */
#endif
/* 44 */    NdrFcShort( 0x0 ),    /* 0 */
/* 46 */    NdrFcShort( 0x8 ),    /* 8 */
/* 48 */    0x7,                /* Oi2 Flags:  srv must size, clt must size, has
return, */
                                0x3,                  /* 3 */

            /* Parameter txn_in */

/* 50 */    NdrFcShort( 0x8b ),   /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 52 */    NdrFcShort( 0x4 ),    /* x86 Stack size/offset = 4 */
#else
                                NdrFcShort( 0x8 ),    /*  MIPS Stack
size/offset = 8 */
#endif
#else
                                NdrFcShort( 0x8 ),    /* PPC Stack size/offset
= 8 */
#endif
#else
                                NdrFcShort( 0x8 ),    /* Alpha Stack
size/offset = 8 */
#endif
/* 54 */    NdrFcShort( 0x3c8 ), /* Type Offset=968 */

            /* Parameter txn_out */

/* 56 */    NdrFcShort( 0x4113 ),             /* Flags:  must size, must free, out,
simple ref, srv alloc size=16 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 58 */    NdrFcShort( 0x14 ),   /* x86 Stack size/offset = 20 */
#else
                                NdrFcShort( 0x18 ),   /*  MIPS Stack
size/offset = 24 */
#endif
#else
                                NdrFcShort( 0x18 ),   /* PPC Stack size/offset
= 24 */
#endif
#else
                                NdrFcShort( 0x18 ),   /* Alpha Stack
size/offset = 24 */
#endif
/* 60 */    NdrFcShort( 0x3da ), /* Type Offset=986 */

            /* Return value */

/* 62 */    NdrFcShort( 0x70 ),   /* Flags:  out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 64 */    NdrFcShort( 0x18 ),   /* x86 Stack size/offset = 24 */
#else
                                NdrFcShort( 0x1c ),   /*  MIPS Stack
size/offset = 28 */
#endif
#else
                                NdrFcShort( 0x1c ),   /* PPC Stack size/offset
= 28 */
#endif
#else
                                NdrFcShort( 0x20 ),   /* Alpha Stack
size/offset = 32 */
#endif
/* 66 */    0x8,                /* FC_LONG */
                                0x0,                  /* 0 */

            /* Procedure Delivery */

/* 68 */    0x33,               /* FC_AUTO_HANDLE */
                                0x6c,                 /* Old Flags:  object,
Oi2 */
/* 70 */    NdrFcLong( 0x0 ),     /* 0 */
/* 74 */    NdrFcShort( 0x5 ),    /* 5 */
#ifndef _ALPHA_
#ifndef _PPC_
```

```
#if !defined(_MIPS_)
/* 76 */    NdrFcShort( 0x1c ),   /* x86 Stack size/offset = 28 */
#else
                                  NdrFcShort( 0x20 ),   /*  MIPS Stack
size/offset = 32 */
#endif
#else
                                  NdrFcShort( 0x20 ),   /* PPC Stack size/offset
= 32 */
#endif
#else
                                  NdrFcShort( 0x28 ),   /* Alpha Stack
size/offset = 40 */
#endif
/* 78 */    NdrFcShort( 0x0 ),    /* 0 */
/* 80 */    NdrFcShort( 0x8 ),    /* 8 */
/* 82 */    0x7,                  /* Oi2 Flags:  srv must size, clt must size, has
return, */
                                  0x3,                  /* 3 */

            /* Parameter txn_in */

/* 84 */    NdrFcShort( 0x8b ),   /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 86 */    NdrFcShort( 0x4 ),    /* x86 Stack size/offset = 4 */
#else
                                  NdrFcShort( 0x8 ),    /*  MIPS Stack
size/offset = 8 */
#endif
#else
                                  NdrFcShort( 0x8 ),    /* PPC Stack size/offset
= 8 */
#endif
#else
                                  NdrFcShort( 0x8 ),    /* Alpha Stack
size/offset = 8 */
#endif
/* 88 */    NdrFcShort( 0x3c8 ), /* Type Offset=968 */

            /* Parameter txn_out */

/* 90 */    NdrFcShort( 0x4113 ),             /* Flags:  must size, must free, out,
simple ref, srv alloc size=16 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 92 */    NdrFcShort( 0x14 ),   /* x86 Stack size/offset = 20 */
#else
                                  NdrFcShort( 0x18 ),   /*  MIPS Stack
size/offset = 24 */
#endif
#else
                                  NdrFcShort( 0x18 ),   /* PPC Stack size/offset
= 24 */
#endif
#else
                                  NdrFcShort( 0x18 ),   /* Alpha Stack
size/offset = 24 */
#endif
/* 94 */    NdrFcShort( 0x3da ), /* Type Offset=986 */

            /* Return value */

/* 96 */    NdrFcShort( 0x70 ),   /* Flags:  out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 98 */    NdrFcShort( 0x18 ),   /* x86 Stack size/offset = 24 */
#else
                                  NdrFcShort( 0x1c ),   /*  MIPS Stack
size/offset = 28 */
#endif
#else
                                  NdrFcShort( 0x1c ),   /* PPC Stack size/offset
= 28 */
#endif
#else
                                  NdrFcShort( 0x20 ),   /* Alpha Stack
size/offset = 32 */
#endif
/* 100 */   0x8,                  /* FC_LONG */
                                  0x0,                  /* 0 */

            /* Procedure StockLevel */

/* 102 */   0x33,                 /* FC_AUTO_HANDLE */
                                  0x6c,                 /* Old Flags:  object,
Oi2 */
/* 104 */   NdrFcLong( 0x0 ),     /* 0 */
/* 108 */   NdrFcShort( 0x6 ),    /* 6 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 110 */   NdrFcShort( 0x1c ),   /* x86 Stack size/offset = 28 */
#else
                                  NdrFcShort( 0x20 ),   /*  MIPS Stack
size/offset = 32 */
#endif
#else
                                  NdrFcShort( 0x20 ),   /* PPC Stack size/offset
= 32 */
#endif
#else
                                  NdrFcShort( 0x28 ),   /* Alpha Stack
size/offset = 40 */
#endif
/* 112 */   NdrFcShort( 0x0 ),    /* 0 */
/* 114 */   NdrFcShort( 0x8 ),    /* 8 */
/* 116 */   0x7,                  /* Oi2 Flags:  srv must size, clt must size, has
return, */
                                  0x3,                  /* 3 */

            /* Parameter txn_in */

/* 118 */   NdrFcShort( 0x8b ),   /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 120 */   NdrFcShort( 0x4 ),    /* x86 Stack size/offset = 4 */
#else
                                  NdrFcShort( 0x8 ),    /*  MIPS Stack
size/offset = 8 */
#endif
#else
                                  NdrFcShort( 0x8 ),    /* PPC Stack size/offset
= 8 */
#endif
#else
                                  NdrFcShort( 0x8 ),    /* Alpha Stack
size/offset = 8 */
#endif
/* 122 */   NdrFcShort( 0x3c8 ), /* Type Offset=968 */

            /* Parameter txn_out */
```

```
/* 124 */   NdrFcShort( 0x4113 ),               /* Flags:  must size, must free, out,
simple ref, srv alloc size=16 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 126 */   NdrFcShort( 0x14 ),   /* x86 Stack size/offset = 20 */
#else
                                  NdrFcShort( 0x18 ),   /*  MIPS Stack
size/offset = 24 */
#endif
#else
                                  NdrFcShort( 0x18 ),   /* PPC Stack size/offset
= 24 */
#endif
#else
                                  NdrFcShort( 0x18 ),   /* Alpha Stack
size/offset = 24 */
#endif
/* 128 */   NdrFcShort( 0x3da ), /* Type Offset=986 */

            /* Return value */

/* 130 */   NdrFcShort( 0x70 ),   /* Flags:  out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 132 */   NdrFcShort( 0x18 ),   /* x86 Stack size/offset = 24 */
#else
                                  NdrFcShort( 0x1c ),   /*  MIPS Stack
size/offset = 28 */
#endif
#else
                                  NdrFcShort( 0x1c ),   /* PPC Stack size/offset
= 28 */
#endif
#else
                                  NdrFcShort( 0x20 ),   /* Alpha Stack
size/offset = 32 */
#endif
/* 134 */   0x8,                  /* FC_LONG */
                                  0x0,                  /* 0 */

            /* Procedure OrderStatus */

/* 136 */   0x33,                 /* FC_AUTO_HANDLE */
                                  0x6c,                 /* Old Flags:  object,
Oi2 */
/* 138 */   NdrFcLong( 0x0 ),     /* 0 */
/* 142 */   NdrFcShort( 0x7 ),    /* 7 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 144 */   NdrFcShort( 0x1c ),   /* x86 Stack size/offset = 28 */
#else
                                  NdrFcShort( 0x20 ),   /*  MIPS Stack
size/offset = 32 */
#endif
#else
                                  NdrFcShort( 0x20 ),   /* PPC Stack size/offset
= 32 */
#endif
#else
                                  NdrFcShort( 0x28 ),   /* Alpha Stack
size/offset = 40 */
#endif
/* 146 */   NdrFcShort( 0x0 ),    /* 0 */
/* 148 */   NdrFcShort( 0x8 ),    /* 8 */
/* 150 */   0x7,                  /* Oi2 Flags:  srv must size, clt must size, has
return, */
                                  0x3,                  /* 3 */

            /* Parameter txn_in */

/* 152 */   NdrFcShort( 0x8b ),   /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 154 */   NdrFcShort( 0x4 ),    /* x86 Stack size/offset = 4 */
#else
                                  NdrFcShort( 0x8 ),    /*  MIPS Stack
size/offset = 8 */
#endif
#else
                                  NdrFcShort( 0x8 ),    /* PPC Stack size/offset
= 8 */
#endif
#else
                                  NdrFcShort( 0x8 ),    /* Alpha Stack
size/offset = 8 */
#endif
/* 156 */   NdrFcShort( 0x3c8 ), /* Type Offset=968 */

            /* Parameter txn_out */

/* 158 */   NdrFcShort( 0x4113 ),               /* Flags:  must size, must free, out,
simple ref, srv alloc size=16 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 160 */   NdrFcShort( 0x14 ),   /* x86 Stack size/offset = 20 */
#else
                                  NdrFcShort( 0x18 ),   /*  MIPS Stack
size/offset = 24 */
#endif
#else
                                  NdrFcShort( 0x18 ),   /* PPC Stack size/offset
= 24 */
#endif
#else
                                  NdrFcShort( 0x18 ),   /* Alpha Stack
size/offset = 24 */
#endif
/* 162 */   NdrFcShort( 0x3da ), /* Type Offset=986 */

            /* Return value */

/* 164 */   NdrFcShort( 0x70 ),   /* Flags:  out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 166 */   NdrFcShort( 0x18 ),   /* x86 Stack size/offset = 24 */
#else
                                  NdrFcShort( 0x1c ),   /*  MIPS Stack
size/offset = 28 */
#endif
#else
                                  NdrFcShort( 0x1c ),   /* PPC Stack size/offset
= 28 */
#endif
#else
                                  NdrFcShort( 0x20 ),   /* Alpha Stack
size/offset = 32 */
#endif
/* 168 */   0x8,                  /* FC_LONG */
                                  0x0,                  /* 0 */
```

```
            /* Procedure CallSetComplete */

/* 170 */   0x33,                   /* FC_AUTO_HANDLE */
                                    0x6c,                   /* Old Flags:  object,
Oi2 */
/* 172 */   NdrFcLong( 0x0 ),       /* 0 */
/* 176 */   NdrFcShort( 0x8 ),      /* 8 */
#ifndef _ALPHA_
/* 178 */   NdrFcShort( 0x8 ),      /* x86, MIPS, PPC Stack size/offset = 8 */
#else
                                    NdrFcShort( 0x10 ),     /* Alpha Stack
size/offset = 16 */
#endif
/* 180 */   NdrFcShort( 0x0 ),      /* 0 */
/* 182 */   NdrFcShort( 0x8 ),      /* 8 */
/* 184 */   0x4,                    /* Oi2 Flags:  has return, */
                                    0x1,                    /* 1 */

            /* Return value */

/* 186 */   NdrFcShort( 0x70 ),     /* Flags:  out, return, base type, */
#ifndef _ALPHA_
/* 188 */   NdrFcShort( 0x4 ),      /* x86, MIPS, PPC Stack size/offset = 4 */
#else
                                    NdrFcShort( 0x8 ),      /* Alpha Stack
size/offset = 8 */
#endif
/* 190 */   0x8,                    /* FC_LONG */
                                    0x0,                    /* 0 */

                                    0x0
        }
    };

static const MIDL_TYPE_FORMAT_STRING __MIDL_TypeFormatString =
    {
        0,
        {
                                    NdrFcShort( 0x0 ),      /* 0 */
/*  2 */
                                    0x12, 0x0, /* FC_UP */
/*  4 */    NdrFcShort( 0x3b0 ), /* Offset= 944 (948) */
/*  6 */
                                    0x2b,                   /*
FC_NON_ENCAPSULATED_UNION */
                                    0x9,                    /* FC_ULONG */
/*  8 */    0x7,                    /* Corr desc: FC_USHORT */
                                    0x0,                    /*  */
/* 10 */    NdrFcShort( 0xfff8 ), /* -8 */
/* 12 */    NdrFcShort( 0x2 ),      /* Offset= 2 (14) */
/* 14 */    NdrFcShort( 0x10 ),     /* 16 */
/* 16 */    NdrFcShort( 0x2b ),     /* 43 */
/* 18 */    NdrFcLong( 0x3 ),       /* 3 */
/* 22 */    NdrFcShort( 0x8008 ),               /* Simple arm type: FC_LONG */
/* 24 */    NdrFcLong( 0x11 ),      /* 17 */
/* 28 */    NdrFcShort( 0x8001 ),               /* Simple arm type: FC_BYTE */
/* 30 */    NdrFcLong( 0x2 ),       /* 2 */
/* 34 */    NdrFcShort( 0x8006 ),               /* Simple arm type: FC_SHORT */
/* 36 */    NdrFcLong( 0x4 ),       /* 4 */
/* 40 */    NdrFcShort( 0x800a ),               /* Simple arm type: FC_FLOAT */
/* 42 */    NdrFcLong( 0x5 ),       /* 5 */
/* 46 */    NdrFcShort( 0x800c ),               /* Simple arm type: FC_DOUBLE
*/
/* 48 */    NdrFcLong( 0xb ),       /* 11 */
/* 52 */    NdrFcShort( 0x8006 ),               /* Simple arm type: FC_SHORT */
/* 54 */    NdrFcLong( 0xa ),       /* 10 */
/* 58 */    NdrFcShort( 0x8008 ),               /* Simple arm type: FC_LONG */
/* 60 */    NdrFcLong( 0x6 ),       /* 6 */
/* 64 */    NdrFcShort( 0xd6 ),     /* Offset= 214 (278) */
/* 66 */    NdrFcLong( 0x7 ),       /* 7 */
/* 70 */    NdrFcShort( 0x800c ),               /* Simple arm type: FC_DOUBLE
*/
/* 72 */    NdrFcLong( 0x8 ),       /* 8 */
/* 76 */    NdrFcShort( 0xd0 ),     /* Offset= 208 (284) */
/* 78 */    NdrFcLong( 0xd ),       /* 13 */
/* 82 */    NdrFcShort( 0xe2 ),     /* Offset= 226 (308) */
/* 84 */    NdrFcLong( 0x9 ),       /* 9 */
/* 88 */    NdrFcShort( 0xee ),     /* Offset= 238 (326) */
/* 90 */    NdrFcLong( 0x2000 ),                /* 8192 */
/* 94 */    NdrFcShort( 0xfa ),     /* Offset= 250 (344) */
/* 96 */    NdrFcLong( 0x24 ),      /* 36 */
/* 100 */   NdrFcShort( 0x308 ),  /* Offset= 776 (876) */
/* 102 */   NdrFcLong( 0x4024 ),                /* 16420 */
/* 106 */   NdrFcShort( 0x302 ),  /* Offset= 770 (876) */
/* 108 */   NdrFcLong( 0x4011 ),                /* 16401 */
/* 112 */   NdrFcShort( 0x300 ),  /* Offset= 768 (880) */
/* 114 */   NdrFcLong( 0x4002 ),                /* 16386 */
/* 118 */   NdrFcShort( 0x2fe ),  /* Offset= 766 (884) */
/* 120 */   NdrFcLong( 0x4003 ),                /* 16387 */
/* 124 */   NdrFcShort( 0x2fc ),  /* Offset= 764 (888) */
/* 126 */   NdrFcLong( 0x4004 ),                /* 16388 */
/* 130 */   NdrFcShort( 0x2fa ),  /* Offset= 762 (892) */
/* 132 */   NdrFcLong( 0x4005 ),                /* 16389 */
/* 136 */   NdrFcShort( 0x2f8 ),  /* Offset= 760 (896) */
/* 138 */   NdrFcLong( 0x400b ),                /* 16395 */
/* 142 */   NdrFcShort( 0x2e6 ),  /* Offset= 742 (884) */
/* 144 */   NdrFcLong( 0x400a ),                /* 16394 */
/* 148 */   NdrFcShort( 0x2e4 ),  /* Offset= 740 (888) */
/* 150 */   NdrFcLong( 0x4006 ),                /* 16390 */
/* 154 */   NdrFcShort( 0x2ea ),  /* Offset= 746 (900) */
/* 156 */   NdrFcLong( 0x4007 ),                /* 16391 */
/* 160 */   NdrFcShort( 0x2e0 ),  /* Offset= 736 (896) */
/* 162 */   NdrFcLong( 0x4008 ),                /* 16392 */
/* 166 */   NdrFcShort( 0x2e2 ),  /* Offset= 738 (904) */
/* 168 */   NdrFcLong( 0x400d ),                /* 16397 */
/* 172 */   NdrFcShort( 0x2e0 ),  /* Offset= 736 (908) */
/* 174 */   NdrFcLong( 0x4009 ),                /* 16393 */
/* 178 */   NdrFcShort( 0x2de ),  /* Offset= 734 (912) */
/* 180 */   NdrFcLong( 0x6000 ),                /* 24576 */
/* 184 */   NdrFcShort( 0x2dc ),  /* Offset= 732 (916) */
/* 186 */   NdrFcLong( 0x400c ),                /* 16396 */
/* 190 */   NdrFcShort( 0x2da ),  /* Offset= 730 (920) */
/* 192 */   NdrFcLong( 0x10 ),      /* 16 */
/* 196 */   NdrFcShort( 0x8002 ),               /* Simple arm type: FC_CHAR */
/* 198 */   NdrFcLong( 0x12 ),      /* 18 */
/* 202 */   NdrFcShort( 0x8006 ),               /* Simple arm type: FC_SHORT */
/* 204 */   NdrFcLong( 0x13 ),      /* 19 */
/* 208 */   NdrFcShort( 0x8008 ),               /* Simple arm type: FC_LONG */
/* 210 */   NdrFcLong( 0x16 ),      /* 22 */
/* 214 */   NdrFcShort( 0x8008 ),               /* Simple arm type: FC_LONG */
/* 216 */   NdrFcLong( 0x17 ),      /* 23 */
/* 220 */   NdrFcShort( 0x8008 ),               /* Simple arm type: FC_LONG */
/* 222 */   NdrFcLong( 0xe ),       /* 14 */
/* 226 */   NdrFcShort( 0x2be ),  /* Offset= 702 (928) */
/* 228 */   NdrFcLong( 0x400e ),                /* 16398 */
/* 232 */   NdrFcShort( 0x2c4 ),  /* Offset= 708 (940) */
/* 234 */   NdrFcLong( 0x4010 ),                /* 16400 */
/* 238 */   NdrFcShort( 0x2c2 ),  /* Offset= 706 (944) */
/* 240 */   NdrFcLong( 0x4012 ),                /* 16402 */
/* 244 */   NdrFcShort( 0x280 ),  /* Offset= 640 (884) */
/* 246 */   NdrFcLong( 0x4013 ),                /* 16403 */
/* 250 */   NdrFcShort( 0x27e ),  /* Offset= 638 (888) */
/* 252 */   NdrFcLong( 0x4016 ),                /* 16406 */
/* 256 */   NdrFcShort( 0x278 ),  /* Offset= 632 (888) */
/* 258 */   NdrFcLong( 0x4017 ),                /* 16407 */
```

```
/* 262 */   NdrFcShort( 0x272 ), /* Offset= 626 (888) */
/* 264 */   NdrFcLong( 0x0 ),    /* 0 */
/* 268 */   NdrFcShort( 0x0 ),   /* Offset= 0 (268) */
/* 270 */   NdrFcLong( 0x1 ),    /* 1 */
/* 274 */   NdrFcShort( 0x0 ),   /* Offset= 0 (274) */
/* 276 */   NdrFcShort( 0xffffffff ),           /* Offset= -1 (275) */
/* 278 */
                                 0x15,                  /* FC_STRUCT */
                                 0x7,                   /* 7 */
/* 280 */   NdrFcShort( 0x8 ),   /* 8 */
/* 282 */   0xb,                 /* FC_HYPER */
                                 0x5b,                  /* FC_END */
/* 284 */
                                 0x12, 0x0, /* FC_UP */
/* 286 */   NdrFcShort( 0xc ),   /* Offset= 12 (298) */
/* 288 */
                                 0x1b,                  /* FC_CARRAY */
                                 0x1,                   /* 1 */
/* 290 */   NdrFcShort( 0x2 ),   /* 2 */
/* 292 */   0x9,                 /* Corr desc: FC_ULONG */
                                 0x0,                   /*  */
/* 294 */   NdrFcShort( 0xfffc ), /* -4 */
/* 296 */   0x6,                 /* FC_SHORT */
                                 0x5b,                  /* FC_END */
/* 298 */
                                 0x17,                  /* FC_CSTRUCT */
                                 0x3,                   /* 3 */
/* 300 */   NdrFcShort( 0x8 ),   /* 8 */
/* 302 */   NdrFcShort( 0xfffffff2 ),           /* Offset= -14 (288) */
/* 304 */   0x8,                 /* FC_LONG */
                                 0x8,                   /* FC_LONG */
/* 306 */   0x5c,                /* FC_PAD */
                                 0x5b,                  /* FC_END */
/* 308 */
                                 0x2f,                  /* FC_IP */
                                 0x5a,                  /*
FC_CONSTANT_IID */
/* 310 */   NdrFcLong( 0x0 ),    /* 0 */
/* 314 */   NdrFcShort( 0x0 ),   /* 0 */
/* 316 */   NdrFcShort( 0x0 ),   /* 0 */
/* 318 */   0xc0,                /* 192 */
                                 0x0,                   /* 0 */
/* 320 */   0x0,                 /* 0 */
                                 0x0,                   /* 0 */
/* 322 */   0x0,                 /* 0 */
                                 0x0,                   /* 0 */
/* 324 */   0x0,                 /* 0 */
                                 0x46,                  /* 70 */
/* 326 */
                                 0x2f,                  /* FC_IP */
                                 0x5a,                  /*
FC_CONSTANT_IID */
/* 328 */   NdrFcLong( 0x20400 ),           /* 132096 */
/* 332 */   NdrFcShort( 0x0 ),   /* 0 */
/* 334 */   NdrFcShort( 0x0 ),   /* 0 */
/* 336 */   0xc0,                /* 192 */
                                 0x0,                   /* 0 */
/* 338 */   0x0,                 /* 0 */
                                 0x0,                   /* 0 */
/* 340 */   0x0,                 /* 0 */
                                 0x0,                   /* 0 */
/* 342 */   0x0,                 /* 0 */
                                 0x46,                  /* 70 */
/* 344 */
                                 0x12, 0x10,            /* FC_UP
[pointer_deref] */
/* 346 */   NdrFcShort( 0x2 ),   /* Offset= 2 (348) */
/* 348 */
                                 0x12, 0x0, /* FC_UP */
/* 350 */   NdrFcShort( 0x1fc ), /* Offset= 508 (858) */
/* 352 */
                                 0x2a,                  /*
FC_ENCAPSULATED_UNION */
                                 0x49,                  /* 73 */
/* 354 */   NdrFcShort( 0x18 ),  /* 24 */
/* 356 */   NdrFcShort( 0xa ),   /* 10 */
/* 358 */   NdrFcLong( 0x8 ),    /* 8 */
/* 362 */   NdrFcShort( 0x58 ),  /* Offset= 88 (450) */
/* 364 */   NdrFcLong( 0xd ),    /* 13 */
/* 368 */   NdrFcShort( 0x78 ),  /* Offset= 120 (488) */
/* 370 */   NdrFcLong( 0x9 ),    /* 9 */
/* 374 */   NdrFcShort( 0x94 ),  /* Offset= 148 (522) */
/* 376 */   NdrFcLong( 0xc ),    /* 12 */
/* 380 */   NdrFcShort( 0xbc ),  /* Offset= 188 (568) */
/* 382 */   NdrFcLong( 0x24 ),   /* 36 */
/* 386 */   NdrFcShort( 0x114 ), /* Offset= 276 (662) */
/* 388 */   NdrFcLong( 0x800d ),            /* 32781 */
/* 392 */   NdrFcShort( 0x130 ), /* Offset= 304 (696) */
/* 394 */   NdrFcLong( 0x10 ),   /* 16 */
/* 398 */   NdrFcShort( 0x148 ), /* Offset= 328 (726) */
/* 400 */   NdrFcLong( 0x2 ),    /* 2 */
/* 404 */   NdrFcShort( 0x160 ), /* Offset= 352 (756) */
/* 406 */   NdrFcLong( 0x3 ),    /* 3 */
/* 410 */   NdrFcShort( 0x178 ), /* Offset= 376 (786) */
/* 412 */   NdrFcLong( 0x14 ),   /* 20 */
/* 416 */   NdrFcShort( 0x190 ), /* Offset= 400 (816) */
/* 418 */   NdrFcShort( 0xffffffff ),           /* Offset= -1 (417) */
/* 420 */
                                 0x1b,                  /* FC_CARRAY */
                                 0x3,                   /* 3 */
/* 422 */   NdrFcShort( 0x4 ),   /* 4 */
/* 424 */   0x19,                /* Corr desc:  field pointer, FC_ULONG */
                                 0x0,                   /*  */
/* 426 */   NdrFcShort( 0x0 ),   /* 0 */
/* 428 */
                                 0x4b,                  /* FC_PP */
                                 0x5c,                  /* FC_PAD */
/* 430 */
                                 0x48,                  /*
FC_VARIABLE_REPEAT */
                                 0x49,                  /*
FC_FIXED_OFFSET */
/* 432 */   NdrFcShort( 0x4 ),   /* 4 */
/* 434 */   NdrFcShort( 0x0 ),   /* 0 */
/* 436 */   NdrFcShort( 0x1 ),   /* 1 */
/* 438 */   NdrFcShort( 0x0 ),   /* 0 */
/* 440 */   NdrFcShort( 0x0 ),   /* 0 */
/* 442 */   0x12, 0x0, /* FC_UP */
/* 444 */   NdrFcShort( 0xffffff6e ),           /* Offset= -146 (298) */
/* 446 */
                                 0x5b,                  /* FC_END */


                                 0x8,                   /* FC_LONG */
/* 448 */   0x5c,                /* FC_PAD */
                                 0x5b,                  /* FC_END */
/* 450 */
                                 0x16,                  /* FC_PSTRUCT */
                                 0x3,                   /* 3 */
/* 452 */   NdrFcShort( 0x8 ),   /* 8 */
/* 454 */
                                 0x4b,                  /* FC_PP */
                                 0x5c,                  /* FC_PAD */
/* 456 */
                                 0x46,                  /* FC_NO_REPEAT */
                                 0x5c,                  /* FC_PAD */
/* 458 */   NdrFcShort( 0x4 ),   /* 4 */
```

```
/* 460 */   NdrFcShort( 0x4 ),      /* 4 */
/* 462 */   0x11, 0x0, /* FC_RP */
/* 464 */   NdrFcShort( 0xffffffd4 ),           /* Offset= -44 (420) */
/* 466 */
                                    0x5b,                   /* FC_END */

                                    0x8,                    /* FC_LONG */
/* 468 */   0x8,                    /* FC_LONG */
                                    0x5b,                   /* FC_END */
/* 470 */
                                    0x21,                   /*
FC_BOGUS_ARRAY */
                                    0x3,                    /* 3 */
/* 472 */   NdrFcShort( 0x0 ),      /* 0 */
/* 474 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 476 */   NdrFcShort( 0x0 ),      /* 0 */
/* 478 */   NdrFcLong( 0xffffffff ),            /* -1 */
/* 482 */   0x4c,                   /* FC_EMBEDDED_COMPLEX */
                                    0x0,                    /* 0 */
/* 484 */   NdrFcShort( 0xffffff50 ),           /* Offset= -176 (308) */
/* 486 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 488 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 490 */   NdrFcShort( 0x8 ),      /* 8 */
/* 492 */   NdrFcShort( 0x0 ),      /* 0 */
/* 494 */   NdrFcShort( 0x6 ),      /* Offset= 6 (500) */
/* 496 */   0x8,                    /* FC_LONG */
                                    0x36,                   /* FC_POINTER */
/* 498 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 500 */
                                    0x11, 0x0, /* FC_RP */
/* 502 */   NdrFcShort( 0xfffffe0 ),            /* Offset= -32 (470) */
/* 504 */
                                    0x21,                   /*
FC_BOGUS_ARRAY */
                                    0x3,                    /* 3 */
/* 506 */   NdrFcShort( 0x0 ),      /* 0 */
/* 508 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 510 */   NdrFcShort( 0x0 ),      /* 0 */
/* 512 */   NdrFcLong( 0xffffffff ),            /* -1 */
/* 516 */   0x4c,                   /* FC_EMBEDDED_COMPLEX */
                                    0x0,                    /* 0 */
/* 518 */   NdrFcShort( 0xffffff40 ),           /* Offset= -192 (326) */
/* 520 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 522 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 524 */   NdrFcShort( 0x8 ),      /* 8 */
/* 526 */   NdrFcShort( 0x0 ),      /* 0 */
/* 528 */   NdrFcShort( 0x6 ),      /* Offset= 6 (534) */
/* 530 */   0x8,                    /* FC_LONG */
                                    0x36,                   /* FC_POINTER */
/* 532 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 534 */
                                    0x11, 0x0, /* FC_RP */
/* 536 */   NdrFcShort( 0xfffffe0 ),            /* Offset= -32 (504) */
/* 538 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x3,                    /* 3 */
/* 540 */   NdrFcShort( 0x4 ),      /* 4 */
/* 542 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 544 */   NdrFcShort( 0x0 ),      /* 0 */
/* 546 */
                                    0x4b,                   /* FC_PP */
                                    0x5c,                   /* FC_PAD */
/* 548 */
                                    0x48,                   /*
FC_VARIABLE_REPEAT */
                                    0x49,                   /*
FC_FIXED_OFFSET */
/* 550 */   NdrFcShort( 0x4 ),      /* 4 */
/* 552 */   NdrFcShort( 0x0 ),      /* 0 */
/* 554 */   NdrFcShort( 0x1 ),      /* 1 */
/* 556 */   NdrFcShort( 0x0 ),      /* 0 */
/* 558 */   NdrFcShort( 0x0 ),      /* 0 */
/* 560 */   0x12, 0x0, /* FC_UP */
/* 562 */   NdrFcShort( 0x182 ), /* Offset= 386 (948) */
/* 564 */
                                    0x5b,                   /* FC_END */

                                    0x8,                    /* FC_LONG */
/* 566 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 568 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 570 */   NdrFcShort( 0x8 ),      /* 8 */
/* 572 */   NdrFcShort( 0x0 ),      /* 0 */
/* 574 */   NdrFcShort( 0x6 ),      /* Offset= 6 (580) */
/* 576 */   0x8,                    /* FC_LONG */
                                    0x36,                   /* FC_POINTER */
/* 578 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 580 */
                                    0x11, 0x0, /* FC_RP */
/* 582 */   NdrFcShort( 0xffffffd4 ),           /* Offset= -44 (538) */
/* 584 */
                                    0x2f,                   /* FC_IP */
                                    0x5a,                   /*
FC_CONSTANT_IID */
/* 586 */   NdrFcLong( 0x2f ),      /* 47 */
/* 590 */   NdrFcShort( 0x0 ),      /* 0 */
/* 592 */   NdrFcShort( 0x0 ),      /* 0 */
/* 594 */   0xc0,                   /* 192 */
                                    0x0,                    /* 0 */
/* 596 */   0x0,                    /* 0 */
                                    0x0,                    /* 0 */
/* 598 */   0x0,                    /* 0 */
                                    0x0,                    /* 0 */
/* 600 */   0x0,                    /* 0 */
                                    0x46,                   /* 70 */
/* 602 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x0,                    /* 0 */
/* 604 */   NdrFcShort( 0x1 ),      /* 1 */
/* 606 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 608 */   NdrFcShort( 0x4 ),      /* 4 */
/* 610 */   0x1,                    /* FC_BYTE */
                                    0x5b,                   /* FC_END */
/* 612 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 614 */   NdrFcShort( 0x10 ),     /* 16 */
```

```
/* 616 */   NdrFcShort( 0x0 ),      /* 0 */
/* 618 */   NdrFcShort( 0xa ),      /* Offset= 10 (628) */
/* 620 */   0x8,                    /* FC_LONG */
                                    0x8,                    /* FC_LONG */
/* 622 */   0x4c,                   /* FC_EMBEDDED_COMPLEX */
                                    0x0,                    /* 0 */
/* 624 */   NdrFcShort( 0xffffffd8 ),           /* Offset= -40 (584) */
/* 626 */   0x36,                   /* FC_POINTER */
                                    0x5b,                   /* FC_END */
/* 628 */
                                    0x12, 0x0, /* FC_UP */
/* 630 */   NdrFcShort( 0xfffffffe4 ),          /* Offset= -28 (602) */
/* 632 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x3,                    /* 3 */
/* 634 */   NdrFcShort( 0x4 ),      /* 4 */
/* 636 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 638 */   NdrFcShort( 0x0 ),      /* 0 */
/* 640 */
                                    0x4b,                   /* FC_PP */
                                    0x5c,                   /* FC_PAD */
/* 642 */
                                    0x48,                   /*
FC_VARIABLE_REPEAT */
                                    0x49,                   /*
FC_FIXED_OFFSET */
/* 644 */   NdrFcShort( 0x4 ),      /* 4 */
/* 646 */   NdrFcShort( 0x0 ),      /* 0 */
/* 648 */   NdrFcShort( 0x1 ),      /* 1 */
/* 650 */   NdrFcShort( 0x0 ),      /* 0 */
/* 652 */   NdrFcShort( 0x0 ),      /* 0 */
/* 654 */   0x12, 0x0, /* FC_UP */
/* 656 */   NdrFcShort( 0xffffffd4 ),           /* Offset= -44 (612) */
/* 658 */
                                    0x5b,                   /* FC_END */

                                    0x8,                    /* FC_LONG */
/* 660 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 662 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 664 */   NdrFcShort( 0x8 ),      /* 8 */
/* 666 */   NdrFcShort( 0x0 ),      /* 0 */
/* 668 */   NdrFcShort( 0x6 ),      /* Offset= 6 (674) */
/* 670 */   0x8,                    /* FC_LONG */
                                    0x36,                   /* FC_POINTER */
/* 672 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 674 */
                                    0x11, 0x0, /* FC_RP */
/* 676 */   NdrFcShort( 0xffffffd4 ),           /* Offset= -44 (632) */
/* 678 */
                                    0x1d,                   /* FC_SMFARRAY */
                                    0x0,                    /* 0 */
/* 680 */   NdrFcShort( 0x8 ),      /* 8 */
/* 682 */   0x1,                    /* FC_BYTE */
                                    0x5b,                   /* FC_END */
/* 684 */
                                    0x15,                   /* FC_STRUCT */
                                    0x3,                    /* 3 */
/* 686 */   NdrFcShort( 0x10 ),     /* 16 */
/* 688 */   0x8,                    /* FC_LONG */
                                    0x6,                    /* FC_SHORT */
/* 690 */   0x6,                    /* FC_SHORT */
                                    0x4c,                   /*
FC_EMBEDDED_COMPLEX */
/* 692 */   0x0,                    /* 0 */
                                    NdrFcShort( 0xffffffff1 ),          /* Offset=
-15 (678) */
                                    0x5b,                   /* FC_END */
/* 696 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 698 */   NdrFcShort( 0x18 ),     /* 24 */
/* 700 */   NdrFcShort( 0x0 ),      /* 0 */
/* 702 */   NdrFcShort( 0xa ),      /* Offset= 10 (712) */
/* 704 */   0x8,                    /* FC_LONG */
                                    0x36,                   /* FC_POINTER */
/* 706 */   0x4c,                   /* FC_EMBEDDED_COMPLEX */
                                    0x0,                    /* 0 */
/* 708 */   NdrFcShort( 0xffffffe8 ),           /* Offset= -24 (684) */
/* 710 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 712 */
                                    0x11, 0x0, /* FC_RP */
/* 714 */   NdrFcShort( 0xffffff0c ),           /* Offset= -244 (470) */
/* 716 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x0,                    /* 0 */
/* 718 */   NdrFcShort( 0x1 ),      /* 1 */
/* 720 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 722 */   NdrFcShort( 0x0 ),      /* 0 */
/* 724 */   0x1,                    /* FC_BYTE */
                                    0x5b,                   /* FC_END */
/* 726 */
                                    0x16,                   /* FC_PSTRUCT */
                                    0x3,                    /* 3 */
/* 728 */   NdrFcShort( 0x8 ),      /* 8 */
/* 730 */
                                    0x4b,                   /* FC_PP */
                                    0x5c,                   /* FC_PAD */
/* 732 */
                                    0x46,                   /* FC_NO_REPEAT */
                                    0x5c,                   /* FC_PAD */
/* 734 */   NdrFcShort( 0x4 ),      /* 4 */
/* 736 */   NdrFcShort( 0x4 ),      /* 4 */
/* 738 */   0x12, 0x0, /* FC_UP */
/* 740 */   NdrFcShort( 0xffffffe8 ),           /* Offset= -24 (716) */
/* 742 */
                                    0x5b,                   /* FC_END */

                                    0x8,                    /* FC_LONG */
/* 744 */   0x8,                    /* FC_LONG */
                                    0x5b,                   /* FC_END */
/* 746 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x1,                    /* 1 */
/* 748 */   NdrFcShort( 0x2 ),      /* 2 */
/* 750 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 752 */   NdrFcShort( 0x0 ),      /* 0 */
/* 754 */   0x6,                    /* FC_SHORT */
                                    0x5b,                   /* FC_END */
/* 756 */
                                    0x16,                   /* FC_PSTRUCT */
                                    0x3,                    /* 3 */
/* 758 */   NdrFcShort( 0x8 ),      /* 8 */
/* 760 */
                                    0x4b,                   /* FC_PP */
                                    0x5c,                   /* FC_PAD */
```

```
/* 762 */
                                0x46,                   /* FC_NO_REPEAT */
                                0x5c,                   /* FC_PAD */
/* 764 */   NdrFcShort( 0x4 ),  /* 4 */
/* 766 */   NdrFcShort( 0x4 ),  /* 4 */
/* 768 */   0x12, 0x0, /* FC_UP */
/* 770 */   NdrFcShort( 0xffffffe8 ),           /* Offset= -24 (746) */
/* 772 */
                                0x5b,                   /* FC_END */

                                0x8,                    /* FC_LONG */
/* 774 */   0x8,                /* FC_LONG */
                                0x5b,                   /* FC_END */
/* 776 */
                                0x1b,                   /* FC_CARRAY */
                                0x3,                    /* 3 */
/* 778 */   NdrFcShort( 0x4 ),  /* 4 */
/* 780 */   0x19,               /* Corr desc:  field pointer, FC_ULONG */
                                0x0,                    /*  */
/* 782 */   NdrFcShort( 0x0 ),  /* 0 */
/* 784 */   0x8,                /* FC_LONG */
                                0x5b,                   /* FC_END */
/* 786 */
                                0x16,                   /* FC_PSTRUCT */
                                0x3,                    /* 3 */
/* 788 */   NdrFcShort( 0x8 ),  /* 8 */
/* 790 */
                                0x4b,                   /* FC_PP */
                                0x5c,                   /* FC_PAD */
/* 792 */
                                0x46,                   /* FC_NO_REPEAT */
                                0x5c,                   /* FC_PAD */
/* 794 */   NdrFcShort( 0x4 ),  /* 4 */
/* 796 */   NdrFcShort( 0x4 ),  /* 4 */
/* 798 */   0x12, 0x0, /* FC_UP */
/* 800 */   NdrFcShort( 0xffffffe8 ),           /* Offset= -24 (776) */
/* 802 */
                                0x5b,                   /* FC_END */

                                0x8,                    /* FC_LONG */
/* 804 */   0x8,                /* FC_LONG */
                                0x5b,                   /* FC_END */
/* 806 */
                                0x1b,                   /* FC_CARRAY */
                                0x7,                    /* 7 */
/* 808 */   NdrFcShort( 0x8 ),  /* 8 */
/* 810 */   0x19,               /* Corr desc:  field pointer, FC_ULONG */
                                0x0,                    /*  */
/* 812 */   NdrFcShort( 0x0 ),  /* 0 */
/* 814 */   0xb,                /* FC_HYPER */
                                0x5b,                   /* FC_END */
/* 816 */
                                0x16,                   /* FC_PSTRUCT */
                                0x3,                    /* 3 */
/* 818 */   NdrFcShort( 0x8 ),  /* 8 */
/* 820 */
                                0x4b,                   /* FC_PP */
                                0x5c,                   /* FC_PAD */
/* 822 */
                                0x46,                   /* FC_NO_REPEAT */
                                0x5c,                   /* FC_PAD */
/* 824 */   NdrFcShort( 0x4 ),  /* 4 */
/* 826 */   NdrFcShort( 0x4 ),  /* 4 */
/* 828 */   0x12, 0x0, /* FC_UP */
/* 830 */   NdrFcShort( 0xffffffe8 ),           /* Offset= -24 (806) */
/* 832 */
                                0x5b,                   /* FC_END */

                                0x8,                    /* FC_LONG */
/* 834 */   0x8,                /* FC_LONG */
                                0x5b,                   /* FC_END */
/* 836 */
                                0x15,                   /* FC_STRUCT */
                                0x3,                    /* 3 */
/* 838 */   NdrFcShort( 0x8 ),  /* 8 */
/* 840 */   0x8,                /* FC_LONG */
                                0x8,                    /* FC_LONG */
/* 842 */   0x5c,               /* FC_PAD */
                                0x5b,                   /* FC_END */
/* 844 */
                                0x1b,                   /* FC_CARRAY */
                                0x3,                    /* 3 */
/* 846 */   NdrFcShort( 0x8 ),  /* 8 */
/* 848 */   0x7,                /* Corr desc: FC_USHORT */
                                0x0,                    /*  */
/* 850 */   NdrFcShort( 0xffd8 ),/* -40 */
/* 852 */   0x4c,               /* FC_EMBEDDED_COMPLEX */
                                0x0,                    /* 0 */
/* 854 */   NdrFcShort( 0xffffffee ),           /* Offset= -18 (836) */
/* 856 */   0x5c,               /* FC_PAD */
                                0x5b,                   /* FC_END */
/* 858 */
                                0x1a,                   /*
FC_BOGUS_STRUCT */
                                0x3,                    /* 3 */
/* 860 */   NdrFcShort( 0x28 ), /* 40 */
/* 862 */   NdrFcShort( 0xffffffee ),           /* Offset= -18 (844) */
/* 864 */   NdrFcShort( 0x0 ),  /* Offset= 0 (864) */
/* 866 */   0x6,                /* FC_SHORT */
                                0x6,                    /* FC_SHORT */
/* 868 */   0x38,               /* FC_ALIGNM4 */
                                0x8,                    /* FC_LONG */
/* 870 */   0x8,                /* FC_LONG */
                                0x4c,                   /*
FC_EMBEDDED_COMPLEX */
/* 872 */   0x0,                /* 0 */
                                NdrFcShort( 0xfffffdf7 ),           /* Offset=
-521 (352) */
                                0x5b,                   /* FC_END */
/* 876 */
                                0x12, 0x0, /* FC_UP */
/* 878 */   NdrFcShort( 0xfffffef6 ),           /* Offset= -266 (612) */
/* 880 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 882 */   0x1,                /* FC_BYTE */
                                0x5c,                   /* FC_PAD */
/* 884 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 886 */   0x6,                /* FC_SHORT */
                                0x5c,                   /* FC_PAD */
/* 888 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 890 */   0x8,                /* FC_LONG */
                                0x5c,                   /* FC_PAD */
/* 892 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 894 */   0xa,                /* FC_FLOAT */
                                0x5c,                   /* FC_PAD */
/* 896 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 898 */   0xc,                /* FC_DOUBLE */
                                0x5c,                   /* FC_PAD */
/* 900 */
                                0x12, 0x0, /* FC_UP */
/* 902 */   NdrFcShort( 0xfffffd90 ),           /* Offset= -624 (278) */
/* 904 */
```

```
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 906 */   NdrFcShort( 0xfffffd92 ),           /* Offset= -622 (284) */
/* 908 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 910 */   NdrFcShort( 0xfffffda6 ),           /* Offset= -602 (308) */
/* 912 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 914 */   NdrFcShort( 0xfffffdb4 ),           /* Offset= -588 (326) */
/* 916 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 918 */   NdrFcShort( 0xfffffdc2 ),           /* Offset= -574 (344) */
/* 920 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 922 */   NdrFcShort( 0x2 ),      /* Offset= 2 (924) */
/* 924 */
                                0x12, 0x0, /* FC_UP */
/* 926 */   NdrFcShort( 0x16 ),     /* Offset= 22 (948) */
/* 928 */
                                0x15,                   /* FC_STRUCT */
                                0x7,                    /* 7 */
/* 930 */   NdrFcShort( 0x10 ),     /* 16 */
/* 932 */   0x6,                    /* FC_SHORT */
                                0x1,                    /* FC_BYTE */
/* 934 */   0x1,                    /* FC_BYTE */
                                0x38,                   /* FC_ALIGNM4 */
/* 936 */   0x8,                    /* FC_LONG */
                                0x39,                   /* FC_ALIGNM8 */
/* 938 */   0xb,                    /* FC_HYPER */
                                0x5b,                   /* FC_END */
/* 940 */
                                0x12, 0x0, /* FC_UP */
/* 942 */   NdrFcShort( 0xfffffff2 ),           /* Offset= -14 (928) */
/* 944 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 946 */   0x2,                    /* FC_CHAR */
                                0x5c,                   /* FC_PAD */
/* 948 */
                                0x1a,                   /*
FC_BOGUS_STRUCT */
                                0x7,                    /* 7 */
/* 950 */   NdrFcShort( 0x20 ),     /* 32 */
/* 952 */   NdrFcShort( 0x0 ),      /* 0 */
/* 954 */   NdrFcShort( 0x0 ),      /* Offset= 0 (954) */
/* 956 */   0x8,                    /* FC_LONG */
                                0x8,                    /* FC_LONG */
/* 958 */   0x6,                    /* FC_SHORT */
                                0x6,                    /* FC_SHORT */
/* 960 */   0x6,                    /* FC_SHORT */
                                0x6,                    /* FC_SHORT */
/* 962 */   0x4c,                   /* FC_EMBEDDED_COMPLEX */
                                0x0,                    /* 0 */
/* 964 */   NdrFcShort( 0xfffffc42 ),           /* Offset= -958 (6) */
/* 966 */   0x5c,                   /* FC_PAD */
                                0x5b,                   /* FC_END */
/* 968 */   0xb4,                   /* FC_USER_MARSHAL */
                                0x83,                   /* 131 */
/* 970 */   NdrFcShort( 0x0 ),      /* 0 */
/* 972 */   NdrFcShort( 0x10 ),     /* 16 */
/* 974 */   NdrFcShort( 0x0 ),      /* 0 */
/* 976 */   NdrFcShort( 0xfffffc32 ),           /* Offset= -974 (2) */
/* 978 */
                                0x11, 0x4, /* FC_RP [alloced_on_stack] */
/* 980 */   NdrFcShort( 0x6 ),      /* Offset= 6 (986) */
/* 982 */
                                0x13, 0x0, /* FC_OP */
/* 984 */   NdrFcShort( 0xfffffdc ),            /* Offset= -36 (948) */
/* 986 */   0xb4,                   /* FC_USER_MARSHAL */
                                0x83,                   /* 131 */
/* 988 */   NdrFcShort( 0x0 ),      /* 0 */
/* 990 */   NdrFcShort( 0x10 ),     /* 16 */
/* 992 */   NdrFcShort( 0x0 ),      /* 0 */
/* 994 */   NdrFcShort( 0xfffffff4 ),           /* Offset= -12 (982) */

                                0x0
        }
    };

const CInterfaceProxyVtbl * _tpcc_com_ps_ProxyVtblList[] =
{
    ( CInterfaceProxyVtbl *) &_ITPCCProxyVtbl,
    0
};

const CInterfaceStubVtbl * _tpcc_com_ps_StubVtblList[] =
{
    ( CInterfaceStubVtbl *) &_ITPCCStubVtbl,
    0
};

PCInterfaceName const _tpcc_com_ps_InterfaceNamesList[] =
{
    "ITPCC",
    0
};


#define _tpcc_com_ps_CHECK_IID(n)       IID_GENERIC_CHECK_IID(
_tpcc_com_ps, pIID, n)

int __stdcall _tpcc_com_ps_IID_Lookup( const IID * pIID, int * pIndex )
{

    if(!_tpcc_com_ps_CHECK_IID(0))
        {
        *pIndex = 0;
        return 1;
        }

    return 0;
}

const ExtendedProxyFileInfo tpcc_com_ps_ProxyFileInfo =
{
    (PCInterfaceProxyVtblList *) & _tpcc_com_ps_ProxyVtblList,
    (PCInterfaceStubVtblList *) & _tpcc_com_ps_StubVtblList,
    (const PCInterfaceName * ) & _tpcc_com_ps_InterfaceNamesList,
    0, // no delegation
    & _tpcc_com_ps_IID_Lookup,
    1,
    2,
    0, /* table of [async_uuid] interfaces */
    0, /* Filler1 */
    0, /* Filler2 */
    0  /* Filler3 */
};


#endif /* !defined(_M_IA64) && !defined(_M_AXP64)*/


#pragma warning( disable: 4049 )  /* more than 64k source lines */
```

```
/* this ALWAYS GENERATED file contains the proxy stub code */


 /* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:08 2001
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf (OptLev=i2), W1, Zp8, env=Win64 (32b run,appending), ms_ext, c_ext,
robust
    error checks: allocation ref bounds_check enum stub_data
    VC __declspec() decoration level:
         __declspec(uuid()), __declspec(selectany), __declspec(novtable)
         DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#if defined(_M_IA64) || defined(_M_AXP64)
#define USE_STUBLESS_PROXY


/* verify that the <rpcproxy.h> version is high enough to compile this file*/
#ifndef __REDQ_RPCPROXY_H_VERSION__
#define __REQUIRED_RPCPROXY_H_VERSION__ 475
#endif


#include "rpcproxy.h"
#ifndef __RPCPROXY_H_VERSION__
#error this stub requires an updated version of <rpcproxy.h>
#endif // __RPCPROXY_H_VERSION__


#include "tpcc_com_ps.h"

#define TYPE_FORMAT_STRING_SIZE   979
#define PROC_FORMAT_STRING_SIZE   253
#define TRANSMIT_AS_TABLE_SIZE    0
#define WIRE_MARSHAL_TABLE_SIZE   1

typedef struct _MIDL_TYPE_FORMAT_STRING
    {
    short          Pad;
    unsigned char  Format[ TYPE_FORMAT_STRING_SIZE ];
    } MIDL_TYPE_FORMAT_STRING;

typedef struct _MIDL_PROC_FORMAT_STRING
    {
    short          Pad;
    unsigned char  Format[ PROC_FORMAT_STRING_SIZE ];
    } MIDL_PROC_FORMAT_STRING;


extern const MIDL_TYPE_FORMAT_STRING __MIDL_TypeFormatString;
extern const MIDL_PROC_FORMAT_STRING __MIDL_ProcFormatString;


/* Standard interface: __MIDL_itf_tpcc_com_ps_0000, ver. 0.0,

GUID={0x00000000,0x0000,0x0000,{0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0
x00}} */


/* Object interface: IUnknown, ver. 0.0,

GUID={0x00000000,0x0000,0x0000,{0xC0,0x00,0x00,0x00,0x00,0x00,0x00,
0x46}} */


/* Object interface: ITPCC, ver. 0.0,

GUID={0xFEEE6AA2,0x84B1,0x11d2,{0xBA,0x47,0x00,0xC0,0x4F,0xBF,0x
E0,0x8B}} */


extern const MIDL_STUB_DESC Object_StubDesc;


extern const MIDL_SERVER_INFO ITPCC_ServerInfo;

#pragma code_seg(".orpc")
static const unsigned short ITPCC_FormatStringOffsetTable[] =
    {
    0,
    44,
    88,
    132,
    176,
    220
    };

static const MIDL_SERVER_INFO ITPCC_ServerInfo =
    {
    &Object_StubDesc,
    0,
    __MIDL_ProcFormatString.Format,
    &ITPCC_FormatStringOffsetTable[-3],
    0,
    0,
    0,
    0
    };

static const MIDL_STUBLESS_PROXY_INFO ITPCC_ProxyInfo =
    {
    &Object_StubDesc,
    __MIDL_ProcFormatString.Format,
    &ITPCC_FormatStringOffsetTable[-3],
    0,
    0,
    0
    };

CINTERFACE_PROXY_VTABLE(9) _ITPCCProxyVtbl =
{
    &ITPCC_ProxyInfo,
    &IID_ITPCC,
    IUnknown_QueryInterface_Proxy,
    IUnknown_AddRef_Proxy,
    IUnknown_Release_Proxy ,
    (void *)-1 /* ITPCC::NewOrder */ ,
    (void *)-1 /* ITPCC::Payment */ ,
    (void *)-1 /* ITPCC::Delivery */ ,
    (void *)-1 /* ITPCC::StockLevel */ ,
    (void *)-1 /* ITPCC::OrderStatus */ ,
    (void *)-1 /* ITPCC::CallSetComplete */
};

const CInterfaceStubVtbl _ITPCCStubVtbl =
{
    &IID_ITPCC,
    &ITPCC_ServerInfo,
    9,
    0, /* pure interpreted */
    CStdStubBuffer_METHODS
};
```

```
extern const USER_MARSHAL_ROUTINE_QUADRUPLE
UserMarshalRoutines[ WIRE_MARSHAL_TABLE_SIZE ];

static const MIDL_STUB_DESC Object_StubDesc =
    {
    0,
    NdrOleAllocate,
    NdrOleFree,
    0,
    0,
    0,
    0,
    0,
    __MIDL_TypeFormatString.Format,
    1, /* -error bounds_check flag */
    0x50002, /* Ndr library version */
    0,
    0x5030118, /* MIDL Version 5.3.280 */
    0,
    UserMarshalRoutines,
    0,  /* notify & notify_flag routine table */
    0x1, /* MIDL flag */
    0,  /* Reserved3 */
    0,  /* Reserved4 */
    0   /* Reserved5 */
    };

#pragma data_seg(".rdata")

static const USER_MARSHAL_ROUTINE_QUADRUPLE
UserMarshalRoutines[ WIRE_MARSHAL_TABLE_SIZE ] =
        {

            {
            VARIANT_UserSize
            ,VARIANT_UserMarshal
            ,VARIANT_UserUnmarshal
            ,VARIANT_UserFree
            }

        };


#if !defined(__RPC_WIN64__)
#error  Invalid build platform for this stub.
#endif

static const MIDL_PROC_FORMAT_STRING __MIDL_ProcFormatString =
    {
        0,
        {

                /* Procedure NewOrder */

                                        0x33,               /*
FC_AUTO_HANDLE */
                                        0x6c,               /* Old Flags:  object,
Oi2 */
/*  2 */    NdrFcLong( 0x0 ),   /* 0 */
/*  6 */    NdrFcShort( 0x3 ),  /* 3 */
#ifndef _ALPHA_
/*  8 */    NdrFcShort( 0x38 ), /* ia64 Stack size/offset = 56 */
#else
                                        NdrFcShort( 0x30 ), /* axp64 Stack
size/offset = 48 */
#endif
/* 10 */    NdrFcShort( 0x0 ),  /* 0 */
/* 12 */    NdrFcShort( 0x8 ),  /* 8 */
/* 14 */    0x47,               /* Oi2 Flags:  srv must size, clt must size, has
return, has ext, */
                                        0x3,                /* 3 */
/* 16 */    0xa,                /* 10 */
                                        0x7,                /* Ext Flags:  new corr
desc, clt corr check, srv corr check, */
/* 18 */    NdrFcShort( 0x20 ), /* 32 */
/* 20 */    NdrFcShort( 0x20 ), /* 32 */
/* 22 */    NdrFcShort( 0x0 ),  /* 0 */
/* 24 */    NdrFcShort( 0x0 ),  /* 0 */

                /* Parameter txn_in */

/* 26 */    NdrFcShort( 0x8b ), /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
/* 28 */    NdrFcShort( 0x10 ), /* ia64 Stack size/offset = 16 */
#else
                                        NdrFcShort( 0x8 ),  /* axp64 Stack
size/offset = 8 */
#endif
/* 30 */    NdrFcShort( 0x3b6 ), /* Type Offset=950 */

                /* Parameter txn_out */

/* 32 */    NdrFcShort( 0x6113 ),           /* Flags:  must size, must free, out,
simple ref, srv alloc size=24 */
#ifndef _ALPHA_
/* 34 */    NdrFcShort( 0x28 ), /* ia64 Stack size/offset = 40 */
#else
                                        NdrFcShort( 0x20 ), /* axp64 Stack
size/offset = 32 */
#endif
/* 36 */    NdrFcShort( 0x3c8 ), /* Type Offset=968 */

                /* Return value */

/* 38 */    NdrFcShort( 0x70 ), /* Flags:  out, return, base type, */
#ifndef _ALPHA_
/* 40 */    NdrFcShort( 0x30 ), /* ia64 Stack size/offset = 48 */
#else
                                        NdrFcShort( 0x28 ), /* axp64 Stack
size/offset = 40 */
#endif
/* 42 */    0x8,                /* FC_LONG */
                                        0x0,                /* 0 */

                /* Procedure Payment */

/* 44 */    0x33,               /* FC_AUTO_HANDLE */
                                        0x6c,               /* Old Flags:  object,
Oi2 */
/* 46 */    NdrFcLong( 0x0 ),   /* 0 */
/* 50 */    NdrFcShort( 0x4 ),  /* 4 */
#ifndef _ALPHA_
/* 52 */    NdrFcShort( 0x38 ), /* ia64 Stack size/offset = 56 */
#else
                                        NdrFcShort( 0x30 ), /* axp64 Stack
size/offset = 48 */
#endif
/* 54 */    NdrFcShort( 0x0 ),  /* 0 */
/* 56 */    NdrFcShort( 0x8 ),  /* 8 */
/* 58 */    0x47,               /* Oi2 Flags:  srv must size, clt must size, has
return, has ext, */
                                        0x3,                /* 3 */
/* 60 */    0xa,                /* 10 */
                                        0x7,                /* Ext Flags:  new corr
desc, clt corr check, srv corr check, */
```

```
/* 62 */    NdrFcShort( 0x20 ),   /* 32 */
/* 64 */    NdrFcShort( 0x20 ),   /* 32 */
/* 66 */    NdrFcShort( 0x0 ),    /* 0 */
/* 68 */    NdrFcShort( 0x0 ),    /* 0 */

            /* Parameter txn_in */

/* 70 */    NdrFcShort( 0x8b ),   /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
/* 72 */    NdrFcShort( 0x10 ),   /* ia64 Stack size/offset = 16 */
#else
                                  NdrFcShort( 0x8 ),    /* axp64 Stack
size/offset = 8 */
#endif
/* 74 */    NdrFcShort( 0x3b6 ), /* Type Offset=950 */

            /* Parameter txn_out */

/* 76 */    NdrFcShort( 0x6113 ),             /* Flags:  must size, must free, out,
simple ref, srv alloc size=24 */
#ifndef _ALPHA_
/* 78 */    NdrFcShort( 0x28 ),   /* ia64 Stack size/offset = 40 */
#else
                                  NdrFcShort( 0x20 ),   /* axp64 Stack
size/offset = 32 */
#endif
/* 80 */    NdrFcShort( 0x3c8 ), /* Type Offset=968 */

            /* Return value */

/* 82 */    NdrFcShort( 0x70 ),   /* Flags:  out, return, base type, */
#ifndef _ALPHA_
/* 84 */    NdrFcShort( 0x30 ),   /* ia64 Stack size/offset = 48 */
#else
                                  NdrFcShort( 0x28 ),   /* axp64 Stack
size/offset = 40 */
#endif
/* 86 */    0x8,                  /* FC_LONG */
                                  0x0,                  /* 0 */

            /* Procedure Delivery */

/* 88 */    0x33,                 /* FC_AUTO_HANDLE */
                                  0x6c,                 /* Old Flags:  object,
Oi2 */
/* 90 */    NdrFcLong( 0x0 ),     /* 0 */
/* 94 */    NdrFcShort( 0x5 ),    /* 5 */
#ifndef _ALPHA_
/* 96 */    NdrFcShort( 0x38 ),   /* ia64 Stack size/offset = 56 */
#else
                                  NdrFcShort( 0x30 ),   /* axp64 Stack
size/offset = 48 */
#endif
/* 98 */    NdrFcShort( 0x0 ),    /* 0 */
/* 100 */   NdrFcShort( 0x8 ),    /* 8 */
/* 102 */   0x47,                 /* Oi2 Flags:  srv must size, clt must size, has
return, has ext, */
                                  0x3,                  /* 3 */
/* 104 */   0xa,                  /* 10 */
                                  0x7,                  /* Ext Flags:  new corr
desc, clt corr check, srv corr check, */
/* 106 */   NdrFcShort( 0x20 ),   /* 32 */
/* 108 */   NdrFcShort( 0x20 ),   /* 32 */
/* 110 */   NdrFcShort( 0x0 ),    /* 0 */
/* 112 */   NdrFcShort( 0x0 ),    /* 0 */

            /* Parameter txn_in */

/* 114 */   NdrFcShort( 0x8b ),   /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
/* 116 */   NdrFcShort( 0x10 ),   /* ia64 Stack size/offset = 16 */
#else
                                  NdrFcShort( 0x8 ),    /* axp64 Stack
size/offset = 8 */
#endif
/* 118 */   NdrFcShort( 0x3b6 ), /* Type Offset=950 */

            /* Parameter txn_out */

/* 120 */   NdrFcShort( 0x6113 ),             /* Flags:  must size, must free, out,
simple ref, srv alloc size=24 */
#ifndef _ALPHA_
/* 122 */   NdrFcShort( 0x28 ),   /* ia64 Stack size/offset = 40 */
#else
                                  NdrFcShort( 0x20 ),   /* axp64 Stack
size/offset = 32 */
#endif
/* 124 */   NdrFcShort( 0x3c8 ), /* Type Offset=968 */

            /* Return value */

/* 126 */   NdrFcShort( 0x70 ),   /* Flags:  out, return, base type, */
#ifndef _ALPHA_
/* 128 */   NdrFcShort( 0x30 ),   /* ia64 Stack size/offset = 48 */
#else
                                  NdrFcShort( 0x28 ),   /* axp64 Stack
size/offset = 40 */
#endif
/* 130 */   0x8,                  /* FC_LONG */
                                  0x0,                  /* 0 */

            /* Procedure StockLevel */

/* 132 */   0x33,                 /* FC_AUTO_HANDLE */
                                  0x6c,                 /* Old Flags:  object,
Oi2 */
/* 134 */   NdrFcLong( 0x0 ),     /* 0 */
/* 138 */   NdrFcShort( 0x6 ),    /* 6 */
#ifndef _ALPHA_
/* 140 */   NdrFcShort( 0x38 ),   /* ia64 Stack size/offset = 56 */
#else
                                  NdrFcShort( 0x30 ),   /* axp64 Stack
size/offset = 48 */
#endif
/* 142 */   NdrFcShort( 0x0 ),    /* 0 */
/* 144 */   NdrFcShort( 0x8 ),    /* 8 */
/* 146 */   0x47,                 /* Oi2 Flags:  srv must size, clt must size, has
return, has ext, */
                                  0x3,                  /* 3 */
/* 148 */   0xa,                  /* 10 */
                                  0x7,                  /* Ext Flags:  new corr
desc, clt corr check, srv corr check, */
/* 150 */   NdrFcShort( 0x20 ),   /* 32 */
/* 152 */   NdrFcShort( 0x20 ),   /* 32 */
/* 154 */   NdrFcShort( 0x0 ),    /* 0 */
/* 156 */   NdrFcShort( 0x0 ),    /* 0 */

            /* Parameter txn_in */

/* 158 */   NdrFcShort( 0x8b ),   /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
/* 160 */   NdrFcShort( 0x10 ),   /* ia64 Stack size/offset = 16 */
#else
                                  NdrFcShort( 0x8 ),    /* axp64 Stack
size/offset = 8 */
#endif
```

```
/* 162 */   NdrFcShort( 0x3b6 ), /* Type Offset=950 */

            /* Parameter txn_out */

/* 164 */   NdrFcShort( 0x6113 ),               /* Flags:  must size, must free, out,
simple ref, srv alloc size=24 */
#ifndef _ALPHA_
/* 166 */   NdrFcShort( 0x28 ),  /* ia64 Stack size/offset = 40 */
#else
                                 NdrFcShort( 0x20 ),  /* axp64 Stack
size/offset = 32 */
#endif
/* 168 */   NdrFcShort( 0x3c8 ), /* Type Offset=968 */

            /* Return value */

/* 170 */   NdrFcShort( 0x70 ),  /* Flags:  out, return, base type, */
#ifndef _ALPHA_
/* 172 */   NdrFcShort( 0x30 ),  /* ia64 Stack size/offset = 48 */
#else
                                 NdrFcShort( 0x28 ),  /* axp64 Stack
size/offset = 40 */
#endif
/* 174 */   0x8,                 /* FC_LONG */
                                 0x0,                 /* 0 */

            /* Procedure OrderStatus */

/* 176 */   0x33,                /* FC_AUTO_HANDLE */
                                 0x6c,                /* Old Flags:  object,
Oi2 */
/* 178 */   NdrFcLong( 0x0 ),    /* 0 */
/* 182 */   NdrFcShort( 0x7 ),   /* 7 */
#ifndef _ALPHA_
/* 184 */   NdrFcShort( 0x38 ),  /* ia64 Stack size/offset = 56 */
#else
                                 NdrFcShort( 0x30 ),  /* axp64 Stack
size/offset = 48 */
#endif
/* 186 */   NdrFcShort( 0x0 ),   /* 0 */
/* 188 */   NdrFcShort( 0x8 ),   /* 8 */
/* 190 */   0x47,                /* Oi2 Flags:  srv must size, clt must size, has
return, has ext, */
                                 0x3,                 /* 3 */
/* 192 */   0xa,                 /* 10 */
                                 0x7,                 /* Ext Flags:  new corr
desc, clt corr check, srv corr check, */
/* 194 */   NdrFcShort( 0x20 ),  /* 32 */
/* 196 */   NdrFcShort( 0x20 ),  /* 32 */
/* 198 */   NdrFcShort( 0x0 ),   /* 0 */
/* 200 */   NdrFcShort( 0x0 ),   /* 0 */

            /* Parameter txn_in */

/* 202 */   NdrFcShort( 0x8b ),  /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
/* 204 */   NdrFcShort( 0x10 ),  /* ia64 Stack size/offset = 16 */
#else
                                 NdrFcShort( 0x8 ),   /* axp64 Stack
size/offset = 8 */
#endif
/* 206 */   NdrFcShort( 0x3b6 ), /* Type Offset=950 */

            /* Parameter txn_out */

/* 208 */   NdrFcShort( 0x6113 ),               /* Flags:  must size, must free, out,
simple ref, srv alloc size=24 */
#ifndef _ALPHA_
/* 210 */   NdrFcShort( 0x28 ),  /* ia64 Stack size/offset = 40 */
#else
                                 NdrFcShort( 0x20 ),  /* axp64 Stack
size/offset = 32 */
#endif
/* 212 */   NdrFcShort( 0x3c8 ), /* Type Offset=968 */

            /* Return value */

/* 214 */   NdrFcShort( 0x70 ),  /* Flags:  out, return, base type, */
#ifndef _ALPHA_
/* 216 */   NdrFcShort( 0x30 ),  /* ia64 Stack size/offset = 48 */
#else
                                 NdrFcShort( 0x28 ),  /* axp64 Stack
size/offset = 40 */
#endif
/* 218 */   0x8,                 /* FC_LONG */
                                 0x0,                 /* 0 */

            /* Procedure CallSetComplete */

/* 220 */   0x33,                /* FC_AUTO_HANDLE */
                                 0x6c,                /* Old Flags:  object,
Oi2 */
/* 222 */   NdrFcLong( 0x0 ),    /* 0 */
/* 226 */   NdrFcShort( 0x8 ),   /* 8 */
/* 228 */   NdrFcShort( 0x10 ),  /* ia64, axp64 Stack size/offset = 16 */
/* 230 */   NdrFcShort( 0x0 ),   /* 0 */
/* 232 */   NdrFcShort( 0x8 ),   /* 8 */
/* 234 */   0x44,                /* Oi2 Flags:  has return, has ext, */
                                 0x1,                 /* 1 */
/* 236 */   0xa,                 /* 10 */
                                 0x1,                 /* Ext Flags:  new corr
desc, */
/* 238 */   NdrFcShort( 0x0 ),   /* 0 */
/* 240 */   NdrFcShort( 0x0 ),   /* 0 */
/* 242 */   NdrFcShort( 0x0 ),   /* 0 */
/* 244 */   NdrFcShort( 0x0 ),   /* 0 */

            /* Return value */

/* 246 */   NdrFcShort( 0x70 ),  /* Flags:  out, return, base type, */
/* 248 */   NdrFcShort( 0x8 ),   /* ia64, axp64 Stack size/offset = 8 */
/* 250 */   0x8,                 /* FC_LONG */
                                 0x0,                 /* 0 */

                                 0x0
    }
  };

static const MIDL_TYPE_FORMAT_STRING __MIDL_TypeFormatString =
  {
    0,
    {
                                 NdrFcShort( 0x0 ),   /* 0 */
/*  2 */
                                 0x12, 0x0, /* FC_UP */
/*  4 */     NdrFcShort( 0x39e ), /* Offset= 926 (930) */
/*  6 */
                                 0x2b,                /*
FC_NON_ENCAPSULATED_UNION */
                                 0x9,                 /* FC_ULONG */
/*  8 */     0x7,                 /* Corr desc: FC_USHORT */
                                 0x0,                 /*  */
/* 10 */     NdrFcShort( 0xfff8 ), /* -8 */
/* 12 */     NdrFcShort( 0x1 ),   /* Corr flags:  early, */
/* 14 */     NdrFcShort( 0x2 ),   /* Offset= 2 (16) */
/* 16 */     NdrFcShort( 0x10 ),  /* 16 */
```

```
/* 18 */    NdrFcShort( 0x2b ),   /* 43 */
/* 20 */    NdrFcLong( 0x3 ),     /* 3 */
/* 24 */    NdrFcShort( 0x8008 ),             /* Simple arm type: FC_LONG */
/* 26 */    NdrFcLong( 0x11 ),    /* 17 */
/* 30 */    NdrFcShort( 0x8001 ),             /* Simple arm type: FC_BYTE */
/* 32 */    NdrFcLong( 0x2 ),     /* 2 */
/* 36 */    NdrFcShort( 0x8006 ),             /* Simple arm type: FC_SHORT */
/* 38 */    NdrFcLong( 0x4 ),     /* 4 */
/* 42 */    NdrFcShort( 0x800a ),             /* Simple arm type: FC_FLOAT */
/* 44 */    NdrFcLong( 0x5 ),     /* 5 */
/* 48 */    NdrFcShort( 0x800c ),             /* Simple arm type: FC_DOUBLE
*/
/* 50 */    NdrFcLong( 0xb ),     /* 11 */
/* 54 */    NdrFcShort( 0x8006 ),             /* Simple arm type: FC_SHORT */
/* 56 */    NdrFcLong( 0xa ),     /* 10 */
/* 60 */    NdrFcShort( 0x8008 ),             /* Simple arm type: FC_LONG */
/* 62 */    NdrFcLong( 0x6 ),     /* 6 */
/* 66 */    NdrFcShort( 0xd6 ),   /* Offset= 214 (280) */
/* 68 */    NdrFcLong( 0x7 ),     /* 7 */
/* 72 */    NdrFcShort( 0x800c ),             /* Simple arm type: FC_DOUBLE
*/
/* 74 */    NdrFcLong( 0x8 ),     /* 8 */
/* 78 */    NdrFcShort( 0xd0 ),   /* Offset= 208 (286) */
/* 80 */    NdrFcLong( 0xd ),     /* 13 */
/* 84 */    NdrFcShort( 0xe4 ),   /* Offset= 228 (312) */
/* 86 */    NdrFcLong( 0x9 ),     /* 9 */
/* 90 */    NdrFcShort( 0xf0 ),   /* Offset= 240 (330) */
/* 92 */    NdrFcLong( 0x2000 ),              /* 8192 */
/* 96 */    NdrFcShort( 0xfc ),   /* Offset= 252 (348) */
/* 98 */    NdrFcLong( 0x24 ),    /* 36 */
/* 102 */   NdrFcShort( 0x2f4 ),  /* Offset= 756 (858) */
/* 104 */   NdrFcLong( 0x4024 ),              /* 16420 */
/* 108 */   NdrFcShort( 0x2ee ),  /* Offset= 750 (858) */
/* 110 */   NdrFcLong( 0x4011 ),              /* 16401 */
/* 114 */   NdrFcShort( 0x2ec ),  /* Offset= 748 (862) */
/* 116 */   NdrFcLong( 0x4002 ),              /* 16386 */
/* 120 */   NdrFcShort( 0x2ea ),  /* Offset= 746 (866) */
/* 122 */   NdrFcLong( 0x4003 ),              /* 16387 */
/* 126 */   NdrFcShort( 0x2e8 ),  /* Offset= 744 (870) */
/* 128 */   NdrFcLong( 0x4004 ),              /* 16388 */
/* 132 */   NdrFcShort( 0x2e6 ),  /* Offset= 742 (874) */
/* 134 */   NdrFcLong( 0x4005 ),              /* 16389 */
/* 138 */   NdrFcShort( 0x2e4 ),  /* Offset= 740 (878) */
/* 140 */   NdrFcLong( 0x400b ),              /* 16395 */
/* 144 */   NdrFcShort( 0x2d2 ),  /* Offset= 722 (866) */
/* 146 */   NdrFcLong( 0x400a ),              /* 16394 */
/* 150 */   NdrFcShort( 0x2d0 ),  /* Offset= 720 (870) */
/* 152 */   NdrFcLong( 0x4006 ),              /* 16390 */
/* 156 */   NdrFcShort( 0x2d6 ),  /* Offset= 726 (882) */
/* 158 */   NdrFcLong( 0x4007 ),              /* 16391 */
/* 162 */   NdrFcShort( 0x2cc ),  /* Offset= 716 (878) */
/* 164 */   NdrFcLong( 0x4008 ),              /* 16392 */
/* 168 */   NdrFcShort( 0x2ce ),  /* Offset= 718 (886) */
/* 170 */   NdrFcLong( 0x400d ),              /* 16397 */
/* 174 */   NdrFcShort( 0x2cc ),  /* Offset= 716 (890) */
/* 176 */   NdrFcLong( 0x4009 ),              /* 16393 */
/* 180 */   NdrFcShort( 0x2ca ),  /* Offset= 714 (894) */
/* 182 */   NdrFcLong( 0x6000 ),              /* 24576 */
/* 186 */   NdrFcShort( 0x2c8 ),  /* Offset= 712 (898) */
/* 188 */   NdrFcLong( 0x400c ),              /* 16396 */
/* 192 */   NdrFcShort( 0x2c6 ),  /* Offset= 710 (902) */
/* 194 */   NdrFcLong( 0x10 ),    /* 16 */
/* 198 */   NdrFcShort( 0x8002 ),             /* Simple arm type: FC_CHAR */
/* 200 */   NdrFcLong( 0x12 ),    /* 18 */
/* 204 */   NdrFcShort( 0x8006 ),             /* Simple arm type: FC_SHORT */
/* 206 */   NdrFcLong( 0x13 ),    /* 19 */
/* 210 */   NdrFcShort( 0x8008 ),             /* Simple arm type: FC_LONG */
/* 212 */   NdrFcLong( 0x16 ),    /* 22 */
/* 216 */   NdrFcShort( 0x8008 ),             /* Simple arm type: FC_LONG */
/* 218 */   NdrFcLong( 0x17 ),    /* 23 */
/* 222 */   NdrFcShort( 0x8008 ),             /* Simple arm type: FC_LONG */
/* 224 */   NdrFcLong( 0xe ),     /* 14 */
/* 228 */   NdrFcShort( 0x2aa ),  /* Offset= 682 (910) */
/* 230 */   NdrFcLong( 0x400e ),              /* 16398 */
/* 234 */   NdrFcShort( 0x2b0 ),  /* Offset= 688 (922) */
/* 236 */   NdrFcLong( 0x4010 ),              /* 16400 */
/* 240 */   NdrFcShort( 0x2ae ),  /* Offset= 686 (926) */
/* 242 */   NdrFcLong( 0x4012 ),              /* 16402 */
/* 246 */   NdrFcShort( 0x26c ),  /* Offset= 620 (866) */
/* 248 */   NdrFcLong( 0x4013 ),              /* 16403 */
/* 252 */   NdrFcShort( 0x26a ),  /* Offset= 618 (870) */
/* 254 */   NdrFcLong( 0x4016 ),              /* 16406 */
/* 258 */   NdrFcShort( 0x264 ),  /* Offset= 612 (870) */
/* 260 */   NdrFcLong( 0x4017 ),              /* 16407 */
/* 264 */   NdrFcShort( 0x25e ),  /* Offset= 606 (870) */
/* 266 */   NdrFcLong( 0x0 ),     /* 0 */
/* 270 */   NdrFcShort( 0x0 ),    /* Offset= 0 (270) */
/* 272 */   NdrFcLong( 0x1 ),     /* 1 */
/* 276 */   NdrFcShort( 0x0 ),    /* Offset= 0 (276) */
/* 278 */   NdrFcShort( 0xffffffff ),         /* Offset= -1 (277) */
/* 280 */
                                  0x15,                 /* FC_STRUCT */
                                  0x7,                  /* 7 */
/* 282 */   NdrFcShort( 0x8 ),    /* 8 */
/* 284 */   0xb,                  /* FC_HYPER */
                                  0x5b,                 /* FC_END */
/* 286 */
                                  0x12, 0x0, /* FC_UP */
/* 288 */   NdrFcShort( 0xe ),    /* Offset= 14 (302) */
/* 290 */
                                  0x1b,                 /* FC_CARRAY */
                                  0x1,                  /* 1 */
/* 292 */   NdrFcShort( 0x2 ),    /* 2 */
/* 294 */   0x9,                  /* Corr desc: FC_ULONG */
                                  0x0,                  /*  */
/* 296 */   NdrFcShort( 0xfffc ), /* -4 */
/* 298 */   NdrFcShort( 0x1 ),    /* Corr flags:  early, */
/* 300 */   0x6,                  /* FC_SHORT */
                                  0x5b,                 /* FC_END */
/* 302 */
                                  0x17,                 /* FC_CSTRUCT */
                                  0x3,                  /* 3 */
/* 304 */   NdrFcShort( 0x8 ),    /* 8 */
/* 306 */   NdrFcShort( 0xfffffff0 ),         /* Offset= -16 (290) */
/* 308 */   0x8,                  /* FC_LONG */
                                  0x8,                  /* FC_LONG */
/* 310 */   0x5c,                 /* FC_PAD */
                                  0x5b,                 /* FC_END */
/* 312 */
                                  0x2f,                 /* FC_IP */
                                  0x5a,                 /*
FC_CONSTANT_IID */
/* 314 */   NdrFcLong( 0x0 ),     /* 0 */
/* 318 */   NdrFcShort( 0x0 ),    /* 0 */
/* 320 */   NdrFcShort( 0x0 ),    /* 0 */
/* 322 */   0xc0,                 /* 192 */
                                  0x0,                  /* 0 */
/* 324 */   0x0,                  /* 0 */
                                  0x0,                  /* 0 */
/* 326 */   0x0,                  /* 0 */
                                  0x0,                  /* 0 */
/* 328 */   0x0,                  /* 0 */
                                  0x46,                 /* 70 */
/* 330 */
                                  0x2f,                 /* FC_IP */
```

```
                                0x5a,                   /*
FC_CONSTANT_IID */
/* 332 */   NdrFcLong( 0x20400 ),           /* 132096 */
/* 336 */   NdrFcShort( 0x0 ),      /* 0 */
/* 338 */   NdrFcShort( 0x0 ),      /* 0 */
/* 340 */   0xc0,                   /* 192 */
                                0x0,                    /* 0 */
/* 342 */   0x0,                    /* 0 */
                                0x0,                    /* 0 */
/* 344 */   0x0,                    /* 0 */
                                0x0,                    /* 0 */
/* 346 */   0x0,                    /* 0 */
                                0x46,                   /* 70 */
/* 348 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 350 */   NdrFcShort( 0x2 ),      /* Offset= 2 (352) */
/* 352 */
                                0x12, 0x0, /* FC_UP */
/* 354 */   NdrFcShort( 0x1e6 ), /* Offset= 486 (840) */
/* 356 */
                                0x2a,                   /*
FC_ENCAPSULATED_UNION */
                                0x89,                   /* 137 */
/* 358 */   NdrFcShort( 0x20 ),     /* 32 */
/* 360 */   NdrFcShort( 0xa ),      /* 10 */
/* 362 */   NdrFcLong( 0x8 ),       /* 8 */
/* 366 */   NdrFcShort( 0x50 ),     /* Offset= 80 (446) */
/* 368 */   NdrFcLong( 0xd ),       /* 13 */
/* 372 */   NdrFcShort( 0x70 ),     /* Offset= 112 (484) */
/* 374 */   NdrFcLong( 0x9 ),       /* 9 */
/* 378 */   NdrFcShort( 0x90 ),     /* Offset= 144 (522) */
/* 380 */   NdrFcLong( 0xc ),       /* 12 */
/* 384 */   NdrFcShort( 0xb0 ),     /* Offset= 176 (560) */
/* 386 */   NdrFcLong( 0x24 ),      /* 36 */
/* 390 */   NdrFcShort( 0x104 ),    /* Offset= 260 (650) */
/* 392 */   NdrFcLong( 0x800d ),            /* 32781 */
/* 396 */   NdrFcShort( 0x120 ),    /* Offset= 288 (684) */
/* 398 */   NdrFcLong( 0x10 ),      /* 16 */
/* 402 */   NdrFcShort( 0x13a ),    /* Offset= 314 (716) */
/* 404 */   NdrFcLong( 0x2 ),       /* 2 */
/* 408 */   NdrFcShort( 0x150 ),    /* Offset= 336 (744) */
/* 410 */   NdrFcLong( 0x3 ),       /* 3 */
/* 414 */   NdrFcShort( 0x166 ),    /* Offset= 358 (772) */
/* 416 */   NdrFcLong( 0x14 ),      /* 20 */
/* 420 */   NdrFcShort( 0x17c ),    /* Offset= 380 (800) */
/* 422 */   NdrFcShort( 0xffffffff ),           /* Offset= -1 (421) */
/* 424 */
                                0x21,                   /*
FC_BOGUS_ARRAY */
                                0x3,                    /* 3 */
/* 426 */   NdrFcShort( 0x0 ),      /* 0 */
/* 428 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                0x0,                    /*  */
/* 430 */   NdrFcShort( 0x0 ),      /* 0 */
/* 432 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 434 */   NdrFcLong( 0xffffffff ),            /* -1 */
/* 438 */   NdrFcShort( 0x0 ),      /* Corr flags:  */
/* 440 */
                                0x12, 0x0, /* FC_UP */
/* 442 */   NdrFcShort( 0xffffff74 ),           /* Offset= -140 (302) */
/* 444 */   0x5c,                   /* FC_PAD */
                                0x5b,                   /* FC_END */
/* 446 */
                                0x1a,                   /*
FC_BOGUS_STRUCT */
                                0x3,                    /* 3 */
/* 448 */   NdrFcShort( 0x10 ),     /* 16 */
/* 450 */   NdrFcShort( 0x0 ),      /* 0 */
/* 452 */   NdrFcShort( 0x6 ),      /* Offset= 6 (458) */
/* 454 */   0x8,                    /* FC_LONG */
                                0x39,                   /* FC_ALIGNM8 */
/* 456 */   0x36,                   /* FC_POINTER */
                                0x5b,                   /* FC_END */
/* 458 */
                                0x11, 0x0, /* FC_RP */
/* 460 */   NdrFcShort( 0xffffffdc ),           /* Offset= -36 (424) */
/* 462 */
                                0x21,                   /*
FC_BOGUS_ARRAY */
                                0x3,                    /* 3 */
/* 464 */   NdrFcShort( 0x0 ),      /* 0 */
/* 466 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                0x0,                    /*  */
/* 468 */   NdrFcShort( 0x0 ),      /* 0 */
/* 470 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 472 */   NdrFcLong( 0xffffffff ),            /* -1 */
/* 476 */   NdrFcShort( 0x0 ),      /* Corr flags:  */
/* 478 */   0x4c,                   /* FC_EMBEDDED_COMPLEX */
                                0x0,                    /* 0 */
/* 480 */   NdrFcShort( 0xffffff58 ),           /* Offset= -168 (312) */
/* 482 */   0x5c,                   /* FC_PAD */
                                0x5b,                   /* FC_END */
/* 484 */
                                0x1a,                   /*
FC_BOGUS_STRUCT */
                                0x3,                    /* 3 */
/* 486 */   NdrFcShort( 0x10 ),     /* 16 */
/* 488 */   NdrFcShort( 0x0 ),      /* 0 */
/* 490 */   NdrFcShort( 0x6 ),      /* Offset= 6 (496) */
/* 492 */   0x8,                    /* FC_LONG */
                                0x39,                   /* FC_ALIGNM8 */
/* 494 */   0x36,                   /* FC_POINTER */
                                0x5b,                   /* FC_END */
/* 496 */
                                0x11, 0x0, /* FC_RP */
/* 498 */   NdrFcShort( 0xffffffdc ),           /* Offset= -36 (462) */
/* 500 */
                                0x21,                   /*
FC_BOGUS_ARRAY */
                                0x3,                    /* 3 */
/* 502 */   NdrFcShort( 0x0 ),      /* 0 */
/* 504 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                0x0,                    /*  */
/* 506 */   NdrFcShort( 0x0 ),      /* 0 */
/* 508 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 510 */   NdrFcLong( 0xffffffff ),            /* -1 */
/* 514 */   NdrFcShort( 0x0 ),      /* Corr flags:  */
/* 516 */   0x4c,                   /* FC_EMBEDDED_COMPLEX */
                                0x0,                    /* 0 */
/* 518 */   NdrFcShort( 0xffffff44 ),           /* Offset= -188 (330) */
/* 520 */   0x5c,                   /* FC_PAD */
                                0x5b,                   /* FC_END */
/* 522 */
                                0x1a,                   /*
FC_BOGUS_STRUCT */
                                0x3,                    /* 3 */
/* 524 */   NdrFcShort( 0x10 ),     /* 16 */
/* 526 */   NdrFcShort( 0x0 ),      /* 0 */
/* 528 */   NdrFcShort( 0x6 ),      /* Offset= 6 (534) */
/* 530 */   0x8,                    /* FC_LONG */
                                0x39,                   /* FC_ALIGNM8 */
/* 532 */   0x36,                   /* FC_POINTER */
                                0x5b,                   /* FC_END */
/* 534 */
                                0x11, 0x0, /* FC_RP */
```

```
/* 536 */   NdrFcShort( 0xffffffdc ),           /* Offset= -36 (500) */
/* 538 */
                                0x21,                   /*
FC_BOGUS_ARRAY */
                                0x3,                    /* 3 */
/* 540 */   NdrFcShort( 0x0 ),      /* 0 */
/* 542 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                0x0,                    /*  */
/* 544 */   NdrFcShort( 0x0 ),      /* 0 */
/* 546 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 548 */   NdrFcLong( 0xffffffff ),            /* -1 */
/* 552 */   NdrFcShort( 0x0 ),      /* Corr flags:  */
/* 554 */
                                0x12, 0x0, /* FC_UP */
/* 556 */   NdrFcShort( 0x176 ), /* Offset= 374 (930) */
/* 558 */   0x5c,                   /* FC_PAD */
                                0x5b,                   /* FC_END */
/* 560 */
                                0x1a,                   /*
FC_BOGUS_STRUCT */
                                0x3,                    /* 3 */
/* 562 */   NdrFcShort( 0x10 ),     /* 16 */
/* 564 */   NdrFcShort( 0x0 ),      /* 0 */
/* 566 */   NdrFcShort( 0x6 ),      /* Offset= 6 (572) */
/* 568 */   0x8,                    /* FC_LONG */
                                0x39,                   /* FC_ALIGNM8 */
/* 570 */   0x36,                   /* FC_POINTER */
                                0x5b,                   /* FC_END */
/* 572 */
                                0x11, 0x0, /* FC_RP */
/* 574 */   NdrFcShort( 0xffffffdc ),           /* Offset= -36 (538) */
/* 576 */
                                0x2f,                   /* FC_IP */
                                0x5a,                   /*
FC_CONSTANT_IID */
/* 578 */   NdrFcLong( 0x2f ),      /* 47 */
/* 582 */   NdrFcShort( 0x0 ),      /* 0 */
/* 584 */   NdrFcShort( 0x0 ),      /* 0 */
/* 586 */   0xc0,                   /* 192 */
                                0x0,                    /* 0 */
/* 588 */   0x0,                    /* 0 */
                                0x0,                    /* 0 */
/* 590 */   0x0,                    /* 0 */
                                0x0,                    /* 0 */
/* 592 */   0x0,                    /* 0 */
                                0x46,                   /* 70 */
/* 594 */
                                0x1b,                   /* FC_CARRAY */
                                0x0,                    /* 0 */
/* 596 */   NdrFcShort( 0x1 ),      /* 1 */
/* 598 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                0x0,                    /*  */
/* 600 */   NdrFcShort( 0x4 ),      /* 4 */
/* 602 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 604 */   0x1,                    /* FC_BYTE */
                                0x5b,                   /* FC_END */
/* 606 */
                                0x1a,                   /*
FC_BOGUS_STRUCT */
                                0x3,                    /* 3 */
/* 608 */   NdrFcShort( 0x18 ),     /* 24 */
/* 610 */   NdrFcShort( 0x0 ),      /* 0 */
/* 612 */   NdrFcShort( 0xc ),      /* Offset= 12 (624) */
/* 614 */   0x8,                    /* FC_LONG */
                                0x8,                    /* FC_LONG */
/* 616 */   0x4c,                   /* FC_EMBEDDED_COMPLEX */
                                0x0,                    /* 0 */
/* 618 */   NdrFcShort( 0xffffffd6 ),           /* Offset= -42 (576) */
/* 620 */   0x39,                   /* FC_ALIGNM8 */
                                0x36,                   /* FC_POINTER */
/* 622 */   0x5c,                   /* FC_PAD */
                                0x5b,                   /* FC_END */
/* 624 */
                                0x12, 0x0, /* FC_UP */
/* 626 */   NdrFcShort( 0xfffffffe0 ),          /* Offset= -32 (594) */
/* 628 */
                                0x21,                   /*
FC_BOGUS_ARRAY */
                                0x3,                    /* 3 */
/* 630 */   NdrFcShort( 0x0 ),      /* 0 */
/* 632 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                0x0,                    /*  */
/* 634 */   NdrFcShort( 0x0 ),      /* 0 */
/* 636 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 638 */   NdrFcLong( 0xffffffff ),            /* -1 */
/* 642 */   NdrFcShort( 0x0 ),      /* Corr flags:  */
/* 644 */
                                0x12, 0x0, /* FC_UP */
/* 646 */   NdrFcShort( 0xffffffd8 ),           /* Offset= -40 (606) */
/* 648 */   0x5c,                   /* FC_PAD */
                                0x5b,                   /* FC_END */
/* 650 */
                                0x1a,                   /*
FC_BOGUS_STRUCT */
                                0x3,                    /* 3 */
/* 652 */   NdrFcShort( 0x10 ),     /* 16 */
/* 654 */   NdrFcShort( 0x0 ),      /* 0 */
/* 656 */   NdrFcShort( 0x6 ),      /* Offset= 6 (662) */
/* 658 */   0x8,                    /* FC_LONG */
                                0x39,                   /* FC_ALIGNM8 */
/* 660 */   0x36,                   /* FC_POINTER */
                                0x5b,                   /* FC_END */
/* 662 */
                                0x11, 0x0, /* FC_RP */
/* 664 */   NdrFcShort( 0xffffffdc ),           /* Offset= -36 (628) */
/* 666 */
                                0x1d,                   /* FC_SMFARRAY */
                                0x0,                    /* 0 */
/* 668 */   NdrFcShort( 0x8 ),      /* 8 */
/* 670 */   0x1,                    /* FC_BYTE */
                                0x5b,                   /* FC_END */
/* 672 */
                                0x15,                   /* FC_STRUCT */
                                0x3,                    /* 3 */
/* 674 */   NdrFcShort( 0x10 ),     /* 16 */
/* 676 */   0x8,                    /* FC_LONG */
                                0x6,                    /* FC_SHORT */
/* 678 */   0x6,                    /* FC_SHORT */
                                0x4c,                   /*
FC_EMBEDDED_COMPLEX */
/* 680 */   0x0,                    /* 0 */
                                NdrFcShort( 0xfffffff1 ),           /* Offset=
-15 (666) */
                                0x5b,                   /* FC_END */
/* 684 */
                                0x1a,                   /*
FC_BOGUS_STRUCT */
                                0x3,                    /* 3 */
/* 686 */   NdrFcShort( 0x20 ),     /* 32 */
/* 688 */   NdrFcShort( 0x0 ),      /* 0 */
/* 690 */   NdrFcShort( 0xa ),      /* Offset= 10 (700) */
/* 692 */   0x8,                    /* FC_LONG */
                                0x39,                   /* FC_ALIGNM8 */
/* 694 */   0x36,                   /* FC_POINTER */
                                0x4c,                   /*
FC_EMBEDDED_COMPLEX */
```

```
/* 696 */   0x0,                    /* 0 */
                                    NdrFcShort( 0xfffffff7 ),           /* Offset=
-25 (672) */
                                    0x5b,                   /* FC_END */
/* 700 */
                                    0x11, 0x0, /* FC_RP */
/* 702 */   NdrFcShort( 0xffffff10 ),           /* Offset= -240 (462) */
/* 704 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x0,                    /* 0 */
/* 706 */   NdrFcShort( 0x1 ),      /* 1 */
/* 708 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 710 */   NdrFcShort( 0x0 ),      /* 0 */
/* 712 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 714 */   0x1,                    /* FC_BYTE */
                                    0x5b,                   /* FC_END */
/* 716 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 718 */   NdrFcShort( 0x10 ),     /* 16 */
/* 720 */   NdrFcShort( 0x0 ),      /* 0 */
/* 722 */   NdrFcShort( 0x6 ),      /* Offset= 6 (728) */
/* 724 */   0x8,                    /* FC_LONG */
                                    0x39,                   /* FC_ALIGNM8 */
/* 726 */   0x36,                   /* FC_POINTER */
                                    0x5b,                   /* FC_END */
/* 728 */
                                    0x12, 0x0, /* FC_UP */
/* 730 */   NdrFcShort( 0xfffffff6 ),           /* Offset= -26 (704) */
/* 732 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x1,                    /* 1 */
/* 734 */   NdrFcShort( 0x2 ),      /* 2 */
/* 736 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 738 */   NdrFcShort( 0x0 ),      /* 0 */
/* 740 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 742 */   0x6,                    /* FC_SHORT */
                                    0x5b,                   /* FC_END */
/* 744 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 746 */   NdrFcShort( 0x10 ),     /* 16 */
/* 748 */   NdrFcShort( 0x0 ),      /* 0 */
/* 750 */   NdrFcShort( 0x6 ),      /* Offset= 6 (756) */
/* 752 */   0x8,                    /* FC_LONG */
                                    0x39,                   /* FC_ALIGNM8 */
/* 754 */   0x36,                   /* FC_POINTER */
                                    0x5b,                   /* FC_END */
/* 756 */
                                    0x12, 0x0, /* FC_UP */
/* 758 */   NdrFcShort( 0xfffffff6 ),           /* Offset= -26 (732) */
/* 760 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x3,                    /* 3 */
/* 762 */   NdrFcShort( 0x4 ),      /* 4 */
/* 764 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 766 */   NdrFcShort( 0x0 ),      /* 0 */
/* 768 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 770 */   0x8,                    /* FC_LONG */
                                    0x5b,                   /* FC_END */
/* 772 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 774 */   NdrFcShort( 0x10 ),     /* 16 */
/* 776 */   NdrFcShort( 0x0 ),      /* 0 */
/* 778 */   NdrFcShort( 0x6 ),      /* Offset= 6 (784) */
/* 780 */   0x8,                    /* FC_LONG */
                                    0x39,                   /* FC_ALIGNM8 */
/* 782 */   0x36,                   /* FC_POINTER */
                                    0x5b,                   /* FC_END */
/* 784 */
                                    0x12, 0x0, /* FC_UP */
/* 786 */   NdrFcShort( 0xfffffe6 ),            /* Offset= -26 (760) */
/* 788 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x7,                    /* 7 */
/* 790 */   NdrFcShort( 0x8 ),      /* 8 */
/* 792 */   0x19,                   /* Corr desc:  field pointer, FC_ULONG */
                                    0x0,                    /*  */
/* 794 */   NdrFcShort( 0x0 ),      /* 0 */
/* 796 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 798 */   0xb,                    /* FC_HYPER */
                                    0x5b,                   /* FC_END */
/* 800 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 802 */   NdrFcShort( 0x10 ),     /* 16 */
/* 804 */   NdrFcShort( 0x0 ),      /* 0 */
/* 806 */   NdrFcShort( 0x6 ),      /* Offset= 6 (812) */
/* 808 */   0x8,                    /* FC_LONG */
                                    0x39,                   /* FC_ALIGNM8 */
/* 810 */   0x36,                   /* FC_POINTER */
                                    0x5b,                   /* FC_END */
/* 812 */
                                    0x12, 0x0, /* FC_UP */
/* 814 */   NdrFcShort( 0xfffffe6 ),            /* Offset= -26 (788) */
/* 816 */
                                    0x15,                   /* FC_STRUCT */
                                    0x3,                    /* 3 */
/* 818 */   NdrFcShort( 0x8 ),      /* 8 */
/* 820 */   0x8,                    /* FC_LONG */
                                    0x8,                    /* FC_LONG */
/* 822 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 824 */
                                    0x1b,                   /* FC_CARRAY */
                                    0x3,                    /* 3 */
/* 826 */   NdrFcShort( 0x8 ),      /* 8 */
/* 828 */   0x7,                    /* Corr desc: FC_USHORT */
                                    0x0,                    /*  */
/* 830 */   NdrFcShort( 0xffc8 ),   /* -56 */
/* 832 */   NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 834 */   0x4c,                   /* FC_EMBEDDED_COMPLEX */
                                    0x0,                    /* 0 */
/* 836 */   NdrFcShort( 0xffffffec ),           /* Offset= -20 (816) */
/* 838 */   0x5c,                   /* FC_PAD */
                                    0x5b,                   /* FC_END */
/* 840 */
                                    0x1a,                   /*
FC_BOGUS_STRUCT */
                                    0x3,                    /* 3 */
/* 842 */   NdrFcShort( 0x38 ),     /* 56 */
/* 844 */   NdrFcShort( 0xffffffec ),           /* Offset= -20 (824) */
/* 846 */   NdrFcShort( 0x0 ),      /* Offset= 0 (846) */
/* 848 */   0x6,                    /* FC_SHORT */
                                    0x6,                    /* FC_SHORT */
/* 850 */   0x38,                   /* FC_ALIGNM4 */
                                    0x8,                    /* FC_LONG */
/* 852 */   0x8,                    /* FC_LONG */
```

```
                                0x4c,                   /*
FC_EMBEDDED_COMPLEX */
/* 854 */   0x4,                 /* 4 */
                                NdrFcShort( 0xfffffe0d ),           /* Offset=
-499 (356) */
                                0x5b,                   /* FC_END */
/* 858 */
                                0x12, 0x0, /* FC_UP */
/* 860 */   NdrFcShort( 0xffffff02 ),           /* Offset= -254 (606) */
/* 862 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 864 */   0x1,                 /* FC_BYTE */
                                0x5c,                   /* FC_PAD */
/* 866 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 868 */   0x6,                 /* FC_SHORT */
                                0x5c,                   /* FC_PAD */
/* 870 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 872 */   0x8,                 /* FC_LONG */
                                0x5c,                   /* FC_PAD */
/* 874 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 876 */   0xa,                 /* FC_FLOAT */
                                0x5c,                   /* FC_PAD */
/* 878 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 880 */   0xc,                 /* FC_DOUBLE */
                                0x5c,                   /* FC_PAD */
/* 882 */
                                0x12, 0x0, /* FC_UP */
/* 884 */   NdrFcShort( 0xfffffda4 ),           /* Offset= -604 (280) */
/* 886 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 888 */   NdrFcShort( 0xfffffda6 ),           /* Offset= -602 (286) */
/* 890 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 892 */   NdrFcShort( 0xfffffdbc ),           /* Offset= -580 (312) */
/* 894 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 896 */   NdrFcShort( 0xfffffdca ),           /* Offset= -566 (330) */
/* 898 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 900 */   NdrFcShort( 0xfffffdd8 ),           /* Offset= -552 (348) */
/* 902 */
                                0x12, 0x10,             /* FC_UP
[pointer_deref] */
/* 904 */   NdrFcShort( 0x2 ),   /* Offset= 2 (906) */
/* 906 */
                                0x12, 0x0, /* FC_UP */
/* 908 */   NdrFcShort( 0x16 ),  /* Offset= 22 (930) */
/* 910 */
                                0x15,                   /* FC_STRUCT */
                                0x7,                    /* 7 */
/* 912 */   NdrFcShort( 0x10 ),  /* 16 */
/* 914 */   0x6,                 /* FC_SHORT */
                                0x1,                    /* FC_BYTE */
/* 916 */   0x1,                 /* FC_BYTE */
                                0x38,                   /* FC_ALIGNM4 */
/* 918 */   0x8,                 /* FC_LONG */
                                0x39,                   /* FC_ALIGNM8 */
/* 920 */   0xb,                 /* FC_HYPER */
                                0x5b,                   /* FC_END */
/* 922 */
                                0x12, 0x0, /* FC_UP */
/* 924 */   NdrFcShort( 0xfffffff2 ),           /* Offset= -14 (910) */
/* 926 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 928 */   0x2,                 /* FC_CHAR */
                                0x5c,                   /* FC_PAD */
/* 930 */
                                0x1a,                   /*
FC_BOGUS_STRUCT */
                                0x7,                    /* 7 */
/* 932 */   NdrFcShort( 0x20 ),  /* 32 */
/* 934 */   NdrFcShort( 0x0 ),   /* 0 */
/* 936 */   NdrFcShort( 0x0 ),   /* Offset= 0 (936) */
/* 938 */   0x8,                 /* FC_LONG */
                                0x8,                    /* FC_LONG */
/* 940 */   0x6,                 /* FC_SHORT */
                                0x6,                    /* FC_SHORT */
/* 942 */   0x6,                 /* FC_SHORT */
                                0x6,                    /* FC_SHORT */
/* 944 */   0x4c,                /* FC_EMBEDDED_COMPLEX */
                                0x0,                    /* 0 */
/* 946 */   NdrFcShort( 0xfffffc54 ),           /* Offset= -940 (6) */
/* 948 */   0x5c,                /* FC_PAD */
                                0x5b,                   /* FC_END */
/* 950 */   0xb4,                /* FC_USER_MARSHAL */
                                0x83,                   /* 131 */
/* 952 */   NdrFcShort( 0x0 ),   /* 0 */
/* 954 */   NdrFcShort( 0x18 ),  /* 24 */
/* 956 */   NdrFcShort( 0x0 ),   /* 0 */
/* 958 */   NdrFcShort( 0xfffffc44 ),           /* Offset= -956 (2) */
/* 960 */
                                0x11, 0x4, /* FC_RP [alloced_on_stack] */
/* 962 */   NdrFcShort( 0x6 ),   /* Offset= 6 (968) */
/* 964 */
                                0x13, 0x0, /* FC_OP */
/* 966 */   NdrFcShort( 0xffffffdc ),           /* Offset= -36 (930) */
/* 968 */   0xb4,                /* FC_USER_MARSHAL */
                                0x83,                   /* 131 */
/* 970 */   NdrFcShort( 0x0 ),   /* 0 */
/* 972 */   NdrFcShort( 0x18 ),  /* 24 */
/* 974 */   NdrFcShort( 0x0 ),   /* 0 */
/* 976 */   NdrFcShort( 0xfffffff4 ),           /* Offset= -12 (964) */

                                0x0
    }
  };

const CInterfaceProxyVtbl * _tpcc_com_ps_ProxyVtblList[] =
{
  ( CInterfaceProxyVtbl *) &_ITPCCProxyVtbl,
  0
};

const CInterfaceStubVtbl * _tpcc_com_ps_StubVtblList[] =
{
  ( CInterfaceStubVtbl *) &_ITPCCStubVtbl,
  0
};

PCInterfaceName const _tpcc_com_ps_InterfaceNamesList[] =
{
  "ITPCC",
  0
};


#define _tpcc_com_ps_CHECK_IID(n)       IID_GENERIC_CHECK_IID(
_tpcc_com_ps, pIID, n)
```

```
int __stdcall _tpcc_com_ps_IID_Lookup( const IID * pIID, int * pIndex )
{

   if(!_tpcc_com_ps_CHECK_IID(0))
      {
      *pIndex = 0;
      return 1;
      }

   return 0;
}

const ExtendedProxyFileInfo tpcc_com_ps_ProxyFileInfo =
{
   (PCInterfaceProxyVtblList *) & _tpcc_com_ps_ProxyVtblList,
   (PCInterfaceStubVtblList *) & _tpcc_com_ps_StubVtblList,
   (const PCInterfaceName * ) & _tpcc_com_ps_InterfaceNamesList,
   0, // no delegation
   & _tpcc_com_ps_IID_Lookup,
   1,
   2,
   0, /* table of [async_uuid] interfaces */
   0, /* Filler1 */
   0, /* Filler2 */
   0  /* Filler3 */
};


#endif /* defined(_M_IA64) || defined(_M_AXP64)*/
```

Tpcc_com_sl.rgs

```
HKCR
{
            TPCC.StockLevel.1 = s 'StockLevel Class'
            {
                        CLSID = s
'{2668369E-A50D-11D2-BA4E-00C04FBFE08B}'
            }
            TPCC.StockLevel = s 'StockLevel Class'
            {
                        CurVer = s 'TPCC.StockLevel.1'
            }
            NoRemove CLSID
            {
                        ForceRemove
{2668369E-A50D-11D2-BA4E-00C04FBFE08B} = s 'StockLevel Class'
                        {
                                    ProgID = s 'TPCC.StockLevel.1'
                                    VersionIndependentProgID = s
'TPCC.StockLevel'
                                    InprocServer32 = s '%MODULE%'
                                    {
                                                val ThreadingModel = s 'Both'
                                    }
                        }
            }
}
```

tpcc_odbc.cpp

```
/*          FILE:                   TPCC_ODBC.CPP
 *                                          Microsoft TPC-C Kit Ver.
4.20.000
 *                                                      Copyright Microsoft, 1999
 *          All Rights Reserved
 *
 *                                                      Version 4.10.000 audited by
Richard Gimarc, Performance Metrics, 3/17/99
 *
 *          PURPOSE:            Implements ODBC calls for TPC-C txns.
 *          Contact:    Charles Levine (clevine@microsoft.com)
 *
 *  Change history:
 *                      4.20.000 - updated rev number to match kit
 *                      4.10.001 - not deleting error class in catch handler on
deadlock retry;
 *                                                      not a functional bug, but a
memory leak
 */

#include <windows.h>
#include <stdio.h>
#include <assert.h>

#define DBNTWIN32
#include <sqltypes.h>
#include <sql.h>
#include <sqlext.h>
#include <odbcss.h>

#ifdef ICECAP
#include <icapexp.h>
#endif

// need to declare functions for export
#define DllDecl  __declspec( dllexport )

#include "..\..\common\src\error.h"
#include "..\..\common\src\trans.h"
#include "..\..\common\src\txn_base.h"
#include "tpcc_odbc.h"

// version string; must match return value from tpcc_version stored proc
const char  sVersion[] = "4.10.000";

const iMaxRetries = 10;                         // how many retries on deadlock

const int iErrOleDbProvider = 7312;
const char sErrTimeoutExpired[] = "Timeout expired";

static SQLHENV henv = SQL_NULL_HENV;
// ODBC environment handle

BOOL APIENTRY DllMain(HMODULE hModule, DWORD
ul_reason_for_call, LPVOID lpReserved)
{
            switch( ul_reason_for_call )
            {
                        case DLL_PROCESS_ATTACH:
                                    DisableThreadLibraryCalls(hModule);
                                    if (
SQLAllocHandleStd(SQL_HANDLE_ENV, SQL_NULL_HANDLE, &henv)
!= SQL_SUCCESS )
                                                return FALSE;
                                    break;

                        case DLL_PROCESS_DETACH:
                                    if (henv != NULL)
                                                SQLFreeEnv(henv);
                                    break;
```

```
                default:
                        /* nothing */;
        }
        return TRUE;
}

/* FUNCTION: CTPCC_ODBC_ERR::ErrorText
 *
 */

char* CTPCC_ODBC_ERR::ErrorText(void)
{
        int i;

        static SERRORMSG errorMsgs[] =
        {
                { ERR_WRONG_SP_VERSION,
"Wrong version of stored procs on database server"      },
                { ERR_INVALID_CUST,
"Invalid Customer id,name."
        },
                { ERR_NO_SUCH_ORDER,            "No orders
found for customer."
},
                { ERR_RETRIED_TRANS,            "Retries
before transaction succeeded."                  },
                { 0,
""
                                                }
        };

        static char szNotFound[] = "Unknown error number.";

        for(i=0; errorMsgs[i].szMsg[0]; i++)
        {
                if ( m_errno == errorMsgs[i].iError )
                        break;
        }
        if ( !errorMsgs[i].szMsg[0] )
                return szNotFound;
        else
                return errorMsgs[i].szMsg;
}

// wrapper routine for class constructor
__declspec(dllexport) CTPCC_ODBC* CTPCC_ODBC_new(
        LPCSTR szServer,                // name of SQL server
        LPCSTR szUser,                          // user name for login
        LPCSTR szPassword,              // password for login
        LPCSTR szHost,                          // not used
        LPCSTR szDatabase )             // name of database to use
{
        return new CTPCC_ODBC( szServer, szUser, szPassword, szHost,
szDatabase );
}


CTPCC_ODBC::CTPCC_ODBC (
        LPCSTR szServer,                                // name of
SQL server
        LPCSTR szUser,                                          //
user name for login
        LPCSTR szPassword,                              // password
for login
        LPCSTR szHost,                                          //
not used
        LPCSTR szDatabase                               // name of
database to use
        )
{
        RETCODE                 rc;

        // initialization
        m_hdbc = SQL_NULL_HDBC;
        m_hstmt = SQL_NULL_HSTMT;

        m_hstmtNewOrder = SQL_NULL_HSTMT;
        m_hstmtPayment = SQL_NULL_HSTMT;
        m_hstmtDelivery = SQL_NULL_HSTMT;
        m_hstmtOrderStatus = SQL_NULL_HSTMT;
        m_hstmtStockLevel = SQL_NULL_HSTMT;

        m_descNewOrderCols1 = SQL_NULL_HDESC;
        m_descNewOrderCols2 = SQL_NULL_HDESC;
        m_descOrderStatusCols1 = SQL_NULL_HDESC;
        m_descOrderStatusCols2 = SQL_NULL_HDESC;


        if ( SQLAllocHandle(SQL_HANDLE_DBC, henv, &m_hdbc) !=
SQL_SUCCESS )
                ThrowError(CODBCERR::eAllocHandle);

        if ( SQLSetConnectOption(m_hdbc, SQL_PACKET_SIZE, 4096) !=
SQL_SUCCESS )
                ThrowError(CODBCERR::eConnOption);

        {
                char                    szConnectStr[256];
                char                    szOutStr[1024];
                SQLSMALLINT             iOutStrLen;

                sprintf( szConnectStr, "DRIVER=SQL
Server;SERVER=%s;UID=%s;PWD=%s;DATABASE=%s",
                        szServer, szUser, szPassword, szDatabase );

                rc = SQLDriverConnect(m_hdbc, NULL,
(SQLCHAR*)szConnectStr, sizeof(szConnectStr),
                        (SQLCHAR*)szOutStr, sizeof(szOutStr),
&iOutStrLen, SQL_DRIVER_NOPROMPT );

                if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)
                        ThrowError(CODBCERR::eConnect);
        }

        if (SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc, &m_hstmt)
!= SQL_SUCCESS)
                ThrowError(CODBCERR::eAllocHandle);

        {
                char                    buffer[128];

                // set some options affecting connection behavior
                strcpy(buffer, "set nocount on set XACT_ABORT ON");
                rc = SQLExecDirect(m_hstmt, (unsigned char *)buffer,
SQL_NTS);
                if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)
                        ThrowError(CODBCERR::eExecDirect);

                // verify that version of stored procs on server is correct
                char db_sp_version[10];
                strcpy(buffer, "{call tpcc_version}");
                rc = SQLExecDirect(m_hstmt, (unsigned char *)buffer,
SQL_NTS);
```

```
                        if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)
                                ThrowError(CODBCERR::eExecDirect);
                        if ( SQLBindCol(m_hstmt, 1, SQL_C_CHAR,
&db_sp_version, sizeof(db_sp_version), NULL) != SQL_SUCCESS )
                                ThrowError(CODBCERR::eBindCol);
                        if ( SQLFetch(m_hstmt) == SQL_ERROR )
                                ThrowError(CODBCERR::eFetch);
                        if (strcmp(db_sp_version,sVersion))
                                throw new CTPCC_ODBC_ERR(
CTPCC_ODBC_ERR::ERR_WRONG_SP_VERSION );

                        SQLFreeHandle(SQL_HANDLE_STMT, m_hstmt);
        }

        // Bind parameters for each of the transactions
        InitNewOrderParams();
        InitPaymentParams();
        InitOrderStatusParams();
        InitDeliveryParams();
        InitStockLevelParams();
}

CTPCC_ODBC::~CTPCC_ODBC( void )
{
        // note: descriptors are automatically released when the connection is
dropped
        SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtNewOrder);
        SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtPayment);
        SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtDelivery);
        SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtOrderStatus);
        SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtStockLevel);

        SQLDisconnect(m_hdbc);
        SQLFreeHandle(SQL_HANDLE_DBC, m_hdbc);
}

void CTPCC_ODBC::ThrowError( CODBCERR::ACTION eAction )
{
        RETCODE                 rc;
        SDWORD          lNativeError;
        char            szState[6];
        char            szMsg[SQL_MAX_MESSAGE_LENGTH];
        char
szTmp[6*SQL_MAX_MESSAGE_LENGTH];
        CODBCERR   *pODBCErr;                   // not
allocated until needed (maybe never)

        pODBCErr = new CODBCERR();

        pODBCErr->m_NativeError = 0;
        pODBCErr->m_eAction = eAction;
        pODBCErr->m_bDeadLock = FALSE;

        szTmp[0] = 0;
        while (TRUE)
        {
                rc = SQLError(henv, m_hdbc, m_hstmt, (BYTE
*)&szState, &lNativeError,
                                                (BYTE *)&szMsg,
sizeof(szMsg), NULL);
                if (rc == SQL_NO_DATA)
                        break;

                // check for deadlock
                if (lNativeError == 1205 || (lNativeError ==
iErrOleDbProvider &&
                        strstr(szMsg, sErrTimeoutExpired) != NULL))
                        pODBCErr->m_bDeadLock = TRUE;

                // capture the (first) database error
                if (pODBCErr->m_NativeError == 0 && lNativeError !=
0)
                        pODBCErr->m_NativeError = lNativeError;

                // quit if there isn't enough room to concatenate error text
                if ( (strlen(szMsg) + 2) > (sizeof(szTmp) - strlen(szTmp))
)
                        break;

                // include line break after first error msg
                if (szTmp[0] != 0)
                        strcat( szTmp, "\n");
                strcat( szTmp, szMsg );
        }

        if (pODBCErr->m_odbcerrstr != NULL)
        {
                delete [] pODBCErr->m_odbcerrstr;
                pODBCErr->m_odbcerrstr = NULL;
        }

        if (strlen(szTmp) > 0)
        {
                pODBCErr->m_odbcerrstr = new char[ strlen(szTmp)+1
];
                strcpy( pODBCErr->m_odbcerrstr, szTmp );
        }

        SQLFreeStmt(m_hstmt, SQL_CLOSE);
        throw pODBCErr;
}

void CTPCC_ODBC::InitStockLevelParams()
{
        if (   SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc,
&m_hstmtStockLevel) != SQL_SUCCESS )
                ThrowError(CODBCERR::eAllocHandle);

        m_hstmt = m_hstmtStockLevel;

        int i = 0;
        if (   SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SSHORT, SQL_SMALLINT, 0, 0, &m_txn.StockLevel.w_id, 0,
NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.StockLevel.d_id, 0, NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT, 0, 0,
&m_txn.StockLevel.threshold, 0, NULL) != SQL_SUCCESS
                )
                ThrowError(CODBCERR::eBindParam);

        if ( SQLBindCol(m_hstmt, 1, SQL_C_SLONG,
&m_txn.StockLevel.low_stock, 0, NULL) != SQL_SUCCESS )
                ThrowError(CODBCERR::eBindCol);
}

void CTPCC_ODBC::StockLevel()
{
        RETCODE                 rc;
        int                     iTryCount = 0;

        m_hstmt = m_hstmtStockLevel;
```

```
	while (TRUE)
	{
		try
		{
			rc = SQLExecDirectW(m_hstmt,
(SQLWCHAR*)L"{call tpcc_stocklevel(?,?,?)}", SQL_NTS);
			if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)

ThrowError(CODBCERR::eExecDirect);

			if ( SQLFetch(m_hstmt) == SQL_ERROR )

ThrowError(CODBCERR::eFetch);

			SQLFreeStmt(m_hstmt, SQL_CLOSE);

			m_txn.StockLevel.exec_status_code = eOK;
			break;
		}
		catch (CODBCERR *e)
		{
			if ((!e->m_bDeadLock) || (++iTryCount >
iMaxRetries))
				throw;

			// hit deadlock; backoff for increasingly longer
period
			delete e;
			Sleep(10 * iTryCount);
		}
	}

//	if (iTryCount)
//		throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

void CTPCC_ODBC::InitNewOrderParams()
{
	if (   SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc,
&m_hstmtNewOrder) != SQL_SUCCESS
		|| SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descNewOrderCols1) != SQL_SUCCESS
		|| SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descNewOrderCols2) != SQL_SUCCESS
		)
		ThrowError(CODBCERR::eAllocHandle);

	m_hstmt = m_hstmtNewOrder;

	if ( SQLSetStmtAttrW( m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descNewOrderCols1, SQL_IS_POINTER ) != SQL_SUCCESS )
		ThrowError(CODBCERR::eSetStmtAttr);

	int i = 0;
	if (   SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SSHORT, SQL_SMALLINT, 0, 0, &m_txn.NewOrder.w_id, 0,
NULL) != SQL_SUCCESS
		|| SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.NewOrder.d_id, 0, NULL) != SQL_SUCCESS
		|| SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.NewOrder.c_id, 0, NULL) != SQL_SUCCESS
		|| SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.NewOrder.o_ol_cnt, 0, NULL) != SQL_SUCCESS
		|| SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.NewOrder.o_all_local, 0, NULL) != SQL_SUCCESS
		)
		ThrowError(CODBCERR::eBindParam);

	for (int j=0; j<MAX_OL_NEW_ORDER_ITEMS; j++)
	{
		if (   SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.NewOrder.OL[j].ol_i_id, 0, NULL) != SQL_SUCCESS
			|| SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT, 0, 0,
&m_txn.NewOrder.OL[j].ol_supply_w_id, 0, NULL) != SQL_SUCCESS
			|| SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT, 0, 0,
&m_txn.NewOrder.OL[j].ol_quantity, 0, NULL) != SQL_SUCCESS
			)
			ThrowError(CODBCERR::eBindParam);
	}

	// set the bind offset pointer
	if ( SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_ROW_BIND_OFFSET_PTR, &m_BindOffset,
SQL_IS_POINTER ) != SQL_SUCCESS )
		ThrowError(CODBCERR::eSetStmtAttr);

	i = 0;
	if (   SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.NewOrder.OL[0].ol_i_name,
sizeof(m_txn.NewOrder.OL[0].ol_i_name), NULL) != SQL_SUCCESS
		|| SQLBindCol(m_hstmt, ++i, SQL_C_SSHORT,
&m_txn.NewOrder.OL[0].ol_stock, 0, NULL) != SQL_SUCCESS
		|| SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.NewOrder.OL[0].ol_brand_generic,
sizeof(m_txn.NewOrder.OL[0].ol_brand_generic), NULL) != SQL_SUCCESS
		|| SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.NewOrder.OL[0].ol_i_price, 0, NULL) != SQL_SUCCESS
		|| SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.NewOrder.OL[0].ol_amount, 0, NULL) != SQL_SUCCESS
		)
		ThrowError(CODBCERR::eBindCol);

	// associate the column bindings for the second result set
	if ( SQLSetStmtAttrW( m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descNewOrderCols2, SQL_IS_POINTER ) != SQL_SUCCESS )
		ThrowError(CODBCERR::eSetStmtAttr);

	i = 0;
	if (   SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.NewOrder.w_tax, 0, NULL) != SQL_SUCCESS
		|| SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.NewOrder.d_tax, 0, NULL) != SQL_SUCCESS
		|| SQLBindCol(m_hstmt, ++i, SQL_C_SLONG,
&m_txn.NewOrder.o_id, 0, NULL) != SQL_SUCCESS
		|| SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.NewOrder.c_last, sizeof(m_txn.NewOrder.c_last), NULL) !=
SQL_SUCCESS
		|| SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.NewOrder.c_discount, 0, NULL) != SQL_SUCCESS
		|| SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.NewOrder.c_credit, sizeof(m_txn.NewOrder.c_credit), NULL) !=
SQL_SUCCESS
```

```
                || SQLBindCol(m_hstmt, ++i,
SQL_C_TYPE_TIMESTAMP, &m_txn.NewOrder.o_entry_d, 0, NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_SLONG,
&m_no_commit_flag, 0, NULL) != SQL_SUCCESS
        )
                ThrowError(CODBCERR::eBindCol);
}

void CTPCC_ODBC::NewOrder()
{
        int                                             i;
        RETCODE                                         rc;
        int                                             iTryCount =
0;

                // 0        1        2

                // 012345678901234567890123456789
        wchar_t                                         szSqlTemplate[] =
L"{call tpcc_neworder(?,?,?,?,?,?,"

                 L"?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,"

                 L"?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,"

                 L"?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?)}";

        m_hstmt = m_hstmtNewOrder;

        // associate the parameter and column bindings for this transaction
        if ( SQLSetStmtAttrW( m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descNewOrderCols1, SQL_IS_POINTER ) != SQL_SUCCESS )
                ThrowError(CODBCERR::eSetStmtAttr);

        // clip statement buffer based on number of parameters
        // fixed part is 29 chars and variable part is 6 chars per line item
        i = 29 + m_txn.NewOrder.o_ol_cnt*6;
        wcscpy( &szSqlTemplate[i], L")}" );

        // check whether any order lines are for a remote warehouse
        m_txn.NewOrder.o_all_local = 1;
        for (i = 0; i < m_txn.NewOrder.o_ol_cnt; i++)
        {
                if (m_txn.NewOrder.OL[i].ol_supply_w_id !=
m_txn.NewOrder.w_id)
                {
                        m_txn.NewOrder.o_all_local = 0;  // at least
one remote warehouse
                        break;
                }
        }

        while (TRUE)
        {
                try
                {
                        m_BindOffset = 0;
                        rc = SQLExecDirectW(m_hstmt,
(SQLWCHAR*)szSqlTemplate, SQL_NTS);
                        if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)

ThrowError(CODBCERR::eExecDirect);

                        // Get order line results
                        m_txn.NewOrder.total_amount = 0;
                        for (i = 0; i<m_txn.NewOrder.o_ol_cnt; i++)
                        {
                                // set the bind offset value...
                                m_BindOffset = i *
sizeof(m_txn.NewOrder.OL[0]);

                                if ( SQLFetch(m_hstmt) ==
SQL_ERROR)

ThrowError(CODBCERR::eFetch);

                                // move to the next resultset
                                if ( SQLMoreResults(m_hstmt) ==
SQL_ERROR )

ThrowError(CODBCERR::eMoreResults);

                                m_txn.NewOrder.total_amount +=
m_txn.NewOrder.OL[i].ol_amount;
                        }

                        // associate the column bindings for the
second result set
                        if ( SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_APP_ROW_DESC, m_descNewOrderCols2, SQL_IS_POINTER
) != SQL_SUCCESS )

ThrowError(CODBCERR::eSetStmtAttr);

                        if ( SQLFetch(m_hstmt) == SQL_ERROR)

ThrowError(CODBCERR::eFetch);

                        SQLFreeStmt(m_hstmt, SQL_CLOSE);

                        if (m_no_commit_flag == 1)
                        {
                                m_txn.NewOrder.total_amount *=
((1 + m_txn.NewOrder.w_tax + m_txn.NewOrder.d_tax) * (1 -
m_txn.NewOrder.c_discount));

m_txn.NewOrder.exec_status_code = eOK;
                        }
                        else

m_txn.NewOrder.exec_status_code = eInvalidItem;

                        break;
                }
                catch (CODBCERR *e)
                {
                        if ((!e->m_bDeadLock) || (++iTryCount >
iMaxRetries))
                                throw;

                        // hit deadlock; backoff for increasingly longer
period
                        delete e;
                        Sleep(10 * iTryCount);
                }
        }

//              if (iTryCount)
//                      throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

void CTPCC_ODBC::InitPaymentParams()
```

```
{
        if (   SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc,
&m_hstmtPayment) != SQL_SUCCESS )
                ThrowError(CODBCERR::eAllocHandle);

        m_hstmt = m_hstmtPayment;

        int i = 0;
        if (   SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SSHORT, SQL_SMALLINT, 0, 0, &m_txn.Payment.w_id, 0, NULL)
!= SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT, 0, 0,
&m_txn.Payment.c_w_id, 0, NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_DOUBLE, SQL_NUMERIC, 6, 2,
&m_txn.Payment.h_amount, 0, NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.Payment.d_id, 0, NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.Payment.c_d_id, 0, NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.Payment.c_id, 0, NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_CHAR, SQL_CHAR,
sizeof(m_txn.Payment.c_last), 0, &m_txn.Payment.c_last,
sizeof(m_txn.Payment.c_last), NULL) != SQL_SUCCESS
                )
                ThrowError(CODBCERR::eBindParam);

        i = 0;
        if (   SQLBindCol(m_hstmt, ++i, SQL_C_SLONG,
&m_txn.Payment.c_id,                    0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_last,                  sizeof(m_txn.Payment.c_last),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i,
SQL_C_TYPE_TIMESTAMP, &m_txn.Payment.h_date,
0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_street_1,      sizeof(m_txn.Payment.w_street_1), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_street_2,      sizeof(m_txn.Payment.w_street_2), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_city,                  sizeof(m_txn.Payment.w_city),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_state,                 sizeof(m_txn.Payment.w_state),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_zip,                   sizeof(m_txn.Payment.w_zip),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_street_1,      sizeof(m_txn.Payment.d_street_1), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_street_2,      sizeof(m_txn.Payment.d_street_2), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_city,                  sizeof(m_txn.Payment.d_city),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_state,                 sizeof(m_txn.Payment.d_state),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_zip,                   sizeof(m_txn.Payment.d_zip),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_first,                 sizeof(m_txn.Payment.c_first),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_middle,        sizeof(m_txn.Payment.c_middle), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_street_1,      sizeof(m_txn.Payment.c_street_1), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_street_2,      sizeof(m_txn.Payment.c_street_2), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_city,                  sizeof(m_txn.Payment.c_city),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_state,                 sizeof(m_txn.Payment.c_state),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_zip,                   sizeof(m_txn.Payment.c_zip),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_phone,                 sizeof(m_txn.Payment.c_phone),
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i,
SQL_C_TYPE_TIMESTAMP, &m_txn.Payment.c_since,
0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_credit,        sizeof(m_txn.Payment.c_credit), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.Payment.c_credit_lim,0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.Payment.c_discount,      0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.Payment.c_balance,       0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_data,                  sizeof(m_txn.Payment.c_data),
NULL) != SQL_SUCCESS
                )
                ThrowError(CODBCERR::eBindCol);
}

void CTPCC_ODBC::Payment()
{
        RETCODE                         rc;
        int                             iTryCount = 0;

        m_hstmt = m_hstmtPayment;

        if (m_txn.Payment.c_id != 0)
                m_txn.Payment.c_last[0] = 0;

        while (TRUE)
        {
                try
                {
                        rc = SQLExecDirectW(m_hstmt,
(SQLWCHAR*)L"{call tpcc_payment(?,?,?,?,?,?,?)}", SQL_NTS);
                        if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)
```

```
ThrowError(CODBCERR::eExecDirect);

                                if ( SQLFetch(m_hstmt) == SQL_ERROR)
ThrowError(CODBCERR::eFetch);

                                SQLFreeStmt(m_hstmt, SQL_CLOSE);

                                if (m_txn.Payment.c_id == 0)
                                        throw new CTPCC_ODBC_ERR(
CTPCC_ODBC_ERR::ERR_INVALID_CUST );
                                else
                                        m_txn.Payment.exec_status_code
= eOK;

                                break;
                        }
                        catch (CODBCERR *e)
                        {
                                if ((!e->m_bDeadLock) || (++iTryCount >
iMaxRetries))
                                        throw;

                                // hit deadlock; backoff for increasingly longer
period
                                delete e;
                                Sleep(10 * iTryCount);
                        }
        }

//      if (iTryCount)
//              throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

void CTPCC_ODBC::InitOrderStatusParams()
{
        if (   SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc,
&m_hstmtOrderStatus) != SQL_SUCCESS
                || SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descOrderStatusCols1) != SQL_SUCCESS
                || SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descOrderStatusCols2) != SQL_SUCCESS
                )
                ThrowError(CODBCERR::eAllocHandle);

        m_hstmt = m_hstmtOrderStatus;

        if (   SQLSetStmtAttrW( m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descOrderStatusCols1, SQL_IS_POINTER ) != SQL_SUCCESS )
                ThrowError(CODBCERR::eSetStmtAttr);

        int i = 0;
        if (   SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SSHORT, SQL_SMALLINT, 0, 0, &m_txn.OrderStatus.w_id, 0,
NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.OrderStatus.d_id, 0, NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.OrderStatus.c_id, 0, NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_CHAR, SQL_CHAR,
sizeof(m_txn.OrderStatus.c_last), 0, &m_txn.OrderStatus.c_last,
sizeof(m_txn.OrderStatus.c_last), NULL) != SQL_SUCCESS
                )
                ThrowError(CODBCERR::eBindParam);

        // configure block cursor
        if (   SQLSetStmtAttrW(m_hstmt,
SQL_ATTR_ROW_BIND_TYPE,
(SQLPOINTER)sizeof(m_txn.OrderStatus.OL[0]), 0) != SQL_SUCCESS
                || SQLSetStmtAttrW(m_hstmt,
SQL_ATTR_ROWS_FETCHED_PTR, &m_RowsFetched, 0) !=
SQL_SUCCESS
                )
                ThrowError(CODBCERR::eSetStmtAttr);

        i = 0;
        if (   SQLBindCol(m_hstmt, ++i, SQL_C_SSHORT,
&m_txn.OrderStatus.OL[0].ol_supply_w_id, 0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_SLONG,
&m_txn.OrderStatus.OL[0].ol_i_id, 0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_SSHORT,
&m_txn.OrderStatus.OL[0].ol_quantity, 0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.OrderStatus.OL[0].ol_amount, 0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i,
SQL_C_TYPE_TIMESTAMP, &m_txn.OrderStatus.OL[0].ol_delivery_d, 0,
NULL) != SQL_SUCCESS
                )
                ThrowError(CODBCERR::eBindCol);


        if ( SQLSetStmtAttrW( m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descOrderStatusCols2, SQL_IS_POINTER ) != SQL_SUCCESS )
                ThrowError(CODBCERR::eSetStmtAttr);

        i = 0;
        if (   SQLBindCol(m_hstmt, ++i, SQL_C_SLONG,
&m_txn.OrderStatus.c_id, 0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.OrderStatus.c_last, sizeof(m_txn.OrderStatus.c_last), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.OrderStatus.c_first, sizeof(m_txn.OrderStatus.c_first), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.OrderStatus.c_middle, sizeof(m_txn.OrderStatus.c_middle), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i,
SQL_C_TYPE_TIMESTAMP, &m_txn.OrderStatus.o_entry_d, 0, NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_SSHORT,
&m_txn.OrderStatus.o_carrier_id, 0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.OrderStatus.c_balance, 0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i, SQL_C_SLONG,
&m_txn.OrderStatus.o_id, 0, NULL) != SQL_SUCCESS
                )
                ThrowError(CODBCERR::eBindCol);
}

void CTPCC_ODBC::OrderStatus()
{
        int
iTryCount = 0;
        RETCODE
rc;

        m_hstmt = m_hstmtOrderStatus;
```

```
	if ( SQLSetStmtAttrW( m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descOrderStatusCols1, SQL_IS_POINTER ) != SQL_SUCCESS )
		ThrowError(CODBCERR::eSetStmtAttr);

	if (m_txn.OrderStatus.c_id != 0)
		m_txn.OrderStatus.c_last[0] = 0;

	while (TRUE)
	{
		try
		{
			// configure block cursor
			if ( SQLSetStmtAttrW(m_hstmt,
SQL_ATTR_ROW_ARRAY_SIZE, (SQLPOINTER)1, 0) != SQL_SUCCESS )

ThrowError(CODBCERR::eSetStmtAttr);

			rc = SQLExecDirectW(m_hstmt,
(SQLWCHAR*)L"{call tpcc_orderstatus(?,?,?,?)}", SQL_NTS);
			if ( ((rc == SQL_SUCCESS_WITH_INFO)
&& (m_RowsFetched != 0)) || (rc == SQL_ERROR) )

ThrowError(CODBCERR::eExecDirect);

			// configure block cursor
			if ( SQLSetStmtAttrW(m_hstmt,
SQL_ATTR_ROW_ARRAY_SIZE,
(SQLPOINTER)MAX_OL_ORDER_STATUS_ITEMS, 0) != SQL_SUCCESS
)

ThrowError(CODBCERR::eSetStmtAttr);

			rc = SQLFetchScroll( m_hstmt,
SQL_FETCH_NEXT, 0 );
			if ( ((rc == SQL_SUCCESS_WITH_INFO)
&& (m_RowsFetched != 0)) || (rc == SQL_ERROR) )

ThrowError(CODBCERR::eFetchScroll);

			m_txn.OrderStatus.o_ol_cnt =
(short)m_RowsFetched;

			if (m_txn.OrderStatus.o_ol_cnt != 0)
			{
				if ( SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_APP_ROW_DESC, m_descOrderStatusCols2,
SQL_IS_POINTER ) != SQL_SUCCESS )

ThrowError(CODBCERR::eSetStmtAttr);

				if ( SQLMoreResults(m_hstmt) ==
SQL_ERROR )

ThrowError(CODBCERR::eMoreResults);

				if ( (rc = SQLFetch(m_hstmt)) ==
SQL_ERROR)

ThrowError(CODBCERR::eFetch);
			}

			SQLFreeStmt(m_hstmt, SQL_CLOSE);

			if (m_txn.OrderStatus.o_ol_cnt == 0)
				throw new CTPCC_ODBC_ERR(
CTPCC_ODBC_ERR::ERR_NO_SUCH_ORDER );
			else if (m_txn.OrderStatus.c_id == 0 &&
m_txn.OrderStatus.c_last[0] == 0)
				throw new CTPCC_ODBC_ERR(
CTPCC_ODBC_ERR::ERR_INVALID_CUST );
			else

m_txn.OrderStatus.exec_status_code = eOK;

			break;
		}
		catch (CODBCERR *e)
		{
			if ((!e->m_bDeadLock) || (++iTryCount >
iMaxRetries))
				throw;

			// hit deadlock; backoff for increasingly longer
period
			delete e;
			Sleep(10 * iTryCount);
		}
	}

//	if (iTryCount)
//		throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

void CTPCC_ODBC::InitDeliveryParams()
{
	if (   SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc,
&m_hstmtDelivery) != SQL_SUCCESS )
		ThrowError(CODBCERR::eAllocHandle);

	m_hstmt = m_hstmtDelivery;

	int i = 0;
	if (   SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SSHORT, SQL_SMALLINT, 0, 0, &m_txn.Delivery.w_id, 0, NULL)
!= SQL_SUCCESS
		|| SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT, 0, 0,
&m_txn.Delivery.o_carrier_id, 0, NULL) != SQL_SUCCESS
		)
		ThrowError(CODBCERR::eBindParam);

	for (i=0;i<10;i++)
	{
		if ( SQLBindCol(m_hstmt, (UWORD)(i+1),
SQL_C_SLONG, &m_txn.Delivery.o_id[i], 0, NULL) != SQL_SUCCESS )
			ThrowError(CODBCERR::eBindCol);
	}
}

void CTPCC_ODBC::Delivery()
{
	RETCODE			rc;
	int			iTryCount = 0;

	m_hstmt = m_hstmtDelivery;

	while (TRUE)
	{
		try
		{
			rc = SQLExecDirectW(m_hstmt,
(SQLWCHAR*)L"{call tpcc_delivery(?,?)}", SQL_NTS);
			if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)
```

```
ThrowError(CODBCERR::eExecDirect);

                                        if ( SQLFetch(m_hstmt) == SQL_ERROR )

ThrowError(CODBCERR::eFetch);

                                        SQLFreeStmt(m_hstmt, SQL_CLOSE);
                                        m_txn.Delivery.exec_status_code = eOK;
                                        break;
                                }
                                catch (CODBCERR *e)
                                {
                                        if ((!e->m_bDeadLock) || (++iTryCount >
iMaxRetries))
                                                throw;

                                        // hit deadlock; backoff for increasingly longer
period
                                        delete e;
                                        Sleep(10 * iTryCount);
                                }
                }

//              if (iTryCount)
//                      throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_RETRIED_TRANS,
iTryCount);
}
```

tpcc_odbc.h

```
/*              FILE:                   TPCC_ODBC.H
 *                                              Microsoft TPC-C Kit Ver.
4.20.000
 *                                              Copyright Microsoft, 1999
 *              All Rights Reserved
 *
 *                                              Version 4.10.000 audited by
Richard Gimarc, Performance Metrics, 3/17/99
 *
 *              PURPOSE:                Header file for TPC-C txn class
implementation.
 *
 *  Change history:
 *                      4.20.000 - updated rev number to match kit
 */
#pragma once

// need to declare functions for import, unless define has already been created
// by the DLL's .cpp module for export.
#ifndef DllDecl
#define DllDecl  __declspec( dllimport )
#endif

class CODBCERR : public CBaseErr
{
        public:
                enum ACTION
                {
                        eNone,
                        eUnknown,
                        eAllocConn,                                     //
error from SQLAllocConnect
                        eAllocHandle,                   // error from
SQLAllocHandle
                        eConnOption,                    // error from
SQLSetConnectOption
                        eConnect,                       // error from
SQLConnect
                        eAllocStmt,                                     //
error from SQLAllocStmt
                        eExecDirect,                    // error from
SQLExecDirect
                        eBindParam,                                     //
error from SQLBindParameter
                        eBindCol,                       // error from
SQLBindCol
                        eFetch,                                         //
error from SQLFetch
                        eFetchScroll,                   // error from
SQLFetchScroll
                        eMoreResults,                   // error from
SQLMoreResults
                        ePrepare,                       // error from
SQLPrepare
                        eExecute,                       // error from
SQLExecute
                        eSetEnvAttr,                    // error from
SQLSetEnvAttr
                        eSetStmtAttr                    // error from
SQLSetStmtAttr
                };

                CODBCERR(void)
                {
                        m_eAction = eNone;
                        m_NativeError = 0;
                        m_bDeadLock = FALSE;
                        m_odbcerrstr = NULL;
                };

                ~CODBCERR()
                {
                        if (m_odbcerrstr != NULL)
                                delete [] m_odbcerrstr;
                };

                ACTION  m_eAction;
                int             m_NativeError;
                BOOL    m_bDeadLock;
                char   *m_odbcerrstr;

                int ErrorType() {return ERR_TYPE_ODBC;};
                int ErrorNum() {return m_NativeError;};
                char *ErrorText() {return m_odbcerrstr;};

};

class CTPCC_ODBC_ERR : public CBaseErr
{
        public:
                enum TPCC_ODBC_ERRS
                {
                        ERR_WRONG_SP_VERSION = 1,               //
"Wrong version of stored procs on database server"
                        ERR_INVALID_CUST,
// "Invalid Customer id,name."
                        ERR_NO_SUCH_ORDER,
// "No orders found for customer."
                        ERR_RETRIED_TRANS,
// "Retries before transaction succeeded."
                };
```

```
                CTPCC_ODBC_ERR( int iErr ) { m_errno = iErr;
m_iTryCount = 0; };

                CTPCC_ODBC_ERR( int iErr, int iTryCount ) {
m_errno = iErr; m_iTryCount = iTryCount; };

                int             m_errno;
                int             m_iTryCount;

                int ErrorType() {return ERR_TYPE_TPCC_ODBC;};
                int ErrorNum() {return m_errno;};

                char *ErrorText();
};

class DllDecl CTPCC_ODBC : public CTPCC_BASE
{
        private:
                // declare variables and private functions here...
                BOOL            m_bDeadlock;            //
transaction was selected as deadlock victim
                int                     m_MaxRetries;
// retry count on deadlock

                SQLHENV                 m_henv;
        // ODBC environment handle
                SQLHDBC                 m_hdbc;
                SQLHSTMT        m_hstmt;                //
the current hstmt

                SQLHSTMT        m_hstmtNewOrder;
                SQLHSTMT        m_hstmtPayment;
                SQLHSTMT        m_hstmtDelivery;
                SQLHSTMT        m_hstmtOrderStatus;
                SQLHSTMT        m_hstmtStockLevel;

                SQLHDESC        m_descNewOrderCols1;
                SQLHDESC        m_descNewOrderCols2;
                SQLHDESC        m_descOrderStatusCols1;
                SQLHDESC        m_descOrderStatusCols2;

                // new-order specific fields
                SQLUINTEGER     m_BindOffset;
                SQLUINTEGER     m_RowsFetched;
                int                     m_no_commit_flag;

                void ThrowError( CODBCERR::ACTION eAction );

                void InitNewOrderParams();
                void InitPaymentParams();
                void InitDeliveryParams();
                void InitStockLevelParams();
                void InitOrderStatusParams();

                union
                {
                        NEW_ORDER_DATA
NewOrder;
                        PAYMENT_DATA            Payment;
                        DELIVERY_DATA           Delivery;
                        STOCK_LEVEL_DATA        StockLevel;
                        ORDER_STATUS_DATA       OrderStatus;
                }                       m_txn;

        public:
                CTPCC_ODBC(LPCSTR szServer, LPCSTR szUser,
LPCSTR szPassword, LPCSTR szHost, LPCSTR szDatabase);
                ~CTPCC_ODBC(void);
                inline PNEW_ORDER_DATA
BuffAddr_NewOrder()             { return &m_txn.NewOrder;   };
                inline PPAYMENT_DATA
BuffAddr_Payment()              { return &m_txn.Payment;    };
                inline PDELIVERY_DATA
BuffAddr_Delivery()             { return &m_txn.Delivery;   };
                inline PSTOCK_LEVEL_DATA BuffAddr_StockLevel()
{ return &m_txn.StockLevel;  };
                inline PORDER_STATUS_DATA
BuffAddr_OrderStatus()          { return &m_txn.OrderStatus; };

                void NewOrder           ();
                void Payment            ();
                void Delivery           ();
                void StockLevel         ();
                void OrderStatus        ();

};


// wrapper routine for class constructor
extern "C" DllDecl CTPCC_ODBC* CTPCC_ODBC_new
                ( LPCSTR szServer, LPCSTR szUser, LPCSTR szPassword,
LPCSTR szHost, LPCSTR szDatabase );

typedef CTPCC_ODBC* (TYPE_CTPCC_ODBC)(LPCSTR, LPCSTR,
LPCSTR, LPCSTR, LPCSTR);
```

trans.h

```
/*              FILE:                   TRANS.H
 *                                              Microsoft TPC-C Kit Ver.
4.20.000
 *                                              Copyright Microsoft, 1999
 *          All Rights Reserved
 *
 *                                              Version 4.10.000 audited by
Richard Gimarc, Performance Metrics, 3/17/99
 *
 *              PURPOSE:                Header file for TPC-C structure templates.
 *
 *  Change history:
 *                      4.20.000 - updated rev number to match kit
 */
#pragma once

// String length constants
#define SERVER_NAME_LEN          20
#define DATABASE_NAME_LEN        20
#define USER_NAME_LEN            20
#define PASSWORD_LEN             20
#define TABLE_NAME_LEN           20
#define I_DATA_LEN               50
#define I_NAME_LEN               24
#define BRAND_LEN                1
#define LAST_NAME_LEN            16
#define W_NAME_LEN               10
#define ADDRESS_LEN              20
#define STATE_LEN                2
#define ZIP_LEN                  9
#define S_DIST_LEN               24
#define S_DATA_LEN               50
#define D_NAME_LEN               10
#define FIRST_NAME_LEN           16
#define MIDDLE_NAME_LEN          2
```

```
#define PHONE_LEN               16
#define DATETIME_LEN             30
#define CREDIT_LEN               2
#define C_DATA_LEN              250
#define H_DATA_LEN               24
#define DIST_INFO_LEN            24
#define MAX_OL_NEW_ORDER_ITEMS    15
#define MAX_OL_ORDER_STATUS_ITEMS 15
#define STATUS_LEN              25
#define OL_DIST_INFO_LEN                24

// TIMESTAMP_STRUCT is provided by the ODBC header file sqltypes.h, but
is not available
// when compiling with dblib, so redefined here.  Note: we are using the symbol
"__SQLTYPES"
// (declared in sqltypes.h) as a way to determine if TIMESTAMP_STRUCT has
been declared.
#ifndef __SQLTYPES
        typedef struct
        {
                        short                           /*
SQLSMALLINT */    year;
                        unsigned short          /* SQLUSMALLINT
*/          month;
                        unsigned short          /* SQLUSMALLINT
*/          day;
                        unsigned short          /* SQLUSMALLINT
*/          hour;
                        unsigned short          /* SQLUSMALLINT
*/          minute;
                        unsigned short          /* SQLUSMALLINT
*/          second;
                        unsigned long           /* SQLUINTEGER */
fraction;
        } TIMESTAMP_STRUCT;
#endif

// possible values for exec_status_code after transaction completes
enum EXEC_STATUS
{
        eOK,                            // 0        "Transaction
commited."
        eInvalidItem,           // 1        "Item number is not valid."
        eDeliveryFailed         // 2        "Delivery Post Failed."
};

// transaction structures
typedef struct
{
        // input params
        short                                   ol_supply_w_id;
        long                                    ol_i_id;
        short                                   ol_quantity;

        // output params
        char
ol_i_name[I_NAME_LEN+1];
        char
ol_brand_generic[BRAND_LEN+1];
        double                                  ol_i_price;
        double                                  ol_amount;
        short                                   ol_stock;
} OL_NEW_ORDER_DATA;

typedef struct
{
        // input params
        short           w_id;
        short           d_id;
        long            c_id;
        short           o_ol_cnt;

        // output params
        EXEC_STATUS                             exec_status_code;
        char            c_last[LAST_NAME_LEN+1];
        char            c_credit[CREDIT_LEN+1];
        double          c_discount;
        double          w_tax;
        double          d_tax;
        long                    o_id;
        short                                   o_commit_flag;
        TIMESTAMP_STRUCT        o_entry_d;
        short           o_all_local;
        double          total_amount;
        OL_NEW_ORDER_DATA
OL[MAX_OL_NEW_ORDER_ITEMS];
} NEW_ORDER_DATA, *PNEW_ORDER_DATA;

typedef struct
{       // input params
        short                           w_id;
        short                           d_id;
        long                            c_id;
        short                           c_d_id;
        short                           c_w_id;
        double                          h_amount;
        char                    c_last[LAST_NAME_LEN+1];

        // output params
        EXEC_STATUS                             exec_status_code;
        TIMESTAMP_STRUCT        h_date;
        char                            w_street_1[ADDRESS_LEN+1];
        char                            w_street_2[ADDRESS_LEN+1];
        char                            w_city[ADDRESS_LEN+1];
        char                            w_state[STATE_LEN+1];
        char                            w_zip[ZIP_LEN+1];
        char                            d_street_1[ADDRESS_LEN+1];
        char                            d_street_2[ADDRESS_LEN+1];
        char                            d_city[ADDRESS_LEN+1];
        char                            d_state[STATE_LEN+1];
        char                    d_zip[ZIP_LEN+1];
        char                            c_first[FIRST_NAME_LEN+1];
        char                            c_middle[MIDDLE_NAME_LEN
+ 1];
        char                            c_street_1[ADDRESS_LEN+1];
        char                            c_street_2[ADDRESS_LEN+1];
        char                            c_city[ADDRESS_LEN+1];
        char                            c_state[STATE_LEN+1];
        char                            c_zip[ZIP_LEN+1];
        char                            c_phone[PHONE_LEN+1];
        TIMESTAMP_STRUCT        c_since;
        char                            c_credit[CREDIT_LEN+1];
        double                          c_credit_lim;
        double                          c_discount;
        double                          c_balance;
        char                            c_data[200+1];
} PAYMENT_DATA, *PPAYMENT_DATA;

typedef struct
{
        long                            ol_i_id;
        short                           ol_supply_w_id;
        short                           ol_quantity;
        double                          ol_amount;
        TIMESTAMP_STRUCT        ol_delivery_d;
} OL_ORDER_STATUS_DATA;
```

```
typedef struct
{       // input params
        short           w_id;
        short           d_id;
        long            c_id;
        char            c_last[LAST_NAME_LEN+1];

        // output params
        EXEC_STATUS                             exec_status_code;
        char            c_first[FIRST_NAME_LEN+1];
        char            c_middle[MIDDLE_NAME_LEN+1];
        double           c_balance;
        long            o_id;
        TIMESTAMP_STRUCT        o_entry_d;
        short           o_carrier_id;
        OL_ORDER_STATUS_DATA
OL[MAX_OL_ORDER_STATUS_ITEMS];
        short           o_ol_cnt;
} ORDER_STATUS_DATA, *PORDER_STATUS_DATA;


typedef struct
{       // input params
        short                   w_id;
        short                   o_carrier_id;

        // output params
        EXEC_STATUS                             exec_status_code;
        SYSTEMTIME                      queue_time;
        long                                    o_id[10];               //
id's of delivered orders for districts 1 to 10
} DELIVERY_DATA, *PDELIVERY_DATA;

//This structure is used for posting delivery transactions and for writing them to
the delivery server.
typedef struct _DELIVERY_TRANSACTION
{
        SYSTEMTIME      queue;                          //time
delivery transaction queued
        short                   w_id;                           //delivery
warehouse
        short                   o_carrier_id;           //carrier id
} DELIVERY_TRANSACTION;

typedef struct
{       // input params
        short                                   w_id;
        short                                   d_id;
        short                                   threshold;

        // output params
        EXEC_STATUS                             exec_status_code;
        long                                    low_stock;
} STOCK_LEVEL_DATA, *PSTOCK_LEVEL_DATA;
```

txn_base.h

```
/*      FILE:                   TXN_BASE.H
 *                                      Microsoft TPC-C Kit Ver.
4.20.000
 *                                      Copyright Microsoft, 1999
 *      All Rights Reserved
 *
 *                                      Version 4.10.000 audited by
Richard Gimarc, Performance Metrics, 3/17/99
 *      PURPOSE:        Header file for TPC-C txn class
implementation.
 *
 *  Change history:
 *                      4.20.000 - updated rev number to match kit
 */

#pragma once

// need to declare functions for import, unless define has already been created
// by the DLL's .cpp module for export.
#ifndef DllDecl
#define DllDecl  __declspec( dllimport )
#endif

class DllDecl CTPCC_BASE
{
        public:
                CTPCC_BASE(void) {};
                virtual ~CTPCC_BASE(void) {};

                virtual PNEW_ORDER_DATA
BuffAddr_NewOrder()                     = 0;
                virtual PPAYMENT_DATA
BuffAddr_Payment()              = 0;
                virtual PDELIVERY_DATA
BuffAddr_Delivery()             = 0;
                virtual PSTOCK_LEVEL_DATA
BuffAddr_StockLevel()           = 0;
                virtual PORDER_STATUS_DATA
BuffAddr_OrderStatus()          = 0;

                virtual void NewOrder                   () = 0;
                virtual void Payment            () = 0;
                virtual void Delivery           () = 0;
                virtual void StockLevel                 () = 0;
                virtual void OrderStatus        () = 0;
};
```

txnlog.h

```
/*      FILE:                   TXNLOG.H
 *                                      Microsoft TPC-C Kit Ver.
4.10.000
 *                                      not yet audited
 *
 *      PURPOSE:        Header file for txn log class
 *                                      Copyright Microsoft, 1999
 *      All Rights Reserved
 *
 */

#pragma once

  typedef struct _TXN_NEWORDER
        {
    BYTE        OL_Count;       //range 0 to 31
    BYTE        OL_Remote_Count;    //range 0 to 31
    WORD        c_id;
    int         o_id;
        } TXN_NEWORDER;

  typedef struct _TXN_PAYMENT
        {
    BYTE        CustByName;
    BYTE        IsRemote;
        } TXN_PAYMENT;
```

```
typedef struct _TXN_ORDERSTATUS
        {
                BYTE    CustByName;
        } TXN_ORDERSTATUS;

        typedef union _TXN_DETAILS
        {
                TXN_NEWORDER   NewOrder;
                TXN_PAYMENT            Payment;
                TXN_ORDERSTATUS        OrderStatus;
        } TXN_DETAILS;


        // Common header for all records in txn log.  The TxnType field is
        // a switch which identifies the particular variant.
        #define TXN_REC_TYPE_CONTROL            1       //

        #define TXN_REC_TYPE_TPCC                       2
// replaces TRANSACTION_TYPE_TPCC
        #define TXN_REC_TYPE_TPCC_DELIV_DEF     3

        typedef struct _TXN_RECORD_HEADER
        {
                JULIAN_TIME     TxnStartT0;             //
start of txn
                BYTE    TxnType;                        // one of
TXN_REC_TYPE_*
                BYTE    TxnSubType;                     //
depends on TxnType
        } TXN_RECORD_HEADER, *PTXN_RECORD_HEADER;


        typedef struct _TXN_RECORD_CONTROL
        {
                // common header; must exactly match
TXN_RECORD_HEADER
                JULIAN_TIME     TxnStartT0;             //
start of txn
                BYTE    TxnType;                        // =
TXN_REC_TYPE_CONTROL
                BYTE    TxnSubType;                     //
depends on TxnType
                // end of common header

                DWORD   Len;                            //
number of bytes after this field
        } TXN_RECORD_CONTROL, *PTXN_RECORD_CONTROL;


        // TPC-C Txn Record Layout:
        //
  //'TxnStartT0' is a Julian timestamp corresponding to the moment the
  //txn is sent to the SUT, i.e., beginning of response time.  Deltas
  //are in milliseconds.  Note that if RTDelay > 0, then the txn was
  //delayed by this amount.  The delay occurs at the beginning of the
  //response time.  So if RTDelay > 0, then the txn was actually sent
  //at TxnStartT0 + RTDelay.
  //
  //Graphically:
  //
  //  time -->
  //
  //    |--- Menu  ---|-- Keying  --|-- Response --|--- Think  --|
  //     <- DeltaT1 -> <- DeltaT2 -> <- DeltaT4  -> <- DeltaT3 ->
  //                    ^
  //                    ^ TxnStartT0
  //
  //RTDelay is the amount of response time delay included in DeltaT4.
  //RTDelay is recorded per txn because this value can be changed on
  //the fly, and so may vary from txn to txn.
  //
  //TxnStatus is the txn completion code.  It is used to indicate errors.
  //For example, in the New Order txn, 1% of txns abort.  TxnStatus will
  //reflect this.

        typedef struct _TXN_RECORD_TPCC
        {
                // common header; must exactly match
TXN_RECORD_HEADER
                JULIAN_TIME     TxnStartT0;             //
start of txn
                BYTE    TxnType;                        // =
TXN_REC_TYPE_TPCC
                BYTE    TxnSubType;                     //
depends on TxnType
                // end of common header

                int     DeltaT1;                // menu time (ms)
                int     DeltaT2;                // keying time (ms)
                int     DeltaT3;                // think time (ms)
                int     DeltaT4;                // response time (ms)
                int     RTDelay;                // response time delay
(ms)
                int             TxnError;       // error code
providing more detail for TxnStatus
                int             w_id;           //
warehouse ID
                BYTE    d_id;                   // assigned
district ID for this thread
                BYTE    d_id_ThisTxn;   // district ID chosen for
this particular
                BYTE    TxnStatus;      // completion status for
txn to indicate errors
                BYTE    reserved;       // for word alignment
                TXN_DETAILS     TxnDetails;     //
        } TXN_RECORD_TPCC, *PTXN_RECORD_TPCC;

        // TPC-C Deferred Delivery Txn Record Layout:
        //
  //Incorporating delivery transaction information into the above
        //structure would increase the size of TXN_DETAILS from 8 to 42
bytes.
  //Hence, we store delivery transaction details in a separate structure.
  //
        typedef struct _TXN_RECORD_TPCC_DELIV_DEF
        {
                // common header; must exactly match
TXN_RECORD_HEADER
                JULIAN_TIME     TxnStartT0;             //
start of txn
                BYTE    TxnType;                        // =
TXN_REC_TYPE_TPCC_DELIV_DEF
                BYTE    TxnSubType;                     //
= 0
                // end of common header

                int     DeltaT4;                // response time (ms)
                int             DeltaTxnExec;   // execution
time (ms)
                int             w_id;           //
warehouse ID
                BYTE    TxnStatus;      // completion status for
txn to indicate errors
                BYTE    reserved;       // for word alignment
                short   o_carrier_id;   // carrier id
```

```
                long        o_id[10];           // returned delivery
transaction ids
        } TXN_RECORD_TPCC_DELIV_DEF,
*PTXN_RECORD_TPCC_DELIV_DEF;



#define         TXN_LOG_VERSION                 2
#define         TXN_DATA_START          4096    // offset in
log file where log records start
#define         TXN_LOG_EYE_CATCHER     "BC"    // signature
bytes at the start of log file


        ////////////////////////////////////////////////////////////////////////
        // The transaction log has a header as the first 4K block.
        //
        typedef struct _TXN_LOG_HEADER
        {
                char                    EyeCatcher[2];      //
signature bytes; should always be "BC"
                int                             LogVersion;
        // set to TXN_LOG_VERSION
                JULIAN_TIME             BeginTxnTS;
// timestamp of first (lowest) txn start
                JULIAN_TIME             EndTxnTS;
// timestamp of last (highest) txn completion time
                int                             iRecCount;
        // number of records in log file
                BOOL                    bLogSorted;
                int                             iFileSize;
// file size in bytes

                // the record map provides a fast way to get close to a
particular timestamp in a sorted log file.
//              struct
//              {
//                      JULIAN_TIME             TS;
        // timestamp of record
//                      int
iPos;           // byte position in file
//              }
RecMap[RecMapSize];
//#define         RecMapSize                              200

        } TXN_LOG_HEADER, *PTXN_LOG_HEADER;

        /* Header of the sorted pointers blocks in Temp file (in merging). */
        typedef struct BLOCK_HEADER {
                long    BlockPos;
                __int64 CurPos;
                DWORD   BytesRead;
                int             nRecords;
                BYTE    *offset;    /* offset of pointers to records in
the log file */
        } BLOCK_HEADER, *PBLOCK_HEADER;



#define     READ_BUFFER_SIZE            64*1024
#define     WRITE_BUFFER_SIZE            8*1024

#define     NUM_READ_BUFFERS            1
#define     NUM_WRITE_BUFFERS           2
#define     MAX_NUM_BUFFERS                     2

// flags passed in to the constructor
#define     TXN_LOG_WRITE       0x01
#define     TXN_LOG_READ        0x02
#define     TXN_LOG_SORTED      0x04
#define TXN_LOG_CRASHOPEN       0x08            // if set,
invalid headers will be tolerated; used for recovery

#define     TXN_LOG_OS_ERROR    1
#define     TXN_LOG_NOT_SORTED  2

#define SKIP_CTRL_RECS          1

class CTxnLog
{
        private:
                DWORD           iBufferSize;
//buffer allocated size
                DWORD           iBytesFreeInBuffer;
//total bytes available for use in buffer
                int                             iNumBuffers;
        //buffers in use
                int                             iActiveBuffer;
        //indicates which buffer is active: 0 or 1
                int                             iIoBuffer;
        //buffer for any pending IO operation
//              int                             iFilePointer;
        //position in file.
                LARGE_INTEGER   lFilePointer;
//position in file.
                int                             iNextRec;
        //when reading, ordinal value of next record

                // A "save point" is remembered each time
GetNextRecord is called with a start time specified.
                // The next time it is called, if start time is after the save
point, we start scanning from the
                // save point.  This is particularly useful in
FindBestInterval, where the log is scanned repeatedly.
                JULIAN_TIME             SavePtTime;
//              int
iSavePtFilePointer;
                LARGE_INTEGER   lSavePtFilePointer;
                int
iSavePtNextRec;

                JULIAN_TIME     lastTS;
        //when writing sorted output, used to verify records are sorted
                BOOL            bWrite;
        //writing log file
                BOOL            bCrashOpen;
        // tolerate bad headers and consistency checks

                BOOL                            bLogSorted;
        // is log file sorted?  applies to both input and output
                JULIAN_TIME             BeginTxnTS;
        // timestamp of first (lowest) txn start
                JULIAN_TIME             EndTxnTS;
        // timestamp of last (highest) txn completion time
                int                             iRecCount;
                // number of records in log file

                BYTE            *pCurrent;
//ptr to current buffer
                BYTE
*pBuffer[MAX_NUM_BUFFERS];

                PTXN_RECORD_HEADER      *TxnArray;
//transaction record pointer array for sort

                DWORD           dwError;
```

```
                HANDLE          hTxnFile;
//handle to log file
                HANDLE          hMapFile;
//map file used when sorting the log
                HANDLE          hIoComplete;
//event to signify that there are no pending IOs
                HANDLE          hLogFileIo;
        //event to signal the IO thread to write the inactive buffer

                Spinlock    Spin;
//spin lock to protect the txn log file buffers

                FILE                                    *tmpFile;
//temp file for merging sorted pieces
                PBLOCK_HEADER           tmpHeaders;
//sorted pointers block header
                BYTE
**recPointers;          //record pointer buffers for each sorted block
                PTXN_RECORD_HEADER      *recBuffers;
//record buffers for each sorted block
                int             *PointersRead;
        //# of pointers processed in each block
                BOOL      *BlockAvailable;
//whether to check a particular block for jmin

                int             nBlocks;
                int             jmin;
                //index (block-wise) of the lowest timestamp record
                int             iAvgRecordLen;
        //average record length

                int             iSortedReturnedCount;
//keeps track of the # of sorted records returned through GetSortedRecord()


                int Write(BYTE *ptr, DWORD Size);
                static void LogFileIO(CTxnLog *);

                void LoadBuffers(int j);
//used in sort/merge to load record buffers

        public:

                CTxnLog::CTxnLog(LPCTSTR szFileName, DWORD
dwOpts);
                ~CTxnLog(void);

                int WriteToLog(PTXN_RECORD_TPCC pTxnRcrd);
                int WriteToLog(PTXN_RECORD_TPCC_DELIV_DEF
pTxnRcrd);
                int WriteToLog(PTXN_RECORD_CONTROL
pCtrlRec);
                int WriteToLog(PTXN_RECORD_HEADER pCtrlRec);

                int WriteCtrlRecToLog(BYTE SubType, LPTSTR lpStr,
DWORD dwLen);

                void CloseTransactionLogFile(void);

                PTXN_RECORD_HEADER GetNextRecord(BOOL
bSkipCtrlRecs = FALSE);
                PTXN_RECORD_HEADER
GetNextRecord(JULIAN_TIME SeekTimeT0, BOOL bSkipCtrlRecs =
FALSE);

                int Sort(void);
                PTXN_RECORD_HEADER GetSortedRecord();
                inline BOOL IsSorted(void) { return bLogSorted; };
                inline JULIAN_TIME BeginTS(void) { return
BeginTxnTS; };
                inline JULIAN_TIME EndTS(void) { return EndTxnTS;
};
                inline int RecordCount(void) { return iRecCount; };
};

class CTXNLOG_ERR : public CBaseErr
{
        public:
                enum CTXNLOG_ERRS
                {
                        ERR_BAD_FILE_FORMAT,            //
"File format is invalid."
                        ERR_UNKNOWN_LOG_VERSION,        //
"Log file version is unknown."
                        ERR_BROKEN_LOG_FILE,            //
"Log file is broken."
                        ERR_LOG_NOT_SORTED,
// "Log file is not sorted"
                        ERR_INVALID_TIME_SEQ,           //
"Internal Error: Record Time Sequence invalid."
                };

                CTXNLOG_ERR(int iErr) : CBaseErr(iErr) {};

                int ErrorType() {return ERR_TYPE_TXNLOG;};

                char *ErrorText()
                {
                        static char *szMsgs[] = {
                                "File format is invalid.",
                                "Log file version is unknown.",
                                "Log file is broken.",
                                "Log file is not sorted",
                                "Internal Error: Record Time
Sequence invalid.",
                                ""
                        };

                        for(int i = 0; szMsgs[i][0]; i++)
                        {
                                if ( m_idMsg == i )
                                        break;
                        }

                        return(szMsgs[i][0] ? szMsgs[i] :
ERR_UNKNOWN);
                };
};
```

webclnt.dsp

```
# Microsoft Developer Studio Project File - Name="webclnt" - Package
Owner=<4>
# Microsoft Developer Studio Generated Build File, Format Version 5.00
# ** DO NOT EDIT **

# TARGTYPE "Win32 (x86) Application" 0x0101

CFG=webclnt - Win32 Release
!MESSAGE This is not a valid makefile. To build this project using NMAKE,
!MESSAGE use the Export Makefile command and run
!MESSAGE
!MESSAGE NMAKE /f "Webclnt.mak".
!MESSAGE
```

```
!MESSAGE You can specify a configuration when running NMAKE
!MESSAGE by defining the macro CFG on the command line. For example:
!MESSAGE
!MESSAGE NMAKE /f "Webclnt.mak" CFG="webclnt - Win32 Release"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "webclnt - Win32 Release" (based on "Win32 (x86) Application")
!MESSAGE "webclnt - Win32 Debug" (based on "Win32 (x86) Application")
!MESSAGE

# Begin Project
# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CPP=cl.exe
MTL=midl.exe
RSC=rc.exe

!IF  "$(CFG)" == "webclnt - Win32 Release"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir ".\Release"
# PROP BASE Intermediate_Dir ".\Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\Release"
# PROP Intermediate_Dir ".\Release"
# PROP Target_Dir ""
# ADD BASE CPP /nologo /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /c
# ADD CPP /nologo /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "NDEBUG" /win32
# ADD MTL /nologo /D "NDEBUG" /mktyplib203 /win32
# ADD BASE RSC /l 0x409 /d "NDEBUG"
# ADD RSC /l 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /machine:I386
# ADD LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib odbccp32.lib
/nologo /subsystem:windows /machine:I386

!ELSEIF  "$(CFG)" == "webclnt - Win32 Debug"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir ".\Debug"
# PROP BASE Intermediate_Dir ".\Debug"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\Debug"
# PROP Intermediate_Dir ".\Debug"
# PROP Target_Dir ""
# ADD BASE CPP /nologo /W3 /Gm /GX /Zi /Od /D "WIN32" /D "_DEBUG"
/D "_WINDOWS" /YX /c
# ADD CPP /nologo /W3 /Gm /GX /Zi /Od /D "WIN32" /D "_DEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "_DEBUG" /win32
# ADD MTL /nologo /D "_DEBUG" /mktyplib203 /win32
# ADD BASE RSC /l 0x409 /d "_DEBUG"
# ADD RSC /l 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:windows /debug /machine:I386
# ADD LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib odbccp32.lib
/nologo /subsystem:windows /debug /machine:I386

!ENDIF

# Begin Target

# Name "webclnt - Win32 Release"
# Name "webclnt - Win32 Debug"
# End Target
# End Project
```

Stored Procedures

neword.sql

```
--  File:    NEWORD.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.42
--           Copyright Microsoft, 2002
--  Purpose:  Creates new order transaction stored procedure
--
--              Interface Level: 4.10.000

use tpcc
go

if exists ( select name from sysobjects where name = 'tpcc_neworder' )
              drop procedure tpcc_neworder
go

create proc tpcc_neworder
                                                    @w_id          int,
                                                    @d_id          tinyint,
                                                    @c_id          int,
                                                    @o_ol_cnt      tinyint,
                                                    @o_all_local   tinyint,
                                                    @i_id1  int = 0,
@s_w_id1  int = 0, @ol_qty1  smallint = 0,
                                                    @i_id2  int = 0,
@s_w_id2  int = 0, @ol_qty2  smallint = 0,
                                                    @i_id3  int = 0,
@s_w_id3  int = 0, @ol_qty3  smallint = 0,
                                                    @i_id4  int = 0,
@s_w_id4  int = 0, @ol_qty4  smallint = 0,
                                                    @i_id5  int = 0,
@s_w_id5  int = 0, @ol_qty5  smallint = 0,
                                                    @i_id6  int = 0,
@s_w_id6  int = 0, @ol_qty6  smallint = 0,
                                                    @i_id7  int = 0,
@s_w_id7  int = 0, @ol_qty7  smallint = 0,
                                                    @i_id8  int = 0,
@s_w_id8  int = 0, @ol_qty8  smallint = 0,
                                                    @i_id9  int = 0,
@s_w_id9  int = 0, @ol_qty9  smallint = 0,
                                                    @i_id10 int = 0,
@s_w_id10 int = 0, @ol_qty10 smallint = 0,
```

```
                                                @i_id11 int = 0,
@s_w_id11 int = 0, @ol_qty11 smallint = 0,
                                                @i_id12 int = 0,
@s_w_id12 int = 0, @ol_qty12 smallint = 0,
                                                @i_id13 int = 0,
@s_w_id13 int = 0, @ol_qty13 smallint = 0,
                                                @i_id14 int = 0,
@s_w_id14 int = 0, @ol_qty14 smallint = 0,
                                                @i_id15 int = 0,
@s_w_id15 int = 0, @ol_qty15 smallint = 0


as
declare     @w_tax          numeric(4,4),
        @d_tax          numeric(4,4),
        @c_last         char(16),
        @c_credit       char(2),
        @c_discount     numeric(4,4),
        @i_price        numeric(5,2),
        @i_name         char(24),
        @i_data         char(50),
        @o_entry_d      datetime,
        @remote_flag    int,
        @s_quantity     smallint,
        @s_data         char(50),
        @s_dist         char(24),
                @li_no          int,
                @o_id                   int,
                @commit_flag    tinyint,
        @li_id          int,
        @li_s_w_id      int,
        @li_qty         smallint,
                @ol_number              int,
                @c_id_local             int

begin

begin transaction n

-- get district tax and next availible order id and update
-- plus initialize local variables

                update      district
                set         @d_tax      = d_tax,
                            @o_id       = d_next_o_id,
                            d_next_o_id  = d_next_o_id + 1,
                            @o_entry_d   = getdate(),
                            @li_no      = 0,
                            @commit_flag = 1
                where       d_w_id      = @w_id and
                            d_id        = @d_id

-- process orderlines

                while (@li_no < @o_ol_cnt)
                begin

                        select @li_no = @li_no + 1

-- set i_id, s_w_id, and qty for this lineitem

                        select      @li_id = case @li_no
                                                when 1 then @i_id1
                                                when 2 then @i_id2
                                                when 3 then @i_id3
                                                when 4 then @i_id4
                                                when 5 then @i_id5
                                                when 6 then @i_id6
                                                when 7 then @i_id7
                                                when 8 then @i_id8
                                                when 9 then @i_id9
                                                when 10 then @i_id10
                                                when 11 then @i_id11
                                                when 12 then @i_id12
                                                when 13 then @i_id13
                                                when 14 then @i_id14
                                                when 15 then @i_id15
                                                end,

                                    @li_s_w_id = case @li_no
                                                when 1 then @s_w_id1
                                                when 2 then @s_w_id2
                                                when 3 then @s_w_id3
                                                when 4 then @s_w_id4
                                                when 5 then @s_w_id5
                                                when 6 then @s_w_id6
                                                when 7 then @s_w_id7
                                                when 8 then @s_w_id8
                                                when 9 then @s_w_id9
                                                when 10 then @s_w_id10
                                                when 11 then @s_w_id11
                                                when 12 then @s_w_id12
                                                when 13 then @s_w_id13
                                                when 14 then @s_w_id14
                                                when 15 then @s_w_id15
                                                end,

                                    @li_qty = case  @li_no
                                                when 1 then @ol_qty1
                                                when 2 then @ol_qty2
                                                when 3 then @ol_qty3
                                                when 4 then @ol_qty4
                                                when 5 then @ol_qty5
                                                when 6 then @ol_qty6
                                                when 7 then @ol_qty7
                                                when 8 then @ol_qty8
                                                when 9 then @ol_qty9
                                                when 10 then @ol_qty10
                                                when 11 then @ol_qty11
                                                when 12 then @ol_qty12
                                                when 13 then @ol_qty13
                                                when 14 then @ol_qty14
                                                when 15 then @ol_qty15
                                                end

-- get item data (no one updates item)

                        select      @i_price = i_price,
                                    @i_name  = i_name,
                                    @i_data  = i_data
                        from        item (tablock repeatableread)
                        where       i_id = @li_id

-- update stock values

                        update      stock
                        set         s_ytd               = s_ytd + @li_qty,
                                    @s_quantity         = s_quantity   =
s_quantity - @li_qty +
                                                                    case
when (s_quantity - @li_qty < 10) then 91 else 0 end,
                                    s_order_cnt         = s_order_cnt + 1,
                                    s_remote_cnt        = s_remote_cnt + case
when (@li_s_w_id = @w_id) then 0 else 1 end,
                                    @s_data             = s_data,
                                    @s_dist             = case @d_id
```

```
                                        when 1  then
s_dist_01
                                        when 2  then
s_dist_02
                                        when 3  then
s_dist_03
                                        when 4  then
s_dist_04
                                        when 5  then
s_dist_05
                                        when 6  then
s_dist_06
                                        when 7  then
s_dist_07
                                        when 8  then
s_dist_08
                                        when 9  then
s_dist_09
                                        when 10 then
s_dist_10
                                        end
                where   s_i_id          = @li_id and
                        s_w_id          = @li_s_w_id

--  if there actually is a stock (and item) with these ids, go to work

                if (@@rowcount > 0)
                begin

--  insert order_line data (using data from item and stock)

                        insert into order_line values(@o_id,
                                                        @d_id,
                                                        @w_id,
                                                        @li_no,
                                                        @li_id,

@li_s_w_id,
                                                        'dec 31,
1899',
                                                        @li_qty,
                                                        @i_price
* @li_qty,
                                                        @s_dist)


--  send line-item data to client

                        select  @i_name,
                                @s_quantity,
                                b_g = case when (
(patindex('%ORIGINAL%',@i_data) > 0) and

(patindex('%ORIGINAL%',@s_data) > 0) )
                                    then 'B' else 'G' end,
                                @i_price,
                                @i_price * @li_qty

                end
                else
                begin

--  no item (or stock) found - triggers rollback condition

                        select ",0,",0,0
                        select @commit_flag = 0

                end
        end

--  get customer last name, discount, and credit rating

        select  @c_last     = c_last,
                @c_discount = c_discount,
                @c_credit   = c_credit,
                @c_id_local = c_id
        from    customer (repeatableread)
        where   c_id                = @c_id and
                c_w_id              = @w_id and
                c_d_id              = @d_id

--  insert fresh row into orders table

        insert into orders values (     @o_id,
                                        @d_id,
                                        @w_id,
                                        @c_id_local,
                                        @o_entry_d,
                                        0,
                                        @o_ol_cnt,
                                        @o_all_local)

--  insert corresponding row into new-order table

        insert into new_order values (  @o_id,
                                        @d_id,
                                        @w_id)

--  select warehouse tax

        select  @w_tax  = w_tax
        from    warehouse (repeatableread)
        where   w_id    = @w_id

        if (@commit_flag = 1)

                commit transaction n
        else

--  all that work for nuthin!!!

                rollback transaction n

--  return order data to client

        select  @w_tax,
                @d_tax,
                @o_id,
                @c_last,
                @c_discount,
                @c_credit,
                @o_entry_d,
                @commit_flag

end

go
```

payment.sql

```
-- File:    PAYMENT.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.42
--          Copyright Microsoft, 2002
-- Purpose:  Creates payment transaction stored procedure
--
--              Interface Level: 4.10.000

use tpcc
go

if exists (select name from sysobjects where name = 'tpcc_payment' )
        drop procedure tpcc_payment
go

create proc tpcc_payment        @w_id       int,
                                @c_w_id     int,
                                @h_amount   numeric(6,2),
                                @d_id       tinyint,
                                @c_d_id     tinyint,
                                @c_id       int,
                                @c_last     char(16) = ''


as
declare  @w_street_1    char(20),
        @w_street_2     char(20),
        @w_city         char(20),
        @w_state        char(2),
        @w_zip          char(9),
        @w_name         char(10),
        @d_street_1     char(20),
        @d_street_2     char(20),
        @d_city         char(20),
        @d_state        char(2),
        @d_zip          char(9),
        @d_name         char(10),
        @c_first        char(16),
        @c_middle       char(2),
        @c_street_1     char(20),
        @c_street_2     char(20),
        @c_city         char(20),
        @c_state        char(2),
        @c_zip          char(9),
        @c_phone        char(16),
        @c_since        datetime,
        @c_credit       char(2),
        @c_credit_lim   numeric(12,2),
        @c_balance      numeric(12,2),
        @c_discount     numeric(4,4),
        @data           char(500),
        @c_data         char(500),
        @datetime       datetime,
        @w_ytd          numeric(12,2),
        @d_ytd          numeric(12,2),
        @cnt            smallint,
        @val            smallint,
        @screen_data    char(200),
                @d_id_local             tinyint,
                @w_id_local             int,
                @c_id_local             int

select @screen_data = ''

begin tran p

-- get payment date

                select  @datetime = getdate()

                if (@c_id = 0)
                begin

-- get customer id and info using last name

                        select  @cnt    = count(*)
                        from    customer (repeatableread)
                        where   c_last  = @c_last and
                                c_w_id  = @c_w_id and
                                c_d_id  = @c_d_id


                        select  @val = (@cnt + 1) / 2
                        set     rowcount @val

                        select  @c_id   = c_id
                        from    customer (repeatableread)
                        where   c_last  = @c_last and
                                c_w_id  = @c_w_id and
                                c_d_id  = @c_d_id
                        order   by c_last, c_first

                        set     rowcount 0
                end

-- get customer info and update balances

                update  customer
                set     @c_balance              = c_balance             = c_balance
- @h_amount,
                        c_payment_cnt           = c_payment_cnt + 1,
                        c_ytd_payment           = c_ytd_payment + @h_amount,
                        @c_first    = c_first,
                        @c_middle               = c_middle,
                        @c_last                 = c_last,
                        @c_street_1             = c_street_1,
                        @c_street_2             = c_street_2,
                        @c_city                 = c_city,
                        @c_state    = c_state,
                        @c_zip                  = c_zip,
                        @c_phone = c_phone,
                        @c_credit = c_credit,
                        @c_credit_lim           = c_credit_lim,
                        @c_discount             = c_discount,
                        @c_since  = c_since,
                        @data                   = c_data,
                        @c_id_local             = c_id
                where   c_id                    = @c_id and
                        c_w_id                  = @c_w_id and
                        c_d_id                  = @c_d_id

-- if customer has bad credit get some more info

                if (@c_credit = 'BC')
                begin

--              compute new info

                        select @c_data          = convert(char(5),@c_id) +
                                                  convert(char(4),@c_d_id) +
                                                  convert(char(5),@c_w_id) +
                                                  convert(char(4),@d_id) +
                                                  convert(char(5),@w_id) +
                                                  convert(char(19),@h_amount) +
                                                  substring(@data, 1, 458)
```

```
-- update customer info

                update  customer
                set     c_data      = @c_data

                where   c_id        = @c_id and
                        c_w_id      = @c_w_id and
                        c_d_id      = @c_d_id

                select  @screen_data = substring (@c_data,1,200)

        end

-- get district data and update year-to-date

        update  district
        set     d_ytd               = d_ytd + @h_amount,
                @d_street_1         = d_street_1,
                @d_street_2         = d_street_2,
                @d_city             = d_city,
                @d_state   = d_state,
                @d_zip              = d_zip,
                @d_name             = d_name,
                @d_id_local         = d_id
        where   d_w_id              = @w_id and
                d_id                = @d_id

-- get warehouse data and update year-to-date

        update  warehouse
        set     w_ytd               = w_ytd + @h_amount,
                @w_street_1         = w_street_1,
                @w_street_2         = w_street_2,
                @w_city             = w_city,
                @w_state  = w_state,
                @w_zip              = w_zip,
                @w_name             = w_name,
                @w_id_local         = w_id
        where   w_id                = @w_id

-- create history record

        insert into history values (    @c_id_local,
                                        @c_d_id,
                                        @c_w_id,

                                        @d_id_local,
                                        @w_id_local,
                                        @datetime,
                                        @h_amount,
                                        @w_name + '    ' +
@d_name)
commit tran p

-- return data to client

select  @c_id,
        @c_last,
        @datetime,
        @w_street_1,
        @w_street_2,
        @w_city,
        @w_state,
        @w_zip,
        @d_street_1,
        @d_street_2,
        @d_city,
        @d_state,
        @d_zip,
        @c_first,
        @c_middle,
        @c_street_1,
        @c_street_2,
        @c_city,
        @c_state,
        @c_zip,
        @c_phone,
        @c_since,
        @c_credit,
        @c_credit_lim,
        @c_discount,
        @c_balance,
        @screen_data

go
```

ordstat.sql

```
-- File:    ORDSTAT.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.42
--          Copyright Microsoft, 2002
-- Purpose:  Creates order status transaction stored procedure
--
--            Interface Level: 4.10.000

use tpcc
go

if exists ( select name from sysobjects where name = 'tpcc_orderstatus' )
            drop procedure   tpcc_orderstatus
go

create proc tpcc_orderstatus    @w_id   int,
                                @d_id   tinyint,

                                @c_id   int,
                                @c_last char(16) = ''

as

declare @c_balance          numeric(12,2),
      @c_first              char(16),
      @c_middle             char(2),
      @o_id                 int,
      @o_entry_d            datetime,
      @o_carrier_id         smallint,
      @cnt                  smallint

begin tran o

if (@c_id = 0)
            begin

-- get customer id and info using last name

                select  @cnt        = (count(*)+1)/2
                from    customer (repeatableread)
                where   c_last      = @c_last and
                        c_w_id      = @w_id and
                        c_d_id      = @d_id

                set     rowcount @cnt

                select  @c_id               = c_id,
                        @c_balance          = c_balance,
                          @c_first = c_first,
```

```
                        @c_last  = c_last,
                        @c_middle           = c_middle
                from    customer (repeatableread)
                where   c_last              = @c_last and
                        c_w_id              = @w_id and
                        c_d_id              = @d_id
                order   by c_w_id, c_d_id, c_last, c_first

                set     rowcount 0
        end

        else

        begin

-- get customer info if by id

                select  @c_balance          = c_balance,
                        @c_first    = c_first,
                        @c_middle           = c_middle,
                        @c_last             = c_last
                from    customer (repeatableread)
                where   c_id                = @c_id and
                        c_d_id              = @d_id and
                        c_w_id              = @w_id

                select  @cnt        = @@rowcount

        end

-- if no such customer

        if (@cnt = 0)
        begin
                raiserror('Customer not found',18,1)
                goto custnotfound
        end

-- get order info

        select  @o_id               = o_id,
                @o_entry_d          = o_entry_d,
                @o_carrier_id       = o_carrier_id
        from    orders (serializable)
        where   o_c_id              = @c_id and
                o_d_id              = @d_id and
                o_w_id              = @w_id
        order   by o_id asc

-- select order lines for the current order

        select  ol_supply_w_id,
                ol_i_id,
                ol_quantity,
                ol_amount,
                ol_delivery_d
        from    order_line (repeatableread)
        where   ol_o_id = @o_id and
                ol_d_id = @d_id and
                ol_w_id = @w_id

custnotfound:

commit tran o

-- return data to client

select  @c_id,
        @c_last,
        @c_first,
        @c_middle,
        @o_entry_d,
        @o_carrier_id,
        @c_balance,
        @o_id

Go
```

delivery.sql

```
-- File:    DELIVERY.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.42
--          Copyright Microsoft, 2002
-- Purpose:  Creates delivery transaction stored procedure
--
--              Interface Level: 4.10.000

use tpcc
go

if exists (select name from sysobjects where name = 'tpcc_delivery' )
        drop procedure tpcc_delivery
go

create proc tpcc_delivery       @w_id       int,

                                                @o_carrier_id   smallint
as

declare @d_id       tinyint,
    @o_id           int,
    @c_id           int,
    @total          numeric(12,2),
    @oid1           int,
    @oid2           int,
    @oid3           int,
    @oid4           int,
    @oid5           int,
    @oid6           int,
    @oid7           int,
    @oid8           int,
    @oid9           int,
    @oid10          int

select @d_id = 0

begin tran d

        while (@d_id < 10)
        begin

            select @d_id  = @d_id + 1,
                           @total = 0,
                           @o_id  = 0

                select  top 1
                        @o_id       = no_o_id
                from    new_order (serializable updlock)
                where   no_w_id    = @w_id and
                        no_d_id    = @d_id
                order   by no_o_id asc

            if (@@rowcount <> 0)
                begin
```

```
-- claim the order for this district

                                delete      new_order
                                where       no_w_id    = @w_id and
                                            no_d_id    = @d_id and
                                            no_o_id    = @o_id

-- set carrier_id on this order (and get customer id)

                                update      orders
                                set         o_carrier_id            =
@o_carrier_id,
                                            @c_id                   = o_c_id
                                where       o_w_id                  = @w_id
and
                                            o_d_id                  = @d_id
and
                                            o_id                    = @o_id

-- set date in all lineitems for this order (and sum amounts)

                                update      order_line
                                set         ol_delivery_d           = getdate(),
                                            @total                  = @total +
ol_amount
                                where       ol_w_id                 = @w_id
and
                                            ol_d_id                 = @d_id
and
                                            ol_o_id                 = @o_id

-- accummulate lineitem amounts for this order into customer

                                update      customer
                                set         c_balance  = c_balance + @total,
                                            c_delivery_cnt          =
c_delivery_cnt + 1
                                where       c_w_id                  = @w_id
and
                                            c_d_id                  = @d_id
and
                                            c_id                    = @c_id

                        end

              select @oid1 = case @d_id when  1  then @o_id else @oid1 end,
            @oid2 = case @d_id when  2  then @o_id else @oid2 end,
            @oid3 = case @d_id when  3  then @o_id else @oid3 end,
            @oid4 = case @d_id when  4  then @o_id else @oid4 end,
            @oid5 = case @d_id when  5  then @o_id else @oid5 end,
            @oid6 = case @d_id when  6  then @o_id else @oid6 end,
            @oid7 = case @d_id when  7  then @o_id else @oid7 end,
            @oid8 = case @d_id when  8  then @o_id else @oid8 end,
            @oid9 = case @d_id when  9  then @o_id else @oid9 end,
            @oid10 = case @d_id when 10 then @o_id else @oid10 end

    end

commit tran d

-- return delivery data to client

select @oid1,
       @oid2,
       @oid3,
       @oid4,
       @oid5,
       @oid6,
       @oid7,
       @oid8,
       @oid9,
       @oid10

Go
```

Stocklev.sql

```
-- File:    STOCKLEV.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.42
--          Copyright Microsoft, 2002
-- Purpose:  Creates stock level transaction stored procedure
--
--            Interface Level: 4.10.000

use tpcc
go

if exists (select name from sysobjects where name = 'tpcc_stocklevel' )
            drop procedure tpcc_stocklevel
go

create proc tpcc_stocklevel         @w_id                   int,
                                            @d_id                   tinyint,
                                            @threshhold             smallint
as

declare     @o_id_low int,
            @o_id_high int

select      @o_id_low               = (d_next_o_id - 20),
            @o_id_high              = (d_next_o_id - 1)
from        district
where       d_w_id                  = @w_id and
            d_id                    = @d_id

select      count(distinct(s_i_id))
from        stock, order_line
where       ol_w_id                 =  @w_id and
            ol_d_id                 =  @d_id and
            ol_o_id                   between @o_id_low and
                                      @o_id_high and
            s_w_id                  =  ol_w_id and
            s_i_id                  =  ol_i_id and
            s_quantity <  @threshhold

go
```

version.sql

```
-- File:    VERSION.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Returns version level of TPC-C stored procs
-- Note:     Always update the return value of this proc for
--          any interface changes or 'must have' bug fixes.
--
-- The value returned by this SP defines the 'interface level',
-- which must match between the stored procs and the client code.
-- The interface level may be down rev from the current kit.  This
-- indicates that the interface hasn't changed since that version.

use tpcc
go
```

```
if exists ( select name from sysobjects where name = 'tpcc_version' )
        drop procedure tpcc_version
go

create proc tpcc_version
as
declare     @version   char(8)

begin
        select @version = '4.10.000'
        select @version as 'Version'
end

go
```

Appendix B: Database Design

Database Build

createdb.sql

```
-- File:    CREATEDB.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates tpcc database and backup files


use master
go

--          Create temporary table for timing

if exists ( select name from sysobjects where name = 'tpcc_timer' )
            drop table tpcc_timer
go

create table tpcc_timer
(
            start_date                                  char(30),
            end_date                                    char(30)
)

insert      into tpcc_timer values (0,0)
go

--          Store starting time

update      tpcc_timer
set         start_date  = (select convert(char(30), getdate(),9))
go

-- create main database files

CREATE DATABASE tpcc
ON PRIMARY
(           NAME                = MSSQL_tpcc_root,
            FILENAME            = 'F:\MSSQL_tpcc_root.mdf',
            SIZE                = 8MB,
            FILEGROWTH          = 0),
FILEGROUP           MSSQL_misc_fg
(           NAME                = MSSQL_misc1,
            FILENAME            = 'C:\mp\m1\',
            SIZE                = 153000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_misc2,
            FILENAME            = 'C:\mp\m2\',
            SIZE                = 153000MB,
            FILEGROWTH          = 0),

FILEGROUP           MSSQL_cs_fg
(           NAME                = MSSQL_cs1,
            FILENAME            = 'c:\mp\c1\',
            SIZE                = 80000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_cs2,
            FILENAME            = 'c:\mp\c2\',
            SIZE                = 80000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_cs3,
            FILENAME            = 'c:\mp\c3\',
            SIZE                = 80000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_cs4,
            FILENAME            = 'c:\mp\c4\',
            SIZE                = 80000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_cs5,
            FILENAME            = 'c:\mp\c5\',
            SIZE                = 80000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_cs6,
            FILENAME            = 'c:\mp\c6\',
            SIZE                = 80000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_cs7,
            FILENAME            = 'c:\mp\c7\',
            SIZE                = 80000MB,
            FILEGROWTH          = 0)

LOG ON
(           NAME                = MSSQL_tpcc_log,
            FILENAME            = 'E:',
            SIZE                = 263000MB,
            FILEGROWTH          = 0)
COLLATE Latin1_General_BIN
go

-- Store ending time
update      tpcc_timer
set         end_date    = (select convert(char(30), getdate(),9))
go

select 'Elapsed time (in seconds): ', datediff(second,(select start_date from
tpcc_timer),(select end_date from tpcc_timer))

--          remove temporary table

if exists ( select name from sysobjects where name = 'tpcc_timer' )
            drop table tpcc_timer
go
```

dbop1.sql

```
-- File:    DBOPT1.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Sets database options for data load


use master
go

exec sp_dboption tpcc,'select into/bulkcopy',true
exec sp_dboption tpcc,'trunc. log on chkpt.',true
exec sp_dboption tpcc,'torn page detection',false
go

use tpcc
go

checkpoint
Go
```

dbopt2.sql

```
-- File:    DBOPT2.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
```

```
--          Copyright Microsoft, 2001
--  Purpose:  Resets database options after data load

exec sp_dboption tpcc,'select into/bulkcopy',false
exec sp_dboption tpcc,'trunc. log on chkpt.',false
exec sp_dboption tpcc,'torn page detection',false
GO

USE tpcc
GO

CHECKPOINT
GO

sp_configure 'allow updates',1
GO

RECONFIGURE WITH OVERRIDE
GO

DECLARE             @msg                    varchar(50)

--                                  --
--      OPTIONS FOR SQL SERVER 2000        --
-- Set option values for user-defined indexes --
--                                  --

SET         @msg      = ' '
PRINT       @msg
SET         @msg      = 'Setting SQL Server indexoptions'
PRINT       @msg
SET         @msg      = ' '
PRINT       @msg

EXEC sp_indexoption             'customer', 'DisAllowPageLocks', TRUE
EXEC sp_indexoption             'district',    'DisAllowPageLocks', TRUE
EXEC sp_indexoption             'warehouse',            'DisAllowPageLocks',
TRUE
EXEC sp_indexoption             'stock',       'DisAllowPageLocks', TRUE
EXEC sp_indexoption             'order_line',           'DisAllowRowLocks',
TRUE
EXEC sp_indexoption             'orders',      'DisAllowRowLocks', TRUE
EXEC sp_indexoption             'new_order',            'DisAllowRowLocks',
TRUE
EXEC sp_indexoption             'item',                 'DisAllowRowLocks',
TRUE
EXEC sp_indexoption             'item',                 'DisAllowPageLocks',
TRUE
GO

Print ' '
Print '******************'
Print 'Pre-specified Locking Hierarchy:'
Print '         Lockflag = 0 ==> No pre-specified hierarchy'
Print '   Lockflag = 1 ==> Lock at Page-level then Table-level'
Print '   Lockflag = 2 ==> Lock at Row-level then Table-level'
Print '   Lockflag = 3 ==> Lock at Table-level'
Print ' '

SELECT   name,lockflags
FROM     sysindexes
WHERE    object_id('warehouse')             = id OR
         object_id('district')      = id OR
         object_id('customer')      = id OR
         object_id('stock')         = id OR
         object_id('orders')        = id OR
         object_id('order_line')    = id OR
         object_id('history')       = id OR
         object_id('new_order')             = id OR
         object_id('item')          = id
ORDER    BY lockflags asc
GO

sp_configure 'allow updates',0
GO

RECONFIGURE WITH OVERRIDE
GO

EXEC sp_dboption tpcc,          'auto update statistics',FALSE
EXEC sp_dboption tpcc,          'auto create statistics', FALSE
GO

EXEC sp_tableoption 'district',    'pintable',true
EXEC sp_tableoption 'warehouse',            'pintable',true
EXEC sp_tableoption 'new_order',            'pintable',true
EXEC sp_tableoption 'item',                 'pintable',true
GO
```

idxcuscl.sql

```
-- File:    IDXCUSCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates clustered index on customer table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where name = 'customer_c1' )
            drop index customer.customer_c1

create unique clustered index customer_c1 on customer(c_w_id, c_d_id, c_id)
            on MSSQL_cs_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

idxcusnc.sql

```
-- File:    IDXCUSNC.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates non-clustered index on customer table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where  name = 'customer_nc1' )
```

```
            drop index customer.customer_nc1

create unique nonclustered index customer_nc1 on customer(c_w_id, c_d_id,
c_last, c_first, c_id)
            on MSSQL_cs_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

idxdiscl.sql

```
-- File:    IDXDISCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates clustered index on district table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where name = 'district_c1' )
            drop index district.district_c1

create unique clustered index  district_c1 on district(d_w_id, d_id)
            with fillfactor=100 on MSSQL_misc_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

idxhiscl.sql

```
-- File:    IDXHISCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates clustered index on history table
--
-- CAUTION:  ****************************************
-- CAUTION:  This index is only beneficial for systems
-- CAUTION:  with 8 or more processors.
-- CAUTION:  It may negatively impact performance on
-- CAUTION:  on systems with less than 8 processors.
-- CAUTION:  ****************************************


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where  name = 'history_c1' )
            drop index history.history_c1

create unique clustered index history_c1 on history(h_c_w_id, h_date,
h_c_d_id, h_c_id, h_amount)
            on MSSQL_misc_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

idxitmcl.sql

```
-- File:    IDXITMCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates clustered index on item table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where  name = 'item_c1' )
            drop index item.item_c1

create unique clustered index item_c1 on item(i_id)
            on MSSQL_misc_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

idxnodcl.sql

```
-- File:    IDXNODCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates clustered index on new_order table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where  name = 'new_order_c1' )
            drop index new_order.new_order_c1

create unique clustered index new_order_c1 on new_order(no_w_id, no_d_id,
no_o_id)
            on MSSQL_misc_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)
```

```
go
```

idxodlcl.sql

```
-- File:    IDXODLCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates clustered index on order_line table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where  name = 'order_line_c1' )
              drop index order_line.order_line_c1

create unique clustered index order_line_c1 on order_line(ol_w_id, ol_d_id,
ol_o_id, ol_number)
              on MSSQL_misc_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

idxordcl.sql

```
-- File:    IDXORDCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates clustered index on orders table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where  name = 'orders_c1' )
              drop index orders.orders_c1

create unique clustered index orders_c1 on orders(o_w_id, o_d_id, o_id)
              on MSSQL_misc_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

idxordnc.sql

```
-- File:    IDXORDNC.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates non-clustered index on orders table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where  name = 'orders_nc1' )
              drop index orders.orders_nc1

create index orders_nc1 on orders(o_w_id, o_d_id, o_c_id, o_id)
              on MSSQL_misc_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

idxstkcl.sql

```
-- File:    IDXSTKCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates clustered index on stock table


use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where  name = 'stock_c1' )
              drop index stock.stock_c1

create unique clustered index stock_c1 on stock(s_i_id, s_w_id)
              on MSSQL_cs_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

idxwarcl.sql

```
-- File:    IDXWARCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Creates clustered index on warehouse table


use tpcc
go

declare @startdate datetime
```

```
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where name = 'warehouse_c1' )
        drop index warehouse.warehouse_c1

create unique clustered index warehouse_c1 on warehouse(w_id)
        with fillfactor=100 on MSSQL_misc_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

RunSQLcfg.sql

```
-- File:    RUNSQLCFG.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  This script file is used to set runtime server configuration
parameters
--

exec sp_configure "show advanced option", 1
go

reconfigure with override
go

/* change this value to approximately the number of connected users */
exec sp_configure "max worker threads",255

/* increase priority of user threads */
exec sp_configure "priority boost",1

/* disable automatic checkpointing */
exec sp_configure "recovery interval",32767

/* change to a mask appropriate for the number of processors on the server */
exec sp_configure "affinity mask",0xf

/* enable fibers */
exec sp_configure "lightweight pooling",1

go

reconfigure with override
go
```

sqlshutdown.sql

```
-- File:    SQLSHUTDOWN.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41

--          Copyright Microsoft, 2001
-- Purpose:  Checkpoints tpcc database and issues a shutdown
--

use tpcc
go
checkpoint
go
shutdown
go
```

Tables.sql

```
-- File:    TABLES.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.42
--          Copyright Microsoft, 2002
-- Purpose:  Creates TPC-C tables

SET ANSI_NULL_DFLT_OFF ON
go

use tpcc
go

--
-- Remove all existing TPC-C tables
--

if exists ( select name from sysobjects where name = 'warehouse' )
        drop table warehouse
go
if exists ( select name from sysobjects where name = 'district' )
        drop table district
go
if exists ( select name from sysobjects where name = 'customer' )
        drop table customer
go
if exists ( select name from sysobjects where name = 'history' )
        drop table history
go
if exists ( select name from sysobjects where name = 'new_order' )
        drop table new_order
go
if exists ( select name from sysobjects where name = 'orders' )
        drop table orders
go
if exists ( select name from sysobjects where name = 'order_line' )
        drop table order_line
go
if exists ( select name from sysobjects where name = 'item' )
        drop table item
go
if exists ( select name from sysobjects where name = 'stock' )
        drop table stock
go

--
-- Create new tables
--

create table warehouse
(
        w_id                    int,
        w_name                  char(10),
        w_street_1              char(20),
        w_street_2              char(20),
        w_city                  char(20),
        w_state                 char(2),
        w_zip                   char(9),
        w_tax                   numeric(4,4),
        w_ytd                   numeric(12,2)
) on MSSQL_misc_fg
go

create table district
(
```

```
        d_id                    tinyint,
        d_w_id                  int,
        d_name                  char(10),
        d_street_1      char(20),
        d_street_2      char(20),
        d_city                  char(20),
        d_state                 char(2),
        d_zip                   char(9),
        d_tax                   numeric(4,4),
        d_ytd                   numeric(12,2),
        d_next_o_id             int
) on MSSQL_misc_fg
go

create table customer
(
        c_id                    int,
        c_d_id                  tinyint,
        c_w_id                  int,
        c_first                 char(16),
        c_middle        char(2),
        c_last                  char(16),
        c_street_1      char(20),
        c_street_2      char(20),
        c_city                  char(20),
        c_state                 char(2),
        c_zip                   char(9),
        c_phone                 char(16),
        c_since                 datetime,
        c_credit        char(2),
        c_credit_lim            numeric(12,2),
        c_discount      numeric(4,4),
        c_balance       numeric(12,2),
        c_ytd_payment           numeric(12,2),
        c_payment_cnt           smallint,
        c_delivery_cnt          smallint,
        c_data                  char(500)
) on MSSQL_cs_fg
go

create table history
(
        h_c_id                  int,
        h_c_d_id        tinyint,
        h_c_w_id        int,
        h_d_id                  tinyint,
        h_w_id                  int,
        h_date                  datetime,
        h_amount        numeric(6,2),
        h_data                  char(24)
) on MSSQL_misc_fg
go

create table new_order
(
        no_o_id                 int,
        no_d_id                 tinyint,
        no_w_id                 int
) on MSSQL_misc_fg
go

create table orders
(
        o_id                    int,
        o_d_id                  tinyint,
        o_w_id                  int,
        o_c_id                  int,
        o_entry_d       datetime,
        o_carrier_id            tinyint,
        o_ol_cnt        tinyint,
        o_all_local     tinyint
) on MSSQL_misc_fg
go

create table order_line
(
        ol_o_id                 int,
        ol_d_id                 tinyint,
        ol_w_id                 int,
        ol_number       tinyint,
        ol_i_id                 int,
        ol_supply_w_id          int,
        ol_delivery_d           datetime,
        ol_quantity             smallint,
        ol_amount       numeric(6,2),
        ol_dist_info            char(24)
) on MSSQL_misc_fg
go

create table item
(
        i_id                    int,
        i_im_id                 int,
        i_name                  char(24),
        i_price                 numeric(5,2),
        i_data                  char(50)
) on MSSQL_misc_fg
go

create table stock
(
        s_i_id                  int,
        s_w_id                  int,
        s_quantity      smallint,
        s_dist_01       char(24),
        s_dist_02       char(24),
        s_dist_03       char(24),
        s_dist_04       char(24),
        s_dist_05       char(24),
        s_dist_06       char(24),
        s_dist_07       char(24),
        s_dist_08       char(24),
        s_dist_09       char(24),
        s_dist_10       char(24),
        s_ytd                   int,
        s_order_cnt             smallint,
        s_remote_cnt            smallint,
        s_data                  char(50)
) on MSSQL_cs_fg
Go
```

Load Source Code

getargs.c

```
//      File:           GETARGS.C
//                              Microsoft TPC-C Kit Ver. 4.41
//                              Copyright Microsoft, 1996, 1997,
1998, 1999, 2000, 2001
//      Purpose:  Source file for command line processing


// Includes
#include "tpcc.h"
```

```
//==============================================================
==============
//
// Function name: GetArgsLoader
//
//==============================================================
==============

void GetArgsLoader(int argc, char **argv, TPCCLDR_ARGS *pargs)
{
   int                  i;
   char      *ptr;

#ifdef DEBUG
   printf("[%ld]DBG: Entering GetArgsLoader()\n", (int)
GetCurrentThreadId());
#endif

   /* init args struct with some useful values */
   pargs->server                = SERVER;
   pargs->user                  = USER;
   pargs->password                      = PASSWORD;
   pargs->database                      = DATABASE;
   pargs->batch                 = BATCH;
   pargs->num_warehouses                = UNDEF;
            pargs->tables_all                           = TRUE;
            pargs->table_item                           = FALSE;
            pargs->table_warehouse                      = FALSE;
            pargs->table_customer                       = FALSE;
            pargs->table_orders                         = FALSE;
            pargs->loader_res_file                      =
LOADER_RES_FILE;
            pargs->log_path                                     =
LOG_PATH;
            pargs->pack_size            = DEFLDPACKSIZE;
            pargs->starting_warehouse   =
DEF_STARTING_WAREHOUSE;
            pargs->build_index                          = BUILD_INDEX;
            pargs->index_order                          = INDEX_ORDER;
            pargs->index_script_path    = INDEX_SCRIPT_PATH;
            pargs->scale_down                           = SCALE_DOWN;

   /* check for zero command line args */
   if ( argc == 1 )
                        GetArgsLoaderUsage();

   for (i = 1; i < argc; ++i)
   {
                        if (argv[i][0] != '-' && argv[i][0] != '/')
                        {
                        printf("\nUnrecognized command");
                        GetArgsLoaderUsage();
                        exit(1);
                        }

                        ptr = argv[i];

                        switch (ptr[1])
                        {
                        case '?':    /* Fall throught */
                                    GetArgsLoaderUsage();
                                    break;

                        case 'D':
                                    pargs->database = ptr+2;
                                    break;

                        case 'P':
                                    pargs->password = ptr+2;
                                    break;

                        case 'S':
                                    pargs->server = ptr+2;
                                    break;

                        case 'U':
                                    pargs->user = ptr+2;
                                    break;

                        case 'b':
                                    pargs->batch = atol(ptr+2);
                                    break;

                        case 'W':
                                    pargs->num_warehouses =
atol(ptr+2);
                                    break;

                        case 's':
                                    pargs->starting_warehouse =
atol(ptr+2);
                                    break;

                        case 't':
                                    {
                                                pargs->tables_all =
FALSE;
                                                if (strcmp(ptr+2,"item")
== 0)

pargs->table_item = TRUE;
                                                else if
(strcmp(ptr+2,"warehouse") == 0)

pargs->table_warehouse = TRUE;
                                                else if
(strcmp(ptr+2,"customer") == 0)

pargs->table_customer = TRUE;
                                                else if
(strcmp(ptr+2,"orders") == 0)

pargs->table_orders = TRUE;
                                                else
                                                {
                                                printf("\nUnrecognized
command");
                                                GetArgsLoaderUsage();
                                                exit(1);
                                                }

                                                break;
                                    }
                        case 'f':
                                    pargs->loader_res_file = ptr+2;
                                    break;
                        case 'L':
                                    pargs->log_path = ptr+2;
                                    break;
                        case 'p':
                                    pargs->pack_size = atol(ptr+2);
                                    break;
```

```
                        case 'i':
                                pargs->build_index = atol(ptr+2);
                                break;

                        case 'o':
                                pargs->index_order = atol(ptr+2);
                                break;

                        case 'c':
                                pargs->scale_down = atol(ptr+2);
                                break;

                case 'd':
                                pargs->index_script_path = ptr+2;
                                break;

                        default:
                        GetArgsLoaderUsage();
                        exit(-1);
                        break;
                }
  }

  /* check for required args */
  if (pargs->num_warehouses == UNDEF )
  {
                printf("Number of Warehouses is required\n");
                exit(-2);
  }

  return;
}


//=========================================================
===============
//
// Function name: GetArgsLoaderUsage
//
//=========================================================
===============

void GetArgsLoaderUsage()
{

#ifdef DEBUG
  printf("[%ld]DBG: Entering GetArgsLoaderUsage()\n", (int)
GetCurrentThreadId());
#endif


  printf("TPCCLDR:\n\n");
        printf("Parameter                                Default\n");
        printf("-----------------------------------------------------------\n");
  printf("-W Number of Warehouses to Load                  Required \n");
  printf("-S Server                                %s\n", SERVER);
  printf("-U Username                              %s\n", USER);
  printf("-P Password                              %s\n", PASSWORD);
  printf("-D Database                              %s\n", DATABASE);
        printf("-b Batch Size                            %ld\n", (long)
BATCH);
        printf("-p TDS packet size                       %ld\n", (long)
DEFLDPACKSIZE);
        printf("-f Loader Results Output Filename            %s\n",
LOADER_RES_FILE);
        printf("-s Starting Warehouse                    %ld\n", (long)
DEF_STARTING_WAREHOUSE);
        printf("-i Build Option (data = 0, data and index = 1)      %ld\n",
(long) BUILD_INDEX);
        printf("-o Cluster Index Build Order (before = 1, after = 0)  %ld\n",
(long) INDEX_ORDER);
        printf("-c Build Scaled Database (normal = 0, tiny = 1)      %ld\n",
(long) SCALE_DOWN);
        printf("-d Index Script Path                        %s\n",
INDEX_SCRIPT_PATH);
        printf("-t Table to Load                            all tables \n");
  printf("   [item|warehouse|customer|orders]\n");
  printf("   Notes: \n");
  printf("     - the '-t' parameter may be included multiple times to \n");
  printf("       specify multiple tables to be loaded \n");
  printf("     - 'item' loads ITEM table \n");
  printf("     - 'warehouse' loads WAREHOUSE, DISTRICT, and STOCK
tables \n");
  printf("     - 'customer' loads CUSTOMER and HISTORY tables \n");
  printf("     - 'orders' load NEW-ORDER, ORDERS, ORDER-LINE tables
\n");

        printf("\nNote:  Command line switches are case sensitive.\n");

  exit(0);
}
```

random.c

```
//          File:                   RANDOM.C
//                                          Microsoft TPC-C Kit Ver. 4.41
//                                          Copyright Microsoft, 1996, 1997,
1998, 1999, 2000, 2001
//          Purpose:    Random number generation routines for database loader


// Includes
#include "tpcc.h"
#include "math.h"

// Defines
#define A          16807
#define M      2147483647
#define Q         127773     /* M div A */
#define R           2836     /* M mod A */
#define Thread          __declspec(thread)

// Globals
long        Thread Seed = 0;      /* thread local seed */

/*************************************************************
***************
*                                                   *
* random -                                          *
*     Implements a GOOD pseudo random number generator.  This generator
*
*     will/should? run the complete period before repeating.          *
*                                                   *
* Copied from:                                      *
*     Random Numbers Generators: Good Ones Are Hard to Find.          *
*     Communications of the ACM - October 1988 Volume 31 Number 10
*
*                                                   *
* Machine Dependencies:                             *
*     long must be 2 ^ 31 - 1 or greater.             *
*                                                   *
*************************************************************
**************/
```

```
/*************************************************************************
**************
* seed - load the Seed value used in irand and drand.  Should be used before  *
*       first call to irand or drand.                                   *
*************************************************************************
*************/

void seed(long val)
{

#ifdef DEBUG
   printf("[%ld]DBG: Entering seed()...\n", (int) GetCurrentThreadId());
            printf("Old Seed %ld New Seed %ld\n",Seed, val);
#endif

   if ( val < 0 )
                val = abs(val);

   Seed = val;

}


/*************************************************************************
*************
*                                                                       *
* irand - returns a 32 bit integer pseudo random number with a period of     *
*       1 to 2 ^ 32 - 1.                                                *
*                                                                       *
* parameters:                                                           *
*       none.                                                           *
*                                                                       *
* returns:                                                              *
*       32 bit integer - defined as long ( see above ).                 *
*                                                                       *
* side effects:                                                         *
*       seed get recomputed.                                            *
*************************************************************************
*************/

long irand()
{
   register long    s;     /* copy of seed */
   register long    test;  /* test flag */
   register long    hi;    /* tmp value for speed */
   register long    lo;    /* tmp value for speed */

#ifdef DEBUG
   printf("[%ld]DBG: Entering irand()...\n", (int) GetCurrentThreadId());
#endif

   s = Seed;
   hi = s / Q;
   lo = s % Q;

   test = A * lo - R * hi;
   if ( test > 0 )
                        Seed = test;
   else
                        Seed = test + M;

   return( Seed );
}


/*************************************************************************
*************
*                                                                       *
* drand - returns a double pseudo random number between 0.0 and 1.0.        *
*       See irand.                                                      *
*************************************************************************
************/
double drand()
{

#ifdef DEBUG
   printf("[%ld]DBG: Entering drand()...\n", (int) GetCurrentThreadId());
#endif

   return( (double)irand() / 2147483647.0);
}


//=======================================================================
===============
// Function   : RandomNumber
//
// Description:
//=======================================================================
===============
long RandomNumber(long lower, long upper)
{
   long rand_num;

#ifdef DEBUG
   printf("[%ld]DBG: Entering RandomNumber()...\n", (int)
GetCurrentThreadId());
#endif

                if ( upper == lower )   /* pgd 08-13-96 perf enhancement */
                        return lower;

                upper++;

   if ( upper <= lower )
                        rand_num = upper;
   else
                        rand_num = lower + irand() % (upper - lower); /* pgd
08-13-96 perf enhancement */


#ifdef DEBUG
   printf("[%ld]DBG: RandomNumber between %ld & %ld ==> %ld\n",
                                                (int) GetCurrentThreadId(), lower,
upper, rand_num);
#endif


   return rand_num;
}


#if 0

//Orginal code pgd 08/13/96

long RandomNumber(long lower,
                                                        long upper)
{
   long rand_num;

#ifdef DEBUG
   printf("[%ld]DBG: Entering RandomNumber()...\n", (int)
GetCurrentThreadId());
#endif
```

```
        upper++;

   if ((upper <= lower))
                rand_num = upper;
   else
                rand_num = lower + irand() % ((upper > lower) ? upper -
lower : upper);


#ifdef DEBUG
   printf("[%ld]DBG: RandomNumber between %ld & %ld ==> %ld\n",
                                        (int) GetCurrentThreadId(), lower,
upper, rand_num);
#endif


   return rand_num;
}
#endif

//==============================================================
===============
// Function   : NURand
//
// Description:
//==============================================================
===============
long NURand(int iConst,
            long x,
            long y,
            long C)
{
   long rand_num;

#ifdef DEBUG
   printf("[%ld]DBG: Entering NURand()...\n", (int) GetCurrentThreadId());
#endif

   rand_num = (((RandomNumber(0,iConst) | RandomNumber(x,y)) + C) %
(y-x+1))+x;

#ifdef DEBUG
   printf("[%ld]DBG: NURand: num = %d\n", (int) GetCurrentThreadId(),
rand_num);
#endif

   return rand_num;
}
```

strings.c

```
//          File:               STRINGS.C
//                                      Microsoft TPC-C Kit Ver. 4.41
//                                      Copyright Microsoft, 1996, 1997,
1998, 1999, 2000, 2001
//          Purpose:    Source file for database loader string functions


// Includes
#include "tpcc.h"
#include <string.h>
#include <ctype.h>

//==============================================================
===============
//
// Function name: MakeAddress
//
//==============================================================
===============

void MakeAddress(char *street_1,
                                        char *street_2,
                                        char *city,
                                        char *state,
                                        char *zip)
{

#ifdef DEBUG
   printf("[%ld]DBG: Entering MakeAddress()\n", (int) GetCurrentThreadId());
#endif

   MakeAlphaString (10, 20, ADDRESS_LEN, street_1);
   MakeAlphaString (10, 20, ADDRESS_LEN, street_2);
   MakeAlphaString (10, 20, ADDRESS_LEN, city);
   MakeAlphaString ( 2,  2, STATE_LEN, state);
   MakeZipNumberString( 9,  9, ZIP_LEN, zip);

#ifdef DEBUG
   printf("[%ld]DBG: MakeAddress: street_1: %s, street_2: %s, city: %s, state:
%s, zip: %s\n",
                                (int) GetCurrentThreadId(), street_1, street_2,
city, state, zip);
#endif

   return;

}


//==============================================================
===============
//
// Function name: LastName
//
//==============================================================
===============

void LastName(int  num,
                        char *name)
{
   static char *n[] =
   {
                "BAR" , "OUGHT", "ABLE" , "PRI"  , "PRES",
                "ESE" , "ANTI" , "CALLY", "ATION", "EING"
   };

#ifdef DEBUG
   printf("[%ld]DBG: Entering LastName()\n", (int) GetCurrentThreadId());
#endif

   if ((num >= 0) && (num < 1000))
   {
                strcpy(name, n[(num/100)%10]);
                strcat(name, n[(num/10)%10]);
                strcat(name, n[(num/1)%10]);

                if (strlen(name) < LAST_NAME_LEN)
                {
                        PaddString(LAST_NAME_LEN, name);
                }

   }
   else
   {
```

```
                printf("\nError in LastName()... num <%ld> out of range
(0,999)\n", num);
                exit(-1);
    }


#ifdef DEBUG
    printf("[%ld]DBG: LastName: num = [%d] ==> [%d][%d][%d]\n",
                                (int) GetCurrentThreadId(), num, num/100,
(num/10)%10, num%10);
        printf("[%ld]DBG: LastName: String = %s\n", (int)
GetCurrentThreadId(), name);
#endif

    return;

}


//=================================================================
===============
//
// Function name: MakeAlphaString
//
//=================================================================
===============

//philipdu 08/13/96 Changed MakeAlphaString to use A-Z, a-z, and 0-9 in
//accordance with spec see below:
//The spec says:
//4.3.2.2    The notation random a-string [x .. y]
//(respectively, n-string [x .. y]) represents a string of random alphanumeric
//(respectively, numeric) characters of a random length of minimum x,
maximum y,
//and mean (y+x)/2. Alphanumerics are A..Z, a..z, and 0..9.  The only other
//requirement is that the character set used "must be able to represent a
minimum
//of 128 different characters".  We are using 8-bit chars, so this is a non issue.
//It is completely unreasonable to stuff non-printing chars into the text fields.
//-CLevine 08/13/96

int MakeAlphaString( int  x, int  y, int  z, char *str)
{
        int             len;
        int             i;
    char    cc = 'a';
        static  char chArray[] =
"0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstu
vwxyz";
        static  int     chArrayMax = 61;

#ifdef DEBUG
    printf("[%ld]DBG: Entering MakeAlphaString()\n", (int)
GetCurrentThreadId());
#endif

        len= RandomNumber(x, y);

        for (i=0; i<len; i++)
        {
                cc = chArray[RandomNumber(0, chArrayMax)];
      str[i] = cc;
    }
        //if ( len < z )
        //      memset(str+len, ' ', z - len);
        str[len] = 0;

    return len;
}


//=================================================================
===============
//
// Function name: MakeOriginalAlphaString
//
//=================================================================
===============

int MakeOriginalAlphaString(int  x,
                                                                int  y,

int  z,
                                                                char *str,
                                                            int  percent)
{
    int             len;
    int             val;
    int             start;

#ifdef DEBUG
    printf("[%ld]DBG: Entering MakeOriginalAlphaString()\n", (int)
GetCurrentThreadId());
#endif

    // verify prercentage is valid
    if ((percent < 0) || (percent > 100))
    {
                printf("MakeOrigianlAlphaString: Invalid percentage:
%d\n", percent);
                exit(-1);
    }

    // verify string is at least 8 chars in length
    if ((x + y) <= 8)
    {
                printf("MakeOriginalAlphaString: string length must be
>= 8\n");
                exit(-1);
    }

    // Make Alpha String
    len = MakeAlphaString(x,y, z, str);

    val = RandomNumber(1,100);
    if (val <= percent)
    {
                start = RandomNumber(0, len - 8);
                strncpy(str + start, "ORIGINAL", 8);
    }


#ifdef DEBUG
    printf("[%ld]DBG: MakeOriginalAlphaString: : %s\n",
                        (int) GetCurrentThreadId(), str);
#endif

    return strlen(str);
}


//=================================================================
===============
//
// Function name: MakeNumberString
//
```

```
//==========================================================
==============
int MakeNumberString(int  x, int  y, int  z, char *str)
{
        char tmp[16];

        //MakeNumberString is always called MakeZipNumberString(16,
16, 16, string)

        memset(str, '0', 16);
        itoa(RandomNumber(0, 99999999), tmp, 10);
        memcpy(str, tmp, strlen(tmp));

        itoa(RandomNumber(0, 99999999), tmp, 10);
        memcpy(str+8, tmp, strlen(tmp));

        str[16] = 0;

   return 16;
}


//==========================================================
==============
//
// Function name: MakeZipNumberString
//
//==========================================================
==============
int MakeZipNumberString(int  x, int  y, int  z, char *str)
{
        char tmp[16];

        //MakeZipNumberString is always called MakeZipNumberString(9,
9, 9, string)

        strcpy(str, "000011111");

        itoa(RandomNumber(0, 9999), tmp, 10);
        memcpy(str, tmp, strlen(tmp));

   return 9;
}


//==========================================================
==============
//
// Function name: InitString
//
//==========================================================
==============
void InitString(char *str, int len)
{
#ifdef DEBUG
   printf("[%ld]DBG: Entering InitString()\n", (int) GetCurrentThreadId());
#endif

        memset(str, ' ', len);
   str[len] = 0;
}


//==========================================================
==============
// Function name: InitAddress
//
// Description:
//
//==========================================================
==============

void InitAddress(char *street_1, char *street_2, char *city, char *state, char
*zip)
{
        memset(street_1, ' ', ADDRESS_LEN+1);
        memset(street_2, ' ', ADDRESS_LEN+1);
        memset(city, ' ', ADDRESS_LEN+1);

   street_1[ADDRESS_LEN+1] = 0;
   street_2[ADDRESS_LEN+1] = 0;
   city[ADDRESS_LEN+1]     = 0;

        memset(state, ' ', STATE_LEN+1);
   state[STATE_LEN+1] = 0;

        memset(zip, ' ', ZIP_LEN+1);
   zip[ZIP_LEN+1] = 0;
}


//==========================================================
==============
//
// Function name: PaddString
//
//==========================================================
==============

void PaddString(int max, char *name)
{
        int             len;

        len = strlen(name);
        if ( len < max )
                memset(name+len, ' ', max - len);
        name[max] = 0;

        return;
}
```

time.c

```
//      File:           TIME.C
//                                      Microsoft TPC-C Kit Ver. 4.41
//                                      Copyright Microsoft, 1996, 1997,
1998, 1999, 2000, 2001
//      Purpose:    Source file for time functions


// Includes
#include "tpcc.h"

// Globals
static long start_sec;


//==========================================================
==============
//
// Function name: TimeNow
//
//==========================================================
==============
```

```
long TimeNow()
{
  long                  time_now;
  struct    _timeb el_time;

#ifdef DEBUG
   printf("[%ld]DBG: Entering TimeNow()\n", (int) GetCurrentThreadId());
#endif

  _ftime(&el_time);

  time_now = ((el_time.time - start_sec) * 1000) + el_time.millitm;

  return time_now;
}
```

tpcc.h

```
//          File:               TPCC.H
//                                      Microsoft TPC-C Kit Ver. 4.41
//                                      Copyright Microsoft, 1996, 1997,
1998, 1999, 2000, 2001
//          Purpose:    Header file for TPC-C database loader


// Build number of TPC Benchmark Kit
#define TPCKIT_VER          "4.41"

// General headers
#include <windows.h>
#include <winbase.h>
#include <stdlib.h>
#include <stdio.h>
#include <process.h>
#include <stddef.h>
#include <stdarg.h>
#include <string.h>
#include <time.h>
#include <sys\timeb.h>
#include <sys\types.h>

// ODBC headers
#include <sql.h>
#include <sqlext.h>
#include <odbcss.h>

// General constants
#define MILLI               1000
#define FALSE                       0
#define TRUE                1
#define UNDEF                               -1
#define MINPRINTASCII                32
#define MAXPRINTASCII                126

// Default environment constants
#define SERVER                      ""
#define DATABASE                    "tpcc"
#define USER                "sa"
#define PASSWORD                 ""

// Default loader arguments
#define BATCH               10000
#define DEFLDPACKSIZE               32768
#define LOADER_RES_FILE
"C:\\MSTPCC.440\\SETUP\\logs\\load.out"
#define LOG_PATH            "C:\\MSTPCC.440\\SETUP\\LOGS\\";
#define LOADER_NURAND_C              123
#define DEF_STARTING_WAREHOUSE       1
#define BUILD_INDEX                                 1
// build both data and indexes
#define INDEX_ORDER                                 1
// build indexes before load
#define SCALE_DOWN                                  0
  // build a normal scale database
#define INDEX_SCRIPT_PATH "scripts"

typedef struct
{
   char                     *server;
   char                     *database;
   char                     *user;
   char                     *password;
        BOOL                        tables_all;
// set if loading all tables
        BOOL                        table_item;
// set if loading ITEM table specifically
        BOOL                        table_warehouse;    //
set if loading WAREHOUSE, DISTRICT, and STOCK
        BOOL                        table_customer;
// set if loading CUSTOMER and HISTORY
        BOOL                        table_orders;
// set if loading NEW-ORDER, ORDERS, ORDER-LINE
   long                     num_warehouses;
   long                     batch;
   long                     verbose;
        long                        pack_size;
        char                        *loader_res_file;
        char                        *log_path;
        char                        *synch_servername;
        long                        case_sensitivity;
        long                        starting_warehouse;
        long                        build_index;
        long                        index_order;
        long                        scale_down;
        char                        *index_script_path;
} TPCCLDR_ARGS;

// String length constants
        #define SERVER_NAME_LEN          20
        #define DATABASE_NAME_LEN        20
        #define USER_NAME_LEN            20
        #define PASSWORD_LEN             20
        #define TABLE_NAME_LEN           20
        #define I_DATA_LEN               50
        #define I_NAME_LEN               24
        #define BRAND_LEN                1
        #define LAST_NAME_LEN            16
        #define W_NAME_LEN               10
        #define ADDRESS_LEN              20
        #define STATE_LEN                2
        #define ZIP_LEN                  9
        #define S_DIST_LEN               24
        #define S_DATA_LEN               50
        #define D_NAME_LEN               10
        #define FIRST_NAME_LEN           16
        #define MIDDLE_NAME_LEN          2
        #define PHONE_LEN                16
        #define CREDIT_LEN               2
        #define C_DATA_LEN               500
        #define H_DATA_LEN               24
        #define DIST_INFO_LEN            24
        #define MAX_OL_NEW_ORDER_ITEMS   15
        #define MAX_OL_ORDER_STATUS_ITEMS 15
        #define STATUS_LEN               25
        #define OL_DIST_INFO_LEN                    24
```

```
        #define C_SINCE_LEN
23
        #define H_DATE_LEN
23
        #define OL_DELIVERY_D_LEN                23
        #define O_ENTRY_D_LEN           23


// Functions in random.c
void    seed();
long    irand();
double  drand();
void    WUCreate();
short   WURand();
long    RandomNumber(long lower, long upper);

// Functions in getargs.c;
void    GetArgsLoader();
void    GetArgsLoaderUsage();

// Functions in time.c
long    TimeNow();

// Functions in strings.c
void    MakeAddress();
void    LastName();
int     MakeAlphaString();
int     MakeOriginalAlphaString();
int     MakeNumberString();
int     MakeZipNumberString();
void    InitString();
void    InitAddress();
void    PaddString();
```

tpccldr.c

```
//      File:           TPCCLDR.C
//                              Microsoft TPC-C Kit Ver. 4.41
//                              Copyright Microsoft, 1996, 1997,
1998, 1999, 2000, 2001
//      Purpose:  Source file for TPC-C database loader


// Includes
#include "tpcc.h"
#include "search.h"

// Defines
#define MAXITEMS            100000
#define MAXITEMS_SCALE_DOWN                 100
#define CUSTOMERS_PER_DISTRICT  3000
#define CUSTOMERS_SCALE_DOWN    30
#define DISTRICT_PER_WAREHOUSE  10
#define ORDERS_PER_DISTRICT     3000
#define ORDERS_SCALE_DOWN       30
#define MAX_CUSTOMER_THREADS    2
#define MAX_ORDER_THREADS       3
#define MAX_MAIN_THREADS        4

// Functions declarations

void HandleErrorDBC (SQLHDBC  hdbc1);

void CheckDataBase();

long NURand();
void LoadItem();
void LoadWarehouse();

void Stock();
void District();

void LoadCustomer();
void CustomerBufInit();
void CustomerBufLoad();
void LoadCustomerTable();
void LoadHistoryTable();

void LoadOrders();
void OrdersBufInit();
void OrdersBufLoad();
void LoadOrdersTable();
void LoadNewOrderTable();
void LoadOrderLineTable();
void GetPermutation();
void CheckForCommit();
void OpenConnections();
void BuildIndex();
void FormatDate ();

// Shared memory structures

typedef struct
{
   long         ol;
   long         ol_i_id;
   short        ol_supply_w_id;
   short        ol_quantity;
   double        ol_amount;
   char         ol_dist_info[DIST_INFO_LEN+1];
            char
ol_delivery_d[OL_DELIVERY_D_LEN+1];
} ORDER_LINE_STRUCT;

typedef struct
{
   long         o_id;
   short        o_d_id;
   short        o_w_id;
   long         o_c_id;
   short        o_carrier_id;
   short        o_ol_cnt;
   short        o_all_local;
            ORDER_LINE_STRUCT   o_ol[15];
} ORDERS_STRUCT;

typedef struct
{
   long                                 c_id;
   short                                c_d_id;
   short                                c_w_id;
            char
c_first[FIRST_NAME_LEN+1];
   char
c_middle[MIDDLE_NAME_LEN+1];
   char                                 c_last[LAST_NAME_LEN+1];
   char                                 c_street_1[ADDRESS_LEN+1];
   char                                 c_street_2[ADDRESS_LEN+1];
   char                                 c_city[ADDRESS_LEN+1];
   char                                 c_state[STATE_LEN+1];
   char                                 c_zip[ZIP_LEN+1];
   char                                 c_phone[PHONE_LEN+1];
   char                                 c_credit[CREDIT_LEN+1];
   double                               c_credit_lim;
   double                               c_discount;
```

```
//  fix to avoid ODBC float to numeric conversion problem.
//  double                              c_balance;
            char                                c_balance[6];

   double                               c_ytd_payment;
            short                               c_payment_cnt;
            short                               c_delivery_cnt;
            char
c_data[C_DATA_LEN+1];
            double                              h_amount;
   char                                 h_data[H_DATA_LEN+1];
} CUSTOMER_STRUCT;

typedef struct
{
            char
c_last[LAST_NAME_LEN+1];
            char
c_first[FIRST_NAME_LEN+1];
   long                                 c_id;
} CUSTOMER_SORT_STRUCT;

typedef struct
{
   long             time_start;
} LOADER_TIME_STRUCT;


// Global variables

char        szLastError[300];

HENV        henv;

HDBC        v_hdbc;                                                 //
for SQL Server version verification
HDBC        i_hdbc1;                                                // for ITEM
table
HDBC        w_hdbc1;                                                // for
WAREHOUSE, DISTRICT, STOCK
HDBC        c_hdbc1;                                                // for
CUSTOMER
HDBC        c_hdbc2;                                                // for
HISTORY
HDBC        o_hdbc1;                                                // for
ORDERS
HDBC        o_hdbc2;                                                // for
NEW-ORDER
HDBC        o_hdbc3;                                                // for
ORDER-LINE

HSTMT       v_hstmt;                                                // for SQL
Server version verification
HSTMT       i_hstmt1;
HSTMT       w_hstmt1;
HSTMT       c_hstmt1, c_hstmt2;
HSTMT       o_hstmt1, o_hstmt2, o_hstmt3;

ORDERS_STRUCT   orders_buf[ORDERS_PER_DISTRICT];
CUSTOMER_STRUCT customer_buf[CUSTOMERS_PER_DISTRICT];
long        orders_rows_loaded;
long        new_order_rows_loaded;
long        order_line_rows_loaded;
long        history_rows_loaded;
long        customer_rows_loaded;
long        stock_rows_loaded;
long        district_rows_loaded;
long        item_rows_loaded;
long        warehouse_rows_loaded;
long        main_time_start;
long        main_time_end;
long                            max_items;
long                            customers_per_district;
long                            orders_per_district;
long                            first_new_order;
long                            last_new_order;

TPCCLDR_ARGS    *aptr, args;

//=============================================================
==============
//
// Function name: main
//
//=============================================================
==============

int main(int  argc, char **argv)
{

            DWORD       dwThreadID[MAX_MAIN_THREADS];
            HANDLE      hThread[MAX_MAIN_THREADS];
            FILE        *fLoader;
            char        buffer[255];
            int                                         i;

            for (i=0; i<MAX_MAIN_THREADS; i++)
                        hThread[i] = NULL;

   printf("\n*************************************************");
            printf("\n*                                       *");
            printf("\n*  Microsoft SQL Server                 *");
            printf("\n*                                       *");
            printf("\n*  TPC-C BENCHMARK KIT:  Database loader        *");
            printf("\n*  Version %s                            *", TPCKIT_VER);
            printf("\n*                                       *");

printf("\n*************************************************\n\n");

   // process command line arguments

   aptr = &args;
   GetArgsLoader(argc, argv, aptr);


            // verify database and tables exist before attempting to load
            //CheckDataBase();


            printf("Build interface is ODBC.\n");

            if (aptr->build_index == 0)
                        printf("Data load only - no index creation.\n");
            else
                        printf("Data load and index creation.\n");

            if (aptr->index_order == 0)
                        printf("Clustered indexes will be created after bulk
load.\n");
            else
                        printf("Clustered indexes will be created before bulk
load.\n");

            // set database scale values
            if (aptr->scale_down == 1)
            {
```

```
                        printf("*** Scaled Down Database ***\n");
                        max_items = MAXITEMS_SCALE_DOWN;
                        customers_per_district =
CUSTOMERS_SCALE_DOWN;
                        orders_per_district = ORDERS_SCALE_DOWN;
                        first_new_order = 0;
                        last_new_order  = 30;
                }
                else
                {
                        max_items = MAXITEMS;
                        customers_per_district =
CUSTOMERS_PER_DISTRICT;
                        orders_per_district = ORDERS_PER_DISTRICT;
                        first_new_order = 2100;
                        last_new_order  = 3000;
                }


                // open connections to SQL Server

                OpenConnections();

                // open file for loader results
                fLoader = fopen(aptr->loader_res_file, "w");



   if (fLoader == NULL)
                {
                        printf("Error, loader result file open failed.");
                        exit(-1);
                }

   // start loading data

   sprintf(buffer,"TPC-C load started for %ld
warehouses.\n",aptr->num_warehouses);

                printf("%s",buffer);
                fprintf(fLoader,"%s",buffer);

                main_time_start = (TimeNow() / MILLI);

                // start parallel load threads


                if (aptr->tables_all || aptr->table_item)
                {
                        fprintf(fLoader, "\nStarting loader threads for: item\n");

                        hThread[0] = CreateThread(NULL,

 0,

 (LPTHREAD_START_ROUTINE) LoadItem,

 NULL,

 0,

 &dwThreadID[0]);

                        if (hThread[0] == NULL)
                        {
                                printf("Error, failed in creating creating thread
= 0.\n");
                                exit(-1);
                        }
                }

                if (aptr->tables_all || aptr->table_warehouse)
                {
                        fprintf(fLoader, "Starting loader threads for:
warehouse\n");

                        hThread[1] = CreateThread(NULL,

 0,

 (LPTHREAD_START_ROUTINE) LoadWarehouse,

 NULL,

 0,

 &dwThreadID[1]);

                        if (hThread[1] == NULL)
                        {
                                printf("Error, failed in creating creating thread
= 1.\n");
                                exit(-1);
                        }
                }

                if (aptr->tables_all || aptr->table_customer)
                {
                        fprintf(fLoader, "Starting loader threads for:
customer\n");

                        hThread[2] = CreateThread(NULL,

 0,

 (LPTHREAD_START_ROUTINE) LoadCustomer,

 NULL,

 0,

 &dwThreadID[2]);

                        if (hThread[2] == NULL)
                        {
                                printf("Error, failed in creating creating main
thread = 2.\n");
                                exit(-1);
                        }
                }

                if (aptr->tables_all || aptr->table_orders)
                {
                        fprintf(fLoader, "Starting loader threads for: orders\n");

                        hThread[3] = CreateThread(NULL,

 0,

 (LPTHREAD_START_ROUTINE) LoadOrders,

 NULL,

 0,

 &dwThreadID[3]);
```

```
                        if (hThread[3] == NULL)
                        {
                                printf("Error, failed in creating creating main
thread = 3.\n");
                                exit(-1);
                        }
                }

                // Wait for threads to finish...
                for (i=0; i<MAX_MAIN_THREADS; i++)
                {
                        if (hThread[i] != NULL)
                        {
                                WaitForSingleObject( hThread[i], INFINITE
);
                                CloseHandle(hThread[i]);
                                hThread[i] = NULL;
                        }
                }

                main_time_end = (TimeNow() / MILLI);

   sprintf(buffer,"\nTPC-C load completed successfully in %ld minutes.\n",
                                (main_time_end - main_time_start)/60);

                printf("%s",buffer);
                fprintf(fLoader, "%s", buffer);

                fclose(fLoader);

                SQLFreeEnv(henv);

   exit(0);

                return 0;
}


//=============================================================
==============
//
// Function name: LoadItem
//
//=============================================================
==============

void LoadItem()
{
   long                 i_id;
                long                    i_im_id;
   char                 i_name[I_NAME_LEN+1];
   double               i_price;
   char                 i_data[I_DATA_LEN+1];
                char                    name[20];
                long                    time_start;
                RETCODE                         rc;
                DBINT                   rcint;
                char                    bcphint[128];
                char                    err_log_path[256];

                // Seed with unique number
                seed(1);

                printf("Loading item table...\n");

                // if build index before load
                if ((aptr->build_index == 1) && (aptr->index_order == 1))
                        BuildIndex("idxitmcl");

                InitString(i_name, I_NAME_LEN+1);
                InitString(i_data, I_DATA_LEN+1);

                sprintf(name, "%s..%s", aptr->database, "item");

                //rc = bcp_init(i_hdbc1, name, NULL, "logs\\item.err", DB_IN);
                strcpy(err_log_path,aptr->log_path);
                strcat(err_log_path,"item.err");
                rc = bcp_init(i_hdbc1, name, NULL, err_log_path , DB_IN);
                if (rc != SUCCEED)
                        HandleErrorDBC(i_hdbc1);

                if ((aptr->build_index == 1) && (aptr->index_order == 1))
                {
                        sprintf(bcphint, "tablock, order (i_id),
ROWS_PER_BATCH = 100000");
                        rc = bcp_control(i_hdbc1, BCPHINTS, (void*) bcphint);
                        if (rc != SUCCEED)
                                HandleErrorDBC(i_hdbc1);
                }

                rc = bcp_bind(i_hdbc1, (BYTE *) &i_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 1);
                if (rc != SUCCEED)
                        HandleErrorDBC(i_hdbc1);

                rc = bcp_bind(i_hdbc1, (BYTE *) &i_im_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, 2);
                if (rc != SUCCEED)
                        HandleErrorDBC(i_hdbc1);

                rc = bcp_bind(i_hdbc1, (BYTE *) i_name, 0, I_NAME_LEN,
NULL, 0, 0, 3);
                if (rc != SUCCEED)
                        HandleErrorDBC(i_hdbc1);

                rc = bcp_bind(i_hdbc1, (BYTE *) &i_price, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 4);
                if (rc != SUCCEED)
                        HandleErrorDBC(i_hdbc1);

                rc = bcp_bind(i_hdbc1, (BYTE *) i_data, 0, I_DATA_LEN, NULL,
0, 0, 5);
                if (rc != SUCCEED)
                        HandleErrorDBC(i_hdbc1);

                time_start = (TimeNow() / MILLI);

                item_rows_loaded = 0;

                for (i_id = 1; i_id <= max_items; i_id++)
                {
                        i_im_id = RandomNumber(1L, 10000L);

                        MakeAlphaString(14, 24, I_NAME_LEN, i_name);

                        i_price = ((float) RandomNumber(100L, 10000L))/100.0;

                        MakeOriginalAlphaString(26, 50, I_DATA_LEN, i_data,
10);

                        rc = bcp_sendrow(i_hdbc1);
                        if (rc != SUCCEED)
                                HandleErrorDBC(i_hdbc1);

                        item_rows_loaded++;
```

```
                        CheckForCommit(i_hdbc1, i_hstmt1, item_rows_loaded,
"item", &time_start);
                }

                rcint = bcp_done(i_hdbc1);
                if (rcint < 0)
                        HandleErrorDBC(i_hdbc1);

                printf("Finished loading item table.\n");

                SQLFreeStmt(i_hstmt1, SQL_DROP);
                SQLDisconnect(i_hdbc1);
                SQLFreeConnect(i_hdbc1);

                // if build index after load
                if ((aptr->build_index == 1) && (aptr->index_order == 0))
                        BuildIndex("idxitmcl");

}


//============================================================
====================
//
// Function   : LoadWarehouse
//
// Loads WAREHOUSE table and loads Stock and District as Warehouses are
created
//
//============================================================
====================

void LoadWarehouse()
{
   short    w_id;
   char     w_name[W_NAME_LEN+1];
   char     w_street_1[ADDRESS_LEN+1];
   char     w_street_2[ADDRESS_LEN+1];
   char     w_city[ADDRESS_LEN+1];
   char     w_state[STATE_LEN+1];
   char     w_zip[ZIP_LEN+1];
   double   w_tax;
   double   w_ytd;
                char            name[20];
                long            time_start;
                RETCODE                 rc;
                DBINT           rcint;
                char            bcphint[128];
                char            err_log_path[256];

                // Seed with unique number
                seed(2);

                printf("Loading warehouse table...\n");

                // if build index before load...
                if ((aptr->build_index == 1) && (aptr->index_order == 1))
                        BuildIndex("idxwarcl");

                InitString(w_name, W_NAME_LEN+1);
                InitAddress(w_street_1, w_street_2, w_city, w_state, w_zip);

                sprintf(name, "%s..%s", aptr->database, "warehouse");

                //rc = bcp_init(w_hdbc1, name, NULL, "logs\\whouse.err", DB_IN);

                strcpy(err_log_path,aptr->log_path);
                strcat(err_log_path,"whouse.err");
                rc = bcp_init(w_hdbc1, name, NULL, err_log_path, DB_IN);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                if ((aptr->build_index == 1) && (aptr->index_order == 1))
                {
                        sprintf(bcphint, "tablock, order (w_id),
ROWS_PER_BATCH = %d", aptr->num_warehouses);
                        rc = bcp_control(w_hdbc1, BCPHINTS, (void*)
bcphint);
                        if (rc != SUCCEED)
                                HandleErrorDBC(w_hdbc1);
                }

                rc = bcp_bind(w_hdbc1, (BYTE *) &w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 1);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                rc = bcp_bind(w_hdbc1, (BYTE *) w_name, 0, W_NAME_LEN,
NULL, 0, 0, 2);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                rc = bcp_bind(w_hdbc1, (BYTE *) w_street_1, 0, ADDRESS_LEN,
NULL, 0, 0, 3);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                rc = bcp_bind(w_hdbc1, (BYTE *) w_street_2, 0, ADDRESS_LEN,
NULL, 0, 0, 4);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                rc = bcp_bind(w_hdbc1, (BYTE *) w_city, 0, ADDRESS_LEN,
NULL, 0, 0, 5);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                rc = bcp_bind(w_hdbc1, (BYTE *) w_state, 0, STATE_LEN,
NULL, 0, 0, 6);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                rc = bcp_bind(w_hdbc1, (BYTE *) w_zip, 0, ZIP_LEN, NULL, 0, 0,
7);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                rc = bcp_bind(w_hdbc1, (BYTE *) &w_tax, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 8);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                rc = bcp_bind(w_hdbc1, (BYTE *) &w_ytd, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 9);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                time_start = (TimeNow() / MILLI);

                warehouse_rows_loaded = 0;

                for (w_id = (short)aptr->starting_warehouse; w_id <=
aptr->num_warehouses; w_id++)
                {
                        MakeAlphaString(6,10, W_NAME_LEN, w_name);
```

```
                        MakeAddress(w_street_1, w_street_2, w_city, w_state,
w_zip);

                        w_tax = ((float) RandomNumber(0L,2000L))/10000.00;

                        w_ytd = 300000.00;

                        rc = bcp_sendrow(w_hdbc1);
                        if (rc != SUCCEED)
                                HandleErrorDBC(w_hdbc1);

                        warehouse_rows_loaded++;
                        CheckForCommit(w_hdbc1, i_hstmt1,
warehouse_rows_loaded, "warehouse", &time_start);
                }

                rcint = bcp_done(w_hdbc1);
                if (rcint < 0)
                        HandleErrorDBC(w_hdbc1);

                printf("Finished loading warehouse table.\n");

                // if build index after load...
                if ((aptr->build_index == 1) && (aptr->index_order == 0))
                        BuildIndex("idxwarcl");

                stock_rows_loaded = 0;
                district_rows_loaded = 0;

                District();
                Stock();

}


//==============================================================
================
//
// Function   : District
//
//==============================================================
================

void District()
{
   short     d_id;
   short     d_w_id;
   char      d_name[D_NAME_LEN+1];
   char      d_street_1[ADDRESS_LEN+1];
   char      d_street_2[ADDRESS_LEN+1];
   char      d_city[ADDRESS_LEN+1];
   char      d_state[STATE_LEN+1];
   char      d_zip[ZIP_LEN+1];
   double    d_tax;
   double    d_ytd;
                char          name[20];
   long      d_next_o_id;
                long          time_start;
                int                     w_id;
                RETCODE                 rc;
                DBINT         rcint;
                char          bcphint[128];
                char          err_log_path[256];

                // Seed with unique number
                seed(4);

                printf("Loading district table...\n");

                // build index before load
                if ((aptr->build_index == 1) && (aptr->index_order == 1))
                        BuildIndex("idxdiscl");

                InitString(d_name, D_NAME_LEN+1);
                InitAddress(d_street_1, d_street_2, d_city, d_state, d_zip);
                sprintf(name, "%s..%s", aptr->database, "district");

                //rc = bcp_init(w_hdbc1, name, NULL, "logs\\district.err", DB_IN);
                strcpy(err_log_path,aptr->log_path);
                strcat(err_log_path,"district.err");
                rc = bcp_init(w_hdbc1, name, NULL, err_log_path, DB_IN);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                if ((aptr->build_index == 1) && (aptr->index_order == 1))
                {
                        sprintf(bcphint, "tablock, order (d_w_id, d_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 10));
                        rc = bcp_control(w_hdbc1, BCPHINTS, (void*)
bcphint);
                        if (rc != SUCCEED)
                                HandleErrorDBC(w_hdbc1);
                }

                rc = bcp_bind(w_hdbc1, (BYTE *) &d_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 1);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                rc = bcp_bind(w_hdbc1, (BYTE *) &d_w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 2);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                rc = bcp_bind(w_hdbc1, (BYTE *) d_name, 0, D_NAME_LEN,
NULL, 0, 0, 3);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                rc = bcp_bind(w_hdbc1, (BYTE *) d_street_1, 0, ADDRESS_LEN,
NULL, 0, 0, 4);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                rc = bcp_bind(w_hdbc1, (BYTE *) d_street_2, 0, ADDRESS_LEN,
NULL, 0, 0, 5);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                rc = bcp_bind(w_hdbc1, (BYTE *) d_city, 0, ADDRESS_LEN,
NULL, 0, 0, 6);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                rc = bcp_bind(w_hdbc1, (BYTE *) d_state, 0, STATE_LEN, NULL,
0, 0, 7);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                rc = bcp_bind(w_hdbc1, (BYTE *) d_zip, 0, ZIP_LEN, NULL, 0, 0,
8);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

                rc = bcp_bind(w_hdbc1, (BYTE *) &d_tax, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 9);
```

```
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);

        rc = bcp_bind(w_hdbc1, (BYTE *) &d_ytd, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 10);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);

        rc = bcp_bind(w_hdbc1, (BYTE *) &d_next_o_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, 11);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);

        d_ytd  = 30000.0;

        d_next_o_id = orders_per_district+1;

        time_start = (TimeNow() / MILLI);

        for (w_id = aptr->starting_warehouse; w_id <=
aptr->num_warehouses; w_id++)
        {
                d_w_id = w_id;

                for (d_id = 1; d_id <= DISTRICT_PER_WAREHOUSE;
d_id++)
                {
                        MakeAlphaString(6,10,D_NAME_LEN,
d_name);

                        MakeAddress(d_street_1, d_street_2, d_city,
d_state, d_zip);

                        d_tax = ((float)
RandomNumber(0L,2000L))/10000.00;

                        rc = bcp_sendrow(w_hdbc1);
                        if (rc != SUCCEED)
                                HandleErrorDBC(w_hdbc1);

                        district_rows_loaded++;
                        CheckForCommit(w_hdbc1, w_hstmt1,
district_rows_loaded, "district", &time_start);
                }
   }

        rcint = bcp_done(w_hdbc1);
        if (rcint < 0)
                HandleErrorDBC(w_hdbc1);

        printf("Finished loading district table.\n");

        // if build index after load...
        if ((aptr->build_index == 1) && (aptr->index_order == 0))
                BuildIndex("idxdiscl");

   return;
}


//==============================================================
==============
//
// Function   : Stock
//
//==============================================================
==============
void Stock()
{
   long     s_i_id;
   short    s_w_id;
   short    s_quantity;
   char     s_dist_01[S_DIST_LEN+1];
   char     s_dist_02[S_DIST_LEN+1];
   char     s_dist_03[S_DIST_LEN+1];
   char     s_dist_04[S_DIST_LEN+1];
   char     s_dist_05[S_DIST_LEN+1];
   char     s_dist_06[S_DIST_LEN+1];
   char     s_dist_07[S_DIST_LEN+1];
   char     s_dist_08[S_DIST_LEN+1];
   char     s_dist_09[S_DIST_LEN+1];
   char     s_dist_10[S_DIST_LEN+1];
   long     s_ytd;
   short    s_order_cnt;
   short    s_remote_cnt;
   char     s_data[S_DATA_LEN+1];
   short    len;
        char        name[20];
        long        time_start;
        RETCODE             rc;
        DBINT       rcint;
        char        bcphint[128];
        char        err_log_path[256];

        // Seed with unique number
        seed(3);

        // if build index before load...
        if ((aptr->build_index == 1) && (aptr->index_order == 1))
                BuildIndex("idxstkcl");

        sprintf(name, "%s..%s", aptr->database, "stock");

        //rc = bcp_init(w_hdbc1, name, NULL, "logs\\stock.err", DB_IN);
        strcpy(err_log_path,aptr->log_path);
        strcat(err_log_path,"stock.err");
        rc = bcp_init(w_hdbc1, name, NULL, err_log_path, DB_IN);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);

        if ((aptr->build_index == 1) && (aptr->index_order == 1))
        {
                sprintf(bcphint, "tablock, order (s_i_id, s_w_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 100000));
                rc = bcp_control(w_hdbc1, BCPHINTS, (void*)
bcphint);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);
        }

        rc = bcp_bind(w_hdbc1, (BYTE *) &s_i_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, 1);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);

        bcp_bind(w_hdbc1, (BYTE *) &s_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 2);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);

        rc = bcp_bind(w_hdbc1, (BYTE *) &s_quantity, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 3);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);
```

```
	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_01, 0, S_DIST_LEN,
NULL, 0, 0, 4);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_02, 0, S_DIST_LEN,
NULL, 0, 0, 5);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_03, 0, S_DIST_LEN,
NULL, 0, 0, 6);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_04, 0, S_DIST_LEN,
NULL, 0, 0, 7);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_05, 0, S_DIST_LEN,
NULL, 0, 0, 8);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_06, 0, S_DIST_LEN,
NULL, 0, 0, 9);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_07, 0, S_DIST_LEN,
NULL, 0, 0, 10);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_08, 0, S_DIST_LEN,
NULL, 0, 0, 11);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_09, 0, S_DIST_LEN,
NULL, 0, 0, 12);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_10, 0, S_DIST_LEN,
NULL, 0, 0, 13);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) &s_ytd, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, 14);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) &s_order_cnt, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 15);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) &s_remote_cnt, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 16);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_data, 0, S_DATA_LEN,
NULL, 0, 0, 17);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	s_ytd = s_order_cnt = s_remote_cnt = 0;

	time_start = (TimeNow() / MILLI);

	printf("...Loading stock table\n");

	for (s_i_id=1; s_i_id <= max_items; s_i_id++)
	{
		for (s_w_id = (short)aptr->starting_warehouse; s_w_id
<= aptr->num_warehouses; s_w_id++)
		{
			s_quantity =
(short)RandomNumber(10L,100L);
			len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_01);
			len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_02);
			len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_03);
			len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_04);
			len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_05);
			len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_06);
			len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_07);
			len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_08);
			len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_09);
			len = MakeAlphaString(24,24,S_DIST_LEN,
s_dist_10);

			len = MakeOriginalAlphaString(26,50,
S_DATA_LEN, s_data,10);

			rc = bcp_sendrow(w_hdbc1);
			if (rc != SUCCEED)
				HandleErrorDBC(w_hdbc1);

			stock_rows_loaded++;
			CheckForCommit(w_hdbc1, w_hstmt1,
stock_rows_loaded, "stock", &time_start);

		}
	}

	rcint = bcp_done(w_hdbc1);
	if (rcint < 0)
		HandleErrorDBC(w_hdbc1);

	printf("Finished loading stock table.\n");

	SQLFreeStmt(w_hstmt1, SQL_DROP);
	SQLDisconnect(w_hdbc1);
	SQLFreeConnect(w_hdbc1);

	// if build index after load...
	if ((aptr->build_index == 1) && (aptr->index_order == 0))
		BuildIndex("idxstkcl");

	return;
}
```

```
//==========================================================
==============
//
// Function   : LoadCustomer
//
//==========================================================
==============

void LoadCustomer()
{
        LOADER_TIME_STRUCT     customer_time_start;
        LOADER_TIME_STRUCT     history_time_start;
        short                  w_id;
  short         d_id;
        DWORD
dwThreadID[MAX_CUSTOMER_THREADS];
        HANDLE
hThread[MAX_CUSTOMER_THREADS];
        char                   name[20];
        RETCODE
rc;
        DBINT                                          rcint;
        char
bcphint[128];
        char                                           cmd[256];
        int
num_procs;
        char
err_log_path_cust[256];
        char
err_log_path_hist[256];
        // SQLRETURN                                   rc_1;
        // SQLSMALLINT                                 recnum,
MsgLen;
        // SQLCHAR
SqlState[6], Msg[SQL_MAX_MESSAGE_LENGTH];
        // SQLINTEGER                                  NativeError;

        // Seed with unique number
        seed(5);

        printf("Loading customer and history tables...\n");

        // if build index before load...
        if ((aptr->build_index == 1) && (aptr->index_order == 1))
        {
                BuildIndex("idxcuscl");
                // check the number of processors on this system
                // if 8 or more processors, then build index on History.
                // if less than 8 processors, do not build the index
                num_procs = atoi(getenv(
"NUMBER_OF_PROCESSORS" ));
                if ( num_procs >= 8 )
                        BuildIndex("idxhiscl");
        }

        // Initialize bulk copy
        sprintf(name, "%s..%s", aptr->database, "customer");

        //rc = bcp_init(c_hdbc1, name, NULL, "logs\\customer.err",
DB_IN);
        strcpy(err_log_path_cust,aptr->log_path);
        strcat(err_log_path_cust,"customer.err");
        rc = bcp_init(c_hdbc1, name, NULL, err_log_path_cust, DB_IN);
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc1);

        if ((aptr->build_index == 1) && (aptr->index_order == 1))
        {
                sprintf(bcphint, "tablock, order (c_w_id, c_d_id, c_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 30000));
                rc = bcp_control(c_hdbc1, BCPHINTS, (void*) bcphint);

                if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);
        }

        sprintf(name, "%s..%s", aptr->database, "history");

        rc = bcp_init(c_hdbc2, name, NULL, "logs\\history.err", DB_IN);
        strcpy(err_log_path_hist,aptr->log_path);
        strcat(err_log_path_hist,"history.err");
        rc = bcp_init(c_hdbc2, name, NULL, err_log_path_hist, DB_IN);
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc2);

        sprintf(bcphint, "tablock");
        rc = bcp_control(c_hdbc2, BCPHINTS, (void*) bcphint);
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc2);

        customer_rows_loaded    = 0;
        history_rows_loaded     = 0;

        CustomerBufInit();

        customer_time_start.time_start = (TimeNow() / MILLI);
        history_time_start.time_start = (TimeNow() / MILLI);

        for (w_id = (short)aptr->starting_warehouse; w_id <=
aptr->num_warehouses; w_id++)
        {
                for (d_id = 1; d_id <= DISTRICT_PER_WAREHOUSE;
d_id++)
                {

                        CustomerBufLoad(d_id, w_id);

                        // Start parallel loading threads here...

                        // Start customer table thread

                        printf("...Loading customer table for: d_id =
%d, w_id = %d\n", d_id, w_id);

                        hThread[0] = CreateThread(NULL,

        0,

        (LPTHREAD_START_ROUTINE) LoadCustomerTable,

        &customer_time_start,

        0,

        &dwThreadID[0]);

                        if (hThread[0] == NULL)
                        {
                                printf("Error, failed in creating
creating thread = 0.\n");
                                exit(-1);
                        }
```

```
                                // Start History table thread

                                printf("...Loading history table for: d_id = %d,
w_id = %d\n", d_id, w_id);

                                hThread[1] = CreateThread(NULL,

        0,

        (LPTHREAD_START_ROUTINE) LoadHistoryTable,

        &history_time_start,

        0,

        &dwThreadID[1]);

                                if (hThread[1] == NULL)
                                {
                                        printf("Error, failed in creating
creating thread = 1.\n");
                                        exit(-1);
                                }

                                WaitForSingleObject( hThread[0], INFINITE
);
                                WaitForSingleObject( hThread[1], INFINITE
);

                                if (CloseHandle(hThread[0]) == FALSE)
                                {
                                        printf("Error, failed in closing
customer thread handle with errno: %d\n", GetLastError());
                                }

                                if (CloseHandle(hThread[1]) == FALSE)
                                {
                                        printf("Error, failed in closing
history thread handle with errno: %d\n", GetLastError());
                                }


                        }

        }

        // flush the bulk connection
        rcint = bcp_done(c_hdbc1);
        if (rcint < 0)
                HandleErrorDBC(c_hdbc1);

        rcint = bcp_done(c_hdbc2);
        if (rcint < 0)
                HandleErrorDBC(c_hdbc2);

        printf("Finished loading customer table.\n");

        // if build index after load...
        if ((aptr->build_index == 1) && (aptr->index_order == 0))
        {
                BuildIndex("idxcuscl");
                // check the number of processors on this system
                // if 8 or more processors, then build index on History.
                // if less than 8 processors, do not build the index
                num_procs = atoi(getenv(
"NUMBER_OF_PROCESSORS" ));
                if (num_procs >= 8)
                        BuildIndex("idxhiscl");
        }

        // build non-clustered index
        if (aptr->build_index == 1)
                BuildIndex("idxcusnc");

        // Output the NURAND used for the loader into C_FIRST for C_ID
= 1,
        // C_W_ID = 1, and C_D_ID = 1
        //sprintf(cmd, "osql -S%s -U%s -P%s -d%s -e -Q\"update customer
set c_first = 'C_LOAD = %d' where c_id = 1 and c_w_id = 1 and c_d_id = 1\" >
logs\\nurand_load.log",
        sprintf(cmd, "osql -S%s -U%s -P%s -d%s -e -Q\"update customer set
c_first = 'C_LOAD = %d' where c_id = 1 and c_w_id = 1 and c_d_id = 1\" >
%snurand_load.log",
                                        aptr->server,
                                        aptr->user,
                                        aptr->password,
                                        aptr->database,
                                        LOADER_NURAND_C,
                                        aptr->log_path);

        system(cmd);

        SQLFreeStmt(c_hstmt1, SQL_DROP);
        SQLDisconnect(c_hdbc1);
        SQLFreeConnect(c_hdbc1);

        SQLFreeStmt(c_hstmt2, SQL_DROP);
        SQLDisconnect(c_hdbc2);
        SQLFreeConnect(c_hdbc2);


   return;

}


//=============================================================
==============
//
// Function   : CustomerBufInit
//
//=============================================================
==============

void CustomerBufInit()
{
        int     i;

        for (i=0;i<customers_per_district;i++)
        {
                customer_buf[i].c_id = 0;
                customer_buf[i].c_d_id = 0;
                customer_buf[i].c_w_id = 0;

                strcpy(customer_buf[i].c_first,"");
                strcpy(customer_buf[i].c_middle,"");
                strcpy(customer_buf[i].c_last,"");
                strcpy(customer_buf[i].c_street_1,"");
                strcpy(customer_buf[i].c_street_2,"");
                strcpy(customer_buf[i].c_city,"");
                strcpy(customer_buf[i].c_state,"");
                strcpy(customer_buf[i].c_zip,"");
                strcpy(customer_buf[i].c_phone,"");
                strcpy(customer_buf[i].c_credit,"");

                customer_buf[i].c_credit_lim = 0;
```

```
                        customer_buf[i].c_discount = (float) 0;

                        //  fix to avoid ODBC float to numeric conversion
problem.
                        //              customer_buf[i].c_balance = 0;
                        strcpy(customer_buf[i].c_balance,"");

                        customer_buf[i].c_ytd_payment = 0;
                        customer_buf[i].c_payment_cnt = 0;
                        customer_buf[i].c_delivery_cnt = 0;

                        strcpy(customer_buf[i].c_data,"");

                        customer_buf[i].h_amount = 0;

                        strcpy(customer_buf[i].h_data,"");

                }


}


//=============================================================
==============
//
// Function   : CustomerBufLoad
//
// Fills shared buffer for HISTORY and CUSTOMER
//=============================================================
==============

void CustomerBufLoad(int d_id, int w_id)
{
                long                                            i;
   CUSTOMER_SORT_STRUCT    c[CUSTOMERS_PER_DISTRICT];


                for (i=0;i<customers_per_district;i++)
                {
                        if (i < 1000)
                                LastName(i, c[i].c_last);
                        else

LastName(NURand(255,0,999,LOADER_NURAND_C), c[i].c_last);

                        MakeAlphaString(8,16,FIRST_NAME_LEN,
c[i].c_first);

                        c[i].c_id = i+1;

                }

                printf("...Loading customer buffer for: d_id = %d, w_id = %d\n",
                                d_id, w_id);

                for (i=0;i<customers_per_district;i++)
                {

                        customer_buf[i].c_d_id = d_id;
                        customer_buf[i].c_w_id = w_id;
                        customer_buf[i].h_amount = 10.0;

                        customer_buf[i].c_ytd_payment  = 10.0;

                        customer_buf[i].c_payment_cnt  = 1;
                        customer_buf[i].c_delivery_cnt = 0;

                        // Generate CUSTOMER and HISTORY data

                        customer_buf[i].c_id = c[i].c_id;

                        strcpy(customer_buf[i].c_first, c[i].c_first);
                        strcpy(customer_buf[i].c_last, c[i].c_last);

                        customer_buf[i].c_middle[0] = 'O';
                        customer_buf[i].c_middle[1] = 'E';

                        MakeAddress(customer_buf[i].c_street_1,
                                        customer_buf[i].c_street_2,
                                        customer_buf[i].c_city,
                                        customer_buf[i].c_state,
                                        customer_buf[i].c_zip);

                        MakeNumberString(16, 16, PHONE_LEN,
customer_buf[i].c_phone);

                        if (RandomNumber(1L, 100L) > 10)
                                customer_buf[i].c_credit[0] = 'G';
                        else
                                customer_buf[i].c_credit[0] = 'B';
                        customer_buf[i].c_credit[1] = 'C';

                        customer_buf[i].c_credit_lim = 50000.0;
                        customer_buf[i].c_discount = ((float)
RandomNumber(0L, 5000L)) / 10000.0;

                        //  fix to avoid ODBC float to numeric conversion
problem.
                        //  customer_buf[i].c_balance = -10.0;
                        strcpy(customer_buf[i].c_balance,"-10.0");

                        MakeAlphaString(300, 500, C_DATA_LEN,
customer_buf[i].c_data);

                        // Generate HISTORY data
                        MakeAlphaString(12, 24, H_DATA_LEN,
customer_buf[i].h_data);

                }
}

//=============================================================
==============
//
// Function   : LoadCustomerTable
//
//=============================================================
==============

void LoadCustomerTable(LOADER_TIME_STRUCT *customer_time_start)
{
                int        i;
   long       c_id;
   short      c_d_id;
   short      c_w_id;
   char       c_first[FIRST_NAME_LEN+1];
   char       c_middle[MIDDLE_NAME_LEN+1];
   char       c_last[LAST_NAME_LEN+1];
   char       c_street_1[ADDRESS_LEN+1];
   char       c_street_2[ADDRESS_LEN+1];
   char       c_city[ADDRESS_LEN+1];
   char       c_state[STATE_LEN+1];
   char       c_zip[ZIP_LEN+1];
   char       c_phone[PHONE_LEN+1];
   char       c_credit[CREDIT_LEN+1];
```

```
   double     c_credit_lim;
   double     c_discount;

              //  fix to avoid ODBC float to numeric conversion problem.
              //  double              c_balance;
              char                    c_balance[6];

   double     c_ytd_payment;
   short      c_payment_cnt;
   short      c_delivery_cnt;
   char       c_data[C_DATA_LEN+1];
              char                    c_since[C_SINCE_LEN+1];
              RETCODE                 rc;

   rc = bcp_bind(c_hdbc1, (BYTE *) &c_id, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT4, 1);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) &c_d_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 2);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

              rc = bcp_bind(c_hdbc1, (BYTE *) &c_w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 3);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_first, 0, FIRST_NAME_LEN, NULL, 0,
0, 4);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_middle, 0,
MIDDLE_NAME_LEN,NULL, 0, 0, 5);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_last, 0, LAST_NAME_LEN, NULL, 0,
0, 6);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_street_1, 0, ADDRESS_LEN, NULL, 0,
0, 7);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_street_2, 0, ADDRESS_LEN,
NULL,0,0, 8);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_city, 0, ADDRESS_LEN, NULL, 0, 0,
9);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_state, 0, STATE_LEN, NULL, 0, 0, 10);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_zip, 0, ZIP_LEN, NULL, 0, 0, 11);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_phone, 0, PHONE_LEN, NULL, 0, 0,
12);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

              rc = bcp_bind(c_hdbc1, (BYTE *) &c_since, 0, C_SINCE_LEN,
NULL, 0, SQLCHARACTER, 13);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_credit, 0, CREDIT_LEN, NULL, 0, 0,
14);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) &c_credit_lim, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 15);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) &c_discount, 0, SQL_VARLEN_DATA,
NULL, 0, SQLFLT8, 16);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);



              //  fix to avoid ODBC float to numeric conversion problem.

   //  rc = bcp_bind(c_hdbc1, (BYTE *) &c_balance, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 17);
              //  if (rc != SUCCEED)
              //            HandleErrorDBC(c_hdbc1);
   rc = bcp_bind(c_hdbc1, (BYTE *) c_balance, 0, 5, NULL, 0,
SQLCHARACTER, 17);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);



   rc = bcp_bind(c_hdbc1, (BYTE *) &c_ytd_payment, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, 18);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) &c_payment_cnt, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 19);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) &c_delivery_cnt,0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 20);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   rc = bcp_bind(c_hdbc1, (BYTE *) c_data, 0, 500, NULL, 0, 0, 21);
              if (rc != SUCCEED)
                        HandleErrorDBC(c_hdbc1);

   for (i = 0; i < customers_per_district; i++)
   {
                        c_id = customer_buf[i].c_id;
                        c_d_id = customer_buf[i].c_d_id;
                        c_w_id = customer_buf[i].c_w_id;

                        strcpy(c_first, customer_buf[i].c_first);
                        strcpy(c_middle, customer_buf[i].c_middle);
                        strcpy(c_last, customer_buf[i].c_last);
                        strcpy(c_street_1, customer_buf[i].c_street_1);
                        strcpy(c_street_2, customer_buf[i].c_street_2);
```

```
                        strcpy(c_city, customer_buf[i].c_city);
                        strcpy(c_state, customer_buf[i].c_state);
                        strcpy(c_zip, customer_buf[i].c_zip);
                        strcpy(c_phone, customer_buf[i].c_phone);
                        strcpy(c_credit, customer_buf[i].c_credit);

                        FormatDate(&c_since);


                        c_credit_lim = customer_buf[i].c_credit_lim;
                        c_discount = customer_buf[i].c_discount;

                        //  fix to avoid ODBC float to numeric conversion
problem.
                        //  c_balance = customer_buf[i].c_balance;
                        strcpy(c_balance, customer_buf[i].c_balance);

                        c_ytd_payment = customer_buf[i].c_ytd_payment;
                        c_payment_cnt = customer_buf[i].c_payment_cnt;
                        c_delivery_cnt = customer_buf[i].c_delivery_cnt;

                        strcpy(c_data, customer_buf[i].c_data);

                        // Send data to server
                        rc = bcp_sendrow(c_hdbc1);
                        if (rc != SUCCEED)
                                HandleErrorDBC(c_hdbc1);

                        customer_rows_loaded++;
                        CheckForCommit(c_hdbc1, c_hstmt1,
customer_rows_loaded, "customer", &customer_time_start->time_start);
    }

}


//=======================================================
==============
//
// Function   : LoadHistoryTable
//
//=======================================================
==============

void LoadHistoryTable(LOADER_TIME_STRUCT *history_time_start)
{
        int     i;
    long    c_id;
    short   c_d_id;
    short   c_w_id;
        double  h_amount;
    char    h_data[H_DATA_LEN+1];
        char            h_date[H_DATE_LEN+1];
        RETCODE                 rc;

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_id, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT4, 1);
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_d_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 2);
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 3);
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_d_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 4);
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 5);
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc2);

        rc = bcp_bind(c_hdbc2, (BYTE *) &h_date, 0, H_DATE_LEN,
NULL, 0, SQLCHARACTER, 6);
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &h_amount, 0, SQL_VARLEN_DATA,
NULL, 0, SQLFLT8, 7);
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) h_data, 0, H_DATA_LEN, NULL, 0, 0,
8);
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc2);

    for (i = 0; i < customers_per_district; i++)
    {
                        c_id = customer_buf[i].c_id;
                        c_d_id = customer_buf[i].c_d_id;
                        c_w_id = customer_buf[i].c_w_id;
                        h_amount = customer_buf[i].h_amount;
                        strcpy(h_data, customer_buf[i].h_data);

                        FormatDate(&h_date);

                        // send to server
                        rc = bcp_sendrow(c_hdbc2);
                        if (rc != SUCCEED)
                                HandleErrorDBC(c_hdbc2);

                        history_rows_loaded++;
                        CheckForCommit(c_hdbc2, c_hstmt2,
history_rows_loaded, "history", &history_time_start->time_start);
    }

}


//=======================================================
=====-==============
//
// Function   : LoadOrders
//
//=======================================================
====================

void LoadOrders()
{
        LOADER_TIME_STRUCT      orders_time_start;
        LOADER_TIME_STRUCT      new_order_time_start;
        LOADER_TIME_STRUCT      order_line_time_start;
        short                   w_id;
    short               d_id;
        DWORD
dwThreadID[MAX_ORDER_THREADS];
```

```
        HANDLE
hThread[MAX_ORDER_THREADS];
        char                            name[20];
        RETCODE
rc;
        char
bcphint[128];
        char
err_log_path_ord[256];
        char
err_log_path_nord[256];
        char
err_log_path_ordl[256];

        // seed with unique number
        seed(6);

        printf("Loading orders...\n");

        // if build index before load...
        if ((aptr->build_index == 1) && (aptr->index_order == 1))
        {
                        BuildIndex("idxordcl");
                        BuildIndex("idxnodcl");
                        BuildIndex("idxodlcl");
        }

        // initialize bulk copy
        sprintf(name, "%s..%s", aptr->database, "orders");

        rc = bcp_init(o_hdbc1, name, NULL, "logs\\orders.err", DB_IN);
        strcpy(err_log_path_ord,aptr->log_path);
        strcat(err_log_path_ord,"orders.err");
        rc = bcp_init(o_hdbc1, name, NULL, err_log_path_ord, DB_IN);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc1);

        if ((aptr->build_index == 1) && (aptr->index_order == 1))
        {
                sprintf(bcphint, "tablock, order (o_w_id, o_d_id, o_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 30000));
                rc = bcp_control(o_hdbc1, BCPHINTS, (void*) bcphint);

                if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc1);
        }

        sprintf(name, "%s..%s", aptr->database, "new_order");

        rc = bcp_init(o_hdbc2, name, NULL, "logs\\neword.err", DB_IN);
        strcpy(err_log_path_nord,aptr->log_path);
        strcat(err_log_path_nord,"neword.err");
        rc = bcp_init(o_hdbc2, name, NULL, err_log_path_nord, DB_IN);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc2);

        if ((aptr->build_index == 1) && (aptr->index_order == 1))
        {
                sprintf(bcphint, "tablock, order (no_w_id, no_d_id,
no_o_id), ROWS_PER_BATCH = %u", (aptr->num_warehouses * 9000));
                rc = bcp_control(o_hdbc2, BCPHINTS, (void*) bcphint);

                if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc2);
        }

        sprintf(name, "%s..%s", aptr->database, "order_line");

        rc = bcp_init(o_hdbc3, name, NULL, "logs\\ordline.err", DB_IN);
        strcpy(err_log_path_ordl,aptr->log_path);
        strcat(err_log_path_ordl,"ordline.err");
        rc = bcp_init(o_hdbc3, name, NULL, err_log_path_ordl, DB_IN);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc3);

   if ((aptr->build_index == 1) && (aptr->index_order == 1))
        {
                sprintf(bcphint, "tablock, order (ol_w_id, ol_d_id,
ol_o_id, ol_number), ROWS_PER_BATCH = %u", (aptr->num_warehouses *
300000));
                rc = bcp_control(o_hdbc3, BCPHINTS, (void*) bcphint);

                if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);
        }

        orders_rows_loaded      = 0;
        new_order_rows_loaded   = 0;
        order_line_rows_loaded  = 0;

        OrdersBufInit();

        orders_time_start.time_start = (TimeNow() / MILLI);
        new_order_time_start.time_start = (TimeNow() / MILLI);
        order_line_time_start.time_start = (TimeNow() / MILLI);

        for (w_id = (short)aptr->starting_warehouse; w_id <=
aptr->num_warehouses; w_id++)
        {
                for (d_id = 1; d_id <= DISTRICT_PER_WAREHOUSE;
d_id++)
                {

                        OrdersBufLoad(d_id, w_id);

                        // start parallel loading threads here...

                        // start Orders table thread

                        printf("...Loading Order Table for: d_id = %d,
w_id = %d\n", d_id, w_id);

                        hThread[0] = CreateThread(NULL,

                0,

                (LPTHREAD_START_ROUTINE) LoadOrdersTable,

                &orders_time_start,

                0,

                &dwThreadID[0]);

                        if (hThread[0] == NULL)
                        {
                                printf("Error, failed in creating
creating thread = 0.\n");
                                exit(-1);
                        }

                        // start NewOrder table thread

                        printf("...Loading New-Order Table for: d_id
= %d, w_id = %d\n", d_id, w_id);
```

```
                                hThread[1] = CreateThread(NULL,
        0,
        (LPTHREAD_START_ROUTINE) LoadNewOrderTable,
        &new_order_time_start,
        0,
        &dwThreadID[1]);
                                if (hThread[1] == NULL)
                                {
                                        printf("Error, failed in creating
creating thread = 1.\n");
                                        exit(-1);
                                }

                                // start Order-Line table thread

                                printf("...Loading Order-Line Table for: d_id
= %d, w_id = %d\n", d_id, w_id);
                                hThread[2] = CreateThread(NULL,
        0,
        (LPTHREAD_START_ROUTINE) LoadOrderLineTable,
        &order_line_time_start,
        0,
        &dwThreadID[2]);
                                if (hThread[2] == NULL)
                                {
                                        printf("Error, failed in creating
creating thread = 2.\n");
                                        exit(-1);
                                }

                                WaitForSingleObject( hThread[0], INFINITE
);
                                WaitForSingleObject( hThread[1], INFINITE
);
                                WaitForSingleObject( hThread[2], INFINITE
);

                                if (CloseHandle(hThread[0]) == FALSE)
                                {
                                        printf("Error, failed in closing
Orders thread handle with errno: %d\n", GetLastError());
                                }

                                if (CloseHandle(hThread[1]) == FALSE)
                                {
                                        printf("Error, failed in closing
NewOrder thread handle with errno: %d\n", GetLastError());
                                }

                                if (CloseHandle(hThread[2]) == FALSE)
                                {
                                        printf("Error, failed in closing
OrderLine thread handle with errno: %d\n", GetLastError());
                                }
                        }
                }

                printf("Finished loading orders.\n");


   return;
}


//=============================================================
==============
//
// Function   : OrdersBufInit
//
// Clears shared buffer for ORDERS, NEWORDER, and ORDERLINE
//
//=============================================================
==============

void OrdersBufInit()
{
        int     i;
        int                     j;

        for (i=0;i<orders_per_district;i++)
        {
                orders_buf[i].o_id = 0;
                orders_buf[i].o_d_id = 0;
                orders_buf[i].o_w_id = 0;
                orders_buf[i].o_c_id = 0;
                orders_buf[i].o_carrier_id = 0;
                orders_buf[i].o_ol_cnt = 0;
                orders_buf[i].o_all_local = 0;

                for (j=0;j<=14;j++)
                {
                        orders_buf[i].o_ol[j].ol = 0;
                        orders_buf[i].o_ol[j].ol_i_id = 0;

                        orders_buf[i].o_ol[j].ol_supply_w_id = 0;
                        orders_buf[i].o_ol[j].ol_quantity = 0;
                        orders_buf[i].o_ol[j].ol_amount = 0;
                        strcpy(orders_buf[i].o_ol[j].ol_dist_info,"");
                }
        }


}


//=============================================================
==============
//
// Function   : OrdersBufLoad
//
// Fills shared buffer for ORDERS, NEWORDER, and ORDERLINE
//
//=============================================================
==============

void OrdersBufLoad(int d_id, int w_id)
{

        int     cust[ORDERS_PER_DISTRICT+1];
        long    o_id;
        short   ol;
```

```
		printf("...Loading Order Buffer for: d_id = %d, w_id = %d\n",
					d_id, w_id);

		GetPermutation(cust, orders_per_district);

		for (o_id=0;o_id<orders_per_district;o_id++)
		{

			// Generate ORDER and NEW-ORDER data

			orders_buf[o_id].o_d_id = d_id;
			orders_buf[o_id].o_w_id = w_id;
			orders_buf[o_id].o_id = o_id+1;
			orders_buf[o_id].o_c_id = cust[o_id+1];
			orders_buf[o_id].o_ol_cnt = (short)RandomNumber(5L,
15L);

			if (o_id < first_new_order)
			{
				orders_buf[o_id].o_carrier_id =
(short)RandomNumber(1L, 10L);
				orders_buf[o_id].o_all_local  = 1;
			}
			else
			{
				orders_buf[o_id].o_carrier_id = 0;
				orders_buf[o_id].o_all_local  = 1;
			}

			for (ol=0; ol<orders_buf[o_id].o_ol_cnt; ol++)
			{

				orders_buf[o_id].o_ol[ol].ol = ol+1;
				orders_buf[o_id].o_ol[ol].ol_i_id =
RandomNumber(1L, max_items);
				orders_buf[o_id].o_ol[ol].ol_supply_w_id =
w_id;
				orders_buf[o_id].o_ol[ol].ol_quantity = 5;
				MakeAlphaString(24, 24,
OL_DIST_INFO_LEN, &orders_buf[o_id].o_ol[ol].ol_dist_info);

				// Generate ORDER-LINE data
				if (o_id < first_new_order)
				{


orders_buf[o_id].o_ol[ol].ol_amount = 0;
					// Added to insure ol_delivery_d
set properly during load


FormatDate(&orders_buf[o_id].o_ol[ol].ol_delivery_d);

				}
				else
				{

orders_buf[o_id].o_ol[ol].ol_amount = RandomNumber(1,999999)/100.0;

					// Added to insure ol_delivery_d
set properly during load

					// odbc datetime format

strcpy(orders_buf[o_id].o_ol[ol].ol_delivery_d,"1899-12-31 00:00:00.000");

				}
			}
		}
}


//=============================================================
===============
//
// Function   : LoadOrdersTable
//
//=============================================================
===============

void LoadOrdersTable(LOADER_TIME_STRUCT *orders_time_start)
{
		int	i;
  long	o_id;
		short	o_d_id;
		short	o_w_id;
  long	o_c_id;
  short	o_carrier_id;
  short	o_ol_cnt;
  short	o_all_local;
		char		o_entry_d[O_ENTRY_D_LEN+1];
		RETCODE			rc;
		DBINT		rcint;

		// bind ORDER data
  rc = bcp_bind(o_hdbc1, (BYTE *) &o_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 1);
		if (rc != SUCCEED)
			HandleErrorDBC(o_hdbc1);

  rc = bcp_bind(o_hdbc1, (BYTE *) &o_d_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 2);
		if (rc != SUCCEED)
			HandleErrorDBC(o_hdbc1);

  rc = bcp_bind(o_hdbc1, (BYTE *) &o_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 3);
		if (rc != SUCCEED)
			HandleErrorDBC(o_hdbc1);

  rc = bcp_bind(o_hdbc1, (BYTE *) &o_c_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 4);
		if (rc != SUCCEED)
			HandleErrorDBC(o_hdbc1);

		rc = bcp_bind(o_hdbc1, (BYTE *) &o_entry_d, 0,
O_ENTRY_D_LEN, NULL, 0, SQLCHARACTER, 5);
		if (rc != SUCCEED)
			HandleErrorDBC(o_hdbc1);

  rc = bcp_bind(o_hdbc1, (BYTE *) &o_carrier_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 6);
		if (rc != SUCCEED)
			HandleErrorDBC(o_hdbc1);

  rc = bcp_bind(o_hdbc1, (BYTE *) &o_ol_cnt, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 7);
		if (rc != SUCCEED)
			HandleErrorDBC(o_hdbc1);

  rc = bcp_bind(o_hdbc1, (BYTE *) &o_all_local, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 8);
		if (rc != SUCCEED)
			HandleErrorDBC(o_hdbc1);

  for (i = 0; i < orders_per_district; i++)
```

```
   {
                        o_id        = orders_buf[i].o_id;
                        o_d_id      = orders_buf[i].o_d_id;
                        o_w_id      = orders_buf[i].o_w_id;
                        o_c_id      = orders_buf[i].o_c_id;
                        o_carrier_id = orders_buf[i].o_carrier_id;
                        o_ol_cnt    = orders_buf[i].o_ol_cnt;
                        o_all_local  = orders_buf[i].o_all_local;

                        FormatDate(&o_entry_d);

                        // send data to server
                        rc = bcp_sendrow(o_hdbc1);
                        if (rc != SUCCEED)
                                HandleErrorDBC(o_hdbc1);

                        orders_rows_loaded++;
                        CheckForCommit(o_hdbc1, o_hstmt1,
orders_rows_loaded, "orders", &orders_time_start->time_start);
   }

            // rcint = bcp_batch(o_hdbc1);
            // if (rcint < 0)
            //          HandleErrorDBC(o_hdbc1);

            if ((o_w_id == aptr->num_warehouses) && (o_d_id == 10))
            {
                        rcint = bcp_done(o_hdbc1);
                        if (rcint < 0)
                                HandleErrorDBC(o_hdbc1);

                        SQLFreeStmt(o_hstmt1, SQL_DROP);
                        SQLDisconnect(o_hdbc1);
                        SQLFreeConnect(o_hdbc1);

                        // if build index after load...
                        if ((aptr->build_index == 1) && (aptr->index_order ==
0))
                                BuildIndex("idxordcl");

                        // build non-clustered index
                        if (aptr->build_index == 1)
                                BuildIndex("idxordnc");
            }

}


//=============================================================
==============
//
// Function   : LoadNewOrderTable
//
//=============================================================
==============

void LoadNewOrderTable(LOADER_TIME_STRUCT *new_order_time_start)
{
   int        i;
   long       o_id;
   short      o_d_id;
   short      o_w_id;
            RETCODE                     rc;
            DBINT               rcint;

            // Bind NEW-ORDER data

   rc = bcp_bind(o_hdbc2, (BYTE *) &o_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 1);
            if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc2);

   rc = bcp_bind(o_hdbc2, (BYTE *) &o_d_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 2);
            if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc2);

   rc = bcp_bind(o_hdbc2, (BYTE *) &o_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 3);
            if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc2);

            for (i = first_new_order; i < last_new_order; i++)
            {
                        o_id    = orders_buf[i].o_id;
                        o_d_id  = orders_buf[i].o_d_id;
                        o_w_id  = orders_buf[i].o_w_id;

                        rc = bcp_sendrow(o_hdbc2);
                        if (rc != SUCCEED)
                                    HandleErrorDBC(o_hdbc2);

                        new_order_rows_loaded++;
                        CheckForCommit(o_hdbc2, o_hstmt2,
new_order_rows_loaded, "new_order", &new_order_time_start->time_start);
            }

            // rcint = bcp_batch(o_hdbc2);
            // if (rcint < 0)
            //          HandleErrorDBC(o_hdbc2);

            if ((o_w_id == aptr->num_warehouses) && (o_d_id == 10))
            {
                        rcint = bcp_done(o_hdbc2);
                        if (rcint < 0)
                                    HandleErrorDBC(o_hdbc2);

                        SQLFreeStmt(o_hstmt2, SQL_DROP);
                        SQLDisconnect(o_hdbc2);
                        SQLFreeConnect(o_hdbc2);

                        // if build index after load...
                        if ((aptr->build_index == 1) && (aptr->index_order ==
0))
                                    BuildIndex("idxnodcl");

            }

}


//=============================================================
==============
//
// Function   : LoadOrderLineTable
//
//=============================================================
==============

void LoadOrderLineTable(LOADER_TIME_STRUCT *order_line_time_start)
{
            int        i,j;
   long       o_id;
            short      o_d_id;
            short      o_w_id;
```

```
   long       ol;
              long          ol_i_id;
   short      ol_supply_w_id;
   short      ol_quantity;
   double     ol_amount;
   char       ol_dist_info[DIST_INFO_LEN+1];
              char                  ol_delivery_d[OL_DELIVERY_D_LEN+1];
              RETCODE                       rc;
              DBINT                 rcint;

              // bind ORDER-LINE data
   rc = bcp_bind(o_hdbc3, (BYTE *) &o_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 1);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

   rc = bcp_bind(o_hdbc3, (BYTE *) &o_d_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 2);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

   rc = bcp_bind(o_hdbc3, (BYTE *) &o_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 3);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

   rc = bcp_bind(o_hdbc3, (BYTE *) &ol, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT4, 4);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

   rc = bcp_bind(o_hdbc3, (BYTE *) &ol_i_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 5);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

   rc = bcp_bind(o_hdbc3, (BYTE *) &ol_supply_w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, 6);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

              rc = bcp_bind(o_hdbc3, (BYTE *) &ol_delivery_d, 0,
OL_DELIVERY_D_LEN, NULL, 0, SQLCHARACTER, 7);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

   rc = bcp_bind(o_hdbc3, (BYTE *) &ol_quantity, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 8);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

   rc = bcp_bind(o_hdbc3, (BYTE *) &ol_amount, 0, SQL_VARLEN_DATA,
NULL, 0, SQLFLT8, 9);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

   rc = bcp_bind(o_hdbc3, (BYTE *) ol_dist_info, 0, DIST_INFO_LEN,
NULL, 0, 0, 10);
              if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

              for (i = 0; i < orders_per_district; i++)
   {
                        o_id    = orders_buf[i].o_id;
                        o_d_id  = orders_buf[i].o_d_id;
                        o_w_id  = orders_buf[i].o_w_id;

                        for (j=0; j < orders_buf[i].o_ol_cnt; j++)
                        {
                                  ol          = orders_buf[i].o_ol[j].ol;
                                  ol_i_id     = orders_buf[i].o_ol[j].ol_i_id;
                                  ol_supply_w_id =
orders_buf[i].o_ol[j].ol_supply_w_id;
                                  ol_quantity    =
orders_buf[i].o_ol[j].ol_quantity;
                                  ol_amount      =
orders_buf[i].o_ol[j].ol_amount;

strcpy(ol_delivery_d,orders_buf[i].o_ol[j].ol_delivery_d);


strcpy(ol_dist_info,orders_buf[i].o_ol[j].ol_dist_info);

                                  rc = bcp_sendrow(o_hdbc3);
                                  if (rc != SUCCEED)
                                            HandleErrorDBC(o_hdbc3);

                                  order_line_rows_loaded++;
                                  CheckForCommit(o_hdbc3, o_hstmt3,
order_line_rows_loaded, "order_line", &order_line_time_start->time_start);
                        }

              }

              // rcint = bcp_batch(o_hdbc3);
              // if (rcint < 0)
              //          HandleErrorDBC(o_hdbc3);

              if ((o_w_id == aptr->num_warehouses) && (o_d_id == 10))
              {
                        rcint = bcp_done(o_hdbc3);
                        if (rcint < 0)
                                  HandleErrorDBC(o_hdbc3);

                        SQLFreeStmt(o_hstmt3, SQL_DROP);
                        SQLDisconnect(o_hdbc3);
                        SQLFreeConnect(o_hdbc3);

                        // if build index after load...
                        if ((aptr->build_index == 1) && (aptr->index_order ==
0))
                                  BuildIndex("idxodlcl");

              }

}


//=============================================================
==============
//
// Function   : GetPermutation
//
//=============================================================
==============

void GetPermutation(int perm[], int n)
{
              int i, r, t;

              for (i=1;i<=n;i++)
                        perm[i] = i;

              for (i=1;i<=n;i++)
              {
                        r = RandomNumber(i,n);
```

```
                t = perm[i];
                perm[i] = perm[r];
                perm[r] = t;
        }

}


//==============================================================
==============
//
// Function   : CheckForCommit
//
//==============================================================
==============

void CheckForCommit(HDBC hdbc,
                                                HSTMT hstmt,
                                        int rows_loaded,
                                                char *table_name,
                                        long *time_start)
{

   long      time_end, time_diff;
        // DBINT   rcint;

   if ( !(rows_loaded % aptr->batch) )
   {

                // rcint = bcp_batch(hdbc);
                // if (rcint < 0)
                //              HandleErrorDBC(hdbc);

                time_end = (TimeNow() / MILLI);
                time_diff = time_end - *time_start;

                printf("-> Loaded %ld rows into %s in %ld sec - Total =
%d (%.2f rps)\n",
                        aptr->batch,
                        table_name,
                                time_diff,
                        rows_loaded,
                                (float) aptr->batch / (time_diff ?
time_diff : 1L));

                *time_start = time_end;
   }

   return;
}


//==============================================================
==============
//
// Function   : OpenConnections
//
//==============================================================
==============

void OpenConnections()
{

        RETCODE         rc;

        char                            szDriverString[300];
        char                            szDriverStringOut[1024];
        SQLSMALLINT                     cbDriverStringOut;

        SQLAllocHandle(SQL_HANDLE_ENV, SQL_NULL_HANDLE,
&henv );

        SQLSetEnvAttr(henv, SQL_ATTR_ODBC_VERSION,
(void*)SQL_OV_ODBC3, 0 );

        SQLAllocHandle(SQL_HANDLE_DBC, henv , &i_hdbc1);
        SQLAllocHandle(SQL_HANDLE_DBC, henv , &w_hdbc1);
        SQLAllocHandle(SQL_HANDLE_DBC, henv , &c_hdbc1);
        SQLAllocHandle(SQL_HANDLE_DBC, henv , &c_hdbc2);
        SQLAllocHandle(SQL_HANDLE_DBC, henv , &o_hdbc1);
        SQLAllocHandle(SQL_HANDLE_DBC, henv , &o_hdbc2);
        SQLAllocHandle(SQL_HANDLE_DBC, henv , &o_hdbc3);

        SQLSetConnectAttr(i_hdbc1, SQL_COPT_SS_BCP, (void
*)SQL_BCP_ON, SQL_IS_INTEGER );
        SQLSetConnectAttr(w_hdbc1, SQL_COPT_SS_BCP, (void
*)SQL_BCP_ON, SQL_IS_INTEGER );
        SQLSetConnectAttr(c_hdbc1, SQL_COPT_SS_BCP, (void
*)SQL_BCP_ON, SQL_IS_INTEGER );
        SQLSetConnectAttr(c_hdbc2, SQL_COPT_SS_BCP, (void
*)SQL_BCP_ON, SQL_IS_INTEGER );
        SQLSetConnectAttr(o_hdbc1, SQL_COPT_SS_BCP, (void
*)SQL_BCP_ON, SQL_IS_INTEGER );
        SQLSetConnectAttr(o_hdbc2, SQL_COPT_SS_BCP, (void
*)SQL_BCP_ON, SQL_IS_INTEGER );
        SQLSetConnectAttr(o_hdbc3, SQL_COPT_SS_BCP, (void
*)SQL_BCP_ON, SQL_IS_INTEGER );

        // Open connections to SQL Server

        // Connection 1

        sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

aptr->server,
                                                                aptr->user,

aptr->password,

aptr->database );

        rc = SQLSetConnectOption (i_hdbc1, SQL_PACKET_SIZE,
aptr->pack_size);
        if (rc != SUCCEED)
                HandleErrorDBC(i_hdbc1);

        rc = SQLDriverConnect ( i_hdbc1,
                                                        NULL,

(SQLCHAR*)&szDriverString[0] ,
                                                                SQL_NTS,

(SQLCHAR*)&szDriverStringOut[0],

sizeof(szDriverStringOut),

&cbDriverStringOut,

SQL_DRIVER_NOPROMPT );
        if (rc != SUCCEED)
                HandleErrorDBC(i_hdbc1);

        // Connection 2
```

```
		sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

aptr->server,
                                                                aptr->user,

aptr->password,

aptr->database );

		rc = SQLSetConnectOption (w_hdbc1, SQL_PACKET_SIZE,
aptr->pack_size);
		if (rc != SUCCEED)
			HandleErrorDBC(w_hdbc1);

		rc = SQLDriverConnect ( w_hdbc1,

NULL,

(SQLCHAR*)&szDriverString[0] ,

SQL_NTS,

(SQLCHAR*)&szDriverStringOut[0],

sizeof(szDriverStringOut),

&cbDriverStringOut,

SQL_DRIVER_NOPROMPT );
		if (rc != SUCCEED)
			HandleErrorDBC(w_hdbc1);

		// Connection 3

		sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

aptr->server,
                                                                aptr->user,

aptr->password,

aptr->database );

		rc = SQLSetConnectOption (c_hdbc1, SQL_PACKET_SIZE,
aptr->pack_size);
		if (rc != SUCCEED)
			HandleErrorDBC(c_hdbc1);

		rc = SQLDriverConnect ( c_hdbc1,

NULL,

(SQLCHAR*)&szDriverString[0] ,

SQL_NTS,

(SQLCHAR*)&szDriverStringOut[0],

sizeof(szDriverStringOut),

&cbDriverStringOut,

SQL_DRIVER_NOPROMPT );
		if (rc != SUCCEED)
			HandleErrorDBC(c_hdbc1);

		// Connection 4

		sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

aptr->server,
                                                                aptr->user,

aptr->password,

aptr->database );

		rc = SQLSetConnectOption (c_hdbc2, SQL_PACKET_SIZE,
aptr->pack_size);
		if (rc != SUCCEED)
			HandleErrorDBC(c_hdbc2);

		rc = SQLDriverConnect ( c_hdbc2,

NULL,

(SQLCHAR*)&szDriverString[0] ,

SQL_NTS,

(SQLCHAR*)&szDriverStringOut[0],

sizeof(szDriverStringOut),

&cbDriverStringOut,

SQL_DRIVER_NOPROMPT );
		if (rc != SUCCEED)
			HandleErrorDBC(c_hdbc2);

		// Connection 5

		sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

aptr->server,
                                                                aptr->user,

aptr->password,

aptr->database );

		rc = SQLSetConnectOption (o_hdbc1, SQL_PACKET_SIZE,
aptr->pack_size);
		if (rc != SUCCEED)
			HandleErrorDBC(o_hdbc1);

		rc = SQLDriverConnect ( o_hdbc1,

NULL,

(SQLCHAR*)&szDriverString[0] ,

SQL_NTS,

(SQLCHAR*)&szDriverStringOut[0],

sizeof(szDriverStringOut),

&cbDriverStringOut,

SQL_DRIVER_NOPROMPT );
		if (rc != SUCCEED)
```

```
                HandleErrorDBC(o_hdbc1);

        // Connection 6

        sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

aptr->server,
                                                        aptr->user,

aptr->password,

aptr->database );

        rc = SQLSetConnectOption (o_hdbc2, SQL_PACKET_SIZE,
aptr->pack_size);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc2);

        rc = SQLDriverConnect ( o_hdbc2,

NULL,

(SQLCHAR*)&szDriverString[0] ,

SQL_NTS,

(SQLCHAR*)&szDriverStringOut[0],

sizeof(szDriverStringOut),

&cbDriverStringOut,

SQL_DRIVER_NOPROMPT );
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc2);

        // Connection 7

        sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

aptr->server,
                                                        aptr->user,

aptr->password,

aptr->database );

        rc = SQLSetConnectOption (o_hdbc3, SQL_PACKET_SIZE,
aptr->pack_size);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc3);

        rc = SQLDriverConnect ( o_hdbc3,

NULL,

(SQLCHAR*)&szDriverString[0] ,

SQL_NTS,

(SQLCHAR*)&szDriverStringOut[0],

sizeof(szDriverStringOut),

&cbDriverStringOut,

SQL_DRIVER_NOPROMPT );
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc3);

}

//=================================================
==============
//
// Function name: BuildIndex
//
//=================================================
==============

void BuildIndex(char  *index_script)
{
        char        cmd[256];

        printf("Starting index creation:  %s\n",index_script);

        sprintf(cmd, "osql -S%s -U%s -P%s -e -i%s\\%s.sql > %s%s.log",
                                        aptr->server,
                                        aptr->user,
                                        aptr->password,
                                        aptr->index_script_path,
                                        index_script,
                                        aptr->log_path,
                                        index_script);

        system(cmd);

        printf("Finished index creation:  %s\n",index_script);
}


void HandleErrorDBC (SQLHDBC  hdbc1)
{

        SQLCHAR                 SqlState[6],
Msg[SQL_MAX_MESSAGE_LENGTH];
        SQLINTEGER  NativeError;
        SQLSMALLINT i, MsgLen;
        SQLRETURN   rc2;
        char            timebuf[128];
        char            datebuf[128];
        char            err_log_path[256];
        FILE            *fp1;

        i = 1;
        while (( rc2 = SQLGetDiagRec(SQL_HANDLE_DBC , hdbc1, i,
SqlState , &NativeError,
                                        Msg, sizeof(Msg) , &MsgLen ))
!= SQL_NO_DATA )
        {

                sprintf( szLastError , "%s" ,  Msg );

                _strtime(timebuf);
                _strdate(datebuf);

                printf( "[%s : %s] %s\n" , datebuf, timebuf, szLastError);

                strcpy(err_log_path,aptr->log_path);
                strcat(err_log_path,"tpccldr.err");
                fp1 = fopen(err_log_path,"w");
                //fp1 = fopen("logs\\tpccldr.err","w");
                if (fp1 == NULL)
```

```
                                printf("ERROR:  Unable to open errorlog
file.\n");
                        else
                        {
                                fprintf(fp1, "[%s : %s] %s\n" , datebuf,
timebuf, szLastError);
                                fclose(fp1);
                        }

                        i++;

                }
}

void HandleErrorSTMT (HSTMT  hstmt1)
{

                SQLCHAR                 SqlState[6],
Msg[SQL_MAX_MESSAGE_LENGTH];
                SQLINTEGER  NativeError;
                SQLSMALLINT i, MsgLen;
                SQLRETURN   rc2;
                char                    timebuf[128];
                char                    datebuf[128];
                char                    err_log_path[256];
                FILE                    *fp1;

                i = 1;
                while (( rc2 = SQLGetDiagRec(SQL_HANDLE_STMT , hstmt1, i,
SqlState , &NativeError,
                                                Msg, sizeof(Msg) , &MsgLen ))
!= SQL_NO_DATA )
                {

                        sprintf( szLastError , "%s" ,  Msg );

                        _strtime(timebuf);
                        _strdate(datebuf);

                        printf( "[%s : %s] %s\n" , datebuf, timebuf, szLastError);

                        strcpy(err_log_path,aptr->log_path);
                        strcat(err_log_path,"tpccldr.err");
                        fp1 = fopen(err_log_path,"w");
                        //fp1 = fopen("logs\\tpccldr.err","w");
                        if (fp1 == NULL)
                                printf("ERROR:  Unable to open errorlog
file.\n");
                        else
                        {
                                fprintf(fp1, "[%s : %s] %s\n" , datebuf,
timebuf, szLastError);
                                fclose(fp1);
                        }

                        i++;

                }
}


void FormatDate ( char* szTimeCOutput )
{

                struct tm when;
                time_t now;

                time( &now );
                when  = *localtime( &now );

                mktime( &when );

                // odbc datetime format
                strftime( szTimeCOutput , 30 , "%Y-%m-%d %H:%M:%S.000",
&when );

                return;

}

//=================================================
==============
//
// Function   : CheckDataBase
//
//=================================================
==============

void CheckDataBase()
{

                RETCODE         rc;

                char                            szDriverString[300];
                char                            szDriverStringOut[1024];
                char                            TablesBitMap[9] =
{"000000000"};
                int                                     i, ExitFlag;

                SQLSMALLINT                     cbDriverStringOut;
                SQLCHAR                                 TabName[10];
                SQLINTEGER                      TabNameInd, TabCount,
TabCountInd;


                ExitFlag = 0;

                SQLAllocHandle(SQL_HANDLE_ENV, SQL_NULL_HANDLE,
&henv );

                SQLSetEnvAttr(henv, SQL_ATTR_ODBC_VERSION,
(void*)SQL_OV_ODBC3, 0 );

                SQLAllocHandle(SQL_HANDLE_DBC, henv , &v_hdbc);

                SQLSetConnectAttr(v_hdbc, SQL_COPT_SS_BCP, (void
*)SQL_BCP_ON, SQL_IS_INTEGER );

                // Open connection to SQL Server

                sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

aptr->server,
                                                                        aptr->user,

aptr->password,

aptr->database );

                rc = SQLSetConnectAttr( v_hdbc, SQL_ATTR_PACKET_SIZE,
(SQLPOINTER)aptr->pack_size, SQL_IS_UINTEGER );
                if (rc != SQL_SUCCESS)
                        HandleErrorDBC(v_hdbc);

                rc = SQLDriverConnect ( v_hdbc,
```

```
                                                NULL,
(SQLCHAR*)&szDriverString[0] ,
                                                        SQL_NTS,
(SQLCHAR*)&szDriverStringOut[0],
sizeof(szDriverStringOut),
&cbDriverStringOut,
SQL_DRIVER_NOPROMPT );

        // if the rc is SQL_ERROR, the the TPCC database probably does
not exist
        if (rc == SQL_ERROR)
        {
                printf("The database TPCC does not appear to exist!\n");
                printf("\nCheck LOGS\\ directory for database creation
errors.\n");

                // cleanup database connections and handles
                SQLFreeHandle(SQL_HANDLE_STMT, v_hstmt);
                SQLDisconnect(v_hdbc);
                SQLFreeHandle(SQL_HANDLE_DBC, v_hdbc);

                // since there is not a database, exit back to SETUP.CMD
                exit(1);
        }

        if ( SQLAllocHandle(SQL_HANDLE_STMT, v_hdbc , &v_hstmt)
!= SQL_SUCCESS )
                HandleErrorDBC(v_hdbc);

        if ( SQLBindCol(v_hstmt, 1, SQL_C_ULONG, &TabCount, 0,
&TabCountInd) != SQL_SUCCESS )
                HandleErrorSTMT(v_hstmt);

        // count the number of user tables from sysobjects
        rc = SQLExecDirect(v_hstmt, "select count(*) from sysobjects
where xtype = \'U\'", SQL_NTS);
        if ((rc != SQL_SUCCESS) && (rc !=
SQL_SUCCESS_WITH_INFO))
                HandleErrorSTMT(v_hstmt);

        if ( SQLFetch(v_hstmt) != SQL_SUCCESS )
                HandleErrorSTMT(v_hstmt);

        // if the number of tables is less than 9, select all the user tables in
TPCC
        if (TabCount != 9)
        {
                SQLFreeHandle(SQL_HANDLE_STMT, v_hstmt);

                SQLAllocHandle(SQL_HANDLE_STMT, v_hdbc ,
&v_hstmt);

                if ( SQLBindCol(v_hstmt, 1, SQL_C_CHAR,
&TabName, sizeof(TabName), &TabNameInd) != SQL_SUCCESS )
                        HandleErrorSTMT(v_hstmt);

                // select the list of user tables into a result set
                rc = SQLExecDirect(v_hstmt, "select * from sysobjects
where xtype = \'U\'", SQL_NTS);
                if ((rc != SQL_SUCCESS) && (rc !=
SQL_SUCCESS_WITH_INFO))
                        HandleErrorSTMT(v_hstmt);

                // go through the result set and set the bitmap for each
found table
                // set the bitmap to '1' if the table name is found

                while ((rc = SQLFetch(v_hstmt)) != SQL_NO_DATA)
                {
                        switch( TabName[0] )
                        {
                        case 'w':
                                TablesBitMap[0] = '1';
                                break;
                        case 'd':
                                TablesBitMap[1] = '1';
                                break;
                        case 'c':
                                TablesBitMap[2] = '1';
                                break;
                        case 'h':
                                TablesBitMap[3] = '1';
                                break;
                        case 'n':
                                TablesBitMap[4] = '1';
                                break;
                        case 'o':
                                if (TabName[5] = 's')
                                        TablesBitMap[5] = '1';
                                if (TabName[5] = '_')
                                        TablesBitMap[6] = '1';
                                break;
                        case 'i':
                                TablesBitMap[7] = '1';
                                break;
                        case 's':
                                TablesBitMap[8] = '1';
                                break;
                        }
                }

                // a '0' ExitFlag means do NOT exit the loader early, a '1'
means exit the loader early
                ExitFlag = 0;

                // interate through the bitmap to display which table(s) is
actually missing
                for (i = 0; i <= 8; i++)
                {
                        switch(i)
                        {
                        case 0:
                                if (TablesBitMap[i] == '0')
                                {
                                        printf("The Warehouse
table is missing or damaged.\n");
                                        ExitFlag = 1;
                                }
                                break;
                        case 1:
                                if (TablesBitMap[i] == '0')
                                {
                                        printf("The District
table is missing or damaged.\n");
                                        ExitFlag = 1;
                                }
                                break;
                        case 2:
                                if (TablesBitMap[i] == '0')
                                {
```

```
                                        printf("The Customer
table is missing or damaged.\n");
                                        ExitFlag = 1;
                                }
                                break;
                        case 3:
                                if (TablesBitMap[i] == '0')
                                {
                                        printf("The History
table is missing or damaged.\n");
                                        ExitFlag = 1;
                                }
                                break;
                        case 4:
                                if (TablesBitMap[i] == '0')
                                {
                                        printf("The New_Order
table is missing or damaged.\n");
                                        ExitFlag = 1;
                                }
                                break;
                        case 5:
                                if (TablesBitMap[i] == '0')
                                {
                                        printf("The Orders table
is missing or damaged.\n");
                                        ExitFlag = 1;
                                }
                                break;
                        case 6:
                                if (TablesBitMap[i] == '0')
                                {
                                        printf("The Order_Line
table is missing or damaged.\n");
                                        ExitFlag = 1;
                                }
                                break;
                        case 7:
                                if (TablesBitMap[i] == '0')
                                {
                                        printf("The Item table is
missing or damaged.\n");
                                        ExitFlag = 1;
                                }
                                break;
                        case 8:
                                if (TablesBitMap[i] == '0')
                                {
                                        printf("The Stock table
is missing or damaged.\n");
                                        ExitFlag = 1;
                                }
                                break;
                        }
                }

                // if one or more tables are missing, display message and
exit the loader
                if (ExitFlag = 1)
                {
                        printf("\nExiting TPC-C Loader!\n");
                        printf("\nCheck LOGS\\ directory for
database\n");
                        printf("or table creation errors.\n");

                        // cleanup database connections and handles
                        SQLFreeHandle(SQL_HANDLE_STMT,
v_hstmt);
                        SQLDisconnect(v_hdbc);
                        SQLFreeHandle(SQL_HANDLE_DBC,
v_hdbc);

                        exit(1);
                }
        }

        // cleanup database connections and handles
        SQLFreeHandle(SQL_HANDLE_STMT, v_hstmt);
        SQLDisconnect(v_hdbc);
        SQLFreeHandle(SQL_HANDLE_DBC, v_hdbc);

        return;
}
```

tpccldr.mak

```
# Microsoft Developer Studio Generated NMAKE File, Format Version 4.10
# ** DO NOT EDIT **

# TARGTYPE "Win32 (x86) Console Application" 0x0103

!IF "$(CFG)" == ""
CFG=tpccldr - Win32 Debug
!MESSAGE No configuration specified.  Defaulting to tpccldr - Win32 Debug.
!ENDIF

!IF "$(CFG)" != "tpccldr - Win32 Release" && "$(CFG)" !=\
 "tpccldr - Win32 Debug"
!MESSAGE Invalid configuration "$(CFG)" specified.
!MESSAGE You can specify a configuration when running NMAKE on this
makefile
!MESSAGE by defining the macro CFG on the command line.  For example:
!MESSAGE
!MESSAGE NMAKE /f "tpccldr.mak" CFG="tpccldr - Win32 Debug"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "tpccldr - Win32 Release" (based on "Win32 (x86) Console
Application")
!MESSAGE "tpccldr - Win32 Debug" (based on "Win32 (x86) Console
Application")
!MESSAGE
!ERROR An invalid configuration is specified.
!ENDIF

!IF "$(OS)" == "Windows_NT"
NULL=
!ELSE
NULL=nul
!ENDIF
################################################################
################
# Begin Project
# PROP Target_Last_Scanned "tpccldr - Win32 Debug"
RSC=rc.exe
CPP=cl.exe

!IF  "$(CFG)" == "tpccldr - Win32 Release"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir "Release"
# PROP BASE Intermediate_Dir "Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
```

```
# PROP Use_Debug_Libraries 0
# PROP Output_Dir "bin"
# PROP Intermediate_Dir "objects"
# PROP Target_Dir ""
OUTDIR=.\bin
INTDIR=.\objects

ALL : "$(OUTDIR)\tpccldr.exe"

CLEAN :
	-@erase "$(INTDIR)\getargs.obj"
	-@erase "$(INTDIR)\random.obj"
	-@erase "$(INTDIR)\strings.obj"
	-@erase "$(INTDIR)\time.obj"
	-@erase "$(INTDIR)\tpccldr.obj"
	-@erase "$(OUTDIR)\tpccldr.exe"

"$(OUTDIR)" :
    if not exist "$(OUTDIR)/$(NULL)" mkdir "$(OUTDIR)"

"$(INTDIR)" :
    if not exist "$(INTDIR)/$(NULL)" mkdir "$(INTDIR)"

# ADD BASE CPP /nologo /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D
"_CONSOLE" /YX /c
# ADD CPP /nologo /MT /W3 /GX /O2 /I "c:\mssql\dblib\include" /D
"NDEBUG" /D "WIN32" /D "_CONSOLE" /D "DBNTWIN32" /c
# SUBTRACT CPP /YX
CPP_PROJ=/nologo /MT /W3 /GX /O2 /I "c:\mssql\dblib\include" /D
"NDEBUG" /D\
 "WIN32" /D "_CONSOLE" /D "DBNTWIN32" /Fo"$(INTDIR)/" /c
CPP_OBJS=.\objects/
CPP_SBRS=.\.
# ADD BASE RSC /l 0x409 /d "NDEBUG"
# ADD RSC /l 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
BSC32_FLAGS=/nologo /o"$(OUTDIR)/tpccldr.bsc"
BSC32_SBRS= \

LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:console /machine:I386
# ADD LINK32 c:\mssql\dblib\lib\ntwdblib.lib kernel32.lib user32.lib gdi32.lib
winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib
uuid.lib odbc32.lib odbccp32.lib /nologo /subsystem:console /pdb:none
/machine:I386
LINK32_FLAGS=c:\mssql\dblib\lib\ntwdblib.lib kernel32.lib user32.lib
gdi32.lib\
 winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib\
 uuid.lib odbc32.lib odbccp32.lib /nologo /subsystem:console /pdb:none\
 /machine:I386 /out:"$(OUTDIR)/tpccldr.exe"
LINK32_OBJS= \
	"$(INTDIR)\getargs.obj" \
	"$(INTDIR)\random.obj" \
	"$(INTDIR)\strings.obj" \
	"$(INTDIR)\time.obj" \
	"$(INTDIR)\tpccldr.obj"

"$(OUTDIR)\tpccldr.exe" : "$(OUTDIR)" $(DEF_FILE) $(LINK32_OBJS)
    $(LINK32) @<<
  $(LINK32_FLAGS) $(LINK32_OBJS)
<<

!ELSEIF  "$(CFG)" == "tpccldr - Win32 Debug"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "Debug"
# PROP BASE Intermediate_Dir "Debug"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir "bin"
# PROP Intermediate_Dir "objects"
# PROP Target_Dir ""
OUTDIR=.\bin
INTDIR=.\objects

ALL : "$(OUTDIR)\tpccldr.exe"

CLEAN :
	-@erase "$(INTDIR)\getargs.obj"
	-@erase "$(INTDIR)\random.obj"
	-@erase "$(INTDIR)\strings.obj"
	-@erase "$(INTDIR)\time.obj"
	-@erase "$(INTDIR)\tpccldr.obj"
	-@erase "$(INTDIR)\vc40.idb"
	-@erase "$(INTDIR)\vc40.pdb"
	-@erase "$(OUTDIR)\tpccldr.exe"

"$(OUTDIR)" :
    if not exist "$(OUTDIR)/$(NULL)" mkdir "$(OUTDIR)"

"$(INTDIR)" :
    if not exist "$(INTDIR)/$(NULL)" mkdir "$(INTDIR)"

# ADD BASE CPP /nologo /W3 /Gm /GX /Zi /Od /D "WIN32" /D "_DEBUG"
/D "_CONSOLE" /YX /c
# ADD CPP /nologo /MTd /W3 /Gm /GX /Zi /Od /I "c:\mssql\dblib\include" /D
"_DEBUG" /D "WIN32" /D "_CONSOLE" /D "DBNTWIN32" /c
# SUBTRACT CPP /YX
CPP_PROJ=/nologo /MTd /W3 /Gm /GX /Zi /Od /I "c:\mssql\dblib\include" /D\
 "_DEBUG" /D "WIN32" /D "_CONSOLE" /D "DBNTWIN32"
/Fo"$(INTDIR)/"\
 /Fd"$(INTDIR)/" /c
CPP_OBJS=.\objects/
CPP_SBRS=.\.
# ADD BASE RSC /l 0x409 /d "_DEBUG"
# ADD RSC /l 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
BSC32_FLAGS=/nologo /o"$(OUTDIR)/tpccldr.bsc"
BSC32_SBRS= \

LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib
odbccp32.lib /nologo /subsystem:console /debug /machine:I386
# ADD LINK32 c:\mssql\dblib\lib\ntwdblib.lib kernel32.lib user32.lib gdi32.lib
winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib
uuid.lib odbc32.lib odbccp32.lib /nologo /subsystem:console /pdb:none /debug
/machine:I386
LINK32_FLAGS=c:\mssql\dblib\lib\ntwdblib.lib kernel32.lib user32.lib
gdi32.lib\
 winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib\
 uuid.lib odbc32.lib odbccp32.lib /nologo /subsystem:console /pdb:none /debug\
 /machine:I386 /out:"$(OUTDIR)/tpccldr.exe"
LINK32_OBJS= \
	"$(INTDIR)\getargs.obj" \
	"$(INTDIR)\random.obj" \
	"$(INTDIR)\strings.obj" \
	"$(INTDIR)\time.obj" \
```

```
            "$(INTDIR)\tpccldr.obj"

"$(OUTDIR)\tpccldr.exe" : "$(OUTDIR)" $(DEF_FILE) $(LINK32_OBJS)
    $(LINK32) @<<
  $(LINK32_FLAGS) $(LINK32_OBJS)
<<

!ENDIF

.c{$(CPP_OBJS)}.obj:
   $(CPP) $(CPP_PROJ) $<

.cpp{$(CPP_OBJS)}.obj:
   $(CPP) $(CPP_PROJ) $<

.cxx{$(CPP_OBJS)}.obj:
   $(CPP) $(CPP_PROJ) $<

.c{$(CPP_SBRS)}.sbr:
   $(CPP) $(CPP_PROJ) $<

.cpp{$(CPP_SBRS)}.sbr:
   $(CPP) $(CPP_PROJ) $<

.cxx{$(CPP_SBRS)}.sbr:
   $(CPP) $(CPP_PROJ) $<

################################################################
###############
# Begin Target

# Name "tpccldr - Win32 Release"
# Name "tpccldr - Win32 Debug"

!IF  "$(CFG)" == "tpccldr - Win32 Release"

!ELSEIF  "$(CFG)" == "tpccldr - Win32 Debug"

!ENDIF

################################################################
###############
# Begin Source File

SOURCE=.\src\random.c
DEP_CPP_RANDO=\
            ".\src\tpcc.h"\
            "\mssql\dblib\include\sqldb.h"\
            "\mssql\dblib\include\sqlfront.h"\


"$(INTDIR)\random.obj" : $(SOURCE) $(DEP_CPP_RANDO) "$(INTDIR)"
   $(CPP) $(CPP_PROJ) $(SOURCE)


# End Source File
################################################################
###############
# Begin Source File

SOURCE=.\src\strings.c
DEP_CPP_STRIN=\
            ".\src\tpcc.h"\
            "\mssql\dblib\include\sqldb.h"\
            "\mssql\dblib\include\sqlfront.h"\


"$(INTDIR)\strings.obj" : $(SOURCE) $(DEP_CPP_STRIN) "$(INTDIR)"
   $(CPP) $(CPP_PROJ) $(SOURCE)


# End Source File
################################################################
###############
# Begin Source File

SOURCE=.\src\time.c
DEP_CPP_TIME_=\
            ".\src\tpcc.h"\
            "\mssql\dblib\include\sqldb.h"\
            "\mssql\dblib\include\sqlfront.h"\


"$(INTDIR)\time.obj" : $(SOURCE) $(DEP_CPP_TIME_) "$(INTDIR)"
   $(CPP) $(CPP_PROJ) $(SOURCE)


# End Source File
################################################################
###############
# Begin Source File

SOURCE=.\src\tpccldr.c
DEP_CPP_TPCCL=\
            ".\src\tpcc.h"\
            "\mssql\dblib\include\sqldb.h"\
            "\mssql\dblib\include\sqlfront.h"\


"$(INTDIR)\tpccldr.obj" : $(SOURCE) $(DEP_CPP_TPCCL) "$(INTDIR)"
   $(CPP) $(CPP_PROJ) $(SOURCE)


# End Source File
################################################################
###############
# Begin Source File

SOURCE=.\src\getargs.c
DEP_CPP_GETAR=\
            ".\src\tpcc.h"\
            "\mssql\dblib\include\sqldb.h"\
            "\mssql\dblib\include\sqlfront.h"\


"$(INTDIR)\getargs.obj" : $(SOURCE) $(DEP_CPP_GETAR) "$(INTDIR)"
   $(CPP) $(CPP_PROJ) $(SOURCE)


# End Source File
# End Target
# End Project
################################################################
###############
```

VerifyTpccLoad.sql

```
--  File:    VERIFYTPCCLOAD.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.41
--           Copyright Microsoft, 2001
--  Purpose:  Performs series of TPCC database checks to verify
--                  that database load completed correctly

print         " "
```

```
select      convert(char(30), getdate(),9)
print       " "

use tpcc
go

--          ***********************************
--
--          Check rows per table from SYSINDEXES
--
--          ***********************************

print       'WAREHOUSE TABLE'

select      rows
from        sysindexes
where       id          = object_id("warehouse")
go

print       'DISTRICT TABLE = (10 * No of warehouses)'

select      rows
from        sysindexes
where       id          =object_id("district")
go

print       'ITEM TABLE = 100,000'

select      rows
from        sysindexes
where       id          =object_id("item")
go

print       'CUSTOMER TABLE = (30,000 * No of warehouses)'

select      rows
from        sysindexes
where       id          =object_id("customer")
go

print 'ORDERS TABLE = (30,000 * No of warehouses)'

select      rows
from        sysindexes
where       id          =object_id("orders")
go

print       'HISTORY TABLE = (30,000 * No of warehouses)'

select      rows
from        sysindexes
where       id          =object_id("history")
go

print       'STOCK TABLE = (100,000 * No of warehouses)'

select      rows
from        sysindexes
where       id          =object_id("stock")
go

print       'ORDER_LINE TABLE = (300,000 * No of warehouses + some
change)'

select  count_big(*)
from    order_line
go

print       'NEW_ORDER TABLE = (9000 * No of warehouses)'

select      rows
from        sysindexes
where       id          =object_id("new_order")
go

--          *************
--
--          Check indices
--
--          *************

print '**************Index Check****************'

use tpcc
go

sp_helpindex            customer
go

sp_helpindex            stock
go

sp_helpindex            district
go

sp_helpindex            item
go

sp_helpindex            new_order
go

sp_helpindex            orders
go

sp_helpindex            order_line
go

sp_helpindex            warehouse
Go
```

version.sql

```
-- File:    VERSION.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.41
--          Copyright Microsoft, 2001
-- Purpose:  Extracts current version of SQL Server


use master
go

SELECT   CONVERT(char(20), SERVERPROPERTY('ProductVersion'))
go

SELECT   CONVERT(char(20), SERVERPROPERTY('ProductLevel'))
go

SELECT   CONVERT(char(30), getdate(),9)
go
```

Appendix C: Tunable Parameters

Microsoft SQL Server 2000 Configuration Parameters

```
1> 2> 3> 4> 5> 6> 7> 8> 9> 10> 11>
--  File:     VERSION.SQL
--            Microsoft TPC-C Benchmark Kit Ver. 4.22
--            Copyright Microsoft, 2001
--  Purpose:  Returns SQL Server version string



print " "
select convert(char(30), getdate(),9)
print " "

 ------------------------------
 Apr  1 2003  5:53:40:993PM

(1 row affected)

1> 2> 3>
select @@version



 ------------------------------------------------------------------------------
              ------------------------------------------------------------------------
              ------------------------------------------------------------------------
              -----------------------------------
 Microsoft SQL Server  2000 - 8.00.761 (Intel X86)
              Feb 27 2003 12:09:37
              Cop
              yright (c) 1988-2003 Microsoft Corporation
              Enterprise Edition on Windo
              ws NT 5.2 (Build 3785: )



(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 " "

 ------------------------------
 Apr  1 2003  5:53:41:790PM

(1 row affected)

1> 2> 3> DBCC execution completed. If DBCC printed error messages, contact
your system administrator.
Configuration option 'show advanced options' changed from 1 to 1. Run the
RECONFIGURE statement to install.

sp_configure "show advanced",1
1> 2> reconfigure with override
1> 2> sp_configure
 name                                 minimum     maximum
config_value run_value
 ------------------------------------------------------------------------------- ----------- -----------
------------ -----------
 affinity mask                        -2147483648  2147483647
  65535       65535
 allow updates                                0           1           0
 0
 awe enabled                                  0           1           1
 1
 c2 audit mode                                0           1           0
 0
 cost threshold for parallelism               0       32767
5           5
 Cross DB Ownership Chaining                  0           1
  0           0
 cursor threshold                            -1  2147483647
-1          -1
 default full-text language                   0  2147483647
1033        1033
 default language                             0        9999           0
     0
 fill factor (%)                              0         100           0
 0
 index create memory (KB)                   704  2147483647
         0           0
 lightweight pooling                          0           1           1
    1
 locks                                     5000  2147483647           0
       0
 max degree of parallelism                    0          32           1
         1
 max server memory (MB)                       4  2147483647
    61775       61775
 max text repl size (B)                       0  2147483647
65536       65536
 max worker threads                          32       32767
532         532
 media retention                              0         365           0
    0
 min memory per query (KB)                  512  2147483647
        1024        1024
 min server memory (MB)                       0  2147483647
       0           0
 nested triggers                              0           1           1
1
 network packet size (B)                    512       65536
4096        4096
 open objects                                 0  2147483647           0
         0
 priority boost                               0           1           1
1
 query governor cost limit                    0  2147483647
    0           0
 query wait (s)                              -1  2147483647          -1
         -1
 recovery interval (min)                      0       32767
112         112
 remote access                                0           1           1
 1
 remote login timeout (s)                     0  2147483647
  0           0
 remote proc trans                            0           1           0
  0
 remote query timeout (s)                     0  2147483647
    0           0
```

```
scan for startup procs                          0        1          0
   0
set working set size                            0        1          0
   0
show advanced options                           0        1          1
        1
two digit year cutoff                        1753     9999
2049       2049
user connections                                0    32767          0
        0
user options                                    0    32767          0
   0

1>
```

Microsoft Windows Server 2003 Datacenter Edition

Changes to the SUT

Changes made to the default installation of .NET DataCenter 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 /PAE /MAXMEM=65535 /hal=halx440.dll

gpedit.msc - Computer Configuration - Windows Settings - Security Settings - Local Policies - User Rights Assignments - policy 'Lock pages in memory' added group 'Administrators'

Enabled VIA protocol for SQL Server

Microsoft SQL Server Startup Parameters

C:\Program Files\Microsoft SQL Server\MSSQL\Binn\sqlservr -c -x -t3502

where:

-c Start SQL Server independent of the Service Control Manager
-x Disable the keeping of CPU timeand cache hit ratio statistice
-t3502 writes a message to the SQL Server Errorlog showing the beginning and ending time of each checkpoint

Registry:

TPCC.AllTxns:
    Activation:
        Enable Object Pooling selected
        Minimum Pool Size: 110
        Maximum Pool Size: 110
        Creating Timeout: 300,000
        Enable Object Construction
        Enable Just in Time Activation
    Concurrency:
        Concurrency Required

```
[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"="ibmserv2"
"DbName"="tpcc"
"DbUser"="sa"
"DbPassword"=""
"COM_SinglePool"="YES"

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\P
arameters]
"ListenBackLog"=dword:00000096
"DispatchEntries"=hex(7):4c,00,44,00,41,00,50,00,53,00,56,00,43,00,00,00,53,
00,\
  4d,00,54,00,50,00,53,00,56,00,43,00,00,00,00,00
"PoolThreadLimit"=dword:000000be
"ThreadTimeout"=dword:00015180

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\P
erformance]
"Library"="infoctrs.dll"
"Open"="OpenINFOPerformanceData"
"Close"="CloseINFOPerformanceData"
"Collect"="CollectINFOPerformanceData"
"Last Counter"=dword:00000bfe
"Last Help"=dword:00000bff
"First Counter"=dword:00000bbe
"First Help"=dword:00000bbf
"Library Validation
Code"=hex:18,ef,36,c1,11,e4,c2,01,10,25,00,00,00,00,00,00
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
"WbemAdapFileSize"=dword:00002510
"WbemAdapStatus"=dword:00000000
World Wide Web Service Registry Parameters

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC]
"Type"=dword:00000020
"Start"=dword:00000002
"ErrorControl"=dword:00000001
"ImagePath"=hex(2):43,00,3a,00,5c,00,57,00,49,00,4e,00,4e,00,54,00,5c,00,53,
00,\
  79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,69,00,6e,00,65,00,74,00,73,\
  00,72,00,76,00,5c,00,69,00,6e,00,65,00,74,00,69,00,6e,00,66,00,6f,00,2e,00,\
  65,00,78,00,65,00,00,00
"DisplayName"="World Wide Web Publishing Service"
"DependOnService"=hex(7):49,00,49,00,53,00,41,00,44,00,4d,00,49,00,4e,00,0
0,00,\
  00,00
"DependOnGroup"=hex(7):00,00
"ObjectName"="LocalSystem"
"Description"="Provides Web connectivity and administration through the
Internet Information Services snap-in."
"FailureActions"=hex:ff,ff,ff,ff,00,00,00,00,00,00,00,00,03,00,00,00,50,65,0f,\
  00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\
ASP]
"NOTE"="This is for backward compatibility only."

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\
ASP\Parameters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters]
"MajorVersion"=dword:00000005
```

```
"MinorVersion"=dword:00000000
"InstallPath"="C:\\WINNT\\System32\\inetsrv"
"CertMapList"="C:\\WINNT\\System32\\inetsrv\\iiscrmap.dll"
"AccessDeniedMessage"="Error: Access is Denied."
"Filter DLLs"=""
"LogFileDirectory"="C:\\WINNT\\System32\\LogFiles"
"AcceptExOutstanding"=dword:00000028

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch\AdvancedDataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch\RDSServer.DataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\Script Map]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\Virtual Roots]
"/"="c:\\inetpub\\wwwroot,,205"
"/Scripts"="c:\\inetpub\\scripts,,1"
"/IISHelp"="c:\\winnt\\help\\iishelp,,1"
"/IISAdmin"="C:\\WINNT\\System32\\inetsrv\\iisadmin,,1"
"/IISSamples"="c:\\inetpub\\iissamples,,1"
"/MSADC"="c:\\program files\\common files\\system\\msadc,,1"
"/_vti_bin"="C:\\Program Files\\Common Files\\Microsoft Shared\\Web Server Extensions\\40\\isapi,,1"
"/Rpc"="C:\\WINNT\\System32\\RpcProxy,,1"
"/Printers"="C:\\WINNT\\web\\printers,,201"

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Performance]
"Library"="w3ctrs.dll"
"Open"="OpenW3PerformanceData"
"Close"="CloseW3PerformanceData"
"Collect"="CollectW3PerformanceData"
"Last Counter"=dword:00000b76
"Last Help"=dword:00000b77
"First Counter"=dword:00000ad4
"First Help"=dword:00000ad5
"Library Validation Code"=hex:36,82,c4,c8,11,e4,c2,01,10,1d,00,00,00,00,00,00
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
"WbemAdapFileSize"=dword:00001d10
"WbemAdapStatus"=dword:00000000

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Security]
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14,00,00,00,30,00,00,00,02,\
  00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,\
  00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,00,\
  05,12,00,00,00,74,00,6f,00,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,\
  20,00,00,00,20,02,00,00,72,00,73,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,\
  00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,00,\
  00,05,20,00,00,00,23,02,00,00,72,00,73,00,01,01,00,00,00,00,00,05,12,00,00,\
  00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Enum]
"0"="Root\\LEGACY_W3SVC\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001
```

```
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:  3/14/2003 - 2:56 PM
Value 0
 Name:        ClearPageFileAtShutdown
 Type:        REG_DWORD
 Data:        0

Value 1
 Name:        DisablePagingExecutive
 Type:        REG_DWORD
 Data:        0x1

Value 2
 Name:        LargeSystemCache
 Type:        REG_DWORD
 Data:        0

Value 3
 Name:        NonPagedPoolQuota
 Type:        REG_DWORD
 Data:        0

Value 4
 Name:        NonPagedPoolSize
 Type:        REG_DWORD
 Data:        0

Value 5
 Name:        PagedPoolQuota
 Type:        REG_DWORD
 Data:        0

Value 6
 Name:        PagedPoolSize
 Type:        REG_DWORD
 Data:        0

Value 7
 Name:        SecondLevelDataCache
 Type:        REG_DWORD
 Data:        0

Value 8
 Name:        SystemPages
 Type:        REG_DWORD
 Data:        0

Value 9
 Name:        PagingFiles
 Type:        REG_MULTI_SZ
 Data:        c:\pagefile.sys 2048 12288

Value 10
 Name:        PhysicalAddressExtension
 Type:        REG_DWORD
 Data:        0x1

Value 11
 Name:        WriteWatch
 Type:        REG_DWORD
 Data:        0x1
```

Value 12
 Name: SessionViewSize
 Type: REG_DWORD
 Data: 0x30

Value 13
 Name: SessionPoolSize
 Type: REG_DWORD
 Data: 0x4

Value 14
 Name: DontVerifyRandomDrivers
 Type: REG_DWORD
 Data: 0x1

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management\PrefetchParameters
Class Name: <NO CLASS>
Last Write Time: 4/1/2003 - 11:07 AM
Value 0
 Name: VideoInitTime
 Type: REG_DWORD
 Data: 0x1f4

Value 1
 Name: AppLaunchMaxNumPages
 Type: REG_DWORD
 Data: 0xfa0

Value 2
 Name: AppLaunchMaxNumSections
 Type: REG_DWORD
 Data: 0xaa

Value 3
 Name: AppLaunchTimerPeriod
 Type: REG_BINARY
 Data:
80 69 67 ff ff ff ff ff - .igÿÿÿÿÿ

Value 4
 Name: BootMaxNumPages
 Type: REG_DWORD
 Data: 0x1f400

Value 5
 Name: BootMaxNumSections
 Type: REG_DWORD
 Data: 0xff0

Value 6
 Name: BootTimerPeriod
 Type: REG_BINARY
 Data:
00 f2 d8 f8 ff ff ff ff - .òØøÿÿÿÿ

Value 7
 Name: MaxNumActiveTraces
 Type: REG_DWORD
 Data: 0x8

Value 8
 Name: MaxNumSavedTraces
 Type: REG_DWORD
 Data: 0x8

Value 9
 Name: RootDirPath
 Type: REG_SZ
 Data: Prefetch

Value 10
 Name: HostingAppList
 Type: REG_SZ
 Data: DLLHOST.EXE,MMC.EXE,RUNDLL32.EXE

Value 11
 Name: EnablePrefetcher
 Type: REG_DWORD
 Data: 0x2

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\I/O System
Class Name: <NO CLASS>
Last Write Time: 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: 4/1/2003 - 11:04 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\Adapters
Class Name: <NO CLASS>
Last Write Time: 3/13/2003 - 2:27 PM

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B0711B0
Class Name: <NO CLASS>
Last Write Time: 3/13/2003 - 1:13 PM
Value 0
Name: IPAddress
Type: REG_MULTI_SZ
Data: 192.168.230.233

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B0724B0
Class Name: <NO CLASS>
Last Write Time: 3/13/2003 - 1:12 PM
Value 0
Name: IPAddress
Type: REG_MULTI_SZ
Data: 192.168.120.234

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Parameters
Class Name: <NO CLASS>
Last Write Time: 3/13/2003 - 2:27 PM
Value 0
Name: MaxRegisterMBytes
Type: REG_DWORD
Data: 0x200

Value 1
Name: MaxRegisterRdmaMBytes
Type: REG_DWORD
Data: 0x200

Value 2
Name: MaxCQEntries
Type: REG_DWORD
Data: 0x2000

Value 3
Name: MaxRegisterRegions
Type: REG_DWORD
Data: 0x1000

Value 4
Name: MaxVIs
Type: REG_DWORD
Data: 0x400

Value 5
Name: MaxCQs
Type: REG_DWORD
Data: 0x400

Value 6
Name: MaxTransferSize
Type: REG_DWORD
Data: 0x10000

Value 7
Name: MaxPTags
Type: REG_DWORD
Data: 0x800

Value 8
Name: IuBuffers
Type: REG_DWORD
Data: 0x100

Value 9
Name: SendDescQuota
Type: REG_DWORD
Data: 0x8

Value 10
Name: RecvDescQuota
Type: REG_DWORD
Data: 0x8

Value 11
Name: SupportPrototypeCards
Type: REG_DWORD
Data: 0x1

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Security
Class Name: <NO CLASS>
Last Write Time: 3/13/2003 - 1:06 PM
Value 0
Name: Security
Type: REG_BINARY
Data:
00000000 01 00 14 80 90 00 00 00 - 9c 00 00 00 14 00 00 00 ....
00000010 30 00 00 00 02 00 1c 00 - 01 00 00 00 02 80 14 00 0...............
00000020 ff 01 0f 00 01 01 00 00 - 00 00 00 01 00 00 00 00 ÿ...............
00000030 02 00 60 00 04 00 00 00 - 00 00 14 00 fd 01 02 00 ..`.....ý...
00000040 01 01 00 00 00 00 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 ÿ..... ...
00000060 20 02 00 00 00 00 14 00 - 8d 01 02 00 01 01 00 00 ....
00000070 00 00 00 05 0b 00 00 00 - 00 00 18 00 fd 01 02 00 ....ý...
00000080 01 02 00 00 00 00 00 05 - 20 00 00 00 23 02 00 00 ....#...
00000090 01 01 00 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: 4/1/2003 - 11:04 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

SUT System Information Report

System Information report written at: 04/01/03 17:50:26
System Name: IBMSERV2
[System Summary]

Item Value
OS Name Microsoft(R) Windows(R) Server 2003, Datacenter Edition
Version 5.2.3785 Build 3785
OS Manufacturer Microsoft Corporation
System Name IBMSERV2
System Manufacturer IBM
System Model eserver xSeries 440 -[4444aaa]-
System Type X86-based PC
Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz
Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz
Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz
Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz
Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz
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Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz
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Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz
Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz
Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz
BIOS Version/Date IBM -[REE108-US-1.00]-, 3/25/2003
SMBIOS Version 2.3
Windows Directory C:\WINDOWS
System Directory C:\WINDOWS\system32
Boot Device \Device\HarddiskVolume1
Locale United States
Hardware Abstraction Layer Version = "1.25.0000 built by: (x86chk_i)"
User NameIBMSERV2\Administrator
Time ZoneEastern Standard Time
Total Physical Memory 65,536.00 MB
Available Physical Memory 61.31 GB
Total Virtual Memory 125.44 GB
Available Virtual Memory 124.61 GB
Page File Space 63.44 GB
Page File C:\pagefile.sys

[Hardware Resources]

[Conflicts/Sharing]

Resource Device
I/O Port 0x0000A000-0x0000BFFF PCI bus
I/O Port 0x0000A000-0x0000BFFF DEC 21154 PCI to PCI bridge
I/O Port 0x0000A000-0x0000BFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

I/O Port 0x00000000-0x00001FFF PCI bus
I/O Port 0x00000000-0x00001FFF Direct memory access controller

IRQ 4 Other PCI Bridge Device
IRQ 4 Communications Port (COM1)

Memory Address 0xAA000000-0xABFFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xAA000000-0xABFFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

I/O Port 0x0000F000-0x0000FFFF DEC 21154 PCI to PCI bridge
I/O Port 0x0000F000-0x0000FFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

Memory Address 0xA6000000-0xA7FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xA6000000-0xA7FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

Memory Address 0xA4000000-0xA7FFFFFF PCI bus
Memory Address 0xA4000000-0xA7FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xA4000000-0xA7FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

I/O Port 0x00002000-0x000027FF PCI bus
I/O Port 0x00002000-0x000027FF LSI Logic 1020/1030 Ultra320 SCSI Adapter

Memory Address 0xE8000000-0xE9FFFFFF PCI bus
Memory Address 0xE8000000-0xE9FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xE8000000-0xE9FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

I/O Port 0x00006000-0x00007FFF PCI bus
I/O Port 0x00006000-0x00007FFF DEC 21154 PCI to PCI bridge
I/O Port 0x00006000-0x00007FFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

I/O Port 0x0000E000-0x0000FFFF PCI bus
I/O Port 0x0000E000-0x0000FFFF DEC 21154 PCI to PCI bridge
I/O Port 0x0000E000-0x0000FFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

Memory Address 0x94000000-0x97FFFFFF PCI bus
Memory Address 0x94000000-0x97FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0x94000000-0x97FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

Memory Address 0x84000000-0x860FFFFF DEC 21154 PCI to PCI bridge
Memory Address 0x84000000-0x860FFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

Memory Address 0x80000000-0x87FFFFFF PCI bus
Memory Address 0x80000000-0x87FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0x80000000-0x87FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

I/O Port 0x00003000-0x00003FFF PCI bus
I/O Port 0x00003000-0x00003FFF DEC 21154 PCI to PCI bridge
I/O Port 0x00003000-0x00003FFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

Memory Address 0x8C000000-0x8E0FFFFF DEC 21154 PCI to PCI bridge
Memory Address 0x8C000000-0x8E0FFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

I/O Port 0x0000B000-0x0000BFFF DEC 21154 PCI to PCI bridge
I/O Port 0x0000B000-0x0000BFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

Memory Address 0x90000000-0x93FFFFFF PCI bus
Memory Address 0x90000000-0x93FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0x90000000-0x93FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

Memory Address 0xCC000000-0xCFFFFFFF PCI bus
Memory Address 0xCC000000-0xCFFFFFFF DEC 21154 PCI to PCI bridge

Memory Address 0xCC000000-0xCFFFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

Memory Address 0xC8000000-0xCBFFFFFF PCI bus
Memory Address 0xC8000000-0xCBFFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xC8000000-0xCBFFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

Memory Address 0xC4000000-0xC60FFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xC4000000-0xC60FFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

Memory Address 0xD2200000-0xD22FFFFF PCI bus
Memory Address 0xD2200000-0xD22FFFFF LSI Logic 1020/1030 Ultra320 SCSI Adapter

I/O Port 0x00002800-0x000029FF PCI bus
I/O Port 0x00002800-0x000029FF QLogic QLA23xx PCI Fibre Channel Adapter

Memory Address 0xAC000000-0xADFFFFFF PCI bus
Memory Address 0xAC000000-0xADFFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xAC000000-0xADFFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

Memory Address 0xE4000000-0xE7FFFFFF PCI bus
Memory Address 0xE4000000-0xE7FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xE4000000-0xE7FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

Memory Address 0xE2000000-0xE3FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xE2000000-0xE3FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

I/O Port 0x00005000-0x00005FFF DEC 21154 PCI to PCI bridge
I/O Port 0x00005000-0x00005FFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

Memory Address 0xE0000000-0xE3FFFFFF PCI bus
Memory Address 0xE0000000-0xE3FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xE0000000-0xE3FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

Memory Address 0xD0000000-0xD1FFFFFF PCI bus
Memory Address 0xD0000000-0xD1FFFFFF RAGE XL PCI

Memory Address 0x88000000-0x8FFFFFFF PCI bus
Memory Address 0x88000000-0x8FFFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0x88000000-0x8FFFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

Memory Address 0xC0000000-0xC7FFFFFF PCI bus
Memory Address 0xC0000000-0xC7FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xC0000000-0xC7FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

Memory Address 0xA0000-0xA7FFF PCI bus
Memory Address 0xA0000-0xA7FFF RAGE XL PCI

Memory Address 0xA0000000-0xA3FFFFFF PCI bus
Memory Address 0xA0000000-0xA3FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xA0000000-0xA3FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

I/O Port 0x00004000-0x00005FFF PCI bus
I/O Port 0x00004000-0x00005FFF DEC 21154 PCI to PCI bridge
I/O Port 0x00004000-0x00005FFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

I/O Port 0x0000C000-0x0000DFFF PCI bus
I/O Port 0x0000C000-0x0000DFFF DEC 21154 PCI to PCI bridge
I/O Port 0x0000C000-0x0000DFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

I/O Port 0x00008000-0x00008FFF PCI bus
I/O Port 0x00008000-0x00008FFF DEC 21154 PCI to PCI bridge
I/O Port 0x00008000-0x00008FFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

Memory Address 0xA8000000-0xABFFFFFF PCI bus
Memory Address 0xA8000000-0xABFFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xA8000000-0xABFFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)

[DMA]

Resource	Device	Status
Channel 2	Standard floppy disk controller	OK
Channel 4	Direct memory access controller	OK

[Forced Hardware]

Device PNP Device ID

[I/O]

Resource	Device	Status
0x00000000-0x00001FFF	PCI bus	OK
0x00000000-0x00001FFF	Direct memory access controller	OK
0x00001800-0x000018FF	RAGE XL PCI	OK
0x000003B0-0x000003BB	RAGE XL PCI	OK
0x000003C0-0x000003DF	RAGE XL PCI	OK
0x00001900-0x0000197F	Other PCI Bridge Device	OK
0x00000A79-0x00000A79	ISAPNP Read Data Port	OK
0x00000279-0x00000279	ISAPNP Read Data Port	OK
0x00000274-0x00000277	ISAPNP Read Data Port	OK
0x00000430-0x00000437	Motherboard resources	OK
0x00000438-0x00000439	Motherboard resources	OK
0x0000002E-0x0000002F	Motherboard resources	OK
0x00000064-0x00000064	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard	OK
0x00000060-0x00000060	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard	OK
0x000003F0-0x000003F5	Standard floppy disk controller	OK
0x000003F7-0x000003F7	Standard floppy disk controller	OK
0x000003F8-0x000003FF	Communications Port (COM1)	OK
0x00000020-0x00000021	Advanced programmable interrupt controller	OK
0x000000A0-0x000000A1	Advanced programmable interrupt controller	OK
0x00000080-0x0000008F	Direct memory access controller	OK
0x000000C0-0x000000DF	Direct memory access controller	OK
0x00000040-0x00000043	System timer	OK
0x00000070-0x00000073	System CMOS/real time clock	OK
0x00000061-0x00000061	System speaker	OK

0x000000F0-0x000000FF Numeric data processor OK
0x00000092-0x00000092 Motherboard resources OK
0x000000A8-0x000000A9 Motherboard resources OK
0x00000440-0x0000044F Motherboard resources OK
0x000004D0-0x000004D1 Motherboard resources OK
0x000004E0-0x000004FF Motherboard resources OK
0x00000500-0x0000057F Motherboard resources OK
0x00000700-0x0000070F VIA Bus Master IDE Controller OK
0x000001F0-0x000001F7 Primary IDE Channel OK
0x000003F6-0x000003F6 Primary IDE Channel OK
0x00000170-0x00000177 Secondary IDE Channel OK
0x00000376-0x00000376 Secondary IDE Channel OK
0x00002000-0x000027FF PCI bus OK
0x00002000-0x000027FF LSI Logic 1020/1030 Ultra320 SCSI Adapter OK
0x00002100-0x000021FF LSI Logic 1020/1030 Ultra320 SCSI Adapter OK
0x00004000-0x00005FFF PCI bus OK
0x00004000-0x00005FFF DEC 21154 PCI to PCI bridge OK
0x00004000-0x00005FFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0x00005000-0x00005FFF DEC 21154 PCI to PCI bridge OK
0x00005000-0x00005FFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0x00002800-0x000029FF PCI bus OK
0x00002800-0x000029FF QLogic QLA23xx PCI Fibre Channel Adapter OK
0x00003000-0x00003FFF PCI bus OK
0x00003000-0x00003FFF DEC 21154 PCI to PCI bridge OK
0x00003000-0x00003FFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0x00006000-0x00007FFF PCI bus OK
0x00006000-0x00007FFF DEC 21154 PCI to PCI bridge OK
0x00006000-0x00007FFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0x00008000-0x00008FFF PCI bus OK
0x00008000-0x00008FFF DEC 21154 PCI to PCI bridge OK
0x00008000-0x00008FFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0x0000A000-0x0000BFFF PCI bus OK
0x0000A000-0x0000BFFF DEC 21154 PCI to PCI bridge OK
0x0000A000-0x0000BFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0x0000B000-0x0000BFFF DEC 21154 PCI to PCI bridge OK
0x0000B000-0x0000BFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0x00009000-0x000093FF PCI bus OK
0x0000C000-0x0000DFFF PCI bus OK
0x0000C000-0x0000DFFF DEC 21154 PCI to PCI bridge OK
0x0000C000-0x0000DFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0x0000D000-0x0000D0FF QLogic QLA23xx PCI Fibre Channel Adapter OK
0x0000E000-0x0000FFFF PCI bus OK
0x0000E000-0x0000FFFF DEC 21154 PCI to PCI bridge OK
0x0000E000-0x0000FFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0x0000F000-0x0000FFFF DEC 21154 PCI to PCI bridge OK
0x0000F000-0x0000FFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK

[IRQs]

Resource Device Status
IRQ 9 Microsoft ACPI-Compliant System OK
IRQ 39 RAGE XL PCI OK
IRQ 4 Other PCI Bridge Device OK
IRQ 4 Communications Port (COM1) OK
IRQ 1 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard OK
IRQ 12 PS/2 Compatible Mouse OK
IRQ 6 Standard floppy disk controller OK
IRQ 0 System timer OK
IRQ 8 System CMOS/real time clock OK
IRQ 13 Numeric data processor OK
IRQ 14 Primary IDE Channel OK
IRQ 15 Secondary IDE Channel OK
IRQ 40 LSI Logic 1020/1030 Ultra320 SCSI Adapter OK
IRQ 41 LSI Logic 1020/1030 Ultra320 SCSI Adapter OK
IRQ 42 Broadcom NetXtreme Gigabit Ethernet #5 OK
IRQ 11 Broadcom NetXtreme Gigabit Ethernet #6 OK
IRQ 51 Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
IRQ 55 Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
IRQ 71 QLogic QLA23xx PCI Fibre Channel Adapter OK
IRQ 67 Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
IRQ 63 Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
IRQ 116 Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
IRQ 109 Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
IRQ 113 Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
IRQ 137 Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
IRQ 141 QLogic QLA23xx PCI Fibre Channel Adapter OK
IRQ 130 Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
IRQ 134 Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK

[Memory]

Resource Device Status
0xA0000-0xA7FFF PCI bus OK
0xA0000-0xA7FFF RAGE XL PCI OK
0xA8000-0xAFFFF PCI bus OK
0xB0000-0xB7FFF PCI bus OK
0xB8000-0xBFFFF PCI bus OK
0xD0000000-0xD1FFFFFF PCI bus OK
0xD0000000-0xD1FFFFFF RAGE XL PCI OK
0xD1200000-0xD1200FFF RAGE XL PCI OK
0xD1000000-0xD11FFFFF Other PCI Bridge Device OK
0x0400-0x04FF System board OK
0xD2200000-0xD22FFFFF PCI bus OK
0xD2200000-0xD22FFFFF LSI Logic 1020/1030 Ultra320 SCSI Adapter OK
0xD2210000-0xD221FFFF LSI Logic 1020/1030 Ultra320 SCSI Adapter OK
0xD2220000-0xD222FFFF LSI Logic 1020/1030 Ultra320 SCSI Adapter OK
0xD2230000-0xD223FFFF LSI Logic 1020/1030 Ultra320 SCSI Adapter OK
0xD2240000-0xD224FFFF Broadcom NetXtreme Gigabit Ethernet #5 OK
0xD2250000-0xD225FFFF Broadcom NetXtreme Gigabit Ethernet #6 OK
0xC0000000-0xC7FFFFFF PCI bus OK
0xC0000000-0xC7FFFFFF DEC 21154 PCI to PCI bridge OK
0xC0000000-0xC7FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0xE0000000-0xE3FFFFFF PCI bus OK
0xE0000000-0xE3FFFFFF DEC 21154 PCI to PCI bridge OK

0xE0000000-0xE3FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0xC4000000-0xC60FFFFF DEC 21154 PCI to PCI bridge OK
0xC4000000-0xC60FFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0xE2000000-0xE3FFFFFF DEC 21154 PCI to PCI bridge OK
0xE2000000-0xE3FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0xD2400000-0xD24FFFFF PCI bus OK
0xD2420000-0xD2420FFF QLogic QLA23xx PCI Fibre Channel Adapter OK
0xC8000000-0xCBFFFFFF PCI bus OK
0xC8000000-0xCBFFFFFF DEC 21154 PCI to PCI bridge OK
0xC8000000-0xCBFFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0xE8000000-0xE9FFFFFF PCI bus OK
0xE8000000-0xE9FFFFFF DEC 21154 PCI to PCI bridge OK
0xE8000000-0xE9FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0xCC000000-0xCFFFFFFF PCI bus OK
0xCC000000-0xCFFFFFFF DEC 21154 PCI to PCI bridge OK
0xCC000000-0xCFFFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0xE4000000-0xE7FFFFFF PCI bus OK
0xE4000000-0xE7FFFFFF DEC 21154 PCI to PCI bridge OK
0xE4000000-0xE7FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0x90000000-0x93FFFFFF PCI bus OK
0x90000000-0x93FFFFFF DEC 21154 PCI to PCI bridge OK
0x90000000-0x93FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0xA0000000-0xA3FFFFFF PCI bus OK
0xA0000000-0xA3FFFFFF DEC 21154 PCI to PCI bridge OK
0xA0000000-0xA3FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0x80000000-0x87FFFFFF PCI bus OK
0x80000000-0x87FFFFFF DEC 21154 PCI to PCI bridge OK
0x80000000-0x87FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0xA4000000-0xA7FFFFFF PCI bus OK
0xA4000000-0xA7FFFFFF DEC 21154 PCI to PCI bridge OK
0xA4000000-0xA7FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0x84000000-0x860FFFFF DEC 21154 PCI to PCI bridge OK
0x84000000-0x860FFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0xA6000000-0xA7FFFFFF DEC 21154 PCI to PCI bridge OK
0xA6000000-0xA7FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0x98000000-0x987FFFFF PCI bus OK
0xAE000000-0xAE7FFFFF PCI bus OK
0x94000000-0x97FFFFFF PCI bus OK
0x94000000-0x97FFFFFF DEC 21154 PCI to PCI bridge OK
0x94000000-0x97FFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0xAC000000-0xADFFFFFF PCI bus OK
0xAC000000-0xADFFFFFF DEC 21154 PCI to PCI bridge OK
0xAC000000-0xADFFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0x96120000-0x96120FFF QLogic QLA23xx PCI Fibre Channel Adapter OK
0x88000000-0x8FFFFFFF PCI bus OK
0x88000000-0x8FFFFFFF DEC 21154 PCI to PCI bridge OK
0x88000000-0x8FFFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0xA8000000-0xABFFFFFF PCI bus OK
0xA8000000-0xABFFFFFF DEC 21154 PCI to PCI bridge OK
0xA8000000-0xABFFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0x8C000000-0x8E0FFFFF DEC 21154 PCI to PCI bridge OK
0x8C000000-0x8E0FFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0xAA000000-0xABFFFFFF DEC 21154 PCI to PCI bridge OK
0xAA000000-0xABFFFFFF Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) OK
0x98800000-0x98FFFFFF PCI bus OK
0xAE800000-0xAEFFFFFF PCI bus OK

[Components]

[Multimedia]

[Audio Codecs]

CODEC Manufacturer Description Status File Version Size Creation Date
c:\windows\system32\msg723.acm Microsoft Corporation
OK C:\WINDOWS\system32\MSG723.ACM 4.4.4000 116.00 KB (118,784 bytes) 3/12/2003 5:42 PM
c:\windows\system32\msaud32.acm Microsoft Corporation
Windows Media Audio Codec OK
C:\WINDOWS\system32\MSAUD32.ACM 8.00.00.4487 288.00 KB (294,912 bytes) 3/12/2003 5:17 PM
c:\windows\system32\tssoft32.acm DSP GROUP, INC.
OK C:\WINDOWS\system32\TSSOFT32.ACM 1.01 9.50 KB (9,728 bytes) 3/12/2003 5:17 PM
c:\windows\system32\imaadp32.acm Microsoft Corporation
OK C:\WINDOWS\system32\IMAADP32.ACM 5.2.3785.0 (srv03_rtm.030308-1736) 15.50 KB (15,872 bytes) 3/12/2003 5:17 PM
c:\windows\system32\msg711.acm Microsoft Corporation
OK C:\WINDOWS\system32\MSG711.ACM 5.2.3785.0 (srv03_rtm.030308-1736) 10.00 KB (10,240 bytes) 3/12/2003 5:17 PM
c:\windows\system32\msadp32.acm Microsoft Corporation
OK C:\WINDOWS\system32\MSADP32.ACM 5.2.3785.0 (srv03_rtm.030308-1736) 14.50 KB (14,848 bytes) 3/12/2003 5:17 PM
c:\windows\system32\sl_anet.acm Sipro Lab Telecom Inc.
Sipro Lab Telecom Audio Codec OK
C:\WINDOWS\system32\SL_ANET.ACM 3.02 84.00 KB (86,016 bytes) 3/12/2003 5:17 PM
c:\windows\system32\msgsm32.acm Microsoft Corporation
OK C:\WINDOWS\system32\MSGSM32.ACM 5.2.3785.0 (srv03_rtm.030308-1736) 20.50 KB (20,992 bytes) 3/12/2003 5:17 PM

[Video Codecs]

CODEC Manufacturer Description Status File Version Size Creation Date
c:\windows\system32\msh263.drv Microsoft Corporation
OK C:\WINDOWS\system32\MSH263.DRV 4.4.4000 284.00 KB (290,816 bytes) 3/8/2003 5:57 PM
c:\windows\system32\msh261.drv Microsoft Corporation
OK C:\WINDOWS\system32\MSH261.DRV 4.4.4000 180.00 KB (184,320 bytes) 3/12/2003 5:42 PM
c:\windows\system32\tsbyuv.dll Microsoft Corporation
OK C:\WINDOWS\system32\TSBYUV.DLL 5.2.3785.0 (srv03_rtm.030308-1736) 8.00 KB (8,192 bytes) 3/8/2003 6:01 PM

c:\windows\system32\msyuv.dll Microsoft Corporation
OK C:\WINDOWS\system32\MSYUV.DLL 5.2.3785.0 (srv03_rtm.030308-1736) 16.50 KB (16,896 bytes) 3/8/2003 6:00 PM
c:\windows\system32\iyuv_32.dll Microsoft Corporation
OK C:\WINDOWS\system32\IYUV_32.DLL 5.2.3785.0 (srv03_rtm.030308-1736) 45.00 KB (46,080 bytes) 3/8/2003 6:00 PM
c:\windows\system32\msvidc32.dll Microsoft Corporation
OK C:\WINDOWS\system32\MSVIDC32.DLL 5.2.3785.0 (srv03_rtm.030308-1736) 26.50 KB (27,136 bytes) 3/12/2003 5:17 PM
c:\windows\system32\msrle32.dll Microsoft Corporation
OK C:\WINDOWS\system32\MSRLE32.DLL 5.2.3785.0 (srv03_rtm.030308-1736) 10.50 KB (10,752 bytes) 3/12/2003 5:17 PM

[CD-ROM]

Item Value
Drive Z:
Description CD-ROM Drive
Media Loaded No
Media Type CD-ROM
Name MATSHITA DVD-ROM SR-8177
Manufacturer (Standard CD-ROM drives)
Status OK
Transfer Rate Not Available
SCSI Target ID 0
PNP Device ID IDE\CDROMMATSHITA_DVD-ROM_SR-8177_____NB21___\5&2CDE688A&0&0.0.0
Driver c:\windows\system32\drivers\cdrom.sys (5.2.3785.0 (srv03_rtm.030308-1736), 49.50 KB (50,688 bytes), 3/8/2003 3:03 PM)

[Sound Device]

Item Value

[Display]

Item Value
Name RAGE XL PCI
PNP Device ID PCI\VEN_1002&DEV_4752&SUBSYS_02401014&REV_27\3&267A616A&0&18
Adapter Type ATI RAGE XL PCI (B41), ATI Technologies Inc. compatible
Adapter Description RAGE XL PCI
Adapter RAM 8.00 MB (8,388,608 bytes)
Installed Drivers ati2drad.dll
Driver Version 5.00.2195.5012
INF File oem2.inf (ati2mpad section)
Color Planes 1
Color Table Entries 4294967296
Resolution 1024 x 768 x 70 hertz
Bits/Pixel 32
Memory Address 0xD0000000-0xD1FFFFFF
I/O Port 0x00001800-0x000018FF
Memory Address 0xD1200000-0xD1200FFF
IRQ Channel IRQ 39
I/O Port 0x000003B0-0x000003BB
I/O Port 0x000003C0-0x000003DF
Memory Address 0xA0000-0xA7FFF
Driver c:\windows\system32\drivers\ati2mpad.sys (5.00.2195.5012, 316.20 KB (323,793 bytes), 12/21/2001 11:09 AM)

[Infrared]

Item Value

[Input]

[Keyboard]

Item Value
Description Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
Name Enhanced (101- or 102-key)
Layout 00000409
PNP Device ID ACPI\PNP0303\4&7FD7688&0
Number of Function Keys 12
IRQ Channel IRQ 1
I/O Port 0x00000064-0x00000064
I/O Port 0x00000060-0x00000060
Driver c:\windows\system32\drivers\i8042prt.sys (5.2.3785.0 (srv03_rtm.030308-1736), 69.00 KB (70,656 bytes), 3/8/2003 5:13 PM)

[Pointing Device]

Item Value
Hardware Type PS/2 Compatible Mouse
Number of Buttons 2
Status OK
PNP Device ID ACPI\PNP0F13\4&7FD7688&0
Power Management Supported No
Double Click Threshold 6
Handedness Right Hand Operation
IRQ Channel IRQ 12
Driver c:\windows\system32\drivers\i8042prt.sys (5.2.3785.0 (srv03_rtm.030308-1736), 69.00 KB (70,656 bytes), 3/8/2003 5:13 PM)

[Modem]

Item Value

[Network]

[Adapter]

Item Value
Name [00000001] RAS Async Adapter
Adapter Type Not Available
Product Type RAS Async Adapter
Installed Yes
PNP Device ID Not Available
Last Reset 4/1/2003 11:04 AM
Index 1
Service Name AsyncMac
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available

Name [00000002] WAN Miniport (L2TP)
Adapter Type Not Available
Product Type WAN Miniport (L2TP)
Installed Yes

PNP Device ID ROOT\MS_L2TPMINIPORT\0000
Last Reset 4/1/2003 11:04 AM
Index 2
Service Name Rasl2tp
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available
Driver c:\windows\system32\drivers\rasl2tp.sys (5.2.3785.0 (srv03_rtm.030308-1736), 77.00 KB (78,848 bytes), 3/12/2003 5:17 PM)

Name [00000003] WAN Miniport (PPTP)
Adapter Type Wide Area Network (WAN)
Product Type WAN Miniport (PPTP)
Installed Yes
PNP Device ID ROOT\MS_PPTPMINIPORT\0000
Last Reset 4/1/2003 11:04 AM
Index 3
Service Name PptpMiniport
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 50:50:54:50:30:30
Driver c:\windows\system32\drivers\raspptp.sys (5.2.3785.0 (srv03_rtm.030308-1736), 70.50 KB (72,192 bytes), 3/12/2003 5:17 PM)

Name [00000004] WAN Miniport (PPPOE)
Adapter Type Wide Area Network (WAN)
Product Type WAN Miniport (PPPOE)
Installed Yes
PNP Device ID ROOT\MS_PPPOEMINIPORT\0000
Last Reset 4/1/2003 11:04 AM
Index 4
Service Name RasPppoe
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 33:50:6F:45:30:30
Driver c:\windows\system32\drivers\raspppoe.sys (5.2.3785.0 (srv03_rtm.030308-1736), 38.00 KB (38,912 bytes), 3/12/2003 5:17 PM)

Name [00000005] Direct Parallel
Adapter Type Not Available
Product Type Direct Parallel
Installed Yes
PNP Device ID ROOT\MS_PTIMINIPORT\0000
Last Reset 4/1/2003 11:04 AM
Index 5
Service Name Raspti
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available
Driver c:\windows\system32\drivers\raspti.sys (5.2.3785.0 (srv03_rtm.030308-1736), 18.50 KB (18,944 bytes), 3/12/2003 5:17 PM)

Name [00000006] WAN Miniport (IP)
Adapter Type Not Available
Product Type WAN Miniport (IP)
Installed Yes
PNP Device ID ROOT\MS_NDISWANIP\0000
Last Reset 4/1/2003 11:04 AM
Index 6
Service Name NdisWan
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available
Driver c:\windows\system32\drivers\ndiswan.sys (5.2.3785.0 (srv03_rtm.030308-1736), 100.00 KB (102,400 bytes), 3/12/2003 5:17 PM)

Name [00000007] Broadcom NetXtreme Gigabit Ethernet
Adapter Type Not Available
Product Type Broadcom NetXtreme Gigabit Ethernet
Installed Yes
PNP Device ID Not Available
Last Reset 4/1/2003 11:04 AM
Index 7
Service Name b57w2k
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available

Name [00000008] Broadcom NetXtreme Gigabit Ethernet
Adapter Type Not Available
Product Type Broadcom NetXtreme Gigabit Ethernet
Installed Yes
PNP Device ID Not Available
Last Reset 4/1/2003 11:04 AM
Index 8
Service Name b57w2k
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled Yes
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available

Name [00000009] Broadcom NetXtreme Gigabit Ethernet
Adapter Type Not Available
Product Type Broadcom NetXtreme Gigabit Ethernet
Installed Yes
PNP Device ID Not Available
Last Reset 4/1/2003 11:04 AM
Index 9
Service Name b57w2k
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available

DHCP Enabled Yes
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available

Name [00000010] Broadcom NetXtreme Gigabit Ethernet
Adapter Type Not Available
Product Type Broadcom NetXtreme Gigabit Ethernet
Installed Yes
PNP Device ID Not Available
Last Reset 4/1/2003 11:04 AM
Index 10
Service Name b57w2k
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled Yes
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available

Name [00000011] Broadcom NetXtreme Gigabit Ethernet
Adapter Type Ethernet 802.3
Product Type Broadcom NetXtreme Gigabit Ethernet
Installed Yes
PNP Device ID
PCI\VEN_14E4&DEV_1648&SUBSYS_02A61014&REV_01\3&13C0B0C5&0&20
Last Reset 4/1/2003 11:04 AM
Index 11
Service Name b57w2k
IP Address 192.168.122.233
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 12:34:56:78:9A:BC
Memory Address 0xD2240000-0xD224FFFF
IRQ Channel IRQ 42
Driver c:\windows\system32\drivers\b57xp32.sys (6.34.0.0 built by: WinDDK, 166.88 KB (170,880 bytes), 3/20/2003 12:46 PM)

Name [00000012] Broadcom NetXtreme Gigabit Ethernet
Adapter Type Ethernet 802.3
Product Type Broadcom NetXtreme Gigabit Ethernet
Installed Yes
PNP Device ID
PCI\VEN_14E4&DEV_1648&SUBSYS_02A61014&REV_01\3&13C0B0C5&0&21
Last Reset 4/1/2003 11:04 AM
Index 12
Service Name b57w2k
IP Address 0.0.0.0
IP Subnet 0.0.0.0
Default IP Gateway Not Available
DHCP Enabled Yes
DHCP Server 9.44.5.76
DHCP Lease Expires 3/28/2003 1:19 AM
DHCP Lease Obtained 3/27/2003 1:19 PM
MAC Address E8:A5:13:00:35:F7
Memory Address 0xD2250000-0xD225FFFF
IRQ Channel IRQ 11
Driver c:\windows\system32\drivers\b57xp32.sys (6.34.0.0 built by: WinDDK, 166.88 KB (170,880 bytes), 3/20/2003 12:46 PM)

[Protocol]

Item Value
Name MSAFD Tcpip [TCP/IP]
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 16 bytes
Maximum Message Size 0 bytes
Message Oriented No
Minimum Address Size 16 bytes
Pseudo Stream Oriented No
Supports Broadcasting No
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data Yes
Supports Graceful Closing Yes
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD Tcpip [UDP/IP]
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 16 bytes
Maximum Message Size 63.93 KB (65,467 bytes)
Message Oriented Yes
Minimum Address Size 16 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting Yes

Name RSVP UDP Service Provider
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 16 bytes
Maximum Message Size 63.93 KB (65,467 bytes)
Message Oriented Yes
Minimum Address Size 16 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption Yes
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting Yes

Name RSVP TCP Service Provider
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 16 bytes
Maximum Message Size 0 bytes
Message Oriented No
Minimum Address Size 16 bytes
Pseudo Stream Oriented No
Supports Broadcasting No

Supports Connect Data No
Supports Disconnect Data No
Supports Encryption Yes
Supports Expedited Data Yes
Supports Graceful Closing Yes
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{A9D928ED-5B56-4A58-A123-8C70BD5583A5}] SEQPACKET 7
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting No
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{A9D928ED-5B56-4A58-A123-8C70BD5583A5}] DATAGRAM 7
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{8402267C-A1B1-45D4-B2E6-BEADDB99EB27}] SEQPACKET 6
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting No
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{8402267C-A1B1-45D4-B2E6-BEADDB99EB27}] DATAGRAM 6
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{8C62745E-AAE6-4A42-91B0-0400578C9D31}] SEQPACKET 5
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting No
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{8C62745E-AAE6-4A42-91B0-0400578C9D31}] DATAGRAM 5
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{B47CA0B2-DDB4-4E0A-8C65-9B88716FE1A8}] SEQPACKET 4
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)

Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting No
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{B47CA0B2-DDB4-4E0A-8C65-9B88716FE1A8}] DATAGRAM 4
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{0CDA6DA7-D004-4785-98CB-D32569132772}] SEQPACKET 3
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting No
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{0CDA6DA7-D004-4785-98CB-D32569132772}] DATAGRAM 3
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{563BD738-1A53-4026-A72C-5242D6C20910}] SEQPACKET 0
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting No
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{563BD738-1A53-4026-A72C-5242D6C20910}] DATAGRAM 0
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{5E9E0D53-7C36-4180-8443-B07EF9866CCD}] SEQPACKET 1
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting No
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{5E9E0D53-7C36-4180-8443-B07EF9866CCD}] DATAGRAM 1
Connectionless Service Yes

Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{0834FA02-EE26-4BEE-A6CA-964D45B9EACD}] SEQPACKET 2
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting No
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{0834FA02-EE26-4BEE-A6CA-964D45B9EACD}] DATAGRAM 2
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting No

[WinSock]

Item Value
File c:\windows\system32\winsock.dll
Size 2.80 KB (2,864 bytes)
Version 3.10

File c:\windows\system32\wsock32.dll
Size 22.00 KB (22,528 bytes)
Version 5.2.3785.0 (srv03_rtm.030308-1736)

[Ports]

[Serial]

Item Value
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
IRQ Channel IRQ 4
I/O Port 0x000003F8-0x000003FF
Driver c:\windows\system32\drivers\serial.sys (5.2.3785.0 (srv03_rtm.030308-1736), 76.00 KB (77,824 bytes), 3/8/2003 3:38 PM)

[Parallel]

Item Value

[Storage]

[Drives]

Item Value
Drive A:
Description 3 1/2 Inch Floppy Drive

Drive C:
Description Local Fixed Disk
Compressed No

File System NTFS
Size 33.90 GB (36,396,830,720 bytes)
Free Space 27.65 GB (29,692,469,248 bytes)
Volume Name C_DRIVE
Volume Serial Number F0C2D5E1

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 216.54 GB (232,503,955,456 bytes)
Free Space 216.46 GB (232,420,855,808 bytes)
Volume Name F_DRIVE
Volume Serial Number 84A652DC

Drive G:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 631.94 GB (678,536,212,480 bytes)
Free Space 89.85 GB (96,480,759,808 bytes)
Volume Name G_DRIVE
Volume Serial Number C01C4693

Drive H:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 631.84 GB (678,429,286,400 bytes)
Free Space 89.76 GB (96,373,903,360 bytes)
Volume Name H_drive
Volume Serial Number 5C1DEBB8

Drive I:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 1.31 TB (1,443,067,764,736 bytes)
Free Space 801.86 GB (860,989,112,320 bytes)
Volume Name I_DRIVE
Volume Serial Number 78715584

Drive J:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 1.24 TB (1,366,531,485,696 bytes)
Free Space 730.58 GB (784,455,102,464 bytes)
Volume Name J_DRIVE
Volume Serial Number 4CBE989A

Drive K:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 560.65 GB (601,991,757,824 bytes)
Free Space 199.37 GB (214,072,102,912 bytes)
Volume Name K_DRIVE
Volume Serial Number 0402C263

Drive L:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 631.94 GB (678,536,212,480 bytes)
Free Space 451.05 GB (484,314,443,776 bytes)
Volume Name L_DRIVE
Volume Serial Number 84938FED

Drive M:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 631.94 GB (678,536,212,480 bytes)
Free Space 89.85 GB (96,480,825,344 bytes)
Volume Name M_DRIVE
Volume Serial Number 305573C2

Drive N:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 631.94 GB (678,536,212,480 bytes)
Free Space 89.85 GB (96,480,825,344 bytes)
Volume Name N_DRIVE
Volume Serial Number 388161F9

Drive O:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 1.31 TB (1,443,067,764,736 bytes)
Free Space 801.86 GB (860,989,108,224 bytes)
Volume Name O_DRIVE
Volume Serial Number D4B53376

Drive Y:
Description Network Connection
Provider Name \\fsserv\gdrive

Drive Z:
Description CD-ROM Disc

[Disks]

Item Value
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM-ESXS ST336752LC !# SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 4
SCSI Target ID 0
Sectors/Track 63
Size 33.90 GB (36,396,864,000 bytes)
Total Cylinders 4,425
Total Sectors 71,087,625
Total Tracks 1,128,375
Tracks/Cylinder 255
Partition Disk #0, Partition #0
Partition Size 33.90 GB (36,396,831,744 bytes)
Partition Starting Offset 32,256 bytes

Description Mylex RAID Disk Device
Manufacturer Mylex
Model MYLEX eXtremeRAID 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 2
SCSI Bus 4
SCSI Logical Unit 0
SCSI Port 9
SCSI Target ID 0
Sectors/Track 63
Size 1.39 TB (1,528,018,490,880 bytes)
Total Cylinders 185,771
Total Sectors 2,984,411,115
Total Tracks 47,371,605
Tracks/Cylinder 255
Partition Disk #4, Partition #0
Partition Size 78.62 GB (84,416,016,384 bytes)
Partition Starting Offset 8,257,536 bytes
Partition Disk #4, Partition #1
Partition Size 1.31 TB (1,443,067,766,784 bytes)
Partition Starting Offset 84,424,306,176 bytes

Description Mylex RAID Disk Device
Manufacturer Mylex
Model MYLEX eXtremeRAID 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 2
SCSI Bus 4
SCSI Logical Unit 0
SCSI Port 12
SCSI Target ID 0
Sectors/Track 63
Size 711.04 GB (763,478,714,880 bytes)
Total Cylinders 92,821
Total Sectors 1,491,169,365
Total Tracks 23,669,355
Tracks/Cylinder 255
Partition Disk #7, Partition #0
Partition Size 78.62 GB (84,416,016,384 bytes)
Partition Starting Offset 8,257,536 bytes
Partition Disk #7, Partition #1
Partition Size 631.94 GB (678,536,216,064 bytes)
Partition Starting Offset 84,424,306,176 bytes

Description Mylex RAID Disk Device
Manufacturer Mylex
Model MYLEX eXtremeRAID 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 2
SCSI Bus 4
SCSI Logical Unit 0
SCSI Port 11
SCSI Target ID 0
Sectors/Track 63
Size 711.04 GB (763,478,714,880 bytes)
Total Cylinders 92,821
Total Sectors 1,491,169,365
Total Tracks 23,669,355
Tracks/Cylinder 255
Partition Disk #6, Partition #0
Partition Size 149.91 GB (160,960,472,064 bytes)
Partition Starting Offset 8,257,536 bytes
Partition Disk #6, Partition #1
Partition Size 560.65 GB (601,991,760,384 bytes)
Partition Starting Offset 160,968,761,856 bytes

Description Mylex RAID Disk Device
Manufacturer Mylex
Model MYLEX eXtremeRAID 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 2
SCSI Bus 4
SCSI Logical Unit 0
SCSI Port 14
SCSI Target ID 0
Sectors/Track 63
Size 711.04 GB (763,478,714,880 bytes)
Total Cylinders 92,821
Total Sectors 1,491,169,365
Total Tracks 23,669,355
Tracks/Cylinder 255
Partition Disk #9, Partition #0
Partition Size 78.62 GB (84,416,016,384 bytes)
Partition Starting Offset 8,257,536 bytes
Partition Disk #9, Partition #1
Partition Size 631.94 GB (678,536,216,064 bytes)
Partition Starting Offset 84,424,306,176 bytes

Description Mylex RAID Disk Device
Manufacturer Mylex
Model MYLEX eXtremeRAID 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 2
SCSI Bus 4
SCSI Logical Unit 0
SCSI Port 6
SCSI Target ID 0
Sectors/Track 63
Size 474.35 GB (509,334,013,440 bytes)
Total Cylinders 61,923
Total Sectors 994,792,995
Total Tracks 15,790,365
Tracks/Cylinder 255
Partition Disk #1, Partition #0
Partition Size 257.33 GB (276,303,573,504 bytes)
Partition Starting Offset 8,257,536 bytes
Partition Disk #1, Partition #1
Partition Size 216.54 GB (232,503,957,504 bytes)
Partition Starting Offset 276,311,863,296 bytes

Description Mylex RAID Disk Device
Manufacturer Mylex
Model MYLEX eXtremeRAID 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 2
SCSI Bus 4
SCSI Logical Unit 0
SCSI Port 7
SCSI Target ID 0
Sectors/Track 63
Size 711.04 GB (763,478,714,880 bytes)
Total Cylinders 92,821
Total Sectors 1,491,169,365
Total Tracks 23,669,355

Tracks/Cylinder 255
Partition Disk #2, Partition #0
Partition Size 78.62 GB (84,416,016,384 bytes)
Partition Starting Offset 8,257,536 bytes
Partition Disk #2, Partition #1
Partition Size 631.94 GB (678,536,216,064 bytes)
Partition Starting Offset 84,424,306,176 bytes

Description Mylex RAID Disk Device
Manufacturer Mylex
Model MYLEX eXtremeRAID 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 2
SCSI Bus 4
SCSI Logical Unit 0
SCSI Port 8
SCSI Target ID 0
Sectors/Track 63
Size 711.04 GB (763,478,714,880 bytes)
Total Cylinders 92,821
Total Sectors 1,491,169,365
Total Tracks 23,669,355
Tracks/Cylinder 255
Partition Disk #3, Partition #0
Partition Size 78.62 GB (84,416,016,384 bytes)
Partition Starting Offset 8,257,536 bytes
Partition Disk #3, Partition #1
Partition Size 631.84 GB (678,429,287,424 bytes)
Partition Starting Offset 84,424,306,176 bytes

Description Mylex RAID Disk Device
Manufacturer Mylex
Model MYLEX eXtremeRAID 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 2
SCSI Bus 4
SCSI Logical Unit 0
SCSI Port 13
SCSI Target ID 0
Sectors/Track 63
Size 711.04 GB (763,478,714,880 bytes)
Total Cylinders 92,821
Total Sectors 1,491,169,365
Total Tracks 23,669,355
Tracks/Cylinder 255
Partition Disk #8, Partition #0
Partition Size 78.62 GB (84,416,016,384 bytes)
Partition Starting Offset 8,257,536 bytes
Partition Disk #8, Partition #1
Partition Size 631.94 GB (678,536,216,064 bytes)
Partition Starting Offset 84,424,306,176 bytes

Description Mylex RAID Disk Device
Manufacturer Mylex
Model MYLEX eXtremeRAID 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 2
SCSI Bus 4
SCSI Logical Unit 0
SCSI Port 15
SCSI Target ID 0
Sectors/Track 63
Size 1.39 TB (1,528,018,490,880 bytes)
Total Cylinders 185,771
Total Sectors 2,984,411,115
Total Tracks 47,371,605
Tracks/Cylinder 255
Partition Disk #10, Partition #0
Partition Size 78.62 GB (84,416,016,384 bytes)
Partition Starting Offset 8,257,536 bytes
Partition Disk #10, Partition #1
Partition Size 1.31 TB (1,443,067,766,784 bytes)
Partition Starting Offset 84,424,306,176 bytes

Description Mylex RAID Disk Device
Manufacturer Mylex
Model MYLEX eXtremeRAID 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 2
SCSI Bus 4
SCSI Logical Unit 0
SCSI Port 10
SCSI Target ID 0
Sectors/Track 32
Size 1.39 TB (1,528,018,501,632 bytes)
Total Cylinders 728,616
Total Sectors 2,984,411,136
Total Tracks 93,262,848
Tracks/Cylinder 128
Partition Disk #5, Partition #0
Partition Size 149.90 GB (160,958,496,768 bytes)
Partition Starting Offset 2,113,536 bytes
Partition Disk #5, Partition #1
Partition Size 1.24 TB (1,366,531,489,792 bytes)
Partition Starting Offset 160,960,626,688 bytes

[SCSI]

Item Value
Name LSI Logic 1020/1030 Ultra320 SCSI Adapter
Manufacturer LSI Logic
Status OK
PNP Device ID
PCI\VEN_1000&DEV_0030&SUBSYS_10001000&REV_07\3&13C0B0C5&0&18
I/O Port 0x00002000-0x000027FF
Memory Address 0xD2200000-0xD22FFFFF
Memory Address 0xD2210000-0xD221FFFF
IRQ Channel IRQ 40
Driver c:\windows\system32\drivers\symmpi.sys (1.08.23.00 built by: DPRILL, 36.25 KB (37,120 bytes), 12/10/2002 10:32 AM)

Name LSI Logic 1020/1030 Ultra320 SCSI Adapter
Manufacturer LSI Logic
Status OK
PNP Device ID
PCI\VEN_1000&DEV_0030&SUBSYS_10001000&REV_07\3&13C0B0C5&0&19
I/O Port 0x00002100-0x000021FF
Memory Address 0xD2220000-0xD222FFFF
Memory Address 0xD2230000-0xD223FFFF
IRQ Channel IRQ 41
Driver c:\windows\system32\drivers\symmpi.sys (1.08.23.00 built by: DPRILL, 36.25 KB (37,120 bytes), 12/10/2002 10:32 AM)

Name Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)
Manufacturer Mylex
Status OK

PNP Device ID
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&235BDD1F&0&4008
Memory Address 0xC4000000-0xC60FFFFF
I/O Port 0x00005000-0x00005FFF
Memory Address 0xE2000000-0xE3FFFFFF
IRQ Channel IRQ 51
Driver c:\windows\system32\drivers\dac2w2k.sys (7.05-01 built by: WinDDK, 173.00 KB (177,152 bytes), 3/13/2003 11:05 AM)

Name Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)
Manufacturer Mylex
Status OK
PNP Device ID
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&6CA15C9&0&4010
Memory Address 0xC0000000-0xC7FFFFFF
I/O Port 0x00004000-0x00005FFF
Memory Address 0xE0000000-0xE3FFFFFF
IRQ Channel IRQ 55
Driver c:\windows\system32\drivers\dac2w2k.sys (7.05-01 built by: WinDDK, 173.00 KB (177,152 bytes), 3/13/2003 11:05 AM)

Name QLogic QLA23xx PCI Fibre Channel Adapter
Manufacturer QLogic
Status OK
PNP Device ID
PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\3&29E81982&0&20
I/O Port 0x00002800-0x000029FF
Memory Address 0xD2420000-0xD2420FFF
IRQ Channel IRQ 71
Driver c:\windows\system32\drivers\ql2300.sys (8.2.0 Beta 10 (W2K VI), 431.38 KB (441,733 bytes), 3/13/2003 2:22 PM)

Name Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)
Manufacturer Mylex
Status OK
PNP Device ID
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&3A39F236&0&4018
Memory Address 0xC8000000-0xCBFFFFFF
I/O Port 0x00003000-0x00003FFF
Memory Address 0xE8000000-0xE9FFFFFF
IRQ Channel IRQ 67
Driver c:\windows\system32\drivers\dac2w2k.sys (7.05-01 built by: WinDDK, 173.00 KB (177,152 bytes), 3/13/2003 11:05 AM)

Name Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)
Manufacturer Mylex
Status OK
PNP Device ID
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&372A30F3&0&4010
Memory Address 0xCC000000-0xCFFFFFFF
I/O Port 0x00006000-0x00007FFF
Memory Address 0xE4000000-0xE7FFFFFF
IRQ Channel IRQ 63
Driver c:\windows\system32\drivers\dac2w2k.sys (7.05-01 built by: WinDDK, 173.00 KB (177,152 bytes), 3/13/2003 11:05 AM)

Name Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)
Manufacturer Mylex
Status OK
PNP Device ID
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&23201175&0&4008
Memory Address 0x90000000-0x93FFFFFF
I/O Port 0x00008000-0x00008FFF
Memory Address 0xA0000000-0xA3FFFFFF
IRQ Channel IRQ 116
Driver c:\windows\system32\drivers\dac2w2k.sys (7.05-01 built by: WinDDK, 173.00 KB (177,152 bytes), 3/13/2003 11:05 AM)

Name Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)
Manufacturer Mylex
Status OK
PNP Device ID
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&1E4F7F42&0&4008
Memory Address 0x84000000-0x860FFFFF
I/O Port 0x0000B000-0x0000BFFF
Memory Address 0xA6000000-0xA7FFFFFF
IRQ Channel IRQ 109
Driver c:\windows\system32\drivers\dac2w2k.sys (7.05-01 built by: WinDDK, 173.00 KB (177,152 bytes), 3/13/2003 11:05 AM)

Name Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)
Manufacturer Mylex
Status OK
PNP Device ID
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&1BDB7EC&0&4010
Memory Address 0x80000000-0x87FFFFFF
I/O Port 0x0000A000-0x0000BFFF
Memory Address 0xA4000000-0xA7FFFFFF
IRQ Channel IRQ 113
Driver c:\windows\system32\drivers\dac2w2k.sys (7.05-01 built by: WinDDK, 173.00 KB (177,152 bytes), 3/13/2003 11:05 AM)

Name Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)
Manufacturer Mylex
Status OK
PNP Device ID
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&1CCB81AA&0&4008
Memory Address 0x94000000-0x97FFFFFF
I/O Port 0x0000C000-0x0000DFFF
Memory Address 0xAC000000-0xADFFFFFF
IRQ Channel IRQ 137
Driver c:\windows\system32\drivers\dac2w2k.sys (7.05-01 built by: WinDDK, 173.00 KB (177,152 bytes), 3/13/2003 11:05 AM)

Name QLogic QLA23xx PCI Fibre Channel Adapter
Manufacturer QLogic
Status OK
PNP Device ID
PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\3&32219A6E&0&10
I/O Port 0x0000D000-0x0000D0FF
Memory Address 0x96120000-0x96120FFF
IRQ Channel IRQ 141
Driver c:\windows\system32\drivers\ql2300.sys (8.2.0 Beta 10 (W2K VI), 431.38 KB (441,733 bytes), 3/13/2003 2:22 PM)

Name Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)
Manufacturer Mylex
Status OK
PNP Device ID
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&47FD674&0&4008
Memory Address 0x8C000000-0x8E0FFFFF
I/O Port 0x0000F000-0x0000FFFF
Memory Address 0xAA000000-0xABFFFFFF
IRQ Channel IRQ 130

Driver c:\windows\system32\drivers\dac2w2k.sys (7.05-01 built by: WinDDK, 173.00 KB (177,152 bytes), 3/13/2003 11:05 AM)

Name Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated)
Manufacturer Mylex
Status OK
PNP Device ID PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&2388D925&0&4010
Memory Address 0x88000000-0x8FFFFFFF
I/O Port 0x0000E000-0x0000FFFF
Memory Address 0xA8000000-0xABFFFFFF
IRQ Channel IRQ 134
Driver c:\windows\system32\drivers\dac2w2k.sys (7.05-01 built by: WinDDK, 173.00 KB (177,152 bytes), 3/13/2003 11:05 AM)

[IDE]

Item Value
Name VIA Bus Master IDE Controller
Manufacturer VIA Technologies, Inc.
Status OK
PNP Device ID PCI\VEN_1106&DEV_0571&SUBSYS_00000000&REV_06\3&267A616A&0&29
I/O Port 0x00000700-0x0000070F
Driver c:\windows\system32\drivers\viaide.sys (1.00.01.00, 7.00 KB (7,168 bytes), 3/8/2003 3:02 PM)

Name Primary IDE Channel
Manufacturer (Standard IDE ATA/ATAPI controllers)
Status OK
PNP Device ID PCIIDE\IDECHANNEL\4&1C0B4DED&0&0
I/O Port 0x000001F0-0x000001F7
I/O Port 0x000003F6-0x000003F6
IRQ Channel IRQ 14
Driver c:\windows\system32\drivers\atapi.sys (5.2.3785.0 (srv03_rtm.030308-1736), 89.00 KB (91,136 bytes), 3/8/2003 3:02 PM)

Name Secondary IDE Channel
Manufacturer (Standard IDE ATA/ATAPI controllers)
Status OK
PNP Device ID PCIIDE\IDECHANNEL\4&1C0B4DED&0&1
I/O Port 0x00000170-0x00000177
I/O Port 0x00000376-0x00000376
IRQ Channel IRQ 15
Driver c:\windows\system32\drivers\atapi.sys (5.2.3785.0 (srv03_rtm.030308-1736), 89.00 KB (91,136 bytes), 3/8/2003 3:02 PM)

[Printing]

Name Driver Port Name Server Name

[Problem Devices]

Device PNP Device ID Error Code
Not Available ACPI\IBM37D4\2&DABA3FF&0 The drivers for this device are not installed.
Other PCI Bridge Device PCI\VEN_1014&DEV_010F&SUBSYS_01131014&REV_00\3&267A616A&0&20 The drivers for this device are not installed.
VIA Rev 5 or later USB Universal Host Controller PCI\VEN_1106&DEV_3038&SUBSYS_12340925&REV_1A\3&267A616A&0&2A This device is disabled.
VIA Rev 5 or later USB Universal Host Controller PCI\VEN_1106&DEV_3038&SUBSYS_12340925&REV_1A\3&267A616A&0&2B This device is disabled.

[USB]

Device PNP Device ID
VIA Rev 5 or later USB Universal Host Controller PCI\VEN_1106&DEV_3038&SUBSYS_12340925&REV_1A\3&267A616A&0&2A
VIA Rev 5 or later USB Universal Host Controller PCI\VEN_1106&DEV_3038&SUBSYS_12340925&REV_1A\3&267A616A&0&2B

[Software Environment]

[System Drivers]

Name Description File Type Started Start Mode State Status Error Control Accept Pause Accept Stop
abiosdsk Abiosdsk Not Available Kernel Driver No Disabled Stopped OK Ignore No No
acpi Microsoft ACPI Driver c:\windows\system32\drivers\acpi.sys Kernel Driver Yes Boot Running OK Normal No Yes
acpiec ACPIEC c:\windows\system32\drivers\acpiec.sys Kernel Driver No Disabled Stopped OK Normal No No
adpu160m adpu160m Not Available Kernel Driver No Disabled Stopped OK Normal No No
adpu320 adpu320 Not Available Kernel Driver No Disabled Stopped OK Normal No No
afcnt afcnt Not Available Kernel Driver No Disabled Stopped OK Normal No No
afd AFD Networking Support Environment c:\windows\system32\drivers\afd.sys Kernel Driver Yes Auto Running OK Normal No Yes
aha154x Aha154x Not Available Kernel Driver No Disabled Stopped OK Normal No No
aic78u2 aic78u2 Not Available Kernel Driver No Disabled Stopped OK Normal No No
aic78xx aic78xx Not Available Kernel Driver No Disabled Stopped OK Normal No No
aliide AliIde Not Available Kernel Driver No Disabled Stopped OK Normal No No
asyncmac RAS Asynchronous Media Driver c:\windows\system32\drivers\asyncmac.sys Kernel Driver No Manual Stopped OK Normal No No
atapi Standard IDE/ESDI Hard Disk Controller c:\windows\system32\drivers\atapi.sys Kernel Driver Yes Boot Running OK Normal No Yes
atdisk Atdisk Not Available Kernel Driver No Disabled Stopped OK Ignore No No
ati2mpad ati2mpad c:\windows\system32\drivers\ati2mpad.sys Kernel Driver Yes Manual Running OK Ignore No Yes
atmarpc ATM ARP Client Protocol c:\windows\system32\drivers\atmarpc.sys Kernel Driver No Manual Stopped OK Normal No No
audstub Audio Stub Driver c:\windows\system32\drivers\audstub.sys Kernel Driver Yes Manual Running OK Normal No Yes
b57w2k Broadcom NetXtreme Gigabit Ethernet c:\windows\system32\drivers\b57xp32.sys Kernel Driver Yes Manual Running OK Normal No Yes
beep Beep c:\windows\system32\drivers\beep.sys Kernel Driver Yes System Running OK Normal No Yes

cbidf2k cbidf2k c:\windows\system32\drivers\cbidf2k.sys Kernel Driver No Disabled Stopped OK Normal No No
cdfs Cdfs c:\windows\system32\drivers\cdfs.sys File System Driver Yes Disabled Running OK Normal No Yes
cdrom CD-ROM Driver c:\windows\system32\drivers\cdrom.sys Kernel Driver Yes System Running OK Normal No Yes
changer Changer Not Available Kernel Driver No System Stopped OK Ignore No No
clusdisk Cluster Disk Driver c:\windows\system32\drivers\clusdisk.sys Kernel Driver No Disabled Stopped OK Normal No No
cmdide CmdIde Not Available Kernel Driver No Disabled Stopped OK Normal No No
cpqarray Cpqarray Not Available Kernel Driver No Disabled Stopped OK Normal No No
cpqarry2 cpqarry2 Not Available Kernel Driver No Disabled Stopped OK Normal No No
cpqcissm cpqcissm Not Available Kernel Driver No Disabled Stopped OK Normal No No
cpqfcalm cpqfcalm Not Available Kernel Driver No Disabled Stopped OK Normal No No
crcdisk CRC Disk Filter Driver c:\windows\system32\drivers\crcdisk.sys Kernel Driver Yes Boot Running OK Normal No Yes
dac2w2k dac2w2k c:\windows\system32\drivers\dac2w2k.sys Kernel Driver Yes Boot Running OK Normal No Yes
dac960nt dac960nt Not Available Kernel Driver No Disabled Stopped OK Normal No No
dellcerc dellcerc Not Available Kernel Driver No Disabled Stopped OK Normal No No
dfsdriver DfsDriver c:\windows\system32\drivers\dfs.sys File System Driver Yes Boot Running OK Normal No Yes
disk Disk Driver c:\windows\system32\drivers\disk.sys Kernel Driver Yes Boot Running OK Normal No Yes
dmboot dmboot c:\windows\system32\drivers\dmboot.sys Kernel Driver No Disabled Stopped OK Normal No No
dmio Logical Disk Manager Driver c:\windows\system32\drivers\dmio.sys Kernel Driver Yes Boot Running OK Normal No Yes
dmload dmload c:\windows\system32\drivers\dmload.sys Kernel Driver Yes Boot Running OK Normal No Yes
dpti2o dpti2o Not Available Kernel Driver No Disabled Stopped OK Normal No No
fastfat Fastfat c:\windows\system32\drivers\fastfat.sys File System Driver Yes Disabled Running OK Normal No Yes
fdc Floppy Disk Controller Driver c:\windows\system32\drivers\fdc.sys Kernel Driver Yes Manual Running OK Normal No Yes
fips Fips c:\windows\system32\drivers\fips.sys Kernel Driver Yes System Running OK Normal No Yes
flpydisk Floppy Disk Driver c:\windows\system32\drivers\flpydisk.sys Kernel Driver Yes Manual Running OK Normal No Yes
ftdisk Volume Manager Driver c:\windows\system32\drivers\ftdisk.sys Kernel Driver Yes Boot Running OK Normal No Yes
gpc Generic Packet Classifier c:\windows\system32\drivers\msgpc.sys Kernel Driver Yes Manual Running OK Normal No Yes
hpn hpn Not Available Kernel Driver No Disabled Stopped OK Normal No No
hpt3xx hpt3xx Not Available Kernel Driver No Disabled Stopped OK Normal No No
http HTTP c:\windows\system32\drivers\http.sys Kernel Driver No Manual Stopped OK Normal No No
i2omgmt i2omgmt Not Available Kernel Driver No System Stopped OK Normal No No
i2omp i2omp Not Available Kernel Driver No Disabled Stopped OK Normal No No
i8042prt i8042 Keyboard and PS/2 Mouse Port Driver c:\windows\system32\drivers\i8042prt.sys Kernel Driver Yes System Running OK Normal No Yes
iirsp iirsp Not Available Kernel Driver No Disabled Stopped OK Normal No No
imapi CD-Burning Filter Driver c:\windows\system32\drivers\imapi.sys Kernel Driver No System Stopped OK Normal No No
intelide IntelIde Not Available Kernel Driver No Disabled Stopped OK Normal No No
ipfilterdriver IP Traffic Filter Driver c:\windows\system32\drivers\ipfltdrv.sys Kernel Driver No Manual Stopped OK Normal No No
ipinip IP in IP Tunnel Driverc:\windows\system32\drivers\ipinip.sys Kernel Driver No Manual Stopped OK Normal No No
ipnat IP Network Address Translator c:\windows\system32\drivers\ipnat.sys Kernel Driver No Manual Stopped OK Normal No No
ipsec IPSEC driver c:\windows\system32\drivers\ipsec.sys Kernel Driver Yes System Running OK Normal No Yes
ipsraidn ipsraidn Not Available Kernel Driver No Disabled Stopped OK Normal No No
isapnp PnP ISA/EISA Bus Driver c:\windows\system32\drivers\isapnp.sys Kernel Driver Yes Boot Running OK Critical No Yes
kbdclass Keyboard Class Driver c:\windows\system32\drivers\kbdclass.sys Kernel Driver Yes System Running OK Normal No Yes
ksecdd KSecDD c:\windows\system32\drivers\ksecdd.sys Kernel Driver Yes Boot Running OK Normal No Yes
lp6nds35 lp6nds35 Not Available Kernel Driver No Disabled Stopped OK Normal No No
macxp32 macxp32 c:\windows\system32\drivers\macxp32.sys Kernel Driver Yes Boot Running OK Normal No Yes
mnmdd mnmdd c:\windows\system32\drivers\mnmdd.sys Kernel Driver Yes System Running OK Ignore No Yes
modem Modem c:\windows\system32\drivers\modem.sys Kernel Driver No Manual Stopped OK Ignore No No
mouclass Mouse Class Driver c:\windows\system32\drivers\mouclass.sys Kernel Driver Yes System Running OK Normal No Yes
mountmgr Mount Point Manager c:\windows\system32\drivers\mountmgr.sys Kernel Driver Yes Boot Running OK Normal No Yes
mraid35x mraid35x Not Available Kernel Driver No Disabled Stopped OK Normal No No

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mrxdav     WebDav Client Redirector
c:\windows\system32\drivers\mrxdav.sys    File System Driver    No
Manual    Stopped    OK    Normal    No    No
mrxsmb     MRXSMB c:\windows\system32\drivers\mrxsmb.sys    File System
Driver    Yes    System    Running    OK    Normal    No
Yes
msfs       Msfs       c:\windows\system32\drivers\msfs.sys      File System
Driver    Yes    System    Running    OK    Normal    No
Yes
mup        Mup        c:\windows\system32\drivers\mup.sys       File System
Driver    Yes    Boot      Running    OK    Normal    No
Yes
ndis       NDIS System Driver    c:\windows\system32\drivers\ndis.sys
Kernel Driver    Yes    Boot      Running    OK    Normal
No    Yes
ndistapi   Remote Access NDIS TAPI Driver
c:\windows\system32\drivers\ndistapi.sys    Kernel Driver    Yes
Manual    Running    OK    Normal    No    Yes
ndisuio    NDIS Usermode I/O Protocol
c:\windows\system32\drivers\ndisuio.sys    Kernel Driver    Yes
Manual    Running    OK    Normal    No    Yes
ndiswan    Remote Access NDIS WAN Driver
c:\windows\system32\drivers\ndiswan.sys    Kernel Driver    Yes
Manual    Running    OK    Normal    No    Yes
ndproxy    NDIS Proxy    c:\windows\system32\drivers\ndproxy.sys
Kernel Driver    Yes    Manual    Running    OK    Normal
No    Yes
netbios    NetBIOS Interface    c:\windows\system32\drivers\netbios.sys
File System Driver    Yes    System    Running    OK    Normal
No    Yes
netbt      NetBios over Tcpip    c:\windows\system32\drivers\netbt.sys
Kernel Driver    Yes    System    Running    OK    Normal
No    Yes
nfrd960    nfrd960    Not Available    Kernel Driver    No
Disabled    Stopped    OK    Normal    No    No
npfs       Npfs       c:\windows\system32\drivers\npfs.sys      File System
Driver    Yes    System    Running    OK    Normal    No
Yes
ntfs       Ntfs       c:\windows\system32\drivers\ntfs.sys      File System
Driver    Yes    Disabled  Running    OK    Normal    No
Yes
null       Null       c:\windows\system32\drivers\null.sys      Kernel
Driver    Yes    System    Running    OK    Normal    No
Yes
parport    Parport    c:\windows\system32\drivers\parport.sys   Kernel
Driver    No     Manual    Stopped    OK    Ignore    No
No
partmgr    Partition Manager    c:\windows\system32\drivers\partmgr.sys
Kernel Driver    Yes    Boot      Running    OK    Normal
No    Yes
pci        PCI Bus Driver    c:\windows\system32\drivers\pci.sys
Kernel Driver    Yes    Boot      Running    OK    Critical
No    Yes
pciide     PCIIde     Not Available    Kernel Driver    No
Disabled    Stopped    OK    Normal    No    No
pcmcia     Pcmcia     c:\windows\system32\drivers\pcmcia.sys    Kernel
Driver    No     Disabled  Stopped    OK    Normal    No
No
pdcomp     PDCOMP     Not Available    Kernel Driver    No
Manual    Stopped    OK    Ignore    No    No
pdframe    PDFRAME    Not Available    Kernel Driver
No    Manual    Stopped    OK    Ignore    No    No
pdreli     PDRELI     Not Available    Kernel Driver    No
Manual    Stopped    OK    Ignore    No    No
pdrframe   PDRFRAME   Not Available    Kernel Driver
No    Manual    Stopped    OK    Ignore    No    No
perc2      perc2      Not Available    Kernel Driver    No
Disabled    Stopped    OK    Normal    No    No
perc2hib   perc2hib   Not Available    Kernel Driver    No
Disabled    Stopped    OK    Normal    No    No
pptpminiport    WAN Miniport (PPTP)
c:\windows\system32\drivers\raspptp.sys    Kernel Driver    Yes
Manual    Running    OK    Normal    No    Yes
processor  Processor Driver    c:\windows\system32\drivers\processr.sys
Kernel Driver    Yes    Manual    Running    OK    Normal
No    Yes
ptilink    Direct Parallel Link Driver
c:\windows\system32\drivers\ptilink.sys    Kernel Driver    Yes
Manual    Running    OK    Normal    No    Yes
ql1080     ql1080     Not Available    Kernel Driver    No
Disabled    Stopped    OK    Normal    No    No
ql10wnt    Ql10wnt    Not Available    Kernel Driver    No
Disabled    Stopped    OK    Normal    No    No
ql12160    ql12160    Not Available    Kernel Driver    No
Disabled    Stopped    OK    Normal    No    No
ql1240     ql1240     Not Available    Kernel Driver    No
Disabled    Stopped    OK    Normal    No    No
ql1280     ql1280     Not Available    Kernel Driver    No
Disabled    Stopped    OK    Normal    No    No
ql2100     ql2100     Not Available    Kernel Driver    No
Disabled    Stopped    OK    Normal    No    No
ql2200     ql2200     Not Available    Kernel Driver    No
Disabled    Stopped    OK    Normal    No    No
ql2300     ql2300     c:\windows\system32\drivers\ql2300.sys    Kernel
Driver    Yes    Boot      Running    OK    Normal    No
Yes
qlvika     qlvika     c:\windows\system32\drivers\qlvika.sys    Kernel
Driver    Yes    Auto      Running    OK    Normal    No
Yes
rasacd     Remote Access Auto Connection Driver
c:\windows\system32\drivers\rasacd.sys    Kernel Driver    Yes
System    Running    OK    Normal    No    Yes
rasl2tp    WAN Miniport (L2TP)
c:\windows\system32\drivers\rasl2tp.sys    Kernel Driver    Yes
Manual    Running    OK    Normal    No    Yes
raspppoe   Remote Access PPPOE Driver
c:\windows\system32\drivers\raspppoe.sys    Kernel Driver    Yes
Manual    Running    OK    Normal    No    Yes
raspti     Direct Parallel    c:\windows\system32\drivers\raspti.sys
Kernel Driver    Yes    Manual    Running    OK    Normal
No    Yes
rdbss      Rdbss      c:\windows\system32\drivers\rdbss.sys     File System
Driver    Yes    System    Running    OK    Normal    No
Yes
rdpcdd     RDPCDD     c:\windows\system32\drivers\rdpcdd.sys    Kernel
Driver    Yes    System    Running    OK    Ignore    No
Yes
rdpdr      Terminal Server Device Redirector Driver
c:\windows\system32\drivers\rdpdr.sys    Kernel Driver    Yes
Manual    Running    OK    Normal    No    Yes
rdpwd      RDPWD      c:\windows\system32\drivers\rdpwd.sys     Kernel
Driver    No     Manual    Stopped    OK    Ignore    No
No
redbook    Digital CD Audio Playback Filter Driver
c:\windows\system32\drivers\redbook.sys    Kernel Driver    Yes
System    Running    OK    Normal    No    Yes
secdrv     Secdrv     c:\windows\system32\drivers\secdrv.sys    Kernel
Driver    No     Manual    Stopped    OK    Normal    No
No
serenum    Serenum Filter Driver    c:\windows\system32\drivers\serenum.sys
Kernel Driver    Yes    Manual    Running    OK    Normal
No    Yes
serial     Serial port driver    c:\windows\system32\drivers\serial.sys
Kernel Driver    Yes    System    Running    OK    Ignore
No    Yes
```

sfloppy Sfloppy c:\windows\system32\drivers\sfloppy.sys Kernel Driver No System Stopped OK Ignore No No
simbad Simbad Not Available Kernel Driver No Disabled Stopped OK Normal No No
sparrow Sparrow Not Available Kernel Driver No Disabled Stopped OK Normal No No
srv Srv c:\windows\system32\drivers\srv.sys File System Driver Yes Manual Running OK Normal No Yes
swenum Software Bus Driver c:\windows\system32\drivers\swenum.sys Kernel Driver Yes Manual Running OK Normal No Yes
symc810 symc810 Not Available Kernel Driver No Disabled Stopped OK Normal No No
symc8xx symc8xx Not Available Kernel Driver No Disabled Stopped OK Normal No No
symmpi symmpi c:\windows\system32\drivers\symmpi.sys Kernel Driver Yes Boot Running OK Normal No Yes
sym_hi sym_hi Not Available Kernel Driver No Disabled Stopped OK Normal No No
sym_u3 sym_u3 Not Available Kernel Driver No Disabled Stopped OK Normal No No
tcpip TCP/IP Protocol Driver c:\windows\system32\drivers\tcpip.sys Kernel Driver Yes System Running OK Normal No Yes
tdpipe TDPIPE c:\windows\system32\drivers\tdpipe.sys Kernel Driver No Manual Stopped OK Ignore No No
tdtcp TDTCP c:\windows\system32\drivers\tdtcp.sys Kernel Driver No Manual Stopped OK Ignore No No
termdd Terminal Device Driver c:\windows\system32\drivers\termdd.sys Kernel Driver Yes System Running OK Normal No Yes
toside TosIde Not Available Kernel Driver No Disabled Stopped OK Normal No No
udfs Udfs c:\windows\system32\drivers\udfs.sys File System Driver No Disabled Stopped OK Normal No No
update Microcode Update Driver c:\windows\system32\drivers\update.sys Kernel Driver Yes Manual Running OK Normal No Yes
usbhub USB2 Enabled Hub c:\windows\system32\drivers\usbhub.sys Kernel Driver No Manual Stopped OK Normal No No
usbuhci Microsoft USB Universal Host Controller Miniport Driver c:\windows\system32\drivers\usbuhci.sys Kernel Driver No Manual Stopped OK Normal No No
vga vga c:\windows\system32\drivers\vgapnp.sys Kernel Driver No Manual Stopped OK Ignore No No
vgasave VGA Display Controller. c:\windows\system32\drivers\vga.sys Kernel Driver Yes System Running OK Ignore No Yes
viaide ViaIde c:\windows\system32\drivers\viaide.sys Kernel Driver Yes Boot Running OK Normal No Yes
volsnap Storage volumes c:\windows\system32\drivers\volsnap.sys Kernel Driver Yes Boot Running OK Normal No Yes
wanarp Remote Access IP ARP Driver c:\windows\system32\drivers\wanarp.sys Kernel Driver Yes Manual Running OK Normal No Yes
wdica WDICA Not Available Kernel Driver No Manual Stopped OK Ignore No No
wlbs Network Load Balancing c:\windows\system32\drivers\wlbs.sys Kernel Driver No Manual Stopped OK Normal No No

[Signed Drivers]

Device Name Signed Device Class Driver Version Driver Date Manufacturer INF Name Driver Name Device ID
Not Available Not Available Not Available Not Available Not Available Not Available Not Available HTREE\ROOT\0
ACPI Multiprocessor Node Not Available COMPUTER Not Available Not Available (Node-based Computers) Not Available Not Available ROOT\ACPI_HAL\0000
Microsoft ACPI-Compliant System Yes SYSTEM 5.2.3785.0 10/1/2002 Microsoft acpi.inf Not Available ACPI_HAL\PNP0C08\0
Not Available Not Available Not Available Not Available Not Available Not Available Not Available Not Available Not Available ACPI\IBM37D4\2&DABA3FF&0
PCI bus Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\0
PCI standard host CPU bridge Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&267A616A&0&00
RAGE XL PCI No DISPLAY 5.0.2195.5012 12/28/2001 ATI Technologies Inc. oem2.inf Not Available PCI\VEN_1002&DEV_4752&SUBSYS_02401014&REV_27\3&267A616A&0&18
Default Monitor Yes MONITOR 5.1.2001.0 6/6/2001 (Standard monitor types) monitor.inf Not Available DISPLAY\DEFAULT_MONITOR\4&F17EA7B&0&80000000&00&03
Other PCI Bridge Device Not Available UNKNOWN Not Available Not Available Not Available Not Available Not Available PCI\VEN_1014&DEV_010F&SUBSYS_01131014&REV_00\3&267A616A&0&20
VIA Tech PCI to ISA bridge Yes SYSTEM 5.2.3785.0 10/1/2002 VIA machine.inf Not Available PCI\VEN_1106&DEV_0686&SUBSYS_00000000&REV_40\3&267A616A&0&28
ISAPNP Read Data Port Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ISAPNP\READDATAPORT\0
Motherboard resources Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0C02\2
Standard 101/102-Key or Microsoft Natural PS/2 Keyboard Yes KEYBOARD 5.2.3785.0 10/1/2002 (Standard keyboards) keyboard.inf Not Available ACPI\PNP0303\4&7FD7688&0
PS/2 Compatible Mouse Yes MOUSE 5.2.3785.0 10/1/2002 Microsoft msmouse.inf Not Available ACPI\PNP0F13\4&7FD7688&0
Standard floppy disk controller Yes FDC 5.2.3785.0 10/1/2002 (Standard floppy disk controllers) fdc.inf Not Available ACPI\PNP0700\4&7FD7688&0
Floppy disk drive Yes FLOPPYDISK 5.2.3785.0 10/1/2002 (Standard floppy disk drives) flpydisk.inf Not Available FDC\GENERIC_FLOPPY_DRIVE\5&17D92A40&0&0
Communications Port Yes PORTS 5.2.3785.0 10/1/2002 (Standard port types) msports.inf Not Available ACPI\PNP0501\1
Advanced programmable interrupt controller Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0003\4&7FD7688&0

Direct memory access controller Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0200\4&7FD7688&0

System timer Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0100\4&7FD7688&0

System CMOS/real time clock Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0B00\4&7FD7688&0

System speaker Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0800\4&7FD7688&0

Numeric data processor Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0C04\4&7FD7688&0

Motherboard resources Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0C02\3

VIA Bus Master IDE Controller Yes HDC 5.2.3785.0 10/1/2002 VIA Technologies, Inc. mshdc.inf Not Available PCI\VEN_1106&DEV_0571&SUBSYS_00000000&REV_06\3&267A616A&0&29

Primary IDE Channel Yes HDC 5.2.3785.0 10/1/2002 (Standard IDE ATA/ATAPI controllers) mshdc.inf Not Available PCIIDE\IDECHANNEL\4&1C0B4DED&0&0

CD-ROM Drive Yes CDROM 5.2.3785.0 10/1/2002 (Standard CD-ROM drives) cdrom.inf Not Available IDE\CDROMMATSHITA_DVD-ROM_SR-8177_____NB21___\5&2CDE688A&0&0.0.0

Secondary IDE Channel Yes HDC 5.2.3785.0 10/1/2002 (Standard IDE ATA/ATAPI controllers) mshdc.inf Not Available PCIIDE\IDECHANNEL\4&1C0B4DED&0&1

VIA Rev 5 or later USB Universal Host Controller Yes USB 5.2.3785.0 10/1/2002 VIA Technologies usbport.inf Not Available PCI\VEN_1106&DEV_3038&SUBSYS_12340925&REV_1A\3&267A616A&0&2A

VIA Rev 5 or later USB Universal Host Controller Yes USB 5.2.3785.0 10/1/2002 VIA Technologies usbport.inf Not Available PCI\VEN_1106&DEV_3038&SUBSYS_12340925&REV_1A\3&267A616A&0&2B

VIA Tech Power Management controller Yes SYSTEM 5.2.3785.0 10/1/2002 VIA machine.inf Not Available PCI\VEN_1106&DEV_3057&SUBSYS_00000000&REV_40\3&267A616A&0&2C

System board Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0C01\1

ACPI Fixed Feature Button Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\FIXEDBUTTON\2&DABA3FF&0

Processor Yes PROCESSOR 5.2.3785.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2_0

Processor Yes PROCESSOR 5.2.3785.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2_1

Processor Yes PROCESSOR 5.2.3785.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2_2

Processor Yes PROCESSOR 5.2.3785.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2_3

Processor Yes PROCESSOR 5.2.3785.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2_4

Processor Yes PROCESSOR 5.2.3785.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2_5

Processor Yes PROCESSOR 5.2.3785.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2_6

Processor Yes PROCESSOR 5.2.3785.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2_7

Processor Yes PROCESSOR 5.2.3785.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2_8

Processor Yes PROCESSOR 5.2.3785.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2_9

Processor Yes PROCESSOR 5.2.3785.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\10

Processor Yes PROCESSOR 5.2.3785.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\11

Processor Yes PROCESSOR 5.2.3785.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\12

Processor Yes PROCESSOR 5.2.3785.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\13

Processor Yes PROCESSOR 5.2.3785.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\14

Processor Yes PROCESSOR 5.2.3785.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\15

PCI bus Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\1

PCI standard host CPU bridge Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&13C0B0C5&0&00

LSI Logic 1020/1030 Ultra320 SCSI Adapter No SCSIADAPTER 1.8.23.0 12/10/2002 LSI Logic oem5.inf Not Available PCI\VEN_1000&DEV_0030&SUBSYS_10001000&REV_07\3&13C0B0C5&0&18

Disk drive Yes DISKDRIVE 5.2.3785.0 10/1/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM-ESXS&PROD_ST336752LC____!#&REV_B841\4&39D9458C&0&000

SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_25P3495A_S320__1&REV_1\4&39D9458C&0&080

LSI Logic 1020/1030 Ultra320 SCSI Adapter No SCSIADAPTER 1.8.23.0 12/10/2002 LSI Logic oem5.inf Not Available PCI\VEN_1000&DEV_0030&SUBSYS_10001000&REV_07\3&13C0B0C5&0&19

Broadcom NetXtreme Gigabit Ethernet Yes NET 6.34.0.0 2/17/2003 Broadcom oem6.inf Not Available PCI\VEN_14E4&DEV_1648&SUBSYS_02A61014&REV_01\3&13C0B0C5&0&20

Broadcom NetXtreme Gigabit Ethernet Yes NET 6.34.0.0 2/17/2003 Broadcom oem6.inf Not Available PCI\VEN_14E4&DEV_1648&SUBSYS_02A61014&REV_01\3&13C0B0C5&0&21

PCI bus Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\2

PCI standard host CPU bridge Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&1070020&0&00

DEC 21154 PCI to PCI bridge Yes SYSTEM 5.2.3785.0 10/1/2002 DEC machine.inf Not Available PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&1070020&0&08

Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) No SCSIADAPTER 7.5.1.0 12/13/2002 Mylex oem10.inf Not Available PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&235BDD1F&0&4008

SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&22275B46&0&0F0

SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&22275B46&0&1F0

Mylex RAID Disk Device Yes DISKDRIVE 5.2.3785.0 10/1/2002 Mylex disk.inf Not Available SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0700\5&22275B46&0&400

Mylex GAM Device Yes SYSTEM 5.2.3785.0 10/1/2002 Mylex scsidev.inf Not Available SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&22275B46&0&660

DEC 21154 PCI to PCI bridge Yes SYSTEM 5.2.3785.0 10/1/2002 DEC machine.inf Not Available PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&1070020&0&10

Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) No SCSIADAPTER 7.5.1.0 12/13/2002 Mylex oem10.inf Not Available PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&6CA15C9&0&4010

SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D011\5&38B2B567&0&0F0

SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D011\5&38B2B567&0&1F0

SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D011\5&38B2B567&0&2F0

Mylex RAID Disk Device Yes DISKDRIVE 5.2.3785.0 10/1/2002 Mylex disk.inf Not Available SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0700\5&38B2B567&0&400

Mylex GAM Device Yes SYSTEM 5.2.3785.0 10/1/2002 Mylex scsidev.inf Not Available SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&38B2B567&0&660

PCI bus Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\3

PCI standard host CPU bridge Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&29E81982&0&00

QLogic QLA23xx PCI Fibre Channel Adapter No SCSIADAPTER 8.2.0.0 10/22/2002 QLogic oem8.inf Not Available PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\3&29E81982&0&20

Qlogic processor device Yes SYSTEM 5.2.3785.0 10/1/2002 QLOGIC scsidev.inf Not Available SCSI\PROCESSOR&VEN_QLOGIC&PROD_PSEUDO_LUN&REV_\4&26403335&0&07F0

PCI bus Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\4

PCI standard host CPU bridge Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&172E68DD&0&00

DEC 21154 PCI to PCI bridge Yes SYSTEM 5.2.3785.0 10/1/2002 DEC machine.inf Not Available PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&172E68DD&0&18

Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) No SCSIADAPTER 7.5.1.0 12/13/2002 Mylex oem10.inf Not Available PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&3A39F236&0&4018

SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&5BC43E6&0&0F0

SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&5BC43E6&0&1F0

SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&5BC43E6&0&2F0

Mylex RAID Disk Device Yes DISKDRIVE 5.2.3785.0 10/1/2002 Mylex disk.inf Not Available SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0700\5&5BC43E6&0&400

Mylex GAM Device Yes SYSTEM 5.2.3785.0 10/1/2002 Mylex scsidev.inf Not Available SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&5BC43E6&0&660

PCI bus Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\5

PCI standard host CPU bridge Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_05\3&474B838&0&00

DEC 21154 PCI to PCI bridge Yes SYSTEM 5.2.3785.0 10/1/2002 DEC machine.inf Not Available PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&474B838&0&10

Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) No SCSIADAPTER 7.5.1.0 12/13/2002 Mylex oem10.inf Not Available PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&372A30F3&0&4010

SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D011\5&1C398CB3&0&0F0

SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D011\5&1C398CB3&0&1F0

SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&1C398CB3&0&2F0

Mylex RAID Disk Device Yes DISKDRIVE 5.2.3785.0 10/1/2002 Mylex disk.inf Not Available SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0700\5&1C398CB3&0&400

Mylex GAM Device Yes SYSTEM 5.2.3785.0 10/1/2002 Mylex scsidev.inf Not Available
SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&1C398CB3&0&660
Motherboard resources Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available
ACPI\PNP0C02\10
PCI bus Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\80
PCI standard host CPU bridge Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_03\3&389E99D&0&00
DEC 21154 PCI to PCI bridge Yes SYSTEM 5.2.3785.0 10/1/2002 DEC machine.inf Not Available
PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&389E99D&0&08
Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) No SCSIADAPTER 7.5.1.0 12/13/2002 Mylex oem10.inf Not Available
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&23201175&0&4008
SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&207FC0CD&0&0F0
SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&207FC0CD&0&1F0
SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&207FC0CD&0&2F0
Mylex RAID Disk Device Yes DISKDRIVE 5.2.3785.0 10/1/2002 Mylex disk.inf Not Available
SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0700\5&207FC0CD&0&400
Mylex GAM Device Yes SYSTEM 5.2.3785.0 10/1/2002 Mylex scsidev.inf Not Available
SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&207FC0CD&0&660
PCI bus Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\81
PCI standard host CPU bridge Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_03\3&F2FC708&0&00
DEC 21154 PCI to PCI bridge Yes SYSTEM 5.2.3785.0 10/1/2002 DEC machine.inf Not Available
PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&F2FC708&0&08
Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) No SCSIADAPTER 7.5.1.0 12/13/2002 Mylex oem10.inf Not Available
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&1E4F7F42&0&4008
SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D011\5&3B295C8B&0&0F0
SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&3B295C8B&0&1F0
SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&3B295C8B&0&2F0
Mylex RAID Disk Device Yes DISKDRIVE 5.2.3785.0 10/1/2002 Mylex disk.inf Not Available
SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0700\5&3B295C8B&0&400
Mylex GAM Device Yes SYSTEM 5.2.3785.0 10/1/2002 Mylex scsidev.inf Not Available
SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&3B295C8B&0&660
DEC 21154 PCI to PCI bridge Yes SYSTEM 5.2.3785.0 10/1/2002 DEC machine.inf Not Available
PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&F2FC708&0&10
Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) No SCSIADAPTER 7.5.1.0 12/13/2002 Mylex oem10.inf Not Available
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&1BDB7EC&0&4010
SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&390A4D23&0&0F0
SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D011\5&390A4D23&0&1F0
SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&390A4D23&0&2F0
Mylex RAID Disk Device Yes DISKDRIVE 5.2.3785.0 10/1/2002 Mylex disk.inf Not Available
SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0700\5&390A4D23&0&400
Mylex GAM Device Yes SYSTEM 5.2.3785.0 10/1/2002 Mylex scsidev.inf Not Available
SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&390A4D23&0&660
PCI bus Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\82
PCI standard host CPU bridge Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_03\3&21E977AD&0&00
Motherboard resources Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available
ACPI\PNP0C02\20
PCI bus Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\88
PCI standard host CPU bridge Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_03\3&32219A6E&0&00
DEC 21154 PCI to PCI bridge Yes SYSTEM 5.2.3785.0 10/1/2002 DEC machine.inf Not Available
PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&32219A6E&0&08
Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) No SCSIADAPTER 7.5.1.0 12/13/2002 Mylex oem10.inf Not Available
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&1CCB81AA&0&4008
SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D011\5&1C5FD3F0&0&0F0

SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D011\5&1C5FD3F0&0&1F0
SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D011\5&1C5FD3F0&0&2F0
Mylex RAID Disk Device Yes DISKDRIVE 5.2.3785.0 10/1/2002 Mylex disk.inf Not Available SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0700\5&1C5FD3F0&0&400
Mylex GAM Device Yes SYSTEM 5.2.3785.0 10/1/2002 Mylex scsidev.inf Not Available SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&1C5FD3F0&0&660
QLogic QLA23xx PCI Fibre Channel Adapter No SCSIADAPTER 8.2.0.0 10/22/2002 QLogic oem8.inf Not Available PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\3&32219A6E&0&10
Qlogic processor device Yes SYSTEM 5.2.3785.0 10/1/2002 QLOGIC scsidev.inf Not Available SCSI\PROCESSOR&VEN_QLOGIC&PROD_PSEUDO_LUN&REV_\4&1950B1DB&0&07F0
PCI bus Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\89
PCI standard host CPU bridge Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_03\3&1F67E9C9&0&00
DEC 21154 PCI to PCI bridge Yes SYSTEM 5.2.3785.0 10/1/2002 DEC machine.inf Not Available PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&1F67E9C9&0&08
Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) No SCSIADAPTER 7.5.1.0 12/13/2002 Mylex oem10.inf Not Available PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&47FD674&0&4008
SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&1A027B2&0&0F0
SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&1A027B2&0&1F0
SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&1A027B2&0&2F0
Mylex RAID Disk Device Yes DISKDRIVE 5.2.3785.0 10/1/2002 Mylex disk.inf Not Available SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0700\5&1A027B2&0&400
Mylex GAM Device Yes SYSTEM 5.2.3785.0 10/1/2002 Mylex scsidev.inf Not Available SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&1A027B2&0&660
DEC 21154 PCI to PCI bridge Yes SYSTEM 5.2.3785.0 10/1/2002 DEC machine.inf Not Available PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&1F67E9C9&0&10
Mylex eXtremeRAID 2000 Disk Array Controller (Accelerated) No SCSIADAPTER 7.5.1.0 12/13/2002 Mylex oem10.inf Not Available PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&2388D925&0&4010
SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D011\5&321A6006&0&0F0
SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&321A6006&0&1F0
SCSI Processor Device Yes SYSTEM 5.2.3785.0 10/1/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&321A6006&0&2F0
Mylex RAID Disk Device Yes DISKDRIVE 5.2.3785.0 10/1/2002 Mylex disk.inf Not Available SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0700\5&321A6006&0&400
Mylex GAM Device Yes SYSTEM 5.2.3785.0 10/1/2002 Mylex scsidev.inf Not Available SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&321A6006&0&660
PCI bus Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\8A
PCI standard host CPU bridge Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_03\3&3ACAD158&0&00
Motherboard resources Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0C02\21
Logical Disk Manager Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ROOT\DMIO\0000
Volume Manager Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ROOT\FTDISK\0000
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATUREB9C9B9C9OFFSET7E00LENGTH8796B9400
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATUREB25C62F9OFFSET7E0000LENGTH4054F9F200
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATUREB25C62F9OFFSET4055787000LENGTH362250D800
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE7F484DFDOFFSET7E0000LENGTH13A7963000
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE7F484DFDOFFSET13A814AE00LENGTH9DF5896400
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATUREB25C62FAOFFSET204000LENGTH2579DFC000
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATUREB25C62FAOFFSET257A004000LENGTH13E2B9FC000
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available

STORAGE\VOLUME\1&30A96598&0&SIGNATURE855457FBOFFSET7E0000LENGTH13A7963000
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE855457FBOFFSET13A814AE00LENGTH9DFBE8FE00
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE558CF73BOFFSET7E0000LENGTH13A7963000
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE558CF73BOFFSET13A814AE00LENGTH9DFBE8FE00
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE6CBC69B3OFFSET7E0000LENGTH13A7963000
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE6CBC69B3OFFSET13A814AE00LENGTH14FFD8AA800
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURECC543FCBOFFSET7E0000LENGTH13A7963000
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURECC543FCBOFFSET13A814AE00LENGTH9DFBE8FE00
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE16DE1AA2OFFSET7E0000LENGTH2579FDE400
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE16DE1AA2OFFSET257A7C6200LENGTH8C29814A00
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATUREB25C62FBOFFSET7E0000LENGTH13A7963000
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATUREB25C62FBOFFSET13A814AE00LENGTH14FFD8AA800
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE558CF739OFFSET7E0000LENGTH13A7963000
Generic volume Yes VOLUME 5.2.3785.0 10/1/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE558CF739OFFSET13A814AE00LENGTH9DFBE8FE00
AFD Networking Support Environment Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_AFD\0000
Beep Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_BEEP\0000
CRC Disk Filter Driver Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_CRCDISK\0000
dmboot Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_DMBOOT\0000
dmload Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_DMLOAD\0000
Fips Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_FIPS\0000
Generic Packet Classifier Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_GPC\0000
IPSEC driver Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_IPSEC\0000
ksecdd Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_KSECDD\0000
macxp32 Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_MACXP32\0000
mnmdd Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_MNMDD\0000
mountmgr Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_MOUNTMGR\0000
NDIS System Driver Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_NDIS\0000
Remote Access NDIS TAPI Driver Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_NDISTAPI\0000
NDIS Usermode I/O Protocol Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_NDISUIO\0000
NDProxy Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_NDPROXY\0000
NetBios over Tcpip Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_NETBT\0000
Null Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_NULL\0000
Partition Manager Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_PARTMGR\0000
qlvika Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_QLVIKA\0000
Remote Access Auto Connection Driver Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_RASACD\0000
RDPCDD Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_RDPCDD\0000
TCP/IP Protocol Driver Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_TCPIP\0000
VGA Display Controller. Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_VGASAVE\0000
volsnap Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_VOLSNAP\0000
Remote Access IP ARP Driver Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_WANARP\0000

Audio Codecs Yes MEDIA 5.2.3785.0 10/1/2002 (Standard system devices) wave.inf Not Available ROOT\MEDIA\MS_MMACM
Legacy Audio Drivers Yes MEDIA 5.2.3785.0 10/1/2002 (Standard system devices) wave.inf Not Available ROOT\MEDIA\MS_MMDRV
Media Control Devices Yes MEDIA 5.2.3785.0 10/1/2002 (Standard system devices) wave.inf Not Available ROOT\MEDIA\MS_MMMCI
Legacy Video Capture Devices Yes MEDIA 5.2.3785.0 10/1/2002 (Standard system devices) wave.inf Not Available ROOT\MEDIA\MS_MMVCD
Video Codecs Yes MEDIA 5.2.3785.0 10/1/2002 (Standard system devices) wave.inf Not Available ROOT\MEDIA\MS_MMVID
WAN Miniport (L2TP) Yes NET 5.2.3785.0 10/1/2002 Microsoft netrasa.inf Not Available ROOT\MS_L2TPMINIPORT\0000
WAN Miniport (IP) Yes NET 5.2.3785.0 10/1/2002 Microsoft netrasa.inf Not Available ROOT\MS_NDISWANIP\0000
WAN Miniport (PPPOE) Yes NET 5.2.3785.0 10/1/2002 Microsoft netrasa.inf Not Available ROOT\MS_PPPOEMINIPORT\0000
WAN Miniport (PPTP) Yes NET 5.2.3785.0 10/1/2002 Microsoft netrasa.inf Not Available ROOT\MS_PPTPMINIPORT\0000
Direct Parallel Yes NET 5.2.3785.0 10/1/2002 Microsoft netrasa.inf Not Available ROOT\MS_PTIMINIPORT\0000
Terminal Server Device Redirector Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ROOT\RDPDR\0000
Terminal Server Keyboard Driver Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ROOT\RDP_KBD\0000
Terminal Server Mouse Driver Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ROOT\RDP_MOU\0000
Plug and Play Software Device Enumerator Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ROOT\SYSTEM\0000
Microcode Update Device Yes SYSTEM 5.2.3785.0 10/1/2002 (Standard system devices) machine.inf Not Available ROOT\SYSTEM\0001

[Environment Variables]

Variable Value User Name
ClusterLog C:\WINDOWS\Cluster\cluster.log <SYSTEM>
ComSpec %SystemRoot%\system32\cmd.exe <SYSTEM>
NUMBER_OF_PROCESSORS 16 <SYSTEM>
OS Windows_NT <SYSTEM>
Path %SystemRoot%\system32;%SystemRoot%;%SystemRoot%\system32\WBEM;C:\Program Files\Microsoft SQL Server\80\Tools\BINN;c:\batfiles;c:\tools <SYSTEM>
PATHEXT .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH <SYSTEM>
PROCESSOR_ARCHITECTURE x86 <SYSTEM>
PROCESSOR_IDENTIFIER x86 Family 15 Model 2 Stepping 2, GenuineIntel <SYSTEM>
PROCESSOR_LEVEL 15 <SYSTEM>
PROCESSOR_REVISION 0202 <SYSTEM>
TEMP %SystemRoot%\TEMP <SYSTEM>
TMP %SystemRoot%\TEMP <SYSTEM>
windir %SystemRoot% <SYSTEM>
TEMP %USERPROFILE%\Local Settings\Temp NT AUTHORITY\SYSTEM
TMP %USERPROFILE%\Local Settings\Temp NT AUTHORITY\SYSTEM
TEMP %USERPROFILE%\Local Settings\Temp NT AUTHORITY\LOCAL SERVICE
TMP %USERPROFILE%\Local Settings\Temp NT AUTHORITY\LOCAL SERVICE
TEMP %USERPROFILE%\Local Settings\Temp NT AUTHORITY\NETWORK SERVICE
TMP %USERPROFILE%\Local Settings\Temp NT AUTHORITY\NETWORK SERVICE
TEMP %USERPROFILE%\Local Settings\Temp IBMSERV2\Administrator
TMP %USERPROFILE%\Local Settings\Temp IBMSERV2\Administrator

[Print Jobs]

Document Size Owner Notify Status Time Submitted Start Time Until Time Elapsed Time Pages Printed Job ID Priority Parameters Driver Print Processor Host Print Queue Data Type Name

[Network Connections]

Local Name Remote Name Type Status User Name
Y: \\fsserv\gdrive Disk Current Connection IBMSERV2\Administrator

[Running Tasks]

Name Path Process ID Priority Min Working Set Max Working Set Start Time Version Size File Date
system idle process Not Available 0 0 Not Available Not Available Not Available Not Available Not Available Not Available
system Not Available 4 8 0 1413120 Not Available Not Available Not Available Not Available
smss.exe Not Available 536 11 204800 1413120 4/1/2003 11:06 AM Not Available Not Available Not Available
csrss.exe Not Available 584 13 Not Available Not Available 4/1/2003 11:07 AM Not Available Not Available Not Available
winlogon.exe c:\windows\system32\winlogon.exe 608 13 204800 1413120 4/1/2003 11:07 AM 5.2.3785.0 (srv03_rtm.030308-1736) 537.00 KB (549,888 bytes) 3/12/2003 5:17 PM
services.exe c:\windows\system32\services.exe 652 9 204800 1413120 4/1/2003 11:07 AM 5.2.3785.0 (srv03_rtm.030308-1736) 102.00 KB (104,448 bytes) 3/12/2003 5:17 PM
lsass.exe c:\windows\system32\lsass.exe 664 9 204800 1413120 4/1/2003 11:07 AM 5.2.3785.0 (srv03_rtm.030308-1736) 13.00 KB (13,312 bytes) 3/12/2003 5:17 PM
svchost.exe c:\windows\system32\svchost.exe 832 8 204800 1413120 4/1/2003 11:07 AM 5.2.3785.0 (srv03_rtm.030308-1736) 13.00 KB (13,312 bytes) 3/12/2003 5:17 PM
svchost.exe c:\windows\system32\svchost.exe 868 8 204800 1413120 4/1/2003 11:07 AM 5.2.3785.0 (srv03_rtm.030308-1736) 13.00 KB (13,312 bytes) 3/12/2003 5:17 PM
svchost.exe Not Available 1032 8 Not Available Not Available 4/1/2003 11:07 AM Not Available Not Available Not Available

svchost.exe Not Available 1080 8 Not Available Not Available 4/1/2003 11:07 AM Not Available Not Available Not Available
svchost.exe c:\windows\system32\svchost.exe 1092 8 204800 1413120 4/1/2003 11:07 AM 5.2.3785.0 (srv03_rtm.030308-1736) 13.00 KB (13,312 bytes) 3/12/2003 5:17 PM
spoolsv.exe c:\windows\system32\spoolsv.exe 1288 8 204800 1413120 4/1/2003 11:07 AM 5.2.3785.0 (srv03_rtm.030308-1736) 55.00 KB (56,320 bytes) 3/12/2003 5:17 PM
msdtc.exe Not Available 1316 8 Not Available Not Available 4/1/2003 11:07 AM Not Available Not Available Not Available
svchost.exe c:\windows\system32\svchost.exe 1620 8 204800 1413120 4/1/2003 11:07 AM 5.2.3785.0 (srv03_rtm.030308-1736) 13.00 KB (13,312 bytes) 3/12/2003 5:17 PM
gamscm.exe c:\windows\system32\gamserv\gamscm.exe 1644 8 204800 1413120 4/1/2003 11:07 AM Not Available 137.36 KB (140,656 bytes) 3/20/2003 4:08 PM
gamdrv.exe c:\windows\system32\gamserv\gamdrv.exe 1660 8 204800 1413120 4/1/2003 11:07 AM Not Available 304.05 KB (311,343 bytes) 3/20/2003 4:08 PM
gamserv.exe c:\windows\system32\gamserv\gamserv.exe 1668 8 204800 1413120 4/1/2003 11:07 AM Not Available 196.05 KB (200,753 bytes) 3/20/2003 4:08 PM
gamevent.exe c:\windows\system32\gamserv\gamevent.exe 1680 8 204800 1413120 4/1/2003 11:07 AM Not Available 176.05 KB (180,274 bytes) 3/20/2003 4:08 PM
gamevlog.exe c:\windows\system32\gamserv\gamevlog.exe 1708 8 204800 1413120 4/1/2003 11:07 AM Not Available 236.05 KB (241,714 bytes) 3/20/2003 4:08 PM
svchost.exe Not Available 1840 8 Not Available Not Available 4/1/2003 11:07 AM Not Available Not Available Not Available
dfssvc.exe c:\windows\system32\dfssvc.exe 208 8 204800 1413120 4/1/2003 11:07 AM 5.2.3785.0 (srv03_rtm.030308-1736) 130.50 KB (133,632 bytes) 3/12/2003 5:16 PM
explorer.exe c:\windows\explorer.exe 500 8 204800 1413120 4/1/2003 11:07 AM 6.00.3785.0 (srv03_rtm.030308-1736) 1,008.50 KB (1,032,704 bytes) 3/12/2003 5:16 PM
svchost.exe c:\windows\system32\svchost.exe 984 8 204800 1413120 4/1/2003 11:07 AM 5.2.3785.0 (srv03_rtm.030308-1736) 13.00 KB (13,312 bytes) 3/12/2003 5:17 PM
wmiprvse.exe Not Available 1072 8 Not Available Not Available 4/1/2003 11:07 AM Not Available Not Available Not Available
cmd.exe c:\windows\system32\cmd.exe 864 8 204800 1413120 4/1/2003 5:19 PM 5.2.3785.0 (srv03_rtm.030308-1736) 373.50 KB (382,464 bytes) 3/12/2003 5:16 PM
helpctr.exe c:\windows\pchealth\helpctr\binaries\helpctr.exe 3188 8 204800 1413120 4/1/2003 5:48 PM 5.2.3785.0 (srv03_rtm.030308-1736) 764.00 KB (782,336 bytes) 3/12/2003 5:42 PM
wmiprvse.exe Not Available 3100 8 Not Available Not Available 4/1/2003 5:48 PM Not Available Not Available Not Available
helpsvc.exe c:\windows\pchealth\helpctr\binaries\helpsvc.exe 3092 8 204800 1413120 4/1/2003 5:48 PM 5.2.3785.0 (srv03_rtm.030308-1736) 720.00 KB (737,280 bytes) 3/12/2003 5:42 PM

[Loaded Modules]

Name Version Size File Date Manufacturer Path

winlogon 5.2.3785.0 (srv03_rtm.030308-1736) 537.00 KB (549,888 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\winlogon.exe
ntdll 5.2.3785.0 (srv03_rtm.030308-1736) 723.00 KB (740,352 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\ntdll.dll
kernel32 5.2.3785.0 (srv03_rtm.030308-1736) 965.00 KB (988,160 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\kernel32.dll
msvcrt 7.0.3785.0 (srv03_rtm.030308-1736) 319.50 KB (327,168 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\msvcrt.dll
advapi32 5.2.3785.0 (srv03_rtm.030308-1736) 559.50 KB (572,928 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\advapi32.dll
rpcrt4 5.2.3785.0 (srv03_rtm.030308-1736) 644.50 KB (659,968 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\rpcrt4.dll
user32 5.2.3785.0 (srv03_rtm.030308-1736) 562.50 KB (576,000 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\user32.dll
gdi32 5.2.3785.0 (srv03_rtm.030308-1736) 263.00 KB (269,312 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\gdi32.dll
userenv 5.2.3785.0 (srv03_rtm.030308-1736) 733.50 KB (751,104 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\userenv.dll
nddeapi 5.2.3785.0 (srv03_rtm.030308-1736) 16.00 KB (16,384 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\nddeapi.dll
crypt32 5.131.3785.0 (srv03_rtm.030308-1736) 598.00 KB (612,352 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\crypt32.dll
msasn1 5.2.3785.0 (srv03_rtm.030308-1736) 58.00 KB (59,392 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\msasn1.dll
secur32 5.2.3785.0 (srv03_rtm.030308-1736) 63.00 KB (64,512 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\secur32.dll
winsta 5.2.3785.0 (srv03_rtm.030308-1736) 51.00 KB (52,224 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\winsta.dll
netapi32 5.2.3785.0 (srv03_rtm.030308-1736) 317.00 KB (324,608 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\netapi32.dll
profmap 5.2.3785.0 (srv03_rtm.030308-1736) 22.00 KB (22,528 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\profmap.dll
regapi 5.2.3785.0 (srv03_rtm.030308-1736) 48.50 KB (49,664 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\regapi.dll
ws2_32 5.2.3785.0 (srv03_rtm.030308-1736) 85.50 KB (87,552 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\ws2_32.dll
ws2help 5.2.3785.0 (srv03_rtm.030308-1736) 19.50 KB (19,968 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\ws2help.dll
psapi 5.2.3785.0 (srv03_rtm.030308-1736) 21.50 KB (22,016 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\psapi.dll
version 5.2.3785.0 (srv03_rtm.030308-1736) 17.00 KB (17,408 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\version.dll
setupapi 5.2.3785.0 (srv03_rtm.030308-1736) 1,014.50 KB (1,038,848 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\setupapi.dll

msgina 5.2.3785.0 (srv03_rtm.030308-1736) 1.14 MB (1,191,936 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\msgina.dll
shsvcs 6.00.3785.0 (srv03_rtm.030308-1736) 121.50 KB (124,416 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\shsvcs.dll
shlwapi 6.00.3785.0 (srv03_rtm.030308-1736) 281.00 KB (287,744 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\shlwapi.dll
sfc 5.2.3785.0 (srv03_rtm.030308-1736) 4.50 KB (4,608 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\sfc.dll
sfc_os 5.2.3785.0 (srv03_rtm.030308-1736) 133.00 KB (136,192 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\sfc_os.dll
wintrust 5.131.3785.0 (srv03_rtm.030308-1736) 163.50 KB (167,424 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\wintrust.dll
ole32 5.2.3785.0 (srv03_rtm.030308-1736) 1.13 MB (1,187,328 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\ole32.dll
imagehlp 5.2.3785.0 (srv03_rtm.030308-1736) 142.50 KB (145,920 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\imagehlp.dll
comctl32 6.0 (srv03_rtm.030308-1736) 907.00 KB (928,768 bytes) 1/14/2003 12:16 PM Microsoft Corporation c:\windows\winsxs\x86_microsoft.windows.common-controls_6595b64144ccf1df_6.0.100.0_x-ww_8417450b\comctl32.dll
winscard 5.2.3785.0 (srv03_rtm.030308-1736) 98.50 KB (100,864 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\winscard.dll
wtsapi32 5.2.3785.0 (srv03_rtm.030308-1736) 17.50 KB (17,920 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\wtsapi32.dll
sxs 5.2.3785.0 (srv03_rtm.030308-1736) 733.00 KB (750,592 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\sxs.dll
winmm 5.2.3785.0 (srv03_rtm.030308-1736) 166.00 KB (169,984 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\winmm.dll
shell32 6.00.3785.0 (srv03_rtm.030308-1736) 7.79 MB (8,164,352 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\shell32.dll
wldap32 5.2.3785.0 (srv03_rtm.030308-1736) 158.00 KB (161,792 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\wldap32.dll
rsaenh 5.2.3785.0 (srv03_rtm.030308-1736) 176.83 KB (181,072 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\rsaenh.dll
cscdll 5.2.3785.0 (srv03_rtm.030308-1736) 99.00 KB (101,376 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\cscdll.dll
wlnotify 5.2.3785.0 (srv03_rtm.030308-1736) 87.50 KB (89,600 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\wlnotify.dll
winspool 5.2.3785.0 (srv03_rtm.030308-1736) 140.00 KB (143,360 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\winspool.drv
mpr 5.2.3785.0 (srv03_rtm.030308-1736) 56.00 KB (57,344 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\mpr.dll
comctl32 5.82 (srv03_rtm.030308-1736) 561.00 KB (574,464 bytes) 1/14/2003 12:16 PM Microsoft Corporation c:\windows\winsxs\x86_microsoft.windows.common-controls_6595b64144ccf1df_5.82.0.0_x-ww_8a69ba05\comctl32.dll
uxtheme 6.00.3785.0 (srv03_rtm.030308-1736) 196.00 KB (200,704 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\uxtheme.dll
samlib 5.2.3785.0 (srv03_rtm.030308-1736) 49.00 KB (50,176 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\samlib.dll
cscui 5.2.3785.0 (srv03_rtm.030308-1736) 305.00 KB (312,320 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\cscui.dll
mprapi 5.2.3785.0 (srv03_rtm.030308-1736) 81.00 KB (82,944 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\mprapi.dll
activeds 5.2.3785.0 (srv03_rtm.030308-1736) 189.00 KB (193,536 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\activeds.dll
adsldpc 5.2.3785.0 (srv03_rtm.030308-1736) 142.50 KB (145,920 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\adsldpc.dll
credui 5.2.3785.0 (srv03_rtm.030308-1736) 159.00 KB (162,816 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\credui.dll
atl 3.05.2283 83.00 KB (84,992 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\atl.dll
oleaut32 5.2.3785.0 486.00 KB (497,664 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\oleaut32.dll
rtutils 5.2.3785.0 (srv03_rtm.030308-1736) 32.00 KB (32,768 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\rtutils.dll
clbcatq 2001.12.4715.0 (srv03_rtm.030308-1736) 481.00 KB (492,544 bytes) 3/12/2003 5:40 PM Microsoft Corporation c:\windows\system32\clbcatq.dll
comres 2001.12.4715.0 (srv03_rtm.030308-1736) 778.00 KB (796,672 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\comres.dll
ntmarta 5.2.3785.0 (srv03_rtm.030308-1736) 114.00 KB (116,736 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\ntmarta.dll
wbemprox 5.2.3785.0 (srv03_rtm.030308-1736) 17.50 KB (17,920 bytes) 3/12/2003 5:40 PM Microsoft Corporation c:\windows\system32\wbem\wbemprox.dll
wbemcomn 5.2.3785.0 (srv03_rtm.030308-1736) 212.00 KB (217,088 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\wbem\wbemcomn.dll
wbemsvc 5.2.3785.0 (srv03_rtm.030308-1736) 42.50 KB (43,520 bytes) 3/12/2003 5:40 PM Microsoft Corporation c:\windows\system32\wbem\wbemsvc.dll
fastprox 5.2.3785.0 (srv03_rtm.030308-1736) 443.00 KB (453,632 bytes) 3/12/2003 5:40 PM Microsoft Corporation c:\windows\system32\wbem\fastprox.dll
msvcp60 6.05.2144.0 388.00 KB (397,312 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\msvcp60.dll
ntdsapi 5.2.3785.0 (srv03_rtm.030308-1736) 76.00 KB (77,824 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\ntdsapi.dll
dnsapi 5.2.3785.0 (srv03_rtm.030308-1736) 147.50 KB (151,040 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\dnsapi.dll
services 5.2.3785.0 (srv03_rtm.030308-1736) 102.00 KB (104,448 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\services.exe
scesrv 5.2.3785.0 (srv03_rtm.030308-1736) 316.50 KB (324,096 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\scesrv.dll
authz 5.2.3785.0 (srv03_rtm.030308-1736) 67.50 KB (69,120 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\authz.dll
umpnpmgr 5.2.3785.0 (srv03_rtm.030308-1736) 121.50 KB (124,416 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\umpnpmgr.dll

ncobjapi 5.2.3785.0 (srv03_rtm.030308-1736) 35.00 KB (35,840 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\ncobjapi.dll
eventlog 5.2.3785.0 (srv03_rtm.030308-1736) 60.00 KB (61,440 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\eventlog.dll
lsass 5.2.3785.0 (srv03_rtm.030308-1736) 13.00 KB (13,312 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\lsass.exe
lsasrv 5.2.3785.0 (srv03_rtm.030308-1736) 781.00 KB (799,744 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\lsasrv.dll
samsrv 5.2.3785.0 (srv03_rtm.030308-1736) 453.00 KB (463,872 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\samsrv.dll
cryptdll 5.2.3785.0 (srv03_rtm.030308-1736) 34.50 KB (35,328 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\cryptdll.dll
msprivs 5.2.3785.0 (srv03_rtm.030308-1736) 46.50 KB (47,616 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\msprivs.dll
kerberos 5.2.3785.0 (srv03_rtm.030308-1736) 314.00 KB (321,536 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\kerberos.dll
msv1_0 5.2.3785.0 (srv03_rtm.030308-1736) 127.00 KB (130,048 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\msv1_0.dll
netlogon 5.2.3785.0 (srv03_rtm.030308-1736) 409.50 KB (419,328 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\netlogon.dll
w32time 5.2.3785.0 (srv03_rtm.030308-1736) 216.00 KB (221,184 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\w32time.dll
iphlpapi 5.2.3785.0 (srv03_rtm.030308-1736) 83.00 KB (84,992 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\iphlpapi.dll
schannel 5.2.3785.0 (srv03_rtm.030308-1736) 149.50 KB (153,088 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\schannel.dll
wdigest 5.2.3785.0 (srv03_rtm.030308-1736) 61.00 KB (62,464 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\wdigest.dll
rassfm 5.2.3785.0 (srv03_rtm.030308-1736) 20.50 KB (20,992 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\rassfm.dll
kdcsvc 5.2.3785.0 (srv03_rtm.030308-1736) 221.00 KB (226,304 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\kdcsvc.dll
ntdsa 5.2.3785.0 (srv03_rtm.030308-1736) 1.58 MB (1,652,224 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\ntdsa.dll
ntdsatq 5.2.3785.0 (srv03_rtm.030308-1736) 32.00 KB (32,768 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\ntdsatq.dll
mswsock 5.2.3785.0 (srv03_rtm.030308-1736) 254.00 KB (260,096 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\mswsock.dll
esent 5.2.3785.0 (srv03_rtm.030308-1736) 952.50 KB (975,360 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\esent.dll
scecli 5.2.3785.0 (srv03_rtm.030308-1736) 179.50 KB (183,808 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\scecli.dll
wshtcpip 5.2.3785.0 (srv03_rtm.030308-1736) 18.00 KB (18,432 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\wshtcpip.dll
ipsecsvc 5.2.3785.0 (srv03_rtm.030308-1736) 163.00 KB (166,912 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\ipsecsvc.dll
oakley 5.2.3785.0 (srv03_rtm.030308-1736) 324.50 KB (332,288 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\oakley.dll
winipsec 5.2.3785.0 (srv03_rtm.030308-1736) 34.00 KB (34,816 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\winipsec.dll
pstorsvc 5.2.3785.0 (srv03_rtm.030308-1736) 24.00 KB (24,576 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\pstorsvc.dll
psbase 5.2.3785.0 (srv03_rtm.030308-1736) 81.00 KB (82,944 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\psbase.dll
dssenh 5.2.3785.0 (srv03_rtm.030308-1736) 131.33 KB (134,480 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\dssenh.dll
wlbsctrl 5.2.3785.0 (srv03_rtm.030308-1736) 78.00 KB (79,872 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\wlbsctrl.dll
svchost 5.2.3785.0 (srv03_rtm.030308-1736) 13.00 KB (13,312 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\svchost.exe
rpcss 5.2.3785.0 (srv03_rtm.030308-1736) 276.00 KB (282,624 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\rpcss.dll
termsrv 5.2.3785.0 (srv03_rtm.030308-1736) 216.50 KB (221,696 bytes) 3/12/2003 5:40 PM Microsoft Corporation c:\windows\system32\termsrv.dll
icaapi 5.2.3785.0 (srv03_rtm.030308-1736) 10.50 KB (10,752 bytes) 3/12/2003 5:40 PM Microsoft Corporation c:\windows\system32\icaapi.dll
mstlsapi 5.2.3785.0 (srv03_rtm.030308-1736) 104.50 KB (107,008 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\mstlsapi.dll
wzcsvc 5.2.3785.0 (srv03_rtm.030308-1736) 272.50 KB (279,040 bytes) 3/8/2003 6:01 PM Microsoft Corporation c:\windows\system32\wzcsvc.dll
wmi 5.2.3785.0 (srv03_rtm.030308-1736) 6.50 KB (6,656 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\wmi.dll
dhcpcsvc 5.2.3785.0 (srv03_rtm.030308-1736) 101.50 KB (103,936 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\dhcpcsvc.dll
rastls 5.2.3785.0 (srv03_rtm.030308-1736) 155.00 KB (158,720 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\rastls.dll
cryptui 5.131.3785.0 (srv03_rtm.030308-1736) 473.50 KB (484,864 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\cryptui.dll
rasapi32 5.2.3785.0 (srv03_rtm.030308-1736) 227.50 KB (232,960 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\rasapi32.dll
rasman 5.2.3785.0 (srv03_rtm.030308-1736) 56.50 KB (57,856 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\rasman.dll
tapi32 5.2.3785.0 (srv03_rtm.030308-1736) 175.00 KB (179,200 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\tapi32.dll
raschap 5.2.3785.0 (srv03_rtm.030308-1736) 106.00 KB (108,544 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\raschap.dll
schedsvc 5.2.3785.0 (srv03_rtm.030308-1736) 176.00 KB (180,224 bytes) 3/12/2003 5:42 PM Microsoft Corporation c:\windows\system32\schedsvc.dll

msidle 6.00.3785.0 (srv03_rtm.030308-1736) 5.50 KB (5,632 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\msidle.dll
wkssvc 5.2.3785.0 (srv03_rtm.030308-1736) 125.00 KB (128,000 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\wkssvc.dll
wiarpc 5.2.3785.0 (srv03_rtm.030308-1736) 30.00 KB (30,720 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\wiarpc.dll
cryptsvc 5.2.3785.0 (srv03_rtm.030308-1736) 51.50 KB (52,736 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\cryptsvc.dll
certcli 5.2.3785.0 (srv03_rtm.030308-1736) 228.00 KB (233,472 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\certcli.dll
vssapi 5.2.3785.0 (srv03_rtm.030308-1736) 528.00 KB (540,672 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\vssapi.dll
dmserver 5.2.3785.0 (srv03_rtm.030308-1736) 24.00 KB (24,576 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\dmserver.dll
es 2001.12.4715.0 (srv03_rtm.030308-1736) 221.50 KB (226,816 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\es.dll
pchsvc 5.2.3785.0 (srv03_rtm.030308-1736) 31.50 KB (32,256 bytes) 3/12/2003 5:42 PM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\pchsvc.dll
srvsvc 5.2.3785.0 (srv03_rtm.030308-1736) 89.00 KB (91,136 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\srvsvc.dll
seclogon 5.2.3785.0 (srv03_rtm.030308-1736) 16.50 KB (16,896 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\seclogon.dll
sens 5.2.3785.0 (srv03_rtm.030308-1736) 35.50 KB (36,352 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\sens.dll
trkwks 5.2.3785.0 (srv03_rtm.030308-1736) 85.00 KB (87,040 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\trkwks.dll
wmisvc 5.2.3785.0 (srv03_rtm.030308-1736) 131.00 KB (134,144 bytes) 3/12/2003 5:40 PM Microsoft Corporation c:\windows\system32\wbem\wmisvc.dll
wuauserv 5.4.3785.0 (srv03_rtm.030308-1736) 10.50 KB (10,752 bytes) 3/12/2003 5:40 PM Microsoft Corporation c:\windows\system32\wuauserv.dll
wuaueng 5.4.3785.0 (srv03_rtm.030308-1736) 188.50 KB (193,024 bytes) 3/12/2003 5:40 PM Microsoft Corporation c:\windows\system32\wuaueng.dll
advpack 6.00.3785.0 (srv03_rtm.030308-1736) 93.50 KB (95,744 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\advpack.dll
wininet 6.00.3785.0 (srv03_rtm.030308-1736) 609.00 KB (623,616 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\wininet.dll
comsvcs 2001.12.4715.0 (srv03_rtm.030308-1736) 1.14 MB (1,199,616 bytes) 3/12/2003 5:40 PM Microsoft Corporation c:\windows\system32\comsvcs.dll
browser 5.2.3785.0 (srv03_rtm.030308-1736) 70.50 KB (72,192 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\browser.dll
netrap 5.2.3785.0 (srv03_rtm.030308-1736) 11.50 KB (11,776 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\netrap.dll
netman 5.2.3785.0 (srv03_rtm.030308-1736) 209.00 KB (214,016 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\netman.dll
wzcsapi 5.2.3785.0 (srv03_rtm.030308-1736) 24.50 KB (25,088 bytes) 3/8/2003 6:01 PM Microsoft Corporation c:\windows\system32\wzcsapi.dll
netshell 5.2.3785.0 (srv03_rtm.030308-1736) 1.67 MB (1,747,456 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\netshell.dll
clusapi 5.2.3785.0 (srv03_rtm.030308-1736) 56.00 KB (57,344 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\clusapi.dll
netcfgx 5.2.3785.0 (srv03_rtm.030308-1736) 726.00 KB (743,424 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\netcfgx.dll
hnetcfg 5.2.3785.0 (srv03_rtm.030308-1736) 243.50 KB (249,344 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\hnetcfg.dll
wbemcore 5.2.3785.0 (srv03_rtm.030308-1736) 457.00 KB (467,968 bytes) 3/12/2003 5:40 PM Microsoft Corporation c:\windows\system32\wbem\wbemcore.dll
esscli 5.2.3785.0 (srv03_rtm.030308-1736) 235.50 KB (241,152 bytes) 3/12/2003 5:40 PM Microsoft Corporation c:\windows\system32\wbem\esscli.dll
wmiutils 5.2.3785.0 (srv03_rtm.030308-1736) 90.50 KB (92,672 bytes) 3/12/2003 5:40 PM Microsoft Corporation c:\windows\system32\wbem\wmiutils.dll
repdrvfs 5.2.3785.0 (srv03_rtm.030308-1736) 165.00 KB (168,960 bytes) 3/12/2003 5:40 PM Microsoft Corporation c:\windows\system32\wbem\repdrvfs.dll
wmiprvsd 5.2.3785.0 (srv03_rtm.030308-1736) 405.50 KB (415,232 bytes) 3/12/2003 5:40 PM Microsoft Corporation c:\windows\system32\wbem\wmiprvsd.dll
wbemess 5.2.3785.0 (srv03_rtm.030308-1736) 256.50 KB (262,656 bytes) 3/12/2003 5:40 PM Microsoft Corporation c:\windows\system32\wbem\wbemess.dll
rasmans 5.2.3785.0 (srv03_rtm.030308-1736) 163.50 KB (167,424 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\rasmans.dll
ncprov 5.2.3785.0 (srv03_rtm.030308-1736) 43.00 KB (44,032 bytes) 3/12/2003 5:40 PM Microsoft Corporation c:\windows\system32\wbem\ncprov.dll
rastapi 5.2.3785.0 (srv03_rtm.030308-1736) 57.00 KB (58,368 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\rastapi.dll
rasppp 5.2.3785.0 (srv03_rtm.030308-1736) 195.00 KB (199,680 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\rasppp.dll
ntlsapi 5.2.3785.0 (srv03_rtm.030308-1736) 8.00 KB (8,192 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\ntlsapi.dll
ipbootp 5.2.3785.0 (srv03_rtm.030308-1736) 34.50 KB (35,328 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\ipbootp.dll
rasdlg 5.2.3785.0 (srv03_rtm.030308-1736) 642.00 KB (657,408 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\rasdlg.dll
rasadhlp 5.2.3785.0 (srv03_rtm.030308-1736) 6.50 KB (6,656 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\rasadhlp.dll
winhttp 5.2.3785.0 (srv03_rtm.030308-1736) 327.50 KB (335,360 bytes) 1/14/2003 12:16 PM Microsoft Corporation c:\windows\winsxs\x86_microsoft.windows.winhttp_6595b64144ccf1df_5.1.0.0_x-ww_e0651936\winhttp.dll
xactsrv 5.2.3785.0 (srv03_rtm.030308-1736) 86.50 KB (88,576 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\xactsrv.dll
spoolsv 5.2.3785.0 (srv03_rtm.030308-1736) 55.00 KB (56,320 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\spoolsv.exe

spoolss 5.2.3785.0 (srv03_rtm.030308-1736) 79.50 KB (81,408 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\spoolss.dll
localspl 5.2.3785.0 (srv03_rtm.030308-1736) 304.50 KB (311,808 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\localspl.dll
cnbjmon 5.2.3680.0 (Lab03_dev(skatari).020509-1043) 45.50 KB (46,592 bytes) 3/8/2003 5:59 PM Microsoft Corporation c:\windows\system32\cnbjmon.dll
pjlmon 5.2.3785.0 (srv03_rtm.030308-1736) 15.00 KB (15,360 bytes) 3/8/2003 6:00 PM Microsoft Corporation c:\windows\system32\pjlmon.dll
tcpmon 5.2.3785.0 (srv03_rtm.030308-1736) 44.00 KB (45,056 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\tcpmon.dll
mgmtapi 5.2.3785.0 (srv03_rtm.030308-1736) 14.00 KB (14,336 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\mgmtapi.dll
snmpapi 5.2.3785.0 (srv03_rtm.030308-1736) 17.50 KB (17,920 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\snmpapi.dll
wsnmp32 5.2.3785.0 (srv03_rtm.030308-1736) 39.50 KB (40,448 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\wsnmp32.dll
usbmon 5.2.3785.0 (srv03_rtm.030308-1736) 17.00 KB (17,408 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\usbmon.dll
winrnr 5.2.3785.0 (srv03_rtm.030308-1736) 15.00 KB (15,360 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\winrnr.dll
win32spl 5.2.3785.0 (srv03_rtm.030308-1736) 105.00 KB (107,520 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\win32spl.dll
inetpp 5.2.3785.0 (srv03_rtm.030308-1736) 71.50 KB (73,216 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\inetpp.dll
icmp 5.2.3785.0 (srv03_rtm.030308-1736) 4.50 KB (4,608 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\icmp.dll
ersvc 5.2.3785.0 (srv03_rtm.030308-1736) 22.00 KB (22,528 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\ersvc.dll
gamscm Not Available 137.36 KB (140,656 bytes) 3/20/2003 4:08 PM Not Available c:\windows\system32\gamserv\gamscm.exe
gamdrv Not Available 304.05 KB (311,343 bytes) 3/20/2003 4:08 PM Not Available c:\windows\system32\gamserv\gamdrv.exe
wsock32 5.2.3785.0 (srv03_rtm.030308-1736) 22.00 KB (22,528 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\wsock32.dll
gamserv Not Available 196.05 KB (200,753 bytes) 3/20/2003 4:08 PM Not Available c:\windows\system32\gamserv\gamserv.exe
gamevent Not Available 176.05 KB (180,274 bytes) 3/20/2003 4:08 PM Not Available c:\windows\system32\gamserv\gamevent.exe
gamevlog Not Available 236.05 KB (241,714 bytes) 3/20/2003 4:08 PM Not Available c:\windows\system32\gamserv\gamevlog.exe
dfssvc 5.2.3785.0 (srv03_rtm.030308-1736) 130.50 KB (133,632 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\dfssvc.exe
resutils 5.2.3785.0 (srv03_rtm.030308-1736) 59.00 KB (60,416 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\resutils.dll
mfc42u 6.05.3014.0 960.00 KB (983,040 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\mfc42u.dll
explorer 6.00.3785.0 (srv03_rtm.030308-1736) 1,008.50 KB (1,032,704 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\explorer.exe
browseui 6.00.3785.0 (srv03_rtm.030308-1736) 1.01 MB (1,056,768 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\browseui.dll
shdocvw 6.00.3785.0 (srv03_rtm.030308-1736) 1.33 MB (1,393,664 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\shdocvw.dll
apphelp 5.2.3785.0 (srv03_rtm.030308-1736) 122.00 KB (124,928 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\apphelp.dll
themeui 6.00.3785.0 (srv03_rtm.030308-1736) 360.50 KB (369,152 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\themeui.dll
msimg32 5.2.3785.0 (srv03_rtm.030308-1736) 4.50 KB (4,608 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\msimg32.dll
actxprxy 6.00.3785.0 (srv03_rtm.030308-1736) 95.00 KB (97,280 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\actxprxy.dll
linkinfo 5.2.3785.0 (srv03_rtm.030308-1736) 16.50 KB (16,896 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\linkinfo.dll
ntshrui 6.00.3785.0 (srv03_rtm.030308-1736) 136.00 KB (139,264 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\ntshrui.dll
urlmon 6.00.3785.0 (srv03_rtm.030308-1736) 501.50 KB (513,536 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\urlmon.dll
webcheck 6.00.3785.0 (srv03_rtm.030308-1736) 261.50 KB (267,776 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\webcheck.dll
stobject 5.2.3785.0 (srv03_rtm.030308-1736) 117.50 KB (120,320 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\stobject.dll
batmeter 6.00.3785.0 (srv03_rtm.030308-1736) 28.50 KB (29,184 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\batmeter.dll
powrprof 6.00.3785.0 (srv03_rtm.030308-1736) 14.50 KB (14,848 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\powrprof.dll
printui 5.2.3785.0 (srv03_rtm.030308-1736) 536.50 KB (549,376 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\printui.dll
cfgmgr32 5.2.3785.0 (srv03_rtm.030308-1736) 17.50 KB (17,920 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\cfgmgr32.dll
zipfldr 6.00.3785.0 (srv03_rtm.030308-1736) 316.00 KB (323,584 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\zipfldr.dll
drprov 5.2.3785.0 (srv03_rtm.030308-1736) 12.50 KB (12,800 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\drprov.dll
ntlanman 5.2.3785.0 (srv03_rtm.030308-1736) 41.00 KB (41,984 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\ntlanman.dll
netui0 5.2.3785.0 (srv03_rtm.030308-1736) 75.50 KB (77,312 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\netui0.dll
netui1 5.2.3785.0 (srv03_rtm.030308-1736) 184.00 KB (188,416 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\netui1.dll
davclnt 5.2.3785.0 (srv03_rtm.030308-1736) 23.50 KB (24,064 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\davclnt.dll
browselc 6.00.3785.0 (srv03_rtm.030308-1736) 62.00 KB (63,488 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\browselc.dll

shdoclc 6.00.3785.0 (srv03_rtm.030308-1736) 588.50 KB (602,624 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\shdoclc.dll
mprui 5.2.3785.0 (srv03_rtm.030308-1736) 49.00 KB (50,176 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\mprui.dll
netui2 5.2.3785.0 (srv03_rtm.030308-1736) 309.50 KB (316,928 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\netui2.dll
comdlg32 6.00.3785.0 (srv03_rtm.030308-1736) 261.00 KB (267,264 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\comdlg32.dll
netmsg 5.2.3785.0 (srv03_rtm.030308-1736) 178.00 KB (182,272 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\netmsg.dll
netplwiz 5.2.3785.0 (srv03_rtm.030308-1736) 843.00 KB (863,232 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\netplwiz.dll
mydocs 6.00.3785.0 (srv03_rtm.030308-1736) 88.00 KB (90,112 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\mydocs.dll
diskcopy 6.00.3785.0 (srv03_rtm.030308-1736) 1.43 MB (1,503,744 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\diskcopy.dll
tapisrv 5.2.3785.0 (srv03_rtm.030308-1736) 238.50 KB (244,224 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\tapisrv.dll
unimdm 5.2.3785.0 (srv03_rtm.030308-1736) 190.50 KB (195,072 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\unimdm.tsp
uniplat 5.2.3785.0 (srv03_rtm.030308-1736) 15.00 KB (15,360 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\uniplat.dll
kmddsp 5.2.3785.0 (srv03_rtm.030308-1736) 34.00 KB (34,816 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\kmddsp.tsp
ndptsp 5.2.3785.0 (srv03_rtm.030308-1736) 54.50 KB (55,808 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\ndptsp.tsp
ipconf 5.2.3785.0 (srv03_rtm.030308-1736) 16.50 KB (16,896 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\ipconf.tsp
h323 5.2.3785.0 (srv03_rtm.030308-1736) 250.00 KB (256,000 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\h323.tsp
hidphone 5.2.3785.0 (srv03_rtm.030308-1736) 28.00 KB (28,672 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\hidphone.tsp
hid 5.2.3785.0 (srv03_rtm.030308-1736) 17.50 KB (17,920 bytes) 3/8/2003 5:59 PM Microsoft Corporation c:\windows\system32\hid.dll
cmd 5.2.3785.0 (srv03_rtm.030308-1736) 373.50 KB (382,464 bytes) 3/12/2003 5:16 PM Microsoft Corporation c:\windows\system32\cmd.exe
helpctr 5.2.3785.0 (srv03_rtm.030308-1736) 764.00 KB (782,336 bytes) 3/12/2003 5:42 PM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\helpctr.exe
hcappres 5.2.3785.0 (srv03_rtm.030308-1736) 6.50 KB (6,656 bytes) 3/12/2003 5:42 PM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\hcappres.dll
itss 5.2.3785.0 (srv03_rtm.030308-1736) 119.50 KB (122,368 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\itss.dll
msxml3 8.40.9419.0 1.28 MB (1,337,344 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\msxml3.dll
pchshell 5.2.3785.0 (srv03_rtm.030308-1736) 100.50 KB (102,912 bytes) 3/12/2003 5:42 PM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\pchshell.dll
mlang 6.00.3785.0 (srv03_rtm.030308-1736) 570.00 KB (583,680 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\mlang.dll
mshtml 6.00.3785.0 (srv03_rtm.030308-1736) 2.78 MB (2,915,328 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\mshtml.dll
msimtf 5.2.3785.0 (srv03_rtm.030308-1736) 149.00 KB (152,576 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\msimtf.dll
msctf 5.2.3785.0 (srv03_rtm.030308-1736) 287.00 KB (293,888 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\msctf.dll
jscript 5.6.0.8515 436.00 KB (446,464 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\jscript.dll
msls31 3.10.349.0 147.00 KB (150,528 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\msls31.dll
imm32 5.2.3785.0 (srv03_rtm.030308-1736) 105.50 KB (108,032 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\imm32.dll
mshtmled 6.00.3785.0 (srv03_rtm.030308-1736) 443.00 KB (453,632 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\mshtmled.dll
vbscript 5.6.0.8515 404.00 KB (413,696 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\vbscript.dll
mfc42 6.05.3014.0 960.00 KB (983,040 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\mfc42.dll
msinfo 5.2.3785.0 (srv03_rtm.030308-1736) 358.50 KB (367,104 bytes) 3/12/2003 5:42 PM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\msinfo.dll
riched32 5.2.3785.0 (srv03_rtm.030308-1736) 3.50 KB (3,584 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\riched32.dll
riched20 5.31.23.1218 406.00 KB (415,744 bytes) 3/12/2003 5:17 PM Microsoft Corporation c:\windows\system32\riched20.dll
helpsvc 5.2.3785.0 (srv03_rtm.030308-1736) 720.00 KB (737,280 bytes) 3/12/2003 5:42 PM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\helpsvc.exe

[Services]

Display Name Name State Start Mode Service Type Path Error Control Start Name Tag ID
Alerter Alerter Stopped Disabled Share Process c:\windows\system32\svchost.exe -k localservice Normal NT AUTHORITY\LocalService 0
Application Layer Gateway Service ALG Stopped Manual Own Process c:\windows\system32\alg.exe Normal NT AUTHORITY\LocalService 0
Application Management AppMgmt Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Windows Audio AudioSrv Stopped Disabled Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Background Intelligent Transfer Service BITS Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Computer Browser Browser Running Auto Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Indexing Service CiSvc Stopped Manual Share Process c:\windows\system32\cisvc.exe Normal LocalSystem 0
ClipBook ClipSrv Stopped Disabled Own Process c:\windows\system32\clipsrv.exe Normal LocalSystem 0
COM+ System Application COMSysApp Stopped Manual Own Process c:\windows\system32\dllhost.exe /processid:{02d4b3f1-fd88-11d1-960d-00805fc79235} Normal LocalSystem 0

```
Cryptographic Services CryptSvc Running Auto Share
Process c:\windows\system32\svchost.exe -k netsvcs Normal
LocalSystem 0
Distributed File System Dfs Running Auto Own
Process c:\windows\system32\dfssvc.exe Normal LocalSystem 0
DHCP Client Dhcp Running Auto Share Process
c:\windows\system32\svchost.exe -k networkservice Normal NT
AUTHORITY\NetworkService 0
Logical Disk Manager Administrative Service dmadmin Stopped
Manual Share Process c:\windows\system32\dmadmin.exe /com
Normal LocalSystem 0
Logical Disk Managerdmserver Running Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
DNS Client Dnscache Running Auto Share Process
c:\windows\system32\svchost.exe -k networkservice Normal NT
AUTHORITY\NetworkService 0
Error Reporting Service ERSvc Running Auto Share
Process c:\windows\system32\svchost.exe -k winerr Ignore
LocalSystem 0
Event Log Eventlog Running Auto Share Process
c:\windows\system32\services.exe Normal LocalSystem 0
COM+ Event System EventSystem Running Manual Share
Process c:\windows\system32\svchost.exe -k netsvcs Normal
LocalSystem 0
Mylex Global Array Manager Server gamscm Running Auto
Own Process system32\gamserv\gamscm.exe Normal
LocalSystem 0
Help and Support helpsvc Running Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Human Interface Device Access HidServ Stopped Disabled Share
Process c:\windows\system32\svchost.exe -k netsvcs Normal
LocalSystem 0
HTTP SSLHTTPFilter Stopped Manual Share Process
c:\windows\system32\lsass.exe Normal LocalSystem 0
IMAPI CD-Burning COM Service ImapiService Stopped
Disabled Own Process c:\windows\system32\imapi.exe Normal
LocalSystem 0
Intersite Messaging IsmServ Stopped Disabled Own Process
c:\windows\system32\ismserv.exe Normal LocalSystem 0
Kerberos Key Distribution Center kdc Stopped Disabled
Share Process c:\windows\system32\lsass.exe Normal
LocalSystem 0
Server lanmanserver Running Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Workstation lanmanworkstation Running Auto Share
Process c:\windows\system32\svchost.exe -k netsvcs Normal
LocalSystem 0
License Logging LicenseService Stopped Disabled Own
Process c:\windows\system32\llssrv.exe Normal NT
AUTHORITY\NetworkService 0
TCP/IP NetBIOS Helper LmHosts Running Auto Share
Process c:\windows\system32\svchost.exe -k localservice Normal
NT AUTHORITY\LocalService 0
Messenger Messenger Stopped Disabled Share Process
c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
NetMeeting Remote Desktop Sharing mnmsrvc Stopped Manual
Own Process c:\windows\system32\mnmsrvc.exe Normal
LocalSystem 0
Distributed Transaction Coordinator MSDTC Running Auto
Own Process c:\windows\system32\msdtc.exe Normal NT
AUTHORITY\NetworkService 1
Windows Installer MSIServer Stopped Manual Share Process
c:\windows\system32\msiexec.exe /v Normal LocalSystem 0
MSSQLSERVER MSSQLSERVER Stopped Manual Own
Process c:\progra~1\micros~1\mssql\binn\sqlservr.exe Normal
LocalSystem 0
MSSQLServerADHelper MSSQLServerADHelper Stopped
Manual Own Process c:\program files\microsoft sql
server\80\tools\binn\sqladhlp.exe Normal LocalSystem 0
Network DDE NetDDE Stopped Disabled Share Process
c:\windows\system32\netdde.exe Normal LocalSystem 0
Network DDE DSDM NetDDEdsdm Stopped Disabled Share
Process c:\windows\system32\netdde.exe Normal LocalSystem 0
Net Logon Netlogon Stopped Manual Share Process
c:\windows\system32\lsass.exe Normal LocalSystem 0
Network Connections Netman Running Manual Share Process
c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Network Location Awareness (NLA) Nla Running Manual
Share Process c:\windows\system32\svchost.exe -k netsvcs Normal
LocalSystem 0
File Replication NtFrs Stopped Manual Own Process
c:\windows\system32\ntfrs.exe Ignore LocalSystem 0
NT LM Security Support Provider NtLmSsp Stopped Manual
Share Process c:\windows\system32\lsass.exe Normal
LocalSystem 0
Removable Storage NtmsSvc Stopped Manual Share Process
c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Plug and Play PlugPlay Running Auto Share Process
c:\windows\system32\services.exe Normal LocalSystem 0
IPSEC Services PolicyAgent Running Auto Share
Process c:\windows\system32\lsass.exe Normal LocalSystem 0
Protected Storage ProtectedStorage Running Auto Share
Process c:\windows\system32\lsass.exe Normal LocalSystem 0
Remote Access Auto Connection Manager RasAuto Stopped Manual
Share Process c:\windows\system32\svchost.exe -k netsvcs Normal
LocalSystem 0
Remote Access Connection Manager RasMan Running Manual
Share Process c:\windows\system32\svchost.exe -k netsvcs Normal
LocalSystem 0
Remote Desktop Help Session Manager RDSessMgr Stopped
Manual Own Process c:\windows\system32\sessmgr.exe
Normal LocalSystem 0
Routing and Remote Access RemoteAccess Stopped Disabled
Share Process c:\windows\system32\svchost.exe -k netsvcs Normal
LocalSystem 0
Remote Registry RemoteRegistry Running Auto Share
Process c:\windows\system32\svchost.exe -k regsvc Normal NT
AUTHORITY\LocalService 0
Remote Procedure Call (RPC) Locator RpcLocator Stopped
Manual Own Process c:\windows\system32\locator.exe Normal
NT AUTHORITY\NetworkService 0
Remote Procedure Call (RPC) RpcSs Running Auto Share
Process c:\windows\system32\svchost -k rpcss Normal
LocalSystem 0
Resultant Set of Policy Provider RSoPProv Stopped Manual Share
Process c:\windows\system32\rsopprov.exe Normal
LocalSystem 0
Special Administration Console Helper sacsvr Stopped Manual
Share Process c:\windows\system32\svchost.exe -k netsvcs Normal
LocalSystem 0
Security Accounts Manager SamSs Running Auto Share
Process c:\windows\system32\lsass.exe Normal LocalSystem 0
Smart Card SCardSvr Stopped Manual Share Process
c:\windows\system32\scardsvr.exe Ignore NT
AUTHORITY\LocalService 0
Task Scheduler Schedule Running Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Secondary Logon seclogon Running Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs Ignore LocalSystem 0
System Event Notification SENS Running Auto Share
Process c:\windows\system32\svchost.exe -k netsvcs Normal
LocalSystem 0
```

Shell Hardware Detection ShellHWDetection Running Auto
Share Process c:\windows\system32\svchost.exe -k netsvcs Ignore
LocalSystem 0
Print Spooler Spooler Running Auto Own Process
c:\windows\system32\spoolsv.exe Normal LocalSystem 0
SQLSERVERAGENT SQLSERVERAGENT Stopped
Manual Own Process c:\progra~1\micros~1\mssql\binn\sqlagent.exe
Normal LocalSystem 0
Windows Image Acquisition (WIA) stisvc Stopped Disabled
Share Process c:\windows\system32\svchost.exe -k imgsvc Normal
NT AUTHORITY\LocalService 0
Microsoft Software Shadow Copy Provider swprv Stopped Manual
Own Process c:\windows\system32\svchost.exe -k swprv Normal
LocalSystem 0
Performance Logs and Alerts SysmonLog Stopped Manual
Own Process c:\windows\system32\smlogsvc.exe Normal
NT Authority\NetworkService 0
Telephony TapiSrv Running Manual Share Process
c:\windows\system32\svchost.exe -k tapisrv Normal LocalSystem 0
Terminal Services TermService Running Manual Share
Process c:\windows\system32\svchost.exe -k termsvcs Normal
LocalSystem 0
Themes Themes Stopped Disabled Share Process
c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Telnet TlntSvr Stopped Disabled Own Process
c:\windows\system32\tlntsvr.exe Normal NT AUTHORITY\LocalService 0
Distributed Link Tracking Server TrkSvr Stopped Disabled Share
Process c:\windows\system32\svchost.exe -k netsvcs Normal
LocalSystem 0
Distributed Link Tracking Client TrkWks Running Auto Share
Process c:\windows\system32\svchost.exe -k netsvcs Normal
LocalSystem 0
Terminal Services Session Directory Tssdis Stopped Disabled
Own Process c:\windows\system32\tssdis.exe Normal
LocalSystem 0
Upload Manager uploadmgr Stopped Disabled Share Process
c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Uninterruptible Power Supply UPS Stopped Manual Own
Process c:\windows\system32\ups.exe Normal LocalSystem 0
Virtual Disk Service vds Stopped Manual Own Process
c:\windows\system32\vds.exe Normal LocalSystem 0
Volume Shadow Copy VSS Stopped Manual Own
Process c:\windows\system32\vssvc.exe Normal LocalSystem 0
Windows Time W32Time Running Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
WebClient WebClient Stopped Disabled Share Process
c:\windows\system32\svchost.exe -k localservice Normal NT
AUTHORITY\LocalService 0
WinHTTP Web Proxy Auto-Discovery Service WinHttpAutoProxySvc
Stopped Manual Share Process c:\windows\system32\svchost.exe
-k localservice Normal NT AUTHORITY\LocalService 0
Windows Management Instrumentation winmgmt Running Auto
Share Process c:\windows\system32\svchost.exe -k netsvcs Ignore
LocalSystem 0
Portable Media Serial Number Service WmdmPmSN Stopped
Manual Share Process c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Windows Management Instrumentation Driver Extensions Wmi
Stopped Manual Share Process c:\windows\system32\svchost.exe
-k netsvcs Normal LocalSystem 0
WMI Performance Adapter WmiApSrv Stopped Manual
Own Process c:\windows\system32\wbem\wmiapsrv.exe Normal
LocalSystem 0
Automatic Updates wuauserv Running Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Wireless Configuration WZCSVC Running Auto Share
Process c:\windows\system32\svchost.exe -k netsvcs Normal
LocalSystem 0

[Program Groups]

Group Name Name User Name
Accessories Default User:Accessories Default User
Accessories\Accessibility Default User:Accessories\Accessibility
Default User
Accessories\Entertainment Default User:Accessories\Entertainment
Default User
Startup Default User:Startup Default User
Accessories All Users:Accessories All Users
Accessories\Accessibility All Users:Accessories\Accessibility
All Users
Accessories\Communications All Users:Accessories\Communications
All Users
Accessories\Entertainment All Users:Accessories\Entertainment
All Users
Accessories\System Tools All Users:Accessories\System Tools
All Users
Administrative Tools All Users:Administrative Tools All Users
Microsoft SQL Server All Users:Microsoft SQL Server All Users
Startup All Users:Startup All Users
Accessories NT AUTHORITY\SYSTEM:Accessories NT
AUTHORITY\SYSTEM
Accessories\Accessibility NT
AUTHORITY\SYSTEM:Accessories\Accessibility NT
AUTHORITY\SYSTEM
Accessories\Entertainment NT
AUTHORITY\SYSTEM:Accessories\Entertainment NT
AUTHORITY\SYSTEM
Startup NT AUTHORITY\SYSTEM:Startup NT
AUTHORITY\SYSTEM
Accessories IBMSERV2\Administrator:Accessories
IBMSERV2\Administrator
Accessories\Accessibility
IBMSERV2\Administrator:Accessories\Accessibility
IBMSERV2\Administrator
Accessories\Entertainment
IBMSERV2\Administrator:Accessories\Entertainment
IBMSERV2\Administrator
Administrative Tools IBMSERV2\Administrator:Administrative Tools
IBMSERV2\Administrator
QLogic Corporation IBMSERV2\Administrator:QLogic Corporation
IBMSERV2\Administrator
QLogic Corporation\SANblade Control VIX IBMSERV2\Administrator:QLogic
Corporation\SANblade Control VIX IBMSERV2\Administrator
Startup IBMSERV2\Administrator:Startup
IBMSERV2\Administrator

[Startup Programs]

Program Command User NameLocation
desktop desktop.ini NT AUTHORITY\SYSTEM Startup
desktop desktop.ini IBMSERV2\Administrator Startup
Shortcut to synctime shortcut to synctime.lnk
IBMSERV2\Administrator Startup
desktop desktop.ini .DEFAULT Startup
desktop desktop.ini All Users Common Startup

[OLE Registration]

Object Local Server
Sound (OLE2) sndrec32.exe
Media Clip mplay32.exe
Video Clip mplay32.exe /avi
MIDI Sequence mplay32.exe /mid
Sound Not Available
Media Clip Not Available

WordPad Document "%programfiles%\windows nt\accessories\wordpad.exe"
Windows Media Services DRM Storage object Not Available
Bitmap Image mspaint.exe

[Windows Error Reporting]

Time Type Details

[Internet Settings]

[Internet Explorer]

[Following are sub-categories of this main category]
[Summary]

Item Value
Version 6.0.3785.0
Build 63785
Application Path C:\Program Files\Internet Explorer
Language English (United States)
Active Printer Not Available

Cipher Strength 128-bit
Content Advisor Disabled
IEAK Install No

[File Versions]

File Version Size Date Path Company
actxprxy.dll 6.0.3785.0 95 KB 3/8/2003 10:58:44 PM
C:\WINDOWS\system32 Microsoft Corporation
advpack.dll 6.0.3785.0 94 KB 3/8/2003 10:58:46 PM
C:\WINDOWS\system32 Microsoft Corporation
asctrls.ocx 6.0.3785.0 90 KB 3/8/2003 10:57:56 PM
C:\WINDOWS\system32 Microsoft Corporation
browselc.dll 6.0.3785.0 62 KB 3/8/2003 10:54:24 PM
C:\WINDOWS\system32 Microsoft Corporation
browseui.dll 6.0.3785.0 1,032 KB 3/8/2003 10:58:54 PM
C:\WINDOWS\system32 Microsoft Corporation
cdfview.dll 6.0.3785.0 144 KB 3/8/2003 10:58:56 PM
C:\WINDOWS\system32 Microsoft Corporation
comctl32.dll 5.82.3785.0 561 KB 3/8/2003 10:59:04 PM
C:\WINDOWS\system32 Microsoft Corporation
dxtrans.dll 6.3.3785.0 198 KB 3/8/2003 10:59:20 PM
C:\WINDOWS\system32 Microsoft Corporation
dxtmsft.dll 6.3.3785.0 344 KB 3/8/2003 10:59:20 PM
C:\WINDOWS\system32 Microsoft Corporation
iecont.dll <File Missing> Not Available Not Available
Not Available Not Available
iecontlc.dll<File Missing> Not Available Not Available
Not Available Not Available
iedkcs32.dll 16.0.3785.0 300 KB 3/8/2003 10:59:54 PM
C:\WINDOWS\system32 Microsoft Corporation
iepeers.dll 6.0.3785.0 230 KB 3/8/2003 10:59:54 PM
C:\WINDOWS\system32 Microsoft Corporation
iesetup.dll 6.0.3785.0 59 KB 3/8/2003 10:59:54 PM
C:\WINDOWS\system32 Microsoft Corporation
ieuinit.inf Not Available 20 KB 3/8/2003 6:53:32 PM
C:\WINDOWS\system32 Not Available
iexplore.exe 6.0.3785.0 90 KB 3/8/2003 10:58:12 PM
C:\Program Files\Internet Explorer Microsoft Corporation
imgutil.dll 5.2.3785.0 35 KB 3/8/2003 10:59:56 PM
C:\WINDOWS\system32 Microsoft Corporation
inetcpl.cpl 6.0.3785.0 303 KB 3/8/2003 10:57:54 PM
C:\WINDOWS\system32 Microsoft Corporation
inetcplc.dll6.0.3785.0 109 KB 3/8/2003 10:55:48 PM
C:\WINDOWS\system32 Microsoft Corporation
inseng.dll 6.0.3785.0 72 KB 3/8/2003 10:59:58 PM
C:\WINDOWS\system32 Microsoft Corporation
mlang.dll 6.0.3785.0 570 KB 3/8/2003 11:00:14 PM
C:\WINDOWS\system32 Microsoft Corporation
msencode.dll 2002.10.4.0 112 KB 3/8/2003 11:00:24 PM
C:\WINDOWS\system32 Not Available
mshta.exe 6.0.3785.0 26 KB 3/8/2003 10:58:22 PM
C:\WINDOWS\system32 Microsoft Corporation
mshtml.dll 6.0.3785.0 2,847 KB 3/8/2003 11:00:26 PM
C:\WINDOWS\system32 Microsoft Corporation
mshtml.tlb 6.0.3785.0 1,319 KB 3/8/2003 6:37:48 PM
C:\WINDOWS\system32 Microsoft Corporation
mshtmled.dll 6.0.3785.0 443 KB 3/8/2003 11:00:26 PM
C:\WINDOWS\system32 Microsoft Corporation
mshtmler.dll 6.0.3785.0 55 KB 3/8/2003 10:56:10 PM
C:\WINDOWS\system32 Microsoft Corporation
msident.dll6.0.3785.0 47 KB 3/8/2003 11:00:28 PM
C:\WINDOWS\system32 Microsoft Corporation
msidntld.dll 6.0.3785.0 15 KB 3/8/2003 10:56:10 PM
C:\WINDOWS\system32 Microsoft Corporation
msieftp.dll 6.0.3785.0 230 KB 3/8/2003 11:00:28 PM
C:\WINDOWS\system32 Microsoft Corporation
msrating.dll 6.0.3785.0 132 KB 3/8/2003 11:00:32 PM
C:\WINDOWS\system32 Microsoft Corporation
mstime.dll 6.0.3785.0 491 KB 3/8/2003 11:00:34 PM
C:\WINDOWS\system32 Microsoft Corporation
occache.dll 6.0.3785.0 89 KB 3/8/2003 11:00:48 PM
C:\WINDOWS\system32 Microsoft Corporation
proctexe.ocx 6.3.3785.0 78 KB 3/8/2003 10:57:56 PM
C:\WINDOWS\system32 Intel Corporation
sendmail.dll 6.0.3785.0 52 KB 3/8/2003 11:01:06 PM
C:\WINDOWS\system32 Microsoft Corporation
shdoclc.dll 6.0.3785.0 589 KB 3/8/2003 10:53:56 PM
C:\WINDOWS\system32 Microsoft Corporation
shdocvw.dll 6.0.3785.0 1,361 KB 3/8/2003 11:01:08 PM
C:\WINDOWS\system32 Microsoft Corporation
shfolder.dll 6.0.3785.0 23 KB 3/8/2003 11:01:10 PM
C:\WINDOWS\system32 Microsoft Corporation
shlwapi.dll6.0.3785.0 281 KB 3/8/2003 11:01:10 PM
C:\WINDOWS\system32 Microsoft Corporation
tdc.ocx 1.3.0.3130 58 KB 3/8/2003 10:57:56 PM
C:\WINDOWS\system32 Microsoft Corporation
url.dll 6.0.3785.0 36 KB 3/8/2003 11:01:24 PM
C:\WINDOWS\system32 Microsoft Corporation
urlmon.dll 6.0.3785.0 502 KB 3/8/2003 11:01:24 PM
C:\WINDOWS\system32 Microsoft Corporation
webcheck.dll 6.0.3785.0 262 KB 3/8/2003 11:01:30 PM
C:\WINDOWS\system32 Microsoft Corporation
wininet.dll 6.0.3785.0 609 KB 3/8/2003 11:01:32 PM
C:\WINDOWS\system32 Microsoft Corporation

[Connectivity]

Item Value
Connection Preference Never dial

LAN Settings

AutoConfigProxy Not Available
AutoProxyDetectMode Disabled
AutoConfigURL
Proxy Disabled
ProxyServer
ProxyOverride

[Cache]

[Following are sub-categories of this main category]
[Summary]

Item Value
Page Refresh Type Automatic
Temporary Internet Files Folder C:\Documents and Settings\NetworkService\Local Settings\Temporary Internet Files
Total Disk Space Not Available
Available Disk Space Not Available
Maximum Cache Size Not Available
Available Cache Size Not Available

[List of Objects]

Program File Status CodeBase
No cached object information available

[Content]

[Following are sub-categories of this main category]
[Summary]

Item Value
Content Advisor Disabled

[Personal Certificates]

Issued To Issued By Validity Signature Algorithm
No personal certificate information available

[Other People Certificates]

Issued To Issued By Validity Signature Algorithm
No other people certificate information available

[Publishers]

Name
No publisher information available

[Security]

Zone Security Level
My Computer Custom
Local intranet Medium-low
Trusted sites Medium
Internet High
Restricted sites High

Disk Controller Configuration Parameters

Mylex eXtremeRAID 2000 Controller 0

GCFVERSION=2.00;

Begin

BeginGroup

PhysicalDevice0 = Channel=0, Target=0, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice1 = Channel=1, Target=0, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice2 = Channel=0, Target=1, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice3 = Channel=1, Target=1, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice4 = Channel=0, Target=2, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice5 = Channel=1, Target=2, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice6 = Channel=0, Target=3, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice7 = Channel=1, Target=3, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice8 = Channel=0, Target=4, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice9 = Channel=1, Target=4, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice10 = Channel=0, Target=5, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice11 = Channel=1, Target=5, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice12 = Channel=0, Target=6, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice13 = Channel=1, Target=6, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice14 = Channel=0, Target=8, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice15 = Channel=1, Target=8, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice16 = Channel=0, Target=9, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice17 = Channel=1, Target=9, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice18 = Channel=0, Target=10, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice19 = Channel=1, Target=10, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice20 = Channel=0, Target=11, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice21 = Channel=1, Target=11, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice22 = Channel=0, Target=12, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice23 = Channel=1, Target=12, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice24 = Channel=0, Target=13, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice25 = Channel=1, Target=13, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice26 = Channel=0, Target=14, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice27 = Channel=1, Target=14, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

IntermediateDevice0 = StripeSize=64KB, Raid=1, WriteThrough=1,
Size=34696MB,

(PhysicalDevice0, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice1, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks);

IntermediateDevice1 = StripeSize=64KB, Raid=1, WriteThrough=1,
Size=34696MB,

(PhysicalDevice2, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice3, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks);

IntermediateDevice2 = StripeSize=64KB, Raid=1, WriteThrough=1,
Size=34696MB,

(PhysicalDevice4, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice5, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks);

IntermediateDevice3 = StripeSize=64KB, Raid=1, WriteThrough=1,
Size=34696MB,

(PhysicalDevice6, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice7, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks);

IntermediateDevice4 = StripeSize=64KB, Raid=1, WriteThrough=1,
Size=34696MB,

(PhysicalDevice8, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice9, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks);

IntermediateDevice5 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=34696MB,

(PhysicalDevice10, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice11, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks);

IntermediateDevice6 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=34696MB,

(PhysicalDevice12, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice13, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks);

IntermediateDevice7 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=34696MB,

(PhysicalDevice14, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice15, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks);

IntermediateDevice8 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=34696MB,

(PhysicalDevice16, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice17, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks);

IntermediateDevice9 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=34696MB,

(PhysicalDevice18, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice19, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks);

IntermediateDevice10 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=34696MB,

(PhysicalDevice20, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice21, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks);

IntermediateDevice11 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=34696MB,

(PhysicalDevice22, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice23, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks);

IntermediateDevice12 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=34696MB,

(PhysicalDevice24, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice25, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks);

IntermediateDevice13 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=34696MB,

(PhysicalDevice26, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice27, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks);

LogicalDevice0 = StripeSize=64KB, Raid=12, WriteThrough=1, Size=485744MB, BIOSGeometry=8GB,

(IntermediateDevice0, StartAddress=0MB, Size=34696MB),

(IntermediateDevice1, StartAddress=0MB, Size=34696MB),

(IntermediateDevice2, StartAddress=0MB, Size=34696MB),

(IntermediateDevice3, StartAddress=0MB, Size=34696MB),

(IntermediateDevice4, StartAddress=0MB, Size=34696MB),

(IntermediateDevice5, StartAddress=0MB, Size=34696MB),

(IntermediateDevice6, StartAddress=0MB, Size=34696MB),

(IntermediateDevice7, StartAddress=0MB, Size=34696MB),

(IntermediateDevice8, StartAddress=0MB, Size=34696MB),

(IntermediateDevice9, StartAddress=0MB, Size=34696MB),

(IntermediateDevice10, StartAddress=0MB, Size=34696MB),

(IntermediateDevice11, StartAddress=0MB, Size=34696MB),

(IntermediateDevice12, StartAddress=0MB, Size=34696MB),

(IntermediateDevice13, StartAddress=0MB, Size=34696MB);

EndGroup

BeginControllerParameter

ControllerName = eXtremeRAID 2000;

ControllerType = 28;

FirmwareVersion = 7.00;

CacheLineSize = 8KB;

AutomaticRebuildRate = 50;

BackgroundInitializeRate = 50;

ConsistencyCheckRate = 50;

MORERate = 50;

InitiatorID = 7;

DevicesPerSpin = 2;

SequentialDelay = 6S;

EnableDriveSizing = 0;

EnableClustering = 0;

EnableBGInit = 1;

EnableBiosLoadDelay = 0;

EnableForcedUnitAccess = 0;

DisableBios = 0;

EnableCDROMBoot = 0;

EnableStorageWorks = 0;

EnableSAFTE = 0;

EnableSES = 0;

EnableARM = 1;

EnableOFM = 1;

OEMCode = 0;

StartupOption = 0;

EnableTempOffline = 0;

EnablePatrolRead = 0;

EnableSmartMode = 0;

DlyBtwnIterations = 0;

SmartScanInterval = 0;

EndControllerParameter

End

Mylex eXtremeRAID 2000 Controller 1

GCFVERSION=2.00;

Begin

BeginGroup

PhysicalDevice0 = Channel=0, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice1 = Channel=0, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice2 = Channel=0, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice3 = Channel=0, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice4 = Channel=0, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice5 = Channel=0, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice6 = Channel=0, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice7 = Channel=0, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice8 = Channel=0, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice9 = Channel=0, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice10 = Channel=0, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice11 = Channel=0, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice12 = Channel=0, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice13 = Channel=0, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice14 = Channel=1, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice15 = Channel=1, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice16 = Channel=1, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice17 = Channel=1, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice18 = Channel=1, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice19 = Channel=1, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice20 = Channel=1, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice21 = Channel=1, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice22 = Channel=1, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice23 = Channel=1, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice24 = Channel=1, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice25 = Channel=1, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice26 = Channel=1, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice27 = Channel=1, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice28 = Channel=2, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice29 = Channel=2, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice30 = Channel=2, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice31 = Channel=2, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice32 = Channel=2, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice33 = Channel=2, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice34 = Channel=2, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice35 = Channel=2, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice36 = Channel=2, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice37 = Channel=2, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice38 = Channel=2, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice39 = Channel=2, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice40 = Channel=2, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice41 = Channel=2, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

IntermediateDevice0 = StripeSize=64KB, Raid=0, WriteThrough=1, Size=242704MB,

(PhysicalDevice0, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice1, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice2, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice3, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice4, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice5, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice6, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice7, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice8, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice9, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice10, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice11, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice12, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice13, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

IntermediateDevice1 = StripeSize=64KB, Raid=0, WriteThrough=1, Size=242704MB,

(PhysicalDevice14, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice15, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice16, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice17, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice18, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice19, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice20, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice21, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice22, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice23, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice24, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice25, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice26, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice27, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

IntermediateDevice2 = StripeSize=64KB, Raid=0, WriteThrough=1, Size=242704MB,

(PhysicalDevice28, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice29, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice30, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice31, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice32, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice33, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice34, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice35, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice36, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice37, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice38, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice39, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice40, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice41, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

LogicalDevice0 = StripeSize=64KB, Raid=12, WriteThrough=1, Size=728112MB, BIOSGeometry=8GB,

(IntermediateDevice0, StartAddress=0MB, Size=242704MB),

(IntermediateDevice1, StartAddress=0MB, Size=242704MB),

(IntermediateDevice2, StartAddress=0MB, Size=242704MB);

EndGroup

BeginControllerParameter

ControllerName = eXtremeRAID 2000;

ControllerType = 28;

FirmwareVersion = 7.00;

CacheLineSize = 8KB;

AutomaticRebuildRate = 50;

BackgroundInitializeRate = 50;

ConsistencyCheckRate = 50;

MORERate = 50;

InitiatorID = 7;

DevicesPerSpin = 2;

SequentialDelay = 6S;

EnableDriveSizing = 0;

EnableClustering = 0;

EnableBGInit = 1;

EnableBiosLoadDelay = 0;

EnableForcedUnitAccess = 0;

DisableBios = 0;

EnableCDROMBoot = 0;

EnableStorageWorks = 0;

EnableSAFTE = 0;

EnableSES = 0;

EnableARM = 1;

EnableOFM = 1;

OEMCode = 0;

StartupOption = 0;

EnableTempOffline = 0;

EnablePatrolRead = 0;

EnableSmartMode = 0;

DlyBtwnIterations = 0;

SmartScanInterval = 0;

EndControllerParameter

End

Mylex eXtremeRAID 2000 Controller 2

```
GCFVERSION=2.00;

Begin

 BeginGroup

        PhysicalDevice0 = Channel=0, Target=0, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice1 = Channel=0, Target=1, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice2 = Channel=0, Target=2, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice3 = Channel=0, Target=3, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice4 = Channel=0, Target=4, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice5 = Channel=0, Target=5, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice6 = Channel=0, Target=6, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice7 = Channel=0, Target=8, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice8 = Channel=0, Target=9, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice9 = Channel=0, Target=10, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice10 = Channel=0, Target=11, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice11 = Channel=0, Target=12, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice12 = Channel=0, Target=13, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice13 = Channel=0, Target=14, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice14 = Channel=1, Target=0, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice15 = Channel=1, Target=1, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice16 = Channel=1, Target=2, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice17 = Channel=1, Target=3, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice18 = Channel=1, Target=4, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice19 = Channel=1, Target=5, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice20 = Channel=1, Target=6, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        PhysicalDevice21 = Channel=1, Target=8, Size=17340MB,
State=Online,
```

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice22 = Channel=1, Target=9, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice23 = Channel=1, Target=10, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice24 = Channel=1, Target=11, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice25 = Channel=1, Target=12, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice26 = Channel=1, Target=13, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice27 = Channel=1, Target=14, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice28 = Channel=2, Target=0, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice29 = Channel=2, Target=1, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice30 = Channel=2, Target=2, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice31 = Channel=2, Target=3, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice32 = Channel=2, Target=4, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice33 = Channel=2, Target=5, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice34 = Channel=2, Target=6, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice35 = Channel=2, Target=8, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice36 = Channel=2, Target=9, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice37 = Channel=2, Target=10, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice38 = Channel=2, Target=11, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice39 = Channel=2, Target=12, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice40 = Channel=2, Target=13, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice41 = Channel=2, Target=14, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

IntermediateDevice0 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=242704MB,

(PhysicalDevice0, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice1, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice2, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

```
                (PhysicalDevice3, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice4, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice5, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice6, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice7, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice8, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice9, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice10, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice11, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice12, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice13, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks);

        IntermediateDevice1 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=242704MB,

                (PhysicalDevice14, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice15, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice16, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice17, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice18, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice19, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice20, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice21, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice22, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice23, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice24, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice25, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice26, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice27, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks);

        IntermediateDevice2 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=242704MB,

                (PhysicalDevice28, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice29, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice30, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice31, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice32, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice33, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice34, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice35, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice36, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice37, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice38, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice39, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice40, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice41, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks);

        LogicalDevice0 = StripeSize=64KB, Raid=12, WriteThrough=1,
Size=728112MB, BIOSGeometry=8GB,

                (IntermediateDevice0, StartAddress=0MB,
Size=242704MB),

                (IntermediateDevice1, StartAddress=0MB,
Size=242704MB),

                (IntermediateDevice2, StartAddress=0MB,
Size=242704MB);

 EndGroup
```

```
BeginControllerParameter
        ControllerName = eXtremeRAID 2000;
        ControllerType = 28;
        FirmwareVersion = 7.00;
        CacheLineSize = 8KB;
        AutomaticRebuildRate = 50;
        BackgroundInitializeRate = 50;
        ConsistencyCheckRate = 50;
        MORERate = 50;
        InitiatorID = 7;
        DevicesPerSpin = 2;
        SequentialDelay = 6S;
        EnableDriveSizing = 0;
        EnableClustering = 0;
        EnableBGInit = 1;
        EnableBiosLoadDelay = 0;
        EnableForcedUnitAccess = 0;
        DisableBios = 0;
        EnableCDROMBoot = 0;
        EnableStorageWorks = 0;
        EnableSAFTE = 0;
        EnableSES = 0;
        EnableARM = 1;
        EnableOFM = 1;
        OEMCode = 0;
        StartupOption = 0;
        EnableTempOffline = 0;
        EnablePatrolRead = 0;
        EnableSmartMode = 0;
        DlyBtwnIterations = 0;
        SmartScanInterval = 0;
EndControllerParameter
End
```

Mylex eXtremeRAID 2000 Controller 3

```
GCFVERSION=2.00;
Begin
 BeginGroup
        PhysicalDevice0 = Channel=0, Target=0, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;
        PhysicalDevice1 = Channel=0, Target=1, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;
        PhysicalDevice2 = Channel=0, Target=2, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;
        PhysicalDevice3 = Channel=0, Target=3, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;
        PhysicalDevice4 = Channel=0, Target=4, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;
        PhysicalDevice5 = Channel=0, Target=5, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;
        PhysicalDevice6 = Channel=0, Target=6, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;
        PhysicalDevice7 = Channel=0, Target=8, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;
        PhysicalDevice8 = Channel=0, Target=9, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;
        PhysicalDevice9 = Channel=0, Target=10, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;
```

PhysicalDevice10 = Channel=0, Target=11, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice11 = Channel=0, Target=12, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice12 = Channel=0, Target=13, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice13 = Channel=0, Target=14, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice14 = Channel=1, Target=0, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice15 = Channel=1, Target=1, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice16 = Channel=1, Target=2, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice17 = Channel=1, Target=3, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice18 = Channel=1, Target=4, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice19 = Channel=1, Target=5, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice20 = Channel=1, Target=6, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice21 = Channel=1, Target=8, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice22 = Channel=1, Target=9, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice23 = Channel=1, Target=10, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice24 = Channel=1, Target=11, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice25 = Channel=1, Target=12, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice26 = Channel=1, Target=13, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice27 = Channel=1, Target=14, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice28 = Channel=2, Target=0, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice29 = Channel=2, Target=1, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice30 = Channel=2, Target=2, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice31 = Channel=2, Target=3, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice32 = Channel=2, Target=4, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice33 = Channel=2, Target=5, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice34 = Channel=2, Target=6, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice35 = Channel=2, Target=8, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice36 = Channel=2, Target=9, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice37 = Channel=2, Target=10, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice38 = Channel=2, Target=11, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice39 = Channel=2, Target=12, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice40 = Channel=2, Target=13, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice41 = Channel=2, Target=14, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

IntermediateDevice0 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=485744MB,

(PhysicalDevice0, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice1, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice2, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice3, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice4, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice5, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice6, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice7, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice8, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice9, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice10, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice11, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice12, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice13, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks);

IntermediateDevice1 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=485744MB,

(PhysicalDevice14, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice15, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice16, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice17, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice18, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice19, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice20, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice21, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice22, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice23, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

```
                (PhysicalDevice24, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

                (PhysicalDevice25, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

                (PhysicalDevice26, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

                (PhysicalDevice27, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks);

        IntermediateDevice2 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=485744MB,

                (PhysicalDevice28, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

                (PhysicalDevice29, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

                (PhysicalDevice30, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

                (PhysicalDevice31, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

                (PhysicalDevice32, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

                (PhysicalDevice33, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

                (PhysicalDevice34, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

                (PhysicalDevice35, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

                (PhysicalDevice36, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

                (PhysicalDevice37, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

                (PhysicalDevice38, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

                (PhysicalDevice39, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

                (PhysicalDevice40, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

                (PhysicalDevice41, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks);

        LogicalDevice0 = StripeSize=64KB, Raid=12, WriteThrough=1,
Size=1457232MB, BIOSGeometry=2GB,

                (IntermediateDevice0, StartAddress=0MB,
Size=485744MB),

                (IntermediateDevice1, StartAddress=0MB,
Size=485744MB),

                (IntermediateDevice2, StartAddress=0MB,
Size=485744MB);

EndGroup

BeginControllerParameter

        ControllerName = eXtremeRAID 2000;

        ControllerType = 28;

        FirmwareVersion = 7.00;

        CacheLineSize = 8KB;

        AutomaticRebuildRate = 50;

        BackgroundInitializeRate = 50;

        ConsistencyCheckRate = 50;

        MORERate = 50;

        InitiatorID = 7;

        DevicesPerSpin = 2;

        SequentialDelay = 6S;

        EnableDriveSizing = 0;

        EnableClustering = 0;

        EnableBGInit = 1;

        EnableBiosLoadDelay = 0;

        EnableForcedUnitAccess = 0;

        DisableBios = 0;

        EnableCDROMBoot = 0;

        EnableStorageWorks = 0;

        EnableSAFTE = 0;

        EnableSES = 0;

        EnableARM = 1;

        EnableOFM = 1;

        OEMCode = 0;

        StartupOption = 0;

        EnableTempOffline = 0;

        EnablePatrolRead = 0;

        EnableSmartMode = 0;

        DlyBtwnIterations = 0;

        SmartScanInterval = 0;

EndControllerParameter

End
```

Mylex eXtremeRAID 2000 Controller 4

GCFVERSION=2.00;

Begin

BeginGroup

PhysicalDevice0 = Channel=0, Target=0, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice1 = Channel=0, Target=1, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice2 = Channel=0, Target=2, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice3 = Channel=0, Target=3, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice4 = Channel=0, Target=4, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice5 = Channel=0, Target=5, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice6 = Channel=0, Target=6, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice7 = Channel=0, Target=8, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice8 = Channel=0, Target=9, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice9 = Channel=0, Target=10, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice10 = Channel=0, Target=11, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice11 = Channel=0, Target=12, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice12 = Channel=0, Target=13, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice13 = Channel=0, Target=14, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice14 = Channel=1, Target=0, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice15 = Channel=1, Target=1, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice16 = Channel=1, Target=2, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice17 = Channel=1, Target=3, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice18 = Channel=1, Target=4, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice19 = Channel=1, Target=5, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice20 = Channel=1, Target=6, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

```
        PhysicalDevice21 = Channel=1, Target=8, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice22 = Channel=1, Target=9, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice23 = Channel=1, Target=10, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice24 = Channel=1, Target=11, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice25 = Channel=1, Target=12, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice26 = Channel=1, Target=13, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice27 = Channel=1, Target=14, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice28 = Channel=2, Target=0, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice29 = Channel=2, Target=1, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice30 = Channel=2, Target=2, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice31 = Channel=2, Target=3, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice32 = Channel=2, Target=4, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice33 = Channel=2, Target=5, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice34 = Channel=2, Target=6, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice35 = Channel=2, Target=8, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice36 = Channel=2, Target=9, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice37 = Channel=2, Target=10, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice38 = Channel=2, Target=11, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice39 = Channel=2, Target=12, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice40 = Channel=2, Target=13, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice41 = Channel=2, Target=14, Size=34698MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

        IntermediateDevice0 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=485744MB,
                (PhysicalDevice0, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),
                (PhysicalDevice1, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),
```

(PhysicalDevice2, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice3, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice4, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice5, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice6, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice7, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice8, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice9, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice10, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice11, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice12, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice13, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks);

IntermediateDevice1 = StripeSize=64KB, Raid=0, WriteThrough=1, Size=485744MB,

(PhysicalDevice14, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice15, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice16, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice17, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice18, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice19, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice20, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice21, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice22, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice23, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice24, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice25, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice26, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice27, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks);

IntermediateDevice2 = StripeSize=64KB, Raid=0, WriteThrough=1, Size=485744MB,

(PhysicalDevice28, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice29, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice30, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice31, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice32, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice33, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice34, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice35, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice36, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice37, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice38, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice39, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice40, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice41, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks);

LogicalDevice0 = StripeSize=64KB, Raid=12, WriteThrough=1, Size=1457232MB, BIOSGeometry=2GB,

(IntermediateDevice0, StartAddress=0MB, Size=485744MB),

(IntermediateDevice1, StartAddress=0MB, Size=485744MB),

(IntermediateDevice2, StartAddress=0MB, Size=485744MB);

EndGroup

BeginControllerParameter

ControllerName = eXtremeRAID 2000;

ControllerType = 28;

FirmwareVersion = 7.00;

CacheLineSize = 8KB;

AutomaticRebuildRate = 50;

BackgroundInitializeRate = 50;

ConsistencyCheckRate = 50;

MORERate = 50;

InitiatorID = 7;

DevicesPerSpin = 2;

SequentialDelay = 6S;

EnableDriveSizing = 0;

EnableClustering = 0;

EnableBGInit = 1;

EnableBiosLoadDelay = 0;

EnableForcedUnitAccess = 0;

DisableBios = 0;

EnableCDROMBoot = 0;

EnableStorageWorks = 0;

EnableSAFTE = 0;

EnableSES = 0;

EnableARM = 1;

EnableOFM = 1;

OEMCode = 0;

StartupOption = 0;

EnableTempOffline = 0;

EnablePatrolRead = 0;

EnableSmartMode = 0;

DlyBtwnIterations = 0;

SmartScanInterval = 0;

EndControllerParameter

End

Mylex eXtremeRAID 2000 Controller 5

GCFVERSION=2.00;

Begin

BeginGroup

PhysicalDevice0 = Channel=2, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice1 = Channel=2, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice2 = Channel=2, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice3 = Channel=2, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice4 = Channel=2, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice5 = Channel=2, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice6 = Channel=2, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice7 = Channel=2, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice8 = Channel=2, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice9 = Channel=2, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice10 = Channel=2, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice11 = Channel=2, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice12 = Channel=2, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice13 = Channel=2, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice14 = Channel=1, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice15 = Channel=1, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice16 = Channel=1, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice17 = Channel=1, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice18 = Channel=1, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice19 = Channel=1, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice20 = Channel=1, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice21 = Channel=1, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice22 = Channel=1, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice23 = Channel=1, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice24 = Channel=1, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice25 = Channel=1, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice26 = Channel=1, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice27 = Channel=1, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice28 = Channel=0, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice29 = Channel=0, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice30 = Channel=0, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice31 = Channel=0, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice32 = Channel=0, Target=4, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice33 = Channel=0, Target=5, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice34 = Channel=0, Target=6, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice35 = Channel=0, Target=8, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice36 = Channel=0, Target=9, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice37 = Channel=0, Target=10, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice38 = Channel=0, Target=11, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice39 = Channel=0, Target=12, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice40 = Channel=0, Target=13, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice41 = Channel=0, Target=14, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

IntermediateDevice0 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=242704MB,

(PhysicalDevice0, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice1, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice2, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice3, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice4, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice5, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice6, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice7, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice8, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice9, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice10, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice11, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice12, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice13, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks);

IntermediateDevice1 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=242704MB,

(PhysicalDevice14, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice15, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice16, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice17, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice18, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice19, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice20, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice21, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice22, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice23, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice24, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice25, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice26, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice27, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

IntermediateDevice2 = StripeSize=64KB, Raid=0, WriteThrough=1, Size=242704MB,

(PhysicalDevice28, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice29, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice30, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice31, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice32, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice33, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice34, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice35, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice36, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice37, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice38, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice39, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice40, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice41, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

LogicalDevice0 = StripeSize=64KB, Raid=12, WriteThrough=1, Size=728112MB, BIOSGeometry=8GB,

(IntermediateDevice0, StartAddress=0MB, Size=242704MB),

(IntermediateDevice1, StartAddress=0MB, Size=242704MB),

(IntermediateDevice2, StartAddress=0MB, Size=242704MB);

EndGroup

BeginControllerParameter

ControllerName = eXtremeRAID 2000;

ControllerType = 28;

FirmwareVersion = 7.00;

CacheLineSize = 8KB;

AutomaticRebuildRate = 50;

BackgroundInitializeRate = 50;

ConsistencyCheckRate = 50;

MORERate = 50;

InitiatorID = 7;

DevicesPerSpin = 2;

SequentialDelay = 6S;

EnableDriveSizing = 0;

EnableClustering = 0;

EnableBGInit = 1;

EnableBiosLoadDelay = 0;

EnableForcedUnitAccess = 0;

DisableBios = 0;

EnableCDROMBoot = 0;

EnableStorageWorks = 0;

EnableSAFTE = 0;

EnableSES = 0;

EnableARM = 1;

EnableOFM = 1;

OEMCode = 0;

StartupOption = 0;

EnableTempOffline = 0;

EnablePatrolRead = 0;

EnableSmartMode = 0;

DlyBtwnIterations = 0;

SmartScanInterval = 0;

EndControllerParameter

End

Mylex eXtremeRAID 2000 Controller 6

GCFVERSION=2.00;

Begin

BeginGroup

PhysicalDevice0 = Channel=0, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice1 = Channel=0, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice2 = Channel=0, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice3 = Channel=0, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice4 = Channel=0, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice5 = Channel=0, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice6 = Channel=0, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice7 = Channel=0, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice8 = Channel=0, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice9 = Channel=0, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice10 = Channel=0, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice11 = Channel=0, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice12 = Channel=0, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice13 = Channel=0, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice14 = Channel=1, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice15 = Channel=1, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice16 = Channel=1, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice17 = Channel=1, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice18 = Channel=1, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice19 = Channel=1, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice20 = Channel=1, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice21 = Channel=1, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice22 = Channel=1, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice23 = Channel=1, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice24 = Channel=1, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice25 = Channel=1, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice26 = Channel=1, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice27 = Channel=1, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice28 = Channel=2, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice29 = Channel=2, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice30 = Channel=2, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice31 = Channel=2, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice32 = Channel=2, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice33 = Channel=2, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice34 = Channel=2, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice35 = Channel=2, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice36 = Channel=2, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice37 = Channel=2, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice38 = Channel=2, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice39 = Channel=2, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice40 = Channel=2, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice41 = Channel=2, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

IntermediateDevice0 = StripeSize=64KB, Raid=0, WriteThrough=1, Size=242704MB,

(PhysicalDevice0, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice1, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice2, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice3, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice4, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice5, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice6, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice7, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice8, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice9, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice10, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice11, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice12, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice13, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

IntermediateDevice1 = StripeSize=64KB, Raid=0, WriteThrough=1, Size=242704MB,

(PhysicalDevice14, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice15, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice16, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice17, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice18, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice19, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice20, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice21, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice22, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice23, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice24, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice25, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice26, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice27, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

IntermediateDevice2 = StripeSize=64KB, Raid=0, WriteThrough=1, Size=242704MB,

(PhysicalDevice28, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice29, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice30, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice31, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice32, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice33, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice34, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice35, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice36, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice37, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice38, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice39, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice40, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice41, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

LogicalDevice0 = StripeSize=64KB, Raid=12, WriteThrough=1, Size=728112MB, BIOSGeometry=8GB,

(IntermediateDevice0, StartAddress=0MB, Size=242704MB),

(IntermediateDevice1, StartAddress=0MB, Size=242704MB),

(IntermediateDevice2, StartAddress=0MB, Size=242704MB);

EndGroup

BeginControllerParameter

ControllerName = eXtremeRAID 2000;

ControllerType = 28;

FirmwareVersion = 7.00;

CacheLineSize = 8KB;

AutomaticRebuildRate = 50;

BackgroundInitializeRate = 50;

ConsistencyCheckRate = 50;

MORERate = 50;

InitiatorID = 7;

DevicesPerSpin = 2;

SequentialDelay = 6S;

EnableDriveSizing = 0;

EnableClustering = 0;

EnableBGInit = 1;

EnableBiosLoadDelay = 0;

EnableForcedUnitAccess = 0;

DisableBios = 0;

EnableCDROMBoot = 0;

EnableStorageWorks = 0;

EnableSAFTE = 0;

EnableSES = 0;

EnableARM = 1;

EnableOFM = 1;

OEMCode = 0;

StartupOption = 0;

EnableTempOffline = 0;

EnablePatrolRead = 0;

EnableSmartMode = 0;

DlyBtwnIterations = 0;

SmartScanInterval = 0;

EndControllerParameter

End

Mylex eXtremeRAID 2000 Controller 7

GCFVERSION=2.00;

Begin

BeginGroup

PhysicalDevice0 = Channel=0, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice1 = Channel=0, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice2 = Channel=0, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice3 = Channel=0, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice4 = Channel=0, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice5 = Channel=0, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice6 = Channel=0, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice7 = Channel=0, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice8 = Channel=0, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice9 = Channel=0, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice10 = Channel=0, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice11 = Channel=0, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice12 = Channel=0, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice13 = Channel=0, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice14 = Channel=1, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice15 = Channel=1, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice16 = Channel=1, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice17 = Channel=1, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice18 = Channel=1, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice19 = Channel=1, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice20 = Channel=1, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice21 = Channel=1, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice22 = Channel=1, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice23 = Channel=1, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice24 = Channel=1, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice25 = Channel=1, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice26 = Channel=1, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice27 = Channel=1, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice28 = Channel=2, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice29 = Channel=2, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice30 = Channel=2, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice31 = Channel=2, Target=3, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice32 = Channel=2, Target=4, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice33 = Channel=2, Target=5, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice34 = Channel=2, Target=6, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice35 = Channel=2, Target=8, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice36 = Channel=2, Target=9, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice37 = Channel=2, Target=10, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice38 = Channel=2, Target=11, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice39 = Channel=2, Target=12, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice40 = Channel=2, Target=13, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice41 = Channel=2, Target=14, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

IntermediateDevice0 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=242704MB,

(PhysicalDevice0, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice1, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice2, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice3, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice4, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice5, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice6, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice7, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice8, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice9, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice10, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice11, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice12, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice13, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks);

IntermediateDevice1 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=242704MB,

(PhysicalDevice14, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice15, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice16, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice17, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice18, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice19, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

```
                (PhysicalDevice20, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice21, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice22, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice23, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice24, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice25, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice26, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice27, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks);

        IntermediateDevice2 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=242704MB,

                (PhysicalDevice28, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice29, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice30, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice31, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice32, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice33, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice34, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice35, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice36, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice37, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice38, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice39, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice40, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice41, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks);

        LogicalDevice0 = StripeSize=64KB, Raid=12, WriteThrough=1,
Size=728112MB, BIOSGeometry=8GB,

                (IntermediateDevice0, StartAddress=0MB,
Size=242704MB),

                (IntermediateDevice1, StartAddress=0MB,
Size=242704MB),

                (IntermediateDevice2, StartAddress=0MB,
Size=242704MB);

 EndGroup

 BeginControllerParameter

        ControllerName = eXtremeRAID 2000;

        ControllerType = 28;

        FirmwareVersion = 7.00;

        CacheLineSize = 8KB;

        AutomaticRebuildRate = 50;

        BackgroundInitializeRate = 50;

        ConsistencyCheckRate = 50;

        MORERate = 50;

        InitiatorID = 7;

        DevicesPerSpin = 2;

        SequentialDelay = 6S;

        EnableDriveSizing = 0;

        EnableClustering = 0;

        EnableBGInit = 1;

        EnableBiosLoadDelay = 0;

        EnableForcedUnitAccess = 0;

        DisableBios = 0;

        EnableCDROMBoot = 0;

        EnableStorageWorks = 0;

        EnableSAFTE = 0;

        EnableSES = 0;

        EnableARM = 1;

        EnableOFM = 1;

        OEMCode = 0;

        StartupOption = 0;

        EnableTempOffline = 0;
```

EnablePatrolRead = 0;

EnableSmartMode = 0;

DlyBtwnIterations = 336;

SmartScanInterval = 0;

EndControllerParameter

End

Mylex eXtremeRAID 2000 Controller 8

GCFVERSION=2.00;

Begin

BeginGroup

PhysicalDevice0 = Channel=0, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice1 = Channel=0, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice2 = Channel=0, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice3 = Channel=0, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice4 = Channel=0, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice5 = Channel=0, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice6 = Channel=0, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice7 = Channel=0, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice8 = Channel=0, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice9 = Channel=0, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice10 = Channel=0, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice11 = Channel=0, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice12 = Channel=0, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice13 = Channel=0, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice14 = Channel=1, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice15 = Channel=1, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice16 = Channel=1, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice17 = Channel=1, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice18 = Channel=1, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice19 = Channel=1, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice20 = Channel=1, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice21 = Channel=1, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice22 = Channel=1, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice23 = Channel=1, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice24 = Channel=1, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice25 = Channel=1, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice26 = Channel=1, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice27 = Channel=1, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice28 = Channel=2, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice29 = Channel=2, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice30 = Channel=2, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice31 = Channel=2, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice32 = Channel=2, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice33 = Channel=2, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice34 = Channel=2, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice35 = Channel=2, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice36 = Channel=2, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice37 = Channel=2, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice38 = Channel=2, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice39 = Channel=2, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice40 = Channel=2, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice41 = Channel=2, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

IntermediateDevice0 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=242704MB,

(PhysicalDevice0, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice1, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice2, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice3, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice4, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice5, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice6, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice7, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice8, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice9, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice10, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice11, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice12, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice13, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks);

IntermediateDevice1 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=242704MB,

(PhysicalDevice14, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice15, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice16, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice17, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice18, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice19, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice20, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice21, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice22, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice23, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice24, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice25, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice26, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice27, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks);

IntermediateDevice2 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=242704MB,

(PhysicalDevice28, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice29, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice30, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice31, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice32, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice33, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice34, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice35, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice36, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice37, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice38, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice39, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice40, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

(PhysicalDevice41, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

LogicalDevice0 = StripeSize=64KB, Raid=12, WriteThrough=1, Size=728112MB, BIOSGeometry=8GB,

(IntermediateDevice0, StartAddress=0MB, Size=242704MB),

(IntermediateDevice1, StartAddress=0MB, Size=242704MB),

(IntermediateDevice2, StartAddress=0MB, Size=242704MB);

EndGroup

BeginControllerParameter

ControllerName = eXtremeRAID 2000;

ControllerType = 28;

FirmwareVersion = 7.00;

CacheLineSize = 8KB;

AutomaticRebuildRate = 50;

BackgroundInitializeRate = 50;

ConsistencyCheckRate = 50;

MORERate = 50;

InitiatorID = 7;

DevicesPerSpin = 2;

SequentialDelay = 6S;

EnableDriveSizing = 1;

EnableClustering = 0;

EnableBGInit = 1;

EnableBiosLoadDelay = 0;

EnableForcedUnitAccess = 0;

DisableBios = 0;

EnableCDROMBoot = 0;

EnableStorageWorks = 0;

EnableSAFTE = 1;

EnableSES = 1;

EnableARM = 1;

EnableOFM = 1;

OEMCode = 0;

StartupOption = 0;

EnableTempOffline = 0;

EnablePatrolRead = 0;

EnableSmartMode = 0;

DlyBtwnIterations = 336;

SmartScanInterval = 0;

EndControllerParameter

End

Mylex eXtremeRAID 2000 Controller 9

GCFVERSION=2.00;

Begin

BeginGroup

PhysicalDevice0 = Channel=0, Target=0, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice1 = Channel=0, Target=1, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice2 = Channel=0, Target=2, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice3 = Channel=0, Target=3, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice4 = Channel=0, Target=4, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice5 = Channel=0, Target=5, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice6 = Channel=0, Target=6, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice7 = Channel=0, Target=8, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice8 = Channel=0, Target=9, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice9 = Channel=0, Target=10, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice10 = Channel=0, Target=11, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice11 = Channel=0, Target=12, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice12 = Channel=0, Target=13, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice13 = Channel=0, Target=14, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice14 = Channel=1, Target=0, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice15 = Channel=1, Target=1, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice16 = Channel=1, Target=2, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice17 = Channel=1, Target=3, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice18 = Channel=1, Target=4, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice19 = Channel=1, Target=5, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice20 = Channel=1, Target=6, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice21 = Channel=1, Target=8, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice22 = Channel=1, Target=9, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice23 = Channel=1, Target=10, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice24 = Channel=1, Target=11, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice25 = Channel=1, Target=12, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice26 = Channel=1, Target=13, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice27 = Channel=1, Target=14, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice28 = Channel=2, Target=0, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=8;

PhysicalDevice29 = Channel=2, Target=1, Size=34698MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice30 = Channel=2, Target=2, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice31 = Channel=2, Target=3, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice32 = Channel=2, Target=4, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice33 = Channel=2, Target=5, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice34 = Channel=2, Target=6, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice35 = Channel=2, Target=8, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice36 = Channel=2, Target=9, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice37 = Channel=2, Target=10, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice38 = Channel=2, Target=11, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice39 = Channel=2, Target=12, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice40 = Channel=2, Target=13, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

PhysicalDevice41 = Channel=2, Target=14, Size=34698MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=8;

IntermediateDevice0 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=485744MB,

(PhysicalDevice0, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice1, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice2, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice3, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice4, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice5, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice6, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice7, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice8, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice9, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice10, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice11, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice12, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice13, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks);

IntermediateDevice1 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=485744MB,

(PhysicalDevice14, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice15, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice16, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice17, StartAddress=0MB/0Blocks,
Size=34696MB/71057408Blocks),

(PhysicalDevice18, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice19, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice20, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice21, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice22, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice23, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice24, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice25, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice26, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice27, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks);

IntermediateDevice2 = StripeSize=64KB, Raid=0, WriteThrough=1, Size=485744MB,

(PhysicalDevice28, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice29, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice30, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice31, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice32, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice33, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice34, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice35, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice36, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice37, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice38, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice39, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice40, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks),

(PhysicalDevice41, StartAddress=0MB/0Blocks, Size=34696MB/71057408Blocks);

LogicalDevice0 = StripeSize=64KB, Raid=12, WriteThrough=1, Size=1457232MB, BIOSGeometry=8GB,

(IntermediateDevice0, StartAddress=0MB, Size=485744MB),

(IntermediateDevice1, StartAddress=0MB, Size=485744MB),

(IntermediateDevice2, StartAddress=0MB, Size=485744MB);

EndGroup

BeginControllerParameter

ControllerName = eXtremeRAID 2000;

ControllerType = 28;

FirmwareVersion = 7.00;

CacheLineSize = 8KB;

AutomaticRebuildRate = 50;

BackgroundInitializeRate = 50;

ConsistencyCheckRate = 50;

MORERate = 50;

InitiatorID = 7;

DevicesPerSpin = 2;

SequentialDelay = 6S;

EnableDriveSizing = 0;

EnableClustering = 0;

EnableBGInit = 1;

EnableBiosLoadDelay = 0;

EnableForcedUnitAccess = 0;

DisableBios = 0;

EnableCDROMBoot = 0;

EnableStorageWorks = 0;

EnableSAFTE = 0;

EnableSES = 0;

EnableARM = 1;

EnableOFM = 1;

```
        OEMCode = 0;

        StartupOption = 0;

        EnableTempOffline = 0;

        EnablePatrolRead = 0;

        EnableSmartMode = 0;

        DlyBtwnIterations = 336;

        SmartScanInterval = 0;

 EndControllerParameter

End
```

Client Configuration Parameters

Microsoft Windows 2000 Client System Information Report

The system configuration is identical for all four clients.

```
System Information report written at: 04/01/2003 02:23:12 PM
[System Information]

[ Following are sub-categories of this main category ]

[System Summary]

Item          Value
OS Name       Microsoft Windows 2000 Server
Version       5.0.2195 Service Pack 3 Build 2195
OS Manufacturer       Microsoft Corporation
System Name           VCLIENT10
System Manufacturer   IBM
System Model          -[8647xxx]-
System Type           X86-based PC
Processor   x86 Family 15 Model 2 Stepping 7 GenuineIntel ~2400 Mhz
Processor   x86 Family 15 Model 2 Stepping 7 GenuineIntel ~2400 Mhz
Processor   x86 Family 15 Model 2 Stepping 7 GenuineIntel ~2400 Mhz
Processor   x86 Family 15 Model 2 Stepping 7 GenuineIntel ~2400 Mhz
BIOS Version          )Phoenix - Award WorkstationBIOS v6.00PG
Windows Directory     C:\WINNT
System Directory      C:\WINNT\System32
Boot Device           \Device\Harddisk0\Partition1
Locale        United States
User NameVCLIENT10\Administrator
Time ZoneEastern Standard Time
Total Physical Memory           2,096,604 KB
Available Physical Memory       1,863,084 KB
Total Virtual Memory 5,609,000 KB
Available Virtual Memory        5,293,416 KB
Page File Space       3,512,396 KB
Page File   C:\pagefile.sys

[Hardware Resources]

[ Following are sub-categories of this main category ]

[Conflicts/Sharing]

Resource   Device
No conflicted/shared resources

[DMA]

Channel    Device      Status
4          Direct memory access controller  OK
2          Standard floppy disk controller    OK

[Forced Hardware]

Device      PNP Device ID
No Forced Hardware

[I/O]

Address Range         Device      Status
0x0000-0x0CF7         PCI bus     OK
0x0000-0x0CF7         Direct memory access controller  OK
0x0D00-0x40B7         PCI bus     OK
0x40B9-0xFFFF         PCI bus     OK
0x7000-0xBFFF         Intel(R) E7000 Series Hub Interface B PCI-to-PCI Bridge
- 2553       OK
0x7000-0xBFFF         Intel(R) P64H2 PCI to PCI Bridge - 1460      OK
0x7000-0xBFFF         PCI standard PCI-to-PCI bridge   OK
0x7000-0xBFFF         Intel(R) PRO/100 S Dual Port Server Adapter
OK
0xA000-0xBFFF         Intel(R) P64H2 PCI to PCI Bridge - 1460      OK
0xA000-0xBFFF         DEC 21154 PCI to PCI bridge     OK
0xA000-0xBFFF         Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet
Adapter     OK
0xB000-0xB0FF         QLogic QLA23xx PCI Fibre Channel Adapter
OK
0xA400-0xA4FF         Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet
Adapter #2OK
0xA800-0xA8FF         Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet
Adapter #3OK
0xAC00-0xACFF         Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet
Adapter #4OK
0x7400-0x743F         Intel(R) PRO/100 S Dual Port Server Adapter #2
OK
0x8000-0x8FFF         PCI standard PCI-to-PCI bridge   OK
0x8000-0x8FFF         Intel(R) PRO/100 S Dual Port Server Adapter #3
OK
0x8400-0x843F         Intel(R) PRO/100 S Dual Port Server Adapter #4
OK
0x9000-0x90FF         LSI Logic 1020/1030 Ultra320 SCSI Adapter
OK
0x9400-0x94FF         LSI Logic 1020/1030 Ultra320 SCSI Adapter
OK
0xD400-0xD41F         Intel(R) 82801DB/DBM USB Universal Host Controller
- 24C2       OK
0xD000-0xD01F         Intel(R) 82801DB/DBM USB Universal Host Controller
- 24C4       OK
0xC000-0xC0FF         RAGE XL  PCI         OK
0x03B0-0x03BB         RAGE XL  PCI         OK
0x03C0-0x03DF         RAGE XL  PCI         OK
0x0A79-0x0A79         ISAPNP Read Data Port          OK
0x0279-0x0279         ISAPNP Read Data Port          OK
0x0274-0x0277         ISAPNP Read Data Port          OK
0x0010-0x001F         Motherboard resources          OK
0x0022-0x003F         Motherboard resources          OK
0x0044-0x005F         Motherboard resources          OK
0x0062-0x0063         Motherboard resources          OK
0x0065-0x006F         Motherboard resources          OK
0x0074-0x007F         Motherboard resources          OK
0x0091-0x0093         Motherboard resources          OK
```

0x00A2-0x00BF Motherboard resources OK
0x00E0-0x00EF Motherboard resources OK
0x04D0-0x04D1 Motherboard resources OK
0x0800-0x087F Motherboard resources OK
0x0020-0x0021 Programmable interrupt controller OK
0x00A0-0x00A1 Programmable interrupt controller OK
0x0080-0x0090 Direct memory access controller OK
0x0094-0x009F Direct memory access controller OK
0x00C0-0x00DF Direct memory access controller OK
0x0040-0x0043 System timer OK
0x0070-0x0073 System CMOS/real time clock OK
0x0061-0x0061 System speaker OK
0x00F0-0x00FF Numeric data processor OK
0x03F2-0x03F5 Standard floppy disk controller OK
0x03F7-0x03F7 Standard floppy disk controller OK
0x03F8-0x03FF Communications Port (COM1) OK
0x02F8-0x02FF Communications Port (COM2) OK
0x0378-0x037F Printer Port (LPT1) OK
0x0060-0x0060 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard OK
0x0064-0x0064 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard OK
0xF000-0xF00F Intel(R) 82801DB Ultra ATA Storage Controller - 24CB OK
0x01F0-0x01F7 Primary IDE Channel OK
0x03F6-0x03F6 Primary IDE Channel OK
0x0170-0x0177 Secondary IDE Channel OK
0x0376-0x0376 Secondary IDE Channel OK
0x5000-0x501F Intel(R) 82801DB/DBM SMBus Controller - 24C3 OK
0xDC00-0xDCFF SoundMAX Integrated Digital Audio OK
0xE000-0xE03F SoundMAX Integrated Digital Audio OK
0x4000-0x40BF Motherboard resources OK
0x40B8-0x40B8 Not Available OK

[IRQs]

IRQ Number Device
9 Microsoft ACPI-Compliant System
48 Broadcom NetXtreme Gigabit Ethernet
52 QLogic QLA23xx PCI Fibre Channel Adapter
56 Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter
57 Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter #2
58 Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter #3
59 Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter #4
24 Intel(R) PRO/100 S Dual Port Server Adapter
25 Intel(R) PRO/100 S Dual Port Server Adapter #2
28 Intel(R) PRO/100 S Dual Port Server Adapter #3
29 Intel(R) PRO/100 S Dual Port Server Adapter #4
32 LSI Logic 1020/1030 Ultra320 SCSI Adapter
33 LSI Logic 1020/1030 Ultra320 SCSI Adapter
16 Intel(R) 82801DB/DBM USB Universal Host Controller - 24C2
19 Intel(R) 82801DB/DBM USB Universal Host Controller - 24C4
23 Intel PCI to USB Enhanced Host Controller
22 RAGE XL PCI
8 System CMOS/real time clock
13 Numeric data processor
6 Standard floppy disk controller
4 Communications Port (COM1)
3 Communications Port (COM2)
12 PS/2 Compatible Mouse
1 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
14 Primary IDE Channel
15 Secondary IDE Channel
5 Intel(R) 82801DB/DBM SMBus Controller - 24C3
17 SoundMAX Integrated Digital Audio

[Memory]

Range Device Status
0xC8000-0xCBFFF System board OK
0xCE200-0xCFFFF System board OK
0xF0000-0xFBFFF System board OK
0xFC000-0xFFFFF System board OK
0x7FFF0000-0x7FFFFFFF System board OK
0x0000-0x9FFFF System board OK
0x100000-0x7FFEFFFF System board OK
0xFEC00000-0xFECFFFFF System board OK
0xFEE00000-0xFEEFFFFF System board OK
0xFFB00000-0xFFB7FFFF System board OK
0xFFF00000-0xFFFFFFFF System board OK
0xE0000-0xEFFFF System board OK
0xFFB80000-0xFFBFFFFF Intel(r) 82802 Firmware Hub Device OK
0xA0000-0xBFFFF PCI bus OK
0xA0000-0xBFFFF RAGE XL PCI OK
0xC0000-0xDFFFF PCI bus OK
0x80000000-0xFEBFFFFF PCI bus OK
0xEC000000-0xEFFFFFFF Intel(R) E7000 Series Processor to AGP Controller - 2552 OK
0xE8000000-0xEBFFFFFF Intel(R) E7000 Series Processor to AGP Controller - 2552 OK
0xF0000000-0xF6FFFFFF Intel(R) E7000 Series Hub Interface B PCI-to-PCI Bridge - 2553 OK
0xF0000000-0xF6FFFFFF Intel(R) P64H2 PCI to PCI Bridge - 1460 OK
0xF6001000-0xF6001FFF Intel(R) P64H2 I/O Advanced Programmable Interrupt Controller - 1461 OK
0xF3000000-0xF300FFFF Broadcom NetXtreme Gigabit Ethernet OK
0xF3010000-0xF3010FFF QLogic QLA23xx PCI Fibre Channel Adapter OK
0xF1000000-0xF2FFFFFF DEC 21154 PCI to PCI bridge OK
0xF2000000-0xF207FFFF Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter OK
0xF2080000-0xF20FFFFF Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter #2 OK
0xF2100000-0xF217FFFF Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter #3 OK
0xF2180000-0xF21FFFFF Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter #4 OK
0xF6000000-0xF6000FFF Intel(R) P64H2 I/O Advanced Programmable Interrupt Controller - 1461 OK
0xF4000000-0xF5FFFFFF Intel(R) P64H2 PCI to PCI Bridge - 1460 OK
0xF5100000-0xF51FFFFF PCI standard PCI-to-PCI bridge OK
0xF5100000-0xF51FFFFF Intel(R) PRO/100 S Dual Port Server Adapter OK
0xF5141000-0xF5141FFF Intel(R) PRO/100 S Dual Port Server Adapter OK
0xF5140000-0xF5140FFF Intel(R) PRO/100 S Dual Port Server Adapter #2 OK
0xF5120000-0xF513FFFF Intel(R) PRO/100 S Dual Port Server Adapter #2 OK
0xF5000000-0xF50FFFFF PCI standard PCI-to-PCI bridge OK
0xF5000000-0xF50FFFFF Intel(R) PRO/100 S Dual Port Server Adapter #3 OK
0xF5041000-0xF5041FFF Intel(R) PRO/100 S Dual Port Server Adapter #3 OK
0xF5040000-0xF5040FFF Intel(R) PRO/100 S Dual Port Server Adapter #4 OK
0xF5020000-0xF503FFFF Intel(R) PRO/100 S Dual Port Server Adapter #4 OK
0xF5210000-0xF521FFFF LSI Logic 1020/1030 Ultra320 SCSI Adapter OK

0xF5200000-0xF520FFFF LSI Logic 1020/1030 Ultra320 SCSI Adapter
OK
0xF5220000-0xF522FFFF LSI Logic 1020/1030 Ultra320 SCSI Adapter
OK
0xF5230000-0xF523FFFF LSI Logic 1020/1030 Ultra320 SCSI Adapter
OK
0xFA000000-0xFA0003FF Intel PCI to USB Enhanced Host Controller
OK
0xF7000000-0xF7FFFFFF RAGE XL PCI OK
0xF9000000-0xF9000FFF RAGE XL PCI OK
0xFEBFFC00-0xFEBFFFFF Intel(R) 82801DB Ultra ATA Storage
Controller - 24CB OK
0xFA001000-0xFA0011FF SoundMAX Integrated Digital Audio
OK
0xFA002000-0xFA0020FF SoundMAX Integrated Digital Audio
OK

[Components]

[Following are sub-categories of this main category]

[Multimedia]

[Following are sub-categories of this main category]

[Audio Codecs]

Codec Manufacturer Description Status File
Version Size Creation Date
c:\winnt\system32\msadp32.acm Microsoft Corporation
OK C:\WINNT\System32\MSADP32.ACM 5.00.2134.1
14.77 KB (15,120 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\msg723.acm Microsoft Corporation
OK C:\WINNT\System32\MSG723.ACM 4.4.3385 106.77 KB
(109,328 bytes) 2/12/2003 12:55:58 PM
c:\winnt\system32\msg711.acm Microsoft Corporation
OK C:\WINNT\System32\MSG711.ACM 5.00.2134.1
10.27 KB (10,512 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\iac25_32.ax Intel Corporation Indeo® audio software
OK C:\WINNT\System32\IAC25_32.AX 2.05.53 195.00 KB
(199,680 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\tssoft32.acm DSP GROUP, INC. OK
C:\WINNT\System32\TSSOFT32.ACM 1.01 9.27 KB (9,488 bytes)
12/7/1999 7:00:00 AM
c:\winnt\system32\msgsm32.acm Microsoft Corporation
OK C:\WINNT\System32\MSGSM32.ACM 5.00.2134.1
22.27 KB (22,800 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\imaadp32.acm Microsoft Corporation
OK C:\WINNT\System32\IMAADP32.ACM 5.00.2134.1
16.27 KB (16,656 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\lhacm.acm Microsoft Corporation
OK C:\WINNT\System32\LHACM.ACM 4.4.3385 33.27 KB
(34,064 bytes) 2/12/2003 12:55:58 PM

[Video Codecs]

Codec Manufacturer Description Status File
Version Size Creation Date
c:\winnt\system32\msyuv.dll Microsoft Corporation
OK C:\WINNT\System32\MSYUV.DLL 5.00.2134.1
14.77 KB (15,120 bytes) 2/12/2003 2:09:29 PM
c:\winnt\system32\ir50_32.dll Intel Corporation Indeo® video 5.10
OK C:\WINNT\System32\IR50_32.DLL R.5.10.15.2.55
737.50 KB (755,200 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\msh261.drv Microsoft Corporation
OK C:\WINNT\System32\MSH261.DRV 4.4.3385 163.77 KB
(167,696 bytes) 2/12/2003 12:55:58 PM
c:\winnt\system32\msvidc32.dll Microsoft Corporation
OK C:\WINNT\System32\MSVIDC32.DLL 5.00.2134.1
27.27 KB (27,920 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\msh263.drv Microsoft Corporation
OK C:\WINNT\System32\MSH263.DRV 4.4.3385 252.27 KB
(258,320 bytes) 2/12/2003 12:55:39 PM
c:\winnt\system32\msrle32.dll Microsoft Corporation
OK C:\WINNT\System32\MSRLE32.DLL 5.00.2134.1
10.77 KB (11,024 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\ir32_32.dll Intel(R) Corporation OK
C:\WINNT\System32\IR32_32.DLL Not Available 194.50 KB
(199,168 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\iccvid.dll Radius Inc. OK
C:\WINNT\System32\ICCVID.DLL 1.10.0.6 108.00 KB (110,592
bytes) 12/7/1999 7:00:00 AM

[CD-ROM]

Item Value
Drive Z:
Description CD-ROM Drive
Media Loaded False
Media Type CD-ROM
Name HL-DT-ST CD-ROM GCR-8480B
Manufacturer (Standard CD-ROM drives)
Status OK
Transfer Rate Not Available
SCSI Target ID 0
PNP Device ID
IDE\CDROMHL-DT-ST_CD-ROM_GCR-8480B_____1.02____\
5&74A80B&0&0.0.0

[Sound Device]

Item Value
Name SoundMAX Integrated Digital Audio
Status OK
PNP Device ID
PCI\VEN_8086&DEV_24C5&SUBSYS_027A1014&REV_02\3&13C0B0C5
&0&FD
IRQ Number 17
I/O Port 0xDC00-0xDCFF
I/O Port 0xE000-0xE03F
Memory Range 0xFA001000-0xFA0011FF
Memory Range 0xFA002000-0xFA0020FF
Driver c:\winnt\system32\drivers\smwdm.sys (552932, PRE-RELEASE)

[Display]

Item Value
Name RAGE XL PCI
PNP Device ID
PCI\VEN_1002&DEV_4752&SUBSYS_02401014&REV_27\4&1A671D0C&
0&08F0
Adapter Type ATI RAGE XL PCI (B41), ATI Technologies Inc.
compatible
Adapter Description RAGE XL PCI
Adapter RAM 8.00 MB (8,388,608 bytes)
Installed Drivers ati2drad.dll
Driver Version 5.00.2195.5005
INF File oem1.inf (ati2mpad section)
Color Planes 1
Color Table Entries 65536
Resolution 1024 x 768 x 85 hertz
Bits/Pixel 16

[Infrared]

Item Value
No infrared devices

[Input]

[Following are sub-categories of this main category]

[Keyboard]

Item Value
Description Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
Name Enhanced (101- or 102-key)
Layout 00000409
PNP Device ID ACPI\PNP0303\4&323CF337&0
NumberOfFunctionKeys 12

[Pointing Device]

Item Value
Hardware Type PS/2 Compatible Mouse
Number of Buttons 3
Status OK
PNP Device ID ACPI\PNP0F13\4&323CF337&0
Power Management Supported False
Double Click Threshold 6
Handedness Right Handed Operation

[Modem]

Item Value
No modems

[Network]

[Following are sub-categories of this main category]

[Adapter]

Item Value
Name [00000000] RAS Async Adapter
Adapter Type Not Available
Product Name RAS Async Adapter
Installed True
PNP Device ID Not Available
Last Reset 4/1/2003 7:45:18 AM
Index 0
Service Name AsyncMac
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available
Service Name Not Available

Name [00000001] WAN Miniport (L2TP)
Adapter Type Not Available
Product Name WAN Miniport (L2TP)
Installed True
PNP Device ID ROOT\MS_L2TPMINIPORT\0000
Last Reset 4/1/2003 7:45:18 AM
Index 1
Service Name Rasl2tp
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available
Service Name Rasl2tp
Driver c:\winnt\system32\drivers\rasl2tp.sys (52112, 5.00.2195.4052)

Name [00000002] WAN Miniport (PPTP)
Adapter Type Wide Area Network (WAN)
Product Name WAN Miniport (PPTP)
Installed True
PNP Device ID ROOT\MS_PPTPMINIPORT\0000
Last Reset 4/1/2003 7:45:18 AM
Index 2
Service Name PptpMiniport
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 50:50:54:50:30:30
Service Name PptpMiniport
Driver c:\winnt\system32\drivers\raspptp.sys (47888, 5.00.2195.4080)

Name [00000003] Direct Parallel
Adapter Type Not Available
Product Name Direct Parallel
Installed True
PNP Device ID ROOT\MS_PTIMINIPORT\0000
Last Reset 4/1/2003 7:45:18 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 4/1/2003 7:45:18 AM
Index 4
Service Name NdisWan
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available

Service Name NdisWan
Driver c:\winnt\system32\drivers\ndiswan.sys (93104, 5.00.2195.5241)

Name [00000005] Broadcom NetXtreme Gigabit Ethernet
Adapter Type Ethernet 802.3
Product Name Broadcom NetXtreme Gigabit Ethernet
Installed True
PNP Device ID
PCI\VEN_14E4&DEV_16A7&SUBSYS_026F1014&REV_02\5&121CC7C2&0&08E810
Last Reset 4/1/2003 7:45:18 AM
Index 5
Service Name b57w2k
IP Address 192.168.122.10
IP Subnet 255.255.255.0
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:10:DC:72:A2:2D
Service Name b57w2k
IRQ Number 48
Driver c:\winnt\system32\drivers\b57w2k.sys (79336, 2.90.0.0)

Name [00000006] Intel(R) PRO/100 S Dual Port Server Adapter
Adapter Type Ethernet 802.3
Product Name Intel(R) PRO/100 S Dual Port Server Adapter
Installed True
PNP Device ID
PCI\VEN_8086&DEV_1229&SUBSYS_10158086&REV_0D\6&11588895&0&2008F810
Last Reset 4/1/2003 7:45:18 AM
Index 6
Service Name E100B
IP Address 192.168.13.99
IP Subnet 255.255.255.0
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:02:B3:AC:69:D8
Service Name E100B
IRQ Number 24
I/O Port 0x7000-0xBFFF
Driver c:\winnt\system32\drivers\e100bnt5.sys (141584, 6.04.14.0000)

Name [00000007] Intel(R) PRO/100 S Dual Port Server Adapter
Adapter Type Ethernet 802.3
Product Name Intel(R) PRO/100 S Dual Port Server Adapter
Installed True
PNP Device ID
PCI\VEN_8086&DEV_1229&SUBSYS_10158086&REV_0D\6&11588895&0&2808F810
Last Reset 4/1/2003 7:45:18 AM
Index 7
Service Name E100B
IP Address 192.168.12.99
IP Subnet 255.255.255.0
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:02:B3:AC:69:D9
Service Name E100B
IRQ Number 25
I/O Port 0x7400-0x743F
Driver c:\winnt\system32\drivers\e100bnt5.sys (141584, 6.04.14.0000)

Name [00000008] Intel(R) PRO/100 S Dual Port Server Adapter
Adapter Type Ethernet 802.3
Product Name Intel(R) PRO/100 S Dual Port Server Adapter
Installed True
PNP Device ID
PCI\VEN_8086&DEV_1229&SUBSYS_10158086&REV_0D\6&34E7E7F4&0&2010F810
Last Reset 4/1/2003 7:45:18 AM
Index 8
Service Name E100B
IP Address 192.168.17.99
IP Subnet 255.255.255.0
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:02:B3:AC:6C:44
Service Name E100B
IRQ Number 28
I/O Port 0x8000-0x8FFF
Driver c:\winnt\system32\drivers\e100bnt5.sys (141584, 6.04.14.0000)

Name [00000009] Intel(R) PRO/100 S Dual Port Server Adapter
Adapter Type Ethernet 802.3
Product Name Intel(R) PRO/100 S Dual Port Server Adapter
Installed True
PNP Device ID
PCI\VEN_8086&DEV_1229&SUBSYS_10158086&REV_0D\6&34E7E7F4&0&2810F810
Last Reset 4/1/2003 7:45:18 AM
Index 9
Service Name E100B
IP Address 192.168.16.99
IP Subnet 255.255.255.0
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:02:B3:AC:6C:45
Service Name E100B
IRQ Number 29
I/O Port 0x8400-0x843F
Driver c:\winnt\system32\drivers\e100bnt5.sys (141584, 6.04.14.0000)

Name [00000014] Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter
Adapter Type Ethernet 802.3
Product Name Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter
Installed True
PNP Device ID
PCI\VEN_9004&DEV_6915&SUBSYS_00199004&REV_03\6&1CD10E71&0&2018E810
Last Reset 4/1/2003 7:45:18 AM
Index 14
Service Name ADPTSF
IP Address 192.168.15.99
IP Subnet 255.255.255.0
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available

MAC Address 00:00:D1:EF:69:F9
Service Name ADPTSF
IRQ Number 56
I/O Port 0xA000-0xBFFF
Driver c:\winnt\system32\drivers\adptsf50.sys (48384, 5.20.0.24)

Name [00000015] Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter
Adapter Type Ethernet 802.3
Product Name Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter
Installed True
PNP Device ID PCI\VEN_9004&DEV_6915&SUBSYS_00199004&REV_03\6&1CD10E71&0&2818E810
Last Reset 4/1/2003 7:45:18 AM
Index 15
Service Name ADPTSF
IP Address 192.168.11.99
IP Subnet 255.255.255.0
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:00:D1:EF:69:FA
Service Name ADPTSF
IRQ Number 57
I/O Port 0xA400-0xA4FF
Driver c:\winnt\system32\drivers\adptsf50.sys (48384, 5.20.0.24)

Name [00000016] Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter
Adapter Type Ethernet 802.3
Product Name Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter
Installed True
PNP Device ID PCI\VEN_9004&DEV_6915&SUBSYS_00199004&REV_03\6&1CD10E71&0&3018E810
Last Reset 4/1/2003 7:45:18 AM
Index 16
Service Name ADPTSF
IP Address 192.168.10.99
IP Subnet 255.255.255.0
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:00:D1:EF:69:FB
Service Name ADPTSF
IRQ Number 58
I/O Port 0xA800-0xA8FF
Driver c:\winnt\system32\drivers\adptsf50.sys (48384, 5.20.0.24)

Name [00000017] Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter
Adapter Type Ethernet 802.3
Product Name Adaptec ANA62044 64-bit 4 port PCI Fast Ethernet Adapter
Installed True
PNP Device ID PCI\VEN_9004&DEV_6915&SUBSYS_00199004&REV_03\6&1CD10E71&0&3818E810
Last Reset 4/1/2003 7:45:18 AM
Index 17
Service Name ADPTSF
IP Address 192.168.14.99
IP Subnet 255.255.255.0
Default IP Gateway Not Available
DHCP Enabled False
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:00:D1:EF:69:FC
Service Name ADPTSF
IRQ Number 59
I/O Port 0xAC00-0xACFF
Driver c:\winnt\system32\drivers\adptsf50.sys (48384, 5.20.0.24)

[Protocol]

Item Value
Name 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
MinimumAddressSize16 bytes
PseudoStreamOriented False
SupportsBroadcasting False
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption True
SupportsExpeditedData True
SupportsGracefulClosing True
SupportsGuaranteedBandwidth False
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{C5A9DCD8-47C5-437F-A456-3998B708852F}] SEQPACKET 14
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_{C5A9DCD8-47C5-437F-A456-3998B708852F}] DATAGRAM 14
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_{7342D553-7C2A-4066-9070-1B50781771D5}] SEQPACKET 11
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_{7342D553-7C2A-4066-9070-1B50781771D5}] DATAGRAM 11
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_{4A2A9C9A-DDD8-4FED-BF81-B957B71EB0BE}] 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_{4A2A9C9A-DDD8-4FED-BF81-B957B71EB0BE}] 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_{04626D60-9758-487A-8A9E-33BA956B6C94}] SEQPACKET 3
ConnectionlessService False
GuaranteesDelivery True
GuaranteesSequencing True
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize20 bytes
PseudoStreamOriented False
SupportsBroadcasting False
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{04626D60-9758-487A-8A9E-33BA956B6C94}] DATAGRAM 3
ConnectionlessService True
GuaranteesDelivery False
GuaranteesSequencing False
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize20 bytes
PseudoStreamOriented False
SupportsBroadcasting True
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{9580B244-281D-49A2-868D-2DB50DC4BB14}] SEQPACKET 13
ConnectionlessService False
GuaranteesDelivery True
GuaranteesSequencing True
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize20 bytes
PseudoStreamOriented False
SupportsBroadcasting False
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{9580B244-281D-49A2-868D-2DB50DC4BB14}] DATAGRAM 13
ConnectionlessService True
GuaranteesDelivery False
GuaranteesSequencing False
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize20 bytes
PseudoStreamOriented False
SupportsBroadcasting True
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{F37FFD50-F485-4FB7-A01E-55B193228DED}] SEQPACKET 6
ConnectionlessService False
GuaranteesDelivery True
GuaranteesSequencing True
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize20 bytes
PseudoStreamOriented False
SupportsBroadcasting False
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{F37FFD50-F485-4FB7-A01E-55B193228DED}] DATAGRAM 6
ConnectionlessService True
GuaranteesDelivery False
GuaranteesSequencing False
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize20 bytes
PseudoStreamOriented False
SupportsBroadcasting True
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{E64AEA55-29FE-46A2-900A-0F724D1CC407}] SEQPACKET 12
ConnectionlessService False
GuaranteesDelivery True
GuaranteesSequencing True
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize20 bytes
PseudoStreamOriented False

SupportsBroadcasting False
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{E64AEA55-29FE-46A2-900A-0F724D1CC407}] DATAGRAM 12
ConnectionlessService True
GuaranteesDelivery False
GuaranteesSequencing False
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
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_{70347C08-B8F8-4918-93D1-FFF1CE9DB212}] 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_{70347C08-B8F8-4918-93D1-FFF1CE9DB212}] 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_{4DA8936B-544A-43FE-B2F7-D71CAF394BCD}] 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_{4DA8936B-544A-43FE-B2F7-D71CAF394BCD}] 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 RLSD True
Supports RLSD True
Supports 16 Bit Mode False
Supports Special Characters False
Baud Rate 9600
Bits/Byte 8
Stop Bits 1
Parity None
Busy 0
Abort Read/Write on Error 0
Binary Mode Enabled -1
Continue XMit on XOff 0
CTS Outflow Control 0
Discard NULL Bytes 0
DSR Outflow Control 0
DSR Sensitivity 0
DTR Flow Control Type Enable
EOF Character 0
Error Replace Character 0
Error Replacement Enabled 0
Event Character 0
Parity Check Enabled 0
RTS Flow Control Type Enable
XOff Character 19
XOffXMit Threshold 512
XOn Character 17
XOnXMit Threshold 2048
XOnXOff InFlow Control 0
XOnXOff OutFlow Control 0
IRQ Number 4
I/O Port 0x03F8-0x03FF
Driver c:\winnt\system32\drivers\serial.sys (62512, 5.00.2195.5080)

Name COM2
Status OK
PNP Device ID ACPI\PNP0501\2
Maximum Input Buffer Size 0
Maximum Output Buffer Size False
Settable Baud Rate True
Settable Data Bits True
Settable Flow Control True
Settable Parity True
Settable Parity Check True
Settable Stop Bits True
Settable RLSD True
Supports RLSD True
Supports 16 Bit Mode False
Supports Special Characters False
Baud Rate 9600
Bits/Byte 8
Stop Bits 1
Parity None

Busy 0
Abort Read/Write on Error 0
Binary Mode Enabled -1
Continue XMit on XOff 0
CTS Outflow Control 0
Discard NULL Bytes 0
DSR Outflow Control 0
DSR Sensitivity 0
DTR Flow Control Type Enable
EOF Character 0
Error Replace Character 0
Error Replacement Enabled 0
Event Character 0
Parity Check Enabled 0
RTS Flow Control Type Enable
XOff Character 19
XOffXMit Threshold 512
XOn Character 17
XOnXMit Threshold 2048
XOnXOff InFlow Control 0
XOnXOff OutFlow Control 0
IRQ Number 3
I/O Port 0x02F8-0x02FF
Driver c:\winnt\system32\drivers\serial.sys (62512, 5.00.2195.5080)

[Parallel]

Item Value
Name LPT1
PNP Device ID ACPI\PNP0400\4&323CF337&0

[Storage]

[Following are sub-categories of this main category]

[Drives]

Item Value
Drive A:
Description 3 1/2 Inch Floppy Drive

Drive C:
Description Local Fixed Disk
Compressed False
File System NTFS
Size 16.95 GB (18,196,672,512 bytes)
Free Space 12.30 GB (13,205,991,424 bytes)
Volume Name C_Drive
Volume Serial Number 5C29133F
Partition Disk #0, Partition #0
Partition Size 16.95 GB (18,196,674,048 bytes)
Starting Offset 32256 bytes
Drive Description Disk drive
Drive Manufacturer (Standard disk drives)
Drive Model IBM-ESXS ST318432LC 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 2
Drive SCSITargetId 4
Drive SectorsPerTrack 63
Drive Size 18196706304 bytes
Drive TotalCylinders 2221
Drive TotalSectors 35540442
Drive TotalTracks 564134
Drive TracksPerCylinder 254

Drive D:
Description Network Connection
Provider Name \\fsserv\gdrive

[SCSI]

Item Value
Name QLogic QLA23xx PCI Fibre Channel Adapter
Caption QLogic QLA23xx PCI Fibre Channel Adapter
Driver ql2300
Status OK
PNP Device ID
PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\5&121CC7C2&0&10E810
Device ID
PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\5&121CC7C2&0&10E810
Device Map Not Available
Index Not Available
Max Number Controlled Not Available
IRQ Number 52
I/O Port 0xB000-0xB0FF
Driver c:\winnt\system32\drivers\ql2300.sys (441733, 8.2.0 Beta 10 (W2K VI))

Name LSI Logic 1020/1030 Ultra320 SCSI Adapter
Caption LSI Logic 1020/1030 Ultra320 SCSI Adapter
Driver SYMMPI
Status OK
PNP Device ID
PCI\VEN_1000&DEV_0030&SUBSYS_10001014&REV_07\5&21593F33&0&18F810
Device ID
PCI\VEN_1000&DEV_0030&SUBSYS_10001014&REV_07\5&21593F33&0&18F810
Device Map Not Available
Index Not Available
Max Number Controlled Not Available
IRQ Number 32
I/O Port 0x9000-0x90FF
Driver c:\winnt\system32\drivers\symmpi.sys (38512, 1.08.22.00)

Name LSI Logic 1020/1030 Ultra320 SCSI Adapter
Caption LSI Logic 1020/1030 Ultra320 SCSI Adapter
Driver SYMMPI
Status OK
PNP Device ID
PCI\VEN_1000&DEV_0030&SUBSYS_10001014&REV_07\5&21593F33&0&19F810
Device ID
PCI\VEN_1000&DEV_0030&SUBSYS_10001014&REV_07\5&21593F33&0&19F810
Device Map Not Available
Index Not Available
Max Number Controlled Not Available
IRQ Number 33
I/O Port 0x9400-0x94FF
Driver c:\winnt\system32\drivers\symmpi.sys (38512, 1.08.22.00)

[Printing]

Name Port Name Server Name

No printing information

[Problem Devices]

Device	PNP Device ID	Error Code
Not Available	ACPI\IBM37D6\2&DABA3FF&0	28
Not Available	ACPI\ASF0001\2&DABA3FF&0	28

[USB]

Device	PNP Device ID
Intel(R) 82801DB/DBM USB Universal Host Controller - 24C2	PCI\VEN_8086&DEV_24C2&SUBSYS_027A1014&REV_02\3&13C0B0C5&0&E8
USB Root Hub	USB\ROOT_HUB\4&BF47197&0
Intel(R) 82801DB/DBM USB Universal Host Controller - 24C4	PCI\VEN_8086&DEV_24C4&SUBSYS_027A1014&REV_02\3&13C0B0C5&0&E9
USB Root Hub	USB\ROOT_HUB\4&31A3CFF4&0
Intel PCI to USB Enhanced Host Controller	PCI\VEN_8086&DEV_24CD&SUBSYS_027A1014&REV_02\3&13C0B0C5&0&EF
USB 2.0 Root Hub	USB\ROOT_HUB20\4&E58626F&0

[Software Environment]

[Following are sub-categories of this main category]

[Drivers]

Name	Description	File	Type	Started	Start Mode	State	Status	Error Control	Accept Pause	Accept Stop
abiosdsk	Abiosdsk	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Ignore	False	False
abp480n5	abp480n5	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
acpi	Microsoft ACPI Driver	c:\winnt\system32\drivers\acpi.sys	Kernel Driver	True	Boot	Running	OK	Normal	False	True
acpiec	ACPIEC	c:\winnt\system32\drivers\acpiec.sys	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
adptsf	Adaptec DuraLAN PCI Ethernet/Fast Ethernet driver for Windows 2000	c:\winnt\system32\drivers\adptsf50.sys	Kernel Driver	True	Manual	Running	OK	Normal	False	True
adpu160m	adpu160m	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
aeaudio	aeaudio	c:\winnt\system32\drivers\aeaudio.sys	Kernel Driver	True	Manual	Running	OK	Normal	False	True
afd	AFD Networking Support Environment	c:\winnt\system32\drivers\afd.sys	Kernel Driver	True	Auto	Running	OK	Normal	False	True
agp440	Intel AGP Bus Filter	c:\winnt\system32\drivers\agp440.sys	Kernel Driver	True	Boot	Running	OK	Normal	False	True
aha154x	Aha154x	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
aic116x	aic116x	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
aic78u2	aic78u2	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
aic78xx	aic78xx	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
ami0nt	ami0nt	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
amsint	amsint	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
asc	asc	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
asc3350p	asc3350p	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
asc3550	asc3550	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
asyncmac	RAS Asynchronous Media Driver	c:\winnt\system32\drivers\asyncmac.sys	Kernel Driver	False	Manual	Stopped	OK	Normal	False	False
atapi	Standard IDE/ESDI Hard Disk Controller	c:\winnt\system32\drivers\atapi.sys	Kernel Driver	True	Boot	Running	OK	Normal	False	True
atdisk	Atdisk	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Ignore	False	False
ati2mpad	ati2mpad	c:\winnt\system32\drivers\ati2mpad.sys	Kernel Driver	True	Manual	Running	OK	Ignore	False	True
atirage3	atirage3	c:\winnt\system32\drivers\atimpab.sys	Kernel Driver	False	Manual	Stopped	OK	Ignore	False	False
atmarpc	ATM ARP Client Protocol	c:\winnt\system32\drivers\atmarpc.sys	Kernel Driver	False	Manual	Stopped	OK	Normal	False	False
audstub	Audio Stub Driver	c:\winnt\system32\drivers\audstub.sys	Kernel Driver	True	Manual	Running	OK	Normal	False	True
b57w2k	Broadcom NetXtreme Gigabit Ethernet	c:\winnt\system32\drivers\b57w2k.sys	Kernel Driver	True	Manual	Running	OK	Normal	False	True
beep	Beep	c:\winnt\system32\drivers\beep.sys	Kernel Driver	True	System	Running	OK	Normal	False	True
buslogic	BusLogic	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
cd20xrnt	cd20xrnt	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
cdaudio	Cdaudio	c:\winnt\system32\drivers\cdaudio.sys	Kernel Driver	False	System	Stopped	OK	Ignore	False	False
cdfs	Cdfs	c:\winnt\system32\drivers\cdfs.sys	File System Driver	True	Disabled	Running	OK	Normal	False	True
cdrom	CD-ROM Driver	c:\winnt\system32\drivers\cdrom.sys	Kernel Driver	True	System	Running	OK	Normal	False	True
changer	Changer	Not Available	Kernel Driver	False	System	Stopped	OK	Ignore	False	False
cpqarray	Cpqarray	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
cpqarry2	cpqarry2	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
cpqfcalm	cpqfcalm	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
cpqfws2e	cpqfws2e	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
dac960nt	dac960nt	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
deckzpsx	deckzpsx	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	False
dfsdriver	DfsDriver	c:\winnt\system32\drivers\dfs.sys	File System Driver	True	Boot	Running	OK	Normal	False	True
disk	Disk Driver	c:\winnt\system32\drivers\disk.sys	Kernel Driver	True	Boot	Running	OK	Normal	False	True
diskperf	Diskperf	c:\winnt\system32\drivers\diskperf.sys	Kernel Driver	True	Boot	Running	OK	Normal	False	True

dmboot dmboot c:\winnt\system32\drivers\dmboot.sys Kernel Driver False Disabled Stopped OK Normal False False
dmio Logical Disk Manager Driver c:\winnt\system32\drivers\dmio.sys Kernel Driver True Boot Running OK Normal False True
dmload dmload c:\winnt\system32\drivers\dmload.sys Kernel Driver True Boot Running OK Normal False True
dmusic Microsoft DirectMusic SW Synth (WDM) c:\winnt\system32\drivers\dmusic.sys Kernel Driver False Manual Stopped OK Normal False False
e100b Intel(R) PRO Adapter Driver c:\winnt\system32\drivers\e100bnt5.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 True
fastfat Fastfat c:\winnt\system32\drivers\fastfat.sys File System Driver True Disabled Running OK Normal False True
fd16_700 Fd16_700 Not Available Kernel Driver False Disabled Stopped OK Normal False False
fdc Floppy Disk Controller Driver c:\winnt\system32\drivers\fdc.sys Kernel Driver True Manual Running OK Normal False True
fips Fips c:\winnt\system32\drivers\fips.sys Kernel Driver True Auto Running OK Normal False True
fireport fireport Not Available Kernel Driver False Disabled Stopped OK Normal False False
flashpnt flashpnt Not Available Kernel Driver False Disabled Stopped OK Normal False False
flpydisk Floppy Disk Driver c:\winnt\system32\drivers\flpydisk.sys Kernel Driver True Manual Running OK Normal False True
ftdisk Volume Manager Driver c:\winnt\system32\drivers\ftdisk.sys Kernel Driver True Boot Running OK Normal False True
gpc Generic Packet Classifier c:\winnt\system32\drivers\msgpc.sys Kernel Driver True Manual Running OK Normal False True
i8042prt i8042 Keyboard and PS/2 Mouse Port Driver c:\winnt\system32\drivers\i8042prt.sys Kernel Driver True System Running OK Normal False True
ini910u ini910u Not Available Kernel Driver False Disabled Stopped OK Normal False False
intelide IntelIde Not Available Kernel Driver False Disabled Stopped OK Normal False False
ipfilterdriver IP Traffic Filter Driver c:\winnt\system32\drivers\ipfltdrv.sys Kernel Driver False Manual Stopped OK Normal False False
ipinip IP in IP Tunnel Driver c:\winnt\system32\drivers\ipinip.sys Kernel Driver False Manual Stopped OK Normal False False
ipnat IP Network Address Translator c:\winnt\system32\drivers\ipnat.sys Kernel Driver False Manual Stopped OK Normal False False
ipsec IPSEC driver c:\winnt\system32\drivers\ipsec.sys Kernel Driver True Manual Running OK Normal False True
ipsraidn ipsraidn Not Available Kernel Driver False Disabled Stopped OK Normal False False
irenum IR Enumerator Service c:\winnt\system32\drivers\irenum.sys Kernel Driver False Manual Stopped OK Normal False False
isapnp PnP ISA/EISA Bus Driver c:\winnt\system32\drivers\isapnp.sys Kernel Driver True Boot Running OK Critical False True
kbdclass Keyboard Class Driver c:\winnt\system32\drivers\kbdclass.sys Kernel Driver True System Running OK Normal False True
kmixer Microsoft Kernel Wave Audio Mixer c:\winnt\system32\drivers\kmixer.sys Kernel Driver False Manual Stopped OK Normal False False
ksecdd KSecDD c:\winnt\system32\drivers\ksecdd.sys Kernel Driver True Boot Running OK Normal False True
lbrtfdc lbrtfdc Not Available Kernel Driver False System Stopped OK Ignore False False
lp6nds35 lp6nds35 Not Available Kernel Driver False Disabled Stopped OK Normal False False
mnmdd mnmdd c:\winnt\system32\drivers\mnmdd.sys Kernel Driver True System Running OK Ignore False True
modem Modem c:\winnt\system32\drivers\modem.sys Kernel Driver False Manual Stopped OK Ignore False False
mouclass Mouse Class Driver c:\winnt\system32\drivers\mouclass.sys Kernel Driver True System Running OK Normal False True
mountmgr MountMgr c:\winnt\system32\drivers\mountmgr.sys Kernel Driver True Boot Running OK Normal False True
mraid35x mraid35x Not Available Kernel Driver False Disabled Stopped OK Normal False False
mrxsmb MRXSMB c:\winnt\system32\drivers\mrxsmb.sys File System Driver True System Running OK Normal False True
msfs Msfs c:\winnt\system32\drivers\msfs.sys File System Driver True System Running OK Normal False True
mskssrv Microsoft Streaming Service Proxy c:\winnt\system32\drivers\mskssrv.sys Kernel Driver False Manual Stopped OK Normal False False
mspclock Microsoft Streaming Clock Proxy c:\winnt\system32\drivers\mspclock.sys Kernel Driver False Manual Stopped OK Normal False False
mspqm Microsoft Streaming Quality Manager Proxy c:\winnt\system32\drivers\mspqm.sys Kernel Driver False Manual Stopped OK Normal False False
mup Mup c:\winnt\system32\drivers\mup.sys File System Driver True Boot Running OK Normal False True
ncrc710 Ncrc710 Not Available Kernel Driver False Disabled Stopped OK Normal False False
ndis NDIS System Driver c:\winnt\system32\drivers\ndis.sys Kernel Driver True Boot Running OK Normal False True
ndistapi Remote Access NDIS TAPI Driver c:\winnt\system32\drivers\ndistapi.sys Kernel Driver True Manual Running OK Normal False True
ndiswan Remote Access NDIS WAN Driver c:\winnt\system32\drivers\ndiswan.sys Kernel Driver True Manual Running OK Normal False True
ndproxy NDIS Proxy c:\winnt\system32\drivers\ndproxy.sys Kernel Driver True Manual Running OK Normal False True
netbios NetBIOS Interface c:\winnt\system32\drivers\netbios.sys File System Driver True System Running OK Normal False True
netbt NetBios over Tcpip c:\winnt\system32\drivers\netbt.sys Kernel Driver True System Running OK Normal False True
netdetect NetDetect c:\winnt\system32\drivers\netdtect.sys Kernel Driver False Manual Stopped OK Normal False False

```
npfs Npfs c:\winnt\system32\drivers\npfs.sys File System
Driver True System Running OK Normal False
True
ntfs Ntfs c:\winnt\system32\drivers\ntfs.sys File System
Driver True Disabled Running OK Normal False
True
null Null c:\winnt\system32\drivers\null.sys Kernel
Driver True System Running OK Normal False
True
nwlnkflt IPX Traffic Filter Driver
c:\winnt\system32\drivers\nwlnkflt.sys Kernel Driver False
Manual Stopped OK Normal False False
nwlnkfwd IPX Traffic Forwarder Driver
c:\winnt\system32\drivers\nwlnkfwd.sys Kernel Driver False
Manual Stopped OK Normal False False
parallel Parallel class driver c:\winnt\system32\drivers\parallel.sys
Kernel Driver True Manual Running OK Normal
False True
parport Parallel port driver c:\winnt\system32\drivers\parport.sys
Kernel Driver True System Running OK Ignore
False True
partmgr PartMgr c:\winnt\system32\drivers\partmgr.sys Kernel
Driver True Boot Running OK Normal False
True
parvdm ParVdm c:\winnt\system32\drivers\parvdm.sys Kernel
Driver True Auto Running OK Ignore False
True
pci PCI Bus Driver c:\winnt\system32\drivers\pci.sys Kernel
Driver True Boot Running OK Critical False
True
pcidump PCIDump Not Available Kernel Driver False
System Stopped OK Ignore False False
pciide PCIIde c:\winnt\system32\drivers\pciide.sys Kernel
Driver True Boot Running OK Normal False
True
pcmcia Pcmcia c:\winnt\system32\drivers\pcmcia.sys Kernel
Driver False Disabled Stopped OK Normal False
False
pdcomp PDCOMP Not Available Kernel Driver False
Manual Stopped OK Ignore False False
pdframe PDFRAME Not Available Kernel Driver
False Manual Stopped OK Ignore False False
pdreli PDRELI Not Available Kernel Driver False
Manual Stopped OK Ignore False False
pdrframe PDRFRAME Not Available Kernel Driver
False Manual Stopped OK Ignore False False
pptpminiport WAN Miniport (PPTP)
c:\winnt\system32\drivers\raspptp.sys Kernel Driver True
Manual Running OK Normal False True
ptilink Direct Parallel Link Driver
c:\winnt\system32\drivers\ptilink.sys Kernel Driver True
Manual Running OK Normal False True
ql1080 ql1080 Not Available Kernel Driver False
Disabled Stopped OK Normal False False
ql10wnt Ql10wnt Not Available Kernel Driver False
Disabled Stopped OK Normal False False
ql1240 ql1240 Not Available Kernel Driver False
Disabled Stopped OK Normal False False
ql2100 ql2100 Not Available Kernel Driver False
Disabled Stopped OK Normal False False
ql2300 ql2300 c:\winnt\system32\drivers\ql2300.sys Kernel
Driver True Boot Running OK Normal False
True
qlvika qlvika c:\winnt\system32\drivers\qlvika.sys Kernel
Driver True Auto Running OK Normal False
True
rasacd Remote Access Auto Connection Driver
c:\winnt\system32\drivers\rasacd.sys Kernel Driver True
System Running OK Normal False True
rasl2tp WAN Miniport (L2TP)
c:\winnt\system32\drivers\rasl2tp.sys Kernel Driver True
Manual Running OK Normal False True
raspti Direct Parallel c:\winnt\system32\drivers\raspti.sys
Kernel Driver True Manual Running OK Normal
False True
rca Microsoft Streaming Network Raw Channel Access
c:\winnt\system32\drivers\rca.sys Kernel Driver False Manual
Stopped OK Normal False False
rdbss Rdbss c:\winnt\system32\drivers\rdbss.sys File System
Driver True System Running OK Normal False
True
rdpwd RDPWD c:\winnt\system32\drivers\rdpwd.sys Kernel
Driver False Manual Stopped OK Ignore False
False
redbook Digital CD Audio Playback Filter Driver
c:\winnt\system32\drivers\redbook.sys Kernel Driver False
System Stopped OK Normal False False
serenum Serenum Filter Driver c:\winnt\system32\drivers\serenum.sys
Kernel Driver True Manual Running OK Normal
False True
serial Serial port driver c:\winnt\system32\drivers\serial.sys
Kernel Driver True System Running OK Ignore
False True
sfloppy Sfloppy c:\winnt\system32\drivers\sfloppy.sys Kernel
Driver False System Stopped OK Ignore False
False
sglfb sglfb Not Available Kernel Driver False
System Stopped OK Normal False False
simbad Simbad Not Available Kernel Driver False
Disabled Stopped OK Normal False False
smwdm smwdm c:\winnt\system32\drivers\smwdm.sys Kernel
Driver True Manual Running OK Normal False
True
sparrow Sparrow Not Available Kernel Driver False
Disabled Stopped OK Normal False False
spud Special Purpose Utility Driver c:\winnt\system32\drivers\spud.sys
Kernel Driver True Manual Running OK Normal
False True
srv Srv c:\winnt\system32\drivers\srv.sys File System Driver
True Manual Running OK Normal False True
swenum Software Bus Driver c:\winnt\system32\drivers\swenum.sys
Kernel Driver True Manual Running OK Normal
False True
swmidi Microsoft Kernel GS Wavetable Synthesizer
c:\winnt\system32\drivers\swmidi.sys Kernel Driver False
Manual Stopped OK Normal False False
symc810 symc810 Not Available Kernel Driver False
Disabled Stopped OK Normal False False
symc8xx symc8xx Not Available Kernel Driver False
Disabled Stopped OK Normal False False
symmpi symmpi c:\winnt\system32\drivers\symmpi.sys Kernel
Driver True Boot Running OK Normal False
True
sym_hi sym_hi Not Available Kernel Driver False
Disabled Stopped OK Normal False False
sysaudio Microsoft System Audio Device
c:\winnt\system32\drivers\sysaudio.sys Kernel Driver True
Manual Running OK Normal False True
tcpip TCP/IP Protocol Driver c:\winnt\system32\drivers\tcpip.sys
Kernel Driver True System Running OK Normal
False True
tdasync TDASYNC c:\winnt\system32\drivers\tdasync.sys
Kernel Driver False Manual Stopped OK Ignore
False False
```

tdipx TDIPX c:\winnt\system32\drivers\tdipx.sys Kernel
Driver False Manual Stopped OK Ignore False
False
tdnetb TDNETB c:\winnt\system32\drivers\tdnetb.sys Kernel
Driver False Manual Stopped OK Ignore False
False
tdpipe TDPIPE c:\winnt\system32\drivers\tdpipe.sys Kernel
Driver False Manual Stopped OK Ignore False
False
tdspx TDSPX c:\winnt\system32\drivers\tdspx.sys Kernel
Driver False Manual Stopped OK Ignore False
False
tdtcp TDTCP c:\winnt\system32\drivers\tdtcp.sys Kernel
Driver False Manual Stopped OK Ignore False
False
termdd Terminal Device Driver
c:\winnt\system32\drivers\termdd.sys Kernel Driver False
Disabled Stopped OK Normal False False
tga tga Not Available Kernel Driver False
System Stopped OK Ignore False False
udfs Udfs c:\winnt\system32\drivers\udfs.sys File System
Driver False Disabled Stopped OK Normal False
False
uhcd Microsoft USB Universal Host Controller Driver
c:\winnt\system32\drivers\uhcd.sys Kernel Driver True
Manual Running OK Normal False True
ultra66 ultra66 Not Available Kernel Driver False
Disabled Stopped OK Normal False False
update Microcode Update Driver
c:\winnt\system32\drivers\update.sys Kernel Driver True
Manual Running OK Normal False True
usbehci Microsoft USB 2.0 Enhanced Host Controller Miniport Driver
c:\winnt\system32\drivers\usbehci.sys Kernel Driver True
Manual Running OK Normal False True
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 True
Manual Running OK Normal False True
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 True
Manual Running OK Normal False True

[Environment Variables]

Variable Value User Name
ComSpec %SystemRoot%\system32\cmd.exe <SYSTEM>
NUMBER_OF_PROCESSORS 4 <SYSTEM>
OS Windows_NT <SYSTEM>
Os2LibPath %SystemRoot%\system32\os2\dll; <SYSTEM>
Path
%SystemRoot%\system32;%SystemRoot%;%SystemRoot%\System32\Wbem;
C:\Program Files\Microsoft SQL Server\80\Tools\BINN;c:\batfiles;c:\tools
<SYSTEM>
PATHEXT
.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH <SYSTEM>
PROCESSOR_ARCHITECTURE x86 <SYSTEM>
PROCESSOR_IDENTIFIER x86 Family 15 Model 2 Stepping 7,
GenuineIntel <SYSTEM>
PROCESSOR_LEVEL 15 <SYSTEM>
PROCESSOR_REVISION 0207 <SYSTEM>
TEMP %SystemRoot%\TEMP <SYSTEM>
TMP %SystemRoot%\TEMP <SYSTEM>
windir %SystemRoot% <SYSTEM>
TEMP %USERPROFILE%\Local Settings\Temp
VCLIENT10\Administrator
TMP %USERPROFILE%\Local Settings\Temp
VCLIENT10\Administrator

[Jobs]

[Following are sub-categories of this main category]

[Print]

Document Size Owner Notify Status Time Submitted
Start Time Until Time Elapsed Time Pages Printed Job ID
Priority Parameters Driver Name Print Processor Host Print
Queue Data Type Name
No print jobs

[Network Connections]

Local Name Remote Name Type Status User Name
D: \\fsserv\gdrive Disk OK
VCLIENT10\Administrator

[Running Tasks]

Name Path Process ID Priority Min Working Set Max
Working Set Start Time Version Size File Date
system idle process Not Available 0 0 Not
Available Not Available Not Available Unknown Unknown
Unknown
system Not Available 8 8 0 1413120
Not Available Unknown Unknown Unknown
smss.exe c:\winnt\system32\smss.exe 176 11 204800
1413120 4/1/2003 12:45:52 PM 5.00.2195.5382 44.77 KB
(45,840 bytes) 12/7/1999 7:00:00 AM
csrss.exe Not Available 204 13 Not Available
Not Available 4/1/2003 12:45:54 PM Unknown Unknown
Unknown
winlogon.exe c:\winnt\system32\winlogon.exe 200 13
204800 1413120 4/1/2003 12:45:54 PM 5.00.2195.5386
174.77 KB (178,960 bytes) 3/6/2003 1:54:15 PM
services.exe c:\winnt\system32\services.exe 248 9
204800 1413120 4/1/2003 12:45:55 PM 5.00.2195.3940
86.77 KB (88,848 bytes) 12/7/1999 7:00:00 AM
lsass.exe c:\winnt\system32\lsass.exe 260 9 204800
1413120 4/1/2003 12:45:55 PM 5.00.2195.5430 32.77 KB
(33,552 bytes) 12/7/1999 7:00:00 AM
svchost.exe c:\winnt\system32\svchost.exe 444 8
204800 1413120 4/1/2003 12:45:57 PM 5.00.2134.1
7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM
spoolsv.exe c:\winnt\system32\spoolsv.exe 468 8
204800 1413120 4/1/2003 12:45:57 PM 5.00.2195.4299
44.27 KB (45,328 bytes) 2/12/2003 7:39:06 AM
msdtc.exe c:\winnt\system32\msdtc.exe 496 8 204800
1413120 4/1/2003 12:45:57 PM 1999.9.3421.3 6.77 KB
(6,928 bytes) 2/12/2003 7:52:40 AM
svchost.exe c:\winnt\system32\svchost.exe 656 8
204800 1413120 4/1/2003 12:45:58 PM 5.00.2134.1
7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM

llssrv.exe c:\winnt\system32\llssrv.exe 680 9 204800 1413120 4/1/2003 12:45:58 PM 5.00.2195.4907 81.27 KB (83,216 bytes) 7/22/2002 12:05:04 PM
regsvc.exe c:\winnt\system32\regsvc.exe 732 8 204800 1413120 4/1/2003 12:45:58 PM 5.00.2195.3649 65.27 KB (66,832 bytes) 3/6/2003 1:54:11 PM
rsys.exe Not Available 868 8 Not Available Not Available 4/1/2003 12:45:59 PM Unknown Unknown Unknown
explorer.exe c:\winnt\explorer.exe 996 8 204800 1413120 4/1/2003 12:46:08 PM 5.00.3502.5321 237.27 KB (242,960 bytes) 3/6/2003 1:54:16 PM
mstask.exe c:\winnt\system32\mstask.exe 748 8 204800 1413120 4/1/2003 12:46:19 PM 4.71.2195.1 115.77 KB (118,544 bytes) 3/6/2003 1:54:07 PM
tcpsvcs.exe c:\winnt\system32\tcpsvcs.exe 1088 8 204800 1413120 4/1/2003 12:46:19 PM 5.00.2134.1 24.77 KB (25,360 bytes) 12/7/1999 7:00:00 AM
winmgmt.exe c:\winnt\system32\wbem\winmgmt.exe 1132 8 204800 1413120 4/1/2003 12:46:19 PM 1.50.1085.0070 192.08 KB (196,685 bytes) 3/6/2003 1:54:18 PM
svchost.exe c:\winnt\system32\svchost.exe 1152 8 204800 1413120 4/1/2003 12:46:19 PM 5.00.2134.1 7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM
dfssvc.exe c:\winnt\system32\dfssvc.exe 1048 8 204800 1413120 4/1/2003 12:46:27 PM 5.00.2195.3649 88.27 KB (90,384 bytes) 3/6/2003 1:53:59 PM
svchost.exe c:\winnt\system32\svchost.exe 1448 8 204800 1413120 4/1/2003 12:48:28 PM 5.00.2134.1 7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM
dllhost.exe Not Available 1552 8 Not Available Not Available 4/1/2003 12:49:54 PM Unknown Unknown Unknown
inetinfo.exe c:\winnt\system32\inetsrv\inetinfo.exe 1160 8 204800 1413120 4/1/2003 2:16:31 PM 5.00.0984 14.27 KB (14,608 bytes) 3/6/2003 1:54:26 PM
mmc.exe c:\winnt\system32\mmc.exe 296 8 204800 1413120 4/1/2003 2:21:53 PM 5.00.2195.4933 589.27 KB (603,408 bytes) 3/6/2003 1:54:04 PM
rsvp.exe c:\winnt\system32\rsvp.exe 1700 8 204800 1413120 4/1/2003 2:22:56 PM 5.00.2167.1 172.77 KB (176,912 bytes) 12/7/1999 7:00:00 AM

[Loaded Modules]

Name	Version	Size	File Date	Manufacturer	Path
traffic.dll	5.00.2139.1	30.77 KB (31,504 bytes)	12/7/1999 7:00:00 AM	Microsoft Corporation	c:\winnt\system32\traffic.dll
rsvp.exe	5.00.2167.1	172.77 KB (176,912 bytes)	12/7/1999 7:00:00 AM	Microsoft Corporation	c:\winnt\system32\rsvp.exe
mlang.dll	6.00.2800.1106	561.50 KB (574,976 bytes)	8/29/2002 7:14:40 AM	Microsoft Corporation	c:\winnt\system32\mlang.dll
wbemprox.dll	1.50.1085.0045	40.08 KB (41,040 bytes)	3/6/2003 1:54:18 PM	Microsoft Corporation	c:\winnt\system32\wbem\wbemprox.dll
mofd.dll	1.50.1085.0065	136.07 KB (139,332 bytes)	3/6/2003 1:54:17 PM	Microsoft Corporation	c:\winnt\system32\wbem\mofd.dll
rassapi.dll	5.00.2195.5438	14.27 KB (14,608 bytes)	3/6/2003 1:54:11 PM	Microsoft Corporation	c:\winnt\system32\rassapi.dll
adsnt.dll	5.00.2195.5206	196.27 KB (200,976 bytes)	3/6/2003 1:53:55 PM	Microsoft Corporation	c:\winnt\system32\adsnt.dll
dbghelp.dll	5.00.2195.5242	159.27 KB (163,088 bytes)	7/22/2002 12:05:04 PM	Microsoft Corporation	c:\winnt\system32\dbghelp.dll
localsec.dll	5.00.2195.4663	230.27 KB (235,792 bytes)	3/6/2003 1:54:04 PM	Microsoft Corporation	c:\winnt\system32\localsec.dll
devmgr.dll	5.00.2195.5305	216.77 KB (221,968 bytes)	3/6/2003 1:53:59 PM	Microsoft Corporation	c:\winnt\system32\devmgr.dll
filemgmt.dll	5.00.2195.3649	287.27 KB (294,160 bytes)	3/6/2003 1:54:01 PM	Microsoft Corporation	c:\winnt\system32\filemgmt.dll
pdh.dll	5.00.2195.4952	149.27 KB (152,848 bytes)	3/6/2003 1:54:10 PM	Microsoft Corporation	c:\winnt\system32\pdh.dll
smlogcfg.dll	5.00.2195.3975	278.77 KB (285,456 bytes)	3/6/2003 1:54:13 PM	Microsoft Corporation	c:\winnt\system32\smlogcfg.dll
cabinet.dll	5.00.2147.1	54.77 KB (56,080 bytes)	12/7/1999 7:00:00 AM	Microsoft Corporation	c:\winnt\system32\cabinet.dll
msinfo32.dll	5.00.2195.4601	312.27 KB (319,760 bytes)	3/6/2003 1:54:19 PM	Microsoft Corporation	c:\program files\common files\microsoft shared\msinfo\msinfo32.dll
riched20.dll	5.30.23.1209	421.77 KB (431,888 bytes)	3/6/2003 1:54:11 PM	Microsoft Corporation	c:\winnt\system32\riched20.dll
riched32.dll	5.00.2134.1	3.77 KB (3,856 bytes)	12/7/1999 7:00:00 AM	Microsoft Corporation	c:\winnt\system32\riched32.dll
els.dll	5.00.2195.4749	153.77 KB (157,456 bytes)	3/6/2003 1:54:00 PM	Microsoft Corporation	c:\winnt\system32\els.dll
ntmsmgr.dll	1,0,0,1	427.77 KB (438,032 bytes)	12/7/1999 7:00:00 AM	Microsoft Corporation and HighGround Systems, Inc.	c:\winnt\system32\ntmsmgr.dll
mmfutil.dll	1.50.1085.0000	32.06 KB (32,829 bytes)	12/7/1999 7:00:00 AM	Microsoft Corporation	c:\winnt\system32\mmfutil.dll
logdrive.dll	1.50.1085.0000	200.06 KB (204,863 bytes)	12/7/1999 7:00:00 AM	Microsoft Corporation	c:\winnt\system32\logdrive.dll
dfrgres.dll	5.00.2150.1	27.50 KB (28,160 bytes)	12/7/1999 7:00:00 AM	Executive Software International, Inc.	c:\winnt\system32\dfrgres.dll
dfrgsnap.dll	5.00.2195.3649	41.77 KB (42,768 bytes)	3/6/2003 1:53:59 PM	Executive Software International, Inc.	c:\winnt\system32\dfrgsnap.dll
dmdskres.dll	2195.3649.297.3	119.50 KB (122,368 bytes)	3/6/2003 1:53:59 PM	Microsoft Corp., VERITAS Software	c:\winnt\system32\dmdskres.dll
dmutil.dll	2195.3649.297.3	42.27 KB (43,280 bytes)	3/6/2003 1:53:59 PM	VERITAS Software Corp.	c:\winnt\system32\dmutil.dll
ntmsapi.dll	5.00.1948.1	52.27 KB (53,520 bytes)	3/6/2003 1:54:09 PM	Microsoft Corporation	c:\winnt\system32\ntmsapi.dll
dmdskmgr.dll	2195.3649.297.3	159.77 KB (163,600 bytes)	3/6/2003 1:53:59 PM	Microsoft Corp., VERITAS Software	c:\winnt\system32\dmdskmgr.dll
mycomput.dll	5.00.2134.1	107.77 KB (110,352 bytes)	12/7/1999 7:00:00 AM	Microsoft Corporation	c:\winnt\system32\mycomput.dll
mmcndmgr.dll	5.00.2195.5352	816.27 KB (835,856 bytes)	3/6/2003 1:54:04 PM	Microsoft Corporation	c:\winnt\system32\mmcndmgr.dll

mmc.exe 5.00.2195.4933 589.27 KB (603,408 bytes) 3/6/2003 1:54:04 PM Microsoft Corporation c:\winnt\system32\mmc.exe
iislog.dll 5.00.0984 75.27 KB (77,072 bytes) 3/6/2003 1:54:26 PM Microsoft Corporation c:\winnt\system32\inetsrv\iislog.dll
ntlsapi.dll 5.00.2195.4907 6.77 KB (6,928 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\ntlsapi.dll
httpext.dll 5.00.0984 240.27 KB (246,032 bytes) 3/6/2003 1:54:26 PM Microsoft Corporation c:\winnt\system32\inetsrv\httpext.dll
rpcproxy.dll 5.00.2195.5419 16.27 KB (16,656 bytes) 3/6/2003 1:54:22 PM Microsoft Corporation c:\winnt\system32\rpcproxy\rpcproxy.dll
fpexedll.dll 4.0.2.5526 20.06 KB (20,541 bytes) 3/6/2003 1:54:21 PM 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) 3/6/2003 1:54:26 PM Microsoft Corporation c:\winnt\system32\inetsrv\md5filt.dll
gzip.dll 5.00.0984 30.27 KB (30,992 bytes) 3/6/2003 1:54:26 PM Microsoft Corporation c:\winnt\system32\inetsrv\gzip.dll
compfilt.dll 5.00.0984 22.77 KB (23,312 bytes) 3/6/2003 1:54:25 PM Microsoft Corporation c:\winnt\system32\inetsrv\compfilt.dll
sspifilt.dll 5.00.0984 42.77 KB (43,792 bytes) 3/6/2003 1:54:27 PM Microsoft Corporation c:\winnt\system32\inetsrv\sspifilt.dll
iscomlog.dll 5.00.0984 24.27 KB (24,848 bytes) 3/6/2003 1:54:26 PM Microsoft Corporation c:\winnt\system32\inetsrv\iscomlog.dll
lonsint.dll 5.00.0984 11.77 KB (12,048 bytes) 3/6/2003 1:54:26 PM Microsoft Corporation c:\winnt\system32\inetsrv\lonsint.dll
inetsloc.dll 5.00.0984 20.27 KB (20,752 bytes) 3/6/2003 1:54:02 PM Microsoft Corporation c:\winnt\system32\inetsloc.dll
iisfecnv.dll 5.00.0984 7.27 KB (7,440 bytes) 2/12/2003 7:53:06 AM Microsoft Corporation c:\winnt\system32\inetsrv\iisfecnv.dll
isatq.dll 5.00.0984 60.77 KB (62,224 bytes) 3/6/2003 1:54:26 PM Microsoft Corporation c:\winnt\system32\inetsrv\isatq.dll
infocomm.dll 5.00.0984 240.77 KB (246,544 bytes) 3/6/2003 1:54:26 PM Microsoft Corporation c:\winnt\system32\inetsrv\infocomm.dll
w3svc.dll 5.00.0984 335.27 KB (343,312 bytes) 3/6/2003 1:54:27 PM Microsoft Corporation c:\winnt\system32\inetsrv\w3svc.dll
security.dll 5.00.2154.1 5.77 KB (5,904 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\security.dll
svcext.dll 5.00.0984 39.77 KB (40,720 bytes) 3/6/2003 1:54:27 PM Microsoft Corporation c:\winnt\system32\inetsrv\svcext.dll
admexs.dll 5.00.0984 27.77 KB (28,432 bytes) 3/6/2003 1:54:25 PM Microsoft Corporation c:\winnt\system32\inetsrv\admexs.dll
wamreg.dll 5.00.0984 45.77 KB (46,864 bytes) 3/6/2003 1:54:27 PM Microsoft Corporation c:\winnt\system32\inetsrv\wamreg.dll
metadata.dll 5.00.0984 68.77 KB (70,416 bytes) 3/6/2003 1:54:26 PM Microsoft Corporation c:\winnt\system32\inetsrv\metadata.dll
iismap.dll 5.00.0984 55.77 KB (57,104 bytes) 3/6/2003 1:54:02 PM Microsoft Corporation c:\winnt\system32\iismap.dll
nsepm.dll 5.00.0984 43.27 KB (44,304 bytes) 3/6/2003 1:54:26 PM Microsoft Corporation c:\winnt\system32\inetsrv\nsepm.dll
admwprox.dll 5.00.0984 31.77 KB (32,528 bytes) 2/12/2003 7:53:06 AM Microsoft Corporation c:\winnt\system32\admwprox.dll
coadmin.dll 5.00.0984 39.77 KB (40,720 bytes) 3/6/2003 1:54:25 PM Microsoft Corporation c:\winnt\system32\inetsrv\coadmin.dll
iisadmin.dll 5.00.0984 15.27 KB (15,632 bytes) 3/6/2003 1:54:26 PM Microsoft Corporation c:\winnt\system32\inetsrv\iisadmin.dll
rpcref.dll 5.00.0984 4.27 KB (4,368 bytes) 3/6/2003 1:54:26 PM Microsoft Corporation c:\winnt\system32\inetsrv\rpcref.dll
iisrtl.dll 5.00.0984 119.77 KB (122,640 bytes) 3/6/2003 1:54:02 PM Microsoft Corporation c:\winnt\system32\iisrtl.dll
inetinfo.exe 5.00.0984 14.27 KB (14,608 bytes) 3/6/2003 1:54:26 PM Microsoft Corporation c:\winnt\system32\inetsrv\inetinfo.exe
tapisrv.dll 5.00.2195.5227 169.27 KB (173,328 bytes) 3/6/2003 1:54:14 PM Microsoft Corporation c:\winnt\system32\tapisrv.dll
dfssvc.exe 5.00.2195.3649 88.27 KB (90,384 bytes) 3/6/2003 1:53:59 PM Microsoft Corporation c:\winnt\system32\dfssvc.exe
winhttp.dll 5.1.2600.1039 (xpsp1.020511-1800) 303.00 KB (310,272 bytes) 3/6/2003 1:54:25 PM Microsoft Corporation c:\winnt\system32\winhttp.dll
regapi.dll 5.00.2195.5201 35.27 KB (36,112 bytes) 3/6/2003 1:54:11 PM Microsoft Corporation c:\winnt\system32\regapi.dll
utildll.dll 5.00.2153.1 25.77 KB (26,384 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\utildll.dll
wtsapi32.dll 5.00.2134.1 14.27 KB (14,608 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\wtsapi32.dll
advpack.dll 6.00.2800.1106 89.00 KB (91,136 bytes) 8/29/2002 7:14:40 AM Microsoft Corporation c:\winnt\system32\advpack.dll
wuaueng.dll 5.4.3628.1 built by: lab04_n 182.50 KB (186,880 bytes) 3/6/2003 1:54:25 PM Microsoft Corporation c:\winnt\system32\wuaueng.dll
wuauserv.dll 5.4.3628.1 built by: lab04_n 8.50 KB (8,704 bytes) 3/6/2003 1:54:25 PM Microsoft Corporation c:\winnt\system32\wuauserv.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) 3/6/2003 1:54:09 PM Microsoft Corporation c:\winnt\system32\ntmarta.dll
provthrd.dll 1.50.1085.0000 68.07 KB (69,708 bytes) 2/12/2003 12:55:49 PM Microsoft Corporation c:\winnt\system32\wbem\provthrd.dll
ntevt.dll 1.50.1085.0072 192.06 KB (196,671 bytes) 3/6/2003 1:54:17 PM 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) 3/6/2003 1:54:17 PM Microsoft Corporation c:\winnt\system32\wbem\framedyn.dll
cimwin32.dll 1.50.1085.0073 1.04 MB (1,085,520 bytes) 3/6/2003 1:54:17 PM Microsoft Corporation c:\winnt\system32\wbem\cimwin32.dll
wbemsvc.dll 1.50.1085.0007 40.07 KB (41,036 bytes) 3/6/2003 1:54:18 PM Microsoft Corporation c:\winnt\system32\wbem\wbemsvc.dll
wbemess.dll 1.50.1085.0074 364.07 KB (372,804 bytes) 3/6/2003 1:54:18 PM Microsoft Corporation c:\winnt\system32\wbem\wbemess.dll
fastprox.dll 1.50.1085.0056 144.08 KB (147,536 bytes) 3/6/2003 1:54:17 PM Microsoft Corporation c:\winnt\system32\wbem\fastprox.dll
wbemcore.dll 1.50.1085.0085 628.07 KB (643,146 bytes) 3/6/2003 1:54:18 PM Microsoft Corporation c:\winnt\system32\wbem\wbemcore.dll

wbemcomn.dll 1.50.1085.0077 692.07 KB (708,675 bytes) 3/6/2003 1:54:18 PM Microsoft Corporation c:\winnt\system32\wbem\wbemcomn.dll
winmgmt.exe 1.50.1085.0070 192.08 KB (196,685 bytes) 3/6/2003 1:54:18 PM Microsoft Corporation c:\winnt\system32\wbem\winmgmt.exe
simptcp.dll 5.00.2134.1 19.27 KB (19,728 bytes) 2/12/2003 7:52:36 AM Microsoft Corporation c:\winnt\system32\simptcp.dll
tcpsvcs.exe 5.00.2134.1 24.77 KB (25,360 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\tcpsvcs.exe
msidle.dll 5.00.2920.0000 6.27 KB (6,416 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msidle.dll
mstask.exe 4.71.2195.1 115.77 KB (118,544 bytes) 3/6/2003 1:54:07 PM Microsoft Corporation c:\winnt\system32\mstask.exe
netplwiz.dll 5.00.2195.3727 169.77 KB (173,840 bytes) 3/6/2003 1:54:08 PM Microsoft Corporation c:\winnt\system32\netplwiz.dll
netmsg.dll 5.00.2137.1 152.50 KB (156,160 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\netmsg.dll
netui2.dll 5.00.2134.1 280.27 KB (286,992 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\netui2.dll
mprui.dll 5.00.2195.4874 54.77 KB (56,080 bytes) 3/6/2003 1:54:04 PM Microsoft Corporation c:\winnt\system32\mprui.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
shdoclc.dll 6.00.2800.1106 521.00 KB (533,504 bytes) 8/29/2002 7:14:40 AM Microsoft Corporation c:\winnt\system32\shdoclc.dll
urlmon.dll 6.00.2800.1106 471.50 KB (482,816 bytes) 8/29/2002 7:14:40 AM Microsoft Corporation c:\winnt\system32\urlmon.dll
wininet.dll 6.00.2800.1106 572.00 KB (585,728 bytes) 8/29/2002 7:14:40 AM Microsoft Corporation c:\winnt\system32\wininet.dll
browselc.dll 6.00.2800.1106 61.50 KB (62,976 bytes) 8/29/2002 7:14:40 AM Microsoft Corporation c:\winnt\system32\browselc.dll
msacm32.dll 5.00.2134.1 65.27 KB (66,832 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msacm32.dll
msacm32.drv 5.00.2134.1 20.77 KB (21,264 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msacm32.drv
msi.dll 2.0.2600.1 1.90 MB (1,991,168 bytes) 3/6/2003 1:54:05 PM Microsoft Corporation c:\winnt\system32\msi.dll
powrprof.dll 5.00.3502.5305 13.27 KB (13,584 bytes) 3/6/2003 1:54:10 PM Microsoft Corporation c:\winnt\system32\powrprof.dll
batmeter.dll 5.00.3502.5305 20.27 KB (20,752 bytes) 3/6/2003 1:53:55 PM Microsoft Corporation c:\winnt\system32\batmeter.dll
stobject.dll 5.00.2195.4455 79.27 KB (81,168 bytes) 3/6/2003 1:54:13 PM Microsoft Corporation c:\winnt\system32\stobject.dll
webcheck.dll 6.00.2800.1106 252.00 KB (258,048 bytes) 8/29/2002 7:14:40 AM Microsoft Corporation c:\winnt\system32\webcheck.dll
netui1.dll 5.00.2134.1 210.27 KB (215,312 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\netui1.dll
netui0.dll 5.00.2195.4874 70.77 KB (72,464 bytes) 3/6/2003 1:54:08 PM Microsoft Corporation c:\winnt\system32\netui0.dll
ntlanman.dll 5.00.2195.5428 35.27 KB (36,112 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\ntlanman.dll
ntshrui.dll 5.00.2134.1 46.77 KB (47,888 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\ntshrui.dll
mydocs.dll 5.00.3315.4065 55.27 KB (56,592 bytes) 3/6/2003 1:54:08 PM Microsoft Corporation c:\winnt\system32\mydocs.dll
hhsetup.dll 4.74.8702 66.27 KB (67,856 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\hhsetup.dll
mmcshext.dll 5.00.2153.1 24.27 KB (24,848 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\mmcshext.dll
browseui.dll 6.00.2800.1106 1002.00 KB (1,026,048 bytes) 8/29/2002 7:14:40 AM Microsoft Corporation c:\winnt\system32\browseui.dll
shdocvw.dll 6.00.2800.1106 1.28 MB (1,338,368 bytes) 8/29/2002 7:14:40 AM Microsoft Corporation c:\winnt\system32\shdocvw.dll
explorer.exe 5.00.3502.5321 237.27 KB (242,960 bytes) 3/6/2003 1:54:16 PM Microsoft Corporation c:\winnt\explorer.exe
regsvc.exe 5.00.2195.3649 65.27 KB (66,832 bytes) 3/6/2003 1:54:11 PM Microsoft Corporation c:\winnt\system32\regsvc.exe
llsrpc.dll 5.00.2195.4907 47.77 KB (48,912 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\llsrpc.dll
llssrv.exe 5.00.2195.4907 81.27 KB (83,216 bytes) 7/22/2002 12:05:04 PM Microsoft Corporation c:\winnt\system32\llssrv.exe
rasdlg.dll 5.00.2195.5438 515.77 KB (528,144 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\rasdlg.dll
netcfgx.dll 5.00.2195.4874 534.77 KB (547,600 bytes) 3/6/2003 1:54:08 PM Microsoft Corporation c:\winnt\system32\netcfgx.dll
rasmans.dll 5.00.2195.5436 149.27 KB (152,848 bytes) 3/6/2003 1:54:11 PM Microsoft Corporation c:\winnt\system32\rasmans.dll
wmi.dll 5.00.2191.1 6.27 KB (6,416 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\wmi.dll
netshell.dll 5.00.2195.5431 457.77 KB (468,752 bytes) 3/6/2003 1:54:08 PM Microsoft Corporation c:\winnt\system32\netshell.dll
netman.dll 5.00.2195.5282 89.27 KB (91,408 bytes) 3/6/2003 1:54:08 PM Microsoft Corporation c:\winnt\system32\netman.dll
comsvcs.dll 2000.2.3497.0 1.37 MB (1,439,504 bytes) 3/6/2003 1:53:57 PM Microsoft Corporation c:\winnt\system32\comsvcs.dll
ntmsdba.dll 5.00.2195.5279 169.27 KB (173,328 bytes) 3/6/2003 1:54:09 PM Microsoft Corporation c:\winnt\system32\ntmsdba.dll
sens.dll 5.00.2163.1 36.77 KB (37,648 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\sens.dll
iashlpr.dll 5.00.2184.1 33.27 KB (34,064 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\iashlpr.dll
iasacct.dll 5.00.2195.4115 28.27 KB (28,944 bytes) 3/6/2003 1:54:01 PM Microsoft Corporation c:\winnt\system32\iasacct.dll

iasuserr.dll 5.00.2195.4609 19.77 KB (20,240 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\iasuserr.dll
iasnap.dll 5.00.2195.4115 58.77 KB (60,176 bytes) 3/6/2003 1:54:01 PM 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) 3/6/2003 1:54:00 PM Microsoft Corporation c:\winnt\system32\expsrv.dll
vbajet32.dll 6.1.8268 30.27 KB (30,992 bytes) 3/6/2003 1:54:15 PM Microsoft Corporation c:\winnt\system32\vbajet32.dll
msjtes40.dll 4.00.5914.0 236.27 KB (241,936 bytes) 3/6/2003 1:54:06 PM Microsoft Corporation c:\winnt\system32\msjtes40.dll
oledb32r.dll 2.70.9001.0 built by: Lab06_N(dagbuild) 64.00 KB (65,536 bytes) 3/6/2003 2:35:03 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) 9/27/2002 11:22:40 AM Microsoft Corporation c:\winnt\system32\msdart.dll
oledb32.dll 2.71.9031.4 built by: Lab06_N(dagbuild) 408.00 KB (417,792 bytes) 9/27/2002 11:22:42 AM Microsoft Corporation c:\program files\common files\system\ole db\oledb32.dll
msjint40.dll 4.00.2927.2 148.27 KB (151,824 bytes) 3/6/2003 1:54:06 PM Microsoft Corporation c:\winnt\system32\msjint40.dll
msjter40.dll 4.00.2927.2 52.27 KB (53,520 bytes) 3/6/2003 1:54:06 PM Microsoft Corporation c:\winnt\system32\msjter40.dll
mswstr10.dll 4.00.3829.2 600.27 KB (614,672 bytes) 3/6/2003 1:54:07 PM Microsoft Corporation c:\winnt\system32\mswstr10.dll
msjet40.dll 4.00.6218.0 1.43 MB (1,503,504 bytes) 3/6/2003 1:54:06 PM Microsoft Corporation c:\winnt\system32\msjet40.dll
msjetoledb40.dll 4.00.5919.0 340.27 KB (348,432 bytes) 3/6/2003 1:54:06 PM Microsoft Corporation c:\winnt\system32\msjetoledb40.dll
iasrad.dll 5.00.2195.4841 94.77 KB (97,040 bytes) 3/6/2003 1:54:01 PM Microsoft Corporation c:\winnt\system32\iasrad.dll
iassam.dll 5.00.2195.5427 98.27 KB (100,624 bytes) 3/6/2003 1:54:01 PM Microsoft Corporation c:\winnt\system32\iassam.dll
iasads.dll 5.00.2195.5080 73.77 KB (75,536 bytes) 3/6/2003 1:54:01 PM Microsoft Corporation c:\winnt\system32\iasads.dll
iaspolcy.dll 5.00.2134.1 25.27 KB (25,872 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\iaspolcy.dll
iassvcs.dll 5.00.2195.4916 58.77 KB (60,176 bytes) 3/6/2003 1:54:01 PM Microsoft Corporation c:\winnt\system32\iassvcs.dll
iassdo.dll 5.00.2195.4115 263.27 KB (269,584 bytes) 3/6/2003 1:54:01 PM Microsoft Corporation c:\winnt\system32\iassdo.dll
ntmssvc.dll 5.00.2195.5254 391.77 KB (401,168 bytes) 3/6/2003 1:54:09 PM Microsoft Corporation c:\winnt\system32\ntmssvc.dll
ias.dll 5.00.2134.1 7.27 KB (7,440 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\ias.dll
es.dll 2000.2.3497.0 225.27 KB (230,672 bytes) 3/6/2003 1:54:00 PM Microsoft Corporation c:\winnt\system32\es.dll
mtxoci.dll 2000.2.3497.0 103.77 KB (106,256 bytes) 3/6/2003 1:54:08 PM Microsoft Corporation c:\winnt\system32\mtxoci.dll
resutils.dll 5.00.2195.5339 39.77 KB (40,720 bytes) 3/6/2003 1:54:11 PM Microsoft Corporation c:\winnt\system32\resutils.dll
clusapi.dll 5.00.2195.4678 54.27 KB (55,568 bytes) 3/6/2003 1:53:57 PM Microsoft Corporation c:\winnt\system32\clusapi.dll
msvcp50.dll 5.00.7051 552.50 KB (565,760 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msvcp50.dll
xolehlp.dll 1999.9.3421.3 17.27 KB (17,680 bytes) 2/12/2003 7:52:40 AM Microsoft Corporation c:\winnt\system32\xolehlp.dll
msdtclog.dll 2000.2.3497.0 86.77 KB (88,848 bytes) 3/6/2003 1:54:04 PM Microsoft Corporation c:\winnt\system32\msdtclog.dll
mtxclu.dll 2000.2.3497.0 51.27 KB (52,496 bytes) 3/6/2003 1:54:08 PM Microsoft Corporation c:\winnt\system32\mtxclu.dll
msdtcprx.dll 2000.2.3497.0 683.77 KB (700,176 bytes) 3/6/2003 1:54:04 PM Microsoft Corporation c:\winnt\system32\msdtcprx.dll
txfaux.dll 2000.2.3497.0 383.27 KB (392,464 bytes) 3/6/2003 1:54:14 PM Microsoft Corporation c:\winnt\system32\txfaux.dll
msdtctm.dll 2000.2.3497.0 1.08 MB (1,128,208 bytes) 3/6/2003 1:54:05 PM Microsoft Corporation c:\winnt\system32\msdtctm.dll
msdtc.exe 1999.9.3421.3 6.77 KB (6,928 bytes) 2/12/2003 7:52:40 AM Microsoft Corporation c:\winnt\system32\msdtc.exe
inetpp.dll 5.00.2195.4299 64.27 KB (65,808 bytes) 3/6/2003 1:54:02 PM Microsoft Corporation c:\winnt\system32\inetpp.dll
win32spl.dll 5.00.2195.5201 92.27 KB (94,480 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\win32spl.dll
usbmon.dll 5.00.2195.4299 11.27 KB (11,536 bytes) 3/6/2003 1:54:14 PM Microsoft Corporation c:\winnt\system32\usbmon.dll
tcpmon.dll 5.00.2195.4299 40.77 KB (41,744 bytes) 3/6/2003 1:54:14 PM Microsoft Corporation c:\winnt\system32\tcpmon.dll
pjlmon.dll 5.00.2165.1 12.77 KB (13,072 bytes) 11/30/1999 6:39:36 PM Microsoft Corporation c:\winnt\system32\pjlmon.dll
cnbjmon.dll 5.00.2134.1 43.77 KB (44,816 bytes) 11/30/1999 6:38:48 PM Microsoft Corporation c:\winnt\system32\cnbjmon.dll
localspl.dll 5.00.2195.5423 250.27 KB (256,272 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\localspl.dll
spoolss.dll 5.00.2195.5400 61.77 KB (63,248 bytes) 2/12/2003 7:39:06 AM Microsoft Corporation c:\winnt\system32\spoolss.dll
spoolsv.exe 5.00.2195.4299 44.27 KB (45,328 bytes) 2/12/2003 7:39:06 AM Microsoft Corporation c:\winnt\system32\spoolsv.exe
rpcss.dll 5.00.2195.5429 231.27 KB (236,816 bytes) 3/6/2003 1:54:11 PM Microsoft Corporation c:\winnt\system32\rpcss.dll
svchost.exe 5.00.2134.1 7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\svchost.exe

iissuba.dll 5.00.0984 9.77 KB (10,000 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\iissuba.dll
dssenh.dll 5.00.2195.3665 142.77 KB (146,192 bytes) 3/6/2003 1:54:23 PM Microsoft Corporation c:\winnt\system32\dssenh.dll
oakley.dll 5.00.2195.5326 382.27 KB (391,440 bytes) 3/6/2003 1:54:09 PM Microsoft Corporation c:\winnt\system32\oakley.dll
mfc42u.dll 6.00.8665.0 972.05 KB (995,384 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\mfc42u.dll
polagent.dll 5.00.2195.5428 94.77 KB (97,040 bytes) 3/6/2003 1:54:10 PM Microsoft Corporation c:\winnt\system32\polagent.dll
scecli.dll 5.00.2195.4874 109.27 KB (111,888 bytes) 3/6/2003 1:54:12 PM Microsoft Corporation c:\winnt\system32\scecli.dll
atl.dll 3.00.9435 73.06 KB (74,810 bytes) 3/6/2003 1:53:55 PM Microsoft Corporation c:\winnt\system32\atl.dll
certcli.dll 5.00.2195.3649 130.27 KB (133,392 bytes) 3/6/2003 1:53:56 PM Microsoft Corporation c:\winnt\system32\certcli.dll
esent.dll 6.0.3940.25 1.09 MB (1,137,936 bytes) 3/6/2003 1:54:00 PM Microsoft Corporation c:\winnt\system32\esent.dll
ntdsatq.dll 5.00.2195.5246 31.27 KB (32,016 bytes) 3/6/2003 1:54:08 PM Microsoft Corporation c:\winnt\system32\ntdsatq.dll
ntdsa.dll 5.00.2195.5438 1002.27 KB (1,026,320 bytes) 3/6/2003 1:54:08 PM Microsoft Corporation c:\winnt\system32\ntdsa.dll
kdcsvc.dll 5.00.2195.5246 141.77 KB (145,168 bytes) 3/6/2003 1:54:03 PM 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) 3/6/2003 1:54:11 PM Microsoft Corporation c:\winnt\system32\rassfm.dll
rsabase.dll 5.00.2195.3839 128.27 KB (131,344 bytes) 7/22/2002 12:05:04 PM Microsoft Corporation c:\winnt\system32\rsabase.dll
schannel.dll 5.00.2195.5284 139.27 KB (142,608 bytes) 5/4/2001 12:05:02 PM Microsoft Corporation c:\winnt\system32\schannel.dll
netlogon.dll 5.00.2195.5400 362.77 KB (371,472 bytes) 3/6/2003 1:54:08 PM Microsoft Corporation c:\winnt\system32\netlogon.dll
kerberos.dll 5.00.2195.5246 202.77 KB (207,632 bytes) 3/6/2003 1:54:03 PM 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) 3/6/2003 1:54:15 PM Microsoft Corporation c:\winnt\system32\wmicore.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
winrnr.dll 5.00.2160.1 18.77 KB (19,216 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\winrnr.dll
rnr20.dll 5.00.2195.4874 35.77 KB (36,624 bytes) 3/6/2003 1:54:11 PM Microsoft Corporation c:\winnt\system32\rnr20.dll
wshtcpip.dll 5.00.2195.4874 17.27 KB (17,680 bytes) 3/6/2003 1:54:16 PM Microsoft Corporation c:\winnt\system32\wshtcpip.dll
msafd.dll 5.00.2195.4874 103.27 KB (105,744 bytes) 3/6/2003 1:54:04 PM Microsoft Corporation c:\winnt\system32\msafd.dll
mswsock.dll 5.00.2195.4874 62.77 KB (64,272 bytes) 3/6/2003 1:54:07 PM Microsoft Corporation c:\winnt\system32\mswsock.dll
msgsvc.dll 5.00.2195.4874 34.77 KB (35,600 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msgsvc.dll
browser.dll 5.00.2195.4874 48.77 KB (49,936 bytes) 3/6/2003 1:53:55 PM Microsoft Corporation c:\winnt\system32\browser.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) 3/6/2003 1:54:14 PM Microsoft Corporation c:\winnt\system32\trkwks.dll
seclogon.dll 5.00.2195.5201 17.27 KB (17,680 bytes) 3/6/2003 1:54:12 PM Microsoft Corporation c:\winnt\system32\seclogon.dll
psbase.dll 5.00.2195.4822 111.77 KB (114,448 bytes) 3/6/2003 1:54:10 PM Microsoft Corporation c:\winnt\system32\psbase.dll
cryptsvc.dll 5.00.2195.4368 73.27 KB (75,024 bytes) 3/6/2003 1:53:58 PM 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) 3/6/2003 1:53:59 PM VERITAS Software Corp. c:\winnt\system32\dmserver.dll
winsta.dll 5.00.2195.4655 36.77 KB (37,648 bytes) 3/6/2003 1:54:15 PM Microsoft Corporation c:\winnt\system32\winsta.dll
lmhsvc.dll 5.00.2195.4874 9.77 KB (10,000 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\lmhsvc.dll
dnsrslvr.dll 5.00.2195.5354 89.77 KB (91,920 bytes) 3/6/2003 1:53:59 PM Microsoft Corporation c:\winnt\system32\dnsrslvr.dll
tapi32.dll 5.00.2182.1 123.27 KB (126,224 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\tapi32.dll

rasman.dll 5.00.2195.5292 54.77 KB (56,080 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\rasman.dll
rasapi32.dll 5.00.2195.5438 191.77 KB (196,368 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\rasapi32.dll
rtutils.dll 5.00.2168.1 43.77 KB (44,816 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\rtutils.dll
adsldpc.dll 5.00.2195.5400 127.77 KB (130,832 bytes) 3/6/2003 1:53:55 PM Microsoft Corporation c:\winnt\system32\adsldpc.dll
activeds.dll 5.00.2195.5312 175.27 KB (179,472 bytes) 3/6/2003 1:53:53 PM Microsoft Corporation c:\winnt\system32\activeds.dll
mprapi.dll 5.00.2181.1 79.27 KB (81,168 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\mprapi.dll
iphlpapi.dll 5.00.2195.2 68.27 KB (69,904 bytes) 3/6/2003 1:54:02 PM Microsoft Corporation c:\winnt\system32\iphlpapi.dll
icmp.dll 5.00.2134.1 7.27 KB (7,440 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\icmp.dll
dhcpcsvc.dll 5.00.2195.4874 87.77 KB (89,872 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\dhcpcsvc.dll
eventlog.dll 5.00.2195.5336 44.27 KB (45,328 bytes) 3/6/2003 1:54:00 PM Microsoft Corporation c:\winnt\system32\eventlog.dll
ntdsapi.dll 5.00.2195.4827 56.27 KB (57,616 bytes) 3/6/2003 1:54:08 PM Microsoft Corporation c:\winnt\system32\ntdsapi.dll
scesrv.dll 5.00.2195.5316 242.77 KB (248,592 bytes) 3/6/2003 1:54:12 PM Microsoft Corporation c:\winnt\system32\scesrv.dll
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
msv1_0.dll5.00.2195.4745 112.27 KB (114,960 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msv1_0.dll
clbcatq.dll 2000.2.3497.0 497.77 KB (509,712 bytes) 3/6/2003 1:53:57 PM Microsoft Corporation c:\winnt\system32\clbcatq.dll
oleaut32.dll 2.40.4518 612.27 KB (626,960 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\oleaut32.dll
cscui.dll 5.00.2195.4104 233.77 KB (239,376 bytes) 3/6/2003 1:53:58 PM Microsoft Corporation c:\winnt\system32\cscui.dll
winspool.drv 5.00.2195.5225 111.27 KB (113,936 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\winspool.drv
winscard.dll 5.00.2134.1 77.27 KB (79,120 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\winscard.dll
wlnotify.dll 5.00.2195.5377 54.27 KB (55,568 bytes) 3/6/2003 1:54:15 PM Microsoft Corporation c:\winnt\system32\wlnotify.dll
cscdll.dll 5.00.2195.5434 98.77 KB (101,136 bytes) 3/6/2003 1:53:58 PM Microsoft Corporation c:\winnt\system32\cscdll.dll
wdmaud.drv 5.00.2195.3649 21.27 KB (21,776 bytes) 3/6/2003 1:54:15 PM Microsoft Corporation c:\winnt\system32\wdmaud.drv
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) 3/6/2003 1:54:09 PM Microsoft Corporation c:\winnt\system32\ole32.dll
imagehlp.dll 5.00.2195.5242 125.77 KB (128,784 bytes) 5/4/2001 12:05:02 PM Microsoft Corporation c:\winnt\system32\imagehlp.dll
msasn1.dll 5.00.2195.4067 51.27 KB (52,496 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msasn1.dll
crypt32.dll 5.131.2195.4558 464.27 KB (475,408 bytes) 3/6/2003 1:53:57 PM Microsoft Corporation c:\winnt\system32\crypt32.dll
wintrust.dll 5.131.2195.3775 162.27 KB (166,160 bytes) 3/6/2003 1:54:15 PM Microsoft Corporation c:\winnt\system32\wintrust.dll
setupapi.dll 5.00.2195.5400 553.77 KB (567,056 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\setupapi.dll
winmm.dll 5.00.2161.1 184.77 KB (189,200 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\winmm.dll
mpr.dll 5.00.2195.3649 53.77 KB (55,056 bytes) 3/6/2003 1:54:04 PM Microsoft Corporation c:\winnt\system32\mpr.dll
comctl32.dll 5.81 517.27 KB (529,680 bytes) 8/29/2002 7:14:40 AM Microsoft Corporation c:\winnt\system32\comctl32.dll
shlwapi.dll6.00.2800.1106 386.00 KB (395,264 bytes) 8/29/2002 7:14:40 AM Microsoft Corporation c:\winnt\system32\shlwapi.dll
shell32.dll 5.00.3502.5436 2.26 MB (2,374,416 bytes) 3/6/2003 1:54:12 PM Microsoft Corporation c:\winnt\system32\shell32.dll
msgina.dll 5.00.2195.4733 324.77 KB (332,560 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msgina.dll
wsock32.dll 5.00.2195.4874 21.27 KB (21,776 bytes) 3/6/2003 1:54:16 PM Microsoft Corporation c:\winnt\system32\wsock32.dll
dnsapi.dll 5.00.2195.5354 131.27 KB (134,416 bytes) 3/6/2003 1:53:59 PM Microsoft Corporation c:\winnt\system32\dnsapi.dll
wldap32.dll 5.00.2195.5400 158.77 KB (162,576 bytes) 3/6/2003 1:54:15 PM Microsoft Corporation c:\winnt\system32\wldap32.dll
ws2help.dll 5.00.2134.1 17.77 KB (18,192 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\ws2help.dll
ws2_32.dll5.00.2195.4874 66.77 KB (68,368 bytes) 3/6/2003 1:54:15 PM Microsoft Corporation c:\winnt\system32\ws2_32.dll
samlib.dll 5.00.2195.4827 49.77 KB (50,960 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\samlib.dll

netrap.dll 5.00.2134.1 11.27 KB (11,536 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\netrap.dll
netapi32.dll 5.00.2195.5427 305.27 KB (312,592 bytes) 3/6/2003 1:54:08 PM Microsoft Corporation
c:\winnt\system32\netapi32.dll
profmap.dll 5.00.2181.1 29.27 KB (29,968 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\profmap.dll
secur32.dll 5.00.2195.4587 47.27 KB (48,400 bytes) 3/6/2003 1:54:12 PM Microsoft Corporation
c:\winnt\system32\secur32.dll
sfc.dll 5.00.2195.3649 92.11 KB (94,320 bytes) 3/6/2003 1:54:12 PM Microsoft Corporation
c:\winnt\system32\sfc.dll
nddeapi.dll 5.00.2195.4509 15.77 KB (16,144 bytes) 3/6/2003 1:54:08 PM Microsoft Corporation
c:\winnt\system32\nddeapi.dll
userenv.dll 5.00.2195.5425 363.77 KB (372,496 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\userenv.dll
user32.dll 5.00.2195.4314 395.77 KB (405,264 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\user32.dll
gdi32.dll 5.00.2195.5252 228.77 KB (234,256 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\gdi32.dll
rpcrt4.dll 5.00.2195.5419 440.27 KB (450,832 bytes) 3/6/2003 1:54:11 PM Microsoft Corporation
c:\winnt\system32\rpcrt4.dll
advapi32.dll 5.00.2195.5385 358.77 KB (367,376 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\advapi32.dll
kernel32.dll 5.00.2195.5400 716.77 KB (733,968 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\kernel32.dll
msvcrt.dll 6.10.9359.0 284.05 KB (290,869 bytes) 7/22/2002 12:05:04 PM Microsoft Corporation
c:\winnt\system32\msvcrt.dll
winlogon.exe 5.00.2195.5386 174.77 KB (178,960 bytes) 3/6/2003 1:54:15 PM Microsoft Corporation
c:\winnt\system32\winlogon.exe
sfcfiles.dll 5.00.2195.5426 951.27 KB (974,096 bytes) 3/6/2003 1:54:12 PM Microsoft Corporation
c:\winnt\system32\sfcfiles.dll
ntdll.dll 5.00.2195.5400 479.27 KB (490,768 bytes) 5/4/2001 12:05:02 PM Microsoft Corporation
c:\winnt\system32\ntdll.dll
smss.exe 5.00.2195.5382 44.77 KB (45,840 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation
c:\winnt\system32\smss.exe

[Services]

Display Name Name State Start Mode Service Type Path Error Control Start Name Tag ID
Alerter Alerter Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
Application Management AppMgmt Stopped Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
Background Intelligent Transfer Service BITS Stopped Manual Share Process c:\winnt\system32\svchost.exe -k bitsgroup Normal LocalSystem 0
Computer Browser Browser Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
Indexing Service cisvc Stopped Manual Share Process c:\winnt\system32\cisvc.exe Normal LocalSystem 0
ClipBook ClipSrv Stopped Manual Own Process c:\winnt\system32\clipsrv.exe Normal LocalSystem 0
Distributed File System Dfs Running Auto Own Process c:\winnt\system32\dfssvc.exe Normal LocalSystem 0
DHCP Client Dhcp Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
Logical Disk Manager Administrative Service dmadmin Stopped Manual Share Process c:\winnt\system32\dmadmin.exe /com Normal LocalSystem 0
Logical Disk Manager dmserver Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
DNS Client Dnscache Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
Event Log Eventlog Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
COM+ Event System EventSystem Running Manual Share Process c:\winnt\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Fax Service Fax Stopped Manual Own Process c:\winnt\system32\faxsvc.exe Normal LocalSystem 0
Internet Authentication Service IAS Running Auto Share Process c:\winnt\system32\svchost.exe -k netsvcs Normal LocalSystem 0
IIS Admin Service IISADMIN Running Auto Share Process c:\winnt\system32\inetsrv\inetinfo.exe Normal LocalSystem 0
Intersite Messaging IsmServ Stopped Disabled Own Process c:\winnt\system32\ismserv.exe Normal LocalSystem 0
Kerberos Key Distribution Center kdc Stopped Disabled Share Process c:\winnt\system32\lsass.exe Normal LocalSystem 0
Server lanmanserver Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
Workstation lanmanworkstation Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
License Logging Service LicenseService Running Auto Own Process c:\winnt\system32\llssrv.exe Normal LocalSystem 0
TCP/IP NetBIOS Helper Service LmHosts Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
Messenger Messenger Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
NetMeeting Remote Desktop Sharing mnmsrvc Stopped Manual Own Process c:\winnt\system32\mnmsrvc.exe Normal LocalSystem 0
Distributed Transaction Coordinator MSDTC Running Auto Own Process c:\winnt\system32\msdtc.exe Normal LocalSystem 0
Windows Installer MSIServer Stopped Manual Share Process c:\winnt\system32\msiexec.exe /v Normal LocalSystem 0
Network DDE NetDDE Stopped Manual Share Process c:\winnt\system32\netdde.exe Normal LocalSystem 0
Network DDE DSDM NetDDEdsdm Stopped Manual Share Process c:\winnt\system32\netdde.exe Normal LocalSystem 0
Net Logon Netlogon Stopped Manual Share Process c:\winnt\system32\lsass.exe Normal LocalSystem 0
Network Connections Netman Running Manual Share Process c:\winnt\system32\svchost.exe -k netsvcs Normal LocalSystem 0
File Replication NtFrs Stopped Manual Own Process c:\winnt\system32\ntfrs.exe Ignore LocalSystem 0
NT LM Security Support Provider NtLmSsp Stopped Manual Share Process c:\winnt\system32\lsass.exe Normal LocalSystem 0
Removable Storage NtmsSvc Running Auto Share Process c:\winnt\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Plug and Play PlugPlay Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

IPSEC Policy Agent PolicyAgent Running Auto Share Process c:\winnt\system32\lsass.exe Normal LocalSystem 0
Protected Storage ProtectedStorage Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
Remote Access Auto Connection Manager RasAuto Stopped Manual Share Process c:\winnt\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Remote Access Connection Manager RasMan Stopped Manual Share Process c:\winnt\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Routing and Remote Access RemoteAccess Stopped Disabled Share Process c:\winnt\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Remote Registry Service RemoteRegistry Running Auto Own Process c:\winnt\system32\regsvc.exe Normal LocalSystem 0
Remote Command Service RMSYS Running Auto Own Process c:\program files\benchcraft\rsys.exe Normal .\Administrator 0
Remote Procedure Call (RPC) Locator RpcLocator Stopped Manual Own Process c:\winnt\system32\locator.exe Normal LocalSystem 0
Remote Procedure Call (RPC) RpcSs Running Auto Share Process c:\winnt\system32\svchost -k rpcss Normal LocalSystem 0
QoS RSVP RSVP Running Manual Own Process c:\winnt\system32\rsvp.exe -s Normal LocalSystem 0
Security Accounts Manager SamSs Running Auto Share Process c:\winnt\system32\lsass.exe Normal LocalSystem 0
Smart Card Helper SCardDrv Stopped Manual Share Process c:\winnt\system32\scardsvr.exe Ignore LocalSystem 0
Smart Card SCardSvr Stopped Manual Share Process c:\winnt\system32\scardsvr.exe Ignore LocalSystem 0
Task Scheduler Schedule Running Auto Share Process c:\winnt\system32\mstask.exe Normal LocalSystem 0
RunAs Service seclogon Running Auto Share Process c:\winnt\system32\services.exe Ignore LocalSystem 0
System Event Notification SENS Running Auto Share Process c:\winnt\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Internet Connection Sharing SharedAccess Stopped Manual Share Process c:\winnt\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Simple TCP/IP Services SimpTcp Running Auto Share Process c:\winnt\system32\tcpsvcs.exe Normal LocalSystem 0
Simple Mail Transport Protocol (SMTP) SMTPSVC Stopped Auto Share Process c:\winnt\system32\inetsrv\inetinfo.exe Normal LocalSystem 0
Print Spooler Spooler Running Auto Own Process c:\winnt\system32\spoolsv.exe Normal LocalSystem 0
Performance Logs and Alerts SysmonLog Stopped Manual Own Process c:\winnt\system32\smlogsvc.exe Normal LocalSystem 0
Telephony TapiSrv Running Manual Share Process c:\winnt\system32\svchost.exe -k tapisrv Normal LocalSystem 0
Terminal Services TermService Stopped Disabled Own Process c:\winnt\system32\termsrv.exe Normal LocalSystem 0
Telnet TlntSvr Stopped Manual Own Process c:\winnt\system32\tlntsvr.exe Normal LocalSystem 0
Distributed Link Tracking Server TrkSvr Stopped Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
Distributed Link Tracking Client TrkWks Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
Uninterruptible Power Supply UPS Stopped Manual Own Process c:\winnt\system32\ups.exe Normal LocalSystem 0
Utility Manager UtilMan Stopped Manual Own Process c:\winnt\system32\utilman.exe Normal LocalSystem 0
Windows Time W32Time Stopped Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
World Wide Web Publishing Service W3SVC Running Auto Share Process c:\winnt\system32\inetsrv\inetinfo.exe Normal LocalSystem 0
Windows Management Instrumentation WinMgmt Running Auto Own Process c:\winnt\system32\wbem\winmgmt.exe Ignore LocalSystem 0
Windows Management Instrumentation Driver Extensions Wmi Running Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
Automatic Updates wuauserv Running Auto Share Process c:\winnt\system32\svchost.exe -k wugroup Normal LocalSystem 0

[Program Groups]

Group Name Name User Name
Accessories Default User:Accessories Default User
Accessories\Accessibility Default User:Accessories\Accessibility Default User
Accessories\Entertainment Default User:Accessories\Entertainment Default User
Accessories\System Tools Default User:Accessories\System Tools Default User
Startup Default User:Startup Default User
Accessories All Users:Accessories All Users
Accessories\Accessibility All Users:Accessories\Accessibility All Users
Accessories\Communications All Users:Accessories\Communications All Users
Accessories\Entertainment All Users:Accessories\Entertainment All Users
Accessories\Games All Users:Accessories\Games All Users
Accessories\System Tools All Users:Accessories\System Tools All Users
Administrative Tools All Users:Administrative Tools All Users
Microsoft SQL Server All Users:Microsoft SQL Server All Users
Startup All Users:Startup All Users
Accessories VCLIENT10\Administrator:Accessories VCLIENT10\Administrator
Accessories\Accessibility VCLIENT10\Administrator:Accessories\Accessibility VCLIENT10\Administrator
Accessories\Entertainment VCLIENT10\Administrator:Accessories\Entertainment VCLIENT10\Administrator
Accessories\System Tools VCLIENT10\Administrator:Accessories\System Tools VCLIENT10\Administrator
Administrative Tools VCLIENT10\Administrator:Administrative Tools VCLIENT10\Administrator
Benchcraft VCLIENT10\Administrator:Benchcraft VCLIENT10\Administrator
QLogic Corporation VCLIENT10\Administrator:QLogic Corporation VCLIENT10\Administrator
QLogic Corporation\SANblade Control VIX VCLIENT10\Administrator:QLogic Corporation\SANblade Control VIX VCLIENT10\Administrator
Startup VCLIENT10\Administrator:Startup VCLIENT10\Administrator

[Startup Programs]

Program Command User NameLocation
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 55736-459-9608732-04017
Application Path C:\Program Files\Internet Explorer
Language English (United States)
Active Printer Not Available

Cipher Strength 128-bit
Content Advisor Disabled
Update Versions ;SP1;
Java VM Version 5.0.3805.0
IEAK Install No

[File Versions]

File Version Size Date Path Company
advapi32.dll 5.0.2195.5385 359 KB 7/22/2002 12:05:04 PM C:\WINNT\system32 Microsoft Corporation
advpack.dll 6.0.2800.1106 89 KB 8/29/2002 7:14:40 AM C:\WINNT\system32 Microsoft Corporation
browselc.dll 6.0.2800.1106 62 KB 8/29/2002 7:14:40 AM C:\WINNT\system32 Microsoft Corporation
browseui.dll 6.0.2800.1106 1002 KB 8/29/2002 7:14:40 AM C:\WINNT\system32 Microsoft Corporation
ckcnv.exe 5.0.2189.1 9 KB 12/7/1999 7:00:00 AM C:\WINNT\system32 Microsoft Corporation
comctl32.dll 5.81.4916.400 517 KB 8/29/2002 7:14:40 AM C:\WINNT\system32 Microsoft Corporation
crypt32.dll 5.131.2195.4558 464 KB 7/22/2002 12:05:04 PM C:\WINNT\system32 Microsoft Corporation
enhsig.dll File not present Not Available Not Available Not Available
iemigrat.dll File not present Not Available Not Available Not Available
iesetup.dll 6.0.2800.1106 57 KB 8/29/2002 7:14:40 AM C:\WINNT\system32 Microsoft Corporation
iexplore.exe 6.0.2800.1106 89 KB 8/29/2002 7:14:40 AM C:\Program Files\Internet Explorer Microsoft Corporation
imagehlp.dll 5.0.2195.5242 126 KB 7/22/2002 12:05:04 PM C:\WINNT\system32 Microsoft Corporation
inseng.dll 6.0.2800.1106 68 KB 8/29/2002 7:14:40 AM C:\WINNT\system32 Microsoft Corporation
jobexec.dll 5.0.0.1 47 KB 12/7/1999 7:00:00 AM C:\WINNT\system32 Microsoft Corporation
jscript.dll 5.6.0.6626 576 KB 6/26/2001 4:36:02 PM C:\WINNT\system32 Microsoft Corporation
jsproxy.dll 6.0.2800.1106 12 KB 8/29/2002 7:14:40 AM C:\WINNT\system32 Microsoft Corporation
mshtml.dll 6.0.2800.1106 2722 KB 8/29/2002 7:14:40 AM C:\WINNT\system32 Microsoft Corporation
msjava.dll 5.0.3805.0 924 KB 7/22/2002 12:05:04 PM C:\WINNT\system32 Microsoft Corporation
msoss.dll File not present Not Available Not Available Not Available
msxml.dll 8.0.6730.0 494 KB 7/22/2002 12:05:04 PM C:\WINNT\system32 Microsoft Corporation
occache.dll 6.0.2800.1106 86 KB 8/29/2002 7:14:40 AM C:\WINNT\system32 Microsoft Corporation
ole32.dll 5.0.2195.5400 968 KB 7/22/2002 12:05:04 PM C:\WINNT\system32 Microsoft Corporation
oleaut32.dll 2.40.4518.0 612 KB 7/22/2002 12:05:04 PM C:\WINNT\system32 Microsoft Corporation
olepro32.dll 5.0.4518.0 160 KB 7/22/2002 12:05:04 PM C:\WINNT\system32 Microsoft Corporation
rsabase.dll 5.0.2195.3839 128 KB 7/22/2002 12:05:04 PM C:\WINNT\system32 Microsoft Corporation
rsaenh.dll 5.0.2195.3839 131 KB 7/22/2002 12:05:04 PM C:\WINNT\system32 Microsoft Corporation
rasapi32.dll 5.0.2195.5438 192 KB 7/22/2002 12:05:04 PM C:\WINNT\system32 Microsoft Corporation
rsasig.dll File not present Not Available Not Available Not Available
schannel.dll 5.1.2195.0 139 KB 7/22/2002 12:05:04 PM C:\WINNT\system32 Microsoft Corporation
shdoc401.dll File not present Not Available Not Available Not Available
shdocvw.dll 6.0.2800.1106 1307 KB 8/29/2002 7:14:40 AM C:\WINNT\system32 Microsoft Corporation
shell32.dll 5.0.3502.5436 2319 KB 7/22/2002 12:05:04 PM C:\WINNT\system32 Microsoft Corporation
shlwapi.dll 6.0.2800.1106 386 KB 8/29/2002 7:14:40 AM C:\WINNT\system32 Microsoft Corporation
url.dll 6.0.2800.1106 104 KB 8/29/2002 7:14:40 AM C:\WINNT\system32 Microsoft Corporation
urlmon.dll 6.0.2800.1106 472 KB 8/29/2002 7:14:40 AM C:\WINNT\system32 Microsoft Corporation
vbscript.dll 5.6.0.7426 452 KB 2/26/2002 3:58:06 PM C:\WINNT\system32 Microsoft Corporation
webcheck.dll 6.0.2800.1106 252 KB 8/29/2002 7:14:40 AM C:\WINNT\system32 Microsoft Corporation
win.com 5.0.2134.1 24 KB 12/7/1999 7:00:00 AM C:\WINNT\system32 Microsoft Corporation
wininet.dll 6.0.2800.1106 572 KB 8/29/2002 7:14:40 AM C:\WINNT\system32 Microsoft Corporation
winsock.dll 3.10.0.103 3 KB 12/7/1999 7:00:00 AM C:\WINNT\system32 Microsoft Corporation
wintrust.dll 5.131.2195.3775 162 KB 7/22/2002 12:05:04 PM C:\WINNT\system32 Microsoft Corporation
wsock.vxd File not present Not Available Not Available Not Available
wsock32.dll 5.0.2195.4874 21 KB 7/22/2002 12:05:04 PM C:\WINNT\system32 Microsoft Corporation
wsock32n.dll File not present Not Available Not Available Not Available

[Connectivity]

Item Value
Connection Preference Never dial
EnableHttp1.1 1
ProxyHttp1.1 0

LAN Settings

AutoConfigProxy wininet.dll
AutoProxyDetectMode Disabled
AutoConfigURL
Proxy Disabled
ProxyServer
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 17353 MB
Available Disk Space 12594 MB
Maximum Cache Size 541 MB
Available Cache Size 542 MB

[List of Objects]

Program File Status Version CodeBase
No cached object information available

[Content]

[Following are sub-categories of this main category]

[Summary]

Item Value
Content Advisor Disabled

[Personal Certificates]

Issued To Issued By Validity Signature Algorithm
Administrator Administrator 2/12/2003 to 1/19/2103 sha1RSA

[Other People Certificates]

Issued To Issued By Validity Signature Algorithm
No other people certificate information available

[Publishers]

Name
No publisher information available

[Security]

Zone Security Level
Local intranet Custom
Trusted sites Custom
Internet Custom
Restricted sites Custom

Microsoft Windows 2000 Client Registry Parameters

Client 1

Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika]
"ErrorControl"=dword:00000001
"start"=dword:00000002
"type"=dword:00000001
"Tag"=dword:00000001
"group"="MVIA"
"ImagePath"=hex(2):53,00,79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,44,00,\
52,00,49,00,56,00,45,00,52,00,53,00,5c,00,71,00,6c,00,76,00,69,00,6b,00,61,\
00,2e,00,73,00,79,00,73,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B07D3AF]
"IPAddress"=hex(7):31,00,39,00,32,00,2e,00,31,00,36,00,38,00,2e,00,32,00,33,00,\
30,00,2e,00,31,00,31,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Parameters]
"MaxRegisterMBytes"=dword:00000200
"MaxRegisterRdmaMBytes"=dword:00000200
"MaxCQEntries"=dword:00002000
"MaxRegisterRegions"=dword:00001000
"MaxVIs"=dword:00000400
"MaxCQs"=dword:00000400
"MaxTransferSize"=dword:00010000
"MaxPTags"=dword:00000800
"IuBuffers"=dword:00000100
"SendDescQuota"=dword:00000008
"RecvDescQuota"=dword:00000008
"SupportPrototypeCards"=dword:00000001

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Security]
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14,00,00,00,30,00,00,00,02,\
00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,\
00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,00,\
05,12,00,00,00,72,00,74,00,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,\
20,00,00,00,20,02,00,00,00,00,00,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,\
00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,00,\
00,05,20,00,00,00,23,02,00,00,00,00,00,00,01,01,00,00,00,00,00,05,12,00,00,\
00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Enum]
"0"="Root\\LEGACY_QLVIKA\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Parameters]
"ListenBackLog"=dword:00000096
"DispatchEntries"=hex(7):4c,00,44,00,41,00,50,00,53,00,56,00,43,00,00,00,53,00,\
4d,00,54,00,50,00,53,00,56,00,43,00,00,00,00,00
"PoolThreadLimit"=dword:000000be
"ThreadTimeout"=dword:00015180

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Performance]
"Library"="infoctrs.dll"

```
"Open"="OpenINFOPerformanceData"
"Close"="CloseINFOPerformanceData"
"Collect"="CollectINFOPerformanceData"
"Last Counter"=dword:00000bfe
"Last Help"=dword:00000bff
"First Counter"=dword:00000bbe
"First Help"=dword:00000bbf
"Library Validation
Code"=hex:18,ef,36,c1,11,e4,c2,01,10,25,00,00,00,00,00,00
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
"WbemAdapFileSize"=dword:00002510
"WbemAdapStatus"=dword:00000000

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\TPCC]
"Path"="C:\\Inetpub\\wwwroot\\"
"NumberOfDeliveryThreads"=dword:00000012
"MaxConnections"=dword:0000abe0
"MaxPendingDeliveries"=dword:00001130
"DB_Protocol"="ODBC"
"TxnMonitor"="COM"
"DbServer"="ibmserv2"
"DbName"="tpcc"
"DbUser"="sa"
"DbPassword"=""
"COM_SinglePool"="YES"

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC]
"Type"=dword:00000020
"Start"=dword:00000002
"ErrorControl"=dword:00000001
"ImagePath"=hex(2):43,00,3a,00,5c,00,57,00,49,00,4e,00,4e,00,54,00,5c,00,53,
00,\
  79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,69,00,6e,00,65,00,74,00,73,\
  00,72,00,76,00,5c,00,69,00,6e,00,65,00,74,00,69,00,6e,00,66,00,6f,00,2e,00,\
  65,00,78,00,65,00,00,00
"DisplayName"="World Wide Web Publishing Service"
"DependOnService"=hex(7):49,00,49,00,53,00,41,00,44,00,4d,00,49,00,4e,00,0
0,00,\
  00,00
"DependOnGroup"=hex(7):00,00
"ObjectName"="LocalSystem"
"Description"="Provides Web connectivity and administration through the
Internet Information Services snap-in."
"FailureActions"=hex:ff,ff,ff,ff,00,00,00,00,00,00,00,00,03,00,00,00,50,65,0f,\
  00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\
ASP]
"NOTE"="This is for backward compatibility only."

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\
ASP\Parameters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters]
"MajorVersion"=dword:00000005
"MinorVersion"=dword:00000000
"InstallPath"="C:\\WINNT\\System32\\inetsrv"
"CertMapList"="C:\\WINNT\\System32\\inetsrv\\iiscrmap.dll"
"AccessDeniedMessage"="Error: Access is Denied."
"Filter DLLs"=""
"LogFileDirectory"="C:\\WINNT\\System32\\LogFiles"
"AcceptExOutstanding"=dword:00000028

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\ADCLaunch]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\ADCLaunch\AdvancedDataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\ADCLaunch\RDSServer.DataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\Script Map]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\Virtual Roots]
"/"="c:\\inetpub\\wwwroot,,205"
"/Scripts"="c:\\inetpub\\scripts,,1"
"/IISHelp"="c:\\winnt\\help\\iishelp,,1"
"/IISAdmin"="C:\\WINNT\\System32\\inetsrv\\iisadmin,,1"
"/IISSamples"="c:\\inetpub\\iissamples,,1"
"/MSADC"="c:\\program files\\common files\\system\\msadc,,1"
"/_vti_bin"="C:\\Program Files\\Common Files\\Microsoft Shared\\Web Server
Extensions\\40\\isapi,,1"
"/Rpc"="C:\\WINNT\\System32\\RpcProxy,,1"
"/Printers"="C:\\WINNT\\web\\printers,,201"

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
erformance]
"Library"="w3ctrs.dll"
"Open"="OpenW3PerformanceData"
"Close"="CloseW3PerformanceData"
"Collect"="CollectW3PerformanceData"
"Last Counter"=dword:00000b76
"Last Help"=dword:00000b77
"First Counter"=dword:00000ad4
"First Help"=dword:00000ad5
"Library Validation
Code"=hex:36,82,c4,c8,11,e4,c2,01,10,1d,00,00,00,00,00,00
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
"WbemAdapFileSize"=dword:00001d10
"WbemAdapStatus"=dword:00000000

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\S
ecurity]
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14,00,00,00,30,00,00,00,0
2,\
  00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,\
  00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,00,\
  05,12,00,00,00,74,00,6f,00,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,\
  20,00,00,00,20,02,00,00,72,00,73,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,\
  00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,00,\
  00,05,20,00,00,00,23,02,00,00,72,00,73,00,01,01,00,00,00,00,00,05,12,00,00,\
  00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\E
num]
"0"="Root\\LEGACY_W3SVC\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001
```

Client 2

```
Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika]
"ErrorControl"=dword:00000001
"start"=dword:00000002
"type"=dword:00000001
"Tag"=dword:00000001
"group"="MVIA"
```

```
"ImagePath"=hex(2):53,00,79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,44
,00,\
  52,00,49,00,56,00,45,00,52,00,53,00,5c,00,71,00,6c,00,76,00,69,00,6b,00,61,\
  00,2e,00,73,00,79,00,73,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Ad
apters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Ad
apters\210000E08B07D2AF]
"IPAddress"=hex(7):31,00,39,00,32,00,2e,00,31,00,36,00,38,00,2e,00,32,00,33,
00,\
  30,00,2e,00,32,00,31,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Ad
apters\210000E08B07D3AF]
"IPAddress"=hex(7):31,00,39,00,32,00,2e,00,31,00,36,00,38,00,2e,00,32,00,33,
00,\
  30,00,2e,00,31,00,31,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Par
ameters]
"MaxRegisterMBytes"=dword:00000200
"MaxRegisterRdmaMBytes"=dword:00000200
"MaxCQEntries"=dword:00002000
"MaxRegisterRegions"=dword:00001000
"MaxVIs"=dword:00000400
"MaxCQs"=dword:00000400
"MaxTransferSize"=dword:00010000
"MaxPTags"=dword:00000800
"IuBuffers"=dword:00000100
"SendDescQuota"=dword:00000008
"RecvDescQuota"=dword:00000008
"SupportPrototypeCards"=dword:00000000

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Sec
urity]
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14,00,00,00,30,00,00,00,0
2,\
  00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,\
  00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,00,\
  05,12,00,00,00,b0,7e,09,00,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,\
  20,00,00,00,20,02,00,00,00,00,00,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,\
  00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,00,\
  00,05,20,00,00,00,23,02,00,00,00,00,00,00,01,01,00,00,00,00,00,05,12,00,00,\
  00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\En
um]
"0"="Root\\LEGACY_QLVIKA\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\P
arameters]
"ListenBackLog"=dword:00000096
"DispatchEntries"=hex(7):4c,00,44,00,41,00,50,00,53,00,56,00,43,00,00,00,53,
00,\
  4d,00,54,00,50,00,53,00,56,00,43,00,00,00,00,00
"PoolThreadLimit"=dword:000000be
"ThreadTimeout"=dword:00015180

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\P
erformance]
"Library"="infoctrs.dll"
"Open"="OpenINFOPerformanceData"
"Close"="CloseINFOPerformanceData"
"Collect"="CollectINFOPerformanceData"
"Last Counter"=dword:00000bfe
"Last Help"=dword:00000bff
"First Counter"=dword:00000bbe
"First Help"=dword:00000bbf
"Library Validation
Code"=hex:18,ef,36,c1,11,e4,c2,01,10,25,00,00,00,00,00,00
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
"WbemAdapFileSize"=dword:00002510
"WbemAdapStatus"=dword:00000000

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\TPCC]
"Path"="C:\\Inetpub\\wwwroot\\"
"NumberOfDeliveryThreads"=dword:00000012
"MaxConnections"=dword:0000abe0
"MaxPendingDeliveries"=dword:00001130
"DB_Protocol"="ODBC"
"TxnMonitor"="COM"
"DbServer"="ibmserv2"
"DbName"="tpcc"
"DbUser"="sa"
"DbPassword"=""
"COM_SinglePool"="YES"

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC]
"Type"=dword:00000020
"Start"=dword:00000002
"ErrorControl"=dword:00000001
"ImagePath"=hex(2):43,00,3a,00,5c,00,57,00,49,00,4e,00,4e,00,54,00,5c,00,53,
00,\
  79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,69,00,6e,00,65,00,74,00,73,\
  00,72,00,76,00,5c,00,69,00,6e,00,65,00,74,00,69,00,6e,00,66,00,6f,00,2e,00,\
  65,00,78,00,65,00,00,00
"DisplayName"="World Wide Web Publishing Service"
"DependOnService"=hex(7):49,00,49,00,53,00,41,00,44,00,4d,00,49,00,4e,00,0
0,00,\
  00,00
"DependOnGroup"=hex(7):00,00
"ObjectName"="LocalSystem"
"Description"="Provides Web connectivity and administration through the
Internet Information Services snap-in."
"FailureActions"=hex:ff,ff,ff,ff,00,00,00,00,00,00,00,00,03,00,00,00,50,65,0f,\
  00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\
ASP]
"NOTE"="This is for backward compatibility only."

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\
ASP\Parameters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters]
"MajorVersion"=dword:00000005
"MinorVersion"=dword:00000000
"InstallPath"="C:\\WINNT\\System32\\inetsrv"
"CertMapList"="C:\\WINNT\\System32\\inetsrv\\iiscrmap.dll"
"AccessDeniedMessage"="Error: Access is Denied."
"Filter DLLs"=""
"LogFileDirectory"="C:\\WINNT\\System32\\LogFiles"
"AcceptExOutstanding"=dword:00000028

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\ADCLaunch]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\ADCLaunch\AdvancedDataFactory]
```

```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch\RDSServer.DataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\Script Map]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\Virtual Roots]
"/"="c:\\inetpub\\wwwroot,,205"
"/Scripts"="c:\\inetpub\\scripts,,1"
"/IISHelp"="c:\\winnt\\help\\iishelp,,1"
"/IISAdmin"="C:\\WINNT\\System32\\inetsrv\\iisadmin,,1"
"/IISSamples"="c:\\inetpub\\iissamples,,1"
"/MSADC"="c:\\program files\\common files\\system\\msadc,,1"
"/_vti_bin"="C:\\Program Files\\Common Files\\Microsoft Shared\\Web Server Extensions\\40\\isapi,,1"
"/Rpc"="C:\\WINNT\\System32\\RpcProxy,,1"
"/Printers"="C:\\WINNT\\web\\printers,,201"

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Performance]
"Library"="w3ctrs.dll"
"Open"="OpenW3PerformanceData"
"Close"="CloseW3PerformanceData"
"Collect"="CollectW3PerformanceData"
"Last Counter"=dword:00000b76
"Last Help"=dword:00000b77
"First Counter"=dword:00000ad4
"First Help"=dword:00000ad5
"Library Validation Code"=hex:36,82,c4,c8,11,e4,c2,01,10,1d,00,00,00,00,00,00
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
"WbemAdapFileSize"=dword:00001d10
"WbemAdapStatus"=dword:00000000

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Security]
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14,00,00,00,30,00,00,00,02,\
  00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,\
  00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,00,\
  05,12,00,00,00,74,00,6f,00,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,\
  20,00,00,00,20,02,00,00,72,00,73,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,\
  00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,00,\
  00,05,20,00,00,00,23,02,00,00,72,00,73,00,01,01,00,00,00,00,00,05,12,00,00,\
  00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Enum]
"0"="Root\\LEGACY_W3SVC\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001
```

Client 3

```
Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika]
"ErrorControl"=dword:00000001
"start"=dword:00000002
"type"=dword:00000001
"Tag"=dword:00000001
"group"="MVIA"
"ImagePath"=hex(2):53,00,79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,44,00,\
  52,00,49,00,56,00,45,00,52,00,53,00,5c,00,71,00,6c,00,76,00,69,00,6b,00,61,\
  00,2e,00,73,00,79,00,73,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B07D1AF]
"IPAddress"=hex(7):31,00,39,00,32,00,2e,00,31,00,36,00,38,00,2e,00,31,00,32,00,\
  30,00,2e,00,34,00,31,00,00,00,00,00
"VIDeviceNumber"=dword:00000000

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B07D3AF]
"IPAddress"=hex(7):31,00,39,00,32,00,2e,00,31,00,36,00,38,00,2e,00,32,00,33,00,\
  30,00,2e,00,31,00,31,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Parameters]
"MaxRegisterMBytes"=dword:00000200
"MaxRegisterRdmaMBytes"=dword:00000200
"MaxCQEntries"=dword:00002000
"MaxRegisterRegions"=dword:00001000
"MaxVIs"=dword:00000400
"MaxCQs"=dword:00000400
"MaxTransferSize"=dword:00010000
"MaxPTags"=dword:00000800
"IuBuffers"=dword:00000100
"SendDescQuota"=dword:00000008
"RecvDescQuota"=dword:00000008
"SupportPrototypeCards"=dword:00000000

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Security]
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14,00,00,00,30,00,00,00,02,\
  00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,\
  00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,00,\
  05,12,00,00,00,72,00,74,00,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,\
  20,00,00,00,20,02,00,00,00,00,00,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,\
  00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,00,\
  00,05,20,00,00,00,23,02,00,00,00,00,00,00,01,01,00,00,00,00,00,05,12,00,00,\
  00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Enum]
"0"="Root\\LEGACY_QLVIKA\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Parameters]
"ListenBackLog"=dword:00000096
"DispatchEntries"=hex(7):4c,00,44,00,41,00,50,00,53,00,56,00,43,00,00,00,53,00,\
  4d,00,54,00,50,00,53,00,56,00,43,00,00,00,00,00
"PoolThreadLimit"=dword:000000be
"ThreadTimeout"=dword:00015180

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Performance]
"Library"="infoctrs.dll"
"Open"="OpenINFOPerformanceData"
"Close"="CloseINFOPerformanceData"
"Collect"="CollectINFOPerformanceData"
```

```
"Last Counter"=dword:00000bfe
"Last Help"=dword:00000bff
"First Counter"=dword:00000bbe
"First Help"=dword:00000bbf
"Library Validation
Code"=hex:18,ef,36,c1,11,e4,c2,01,10,25,00,00,00,00,00,00
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
"WbemAdapFileSize"=dword:00002510
"WbemAdapStatus"=dword:00000000

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\TPCC]
"Path"="C:\\Inetpub\\wwwroot\\"
"NumberOfDeliveryThreads"=dword:00000012
"MaxConnections"=dword:0000abe0
"MaxPendingDeliveries"=dword:00001130
"DB_Protocol"="ODBC"
"TxnMonitor"="COM"
"DbServer"="ibmserv2"
"DbName"="tpcc"
"DbUser"="sa"
"DbPassword"=""
"COM_SinglePool"="YES"

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC]
"Type"=dword:00000020
"Start"=dword:00000002
"ErrorControl"=dword:00000001
"ImagePath"=hex(2):43,00,3a,00,5c,00,57,00,49,00,4e,00,4e,00,54,00,5c,00,53,
00,\
  79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,69,00,6e,00,65,00,74,00,73,\
  00,72,00,76,00,5c,00,69,00,6e,00,65,00,74,00,69,00,6e,00,66,00,6f,00,2e,00,\
  65,00,78,00,65,00,00,00
"DisplayName"="World Wide Web Publishing Service"
"DependOnService"=hex(7):49,00,49,00,53,00,41,00,44,00,4d,00,49,00,4e,00,0
0,00,\
  00,00
"DependOnGroup"=hex(7):00,00
"ObjectName"="LocalSystem"
"Description"="Provides Web connectivity and administration through the
Internet Information Services snap-in."
"FailureActions"=hex:ff,ff,ff,ff,00,00,00,00,00,00,00,00,03,00,00,00,50,65,0f,\
  00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\
ASP]
"NOTE"="This is for backward compatibility only."

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\
ASP\Parameters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters]
"MajorVersion"=dword:00000005
"MinorVersion"=dword:00000000
"InstallPath"="C:\\WINNT\\System32\\inetsrv"
"CertMapList"="C:\\WINNT\\System32\\inetsrv\\iiscrmap.dll"
"AccessDeniedMessage"="Error: Access is Denied."
"Filter DLLs"=""
"LogFileDirectory"="C:\\WINNT\\System32\\LogFiles"
"AcceptExOutstanding"=dword:00000028

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\ADCLaunch]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\ADCLaunch\AdvancedDataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\ADCLaunch\RDSServer.DataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\Script Map]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
arameters\Virtual Roots]
"/"="c:\\inetpub\\wwwroot,,205"
"/Scripts"="c:\\inetpub\\scripts,,1"
"/IISHelp"="c:\\winnt\\help\\iishelp,,1"
"/IISAdmin"="C:\\WINNT\\System32\\inetsrv\\iisadmin,,1"
"/IISSamples"="c:\\inetpub\\iissamples,,1"
"/MSADC"="c:\\program files\\common files\\system\\msadc,,1"
"/_vti_bin"="C:\\Program Files\\Common Files\\Microsoft Shared\\Web Server
Extensions\\40\\isapi,,1"
"/Rpc"="C:\\WINNT\\System32\\RpcProxy,,1"
"/Printers"="C:\\WINNT\\web\\printers,,201"

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\P
erformance]
"Library"="w3ctrs.dll"
"Open"="OpenW3PerformanceData"
"Close"="CloseW3PerformanceData"
"Collect"="CollectW3PerformanceData"
"Last Counter"=dword:00000b76
"Last Help"=dword:00000b77
"First Counter"=dword:00000ad4
"First Help"=dword:00000ad5
"Library Validation
Code"=hex:36,82,c4,c8,11,e4,c2,01,10,1d,00,00,00,00,00,00
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
"WbemAdapFileSize"=dword:00001d10
"WbemAdapStatus"=dword:00000000

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\S
ecurity]
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14,00,00,00,30,00,00,00,0
2,\
  00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,\
  00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,00,\
  05,12,00,00,00,74,00,6f,00,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,\
  20,00,00,00,20,02,00,00,72,00,73,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,\
  00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,00,\
  00,05,20,00,00,00,23,02,00,00,72,00,73,00,01,01,00,00,00,00,00,05,12,00,00,\
  00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\E
num]
"0"="Root\\LEGACY_W3SVC\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001
```

Client 4

```
Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika]
"ErrorControl"=dword:00000001
"start"=dword:00000002
"type"=dword:00000001
"Tag"=dword:00000001
"group"="MVIA"
"ImagePath"=hex(2):53,00,79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,44
,00,\
  52,00,49,00,56,00,45,00,52,00,53,00,5c,00,71,00,6c,00,76,00,69,00,6b,00,61,\
  00,2e,00,73,00,79,00,73,00,00,00
```

```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B0727B0]
"IPAddress"=hex(7):31,00,39,00,32,00,2e,00,31,00,36,00,38,00,2e,00,31,00,32,00,\
  30,00,2e,00,35,00,31,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B07D3AF]
"IPAddress"=hex(7):31,00,39,00,32,00,2e,00,31,00,36,00,38,00,2e,00,32,00,33,00,\
  30,00,2e,00,31,00,31,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Parameters]
"MaxRegisterMBytes"=dword:00000200
"MaxRegisterRdmaMBytes"=dword:00000200
"MaxCQEntries"=dword:00002000
"MaxRegisterRegions"=dword:00001000
"MaxVIs"=dword:00000400
"MaxCQs"=dword:00000400
"MaxTransferSize"=dword:00010000
"MaxPTags"=dword:00000800
"IuBuffers"=dword:00000100
"SendDescQuota"=dword:00000008
"RecvDescQuota"=dword:00000008
"SupportPrototypeCards"=dword:00000000

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Security]
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14,00,00,00,30,00,00,00,02,\
  00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,\
  00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,00,\
  05,12,00,00,00,72,76,69,63,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,\
  20,00,00,00,20,02,00,00,65,00,00,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,\
  00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,00,\
  00,05,20,00,00,00,23,02,00,00,65,00,00,00,01,01,00,00,00,00,00,05,12,00,00,\
  00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Enum]
"0"="Root\\LEGACY_QLVIKA\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Parameters]
"ListenBackLog"=dword:00000096
"DispatchEntries"=hex(7):4c,00,44,00,41,00,50,00,53,00,56,00,43,00,00,00,53,00,\
  4d,00,54,00,50,00,53,00,56,00,43,00,00,00,00,00
"PoolThreadLimit"=dword:000000be
"ThreadTimeout"=dword:00015180

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Performance]
"Library"="infoctrs.dll"
"Open"="OpenINFOPerformanceData"
"Close"="CloseINFOPerformanceData"
"Collect"="CollectINFOPerformanceData"
"Last Counter"=dword:00000bfe
"Last Help"=dword:00000bff
"First Counter"=dword:00000bbe
"First Help"=dword:00000bbf
"Library Validation
Code"=hex:18,ef,36,c1,11,e4,c2,01,10,25,00,00,00,00,00,00
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
"WbemAdapFileSize"=dword:00002510
"WbemAdapStatus"=dword:00000000


[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\TPCC]
"Path"="C:\\Inetpub\\wwwroot\\"
"NumberOfDeliveryThreads"=dword:00000012
"MaxConnections"=dword:0000abe0
"MaxPendingDeliveries"=dword:00001130
"DB_Protocol"="ODBC"
"TxnMonitor"="COM"
"DbServer"="ibmserv2"
"DbName"="tpcc"
"DbUser"="sa"
"DbPassword"=""
"COM_SinglePool"="YES"


[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC]
"Type"=dword:00000020
"Start"=dword:00000002
"ErrorControl"=dword:00000001
"ImagePath"=hex(2):43,00,3a,00,5c,00,57,00,49,00,4e,00,4e,00,54,00,5c,00,53,00,\
  79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,69,00,6e,00,65,00,74,00,73,\
  00,72,00,76,00,5c,00,69,00,6e,00,65,00,74,00,69,00,6e,00,66,00,6f,00,2e,00,\
  65,00,78,00,65,00,00,00
"DisplayName"="World Wide Web Publishing Service"
"DependOnService"=hex(7):49,00,49,00,53,00,41,00,44,00,4d,00,49,00,4e,00,00,00,\
  00,00
"DependOnGroup"=hex(7):00,00
"ObjectName"="LocalSystem"
"Description"="Provides Web connectivity and administration through the Internet Information Services snap-in."
"FailureActions"=hex:ff,ff,ff,ff,00,00,00,00,00,00,00,00,03,00,00,00,50,65,0f,\
  00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\ASP]
"NOTE"="This is for backward compatibility only."

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\ASP\Parameters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters]
"MajorVersion"=dword:00000005
"MinorVersion"=dword:00000000
"InstallPath"="C:\\WINNT\\System32\\inetsrv"
"CertMapList"="C:\\WINNT\\System32\\inetsrv\\iiscrmap.dll"
"AccessDeniedMessage"="Error: Access is Denied."
"Filter DLLs"=""
"LogFileDirectory"="C:\\WINNT\\System32\\LogFiles"
"AcceptExOutstanding"=dword:00000028

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch\AdvancedDataFactory]
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[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch\RDSServer.DataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\Script Map]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\Virtual Roots]
"/"="c:\\inetpub\\wwwroot,,205"
"/Scripts"="c:\\inetpub\\scripts,,1"
"/IISHelp"="c:\\winnt\\help\\iishelp,,1"
"/IISAdmin"="C:\\WINNT\\System32\\inetsrv\\iisadmin,,1"
"/IISSamples"="c:\\inetpub\\iissamples,,1"
"/MSADC"="c:\\program files\\common files\\system\\msadc,,1"
"/_vti_bin"="C:\\Program Files\\Common Files\\Microsoft Shared\\Web Server Extensions\\40\\isapi,,1"
"/Rpc"="C:\\WINNT\\System32\\RpcProxy,,1"
"/Printers"="C:\\WINNT\\web\\printers,,201"

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Performance]
"Library"="w3ctrs.dll"
"Open"="OpenW3PerformanceData"
"Close"="CloseW3PerformanceData"
"Collect"="CollectW3PerformanceData"
"Last Counter"=dword:00000b76
"Last Help"=dword:00000b77
"First Counter"=dword:00000ad4
"First Help"=dword:00000ad5
"Library Validation Code"=hex:36,82,c4,c8,11,e4,c2,01,10,1d,00,00,00,00,00,00
"WbemAdapFileTime"=hex:00,a0,13,ec,a1,31,c2,01
"WbemAdapFileSize"=dword:00001d10
"WbemAdapStatus"=dword:00000000

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Security]
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14,00,00,00,30,00,00,00,02,\
  00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,00,01,00,00,\
  00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00,01,01,00,00,00,00,00,\
  05,12,00,00,00,74,00,6f,00,00,00,1c,00,ff,01,0f,00,01,02,00,00,00,00,00,05,\
  20,00,00,00,20,02,00,00,72,00,73,00,00,00,18,00,8d,01,02,00,01,01,00,00,00,\
  00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02,00,01,02,00,00,00,00,\
  00,05,20,00,00,00,23,02,00,00,72,00,73,00,01,01,00,00,00,00,00,05,12,00,00,\
  00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Enum]
"0"="Root\\LEGACY_W3SVC\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001

RTE Input Parameters

Profile: m1
File Path: C:\Program Files\BenchCraft\m1.pro
Version: 3

Number of Engines: 32

Name: v10e
Description: v10e
Directory: c:\rtelogs\v10e.log
Machine: vrte10
Parameter Set: PARAM2
Index: 312500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER14723953
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20a
Description: v20a
Directory: c:\rtelogs\v20a.log
Machine: vrte20
Parameter Set: PARAM2
Index: 562500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER24872015
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20b
Description: v20b
Directory: c:\rtelogs\v20b.log
Machine: vrte20
Parameter Set: PARAM2
Index: 625000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER34966171
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v10f
Description: v10f
Directory: c:\rtelogs\v10f.log
Machine: vrte10
Parameter Set: PARAM2
Index: 375000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER45012500
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v10a
Description: v10a
Directory: c:\rtelogs\v10a.log
Machine: vrte10
Parameter Set: PARAM2
Index: 62500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER55066765

Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20c
Description: v20c
Directory: c:\rtelogs\v20c.log
Machine: vrte20
Parameter Set: PARAM2
Index: 687500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER65126187
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20d
Description: v20d
Directory: c:\rtelogs\v20d.log
Machine: vrte20
Parameter Set: PARAM2
Index: 750000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER75175640
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v10b
Description: v10b
Directory: c:\rtelogs\v10b.log
Machine: vrte10
Parameter Set: PARAM2
Index: 12500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER85211109
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v10c
Description: v10c
Directory: c:\rtelogs\v10c.log
Machine: vrte10
Parameter Set: PARAM2
Index: 187500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER95259171
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20e
Description: v20e
Directory: c:\rtelogs\v20e.log
Machine: vrte20
Parameter Set: PARAM2
Index: 812500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER105308218
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20f
Description: v20f
Directory: c:\rtelogs\v20f.log
Machine: vrte20
Parameter Set: PARAM2
Index: 875000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER115358203
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v10d
Description: v10d
Directory: c:\rtelogs\v10d.log
Machine: vrte10
Parameter Set: PARAM2
Index: 250000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER125397734
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v10g
Description: v10g
Directory: c:\rtelogs\v10g.log
Machine: vrte10
Parameter Set: PARAM2
Index: 437500000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER135452671
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v10h

Description: v10h
Directory: c:\rtelogs\v10h.log
Machine: vrte10
Parameter Set: PARAM2
Index: 500000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER145492328
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v20g
Description: v20g
Directory: c:\rtelogs\v20g.log
Machine: vrte20
Parameter Set: PARAM2
Index: 937500000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER155552765
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20h
Description: v20h
Directory: c:\rtelogs\v20h.log
Machine: vrte20
Parameter Set: PARAM2
Index: 1000000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER165598015
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v50a
Description: v50a
Directory: c:\rtelogs\v50a.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1562500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER2966335687
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v50b
Description: v50b
Directory: c:\rtelogs\v50b.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1625000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER3066392812
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v50c
Description: v50c
Directory: c:\rtelogs\v50c.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1687500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER3166432171
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v50d
Description: v50d
Directory: c:\rtelogs\v50d.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1750000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER3266504046
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v50e
Description: v50e
Directory: c:\rtelogs\v50e.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1812500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER3366550687
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v50f
Description: v50f
Directory: c:\rtelogs\v50f.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1875000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER3466629296

Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v50g
Description: v50g
Directory: c:\rtelogs\v50g.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1937500000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER3566700406
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v50h
Description: v50h
Directory: c:\rtelogs\v50h.log
Machine: vrte50
Parameter Set: PARAM2
Index: 2000000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER3666766140
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v40a
Description: v40a
Directory: c:\rtelogs\v40a.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1062500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER4367196046
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v40b
Description: v40b
Directory: c:\rtelogs\v40b.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1125000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER4467244484
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v40c
Description: v40c
Directory: c:\rtelogs\v40c.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1187500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER4567282265
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v40d
Description: v40d
Directory: c:\rtelogs\v40d.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1250000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER4667357593
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v40e
Description: v40e
Directory: c:\rtelogs\v40e.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1312500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER4767405796
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v40f
Description: v40f
Directory: c:\rtelogs\v40f.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1375000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER4867450406
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v40g

Description: v40g
Directory: c:\rtelogs\v40g.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1437500000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER4967505484
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v40h
Description: v40h
Directory: c:\rtelogs\v40h.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1500000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER5067590062
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Number of User groups: 32

Driver Engine: v10e
IIS Server: vclient10e
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1201 - 1500
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v10f
IIS Server: vclient10f
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1501 - 1801
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v10a
IIS Server: vclient10a
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1 - 300
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v10b
IIS Server: vclient10b
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 301 - 600
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v10c
IIS Server: vclient10c
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 601 - 900
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v10d
IIS Server: vclient10d
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 901 - 1200
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v10g
IIS Server: vclient10g
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1802 - 2102
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v10h
IIS Server: vclient10h
SQL Server: ibmserv2
Database: tpcc
User: sa

Protocol: HTML
w_id Range: 2103 - 2403
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v20a
IIS Server: vclient20a
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2404 - 2703
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v20b
IIS Server: vclient20b
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2704 - 3003
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v20c
IIS Server: vclient20c
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3004 - 3303
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v20d
IIS Server: vclient20d
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3304 - 3603
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v20e
IIS Server: vclient20e
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3604 - 3903
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v20f
IIS Server: vclient20f
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3904 - 4204
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v20g
IIS Server: vclient20g
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4205 - 4505
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v20h
IIS Server: vclient20h
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4506 - 4806
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v40a
IIS Server: vclient40a
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4807 - 5106
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v40b

IIS Server: vclient40b
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5107 - 5406
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v40c
IIS Server: vclient40c
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5407 - 5706
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v40d
IIS Server: vclient40d
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5707 - 6006
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v40e
IIS Server: vclient40e
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 6007 - 6306
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v40f
IIS Server: vclient40f
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 6307 - 6607
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v40g
IIS Server: vclient40g
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 6608 - 6908
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v40h
IIS Server: vclient40h
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 6909 - 7209
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v50a
IIS Server: vclient50a
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 7210 - 7509
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v50b
IIS Server: vclient50b
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 7510 - 7809
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v50c
IIS Server: vclient50c
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 7810 - 8109
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000

```
District id: 1
Scale Down: No

Driver Engine: v50d
IIS Server: vclient50d
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 8110 - 8409
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v50e
IIS Server: vclient50e
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 8410 - 8709
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v50f
IIS Server: vclient50f
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 8710 - 9010
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v50g
IIS Server: vclient50g
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 9011 - 9311
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v50h
IIS Server: vclient50h
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 9312 - 9612
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Number of Parameter Sets: 2

~Default
Default Parameter Set
                Txn     Think   Key     RT      RT      Menu
                Weight  Time    Time    Delay   Fence   Delay
New Order       10.00   12.05   18.01   0.10    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    5.00    0.10
Stock Level     1.00    5.05    2.01    0.10    20.00   0.10
Order Status    1.00    10.05   2.01    0.10    5.00    0.10

PARAM2
3 Tier
                Txn     Think   Key     RT      RT      Menu
                Weight  Time    Time    Delay   Fence   Delay
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    5.00    0.10
Stock Level     0.90    5.05    2.01    0.10    20.00   0.10
Order Status    0.90    10.05   2.01    0.10    5.00    0.10
Profile:        m1
File Path:      C:\Program Files\BenchCraft\m1.pro
Version:        3

Number of Engines: 32

Name: v10e
Description: v10e
Directory: c:\rtelogs\v10e.log
Machine: vrte10
Parameter Set: PARAM2
Index: 312500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER14723953
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20a
Description: v20a
Directory: c:\rtelogs\v20a.log
Machine: vrte20
Parameter Set: PARAM2
Index: 562500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER24872015
Connect Rate: 1000
```

Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20b
Description: v20b
Directory: c:\rtelogs\v20b.log
Machine: vrte20
Parameter Set: PARAM2
Index: 625000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER34966171
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v10f
Description: v10f
Directory: c:\rtelogs\v10f.log
Machine: vrte10
Parameter Set: PARAM2
Index: 375000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER45012500
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v10a
Description: v10a
Directory: c:\rtelogs\v10a.log
Machine: vrte10
Parameter Set: PARAM2
Index: 62500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER55066765
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20c
Description: v20c
Directory: c:\rtelogs\v20c.log
Machine: vrte20
Parameter Set: PARAM2
Index: 687500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER65126187
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20d
Description: v20d
Directory: c:\rtelogs\v20d.log
Machine: vrte20
Parameter Set: PARAM2
Index: 750000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER75175640
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v10b
Description: v10b
Directory: c:\rtelogs\v10b.log
Machine: vrte10
Parameter Set: PARAM2
Index: 12500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER85211109
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v10c
Description: v10c
Directory: c:\rtelogs\v10c.log
Machine: vrte10
Parameter Set: PARAM2
Index: 187500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER95259171
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20e
Description: v20e
Directory: c:\rtelogs\v20e.log
Machine: vrte20
Parameter Set: PARAM2
Index: 812500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER105308218
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20f
Description: v20f

Directory: c:\rtelogs\v20f.log
Machine: vrte20
Parameter Set: PARAM2
Index: 875000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER115358203
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v10d
Description: v10d
Directory: c:\rtelogs\v10d.log
Machine: vrte10
Parameter Set: PARAM2
Index: 250000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER125397734
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v10g
Description: v10g
Directory: c:\rtelogs\v10g.log
Machine: vrte10
Parameter Set: PARAM2
Index: 437500000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER135452671
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v10h
Description: v10h
Directory: c:\rtelogs\v10h.log
Machine: vrte10
Parameter Set: PARAM2
Index: 500000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER145492328
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v20g
Description: v20g
Directory: c:\rtelogs\v20g.log
Machine: vrte20
Parameter Set: PARAM2
Index: 937500000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER155552765
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20h
Description: v20h
Directory: c:\rtelogs\v20h.log
Machine: vrte20
Parameter Set: PARAM2
Index: 1000000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER165598015
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v50a
Description: v50a
Directory: c:\rtelogs\v50a.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1562500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER2966335687
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v50b
Description: v50b
Directory: c:\rtelogs\v50b.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1625000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER3066392812
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v50c
Description: v50c
Directory: c:\rtelogs\v50c.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1687500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER3166432171
Connect Rate: 1000

Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v50d
Description: v50d
Directory: c:\rtelogs\v50d.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1750000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER3266504046
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v50e
Description: v50e
Directory: c:\rtelogs\v50e.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1812500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER3366550687
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v50f
Description: v50f
Directory: c:\rtelogs\v50f.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1875000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER3466629296
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v50g
Description: v50g
Directory: c:\rtelogs\v50g.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1937500000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER3566700406
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v50h
Description: v50h
Directory: c:\rtelogs\v50h.log
Machine: vrte50
Parameter Set: PARAM2
Index: 2000000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER3666766140
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v40a
Description: v40a
Directory: c:\rtelogs\v40a.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1062500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER4367196046
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v40b
Description: v40b
Directory: c:\rtelogs\v40b.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1125000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER4467244484
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v40c
Description: v40c
Directory: c:\rtelogs\v40c.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1187500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER4567282265
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v40d
Description: v40d

Directory: c:\rtelogs\v40d.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1250000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER4667357593
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v40e
Description: v40e
Directory: c:\rtelogs\v40e.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1312500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER4767405796
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v40f
Description: v40f
Directory: c:\rtelogs\v40f.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1375000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER4867450406
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v40g
Description: v40g
Directory: c:\rtelogs\v40g.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1437500000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER4967505484
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v40h
Description: v40h
Directory: c:\rtelogs\v40h.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1500000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER5067590062
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Number of User groups: 32

Driver Engine: v10e
IIS Server: vclient10e
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1201 - 1500
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v10f
IIS Server: vclient10f
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1501 - 1801
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v10a
IIS Server: vclient10a
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1 - 300
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v10b
IIS Server: vclient10b
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 301 - 600
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v10c
IIS Server: vclient10c
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 601 - 900
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v10d
IIS Server: vclient10d
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 901 - 1200
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v10g
IIS Server: vclient10g
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1802 - 2102
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v10h
IIS Server: vclient10h
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2103 - 2403
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v20a
IIS Server: vclient20a
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2404 - 2703
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v20b
IIS Server: vclient20b
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2704 - 3003
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v20c
IIS Server: vclient20c
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3004 - 3303
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v20d
IIS Server: vclient20d
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3304 - 3603
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v20e
IIS Server: vclient20e
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3604 - 3903
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v20f
IIS Server: vclient20f
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3904 - 4204
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal

User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v20g
IIS Server: vclient20g
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4205 - 4505
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v20h
IIS Server: vclient20h
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4506 - 4806
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v40a
IIS Server: vclient40a
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4807 - 5106
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v40b
IIS Server: vclient40b
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5107 - 5406
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v40c
IIS Server: vclient40c
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5407 - 5706
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v40d
IIS Server: vclient40d
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5707 - 6006
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v40e
IIS Server: vclient40e
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 6007 - 6306
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v40f
IIS Server: vclient40f
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 6307 - 6607
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v40g
IIS Server: vclient40g
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 6608 - 6908
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v40h
IIS Server: vclient40h
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML

w_id Range: 6909 - 7209
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v50a
IIS Server: vclient50a
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 7210 - 7509
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v50b
IIS Server: vclient50b
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 7510 - 7809
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v50c
IIS Server: vclient50c
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 7810 - 8109
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v50d
IIS Server: vclient50d
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 8110 - 8409
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v50e
IIS Server: vclient50e
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 8410 - 8709
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v50f
IIS Server: vclient50f
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 8710 - 9010
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v50g
IIS Server: vclient50g
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 9011 - 9311
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v50h
IIS Server: vclient50h
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 9312 - 9612
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Number of Parameter Sets: 2

~Default
Default Parameter Set

	Txn Weight	Think Time	Key Time	RT Delay	RT Fence	Menu Delay
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	5.00	0.10
Stock Level	1.00	5.05	2.01	0.10	20.00	0.10

Order Status 1.00 10.05 2.01 0.10
5.00 0.10

PARAM2
3 Tier
Txn Think Key RT RT Menu
Weight Time Time Delay Fence Delay
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
5.00 0.10
Stock Level 0.90 5.05 2.01 0.10
20.00 0.10
Order Status 0.90 10.05 2.01 0.10
5.00 0.10 Profile: m1
File Path: C:\Program Files\BenchCraft\m1.pro
Version: 3

Number of Engines: 32

Name: v10e
Description: v10e
Directory: c:\rtelogs\v10e.log
Machine: vrte10
Parameter Set: PARAM2
Index: 312500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER14723953
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20a
Description: v20a
Directory: c:\rtelogs\v20a.log
Machine: vrte20
Parameter Set: PARAM2
Index: 562500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER24872015
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20b
Description: v20b
Directory: c:\rtelogs\v20b.log
Machine: vrte20
Parameter Set: PARAM2
Index: 625000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER34966171
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v10f
Description: v10f
Directory: c:\rtelogs\v10f.log
Machine: vrte10
Parameter Set: PARAM2
Index: 375000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER45012500
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v10a
Description: v10a
Directory: c:\rtelogs\v10a.log
Machine: vrte10
Parameter Set: PARAM2
Index: 62500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER55066765
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20c
Description: v20c
Directory: c:\rtelogs\v20c.log
Machine: vrte20
Parameter Set: PARAM2
Index: 687500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER65126187
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20d
Description: v20d
Directory: c:\rtelogs\v20d.log
Machine: vrte20
Parameter Set: PARAM2
Index: 750000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER75175640
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v10b
Description: v10b

Directory: c:\rtelogs\v10b.log
Machine: vrte10
Parameter Set: PARAM2
Index: 12500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER85211109
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v10c
Description: v10c
Directory: c:\rtelogs\v10c.log
Machine: vrte10
Parameter Set: PARAM2
Index: 187500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER95259171
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20e
Description: v20e
Directory: c:\rtelogs\v20e.log
Machine: vrte20
Parameter Set: PARAM2
Index: 812500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER105308218
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20f
Description: v20f
Directory: c:\rtelogs\v20f.log
Machine: vrte20
Parameter Set: PARAM2
Index: 875000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER115358203
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v10d
Description: v10d
Directory: c:\rtelogs\v10d.log
Machine: vrte10
Parameter Set: PARAM2
Index: 250000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER125397734
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v10g
Description: v10g
Directory: c:\rtelogs\v10g.log
Machine: vrte10
Parameter Set: PARAM2
Index: 437500000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER135452671
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v10h
Description: v10h
Directory: c:\rtelogs\v10h.log
Machine: vrte10
Parameter Set: PARAM2
Index: 500000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER145492328
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v20g
Description: v20g
Directory: c:\rtelogs\v20g.log
Machine: vrte20
Parameter Set: PARAM2
Index: 937500000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER155552765
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v20h
Description: v20h
Directory: c:\rtelogs\v20h.log
Machine: vrte20
Parameter Set: PARAM2
Index: 1000000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER165598015
Connect Rate: 1000

Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v50a
Description: v50a
Directory: c:\rtelogs\v50a.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1562500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER2966335687
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v50b
Description: v50b
Directory: c:\rtelogs\v50b.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1625000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER3066392812
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v50c
Description: v50c
Directory: c:\rtelogs\v50c.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1687500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER3166432171
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v50d
Description: v50d
Directory: c:\rtelogs\v50d.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1750000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER3266504046
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v50e
Description: v50e
Directory: c:\rtelogs\v50e.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1812500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER3366550687
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v50f
Description: v50f
Directory: c:\rtelogs\v50f.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1875000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER3466629296
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v50g
Description: v50g
Directory: c:\rtelogs\v50g.log
Machine: vrte50
Parameter Set: PARAM2
Index: 1937500000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER3566700406
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v50h
Description: v50h
Directory: c:\rtelogs\v50h.log
Machine: vrte50
Parameter Set: PARAM2
Index: 2000000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER3666766140
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v40a
Description: v40a

Directory: c:\rtelogs\v40a.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1062500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER4367196046
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v40b
Description: v40b
Directory: c:\rtelogs\v40b.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1125000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER4467244484
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v40c
Description: v40c
Directory: c:\rtelogs\v40c.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1187500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER4567282265
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v40d
Description: v40d
Directory: c:\rtelogs\v40d.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1250000000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER4667357593
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v40e
Description: v40e
Directory: c:\rtelogs\v40e.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1312500000
Seed: 4678
Configured Users: 3000
Pipe Name: DRIVER4767405796
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v40f
Description: v40f
Directory: c:\rtelogs\v40f.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1375000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER4867450406
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: v40g
Description: v40g
Directory: c:\rtelogs\v40g.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1437500000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER4967505484
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: v40h
Description: v40h
Directory: c:\rtelogs\v40h.log
Machine: vrte40
Parameter Set: PARAM2
Index: 1500000000
Seed: 4678
Configured Users: 3010
Pipe Name: DRIVER5067590062
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: 3000
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Number of User groups: 32

Driver Engine: v10e
IIS Server: vclient10e
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1201 - 1500
w_id Min Warehouse: 1

w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v10f
IIS Server: vclient10f
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1501 - 1801
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v10a
IIS Server: vclient10a
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1 - 300
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v10b
IIS Server: vclient10b
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 301 - 600
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v10c
IIS Server: vclient10c
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 601 - 900
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v10d
IIS Server: vclient10d
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 901 - 1200
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v10g
IIS Server: vclient10g
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1802 - 2102
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v10h
IIS Server: vclient10h
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2103 - 2403
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v20a
IIS Server: vclient20a
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2404 - 2703
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v20b
IIS Server: vclient20b
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2704 - 3003
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v20c
IIS Server: vclient20c
SQL Server: ibmserv2
Database: tpcc

User: sa
Protocol: HTML
w_id Range: 3004 - 3303
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v20d
IIS Server: vclient20d
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3304 - 3603
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v20e
IIS Server: vclient20e
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3604 - 3903
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v20f
IIS Server: vclient20f
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3904 - 4204
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v20g
IIS Server: vclient20g
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4205 - 4505
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v20h
IIS Server: vclient20h
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4506 - 4806
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v40a
IIS Server: vclient40a
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4807 - 5106
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v40b
IIS Server: vclient40b
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5107 - 5406
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v40c
IIS Server: vclient40c
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5407 - 5706
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v40d
IIS Server: vclient40d
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5707 - 6006
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v40e
IIS Server: vclient40e
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 6007 - 6306
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v40f
IIS Server: vclient40f
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 6307 - 6607
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v40g
IIS Server: vclient40g
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 6608 - 6908
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v40h
IIS Server: vclient40h
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 6909 - 7209
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v50a
IIS Server: vclient50a
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 7210 - 7509
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v50b
IIS Server: vclient50b
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 7510 - 7809
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v50c
IIS Server: vclient50c
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 7810 - 8109
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v50d
IIS Server: vclient50d
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 8110 - 8409
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v50e
IIS Server: vclient50e
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 8410 - 8709
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3000
District id: 1
Scale Down: No

Driver Engine: v50f
IIS Server: vclient50f
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 8710 - 9010
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal

User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v50g
IIS Server: vclient50g
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 9011 - 9311
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Driver Engine: v50h
IIS Server: vclient50h
SQL Server: ibmserv2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 9312 - 9612
w_id Min Warehouse: 1
w_id Max Warehouse: 9612
Scale: Normal
User Count: 3010
District id: 1
Scale Down: No

Number of Parameter Sets: 2

~Default
Default Parameter Set

	Txn Weight	Think Time	Key Time	RT Delay	RT Fence	Menu Delay
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	5.00	0.10
Stock Level	1.00	5.05	2.01	0.10	20.00	0.10
Order Status	1.00	10.05	2.01	0.10	5.00	0.10

PARAM2
3 Tier

	Txn Weight	Think Time	Key Time	RT Delay	RT Fence	Menu Delay
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	5.00	0.10
Stock Level	0.90	5.05	2.01	0.10	20.00	0.10
Order Status	0.90	10.05	2.01	0.10	5.00	0.10

Appendix D: 60-Day Space

TPC-C 60-Day Space Requirements						
Warehouses	9,612				tpmC	119,115.16
Table	Rows	Data KB	Index KB	Extra 5% KB	8HR Space	Total Space KB
Warehouse	9,612	1,040	24	53.20		1,117.20
District	96,120	10,832	48	544.00		11,424.00
Item	100,000	9,528	40	478.40		10,046.40
New-Order	86,508,000	1,541,352	3,912		768,960.00	2,314,224.00
History	288,360,000	17,215,528	66,808		3,426,696.99	20,709,032.99
Orders	288,360,000	9,415,840	4,593,160		2,777,668.12	16,786,668.38
Customer	288,360,000	209,716,368	13,087,000	11,140,168.40		233,943,536.40
Order-Line	2,883,595,034	192,239,672	454,928		38,206,988.12	230,901,588.12
Stock	961,200,000	307,584,000	650,968	15,411,748.40		323,646,716.40
Totals		737,734,160	18,856,888	26,552,992.40	45,180,313.48	828,324,353.88
Segment	LogDev Cnt.	Segment Size	Needed	Overhead		Not Needed
misc	2	156,672,000	270,734,101	2,705,040		(116,769,442.09)
big	7	81,920,000	557,590,253	5,575,903		(481,246,155.33)
master, msdb,model	1	13,312	13,312			-
tpcc_root	1	8,192	8,192			-
tempdb	1	8,704	8,704			-
Totals		238,622,208.00	828,354,561.88	8,283,243.54		(598,015,597.42)
Dynamic Space	218,871,040.00	Sum of Data for Order, Order-Line and History				
Static Space	572,556,243.94	Data + Index + 5% Space + Overhead - Dynamic Space				
Free Space	45,210,521.48	Total Segment Size - Dynamic Space - Static Space - Not needed				
Daily Growth	43,397,185.10	(Dynamic Space/W * 62.5)* tpmC				
Daily Spread	(19,885,256.17)	Free Space - 1.5 * Daily Growth (Zero If Negative)				
60-Day Space (KB)	3,176,387,349.95	Static Space + 60 (Daily Growth + Daily Spread)				
60-Day Space (GB)	3,029.24	60-Day Space in GB (Excludes OS,Paging and RDBMS Logs)				
Available (GB)	12,799.08	Total storage configured and available for database, minus logs, in RAID-0 configuration.				
Log File Storage Requirement						
Log Size (MB)	263,000.00	Total Size of Log File				
% Log Used	32.6903	% of Log File Used During Entire Run				
Total N-O Txn	19,194,842.00	Total Count of New-Order Transactions during Entire Run				
Log / N-O Txn	4.59	KB of Log per New-Order Transaction				
8 Hour Log (GB)	250.09	8 Hours of Log in GB (Excluding Space for Redundancy)				
Log Configured (GB)	474.04					
Disk Capacity	MB	GB				
36.4GB	35,472	33.86				
Space Usage	GB Needed		Disks Priced	Disk Size	GB Priced	GB Usable
60-Day (RAID-0)	3,029.24		378	36.4GB	12,799.08	12,799.08
					Total DB	12,799.08
8hr Log (RAID-1)	250.09		28	36.4GB	948.08	474.04
					Total Log	474.04
OS, SQL Server	4.00		1	36.4GB	33.86	33.86
Total Space	3,283.33		407		13,781.02	13,306.98

Appendix E: Third-Party Quotations

Microsoft Corporation
One Microsoft Way
Redmond, WA 98052-6399

Tel 425 882 8080
Fax 425 936 7329
http://www.microsoft.com/

Microsoft

April 3, 2003

IBM Corporation
Chris King
3039 Cornwallis Road
Research Triangle Park,
NC 27709

Ms. King:

Here is the information you requested regarding pricing for several Microsoft products to be used in conjunction with your TPC-C benchmark testing.

All pricing shown is in US Dollars ($).

Part Number	Description	Unit Price	Quantity	Price
810-00846	**SQL Server 2000 Enterprise Edition** *Per processor licensing* *Discount Schedule: Open Program Level C* *Unit Price reflects a 17% discount from the retail unit price of $19,999.*	$16,541	8	$132,328
C11-00821	**Windows 2000 Server** *Server license only - No CALs* *Discount Schedule: Open Program - No Level* *Unit Price reflects a 8% discount from the retail unit price of $799.*	$738	4	$2,952
254-00170	**Visual C++ Standard** *No discounts applied*	$109	1	$109
PRO-PRORS-16U-01	**Database Server Support Package** *1 Year Term*	$1,950	3	$5,850

All products are currently orderable through Microsoft's normal distribution channels.

This quote is valid for the next 90 days.

If we can be of any further assistance, please contact Jamie Reding at (425) 703-0510 or jamiere@microsoft.com.

Reference ID: PCchki0303044259
Please include this Reference ID in any correspondence regarding this price quote.

QUOTATION

Date 04/04/2003
Quote No. 98037017

Customer
Attn: Chris King
IBM/RTP
3039 Cornwallis Road
RTP, NC 27709
919-543-0349
919-543-4045 (fax)

Quoted By: Kristina Homan
G2FSE: CRAIG BORSACK
Manufacturer QLOGIC
Quote valid for 30 days, unless noted
F.O.B.: Shipping Point

cc:

Please accept the following quotation on behalf of QLOGIC and G2.

L/I	Mfg PN	Cust PN	Qty	Unit Price	Leadtime/ARO
1	QLA2350-BK		1	$2,095.000	10-12 weeks
	Unit price quote is valid for quantity of 1-500.				

Thank you for the opportunity to quote your requirements.
Please let me know if you have any questions or need additional

ATLANTA
1-800-648-8978
770/729-1896Fax

HUNTSVILLE
1-800-648-8978
256/533-5525Fax

RALEIGH
1-800-648-8978
919/481-1958Fax

TAMPA
1-800-648-8978
256/533-5525Fax

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HEWLETT PACKARD
IBM - SERVERS
LIBRARIES/ARRAYS
MAGNETO OPTICAL
MOTHERBOARD
MULTIMEDIA
NAS STORAGE
NETWORKING
NOTEBOOK DRIVES
PC PARTS
PORTABLES
POWER PROTECTION
SERVERS
SOFTWARE
STORAGE COUNTRY
SUN
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TAPE_DRIVES
TAPE_MEDIA
VIDEO
VIDEO CARD
VIDEO DISPLAYS
VIDEO EDITING
KINGSTON_MEMORY

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Product Info			Price	QTY	A
08P3834	MYLEX EXTREMERAID 2000 2INT CHAN 4EXT UHD CH U160 SCSI 32MB.(E2000-4-32BD)		$1,217.00	1	
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08P3835	MYLEX EXTREMERAID 2000 2INT CHAN 4EXT UHD CH U160 SCSI 64MB. (E2000-4-64BD)		$1,455.00	1	
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08P2707	MYLEX EXTREMERAID 3000 1INT ULTRA2 2EXT FIBRE CH 32MB. (E3000-2-32BD)		$1,499.00	1	
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08P2708	MYLEX EXTREMERAID 3000 1INT ULTRA2 2EXT FIBRE CH 64MB (E3000-2-64BD)		$1,653.00	1	
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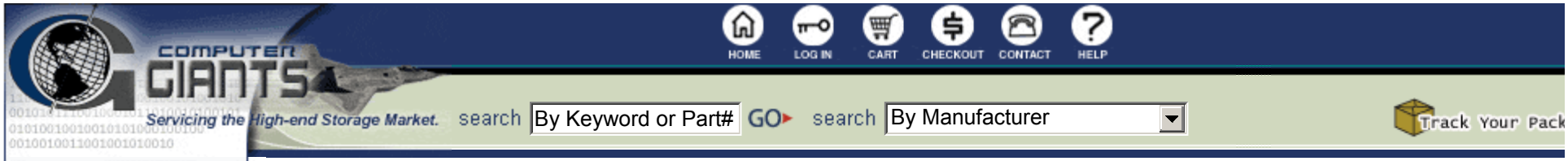

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- MOTHERBOARD
- MULTIMEDIA
- NAS STORAGE
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- VIDEO CARD
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Product Info			Price	QTY	A
1932500	ADAPTEC - ANA-64044 LV KIT 4PORT 66MHZ 64 BIT 10/100BTX NIC .		$511.00	1	
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Product Detail

	Plat.	Item #	Manufacturer/Product	Availability	Price
ADD TO CART	PC	252277	IBM Features and Options IBM UPS 500 - UPS - 500 VA - UPS battery - lead acid - 5 Ah	**Special Order**	**$101.95**

OPTIONS by IBM.

Don't let power problems cost you your work or equipment.

The IBM DataSaver 500 UPS provides battery backup and helps protect computer systems from blackouts, brownouts and surges. Network and phone line surge protection helps protect surges from entering two connected devices sharing a phone line. It has a 10-minute battery backup time that enables you to save precious data and safely shutdown your systems in the event of a power outage, and features 6 outlets to protect multiple devices from power problems. Power management shutdown software saves and closes all open files and applications, and provides unattended operating system shutdown.

Product Features

Product Description	IBM UPS 500 - UPS - 500 VA - UPS battery - lead acid - 5 Ah
Output connector(s)	6 x power NEMA 5-15
Output Voltage	AC 120 V ± 5%
Input Voltage	AC 120 V
Battery Form Factor	Plug-in module
Average Run Time	10 min
Capacity	5 Ah
Power Provided	500 VA
Device Type	UPS
Battery	UPS battery - lead acid - 12 V
Warranty	3 years warranty
Weight	17.2 lbs
Dimensions (WxDxH)	6.9 in x 13 in x 3.9 in
Form Factor	External

Product Details

Labor Warranty	3 Years
Product Warranty	3 Years
Shipping Weight	12 lbs
Mfr. Part No.	33L3477

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