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

TPC-C Version 5.0

Submitted for Review
November 4, 2002

First Edition - November 2002

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Notes

[1] GHz and MHz only measure 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 5.0, 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** .NET Enterprise Server 2003 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.

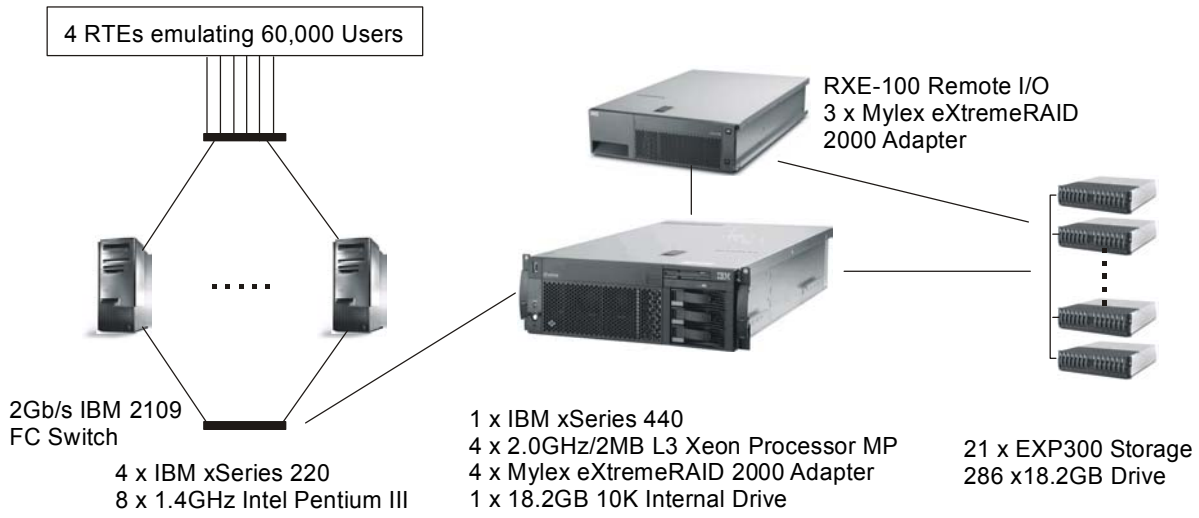
Hardware	Software	Total System Cost	tpmC	$/tpmC	Total Solution Availability Date
IBM @server xSeries 440	Microsoft SQL Server 2000 Enterprise Edition Microsoft Windows .NET Enterprise Server 2003	$426,785	74,206.27	$5.75	March 31, 2003

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

IBM	**IBM @server xSeries 440 c/s with Microsoft SQL Server 2000**		TPC-C Rev. 5.0
			Report Date: Nov. 4, 2002

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
$426,785	**74,206.27 tpmC**	**$5.75 / tpmC**	**March 31, 2003**

Processors	Database Manager	Operating System	Other Software	Number of Users
Server: 4 Intel® Xeon™ Processor MP 2.0GHz Clients: 8 Pentium III 1.4GHz	**Microsoft® SQL Server 2000 Enterprise Edition SP3**	**Microsoft Windows® .NET Enterprise Server 2003**	**Microsoft Visual C++ 6.0 Win32 Microsoft COM+**	**60,000**



System Component	Qty	Server:	Qty	Each Client:
Processors	**4**	**2.0GHz Xeon Processor MP w/2MB L3 Cache**	**2**	**1.4GHz Pentium III w/512KB L2 Cache**
Memory	**16**	**2GB ECC SDRAM**	**3**	**256MB**
Disk Controllers	**7**	**Mylex eXtremeRAID 2000 Adapter**	**1**	**Ultra160 SCSI Interface**
Disk Drives	**286**	**18.2GB (15000 rpm)**	**1**	**18.2GB Hard Disk**
	1	**18.2GB (10000 rpm)**		
Total Storage		**4858.91GB**		
Tape Drive	**1**	**20/40GB SCSI Tape Drive**		

IBM Corporation	IBM @server xSeries 440 c/s with Microsoft SQL Server 2000	TPC-C Rev. 5.0
		Report Date: Nov. 4, 2002

Description	Order Number	Third-Party Brand	Third-Party Pricing	Unit Price	Qty	Ext. Price	3-Yr. Maint.*
Server Hardware							
IBM @server xSeries 440 Four 2.0GHz/2MB Xeon Processor MP	8687-7RX	IBM	1	$40,299	1	$40,299	$3,390
2GB PC133 ECC SDRAM RDIMM	31P8840	IBM	1	4,999	16	79,984	0
Mylex eXtremeRAID 2000 Adapter***	08P3834	Mylex	2	1,228	9	11,052	0
18.2GB 10K Ultra160 SCSI Drive	06P5754	IBM	1	275	1	275	0
QLogic 2350 Fibre Channel-VI Adapter***	QLA2350-BK	QLogic	3	2,568	3	7,704	0
Netfinity 4.2M Ultra2 SCSI Cable	03K9311	IBM	1	105	21	2,205	0
IBM UPS 500	33L3477	IBM	1	99	1	99	0
E54 14" (13.8" Viewable) Color Monitor*	633147N	IBM	1	139	1	139	90
20/40GB Internal SCSI Tape Drive	00N7991	IBM	1	769	1	769	0
NetBAY42 Standard Rack Cabinet	9306421	IBM	1	1,439	2	2,878	600
Storage Hardware							
IBM EXP300 Rack Storage Enclosure*	35311RU	IBM	1	3,179	21	66,759	4,200
18.2GB 15K Ultra160 SCSI Drive	06P5767	IBM	1	439	286	125,554	0
IBM RXE-100 Remote Expansion Encl.*	8684-1RX	IBM	1	4,569	1	4,569	1,050
					Subtotal	$342,385	$9,330
Server Software							
Microsoft SQL Server 2000 EE	810-00846	Microsoft	4	16,541	4	$66,164	$0
Microsoft .NET Enterprise Server 2003	N/A	Microsoft	4	2,699	1	2,699	0
Database Server Support Package 1Year	PROPRORS16U01	Microsoft	4	1,950	3		5,850
					Subtotal	$68,863	$5,850
Client Hardware							
IBM @server xSeries 220* One 256MB 133MHz ECC SDRAM	8646-5AX	IBM	1	1,409	4	$5,636	$2,992
1.4GHz/512KB Pentium III Processor	25P2090	IBM	1	699	4	2,796	0
256MB 133MHz ECC SDRAM RDIMM	10K0020	IBM	1	219	8	1,752	0
18.2GB 10K Ultra160 SCSI Drive	06P5754	IBM	1	275	4	1,100	0
IBM 10/100 Dual-Port Server Adapter	06P4901	IBM	1	209	8	1,672	0
QLogic 2350 Fibre Channel-VI Adapter***	QLA2350-BK	QLogic	3	2,568	4	10,272	0
E54 15" (13.8" Viewable) Color Monitor*	633147N	IBM	1	139	4	556	360
					Subtotal	$24,784	$3,352
Client Software							
Microsoft Windows 2000 Server w/COM+	C11-00821	Microsoft	4	738	4	2,952	0
Microsoft Visual C++ Professional 6.0	048-00317	Microsoft	4	549	1	549	0
					Subtotal	$3,501	$0
User Connectivity							
SAN Fibre Channel 8-Port Switch*	2109S08	IBM	1	16,518	1	16,518	2,160
IBM 5M LC-LC Fibre Channel Cable	19K1248	IBM	1	129	5	645	0
					Subtotal	$17,163	$2,160
					Total	$455,696	$20,692
Large volume discount of 14% on IBM Hardware; prices will vary if purchased separately. See Microsoft quote for software discount.			1			(49,603)	$0

Notes: * The standard 3-year warranties on IBM hardware have been upgraded to 7x24, 4-hour response time coverage.
** Five-year warranty. *** 10% or minimum 2 spares are added in place of on-site service (products have a 5-year return-to-vendor-warranty)
Pricing: 1 - IBM Corp.; 2 - Computer Giants; 3 - QLogic; 4 - Microsoft Corp.
Audited by Brad Askins of InfoSizing, Inc.

Three-Year Cost of Ownership:	$426,785
tpmC Rating:	74,206.27
$ / tpmC:	$5.75

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 specification. If you find that stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org. Thank you.

Numerical Quantities Summary

MQTh, Computed Maximum Qualified Throughput:	74,206.27 tpmC

Response Times (in seconds)	Average	Maximum	90 %-tile
New-Order	0.50	5.25	0.87
Payment	0.46	4.61	0.82
Delivery	0.27	1.63	0.53
Stock Level	0.82	2.90	1.24
Order Status	0.46	5.17	0.82
Delivery (Deferred)	0.13	3.77	0.18
Menu	0.27	3.26	0.54

Transaction Mix (in percent of total transactions)	Total Occurrences	Percent
New-Order	8,904,752	44.94
Payment	8,527,735	43.04
Delivery	794,541	4.01
Stock-Level	793,901	4.01
Order Status	794,112	4.01

Emulation Delay (in seconds)		Response Time	Menu
New-Order		0.1	0.1
Payment		0.1	0.1
Delivery		0.1	0.1
Stock-Level		0.1	0.1
Order Status		0.1	0.1

Keying/Think Times (in seconds)	Average	Minimum	Maximum
New Order	18.01 / 12.05	18.00 / 0.00	18.05 / 120.52
Payment	3.01 / 12.05	3.00 / 0.00	3.05 / 120.51
Delivery	2.01 / 5.05	2.00 / 0.00	2.04 / 50.51
Stock Level	2.01/ 5.05	2.00 / 0.00	2.04 / 50.51
Order Status	2.01/ 10.05	2.00 / 0.00	2.04 / 100.51

Test Duration	
Ramp-up time	33 minutes
Measurement interval	120 minutes
Number of transactions (all types) completed in measurement interval	20,609,633
Ramp-down time	4 minutes
Number of checkpoints in measurement interval	4
Checkpoint interval	30 minutes

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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 5.0.

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 and the Ethernet hubs. Appendix C contains a listing of the RTE scripts and inputs used in the benchmark testing.

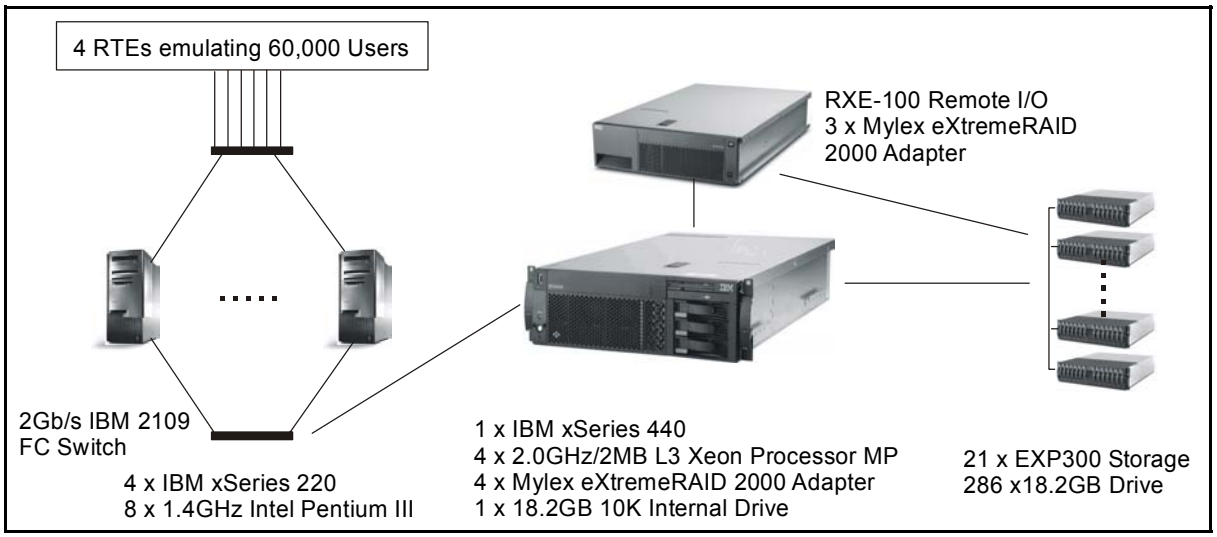
The measured configuration used four IBM xSeries 220 systems, each configured with two 1.4GHz Pentium III processors, as clients, which executed the terminal I/O and submitted transactions to COM+ servers, which were also running on the clients. These COM+ servers forwarded the transaction requests to 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 six PCI slots and three PCI buses to the base server. The RAID and LAN controllers were optimally 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 3
Mylex eXtremeRAID 2000	Server Slot 5
QLogic 2350 FC -VI Adapter	Server Slot 6
Mylex eXtremeRAID 2000	RXE-100 Slot 1
Mylex eXtremeRAID 2000	RXE-100 Slot 3
Mylex eXtremeRAID 2000	RXE-100 Slot 5

Measured and Priced Configuration

The measured and priced configurations were identical.



Clause 1: Logical Database Design Related Items

Table Definitions

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

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

Physical Organization of the Database

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

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

Insert and Delete Operations

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

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

Horizontal or Vertical Partitioning

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

Partitioning was not used in this benchmark.

Replication

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

Replication was not used in this benchmark.

Table Attributes

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

No additional attributes were used in this benchmark.

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 5.0 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 220 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	85.02
Remote warehouse payment transactions	14.98
Non-Primary Key Access	
Payment transactions using C_LAST	60.02
Order-Status transactions using C_LAST	59.99
Delivery	
Delivery transactions skipped	0
Transaction Mix	
New-Order	44.94
Payment	43.04
Delivery	4.01
Stock Level	4.01
Order Status	4.01

Deferred Delivery Mechanism

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

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

The source code is listed in Appendix A.

Clause 3: Transaction and System Properties Related Items

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

Atomicity Requirements

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

All ACID tests were conducted according to specification.

Completed Transactions

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

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

Aborted Transactions

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

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

Consistency Requirements

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

Consistency conditions one through four were tested using a shell script 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 shell scripts to issue queries to the database. Each script 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 6,160 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.

Combined Loss of Log and Loss of System Test (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. The test started with a full load with all users submitting transactions. A checkpoint was issued, and the system continued to run for another 5 minutes.
3. One of the log disk drives was removed. Since the log disk was mirrored, SQL Server continued to process transactions without interruption.
4. The test continued for another 3 minutes.
5. The server under test was powered off, which removed power from the system and the memory.
6. The server was powered on again.
7. SQL Server was started to initiate automatic recovery from its log.
8. Step 1 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.

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 originally built with 6,160 warehouses, and the audited run used 6,000 warehouses.

Table 4-1. Initial Cardinality of Tables

Table Name	Rows
Warehouse	6,160
District	61,600
Item	100,000
New Order	55,440,000
History	184,800,000
Orders	184,800,000
Customer	184,800,000
Order Line	1,847,997,761
Stock	616,000,000
Inactive Warehouses	160

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 system to meet the 8-hour steady state requirement.

Figure 4-2. Data Distribution for the Benchmarked Configuration

Controller	Drives	Partition	Size	Use
0	28 - 18.2GB	E:	190000MB	Logfile
1	42 - 18.2GB	F: Y:	80000MB 300000MB (NTFS)	Customer and Stock Backup 1
2	42 - 18.2GB	G: Z:	80000MB 300000MB (NTFS)	Customer and Stock Backup 2
3	42 - 18.2GB	H:	80000MB	Customer and Stock
4	42 - 18.2GB	I:	80000MB	Customer and Stock
5	42 - 18.2GB	J:	80000MB	Customer and Stock
6	48 - 18.2GB	K:	170000MB	Misc.

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: 74,206.27 tpmC
Price per tpmC: $5.75 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	0.50	5.25	0.87
Payment	0.46	4.61	0.82
Delivery	0.27	1.63	0.53
Stock Level	0.82	2.90	1.24
Order Status	0.46	5.17	0.82
Delivery (Deferred)	0.13	3.77	0.18
Menu	0.27	3.26	0.54

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	3.01 / 12.05	3.00 / 0.00	3.05 / 120.51
Delivery	2.01 / 5.05	2.00 / 0.00	2.04 / 50.51
Stock Level	2.01/ 5.05	2.00 / 0.00	2.04 / 50.51
Order Status	2.01/ 10.05	2.00 / 0.00	2.04 / 100.51

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

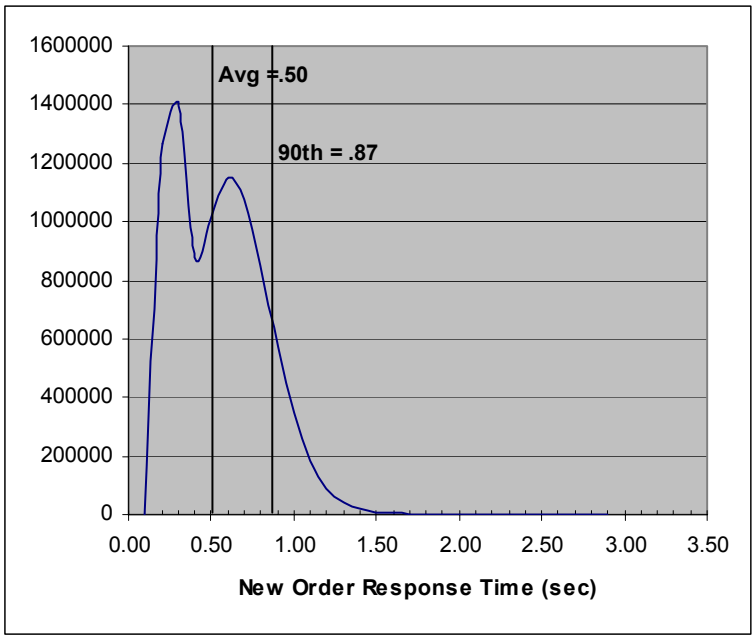


Figure 5-2. Payment Transaction - Response Time Frequency Distribution

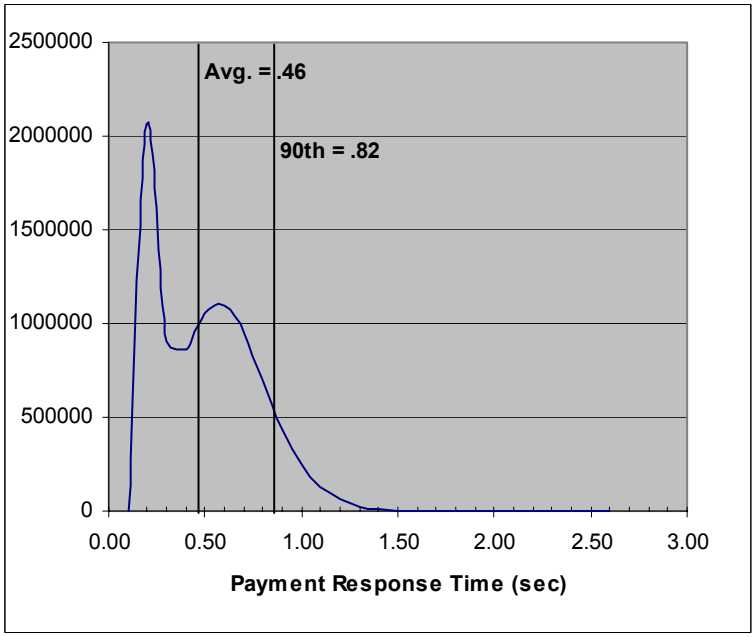


Figure 5-3. Order-Status Transaction - Response Time Frequency Distribution

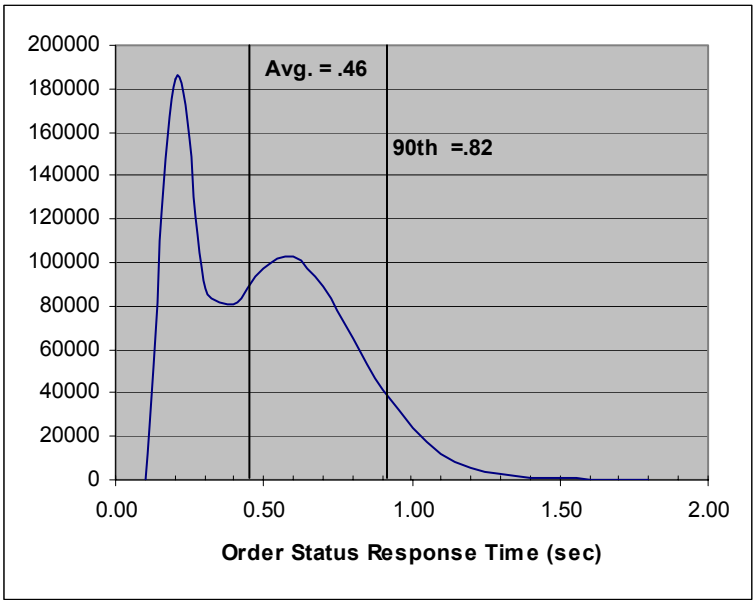


Figure 5-4. Delivery Transaction - Response Time Frequency Distribution

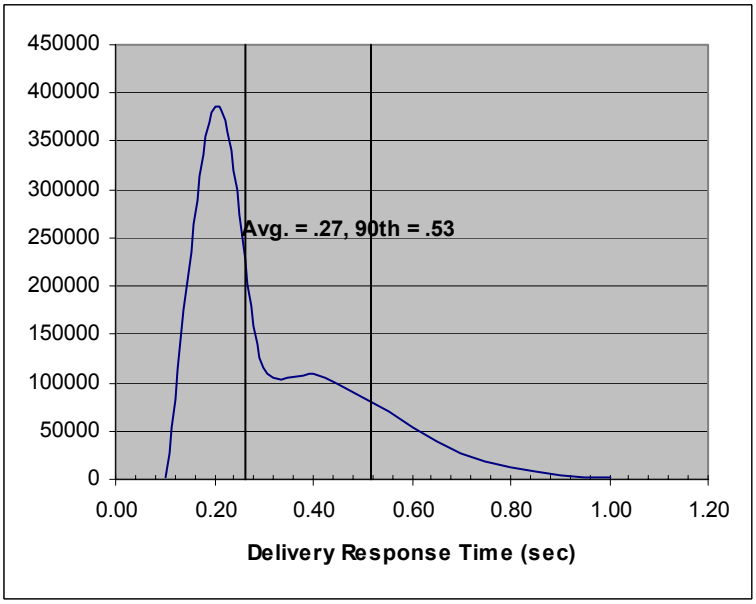
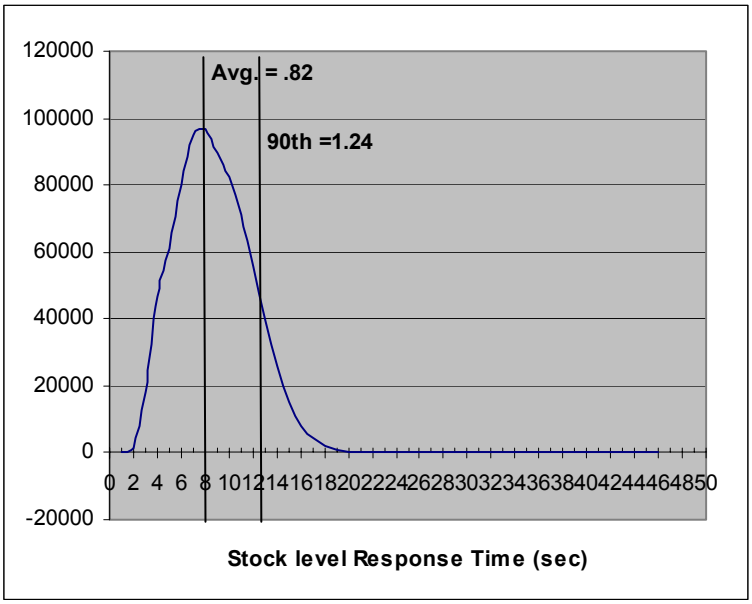


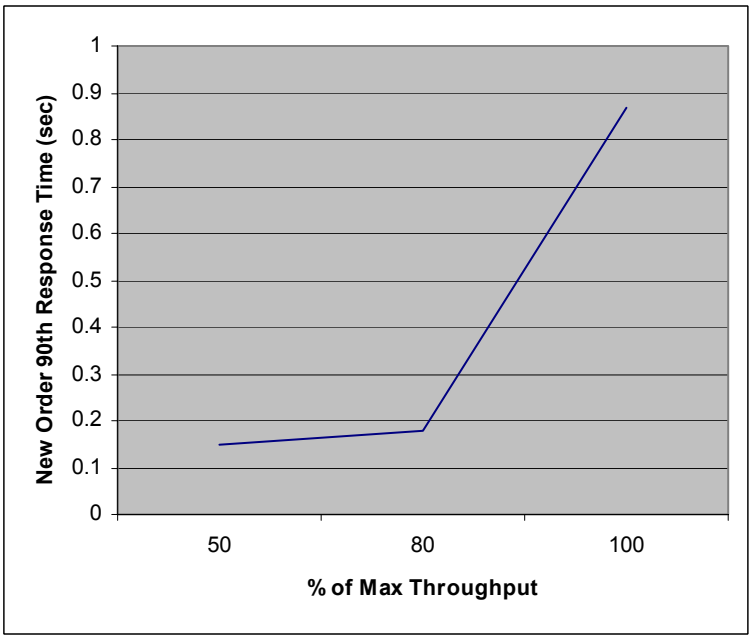
Figure 5-5. Stock-Level Transaction - Response Time Frequency Distribution



Performance Curve for Response Time vs. Throughput

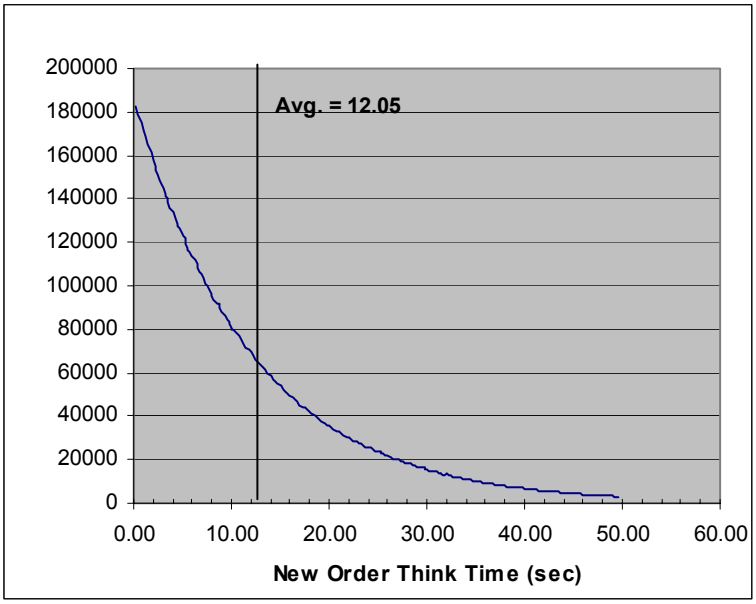
The performance curve for response time vs. throughput (see Clause 5.6.2) must be reported for the New-Order transaction.

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



New Order Think Time Distribution

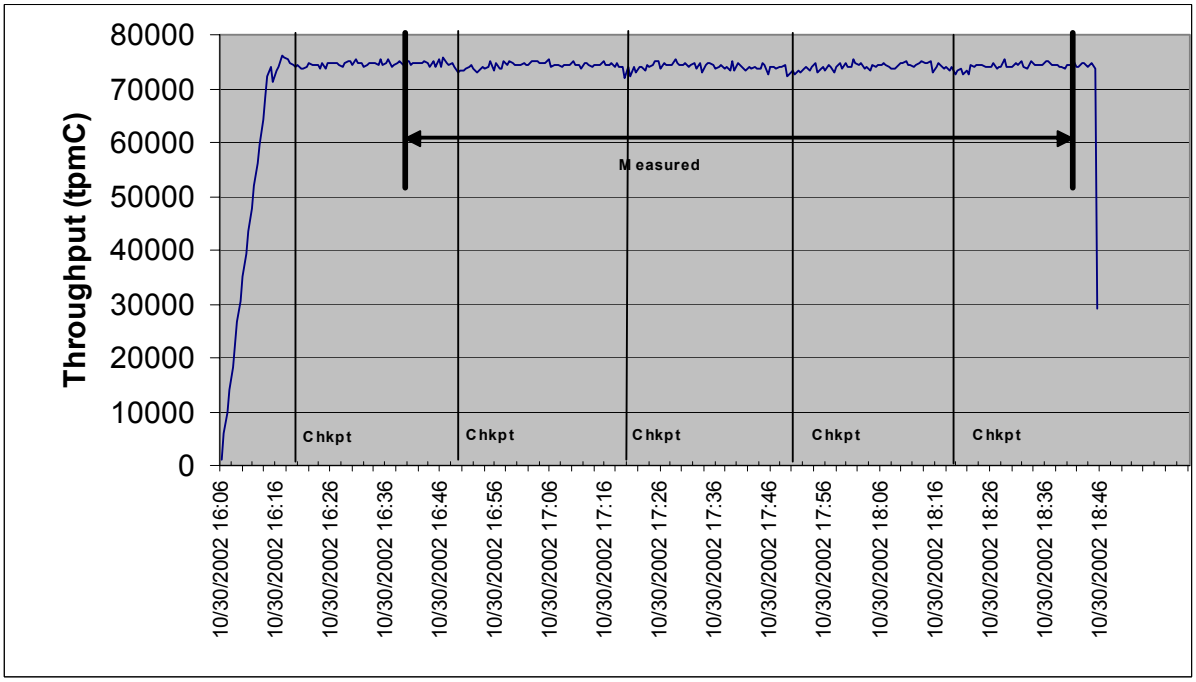
Figure 5-7. New-Order Think Time Distribution



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 2 Gb/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	85.02
Remote warehouse payment transactions	14.98
Non-Primary Key Access	
Payment transactions using C_LAST	60.02
Order-Status transactions using C_LAST	59.99
Delivery	
Delivery transactions skipped	0
Transaction Mix	
New-Order	44.94
Payment	43.04
Delivery	4.01
Stock Level	4.01
Order-Status	4.01

Number of Checkpoints

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

Checkpoints were performed during the ramp-up period and during each measured run interval. The first measurement interval checkpoint started 8 minutes and 55 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	16:49:05	21 minutes
2	17:19:04	21 minutes
3	17:49:03	21 minutes
4	18:19:02	21 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 1.1.2 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 (pages 13 and 14) 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 10Mbps. 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 configuration as priced will be generally available March 31, 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: 74,206.27 tpmC
- Price per tpmC: $5.75 per tpmC
- Three-year cost of ownership: $426,785

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 .NET Enterprise Server 2003
- 4 Microsoft Windows 2000 Server
- 4 Microsoft SQL Server 2000 Enterprise Edition (based on per-processor price)

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

System Pricing

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

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

Clause 9: Audit Related Items

Auditor

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

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

Availability of the Full Disclosure Report

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

The TPC Benchmark C Full Disclosure Report is available at www.tpc.org.

INFO SIZING

TPC TRANSACTION PROCESSING PERFORMANCE COUNCIL CERTIFIED AUDITOR

Benchmark Sponsor: William D. Hall
Manager, xSeries Performance
IBM Server Group
3039 Cornwallis Road
Research Triangle Park, NC 27709

November 1, 2002

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

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

The results were:

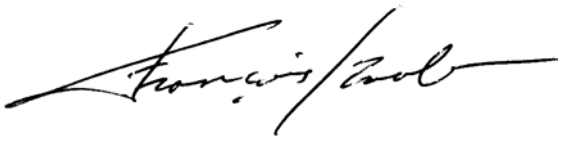
CPU's Speed	Memory	Disks	NewOrder 90% Response Time	**tpmC**
Server: IBM @server xSeries 440				
4 x Xeon MP (2.0GHz)	32 GB Main (2 MB L3 Cache per processor)	287 x 18.2 GB	0.87 Seconds	**74,206.27**
Clients: Four (4) IBM @server xSeries 220 (Specification for each)				
2 x Pentium III (1.4 GHz)	768 MB 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

Respectfully Yours,



François Raab, President

Bradley J. Askins, Auditor

1373 North Franklin Street • Colorado Springs, CO 80903-2527 • Office: 719/473-7555 • Fax: 719/473-7554

Appendix A: Source Code

client_utils.c

```
/* client_utils.c
*/

#include <stdio.h>
#include <time.h>
#include <windows.h>
#include <winperf.h>
#include <winsock.h>
#include "client_utils.h"

#define Li2Double(x) ((double)((x).HighPart) * 4.294967296E9 +
(double)((x).LowPart))

static LARGE_INTEGER pFreq;
static double sFreq;
static int print_thread_id = 1;
static int user_id = 0;
static char *user_code = "C";

/*
 *  get_thread_id
 *      A function that returns the thread ID of the current thread
 */
static int get_thread_id()
{
   return(GetCurrentThreadId());
}


/*
 *  get_prefix
 *              Format the output prefix for printing:
 *              It contains the user_id, 'C' or 'T' depending on whether it
 *              is a terminal or a client and optional a thread identifier
 *              The prefix is written in the buffer passed in by the caller.
 */
static void get_prefix(char *buffer)
{
   if (print_thread_id) {
                           int thread_id = get_thread_id();
                           sprintf(buffer,  "%s(%d-%s-%d)%s",
                           user_id < 10 ? "  " : user_id < 100 ? " " : "",
                           user_id,
                           user_code,
                           thread_id,
                           thread_id < 10 ? " " : "");
   } else {
                           sprintf(buffer,  "%s(%2d-%s)",
                           user_id < 10 ? " " : "", user_id, user_code);
   }
}

/*
 * err_printf
 *      A var-arg function that appends the current time and
 *      other data to the print request and sends it to stderr
 *      if it is not a web client, to a file if it is
 */
void err_printf(char *format, ...)
{
   time_t cur_timet;
   char time_str[30];
   char line_prefix[50];
   va_list ap;

   va_start(ap, format);

   cur_timet = time(&cur_timet);
   strftime(time_str, 29, "%X", localtime(&cur_timet));

   get_prefix(line_prefix);

   fprintf(ERROUT, "%s %s - ", line_prefix, time_str);
   vfprintf(ERROUT, format, ap);
   fflush(ERROUT);

   va_end(ap);
}


/*
 *  encina_error_message
 *
 *  Report an encina error message by interpreting it and writing
 *  it to both the logfile (if any) and to standard error
 */
void encina_error_message(char *msg, unsigned long n)
{
   char errorMsg[ENCINA_MAX_STATUS_STRING_SIZE];
   encina_StatusToString(n, ENCINA_MAX_STATUS_STRING_SIZE,
errorMsg);
   err_printf("ERROR: %s.  Error code = %s (%d 0x%x) \n", msg, errorMsg, n,
n);
}

int get_time_init()
{
    QueryPerformanceFrequency(&pFreq);
    sFreq=Li2Double(pFreq);
    return 0;
}

int get_local_time(time_type *timeP)
{
   double cur_t;
   LARGE_INTEGER counter;

   QueryPerformanceCounter(&counter);
   cur_t = Li2Double(counter) / sFreq;
   timeP->sec = (long)cur_t;
/*    timeP->usec = ((long)cur_t - timeP->sec) * 1000000;*/
   timeP->usec = (long)((cur_t - timeP->sec) * 1000000);
            return 0;
}

/*
 *  time_diff_ms
 *      Return the difference in miliseconds between two times
 */
int time_diff_ms(struct timeval *t2, struct timeval *t1)
{
   int t_diff;

   t_diff = (t2->tv_usec + 1000000 - t1->tv_usec + 500) / 1000 +
         (t2->tv_sec - t1->tv_sec - 1) * 1000;

   return(t_diff);
}

/*
```

```
 * perfClntDataInit:
 *    Initialization for the shared file mapping.
 *
 * return: pointer to the shared memory space
 *
 * This routine creates a named mapped memory section that is used
 * to communicate the TPCC performance data to the extensible
 * counter DLL for NT perfmon.
 */
total_tran_count_t  *perfClntDataInit()
{
   HANDLE hMappedObject;
   total_tran_count_t  *pClntInfo = NULL;
   TCHAR  szMappedObjectName[] =
TEXT("TPCC_CLNT_COUNTER_BLOCK");

      /* create named section for the performance data */
      hMappedObject = CreateFileMapping((HANDLE)0xFFFFFFFF,
                NULL,
                PAGE_READWRITE,
                0,
                sizeof(total_tran_count_t),
                szMappedObjectName);
      if (hMappedObject == NULL) {
         err_printf("perfClntDataInit: CreateFileMapping failed %x\n",
                GetLastError());
         pClntInfo = NULL;
      } else {
         /* map the section and assign the counter block pointer
          * to this section of memory
          */
         pClntInfo = (total_tran_count_t *) MapViewOfFile(hMappedObject,
                   FILE_MAP_ALL_ACCESS,
                   0,
                   0,
                   0);
         if (pClntInfo == NULL) {
            err_printf("perfClntDataInit: MapViewOfFile failed %x\n",
                   GetLastError());
         }
         else {
            err_printf("perfClntDataInit: MapViewOfFile success \n");
         }
      }

   return(pClntInfo);
}
```

client_utils.h

```
#ifndef TPCC_CLIENT_UTILS_H
#define TPCC_CLIENT_UTILS_H

#include <stdio.h>
#include <time.h>
#include <dce/rpc.h>
#include <dce/dce_error.h>
#include <encina/encina.h>
#include <stdlib.h>
#include <utils/trace.h>
#include <winsock.h>
#include "mon_client.h"
#include "../include/tpcc_type.h"

extern FILE * errtpcc;
extern FILE *logtpcc;
extern int debug;
extern char log_file_name[];
extern void logprintf( char *format, ...);
extern void err_printf( char *format, ...);
extern void encina_error_message(char *msg, unsigned long n);
extern int time_diff_ms(struct timeval *t2, struct timeval *t1);

typedef struct {
   int num;
   int errs;
   double RTtotal[2]; // 1 for server RT and 0 for client RT
   int RTcount;
} tran_info_t;

/*
 * total_tran_count_t
 *
 * structure that holds the total count of transaction of each type
 * as well as the reposne times.
 *
 */
typedef struct {
   tran_info_t tran[MAX_TRAN_TYPE + 1];
   int errors;
   double time;
} total_tran_count_t;

/* enc_status_t
 * structure that holds error information
 */
typedef struct {
   int status;
   int line;
   char file[268];
   unsigned long encinaError;
   char errorMsg[ENCINA_MAX_STATUS_STRING_SIZE];
} enc_status_t;

#define FALSE 0
#define TRUE  1

#define DPRINT(args)  if (0) err_printf args


#define CHECK_ENVIRON(str,var)  if (str == NULL) { fprintf(ERROUT, \
                        "%s environment variable is not defined.\n",var);  }

#define CHK_STATUS(st, val, _errMsg)                    \
    if(st) {                                    \
       enc_status.status=val;                       \
       strcpy(enc_status.file, __FILE__);           \
       enc_status.line= __LINE__;                   \
       enc_status.encinaError = st;                 \
       if(_errMsg)strcpy(enc_status.errorMsg, _errMsg);     \
       if(st!=1) return;                            \
     }

#define UTIL_IDENT(a)          a

#if       ENCINA_C_ANSI_STRING_TOKEN_SUPPORT
#define UTIL_STRING(a)         # a
#define UTIL_CONCAT(a, b)      a ## b
#else   /* ENCINA_C_ANSI_STRING_TOKEN_SUPPORT */
#define UTIL_STRING(a)         "a"
#define UTIL_CONCAT(a, b)      UTIL_IDENT(a)b
#endif  /* ENCINA_C_ANSI_STRING_TOKEN_SUPPORT */

/*  ENCINA_CALL:  Make fail-fast calls on the various services.  */
#define ENCINA_CALL(proc_name,call)           \
```

```
{                                       \
   unsigned long _status;                   \
   ENCINA_CALL_RC(proc_name,call,_status);    \
   if (_status) exit_program(_status);        \
}


#define ENCINA_CALL_RC(proc_name,call,rc)                          \
{                                                                  \
   char _errorMsg[ENCINA_MAX_STATUS_STRING_SIZE];                  \
   DPRINT(("ENCINA_CALL_RC: before call %s\n", proc_name));
            \
   rc = (call);                                                    \
   DPRINT(("ENCINA_CALL_RC: after call %s\n", proc_name));
            \
   if (rc)  {                                                      \
      encina_StatusToString(rc, ENCINA_MAX_STATUS_STRING_SIZE,
\
                        _errorMsg);                                \
      err_printf( "%x \n", rc);                                    \
      err_printf( "%s \n", _errorMsg);                                \
      err_printf( "%s \n", proc_name);                                \
   }                                                               \
}

void err_printf(char *format, ...);
void encina_error_message(char *msg, unsigned long n);
int get_time_init();
int get_local_time(time_type *timeP);
int time_diff_ms(struct timeval *t2, struct timeval *t1);

#endif /*  TPCC_CLIENT_UTILS_H  */
```

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;

#define ERR_FATAL_LEVEL                         1
#define ERR_WARNING_LEVEL                       2
#define ERR_INFORMATION_LEVEL     3


#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


class CBaseErr
{
public:
        char    *m_szApp;
        char    *m_szMsg;
        char    *m_szLoc;// code location where the error occurred
        int             m_idMsg;

        CBaseErr(void)
        {
                m_idMsg         = 0;
                m_szMsg         = new char[m_szMsg_size];
                m_szApp         = new char[m_szApp_size];
                m_szLoc         = NULL;

                m_szMsg[0]      = 0;
                m_szApp[0]      = 0;

                GetModuleFileName(GetModuleHandle(NULL),
m_szApp, m_szApp_size);
        }

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

        CBaseErr(int idMsg)
        {
                m_idMsg         = idMsg;
                m_szApp         = new char[m_szApp_size];
                m_szMsg         = new char[m_szMsg_size];
                m_szLoc         = NULL;

                GetModuleFileName(GetModuleHandle(NULL),
m_szApp, m_szApp_size);
                LoadString(GetModuleHandle(NULL), idMsg,
m_szMsg, m_szMsg_size);
        }

        CBaseErr(LPCTSTR szMsg)
        {
                m_idMsg         = 0;
                m_szApp         = new char[m_szApp_size];
                m_szMsg         = new char[m_szMsg_size];
                m_szLoc         = NULL;

                GetModuleFileName(GetModuleHandle(NULL),
m_szApp, m_szApp_size);
                strcpy(m_szMsg, szMsg);
        }

        void SetError(char *szMsg, LPCTSTR szLocation)
        {
                if (szMsg != NULL)
                        strcpy(m_szMsg, szMsg);
                else
                        m_szMsg[0] = 0;

                if (szLocation != NULL)
                {
                        delete [] m_szLoc;
                        m_szLoc = new char[strlen(szLocation)+1];
                        strcpy(m_szLoc, szLocation);
                }
                else
                {
                        delete [] m_szLoc;
                        m_szLoc = NULL;
                }
        }

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

                if (szStr)
                        j = wsprintf(szTmp, "%s\n",szStr);
                if (m_szLoc)
                        j += wsprintf(szTmp+j,
"Location=%s\n",m_szLoc);
                if (m_szMsg)
                        j += wsprintf(szTmp+j, "%s\n", m_szMsg);

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

        char *GetApp(void) { return m_szApp; }
        char *GetMsg(void) { return m_szMsg; }
        char *GetLocation(void) { return m_szLoc; }

        virtual int ErrorType() = 0;    // a value which distinguishes the
kind of error that occurred
        virtual int ErrorNum() = 0;             // an error value
specific to the error type
```

```
        virtual char *ErrorText() = 0;      // a string (i.e., human readable)
representation of the error

};

class CSocketErr : public CBaseErr
{
public:
        enum Action
        {
                eNone,
                eSend,
                eSocket,
                eConnect
        };

        CSocketErr(Action eAction, LPCTSTR szLocation);
        CSocketErr(int iError) { m_errId = iError; };
        int             m_errId;
        Action      m_eAction;

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

class CSystemErr : public CBaseErr
{
public:
        enum Action
        {
                eNone,
                eTransactNamedPipe,
                eWaitNamedPipe,
                eSetNamedPipeHandleState,
                eCreateFile,
                eCreateProcess,
                eCallNamedPipe,
                eCreateEvent,
                eCreateThread,
                eVirtualAlloc,
                eReadFile,
                eWriteFile,
                eMapViewOfFile,
                eCreateFileMapping,
                eInitializeSecurityDescriptor,
                eSetSecurityDescriptorDacl,
                eCreateNamedPipe,
                eConnectNamedPipe,
                eWaitForSingleObject,
                eRegOpenKeyEx,
                eRegQueryValueEx,
        };

        CSystemErr(Action eAction, LPCTSTR szLocation);

        void Draw(HWND hwnd, LPCTSTR szStr = NULL);

        int             m_errId;
        Action      m_eAction;

        int ErrorType() { return ERR_TYPE_OS;}
        int ErrorNum() { return m_errId;}
        char *ErrorText() { return m_szMsg; }
};

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

        int ErrorType() { return ERR_TYPE_MEMORY;}
        int ErrorNum() { return 0;}
        char *ErrorText() { return "Insufficient Memory to continue.";}
};
```

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;
		char	*ptr;
		int			iRc;

		szDllPath[0] =  0;
		bRc = TRUE;
		if ( RegOpenKeyEx(HKEY_LOCAL_MACHINE,
"SYSTEM\\CurrentControlSet\\Services\\W3SVC\\Parameters\\Virtual Roots",
0, KEY_ALL_ACCESS, &hKey) == ERROR_SUCCESS )
		{
			sv = sizeof(szData);
			iRc = RegQueryValueEx( hKey, "/,", NULL, NULL,
szData, &sv );  // used by IIS 3.0
			if (iRc == ERROR_FILE_NOT_FOUND)
				iRc = RegQueryValueEx( hKey, "/", NULL,
NULL, szData, &sv );   // used by IIS 4.0
			if (iRc == ERROR_SUCCESS)
			{
				bRc = FALSE;
				strcpy(szDllPath, szData);
				if ( (ptr = strchr(szDllPath, ',')) )
					*ptr = 0;

				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.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;
}
```

license.txt

```
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mon_client.c

```
/*
 *            mon_client.c
 *
 */

#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <stdarg.h>
#include <time.h>
#include <pthread.h>
#include <tpm/mon/mon.h>
#include <utils/trace.h>
#include "../include/delivery.h"
#include "../include/neworder.h"
#include "../include/payment.h"
#include "../include/stocklevel.h"
#include "../include/orderstatus.h"
#include "../include/tpcc_type.h"
#include "mon_client.h"
#include "client_utils.h"

extern total_tran_count_t  *perfClntDataInit();
static void read_mon_environment(void);

static char *cellName;
static int envRetrieval = 0;
static int useSecurity = FALSE;
static CRITICAL_SECTION    init_lock;
static total_tran_count_t  *pClientInfo=NULL;  /* keep stats for the client process */
static num_active_threads = 0;
static int iStatsFrequency = 1;
FILE    *errtpcc;
char    *errFile = "C:/temp/tpcc_encina.out";
enc_status_t enc_status;

#define NewOrder_code    NEWO_TRANS
#define Payment_code     PAYMENT_TRANS
#define OrderStatus_code ORDER_STAT_TRANS
#define Delivery_code    DELIVERY_TRANS
#define StockLevel_code  STOCK_TRANS


#define INT_ENV_VALUE(var, default) \
  (var = getenv(#var) ? atoi(getenv(#var)) : default)

#define PRE_RPC_WORK(headerP, tran, sub_tran) \
       if (iStatsFrequency > 0) \
                        pre_rpc(headerP, tran, sub_tran); \
               else
 \
                        (headerP)->stats = 0;
#define POST_RPC_WORK(headerP, tran) \
       if (iStatsFrequency > 0) \
                        post_rpc(headerP, tran)

/*  CALTPCC
 *  Macro to sends 1 RPC and then handles any errors.
 *
 *  The macro takes the name of the RPC (e.g., NewOrder)
 *  and makes the RPC by calling the appropriate function
 *  (e.g., impTPCCNewOrder).
 */
#define CALLTPCC(name,length,dataP,header,trpcStatusP)            \
{                                                                 \
 UTIL_CONCAT(impTPCC,name)(length,dataP,&header,trpcStatusP);       \
 if (*(trpcStatusP)) {                                            \
   char msg[100];                                                 \
   sprintf(msg, "TRPC error during impTPCC%s", UTIL_STRING(name));    \
   header.returncode = TRPC_ERROR;                                \
   encina_error_message(msg, *(trpcStatusP));                     \
 } else if ((header.returncode != TPCC_SUCCESS) &&                \
         (header.returncode != INVALID_NEWO)) {                   \
   char msg[100];                                                 \
   sprintf(msg, "App error during impTPCC%s: ", UTIL_STRING(name));   \
   encina_error_message(msg, header.returncode);                  \
 }                                                                \
}

/*
 *  pre_rpc --   For debug purposes
 *
 *  Called before an RPC is made.
 *  Set the state of the thread and keep track of the time the RPC is sent.
 *  This is used by the Background thread to report the state of the client.
 */
static void pre_rpc(data_header *headerP,
                int tran_type,
                int sub_tran_type)
{
   if (iStatsFrequency < 1) {
                        headerP->stats = 0;
   } else {
      int num;
      num = ++ (pClientInfo->tran[tran_type].num);
      headerP->stats = (num % iStatsFrequency==0) ? 1 : 0;
      if (headerP->stats)
                        { /* measure the time for RT */
                                get_local_time(&headerP->clnt_start);
```

```
                        headerP->srv_start.sec = 0;   /* initialize the server time
*/
                        headerP->srv_start.usec = 0;
                        headerP->srv_end.sec = 0;
                        headerP->srv_end.usec = 0;
                        }
    }
}

/*
 *  post_rpc
 *
 *  Called when the RPC returns from the server
 *
 *  Keeps track of the client response time and the server response time
 *  as well as the state of the thread.  This is used by the background
 *  debug thread to report the state of the client
 */
static void post_rpc(data_header *headerP,
                             int tran_type)
{
    double time_diff;
    int tran_failed;
    struct timeval start_time, end_time;

    if (headerP->stats)
                        get_local_time(&headerP->clnt_end);
    else
                        return;

    /* Store the info for each client.
     * Note: Since we don't use mutex for performance reason, pClientInfo
     *       may not be accurate if more than one thread work on the same
     *       data at a same time. But this should give us reasonable info.
     */
    if ((headerP->returncode == TPCC_SUCCESS) ||
        (headerP->returncode == INVALID_NEWO)) {
      tran_failed = 0;
    } else {
      pClientInfo->tran[tran_type].errs ++;
      pClientInfo->errors ++;
      tran_failed = 1;
    }
    if (headerP->stats && tran_type <= MAX_TRAN_TYPE && tran_type > 0
        && !tran_failed) {
          /* update total server round trip response time */
                start_time.tv_sec = headerP->srv_start.sec;
                start_time.tv_usec = headerP->srv_start.usec;
                end_time.tv_sec = headerP->srv_end.sec;
                end_time.tv_usec = headerP->srv_end.usec;
        time_diff = time_diff_ms(&end_time, &start_time);
        pClientInfo->tran[tran_type].RTtotal[1] += time_diff;
                DPRINT(("srv start_time %d.%d, end_time %d.%d, time_diff
%f\n",
                                        start_time.tv_sec, start_time.tv_usec,
                                        end_time.tv_sec, end_time.tv_usec,
                                        time_diff));

        /* update total client round trip response time */
                start_time.tv_sec = headerP->clnt_start.sec;
                start_time.tv_usec = headerP->clnt_start.usec;
                end_time.tv_sec = headerP->clnt_end.sec;
                end_time.tv_usec = headerP->clnt_end.usec;
        time_diff = time_diff_ms(&end_time, &start_time);
        pClientInfo->tran[tran_type].RTtotal[0] += time_diff;
                DPRINT(("clnt start_time %d.%d, end_time %d.%d, time_diff
%f\n",
                                        start_time.tv_sec, start_time.tv_usec,
                                        end_time.tv_sec, end_time.tv_usec,
                                        time_diff));

                /* update num for the number of trans which have RT measured */
      pClientInfo->tran[tran_type].RTcount ++;

    }
}

/*
 *  The following send_*** functions are called from CTPCC_ENCINA class.
 *
 */

/*
 *  send_new_order
 *              Send a new order request to the server
 */
int send_new_order(long length, unsigned char *dataP)
{
    trpc_status_t trpcStatus;
    data_header  header;

    PRE_RPC_WORK(&header, NEWO_TRANS, 0);
    CALLTPCC(NewOrder,length,dataP,header,&trpcStatus)
    POST_RPC_WORK(&header, NEWO_TRANS);
    if (header.returncode == INVALID_NEWO)
                return TPCC_SUCCESS;
    else
                return header.returncode;
}

/*
 *  send_payment
 *              Send a payment request to the server
 */
int send_payment(long length, unsigned char *dataP)
{
    trpc_status_t trpcStatus;
    data_header  header;

    PRE_RPC_WORK(&header, PAYMENT_TRANS, 0);
    CALLTPCC(Payment,length,dataP,header,&trpcStatus);
    POST_RPC_WORK(&header, PAYMENT_TRANS);
    return header.returncode;
}

/*
 *  send_order_status
 *              Send a order status request to the server
 */
int send_order_status(long length, unsigned char *dataP)
{
    trpc_status_t trpcStatus;
    data_header  header;

    PRE_RPC_WORK(&header, ORDER_STAT_TRANS, 0);
    CALLTPCC(OrderStatus,length,dataP,header,&trpcStatus);
    POST_RPC_WORK(&header, ORDER_STAT_TRANS);
    return header.returncode;
}

/*
 *  send_delivery
 *              Send a delivery request to the server
 */
int send_delivery(long length, unsigned char *dataP)
{
```

```
   trpc_status_t trpcStatus;
   data_header  header;

   PRE_RPC_WORK(&header, DELIVERY_TRANS, 0);
   CALLTPCC(Delivery,length,dataP,header,&trpcStatus);
   POST_RPC_WORK(&header, DELIVERY_TRANS);
   return header.returncode;
}

/*
 *  send_stock_level
 *          Send a stock level request to the server
 */
int send_stock_level(long length, unsigned char *dataP)
{
   trpc_status_t trpcStatus;
   data_header  header;

   PRE_RPC_WORK(&header, STOCK_TRANS, 0);
   CALLTPCC(StockLevel,length,dataP,header,&trpcStatus);
   POST_RPC_WORK(&header, STOCK_TRANS);
   return header.returncode;
}



/*
 *  Enroll the client:
 *          get the necessary handles.
 *  This function should be called only once. Use static var client_enrolled to
control it.
 */
void enroll_client()
{
   static  char  *clientName="tpcc_client";
   unsigned long status ;
   static  int   client_enrolled = 0;
   unsigned32          client_authnLevel;
   unsigned32          client_authzSvc;
   time_type a_time;
          char err_msg[100];

   MUTEX_INIT(&init_lock);
   get_local_time(&a_time);
   srand(a_time.sec ^ a_time.usec);

   MUTEX_LOCK(&init_lock);
   if (client_enrolled) {
          MUTEX_UNLOCK(&init_lock);
                return;
   }

   /* open output file for tracing */
   errtpcc = fopen(errFile, "w");
   if(!errtpcc)
   {
                sprintf(err_msg, "Cannot open file %s", errFile);
                CHK_STATUS(1,
ERROUT_FILE_NOT_FOUND,err_msg);
   }

   get_time_init();
          // initialize the space for perfmon
   pClientInfo = perfClntDataInit();
   if (pClientInfo == NULL)  // in case something wrong
          pClientInfo = malloc(sizeof(total_tran_count_t));
   memset(pClientInfo, 0, sizeof(total_tran_count_t));

   read_mon_environment();

   if(!cellName)
          CHK_STATUS(30, CELL_NAME_UNAVAILABLE,
           "ENCINA_TPM_CELL is not set!");

   if (useSecurity) {
                client_authnLevel = rpc_c_protect_level_connect;
                client_authzSvc = rpc_c_authz_dce;
   } else {
                client_authnLevel = rpc_c_protect_level_none;
                client_authzSvc = rpc_c_authz_none;
   }

   if (envRetrieval == 0) {

ENCINA_CALL_RC("mon_RetrieveEnable",mon_RetrieveEnable(FALSE),sta
tus);
      CHK_STATUS(status, MON_RETRIEVEENABLE_FAILED,
           "mon_RetrieveEnable failed");
   }

   err_printf("enroll_client: calling mon_InitClient \n");

ENCINA_CALL_RC("mon_InitClient",mon_InitClient(clientName,cellName),
status);
   CHK_STATUS(status, MON_INITCLIENT_FAILED,
          "mon_InitClient failed");

   DPRINT(("mon_SecuritySetDefaults-> authn %d, authz %d\n",
               client_authnLevel, client_authzSvc));
   ENCINA_CALL_RC("mon_SecuritySetDefaults",

mon_SecuritySetDefaults(client_authnLevel,client_authzSvc),
          status);
   CHK_STATUS(status, MON_SECURITYSET_FAILED,
          "mon_SecuritySetDefaults failed");

   ENCINA_CALL_RC("mon_SetHandleCacheRefreshInterval",
                     mon_SetHandleCacheRefreshInterval(300), status);
   CHK_STATUS(status, MON_SETREFRESHINTERVAL_FAILED,
          "mon_SetHandleCacheRefreshInterval failed");

   {
      dbInfo_data_t data;
      trpc_status_t trpcStatus;
      /* Get DB Info -- currently id does not do anything
        but it will tell us if there is a server out there.
        Better to know instead of when all the terminals
        are up and ready
       */
      impTPCCNOInfo(&data, &trpcStatus);
      if (trpcStatus) {
         char msg[100];
         sprintf(msg, "TRPC error during db info at init.");
         encina_error_message(msg, trpcStatus);
         CHK_STATUS(33,NOINFO_TRPC_ERROR,
                "TRPC error during db info at init");
      }
   }

   client_enrolled = 1;
   MUTEX_UNLOCK(&init_lock);
   err_printf("end of enroll_client\n");
}


/*---------------------------------------------------------------*/
```

```
/*       Read environment paramaters and registry entries      */
/*-------------------------------------------------------------*/
static void read_mon_environment()
{
   char *env_str;
   char    *registryKey = "SOFTWARE\\TransarcCorporation\\TxTpcc";
   HKEY    hKey;
   DWORD   size;
   DWORD   type;
   char    szTmp[256];

   cellName = getenv("ENCINA_TPM_CELL");
   CHECK_ENVIRON(cellName, "ENCINA_TPM_CELL");

   if (env_str = getenv("TPCC_ENV_RETRIEVE")) {
      envRetrieval = atoi(env_str);
   }

   if ( RegOpenKeyEx(HKEY_LOCAL_MACHINE, registryKey, 0,
KEY_READ, &hKey) != ERROR_SUCCESS )
      return;

   size = sizeof(szTmp);
   if ( RegQueryValueEx(hKey, "StatsFrequency", 0, &type, szTmp,
&size)==ERROR_SUCCESS)
      iStatsFrequency = atoi(szTmp);

   RegCloseKey(hKey);
}
```

mon_client.h

```
/*
 *            mon_client.h
 *
 */

#ifndef MON_CLIENT_H
#define MON_CLIENT_H

#define MUTEX_T CRITICAL_SECTION
#define MUTEX_LOCK(a) EnterCriticalSection(a)
#define MUTEX_UNLOCK(a) LeaveCriticalSection(a)
#define MUTEX_INIT(mut)   InitializeCriticalSection(mut)
#define MUTEX_DESTROY(mut) DeleteCriticalSection(mut)
#define ERROUT errtpcc

/*initialization status */
#define INIT_SUCCESS 0
#define INIT_FAILED  1
#define CELL_NAME_UNAVAILABLE 2
#define MON_RETRIEVEENABLE_FAILED 3
#define MON_INITCLIENT_FAILED 4
#define MON_SECURITYSET_FAILED 5
#define MON_SETREFRESHINTERVAL_FAILED 6
#define NOINFO_TRPC_ERROR 7
#define ENROLL_CLIENT_EXCEPTION 8
#define ERROUT_FILE_NOT_FOUND 9
#define LOG_FILE_NOT_FOUND 10
#define TPCC_KEY_NOT_FOUND 11
#define TERM_ALLOC_FAILED 12

/*
 *  Routines and declarations that are common to all clients
 */
#if defined(__cplusplus)
extern "C" {
#endif
int send_new_order(long, unsigned char *);
int send_payment(long, unsigned char *);
int send_order_status(long, unsigned char *);
int send_delivery(long, unsigned char *);
int send_stock_level(long, unsigned char *);
void enroll_client();
#if defined(__cplusplus)
}
#endif

#endif  /*  MON_CLIENT_H  */
```

readme.txt

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 );
```

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
```

Resource_tpcc_rc.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
```

rtetime.h

```
/* FILE: rtetime.h : header file
 * Copyright 1997 Microsoft Corp., All rights reserved.
 *
 * Authors: Charles Levine, Philip Durr
 *                                  Microsoft Corp.
 */

#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 );
}
```

spinlock.h

```
/*          FILE: SPINLOCK.H
 *
 * Copyright 1997 Microsoft Corp., All rights reserved.
 *
 * 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
```

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></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,
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.
4.20.000
 *                                      Copyright Microsoft, 1999
 *      All Rights Reserved
 *
 *                                      Version 4.10.000 audited by
Richard Gimarc, Performance Metrics, 3/17/99
 *
 *      PURPOSE:                Header file for ISAPI TPCC.DLL, defines
structures and functions used in the isapi tpcc.dll.
 *
 */

//VERSION RESOURCE DEFINES
#define _APS_NEXT_RESOURCE_VALUE
101
#define _APS_NEXT_COMMAND_VALUE
        40001
#define _APS_NEXT_CONTROL_VALUE
1000
#define _APS_NEXT_SYMED_VALUE
101
#define TP_MAX_RETRIES
        50


//note that the welcome form must be processed first as terminal ids assigned
here, once the
//terminal id is assigned then the forms can be processed in any order.
#define WELCOME_FORM
1               //beginning form no term id assigned, form id
#define MAIN_MENU_FORM
2               //term id assigned main menu form id
#define NEW_ORDER_FORM
3               //new order form id
#define PAYMENT_FORM
4               //payment form id
#define DELIVERY_FORM
5               //delivery form id
#define ORDER_STATUS_FORM
6               //order status id
#define STOCK_LEVEL_FORM
7               //stock level form id

//This macro is used to prevent the compiler error unused formal parameter
#define UNUSEDPARAM(x) (x = x)


//This structure defines the data necessary to keep distinct for each terminal or
client connection.
typedef struct _CLIENTDATA
{
        int                             iNextFree;
//index of next free element or -1 if this entry in use.
        int                             w_id;
        //warehouse id assigned at welcome form
        int                             d_id;
        //district id assigned at welcome form

        int                             iSyncId;
//syncronization id
        int                             iTickCount;
        //time of last access;

        CTPCC_BASE      *pTxn;

} CLIENTDATA, *PCLIENTDATA;


//This structure is used to define the operational interface for terminal id support
typedef struct _TERM
{
        int                             iNumEntries;
                //total allocated terminal array entries
        int                             iFreeList;
                //next available terminal array element or -1 if none
        int                             iMasterSyncId;
                //syncronization id
        CLIENTDATA      *pClientData;
        //pointer to allocated client data
} TERM;

typedef TERM *PTERM;
        //pointer to terminal structure type


        enum WEBERROR
        {
                NO_ERR,
                ERR_COMMAND_UNDEFINED,
```

```
                ERR_D_ID_INVALID,
                ERR_DELIVERY_CARRIER_ID_RANGE,
                ERR_DELIVERY_CARRIER_INVALID,
                ERR_DELIVERY_MISSING_OCD_KEY,
                ERR_DELIVERY_THREAD_FAILED,
                ERR_GETPROCADDR_FAILED,
                ERR_HTML_ILL_FORMED,
                ERR_INVALID_SYNC_CONNECTION,
                ERR_INVALID_TERMID,
                ERR_LOADDLL_FAILED,
                ERR_MAX_CONNECTIONS_EXCEEDED,
                ERR_MEM_ALLOC_FAILED,
                ERR_MISSING_REGISTRY_ENTRIES,
                ERR_NEWORDER_CUSTOMER_INVALID,
                ERR_NEWORDER_CUSTOMER_KEY,
                ERR_NEWORDER_DISTRICT_INVALID,
                ERR_NEWORDER_FORM_MISSING_DID,
                ERR_NEWORDER_ITEMID_INVALID,
                ERR_NEWORDER_ITEMID_RANGE,
                ERR_NEWORDER_ITEMID_WITHOUT_SUPPW,
                ERR_NEWORDER_MISSING_IID_KEY,
                ERR_NEWORDER_MISSING_QTY_KEY,
                ERR_NEWORDER_MISSING_SUPPW_KEY,
                ERR_NEWORDER_NOITEMS_ENTERED,
                ERR_NEWORDER_QTY_INVALID,
                ERR_NEWORDER_QTY_RANGE,
                ERR_NEWORDER_QTY_WITHOUT_SUPPW,
                ERR_NEWORDER_SUPPW_INVALID,
                ERR_NO_SERVER_SPECIFIED,
                ERR_ORDERSTATUS_CID_AND_CLT,
                ERR_ORDERSTATUS_CID_INVALID,
                ERR_ORDERSTATUS_CLT_RANGE,
                ERR_ORDERSTATUS_DID_INVALID,
                ERR_ORDERSTATUS_MISSING_CID_CLT,
                ERR_ORDERSTATUS_MISSING_CID_KEY,
                ERR_ORDERSTATUS_MISSING_CLT_KEY,
                ERR_ORDERSTATUS_MISSING_DID_KEY,
                ERR_PAYMENT_CDI_INVALID,
                ERR_PAYMENT_CID_AND_CLT,
                ERR_PAYMENT_CUSTOMER_INVALID,
                ERR_PAYMENT_CWI_INVALID,
                ERR_PAYMENT_DISTRICT_INVALID,
                ERR_PAYMENT_HAM_INVALID,
                ERR_PAYMENT_HAM_RANGE,
                ERR_PAYMENT_LAST_NAME_TO_LONG,
                ERR_PAYMENT_MISSING_CDI_KEY,
                ERR_PAYMENT_MISSING_CID_CLT,
                ERR_PAYMENT_MISSING_CID_KEY,
                ERR_PAYMENT_MISSING_CLT,
                ERR_PAYMENT_MISSING_CLT_KEY,
                ERR_PAYMENT_MISSING_CWI_KEY,
                ERR_PAYMENT_MISSING_DID_KEY,
                ERR_PAYMENT_MISSING_HAM_KEY,
                ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY,
                ERR_STOCKLEVEL_THRESHOLD_INVALID,
                ERR_STOCKLEVEL_THRESHOLD_RANGE,
                ERR_VERSION_MISMATCH,
                ERR_W_ID_INVALID
        };

class CWEBCLNT_ERR : public CBaseErr
{
        public:

                CWEBCLNT_ERR(WEBERROR Err)
                {
                        m_Error = Err;
                        m_szTextDetail = NULL;
                        m_SystemErr = 0;
                        m_szErrorText = NULL;
                };

                CWEBCLNT_ERR(WEBERROR 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;
                };

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

                WEBERROR        m_Error;
                char            *m_szTextDetail;      //
                char            *m_szErrorText;
                DWORD           m_SystemErr;

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

};

//These constants have already been defined in engstut.h, but since we do
//not want to include it in the delisrv executable
#define     TXN_EVENT_START                 2
#define     TXN_EVENT_STOP          4
#define TXN_EVENT_WARNING           6                   //used to
record a warning into the log

//function prototypes

BOOL APIENTRY DllMain(HANDLE hModule, DWORD ul_reason_for_call,
LPVOID lpReserved);
void WriteMessageToEventLog(LPTSTR lpszMsg);
void ProcessQueryString(EXTENSION_CONTROL_BLOCK *pECB, int
*pCmd, int *pFormId, int *pTermId, int *pSyncId);
void WelcomeForm(EXTENSION_CONTROL_BLOCK *pECB, char
*szBuffer);
void SubmitCmd(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer);
void BeginCmd(EXTENSION_CONTROL_BLOCK *pECB, int iFormId, int
iTermId);
void ProcessCmd(EXTENSION_CONTROL_BLOCK *pECB, int iFormId, int
iTermId);
void StatsCmd(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer);
void ErrorMessage(EXTENSION_CONTROL_BLOCK *pECB, int iError, int
iErrorType, char *szMsg, int iTermId);
void GetKeyValue(char **pQueryString, char *pKey, char *pValue, int iMax,
WEBERROR err);
int  GetIntKeyValue(char **pQueryString, char *pKey, WEBERROR
NoKeyErr, WEBERROR NotIntErr);
void TermInit(void);
void TermDeleteAll(void);
int  TermAdd(void);
void TermDelete(int id);
void ErrorForm(EXTENSION_CONTROL_BLOCK *pECB, int iType, int
iErrorNum, int iTermId, int iSyncId, char *szErrorText, char *szBuffer );
```

```
void MakeMainMenuForm(int iTermId, int iSyncId, char *szForm);
void MakeStockLevelForm(int iTermId, STOCK_LEVEL_DATA
*pStockLevelData, BOOL bInput, char *szForm);
void MakeNewOrderForm(int iTermId, NEW_ORDER_DATA
*pNewOrderData, BOOL bInput, char *szForm);
void MakePaymentForm(int iTermId, PAYMENT_DATA *pPaymentData,
BOOL bInput, char *szForm);
void MakeOrderStatusForm(int iTermId, ORDER_STATUS_DATA
*pOrderStatusData, BOOL bInput, char *szForm);
void MakeDeliveryForm(int iTermId, DELIVERY_DATA *pDeliveryData,
BOOL bInput, char *szForm);
void ProcessNewOrderForm(EXTENSION_CONTROL_BLOCK  *pECB, int
iTermId, char *szBuffer);
void ProcessPaymentForm(EXTENSION_CONTROL_BLOCK *pECB, int
iTermId, char *szBuffer);
void ProcessOrderStatusForm(EXTENSION_CONTROL_BLOCK *pECB, int
iTermId, char *szBuffer);
void ProcessDeliveryForm(EXTENSION_CONTROL_BLOCK *pECB, int
iTermId, char *szBuffer);
void ProcessStockLevelForm(EXTENSION_CONTROL_BLOCK *pECB, int
iTermId, char *szBuffer);
void GetNewOrderData(LPSTR lpszQueryString, NEW_ORDER_DATA
*pNewOrderData);
void GetPaymentData(LPSTR lpszQueryString, PAYMENT_DATA
*pPaymentData);
void GetOrderStatusData(LPSTR lpszQueryString, ORDER_STATUS_DATA
*pOrderStatusData);
BOOL PostDeliveryInfo(short w_id, short o_carrier_id);
BOOL IsNumeric(char *ptr);
BOOL IsDecimal(char *ptr);
void DeliveryWorkerThread(void *ptr);
```

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 definations of structures specific to TPC-C
#include "..\..\common\src\error.h"
#include "..\..\common\src\txn_base.h"
#include "tpcc_com.h"

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

// wrapper routine for class constructor
__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.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_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.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 Sat Apr 08 16:40:10 2000
 */
/* 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 Sat Apr 08 16:40:10 2000
 */
/* 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 Sat Apr 08 16:40:10 2000
 */
/* 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 Sat Apr 08 16:40:10 2000
 */
/* 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,{0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0
x00}} */


/* Object interface: IUnknown, ver. 0.0,

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


/* Object interface: ITPCC, ver. 0.0,

GUID={0xFEEE6AA2,0x84B1,0x11d2,{0xBA,0x47,0x00,0xC0,0x4F,0xBF,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,
    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 */
```

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                                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( 0xffffffe0 ),       /* 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 */
```

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/* 534 */
                                0x11, 0x0, /* FC_RP */
/* 536 */   NdrFcShort( 0xfffffffe0 ),          /* 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 */   0x2,                /* FC_CHAR */
                                0x5b,                   /* FC_END */
/* 684 */
                                0x15,                   /* FC_STRUCT */
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                                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( 0xfffffff1 ),       /* 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( 0xfffffe0c ),       /* 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 */
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/* 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( 0xffffffdc ),          /* 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 Sat Apr 08 16:40:10 2000
 */
/* 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,{0xC0,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
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( 0xffffffe0 ),           /* 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 */   0x2,                /* FC_CHAR */
                                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( 0xffffffe7 ),           /* 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( 0xffffffe6 ),           /* 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( 0xffffffe6 ),           /* Offset= -26 (732) */
/* 760 */
                                0x1b,               /* FC_CARRAY */
                                0x3,                /* 3 */
/* 762 */   NdrFcShort( 0x4 ),  /* 4 */
/* 764 */   0x19,               /* Corr desc:  field pointer, FC_ULONG */
                                0x0,                /*  */
/* 766 */   NdrFcShort( 0x0 ),  /* 0 */
/* 768 */   NdrFcShort( 0x1 ),  /* Corr flags:  early, */
```

```
/* 770 */   0x8,                /* FC_LONG */
                                0x5b,               /* FC_END */
/* 772 */
                                0x1a,               /*
FC_BOGUS_STRUCT */
                                0x3,                /* 3 */
/* 774 */   NdrFcShort( 0x10 ), /* 16 */
/* 776 */   NdrFcShort( 0x0 ),  /* 0 */
/* 778 */   NdrFcShort( 0x6 ),  /* Offset= 6 (784) */
/* 780 */   0x8,                /* FC_LONG */
                                0x39,               /* FC_ALIGNM8 */
/* 782 */   0x36,               /* FC_POINTER */
                                0x5b,               /* FC_END */
/* 784 */
                                0x12, 0x0, /* FC_UP */
/* 786 */   NdrFcShort( 0xfffffffe6 ),          /* Offset= -26 (760) */
/* 788 */
                                0x1b,               /* FC_CARRAY */
                                0x7,                /* 7 */
/* 790 */   NdrFcShort( 0x8 ),  /* 8 */
/* 792 */   0x19,               /* Corr desc:  field pointer, FC_ULONG */
                                0x0,                /*  */
/* 794 */   NdrFcShort( 0x0 ),  /* 0 */
/* 796 */   NdrFcShort( 0x1 ),  /* Corr flags:  early, */
/* 798 */   0xb,                /* FC_HYPER */
                                0x5b,               /* FC_END */
/* 800 */
                                0x1a,               /*
FC_BOGUS_STRUCT */
                                0x3,                /* 3 */
/* 802 */   NdrFcShort( 0x10 ), /* 16 */
/* 804 */   NdrFcShort( 0x0 ),  /* 0 */
/* 806 */   NdrFcShort( 0x6 ),  /* Offset= 6 (812) */
/* 808 */   0x8,                /* FC_LONG */
                                0x39,               /* FC_ALIGNM8 */
/* 810 */   0x36,               /* FC_POINTER */
                                0x5b,               /* FC_END */
/* 812 */
                                0x12, 0x0, /* FC_UP */
/* 814 */   NdrFcShort( 0xfffffffe6 ),          /* Offset= -26 (788) */
/* 816 */
                                0x15,               /* FC_STRUCT */
                                0x3,                /* 3 */
/* 818 */   NdrFcShort( 0x8 ),  /* 8 */
/* 820 */   0x8,                /* FC_LONG */
                                0x8,                /* FC_LONG */
/* 822 */   0x5c,               /* FC_PAD */
                                0x5b,               /* FC_END */
/* 824 */
                                0x1b,               /* FC_CARRAY */
                                0x3,                /* 3 */
/* 826 */   NdrFcShort( 0x8 ),  /* 8 */
/* 828 */   0x7,                /* Corr desc: FC_USHORT */
                                0x0,                /*  */
/* 830 */   NdrFcShort( 0xffc8 ), /* -56 */
/* 832 */   NdrFcShort( 0x1 ),  /* Corr flags:  early, */
/* 834 */   0x4c,               /* FC_EMBEDDED_COMPLEX */
                                0x0,                /* 0 */
/* 836 */   NdrFcShort( 0xffffffec ),           /* Offset= -20 (816) */
/* 838 */   0x5c,               /* FC_PAD */
                                0x5b,               /* FC_END */
/* 840 */
                                0x1a,               /*
FC_BOGUS_STRUCT */
                                0x3,                /* 3 */
/* 842 */   NdrFcShort( 0x38 ), /* 56 */
/* 844 */   NdrFcShort( 0xffffffec ),           /* Offset= -20 (824) */
/* 846 */   NdrFcShort( 0x0 ),  /* Offset= 0 (846) */
/* 848 */   0x6,                /* FC_SHORT */
                                0x6,                /* FC_SHORT */
/* 850 */   0x38,               /* FC_ALIGNM4 */
                                0x8,                /* FC_LONG */
/* 852 */   0x8,                /* FC_LONG */
                                0x4c,               /*
FC_EMBEDDED_COMPLEX */
/* 854 */   0x4,                /* 4 */
                                NdrFcShort( 0xfffffe0d ),           /* Offset=
-499 (356) */
                                0x5b,               /* FC_END */
/* 858 */
                                0x12, 0x0, /* FC_UP */
/* 860 */   NdrFcShort( 0xffffff02 ),           /* Offset= -254 (606) */
/* 862 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 864 */   0x1,                /* FC_BYTE */
                                0x5c,               /* FC_PAD */
/* 866 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 868 */   0x6,                /* FC_SHORT */
                                0x5c,               /* FC_PAD */
/* 870 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 872 */   0x8,                /* FC_LONG */
                                0x5c,               /* FC_PAD */
/* 874 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 876 */   0xa,                /* FC_FLOAT */
                                0x5c,               /* FC_PAD */
/* 878 */
                                0x12, 0x8, /* FC_UP [simple_pointer] */
/* 880 */   0xc,                /* FC_DOUBLE */
                                0x5c,               /* FC_PAD */
/* 882 */
                                0x12, 0x0, /* FC_UP */
/* 884 */   NdrFcShort( 0xfffffda4 ),           /* Offset= -604 (280) */
/* 886 */
                                0x12, 0x10,         /* FC_UP
[pointer_deref] */
/* 888 */   NdrFcShort( 0xfffffda6 ),           /* Offset= -602 (286) */
/* 890 */
                                0x12, 0x10,         /* FC_UP
[pointer_deref] */
/* 892 */   NdrFcShort( 0xfffffdbc ),           /* Offset= -580 (312) */
/* 894 */
                                0x12, 0x10,         /* FC_UP
[pointer_deref] */
/* 896 */   NdrFcShort( 0xfffffdca ),           /* Offset= -566 (330) */
/* 898 */
                                0x12, 0x10,         /* FC_UP
[pointer_deref] */
/* 900 */   NdrFcShort( 0xfffffdd8 ),           /* Offset= -552 (348) */
/* 902 */
                                0x12, 0x10,         /* FC_UP
[pointer_deref] */
/* 904 */   NdrFcShort( 0x2 ),  /* Offset= 2 (906) */
/* 906 */
                                0x12, 0x0, /* FC_UP */
/* 908 */   NdrFcShort( 0x16 ), /* Offset= 22 (930) */
/* 910 */
                                0x15,               /* FC_STRUCT */
                                0x7,                /* 7 */
/* 912 */   NdrFcShort( 0x10 ), /* 16 */
/* 914 */   0x6,                /* FC_SHORT */
                                0x1,                /* FC_BYTE */
/* 916 */   0x1,                /* FC_BYTE */
                                0x38,               /* FC_ALIGNM4 */
```

```
/* 918 */   0x8,                    /* FC_LONG */
                                    0x39,                   /* FC_ALIGNM8 */
/* 920 */   0xb,                    /* FC_HYPER */
                                    0x5b,                   /* FC_END */
/* 922 */
                                    0x12, 0x0, /* FC_UP */
/* 924 */   NdrFcShort( 0xffffffe2 ),           /* 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_dblib.cpp

```
/*          FILE:                   TPCC_DBLIB.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 dblib 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
 *                                          - had to tweak some declarations
to compile with latest SDK; no functional change
 */

#include <windows.h>
#include <stdio.h>
#include <assert.h>

#define DBNTWIN32
#include <sqlfront.h>
#include <sqldb.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_dblib.h"

#define     DEFCLPACKSIZE                   4096

// 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
static      long        iConnectionCount = 0;  // number of current dblib
connections

const int iErrOleDbProvider = 7312;
const char sErrTimeoutExpired[] = "Timeout expired";

BOOL APIENTRY DllMain(HMODULE hModule, DWORD
ul_reason_for_call, LPVOID lpReserved)
{
        switch( ul_reason_for_call )
        {
                case DLL_PROCESS_ATTACH:
                        DisableThreadLibraryCalls(hModule);
                        dbinit();           // initialize dblib
                        break;

                case DLL_PROCESS_DETACH:
                        dbexit();           // close all dblib
structures/connections
                        break;

                default:
                        /* nothing */;
        }
        return TRUE;
}


int err_handler(DBPROCESS *dbproc, int severity, int dberr, int oserr,
LPCSTR dberrstr, LPCSTR oserrstr)
{
        CTPCC_DBLIB                     *pConn;

        assert(dbproc != NULL);
        pConn = (CTPCC_DBLIB*)dbgetuserdata(dbproc);

        if (pConn != NULL)
        {
                pConn->SetDbLibError( severity, dberr, oserr, dberrstr,
oserrstr );
        }
        return INT_CANCEL;
}

/* FUNCTION: int msg_handler(DBPROCESS *dbproc, DBINT msgno, int
msgstate, int severity, char *msgtext)
 *
 * PURPOSE:         This function handles DB-Library SQL Server error
messages
 *
 * ARGUMENTS:     DBPROCESS                   *dbproc
DBPROCESS id pointer
 *                                          DBINT
msgno                   message number
 *                                          int
msgstate                message state
 *                                          int
severity                message severity
 *                                          char
*msgtext                printable message description
 *
 * RETURNS:                 int
INT_CONTINUE    continue if error is SQLETIME else INT_CANCEL
action
 *
INT_CANCEL                  cancel operation
 *
 * COMMENTS:       This function also sets the dead lock dbproc variable if
necessary.
 *
 */

// typedef INT (SQLAPI *DBMSGHANDLE_PROC)(PDBPROCESS, DBINT,
INT, INT, LPCSTR, LPCSTR, LPCSTR, DBUSMALLINT);

int msg_handler(DBPROCESS *dbproc, DBINT msgno, int msgstate, int
severity,
                                        LPCSTR msgtext, LPCSTR
srvname, LPCSTR procname, DBUSMALLINT line)
{
        CTPCC_DBLIB                     *pConn;

        assert(dbproc != NULL);
        pConn = (CTPCC_DBLIB*)dbgetuserdata(dbproc);

        if (pConn != NULL)
        {
                pConn->SetSqlError( msgno, msgstate, severity, msgtext
);
        }

        return 0;
}

/* FUNCTION: void UtilStrCpy(char * pDest, char * pSrc, int n)
 *
 * PURPOSE:         This function copies n characters from string pSrc to pDst
and places a
 *                  null character at the end of the destination
string.
 *
 * ARGUMENTS:     char                    *pDest      destination
string pointer
 *                                          char
*pSrc       source string pointer
 *                                          int
n                       number of characters to copy
 *
 * RETURNS:                 None
 *
 * COMMENTS:       Unlike strncpy this function ensures that the result string
is
 *                                          always null terminated.
 *
 */
```

```
inline static void UtilStrCpy(char * pDest, const BYTE * pSrc, int n)
{
   strncpy(pDest, (char *)pSrc, n);
   pDest[n] = '\0';

        return;
}

/* FUNCTION: CTPCC_DBLIB_ERR::ErrorText
 *
 */

char* CTPCC_DBLIB_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_DBLIB* CTPCC_DBLIB_new(
        LPCSTR szServer,                // name of SQL server
        LPCSTR szUser,                          // user name for login
        LPCSTR szPassword,              // password for login
        LPCSTR szHost,                          // workstation name;
shows up in sp_who; max 30 chars, only first 10 kept by SQL Server
        LPCSTR szDatabase )             // name of database to use
{
        return new CTPCC_DBLIB( szServer, szUser, szPassword, szHost,
szDatabase );
}


CTPCC_DBLIB::CTPCC_DBLIB (
        LPCSTR szServer,                // name of SQL server
        LPCSTR szUser,                          // user name for login
        LPCSTR szPassword,              // password for login
        LPCSTR szHost,                          // workstation name;
shows up in sp_who; max 30 chars, only first 10 kept by SQL Server
        LPCSTR szDatabase )             // name of database to use
{
        LOGINREC        *login;
        const BYTE      *pData;

        // initialization
        m_dbproc = NULL;
        m_DbLibErr = (CDBLIBERR*)NULL;
        m_SqlErr = (CSQLERR*)NULL;

        m_MaxRetries = 10;              // how many retries on deadlock

        // increase max number of connections if getting close
        if ( dbgetmaxprocs() < (iConnectionCount+5) )
        {
                if ( dbsetmaxprocs(iConnectionCount+10) == FAIL )

ThrowError(CDBLIBERR::eDbSetMaxProcs);
        }

        // allocate a login structure
        login = dblogin();
        if (login == NULL)
                ThrowError(CDBLIBERR::eLogin);
        InterlockedIncrement( &iConnectionCount );

        // register error and message handler functions
        if (dbprocerrhandle(login, err_handler) == NULL)
                ThrowError(CDBLIBERR::eDbProcHandler);

        if (dbprocmsghandle(login, msg_handler) == NULL)
                ThrowError(CDBLIBERR::eDbProcHandler);


        DBSETLUSER(login, szUser);
        DBSETLPWD(login, szPassword);
        DBSETLHOST(login, szHost);
        DBSETLPACKET(login, (unsigned short)DEFCLPACKSIZE);
        DBSETLVERSION(login, DBVER60);                  // use dblib
ver 6.0 client behavior

        // set time to wait for login
        if (dbsetlogintime(60) == FAIL)
                ThrowError(CDBLIBERR::eDbSet);

        // set time to wait for statement execution
        if (dbsettime(180) == FAIL)
                ThrowError(CDBLIBERR::eDbSet);

        m_dbproc = dbopen(login, szServer);

        // deallocate login structure before checking for success
        dbfreelogin( login );

        if (m_dbproc == NULL)
                ThrowError(CDBLIBERR::eDbOpen);

        // save address of class instance so that the message and error
handler
        // can get to data.
        dbsetuserdata(m_dbproc, (LPVOID)this);

        // Use the the right database
        if (dbuse(m_dbproc, szDatabase) == FAIL)
                ThrowError(CDBLIBERR::eDbUse);

        dbcmd(m_dbproc, "set nocount on ");                     //
do not return row counts
```

```
	dbcmd(m_dbproc, "set XACT_ABORT ON");                    //
rollback transaction on abort

	if (dbsqlexec(m_dbproc) == FAIL)
		ThrowError(CDBLIBERR::eDbSqlExec);

	DiscardNextResults(2);

	// verify that version of stored procs on server is correct
	dbrpcinit(m_dbproc, "tpcc_version", 0);

	if (dbrpcexec(m_dbproc) == FAIL)
		ThrowError(CDBLIBERR::eDbRpcExec);

	if (dbresults(m_dbproc) != SUCCEED)
		ThrowError(CDBLIBERR::eDbResults);

	if (dbnextrow(m_dbproc) != REG_ROW)
		ThrowError(CDBLIBERR::eDbNextRow);

	char szSrvVersion[16];
	pData=dbdata(m_dbproc, 1);
	if (pData)
		UtilStrCpy(szSrvVersion, pData, dbdatlen(m_dbproc,
1));
	else
		szSrvVersion[0]=0;
	if (strcmp(szSrvVersion,sVersion))
		throw new CTPCC_DBLIB_ERR(
CTPCC_DBLIB_ERR::ERR_WRONG_SP_VERSION );


	DiscardNextRows(0);
	DiscardNextResults(0);
}


CTPCC_DBLIB::~CTPCC_DBLIB( void )
{
	// close db connection and deallocate resources
	dbclose(m_dbproc);
	InterlockedDecrement( &iConnectionCount );
	if (m_DbLibErr != NULL)
		delete m_DbLibErr;
	if (m_SqlErr != NULL)
		delete m_SqlErr;
}

void CTPCC_DBLIB::SetDbLibError(int severity, int dberr, int oserr, LPCSTR
dberrstr, LPCSTR oserrstr)
{
	delete m_DbLibErr;
	m_DbLibErr = new CDBLIBERR(CDBLIBERR::eUnknown,
severity, dberr, oserr);

	if (dberrstr != NULL)
	{
		m_DbLibErr->m_dberrstr = new char[ strlen(dberrstr)+1
];
		strcpy( m_DbLibErr->m_dberrstr, dberrstr );
	}

	if (oserrstr != NULL)
	{
		m_DbLibErr->m_oserrstr = new char[ strlen(oserrstr)+1
];
		strcpy( m_DbLibErr->m_oserrstr, oserrstr );
	}
}

void CTPCC_DBLIB::SetSqlError( int /*DBINT*/ msgno, int msgstate, int
severity, LPCSTR msgtext )
{
	if (m_SqlErr == NULL)
		m_SqlErr = new CSQLERR();

	m_SqlErr->m_msgno = msgno;
	m_SqlErr->m_msgstate = msgstate;
	m_SqlErr->m_severity = severity;

	delete [] m_SqlErr->m_msgtext;
	if (msgtext != NULL)
	{
		m_SqlErr->m_msgtext = new char[ strlen(msgtext)+1 ];
		strcpy( m_SqlErr->m_msgtext, msgtext );
	}
}

void CTPCC_DBLIB::ThrowError( CDBLIBERR::ACTION eAction )
{
	// discard anything still in return buffer
	DiscardNextRows(-1);
	DiscardNextResults(-1);

	// check for SQL Server error first;  if yes, throw it and ignore any
DBLib error.
	if (m_SqlErr != NULL)
	{
		CSQLERR		*pSqlErr;
		pSqlErr = m_SqlErr;
		m_SqlErr = NULL;    // clear our pointer to instance;
catch handler will delete
		throw pSqlErr;
	}

	CDBLIBERR		*pDbLibErr;
	if (m_DbLibErr == NULL)
		// this case isn't expected to happen, since it means that an
error was returned
		// but the error handlers were not called.
		pDbLibErr = new CDBLIBERR(eAction);
	else
	{
		pDbLibErr = m_DbLibErr;
		pDbLibErr->m_eAction = eAction;
		m_DbLibErr = NULL;				// clear our
pointer to instance; catch handler will delete
	}

	throw pDbLibErr;
}

// Read and discard rows until no more.  Throw an exception if number of rows
read doesn't
// match number of rows expected.  The row count will be ignored if the
expected count value
// passed in is negative.  A typical use of this routine is to verify that there are
no more
// rows to be read.
void CTPCC_DBLIB::DiscardNextRows(int iExpectedCount)
{
	int			iRowsRead = 0;
	RETCODE		rc;

	while (TRUE)
```

```
	{
		rc = dbnextrow(m_dbproc);
		if (rc == NO_MORE_ROWS)
			break;
		if (rc == FAIL)
		{
			if (iExpectedCount >= 0)

ThrowError(CDBLIBERR::eDbNextRow);
			else
				break;
		}
		iRowsRead++;
	}

	if ((iExpectedCount >= 0) &&
		(iExpectedCount != iRowsRead))
		ThrowError(CDBLIBERR::eWrongRowCount);
}

// Read and discard results until no more.  Throw an exception if number of
result sets read doesn't
// match number expected.  The result set count will be ignored if the expected
count value
// passed in is negative.  A typical use of this routine is to verify that there are
no more
// result sets to be read.
void CTPCC_DBLIB::DiscardNextResults(int iExpectedCount)
{
	int			iResultsRead = 0;
	RETCODE		rc;

	while (TRUE)
	{
		rc = dbresults(m_dbproc);
		if (rc == NO_MORE_RESULTS)
			break;
		if (rc == FAIL)
		{
			if (iExpectedCount >= 0)

ThrowError(CDBLIBERR::eDbResults);
			else
				break;
		}

		DiscardNextRows(-1);
		iResultsRead++;
	}

	if ((iExpectedCount >= 0) &&
		(iExpectedCount != iResultsRead))
		ThrowError(CDBLIBERR::eWrongRowCount);
}

void CTPCC_DBLIB::StockLevel()
{
	int				iTryCount = 0;
	const BYTE		*pData;

	ResetError();

	while (TRUE)
	{
		try
		{
			dbrpcinit(m_dbproc, "tpcc_stocklevel", 0);
			dbrpcparam(m_dbproc, NULL, 0, SQLINT2,
-1, -1, (BYTE *) &m_txn.StockLevel.w_id);		// @w_id smallint
			dbrpcparam(m_dbproc, NULL, 0, SQLINT1,
-1, -1, (BYTE *) &m_txn.StockLevel.d_id);		// @d_id tinyint
			dbrpcparam(m_dbproc, NULL, 0, SQLINT2,
-1, -1, (BYTE *) &m_txn.StockLevel.threshold);	// @threshhold smallint

			if (dbrpcexec(m_dbproc) == FAIL)

ThrowError(CDBLIBERR::eDbRpcExec);

			if (dbresults(m_dbproc) != SUCCEED)

ThrowError(CDBLIBERR::eDbResults);

			if (dbnextrow(m_dbproc) != REG_ROW)

ThrowError(CDBLIBERR::eDbNextRow);

			if (pData=dbdata(m_dbproc, 1))
				m_txn.StockLevel.low_stock =
*((long *) pData);

			DiscardNextRows(0);
			DiscardNextResults(0);

			m_txn.StockLevel.exec_status_code = eOK;
			return;
		}
		catch (CSQLERR *e)
		{
			if ((e->m_msgno == 1205 ||
				(e->m_msgno ==
iErrOleDbProvider &&
				strstr(e->m_msgtext,
sErrTimeoutExpired) != NULL)) &&
				(++iTryCount <= iMaxRetries))
			{
				// hit deadlock; backoff for
increasingly longer period
				delete e;
				Sleep(10 * iTryCount);
			}
			else
				throw;
		}
	}	// while (TRUE)

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


void CTPCC_DBLIB::NewOrder()
{
	int				i;
	DBINT			commit_flag;
	DBDATETIME		datetime;
	DBDATEREC		daterec;

	int				iTryCount = 0;
	const BYTE		*pData;

	ResetError();

	while (TRUE)
```

```
	{
		try
		{
			dbrpcinit(m_dbproc, "tpcc_neworder", 0);

			dbrpcparam(m_dbproc, NULL, 0, SQLINT2,
-1, -1, (BYTE *) &m_txn.NewOrder.w_id);
			dbrpcparam(m_dbproc, NULL, 0, SQLINT1,
-1, -1, (BYTE *) &m_txn.NewOrder.d_id);
			dbrpcparam(m_dbproc, NULL, 0, SQLINT4,
-1, -1, (BYTE *) &m_txn.NewOrder.c_id);
			dbrpcparam(m_dbproc, NULL, 0, SQLINT1,
-1, -1, (BYTE *) &m_txn.NewOrder.o_ol_cnt);

			// 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;
				}
			}
			dbrpcparam(m_dbproc, NULL, 0, SQLINT1,
-1, -1, (BYTE *) &m_txn.NewOrder.o_all_local);

			for (i = 0; i < m_txn.NewOrder.o_ol_cnt; i++)
			{
				dbrpcparam(m_dbproc, NULL, 0,
SQLINT4, -1, -1, (BYTE *) &m_txn.NewOrder.OL[i].ol_i_id);
				dbrpcparam(m_dbproc, NULL, 0,
SQLINT2, -1, -1, (BYTE *) &m_txn.NewOrder.OL[i].ol_supply_w_id);
				dbrpcparam(m_dbproc, NULL, 0,
SQLINT2, -1, -1, (BYTE *) &m_txn.NewOrder.OL[i].ol_quantity);
			}

			if (dbrpcexec(m_dbproc) == FAIL)

ThrowError(CDBLIBERR::eDbRpcExec);


			// Get order line results
			m_txn.NewOrder.total_amount = 0;

			for (i = 0; i<m_txn.NewOrder.o_ol_cnt; i++)
			{
				if (dbresults(m_dbproc) !=
SUCCEED)

ThrowError(CDBLIBERR::eDbResults);

				if (dbnumcols(m_dbproc) != 5)

ThrowError(CDBLIBERR::eWrongNumCols);

				if (dbnextrow(m_dbproc) !=
REG_ROW)

ThrowError(CDBLIBERR::eDbNextRow);

				if(pData=dbdata(m_dbproc, 1))

UtilStrCpy(m_txn.NewOrder.OL[i].ol_i_name, pData, dbdatlen(m_dbproc, 1));
				if(pData=dbdata(m_dbproc, 2))

m_txn.NewOrder.OL[i].ol_stock = (*(DBSMALLINT *) pData);
				if(pData=dbdata(m_dbproc, 3))

UtilStrCpy(m_txn.NewOrder.OL[i].ol_brand_generic, pData,
dbdatlen(m_dbproc, 3));
				if(pData=dbdata(m_dbproc, 4))
					dbconvert(m_dbproc,
SQLNUMERIC, (LPCBYTE)pData, dbdatlen(m_dbproc,4),
					SQLFLT8, (BYTE
*)&m_txn.NewOrder.OL[i].ol_i_price, 8);
				if(pData=dbdata(m_dbproc, 5))

					dbconvert(m_dbproc,
SQLNUMERIC, (LPCBYTE)pData, dbdatlen(m_dbproc,5),
					SQLFLT8, (BYTE
*)&m_txn.NewOrder.OL[i].ol_amount, 8);

					m_txn.NewOrder.total_amount =
m_txn.NewOrder.total_amount + m_txn.NewOrder.OL[i].ol_amount;

					DiscardNextRows(0);
			}


			// get remaining values for w_tax, d_tax, o_id,
c_last, c_discount, c_credit, o_entry_d, commit_flag
			if (dbresults(m_dbproc) != SUCCEED)

ThrowError(CDBLIBERR::eDbResults);

			if (dbnextrow(m_dbproc) != REG_ROW)

ThrowError(CDBLIBERR::eDbNextRow);

			if (dbnumcols(m_dbproc) != 8)

ThrowError(CDBLIBERR::eWrongNumCols);

			if (pData=dbdata(m_dbproc, 1))


				dbconvert(m_dbproc,
SQLNUMERIC, (LPCBYTE)pData, dbdatlen(m_dbproc,1), SQLFLT8, (BYTE
*)&m_txn.NewOrder.w_tax, 8);
			if (pData=dbdata(m_dbproc, 2))

				dbconvert(m_dbproc,
SQLNUMERIC, (LPCBYTE)pData, dbdatlen(m_dbproc,2), SQLFLT8, (BYTE
*)&m_txn.NewOrder.d_tax, 8);
			if (pData=dbdata(m_dbproc, 3))
				m_txn.NewOrder.o_id =
(*(DBINT *) pData);
			if (pData=dbdata(m_dbproc, 4))

UtilStrCpy(m_txn.NewOrder.c_last, pData, dbdatlen(m_dbproc, 4));
			if (pData=dbdata(m_dbproc, 5))
				dbconvert(m_dbproc,
SQLNUMERIC, (LPCBYTE)pData, dbdatlen(m_dbproc,5), SQLFLT8, (BYTE
*)&m_txn.NewOrder.c_discount, 8);
			if (pData=dbdata(m_dbproc, 6))

UtilStrCpy(m_txn.NewOrder.c_credit, pData, dbdatlen(m_dbproc, 6));
			if (pData=dbdata(m_dbproc, 7))
			{
				datetime = *((DBDATETIME *)
pData);
```

```
                                        dbdatecrack(m_dbproc, &daterec,
&datetime);
                                        m_txn.NewOrder.o_entry_d.year
= daterec.year;
                                        m_txn.NewOrder.o_entry_d.month
 = daterec.month;
                                        m_txn.NewOrder.o_entry_d.day
= daterec.day;
                                        m_txn.NewOrder.o_entry_d.hour
= daterec.hour;

m_txn.NewOrder.o_entry_d.minute = daterec.minute;

m_txn.NewOrder.o_entry_d.second = daterec.second;
                                }
                                if (pData=dbdata(m_dbproc, 8))
                                        commit_flag = (*(DBTINYINT *)
pData);

                                DiscardNextRows(0);
                                DiscardNextResults(0);


                                if (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;

                                return;
                        }
                        catch (CSQLERR *e)
                        {
                                if ((e->m_msgno == 1205 ||
                                        (e->m_msgno ==
iErrOleDbProvider &&
                                        strstr(e->m_msgtext,
sErrTimeoutExpired) != NULL)) &&
                                        (++iTryCount <= iMaxRetries))
                                {
                                        // hit deadlock; backoff for
increasingly longer period
                                        delete e;
                                        Sleep(10 * iTryCount);
                                }
                                else
                                        throw;
                        }
                }               // while (TRUE)

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


void CTPCC_DBLIB::Payment()
{
        DBDATETIME      datetime;
        DBDATEREC       daterec;
        int                             iTryCount = 0;
        const BYTE              *pData;

        ResetError();

        while (TRUE)
        {
                try
                {
                        dbrpcinit(m_dbproc, "tpcc_payment", 0);

                        dbrpcparam(m_dbproc, NULL, 0, SQLINT2,
-1, -1, (BYTE *) &m_txn.Payment.w_id);
                        dbrpcparam(m_dbproc, NULL, 0, SQLINT2,
-1, -1, (BYTE *) &m_txn.Payment.c_w_id);
                        dbrpcparam(m_dbproc, NULL, 0, SQLFLT8,
-1, -1, (BYTE *) &m_txn.Payment.h_amount);
                        dbrpcparam(m_dbproc, NULL, 0, SQLINT1,
-1, -1, (BYTE *) &m_txn.Payment.d_id);
                        dbrpcparam(m_dbproc, NULL, 0, SQLINT1,
-1, -1, (BYTE *) &m_txn.Payment.c_d_id);
                        dbrpcparam(m_dbproc, NULL, 0, SQLINT4,
-1, -1, (BYTE *) &m_txn.Payment.c_id);

                        // if customer id is zero, then payment is by
name
                        if (m_txn.Payment.c_id == 0)
                                dbrpcparam(m_dbproc, NULL, 0,
SQLCHAR, -1, strlen(m_txn.Payment.c_last), (unsigned char
*)m_txn.Payment.c_last);

                        if (dbrpcexec(m_dbproc) == FAIL)

ThrowError(CDBLIBERR::eDbRpcExec);

                        if (dbresults(m_dbproc) != SUCCEED)

ThrowError(CDBLIBERR::eDbResults);

                        if (dbnextrow(m_dbproc) != REG_ROW)

ThrowError(CDBLIBERR::eDbNextRow);

                        if (dbnumcols(m_dbproc) != 27)

ThrowError(CDBLIBERR::eWrongNumCols);

                        if (pData=dbdata(m_dbproc, 1))
                                m_txn.Payment.c_id = *((DBINT
*) pData);
                        if (pData=dbdata(m_dbproc, 2))
                                UtilStrCpy(m_txn.Payment.c_last,
pData, dbdatlen(m_dbproc, 2));
                        if (pData=dbdata(m_dbproc, 3))
                        {
                                datetime = *((DBDATETIME *)
pData);
                                dbdatecrack(m_dbproc, &daterec,
&datetime);
                                m_txn.Payment.h_date.year   =
daterec.year;
                                m_txn.Payment.h_date.month  =
daterec.month;
                                m_txn.Payment.h_date.day    =
daterec.day;
                                m_txn.Payment.h_date.hour   =
daterec.hour;
```

```
                                        m_txn.Payment.h_date.minute =
daterec.minute;
                                        m_txn.Payment.h_date.second =
daterec.second;
                                }
                                if (pData=dbdata(m_dbproc, 4))

UtilStrCpy(m_txn.Payment.w_street_1, pData, dbdatlen(m_dbproc, 4));
                                if (pData=dbdata(m_dbproc, 5))

UtilStrCpy(m_txn.Payment.w_street_2, pData, dbdatlen(m_dbproc, 5));
                                if (pData=dbdata(m_dbproc, 6))

UtilStrCpy(m_txn.Payment.w_city, pData, dbdatlen(m_dbproc, 6));
                                if (pData=dbdata(m_dbproc, 7))

UtilStrCpy(m_txn.Payment.w_state, pData, dbdatlen(m_dbproc, 7));
                                if (pData=dbdata(m_dbproc, 8))
                                        UtilStrCpy(m_txn.Payment.w_zip,
pData, dbdatlen(m_dbproc, 8));
                                if (pData=dbdata(m_dbproc, 9))

UtilStrCpy(m_txn.Payment.d_street_1, pData, dbdatlen(m_dbproc, 9));
                                if (pData=dbdata(m_dbproc, 10))

UtilStrCpy(m_txn.Payment.d_street_2, pData, dbdatlen(m_dbproc, 10));
                                if (pData=dbdata(m_dbproc, 11))
                                        UtilStrCpy(m_txn.Payment.d_city,
pData, dbdatlen(m_dbproc, 11));
                                if (pData=dbdata(m_dbproc, 12))

UtilStrCpy(m_txn.Payment.d_state, pData, dbdatlen(m_dbproc, 12));
                                if (pData=dbdata(m_dbproc, 13))
                                        UtilStrCpy(m_txn.Payment.d_zip,
pData, dbdatlen(m_dbproc, 13));
                                if (pData=dbdata(m_dbproc, 14))
                                        UtilStrCpy(m_txn.Payment.c_first,
pData, dbdatlen(m_dbproc, 14));
                                if (pData=dbdata(m_dbproc, 15))

UtilStrCpy(m_txn.Payment.c_middle, pData, dbdatlen(m_dbproc, 15));
                                if (pData=dbdata(m_dbproc, 16))

UtilStrCpy(m_txn.Payment.c_street_1, pData, dbdatlen(m_dbproc, 16));
                                if (pData=dbdata(m_dbproc, 17))

UtilStrCpy(m_txn.Payment.c_street_2, pData, dbdatlen(m_dbproc, 17));
                                if (pData=dbdata(m_dbproc, 18))
                                        UtilStrCpy(m_txn.Payment.c_city,
pData, dbdatlen(m_dbproc, 18));
                                if (pData=dbdata(m_dbproc, 19))

UtilStrCpy(m_txn.Payment.c_state, pData, dbdatlen(m_dbproc, 19));
                                if (pData=dbdata(m_dbproc, 20))
                                        UtilStrCpy(m_txn.Payment.c_zip,
pData, dbdatlen(m_dbproc, 20));
                                if (pData=dbdata(m_dbproc, 21))

UtilStrCpy(m_txn.Payment.c_phone, pData, dbdatlen(m_dbproc, 21));
                                if (pData=dbdata(m_dbproc, 22))
                                {
                                        datetime = *((DBDATETIME *)
pData);
                                        dbdatecrack(m_dbproc, &daterec,
&datetime);
                                        m_txn.Payment.c_since.year   =
daterec.year;
                                        m_txn.Payment.c_since.month  =
daterec.month;
                                        m_txn.Payment.c_since.day    =
daterec.day;
                                        m_txn.Payment.c_since.hour   =
daterec.hour;
                                        m_txn.Payment.c_since.minute =
daterec.minute;
                                        m_txn.Payment.c_since.second =
daterec.second;
                                }
                                if(pData=dbdata(m_dbproc, 23))

UtilStrCpy(m_txn.Payment.c_credit, pData, dbdatlen(m_dbproc, 23));
                                if(pData=dbdata(m_dbproc, 24))
                                        dbconvert(m_dbproc,
SQLNUMERIC, (LPCBYTE)pData, dbdatlen(m_dbproc,24), SQLFLT8,
(BYTE *)&m_txn.Payment.c_credit_lim, 8);
                                if(pData=dbdata(m_dbproc, 25))
                                        dbconvert(m_dbproc,
SQLNUMERIC, (LPCBYTE)pData, dbdatlen(m_dbproc,25), SQLFLT8,
(BYTE *)&m_txn.Payment.c_discount, 8);
                                if(pData=dbdata(m_dbproc, 26))
                                        dbconvert(m_dbproc,
SQLNUMERIC, (LPCBYTE)pData, dbdatlen(m_dbproc,26), SQLFLT8,
(BYTE *)&m_txn.Payment.c_balance, 8);
                                if(pData=dbdata(m_dbproc, 27))
                                        UtilStrCpy(m_txn.Payment.c_data,
pData, dbdatlen(m_dbproc, 27));

                                DiscardNextRows(0);
                                DiscardNextResults(0);


                                if (m_txn.Payment.c_id == 0)
                                        throw new CTPCC_DBLIB_ERR(
CTPCC_DBLIB_ERR::ERR_INVALID_CUST );
                                else
                                        m_txn.Payment.exec_status_code
= eOK;

                                return;
                        }
                        catch (CSQLERR *e)
                        {
                                if ((e->m_msgno == 1205 ||
                                        (e->m_msgno ==
iErrOleDbProvider &&
                                        strstr(e->m_msgtext,
sErrTimeoutExpired) != NULL)) &&
                                        (++iTryCount <= iMaxRetries))
                                {
                                        // hit deadlock; backoff for
increasingly longer period
                                        delete e;
                                        Sleep(10 * iTryCount);
                                }
                                else
                                        throw;
                        }
                }               // while (TRUE)

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

```
void CTPCC_DBLIB::OrderStatus()
{
	int			i;
	DBDATETIME	datetime;
	DBDATEREC	daterec;

	int			iTryCount = 0;
	RETCODE			rc;
	const BYTE		*pData;

	ResetError();

	while (TRUE)
	{
		try
		{
			dbrpcinit(m_dbproc, "tpcc_orderstatus", 0);

			dbrpcparam(m_dbproc, NULL, 0, SQLINT2,
-1, -1, (BYTE *) &m_txn.OrderStatus.w_id);
			dbrpcparam(m_dbproc, NULL, 0, SQLINT1,
-1, -1, (BYTE *) &m_txn.OrderStatus.d_id);
			dbrpcparam(m_dbproc, NULL, 0, SQLINT4,
-1, -1, (BYTE *) &m_txn.OrderStatus.c_id);

			// if customer id is zero, then order status is by
name
			if (m_txn.OrderStatus.c_id == 0)
				dbrpcparam(m_dbproc, NULL, 0,
SQLCHAR, -1, strlen(m_txn.OrderStatus.c_last), (unsigned char
*)m_txn.OrderStatus.c_last);


			if (dbrpcexec(m_dbproc) == FAIL)

ThrowError(CDBLIBERR::eDbRpcExec);

			// Get order lines
			if (dbresults(m_dbproc) != SUCCEED)
			{
				if ((m_DbLibErr == NULL) &&
(m_SqlErr == NULL))
					throw new
CTPCC_DBLIB_ERR( CTPCC_DBLIB_ERR::ERR_NO_SUCH_ORDER );
				else

ThrowError(CDBLIBERR::eDbResults);
			}

			if (dbnumcols(m_dbproc) != 5)

ThrowError(CDBLIBERR::eWrongNumCols);

			i = 0;
			while (TRUE)
			{
				rc = dbnextrow(m_dbproc);
				if (rc == NO_MORE_ROWS)
					break;
				if (rc != REG_ROW)

ThrowError(CDBLIBERR::eDbNextRow);

				if(pData=dbdata(m_dbproc, 1))

m_txn.OrderStatus.OL[i].ol_supply_w_id = (*(DBSMALLINT *) pData);
				if(pData=dbdata(m_dbproc, 2))

m_txn.OrderStatus.OL[i].ol_i_id = (*(DBINT *) pData);
				if(pData=dbdata(m_dbproc, 3))

m_txn.OrderStatus.OL[i].ol_quantity = (*(DBSMALLINT *) pData);
				if(pData=dbdata(m_dbproc, 4))
					dbconvert(m_dbproc,
SQLNUMERIC, (LPCBYTE)pData, dbdatlen(m_dbproc,4),

SQLFLT8, (BYTE *)&m_txn.OrderStatus.OL[i].ol_amount, 8);
				if(pData=dbdata(m_dbproc, 5))
				{
					datetime =
*((DBDATETIME *) pData);
					dbdatecrack(m_dbproc,
&daterec, &datetime);

m_txn.OrderStatus.OL[i].ol_delivery_d.year   = daterec.year;

m_txn.OrderStatus.OL[i].ol_delivery_d.month  = daterec.month;

m_txn.OrderStatus.OL[i].ol_delivery_d.day    = daterec.day;

m_txn.OrderStatus.OL[i].ol_delivery_d.hour   = daterec.hour;

m_txn.OrderStatus.OL[i].ol_delivery_d.minute = daterec.minute;

m_txn.OrderStatus.OL[i].ol_delivery_d.second = daterec.second;
				}
				i++;
			}
			m_txn.OrderStatus.o_ol_cnt = i;


			if (dbresults(m_dbproc) != SUCCEED)

ThrowError(CDBLIBERR::eDbResults);

			if (dbnextrow(m_dbproc) != REG_ROW)

ThrowError(CDBLIBERR::eDbNextRow);

			if (dbnumcols(m_dbproc) != 8)

ThrowError(CDBLIBERR::eWrongNumCols);

			if(pData=dbdata(m_dbproc, 1))
				m_txn.OrderStatus.c_id =
(*(DBINT *) pData);
			if(pData=dbdata(m_dbproc, 2))

UtilStrCpy(m_txn.OrderStatus.c_last, pData, dbdatlen(m_dbproc,2));
			if(pData=dbdata(m_dbproc, 3))

UtilStrCpy(m_txn.OrderStatus.c_first, pData, dbdatlen(m_dbproc,3));
			if(pData=dbdata(m_dbproc, 4))

UtilStrCpy(m_txn.OrderStatus.c_middle, pData, dbdatlen(m_dbproc, 4));

			if(pData=dbdata(m_dbproc, 5))
			{
				datetime = *((DBDATETIME *)
pData);
				dbdatecrack(m_dbproc, &daterec,
&datetime);
				m_txn.OrderStatus.o_entry_d.year
 = daterec.year;
```

```
m_txn.OrderStatus.o_entry_d.month  = daterec.month;
                                        m_txn.OrderStatus.o_entry_d.day
 = daterec.day;
                                        m_txn.OrderStatus.o_entry_d.hour
  = daterec.hour;

m_txn.OrderStatus.o_entry_d.minute = daterec.minute;

m_txn.OrderStatus.o_entry_d.second = daterec.second;
                                }
                                if(pData=dbdata(m_dbproc, 6))

                                        m_txn.OrderStatus.o_carrier_id =
(*(DBSMALLINT *) pData);
                                if(pData=dbdata(m_dbproc, 7))
                                        dbconvert(m_dbproc,
SQLNUMERIC, (LPCBYTE)pData, dbdatlen(m_dbproc,7),
                                                                SQLFLT8,
(BYTE *)&m_txn.OrderStatus.c_balance, 8);
                                if(pData=dbdata(m_dbproc, 8))
                                        m_txn.OrderStatus.o_id =
(*(DBINT *) pData);

                                DiscardNextRows(0);
                                DiscardNextResults(0);


                                if (m_txn.OrderStatus.o_ol_cnt == 0)
                                        throw new CTPCC_DBLIB_ERR(
CTPCC_DBLIB_ERR::ERR_NO_SUCH_ORDER );
                                else if (m_txn.OrderStatus.c_id == 0 &&
m_txn.OrderStatus.c_last[0] == 0)
                                        throw new CTPCC_DBLIB_ERR(
CTPCC_DBLIB_ERR::ERR_INVALID_CUST );
                                else

m_txn.OrderStatus.exec_status_code = eOK;

                                        return;
                        }
                        catch (CSQLERR *e)
                        {
                                if ((e->m_msgno == 1205 ||
                                        (e->m_msgno ==
iErrOleDbProvider &&
                                        strstr(e->m_msgtext,
sErrTimeoutExpired) != NULL)) &&
                                        (++iTryCount <= iMaxRetries))
                                {
                                        // hit deadlock; backoff for
increasingly longer period
                                        delete e;
                                        Sleep(10 * iTryCount);
                                }
                                else
                                        throw;
                        }
                }               // while (TRUE)

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


void CTPCC_DBLIB::Delivery()
{
                int                             i;
                int                             iTryCount = 0;
                const BYTE              *pData;

                ResetError();

                while (TRUE)
                {
                        try
                        {
                                dbrpcinit(m_dbproc, "tpcc_delivery", 0);

                                dbrpcparam(m_dbproc, NULL, 0, SQLINT2,
-1, -1, (BYTE *) &m_txn.Delivery.w_id);
                                dbrpcparam(m_dbproc, NULL, 0, SQLINT1,
-1, -1, (BYTE *) &m_txn.Delivery.o_carrier_id);

                                if (dbrpcexec(m_dbproc) == FAIL)

ThrowError(CDBLIBERR::eDbRpcExec);

                                if (dbresults(m_dbproc) != SUCCEED)

ThrowError(CDBLIBERR::eDbResults);

                                if (dbnextrow(m_dbproc) != REG_ROW)

ThrowError(CDBLIBERR::eDbNextRow);

                                if (dbnumcols(m_dbproc) != 10)

ThrowError(CDBLIBERR::eWrongNumCols);

                                for (i=0; i<10; i++)
                                {
                                        if (pData = dbdata(m_dbproc, i+1))
                                                m_txn.Delivery.o_id[i]
= *((DBINT *)pData);
                                }

                                DiscardNextRows(0);
                                DiscardNextResults(0);

                                m_txn.Delivery.exec_status_code = eOK;
                                return;
                        }
                        catch (CSQLERR *e)
                        {
                                if ((e->m_msgno == 1205 ||
                                        (e->m_msgno ==
iErrOleDbProvider &&
                                        strstr(e->m_msgtext,
sErrTimeoutExpired) != NULL)) &&
                                        (++iTryCount <= iMaxRetries))
                                {
                                        // hit deadlock; backoff for
increasingly longer period
                                        delete e;
                                        Sleep(10 * iTryCount);
                                }
                                else
                                        throw;
                        }
                }               // while (TRUE)

//              if (iTryCount)
```

```
//                      throw new
CTPCC_DBLIB_ERR(CTPCC_DBLIB_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

void CTPCC_DBLIB::ResetError()
{
        if (m_DbLibErr != NULL)
        {
                delete m_DbLibErr;
                m_DbLibErr = (CDBLIBERR*)NULL;
        }

        if (m_SqlErr != NULL)
        {
                delete m_SqlErr;
                m_SqlErr = (CSQLERR*)NULL;
        }
        return;
}
```

tpcc_dblib.h

```
/*      FILE:           TPCC_DBLIB.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

#ifndef PDBPROCESS
#define DBPROCESS void   // dbprocess structure type
typedef DBPROCESS * PDBPROCESS;
#endif

// 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 CSQLERR : public CBaseErr
{
        public:

                CSQLERR(void)
                {
                        m_msgno = 0;
                        m_msgstate = 0;
                        m_severity = 0;
                        m_msgtext = NULL;
                };

                ~CSQLERR()
                {
                        delete [] m_msgtext;
                };

                int             m_msgno;
                int             m_msgstate;
                int             m_severity;
                char   *m_msgtext;

                int ErrorType() {return ERR_TYPE_SQL;};
                int ErrorNum() {return m_msgno;};
                char *ErrorText() {return m_msgtext;};

};

class CDBLIBERR : public CBaseErr
{
        public:
                enum ACTION
                {
                        eNone,
                        eUnknown,
                        eLogin,                                 //
error from dblogin
                        eDbOpen,                        // error from
dbopen
                        eDbUse,                                 //
error from dbuse
                        eDbSqlExec,                             //
error from dbsqlexec
                        eDbSet,                                 //
error from one of the dbset* routines
                        eDbNextRow,                             //
error from dbnextrow
                        eWrongRowCount,         // more or
less rows returned than expected
                        eWrongNumCols,          // more or
less columns returned than expected
                        eDbResults,                             //
error from dbresults
                        eDbRpcExec,                             //
error from dbrpcexec
                        eDbSetMaxProcs,         // error from
dbsetmaxprocs
                        eDbProcHandler          // error from
either dbprocerrhandle or dbprocmsghandle
                };

                CDBLIBERR(ACTION eAction, int severity = 0, int
dberror = 0, int oserr = 0)
                {
                        m_eAction = eAction;
                        m_severity = severity;
                        m_dberror = dberror;
                        m_oserr = oserr;

                        m_dberrstr = NULL;
                        m_oserrstr = NULL;
                };

                ~CDBLIBERR()
                {
                        delete [] m_dberrstr;
                        delete [] m_oserrstr;
                };

                ACTION  m_eAction;
                int             m_severity;
                int             m_dberror;
                int             m_oserr;
                char   *m_dberrstr;
```

```
                char   *m_oserrstr;

                int ErrorType() {return ERR_TYPE_DBLIB;};
                int ErrorNum() {return m_dberror;};
                char *ErrorText() {return m_dberrstr;};

};

class CTPCC_DBLIB_ERR : public CBaseErr
{
        public:
                enum CTPCC_DBLIB_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_DBLIB_ERR( int iErr ) { m_errno = iErr;
m_iTryCount = 0; };

                CTPCC_DBLIB_ERR( int iErr, int iTryCount ) {
m_errno = iErr; m_iTryCount = iTryCount; };

                int             m_errno;
                int             m_iTryCount;

                int ErrorType() {return ERR_TYPE_TPCC_DBLIB;};
                int ErrorNum() {return m_errno;};

                char *ErrorText();
};

class DllDecl CTPCC_DBLIB : public CTPCC_BASE
{
        private:
                // declare variables and private functions here...
                PDBPROCESS      m_dbproc;
                CDBLIBERR       *m_DbLibErr;            //
not allocated until needed (maybe never)
                CSQLERR         *m_SqlErr;
// not allocated until needed (maybe never)
                int                     m_MaxRetries;
// retry count on deadlock

                void DiscardNextRows(int iExpectedCount);
                void DiscardNextResults(int iExpectedCount);
                void ThrowError( CDBLIBERR::ACTION eAction );
                void ResetError();

                union
                {
                        NEW_ORDER_DATA
NewOrder;
                        PAYMENT_DATA            Payment;
                        DELIVERY_DATA           Delivery;
                        STOCK_LEVEL_DATA        StockLevel;
                        ORDER_STATUS_DATA       OrderStatus;
                }                       m_txn;

        public:
                CTPCC_DBLIB(LPCSTR szServer, LPCSTR szUser,
LPCSTR szPassword, LPCSTR szHost, LPCSTR szDatabase );
                ~CTPCC_DBLIB(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        ();


                // these are public because they must be called from the
dblib err_handler and msg_hangler
                // outside of the class
                void SetDbLibError(int severity, int dberr, int oserr,
LPCSTR dberrstr, LPCSTR oserrstr);
                void SetSqlError( int msgno, int msgstate, int severity,
LPCSTR msgtext );

};

extern "C" DllDecl CTPCC_DBLIB* CTPCC_DBLIB_new
        ( LPCSTR szServer, LPCSTR szUser, LPCSTR szPassword,
LPCSTR szHost, LPCSTR szDatabase );

typedef CTPCC_DBLIB* (TYPE_CTPCC_DBLIB)(LPCSTR, LPCSTR,
LPCSTR, LPCSTR, LPCSTR);
```

tpcc_enc.cpp

```
// ctpcc_enc.cpp: implementation of the CTPCC_ENCINA class.
//
//////////////////////////////////////////////////////////////////////

#include <windows.h>
#include <process.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>

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

// need to declare functions for export
#define DllDecl  __declspec( dllexport )

#include "..\..\common\src\trans.h"             //tpckit transaction header contains
definitions of structures specific to TPC-C
#include "..\..\common\src\error.h"
#include "..\..\common\src\txn_base.h"
#include "tpcc_enc.h"
#include "..\include\tpcc_type.h"
```

```
#include "mon_client.h"
#include "client_utils.h"

static CRITICAL_SECTION         TpCriticalSection;
extern "C" char *errFile;

BOOL APIENTRY DllMain(HANDLE hModule, DWORD ul_reason_for_call,
LPVOID lpReserved)
{

      switch( ul_reason_for_call )
      {
            case DLL_PROCESS_ATTACH:

                  DisableThreadLibraryCalls(hModule);
                  InitializeCriticalSection(&TpCriticalSection);
                  break;

            case DLL_PROCESS_DETACH:
                  DeleteCriticalSection(&TpCriticalSection);
                  break;

            default:
                  /* nothing */;
      }
      return TRUE;
}

// wrapper routine for class constructor
__declspec(dllexport) CTPCC_ENCINA* CTPCC_ENCINA_new()
{
            return new CTPCC_ENCINA();
}

// wrapper routine for enroll_client
__declspec(dllexport) CTPCC_ENCINA* CTPCC_ENCINA_post_init()
{
            enroll_client();
            return NULL;
}

// constructor and destructor
CTPCC_ENCINA::CTPCC_ENCINA()
{
            //          Add initialization of ENCINA Structures if any
            m_txn = (ENC_DATA *)malloc(sizeof(ENC_DATA));
            if (m_txn == NULL)
                        throw new CENCERR(ERR_TYPE_MEMORY,
ERR_FATAL_LEVEL);
}

CTPCC_ENCINA::~CTPCC_ENCINA()
{
            // free the data structure allocated with tpalloc
            free((char *)m_txn);
}

void CTPCC_ENCINA::NewOrder()
{

            // question: if we need to prepare the data?
   if (send_new_order(sizeof(ENC_DATA), (unsigned char *)m_txn) ==
TRPC_ERROR)
                        throw new CENCERR(TRPC_ERROR);

   if ( m_txn->ErrorType != ERR_SUCCESS )
                        throw new CENCERR( m_txn->ErrorType, m_txn->error
);
}

void CTPCC_ENCINA::Payment()
{
   if (send_payment(sizeof(ENC_DATA), (unsigned char *)m_txn) ==
TRPC_ERROR)
                        throw new CENCERR(TRPC_ERROR);

   if ( m_txn->ErrorType != ERR_SUCCESS )
                        throw new CENCERR( m_txn->ErrorType, m_txn->error
);
}

void CTPCC_ENCINA::Delivery()
{

            // Note: Delivery txn code in the tuxedo server does not implement
logging of the delivery
            //      txn results, so cannot be used as is to run an auditable TPC-C
result.  For that
            //      reason, delivery txns should not be done via Tuxedo.
            //      The code is included for completeness.
            //m_txn->u.Delivery.exec_status_code = eDeliveryFailed;
            //return;

            // Note: If we use the delivery thread in tpcc.dll, it is not possible to
get to this
            //      point for delivery txns. But if we use Encina delivery server,
the code is
            //      needed. It is suggested using the delivery thread in tpcc.dll
since it is
            //      convenient and provides best performance.
            GetLocalTime(&m_txn->u.Delivery.queue_time);

   if (send_delivery(sizeof(ENC_DATA), (unsigned char *)m_txn) ==
TRPC_ERROR)
                        m_txn->u.Delivery.exec_status_code = eDeliveryFailed;
   else
                        m_txn->u.Delivery.exec_status_code = eOK;
}

void CTPCC_ENCINA::StockLevel()
{

   if (send_stock_level(sizeof(ENC_DATA), (unsigned char *)m_txn) ==
TRPC_ERROR)
                        throw new CENCERR(TRPC_ERROR);

   if ( m_txn->ErrorType != ERR_SUCCESS )
                        throw new CENCERR( m_txn->ErrorType, m_txn->error
);
}

void CTPCC_ENCINA::OrderStatus()
{

   if (send_order_status(sizeof(ENC_DATA), (unsigned char *)m_txn) ==
TRPC_ERROR)
                        throw new CENCERR(TRPC_ERROR);

   if ( m_txn->ErrorType != ERR_SUCCESS )
                        throw new CENCERR( m_txn->ErrorType, m_txn->error
);
}

char *CENCERR::ErrorText()
{
            if (m_iErrorType == TRPC_ERROR)
```

```
        {
                sprintf( m_szErrorText, "Error: ENCINA TRPC error
(see log file %s for details)", errFile);
        }
        else
                sprintf( m_szErrorText, "Error: Class %d, error # %d",
m_iErrorType, m_iError );
        return m_szErrorText;
};
```

tpcc_enc.h

```
/*      FILE:           TPCC_ENCINA.H
 *                              Microsoft TPC-C Kit Ver.
4.10.000
 *                              not yet audited
 *
 *      PURPOSE:        Header file for TPC-C Encina class
implementation.
 *                              Copyright Microsoft, 1999
 *      All Rights Reserved
 *
 */

#if !defined(_TPCC_ENCINA_H_)
#define _TPCC_ENCINA_H_

#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 CTPCC_ENCINA : public CTPCC_BASE
{
        private:
                struct ENC_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_txn;

        public:

                CTPCC_ENCINA();
                virtual ~CTPCC_ENCINA();

                inline PNEW_ORDER_DATA
BuffAddr_NewOrder()             { return &m_txn->u.NewOrder;
};
                inline PPAYMENT_DATA
BuffAddr_Payment()      { return &m_txn->u.Payment;     };
                inline PDELIVERY_DATA
BuffAddr_Delivery()     { return &m_txn->u.Delivery;    };
                inline PSTOCK_LEVEL_DATA BuffAddr_StockLevel()
{ return &m_txn->u.StockLevel;  };
                inline PORDER_STATUS_DATA
BuffAddr_OrderStatus()  { return &m_txn->u.OrderStatus; };

                void NewOrder           ();
                void Payment            ();
                void Delivery           ();
                void StockLevel         ();
                void OrderStatus        ();
};


class CENCERR : public CBaseErr
{

        private:
                char    m_szErrorText[64];
        public:
                int             m_errno;        //
                int             m_iErrorType;   // match
ErrorType in CTPCC_ENCINA
                int             m_iError;       // machine
error in CTPCC_ENCINA

                // use this interface for genuine Encina errors
                CENCERR( int iErr )
                {
                        m_errno = iErr;         // ENCINA error
                        m_iErrorType = ERR_TYPE_ENCINA;
                        m_iError = 0;           // only meaningful if
m_errno == TPEOS
                };

                // use this interface to impersonate a non-Encina error
type
                CENCERR( int iErrorType, int iError )
                {
                        m_iErrorType = iErrorType;
                        m_iError = iError;
                        m_errno = iError;   // ???
                }

                // A CENCERR class can impersonate another class,
which happens if the error
                // was not actually a Tuxedo error, but was simply
transmitted back via Tuxedo.
                int ErrorType()
                {
                        return m_iErrorType;
                }

                int ErrorNum() {return m_errno;};
                char *ErrorText();
};

// wrapper routine for class constructor:
extern "C" __declspec(dllexport) CTPCC_ENCINA* CTPCC_ENCINA_new();
extern "C" __declspec(dllexport) CTPCC_ENCINA*
CTPCC_ENCINA_post_init();
```

```
typedef CTPCC_ENCINA* (TYPE_CTPCC_ENCINA)();

#endif // !defined(_TPCC_ENCINA_H_)
```

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);
```

tpcc_tux.cpp

```
/*          FILE:               TPCC_TUX.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
 */

#include <windows.h>
#include <process.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 <tmenv.h>
#include <xa.h>
#include <atmi.h>

#ifdef ICECAP
// for IceCAP profiling
#include <icapexp.h>
#endif

// need to declare functions for export
#define DllDecl  __declspec( dllexport )

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

static TPINIT                                   *tpinf;
static DWORD                                    TLSIsTpInitedKey;
static CRITICAL_SECTION                 TpCriticalSection;


BOOL APIENTRY DllMain(HMODULE hModule, DWORD
ul_reason_for_call, LPVOID lpReserved)
{
        switch( ul_reason_for_call )
        {
                case DLL_PROCESS_ATTACH:
                        DisableThreadLibraryCalls(hModule);

                        // create thread local storage to determine
Tuxedo initialization per thread.
                        // it really should be possible to do this in the
DLL_THREAD_ATTACH call, but
                        // Ed says he could not get it to work.
                        // assumption:value init'd to 0
                        TLSIsTpInitedKey = TlsAlloc();

                        if ((tpinf = (TPINIT *)tpalloc("TPINIT",
NULL, sizeof(TPINIT))) == NULL)
                        {
                                // int TpRc = tperrno;
                                return FALSE;
                        }
                        tpinf->flags |= TPMULTICONTEXTS;

                        InitializeCriticalSection(&TpCriticalSection);
                        break;

                case DLL_PROCESS_DETACH:
                        TlsFree(TLSIsTpInitedKey);
                        DeleteCriticalSection(&TpCriticalSection);
                        break;

                default:
                        /* nothing */;
        }
        return TRUE;
}

static void ThrTpInit()
{
        static int num_tpinits=0;
        int iRc, TpRc;

        // has this thread been initialized?  check thread local storage
        if(!TlsGetValue(TLSIsTpInitedKey))
        {
```

```
                        EnterCriticalSection(&TpCriticalSection);
                        itoa(++num_tpinits, tpinf->cltname, 10);

                        iRc = tpinit(tpinf);
                        TpRc = tperrno;
                        LeaveCriticalSection(&TpCriticalSection);

                        if (iRc < 0)
                                throw new CTUXERR( tperrno );

                        int value = 1;
                        TlsSetValue(TLSIsTpInitedKey,&value);
                }
}

// wrapper routine for class constructor
__declspec(dllexport) CTPCC_TUXEDO* CTPCC_TUXEDO_new()
{
        return new CTPCC_TUXEDO();
}

CTPCC_TUXEDO::CTPCC_TUXEDO()
{
        //      Add initialization of Tuxedo Structures
        m_txn = (TUX_DATA *)tpalloc("CARRAY", NULL,
sizeof(TUX_DATA));
        if (m_txn == NULL)
                throw new CTUXERR( tperrno );
}

CTPCC_TUXEDO::~CTPCC_TUXEDO()
{
        // free the data structure allocated with tpalloc
        tpfree((char *)m_txn);
}

void CTPCC_TUXEDO::NewOrder()
{
        long    ilen, *olen;

        ThrTpInit();

        ilen = sizeof(TUX_DATA);
        olen = &ilen;

        if (tpcall("NEWORDER", (char *)m_txn, ilen, (char **)&m_txn,
(long *)olen, TPSIGRSTRT) == -1)
                throw new CTUXERR( tperrno );

        if ( m_txn->ErrorType != ERR_SUCCESS )
                throw new CTUXERR( m_txn->ErrorType, m_txn->error
);
}

void CTPCC_TUXEDO::Payment()
{
        long    ilen, *olen;

        ThrTpInit();

        ilen = sizeof(TUX_DATA);
        olen = &ilen;

        if (tpcall("PAYMENT", (char *)m_txn, ilen, (char **)&m_txn, (long
*)olen, TPSIGRSTRT) == -1)
                throw new CTUXERR( tperrno );

        if ( m_txn->ErrorType != ERR_SUCCESS )
                throw new CTUXERR( m_txn->ErrorType, m_txn->error
);
}

void CTPCC_TUXEDO::Delivery()
{
        int             iRc;
        long    ilen, *olen;

        // Note: Delivery txn code in the tuxedo server does not implement
logging of the delivery
        //      txn results, so cannot be used as is to run an auditable TPC-C
result.  For that
        //      reason, delivery txns should not be done via tuxedo.
        //      The code is included for completeness.
        m_txn->u.Delivery.exec_status_code = eDeliveryFailed;
        return;

        //  normal path...

        ThrTpInit();

        GetLocalTime(&m_txn->u.Delivery.queue_time);

        ilen = sizeof(TUX_DATA);
        olen = &ilen;

        if ((iRc = tpacall("DELIVERY", (char *)m_txn, ilen,
TPNOREPLY)) == -1)
        {
                int TpRc = tperrno;
                m_txn->u.Delivery.exec_status_code = eDeliveryFailed;
        }
        else
                m_txn->u.Delivery.exec_status_code = eOK;

}

void CTPCC_TUXEDO::StockLevel()
{
        long    ilen, *olen;

        ThrTpInit();

        ilen = sizeof(TUX_DATA);
        olen = &ilen;

        if (tpcall("STOCKLEVEL", (char *)m_txn, ilen, (char **)&m_txn,
(long *)olen, TPSIGRSTRT) == -1)
                throw new CTUXERR( tperrno );

        if ( m_txn->ErrorType != ERR_SUCCESS )
                throw new CTUXERR( m_txn->ErrorType, m_txn->error
);
}

void CTPCC_TUXEDO::OrderStatus()
{
        long    ilen, *olen;

        ThrTpInit();

        ilen = sizeof(TUX_DATA);
        olen = &ilen;

        if (tpcall("ORDERSTATUS", (char *)m_txn, ilen, (char **)&m_txn,
(long *)olen, TPSIGRSTRT) == -1)
                throw new CTUXERR( tperrno );
```

```
	if ( m_txn->ErrorType != ERR_SUCCESS )
		throw new CTUXERR( m_txn->ErrorType, m_txn->error
);
}

char *CTUXERR::ErrorText()
{
	if (m_iErrorType == 0)
	{
		if (m_errno == TPEOS)
			sprintf( m_szErrorText, "Error: TUXEDO
error # %d, OS error # %d", m_errno, m_iError );
		else
			sprintf( m_szErrorText, "Error: TUXEDO
error # %d", m_errno );
	}
	else
		sprintf( m_szErrorText, "Error: Class %d, error # %d",
m_iErrorType, m_iError );
	return m_szErrorText;
};
```

tpcc_tux.h

```
/*	FILE:		TPCC_TUX.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 Tuxedo 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_TUXEDO : public CTPCC_BASE
{
	private:
		struct TUX_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_txn;

	public:
		CTPCC_TUXEDO();
		~CTPCC_TUXEDO(void);

		inline PNEW_ORDER_DATA
BuffAddr_NewOrder()		{ return &m_txn->u.NewOrder;
};
		inline PPAYMENT_DATA
BuffAddr_Payment()	{ return &m_txn->u.Payment;	};
		inline PDELIVERY_DATA
BuffAddr_Delivery()	{ return &m_txn->u.Delivery;	};
		inline PSTOCK_LEVEL_DATA BuffAddr_StockLevel()
{ return &m_txn->u.StockLevel;  };
		inline PORDER_STATUS_DATA
BuffAddr_OrderStatus()	{ return &m_txn->u.OrderStatus; };

		void NewOrder		();
		void Payment		();
		void Delivery		();
		void StockLevel		();
		void OrderStatus	();

};

class CTUXERR : public CBaseErr
{
	private:

		// TODO: should use the sz_Msg field of the base class
instead
		char m_szErrorText[64];

	public:
		// use this interface for genuine Tuxedo errors
		CTUXERR( int iErr )
		{
			m_errno = iErr;
			m_iErrorType = 0;
			m_iError = GetLastError();	// only
meaningful if m_errno == TPEOS
		};

		// use this interface to impersonate a non-Tuxedo error
type
		CTUXERR( int iErrorType, int iError )
		{
			m_iErrorType = iErrorType;
			m_iError = iError;
			m_errno = 0;
		}

		int		m_errno;
		int		m_iErrorType;
		int		m_iError;

		// A CTUXERR class can impersonate another class,
which happens if the error
		// was not actually a Tuxedo error, but was simply
transmitted back via Tuxedo.
		int ErrorType()
		{
```

```
                        if (m_iErrorType == 0)
                                return ERR_TYPE_TUXEDO;
                        else
                                return m_iErrorType;
                }

                int ErrorNum() {return m_errno;};
                char *ErrorText();
};

// wrapper routine for class constructor
extern "C" __declspec(dllexport) CTPCC_TUXEDO*
CTPCC_TUXEDO_new();

typedef CTPCC_TUXEDO* (TYPE_CTPCC_TUXEDO)();
```

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;
```

tuxapp.cpp

```
/*      FILE:           TUXAPP.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 server.
 *      Contact:    Charles Levine (clevine@microsoft.com)
 *
 *  Change history:
 *                  4.20.000 - updated rev number to match kit
 */

#include <windows.h>
#include <process.h>
#include <tchar.h>
#include <stdio.h>
#include <stdarg.h>
#include <iostream.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>
#include <sql.h>
#include <sqlext.h>

#include <tmenv.h>
#include <xa.h>
#include <atmi.h>

#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 "..\..\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 "tuxapp.h"

char        szMyComputerName[MAX_COMPUTERNAME_LENGTH+1];

// configuration settings from registry
TPCCREGISTRYDATA                Reg;

CTPCC_BASE                      *pTxn = NULL;


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

/* FUNCTION: tpsvrinit ( int argc, char *argv[])
 *
 * PURPOSE:         Initialize the Server to Database connection.
 *
 * RETURNS:                int     0       Success
 *                                 -1      Failure
 */

int tpsvrinit ( int argc, char *argv[] )
{
        try
        {
                DWORD dwSize =
MAX_COMPUTERNAME_LENGTH+1;
                GetComputerName(szMyComputerName, &dwSize);
                szMyComputerName[dwSize] = 0;

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

                GetParameters(argc, argv);

                switch (Reg.eDB_Protocol)
                {
                case ODBC:
                        pTxn = new CTPCC_ODBC(
Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, szMyComputerName,
Reg.szDbName );
                        break;
                case DBLIB:
                        pTxn = new CTPCC_DBLIB(
Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, szMyComputerName,
Reg.szDbName );
                        break;
                }
        }
        catch (CBaseErr *e)
        {
                WriteMessageToEventLog(e->ErrorText());
                delete e;
        }
        catch (...)
        {
                WriteMessageToEventLog(TEXT("Unhandled
exception."));
        }

        return 0;
}

/* FUNCTION: tpsvrdone ( void )
 *
 */

void tpsvrdone ( void )
{
        delete pTxn;
        pTxn = NULL;
}

/* FUNCTION: BOOL GetParameters(int argc, char *argv[])
 *
 * PURPOSE:         This function parses the command line passed in to the
delivery executable, initializing
 *                          and filling in global variable parameters.
 *
 * ARGUMENTS:       int             argc        number of command
line arguments passed to delivery
 *                          char        *argv[]     array of
command line argument pointers
 *
 */

static void GetParameters(int argc, char *argv[])
{
        // advance through args until "--" is found
        for(int j=0; j<argc; j++)
        {
                if (strcmp(argv[j],"--") == 0)
                        break;
        }

        for(int i=j+1; i<argc; i++)
        {
                if ( argv[i][0] == '-' || argv[i][0] == '/' )
                {
                        switch(argv[i][1])
                        {
                                case 'S':
                                        strcpy(Reg.szDbServer,
argv[i]+2);
                                        break;
                                case 'D':
                                        strcpy(Reg.szDbName,
argv[i]+2);
                                        break;
                                case 'P':
```

```
strcpy(Reg.szDbPassword, argv[i]+2);
                                                        break;
                                                case 'U':
                                                        strcpy(Reg.szDbUser,
argv[i]+2);
                                                        break;
                                                default:
                                                        cout << "Microsoft
TPC-C Kit" << endl;
                                                        cout << "Tuxedo
Server" << endl << endl;
                                                        cout << "Usage:" <<
endl;
                                                        cout << "    tuxapp
[<tuxedo-args>] -- -S<sql-server> [-D<database>] [-U<user>] [-P<password>]"
<< endl << endl;
                                                        cout << "All parameters
default to values in registry." << endl;
                                                        throw new
CTUXAPP_ERR( ERR_BAD_SYNTAX );
                                        }
                        }
                }
}

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

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

   _stprintf(szMsg, TEXT("Error in TUXAPP.EXE: "));
   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);
   }
}

void NEWORDER( TPSVCINFO *rqst )
{
        PNEW_ORDER_DATA         pNewOrder;
        TUX_DATA                *pData;
        const int               iSize = sizeof(pData->u.NewOrder);

        try
        {
                pData = (TUX_DATA*)rqst->data;
                pData->retval = ERR_SUCCESS;
                pData->error = 0;

                pNewOrder = pTxn->BuffAddr_NewOrder();
                assert( rqst->len == sizeof(TUX_DATA) );
                memcpy(pNewOrder, &pData->u.NewOrder, iSize );

                pTxn->NewOrder();
                memcpy( &pData->u.NewOrder, pNewOrder, iSize );
                tpreturn( TPSUCCESS, 0, rqst->data,
sizeof(TUX_DATA), 0);
        }
        catch (CBaseErr *e)
        {
                pData->retval = e->ErrorType();
                pData->error = e->ErrorNum();
                memcpy( &pData->u.NewOrder, pNewOrder, iSize );
                tpreturn( TPSUCCESS, 0, rqst->data,
sizeof(TUX_DATA), 0);
                delete e;
        }
        catch (...)
        {
                WriteMessageToEventLog(TEXT("Unhandled
exception."));
                pData->retval = ERR_TYPE_LOGIC;
                pData->error = 0;
                memcpy( &pData->u.NewOrder, pNewOrder, iSize );
                tpreturn( TPSUCCESS, 0, rqst->data,
sizeof(TUX_DATA), 0);
        }
}

void PAYMENT( TPSVCINFO *rqst )
{
        PPAYMENT_DATA  pPayment;
        TUX_DATA                *pData;
        const int               iSize = sizeof(pData->u.Payment);

        try
        {
                pData = (TUX_DATA*)rqst->data;
                pData->retval = ERR_SUCCESS;
                pData->error = 0;

                pPayment = pTxn->BuffAddr_Payment();
                assert( rqst->len == sizeof(TUX_DATA) );
                memcpy(pPayment, &pData->u.Payment, iSize );

                pTxn->Payment();
                memcpy( &pData->u.Payment, pPayment, iSize );
                tpreturn( TPSUCCESS, 0, rqst->data,
sizeof(TUX_DATA), 0);
        }
        catch (CBaseErr *e)
        {
                pData->retval = e->ErrorType();
                pData->error = e->ErrorNum();
                memcpy( &pData->u.Payment, pPayment, iSize );
                tpreturn( TPSUCCESS, 0, rqst->data,
sizeof(TUX_DATA), 0);
                delete e;
        }
        catch (...)
        {
                WriteMessageToEventLog(TEXT("Unhandled
exception."));
                pData->retval = ERR_TYPE_LOGIC;
                pData->error = 0;
                memcpy( &pData->u.Payment, pPayment, iSize );
```

```
                tpreturn( TPSUCCESS, 0, rqst->data,
sizeof(TUX_DATA), 0);
        }
}

// Note: Delivery txn code below does not implement logging of the delivery
//       txn results, so cannot be used as is to run an auditable TPC-C result.
//       The code is included for completeness.
void DELIVERY( TPSVCINFO *rqst )
{
        PDELIVERY_DATA pDelivery;
        TUX_DATA                *pData;
        const int               iSize = sizeof(pData->u.Delivery);

        try
        {
                pData = (TUX_DATA*)rqst->data;
                pData->retval = ERR_SUCCESS;
                pData->error = 0;

                pDelivery = pTxn->BuffAddr_Delivery();
                assert( rqst->len == sizeof(TUX_DATA) );
                memcpy(pDelivery, &pData->u.Delivery, iSize );

                pTxn->Delivery();

                memcpy( &pData->u.Delivery, pDelivery, iSize );
                tpreturn( TPSUCCESS, 0, rqst->data,
sizeof(TUX_DATA), 0);
        }
        catch (CBaseErr *e)
        {
                pData->retval = e->ErrorType();
                pData->error = e->ErrorNum();
                memcpy( &pData->u.Delivery, pDelivery, iSize );
                tpreturn( TPSUCCESS, 0, rqst->data,
sizeof(TUX_DATA), 0);
                delete e;
        }
        catch (...)
        {
                WriteMessageToEventLog(TEXT("Unhandled
exception."));
                pData->retval = ERR_TYPE_LOGIC;
                pData->error = 0;
                memcpy( &pData->u.Delivery, pDelivery, iSize );
                tpreturn( TPSUCCESS, 0, rqst->data,
sizeof(TUX_DATA), 0);
        }
}

void STOCKLEVEL( TPSVCINFO *rqst )
{
        PSTOCK_LEVEL_DATA       pStockLevel;
        TUX_DATA                        *pData;
        const int               iSize =
sizeof(pData->u.StockLevel);

        try
        {
                pData = (TUX_DATA*)rqst->data;
                pData->retval = ERR_SUCCESS;
                pData->error = 0;

                pStockLevel = pTxn->BuffAddr_StockLevel();
                assert( rqst->len == sizeof(TUX_DATA) );
                memcpy(pStockLevel, &pData->u.StockLevel, iSize );
                pTxn->StockLevel();
                memcpy( &pData->u.StockLevel, pStockLevel, iSize );
                tpreturn( TPSUCCESS, 0, rqst->data,
sizeof(TUX_DATA), 0);
        }
        catch (CBaseErr *e)
        {
                pData->retval = e->ErrorType();
                pData->error = e->ErrorNum();
                memcpy( &pData->u.StockLevel, pStockLevel, iSize );
                tpreturn( TPSUCCESS, 0, rqst->data,
sizeof(TUX_DATA), 0);
                delete e;
        }
        catch (...)
        {
                WriteMessageToEventLog(TEXT("Unhandled
exception."));
                pData->retval = ERR_TYPE_LOGIC;
                pData->error = 0;
                memcpy( &pData->u.StockLevel, pStockLevel, iSize );
                tpreturn( TPSUCCESS, 0, rqst->data,
sizeof(TUX_DATA), 0);
        }
}

void ORDERSTATUS( TPSVCINFO *rqst )
{
        PORDER_STATUS_DATA      pOrderStatus;
        TUX_DATA                        *pData;
        const int iSize = sizeof(pData->u.OrderStatus);

        try
        {
                pData = (TUX_DATA*)rqst->data;
                pData->retval = ERR_SUCCESS;
                pData->error = 0;

                pOrderStatus = pTxn->BuffAddr_OrderStatus();
                assert( rqst->len == sizeof(TUX_DATA) );
                memcpy(pOrderStatus, &pData->u.OrderStatus, iSize );

                pTxn->OrderStatus();
                memcpy( &pData->u.OrderStatus, pOrderStatus, iSize );
                tpreturn( TPSUCCESS, 0, rqst->data,
sizeof(TUX_DATA), 0);
        }
        catch (CBaseErr *e)
        {
                pData->retval = e->ErrorType();
                pData->error = e->ErrorNum();
                memcpy( &pData->u.OrderStatus, pOrderStatus, iSize );
                tpreturn( TPSUCCESS, 0, rqst->data,
sizeof(TUX_DATA), 0);
                delete e;
        }
        catch (...)
        {
                WriteMessageToEventLog(TEXT("Unhandled
exception."));
                pData->retval = ERR_TYPE_LOGIC;
                pData->error = 0;
                memcpy( &pData->u.OrderStatus, pOrderStatus, iSize );
                tpreturn( TPSUCCESS, 0, rqst->data,
sizeof(TUX_DATA), 0);
        }
}
```

```
/* FUNCTION: CTUXAPP_ERR::ErrorText
 *
 */

char* CTUXAPP_ERR::ErrorText(void)
{
        int i;

        static SERRORMSG errorMsgs[] =
        {
                { ERR_MISSING_REGISTRY_ENTRIES,  "Required
entries missing from registry."                 },
                { ERR_BAD_SYNTAX,
"Syntax error in input parameters."
},
                { ERR_UNKNOWN_DB_PROTOCOL,
"Unknown database protocol specified in registry."      },
                { 0,
        ""
                                                                }
        };

        static char szNotFound[] = "Unknown error number.";

        for(i=0; errorMsgs[i].szMsg[0]; i++)
        {
                if ( m_Error == errorMsgs[i].iError )
                        break;
        }
        if ( !errorMsgs[i].szMsg[0] )
                return szNotFound;
        else
                return errorMsgs[i].szMsg;
}
```

tuxapp.h

```
/*      FILE:           TUXAPP.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 Tuxedo server.
 *
 *  Change history:
 *              4.20.000 - updated rev number to match kit
 */

enum TUXERROR
{
        ERR_MISSING_REGISTRY_ENTRIES = 1,
        ERR_BAD_SYNTAX,
        ERR_UNKNOWN_DB_PROTOCOL
};

class CTUXAPP_ERR : public CBaseErr
{
        public:
                TUXERROR m_Error;

                CTUXAPP_ERR(TUXERROR Err) {     m_Error =
Err; };
                ~CTUXAPP_ERR() {};
                int ErrorType() {return ERR_TYPE_TUXEDO;};
                int ErrorNum() {return m_Error;};
                char *ErrorText();
};

struct TUX_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;
};

static void GetParameters(int argc, char *argv[]);
static void WriteMessageToEventLog(LPTSTR lpszMsg);

#if defined(__cplusplus)
extern "C" {
#endif

void NEWORDER( TPSVCINFO *rqst );
void PAYMENT( TPSVCINFO *rqst );
void DELIVERY( TPSVCINFO *rqst );
void STOCKLEVEL( TPSVCINFO *rqst );
void ORDERSTATUS( TPSVCINFO *rqst );

#if defined(__cplusplus)
}
#endif
```

tuxmain.c

```
/*      FILE:           TUXMAIN.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:        Implementation for TPC-C Tuxedo server.
 *      Contact:    Charles Levine (clevine@microsoft.com)
 *
 *  Change history:
 *              4.20.000 - updated rev number to match kit
 */

#include <stdio.h>
#include <xa.h>
#include <atmi.h>

#if defined(__cplusplus)
extern "C" {
#endif
extern int _tmrunserver _((int));
extern void DELIVERY _((TPSVCINFO *));
extern void NEWORDER _((TPSVCINFO *));
extern void ORDERSTATUS _((TPSVCINFO *));
```

```
extern void PAYMENT _((TPSVCINFO *));
extern void STOCKLEVEL _((TPSVCINFO *));
#if defined(__cplusplus)
}
#endif

static struct tmdsptchtbl_t _tmdsptchtbl[] = {
        { "DELIVERY", "DELIVERY", (void (*) _((TPSVCINFO *)))
DELIVERY, 0, 0 },
        { "NEWORDER", "NEWORDER", (void (*) _((TPSVCINFO *)))
NEWORDER, 1, 0 },
        { "ORDERSTATUS", "ORDERSTATUS", (void (*)
_((TPSVCINFO *))) ORDERSTATUS, 2, 0 },
        { "PAYMENT", "PAYMENT", (void (*) _((TPSVCINFO *)))
PAYMENT, 3, 0 },
        { "STOCKLEVEL", "STOCKLEVEL", (void (*) _((TPSVCINFO
*))) STOCKLEVEL, 4, 0 },
        { NULL, NULL, NULL, 0, 0 }
};

#ifndef _TMDLLIMPORT
#define _TMDLLIMPORT
#endif

_TMDLLIMPORT extern struct xa_switch_t tmnull_switch;

struct tmsvrargs_t tmsvrargs = {
        NULL,
        &_tmdsptchtbl[0],
        0,
        tpsvrinit,
        tpsvrdone,
        _tmrunserver,           /* PRIVATE  */
        NULL,                           /* RESERVED */
        NULL,                           /* RESERVED */
        NULL,                           /* RESERVED */
        NULL                            /* RESERVED */
};

struct tmsvrargs_t *
#ifdef _TMPROTOTYPES
_tmgetsvrargs(void)
#else
_tmgetsvrargs()
#endif
{
        tmsvrargs.xa_switch = &tmnull_switch;
        return(&tmsvrargs);
}

int
#ifdef _TMPROTOTYPES
main(int argc, char **argv)
#else
main(argc,argv)
int argc;
char **argv;
#endif
{
#ifdef TMMAINEXIT
#include "mainexit.h"
#endif

        return( _tmstartserver( argc, argv, _tmgetsvrargs()));
}
```

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
 *
 *                              NOTE: this file is RTE specific
and should not be included
 *                              in Full Disclosure Reports.
 *
 *                              Copyright Microsoft, 1999
 *
 *      PURPOSE:        Structure definitions for logging delivery txn
completion stats.
 *      Contact:    Charles Levine (clevine@microsoft.com)
 */


  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
            WORD    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)
                WORD    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                 1
#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;



#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_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.
                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;
                int
iSavePtNextRec;

                JULIAN_TIME     lastTS;
        //when writing sorted output, used to verify records are sorted
                BOOL            bWrite;
        //writing log file

                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

                        int Write(BYTE *ptr, DWORD Size);
                        static void LogFileIO(CTxnLog *);

                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(int
index);

                        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 CTPCC_DBLIB_ERRS
                        {
                                ERR_BAD_FILE_FORMAT = 1,                //
"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 ) { m_errno = iErr; };

                        int                     m_errno;

                        int ErrorType() {return ERR_TYPE_TXNLOG;};
                        int ErrorNum() {return m_errno;};

                        // TODO: need to complete...
                        char *ErrorText() {return "";};
};
```

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
```

webclnt.dsw

```
Microsoft Developer Studio Workspace File, Format Version 6.00
# WARNING: DO NOT EDIT OR DELETE THIS WORKSPACE FILE!

###############################################################################

Project: "db_dblib_dll"=.\db_dblib_dll\db_dblib_dll.dsp - Package Owner=<4>

Package=<5>
{{{
}}}

Package=<4>
{{{
}}}

###############################################################################

Project: "db_odbc_dll"=.\db_odbc_dll\db_odbc_dll.dsp - Package Owner=<4>

Package=<5>
{{{
}}}

Package=<4>
{{{
}}}

###############################################################################

Project: "install"=.\install\install.dsp - Package Owner=<4>

Package=<5>
{{{
}}}

Package=<4>
{{{
   Begin Project Dependency
   Project_Dep_Name isapi_dll
   End Project Dependency
   Begin Project Dependency
   Project_Dep_Name tuxapp
   End Project Dependency
   Begin Project Dependency
   Project_Dep_Name db_dblib_dll
   End Project Dependency
   Begin Project Dependency
   Project_Dep_Name db_odbc_dll
   End Project Dependency
   Begin Project Dependency
   Project_Dep_Name tm_com_dll
   End Project Dependency
   Begin Project Dependency
   Project_Dep_Name tm_tuxedo_dll
   End Project Dependency
   Begin Project Dependency
   Project_Dep_Name tpcc_com_all
   End Project Dependency
   Begin Project Dependency
   Project_Dep_Name tpcc_com_ps
   End Project Dependency
}}}

###############################################################################

Project: "isapi_dll"=.\isapi_dll\isapi_dll.dsp - Package Owner=<4>

Package=<5>
{{{
}}}

Package=<4>
{{{
   Begin Project Dependency
   Project_Dep_Name db_dblib_dll
   End Project Dependency
   Begin Project Dependency
   Project_Dep_Name db_odbc_dll
   End Project Dependency
   Begin Project Dependency
   Project_Dep_Name tm_tuxedo_dll
   End Project Dependency
```

```
    Begin Project Dependency
    Project_Dep_Name tm_com_dll
    End Project Dependency
    Begin Project Dependency
    Project_Dep_Name tm_encina_dll
    End Project Dependency
}}}

###############################################################
##############

Project: "tm_com_dll"=.\tm_com_dll\tm_com_dll.dsp - Package Owner=<4>

Package=<5>
{{{
}}}

Package=<4>
{{{
    Begin Project Dependency
    Project_Dep_Name tpcc_com_ps
    End Project Dependency
    Begin Project Dependency
    Project_Dep_Name tpcc_com_all
    End Project Dependency
}}}

###############################################################
##############

Project: "tm_encina_dll"=.\tm_encina_dll\tm_encina_dll.dsp - Package
Owner=<4>

Package=<5>
{{{
}}}

Package=<4>
{{{
}}}

###############################################################
##############

Project: "tm_tuxedo_dll"=.\tm_tuxedo_dll\tm_tuxedo_dll.dsp - Package
Owner=<4>

Package=<5>
{{{
}}}

Package=<4>
{{{
}}}

###############################################################
##############

Project: "tpcc_com_all"=.\tpcc_com_all\tpcc_com_all.dsp - Package
Owner=<4>

Package=<5>
{{{
}}}

Package=<4>
{{{
    Begin Project Dependency
    Project_Dep_Name tpcc_com_ps
    End Project Dependency
}}}

###############################################################
##############

Project: "tpcc_com_ps"=.\tpcc_com_ps\tpcc_com_ps.dsp - Package
Owner=<4>

Package=<5>
{{{
}}}

Package=<4>
{{{
}}}

###############################################################
##############

Project: "tuxapp"=.\tuxapp\tuxapp.dsp - Package Owner=<4>

Package=<5>
{{{
}}}

Package=<4>
{{{
    Begin Project Dependency
    Project_Dep_Name db_dblib_dll
    End Project Dependency
    Begin Project Dependency
    Project_Dep_Name db_odbc_dll
    End Project Dependency
}}}

###############################################################
##############

Global:

Package=<5>
{{{
}}}

Package=<3>
{{{
}}}

###############################################################
##############
```

Stored Procedures

neword.sql

```
-- File:    NEWORD.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.22
--          Copyright Microsoft, 2001
-- 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          smallint,
                                                @d_id          tinyint,
                                                @c_id          int,
                                                @o_ol_cnt      tinyint,
                                                @o_all_local   tinyint,
                                                @i_id1  int = 0,
@s_w_id1  smallint = 0, @ol_qty1  smallint = 0,
                                                @i_id2  int = 0,
@s_w_id2  smallint = 0, @ol_qty2  smallint = 0,
                                                @i_id3  int = 0,
@s_w_id3  smallint = 0, @ol_qty3  smallint = 0,
                                                @i_id4  int = 0,
@s_w_id4  smallint = 0, @ol_qty4  smallint = 0,
                                                @i_id5  int = 0,
@s_w_id5  smallint = 0, @ol_qty5  smallint = 0,
                                                @i_id6  int = 0,
@s_w_id6  smallint = 0, @ol_qty6  smallint = 0,
                                                @i_id7  int = 0,
@s_w_id7  smallint = 0, @ol_qty7  smallint = 0,
                                                @i_id8  int = 0,
@s_w_id8  smallint = 0, @ol_qty8  smallint = 0,
                                                @i_id9  int = 0,
@s_w_id9  smallint = 0, @ol_qty9  smallint = 0,
                                                @i_id10 int = 0,
@s_w_id10 smallint = 0, @ol_qty10 smallint = 0,
                                                @i_id11 int = 0,
@s_w_id11 smallint = 0, @ol_qty11 smallint = 0,
                                                @i_id12 int = 0,
@s_w_id12 smallint = 0, @ol_qty12 smallint = 0,
                                                @i_id13 int = 0,
@s_w_id13 smallint = 0, @ol_qty13 smallint = 0,
                                                @i_id14 int = 0,
@s_w_id14 smallint = 0, @ol_qty14 smallint = 0,
                                                @i_id15 int = 0,
@s_w_id15 smallint = 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      smallint,
        @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. 4.22
--          Copyright Microsoft, 2001
-- 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       smallint,
                                @c_w_id     smallint,
                                @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     smallint,
              @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. 4.22
--          Copyright Microsoft, 2001
-- 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     smallint,
```

```
                                        @d_id       tinyint,

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

as

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

begin tran o

if (@c_id = 0)
        begin

-- get customer id and info using last name

                select  @cnt        = (count(*)+1)/2
                from    customer (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. 4.22
--          Copyright Microsoft, 2001
-- 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       smallint,

                                                @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. 4.22
--           Copyright Microsoft, 2001
--  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                   smallint,
                                        @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. 4.22
--          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
```

null-txn.sql

```
-- TPC-C Null Txn Stored Procs
-- Microsoft TPC-C Kit
-- 8/17/99
--
-- This script will create stored procs which accept the same parameters and
return correctly formed
-- results sets to match the standard TPC-C stored procs.  Of course, the advan-
tage 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          smallint,


@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          smallint,
                                                    @d_id          tinyint,
                                                    @c_id          int,
                                                    @o_ol_cnt      tinyint,
                                                    @o_all_local   tinyint,
                                                    @i_id1  int = 0,
@s_w_id1 smallint = 0, @ol_qty1 smallint = 0,
                                                    @i_id2  int = 0,
@s_w_id2 smallint = 0, @ol_qty2 smallint = 0,
                                                    @i_id3  int = 0,
@s_w_id3 smallint = 0, @ol_qty3 smallint = 0,
                                                    @i_id4  int = 0,
@s_w_id4 smallint = 0, @ol_qty4 smallint = 0,
                                                    @i_id5  int = 0,
@s_w_id5 smallint = 0, @ol_qty5 smallint = 0,
                                                    @i_id6  int = 0,
@s_w_id6 smallint = 0, @ol_qty6 smallint = 0,
                                                    @i_id7  int = 0,
@s_w_id7 smallint = 0, @ol_qty7 smallint = 0,
                                                    @i_id8  int = 0,
@s_w_id8 smallint = 0, @ol_qty8 smallint = 0,
                                                    @i_id9  int = 0,
@s_w_id9 smallint = 0, @ol_qty9 smallint = 0,
                                                    @i_id10 int = 0,
@s_w_id10 smallint = 0, @ol_qty10 smallint = 0,
```

```
                                                @i_id11 int = 0,
@s_w_id11 smallint = 0, @ol_qty11 smallint = 0,
                                                @i_id12 int = 0,
@s_w_id12 smallint = 0, @ol_qty12 smallint = 0,
                                                @i_id13 int = 0,
@s_w_id13 smallint = 0, @ol_qty13 smallint = 0,
                                                @i_id14 int = 0,
@s_w_id14 smallint = 0, @ol_qty14 smallint = 0,
                                                @i_id15 int = 0,
@s_w_id15 smallint = 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                      smallint,

@d_id                   tinyint,


@c_id                   int,

@c_last     char(16) = ''

as

declare @c_balance              numeric(12,2),
        @c_first                char(16),
        @c_middle               char(2),
        @o_id                                   int,
        @o_entry_d              datetime,
        @o_carrier_id           smallint,
                @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          smallint,
                                                        @c_w_id
   smallint,
                                                        @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             smallint,
                         @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           smallint,
                                                @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] [smallint] 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
```

Appendix B: Database Design

Database Build

backup.sql

```
-- File:    BACKUP.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.22
--          Copyright Microsoft, 2001
-- Purpose:  Creates backup of tpcc database


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

dump database tpcc to tpccback1, tpccback2, tpccback3, tpccback4 with init,
stats = 1

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

go
```

backupdev.sql

```
-- File:    BACKUPDEVB.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.22
--          Copyright Microsoft, 2001
-- Purpose:  Creates tpcc database Backup Devices


use master
go

-- create backup devices

exec sp_addumpdevice 'disk','tpccback1','Y:\tpccback1.dmp'
go
exec sp_addumpdevice 'disk','tpccback2','Y:\tpccback2.dmp'
go
exec sp_addumpdevice 'disk','tpccback3','Z:\tpccback3.dmp'
go
exec sp_addumpdevice 'disk','tpccback4','Z:\tpccback4.dmp'
go
```

createdb.sql

```
-- File:    CREATEDB.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.22
--          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            = "C:\MSSQL_tpcc_root.mdf",
            SIZE                = 8MB,
            FILEGROWTH          = 0),
FILEGROUP       MSSQL_misc_fg
(           NAME                = MSSQL_misc1,
            FILENAME            = "K:",
            SIZE                = 170000MB,
            FILEGROWTH          = 0),
FILEGROUP       MSSQL_cs_fg
(           NAME                = MSSQL_cs1,
            FILENAME            = "F:",
            SIZE                = 80000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_cs2,
            FILENAME            = "G:",
            SIZE                = 80000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_cs3,
            FILENAME            = "H:",
            SIZE                = 80000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_cs3,
            FILENAME            = "I:",
            SIZE                = 80000MB,
            FILEGROWTH          = 0),
(           NAME                = MSSQL_cs4,
            FILENAME            = "J:",
            SIZE                = 80000MB,
            FILEGROWTH          = 0)
LOG ON
(           NAME                = MSSQL_tpcc_log,
            FILENAME            = "E:",
            SIZE                = 190000MB,
            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
```

dbopt1.sql

```
-- File:    DBOPT1.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.22
--          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. 4.22
--          Copyright Microsoft, 2001
-- Purpose:  Resets database options after data load

sp_dboption tpcc,'select into/bulkcopy',FALSE
GO

sp_dboption tpcc,'trunc. log on chkpt.',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 8.0      --
-- 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. 4.22
--          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. 4.22
--          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. 4.22
--          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
```

idxitmcl.sql

```
-- File:    IDXITMCL.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.22
--          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. 4.22
--          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. 4.22
--          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. 4.22
--          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. 4.22
--          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. 4.22
--          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. 4.22
--          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
```

removedb.sql

```
-- File:    REMOVEDB.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.22
--          Copyright Microsoft, 2001
-- Purpose:  Removes tpcc database and backup files


use master
go

-- remove any existing database and backup files

exec sp_dbremove tpcc, dropdev
go

exec sp_dropdevice 'tpccback1'
exec sp_dropdevice 'tpccback2'
exec sp_dropdevice 'tpccback3'
exec sp_dropdevice 'tpccback4'
go
```

restore.sql

```
-- File:    RESTORE.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.22
--          Copyright Microsoft, 2001
-- Purpose:  Loads database backup from backup files


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

load database tpcc from tpccback1, tpccback2, tpccback3, tpccback4 with stats
= 1

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

go
```

RunSQLCfg.sql

```
/*  TPC-C Benchmark Kit                                    */
/*                                                         */
/*  RUNSQLCFG.SQL                                          */
/*                                                         */
/*  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",240

/* increase priority of user threads */
exec sp_configure "priority boost",1

/* disable automatic checkpointing */
exec sp_configure "recovery interval",56

/* change to a mask appropriate for the number of processors on the server */
exec sp_configure "affinity mask",0x7

/* enable fibers */
exec sp_configure "lightweight pooling",1

/* enable update */
exec sp_configure "allow updates",1

/* set max degree of parallelism */
exec sp_configure "max degree of parallelism",1

go

reconfigure with override
go
```

sqlshutdown.sql

```
use tpcc
go
checkpoint
go
shutdown
go
```

tables.sql

```
-- File:    TABLES.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.22
--          Copyright Microsoft, 2001
-- Purpose:  Creates TPC-C tables


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                    smallint,
        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                  smallint,
        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                  smallint,
        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                smallint,
        h_d_id                  tinyint,
        h_w_id                  smallint,
        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                 smallint
) on MSSQL_misc_fg
go

create table orders
(
        o_id                    int,
        o_d_id                  tinyint,
        o_w_id                  smallint,
        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                 smallint,
        ol_number               tinyint,
        ol_i_id                 int,
        ol_supply_w_id          smallint,
        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                                  smallint,
        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
```

Verify_TpccLoad.sql

```
-- File:    VERIFYTPCCLOAD.SQL
--          Microsoft TPC-C Benchmark Kit Ver. 4.22
--          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      rows
from        sysindexes
where       id          =object_id("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. 4.22
--          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
```

Load Source Code

getargs.c

```
//          File:                   GETARGS.C
//                                  Microsoft TPC-C Kit Ver. 4.22
//                                  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->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 'h':    /* Fall throught */
                        case 'H':
                                            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 '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. 4.22
//                                          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. 4.22
//                                              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. 4.22
//                                    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. 4.22
//                                    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          "4.22"

// 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           "logs\\load.out"
#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                                *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. 4.22
//                                  Copyright Microsoft, 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 CheckSQL();
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

        CheckSQL();
        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];

                // 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);
                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];


                // 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);

                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];

	// 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);

	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];

	// 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);
	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];
        // 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");

        // Initialize bulk copy
        sprintf(name, "%s..%s", aptr->database, "customer");

        rc = bcp_init(c_hdbc1, name, NULL, "logs\\customer.err", 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);

        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");

        // 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, "isql -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",
                                        aptr->server,
                                        aptr->user,
                                        aptr->password,
                                        aptr->database,
                                        LOADER_NURAND_C);

        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];

	// 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);
	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);

	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);
	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, "isql -S%s -U%s -P%s -e -i%s\\%s.sql > logs\\%s.log",
					aptr->server,
					aptr->user,
					aptr->password,
					aptr->index_script_path,
					index_script,
					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];
	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);

		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];
                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);

                        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   : CheckSQL
//
//=============================================================
==============

void CheckSQL()
{

                RETCODE         rc;

                char                            szDriverString[300];
                char                            szDriverStringOut[1024];
                int                                     SQLBuildFlag;
                char                            resp;

                SQLSMALLINT                     cbDriverStringOut;
                SQLCHAR                                 SQLVersion[19];
                SQLINTEGER                      SQLVersionInd;



                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" ,

aptr->server,
                                                                        aptr->user,

aptr->password );

                if ( SQLSetConnectAttr( v_hdbc, SQL_ATTR_PACKET_SIZE,
(SQLPOINTER)aptr->pack_size, SQL_IS_UINTEGER ) != 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 ((rc != SQL_SUCCESS) && (rc !=
SQL_SUCCESS_WITH_INFO))
                        HandleErrorDBC(v_hdbc);
```

```
	if ( SQLAllocHandle(SQL_HANDLE_STMT, v_hdbc , &v_hstmt)
!= SQL_SUCCESS )
		HandleErrorSTMT(v_hstmt);

	rc = SQLBindCol(v_hstmt, 4, SQL_C_CHAR, &SQLVersion,
sizeof(SQLVersion), &SQLVersionInd);

	// issue SQL Server extended stored procedure (xp_msver) to
determine installed version
	rc = SQLExecDirect(v_hstmt, "EXECUTE xp_msver
ProductVersion", SQL_NTS);

	if ((rc != SQL_SUCCESS) && (rc !=
SQL_SUCCESS_WITH_INFO))
		HandleErrorSTMT(v_hstmt);

	rc = SQLFetch(v_hstmt);

	if (rc != SQL_SUCCESS)
		HandleErrorDBC(v_hdbc);

	// Check build number to ensure 8.00.194 or higher

	SQLBuildFlag = 1;

	// first check the Major version

	if ( SQLVersion[0] == '8' )
	{
		if (( SQLVersion[2] == '0') & ( SQLVersion[3] == '0' )  )
		{
			if ( SQLVersion[5] == '1' )
			{
				if ( (SQLVersion[6] == '9') &
(SQLVersion[7] == '4') )
				{
					SQLBuildFlag = 0;
					printf("You are using
SQL Server version = %9s\n\n", SQLVersion);
				}
				else
				{
					SQLBuildFlag = 1;
				}
			}
			else
			{
				if ( SQLVersion[5] == '3' )
				{
					if ( (SQLVersion[6] >=
53) & (SQLVersion[7] >= 48) )
					{

SQLBuildFlag = 0;
							printf("You
are using SQL Server version = %9s\n\n", SQLVersion);
					}
					else
					{

SQLBuildFlag = 1;
					}
				}
			}
		}
		else
		{
			SQLBuildFlag = 1;
		}

		if ( SQLBuildFlag == 1 )
		{
			printf("NOTE:  The SQL Server version you are using is
not supported\n");
			printf("for TPC-C benchmarking.  You currently have
SQL Server version %9s\n",SQLVersion);
			printf("installed.  Please upgrade to Microsoft SQL
Server 2000 (8.00.0194) or better.\n");
			printf("and re-run the SETUP program.\n\n");
			printf("Do you wish to continue with setup? (Y/N): ");
			resp = getchar();
			if ( ( resp == 'N' ) || (resp == 'n') )
			{
				printf("\nSetup Aborted!\n");
				exit(1);
			}
		}

		SQLFreeHandle(SQL_HANDLE_STMT, v_hstmt);
		SQLDisconnect(v_hdbc);
		SQLFreeHandle(SQL_HANDLE_DBC, v_hdbc);

		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
################################################################
###############
```

Appendix C: Tunable Parameters

Microsoft Windows .NET Enterprise Server Configuration Parameters

Server Configuration Parameters

Microsoft Windows .NET Enterprise Server Configuration
Server Configuration Parameters

Microsoft Windows .NET Enterprise Server Configuration
The following services were set as manual on the server:

- Alerter
- Computer Browser
- DHCP Client
- Distributed File System
- Distributed Link Tracking Client
- DNS Client
- IPSEC Policy Agent
- License Logging Service
- Messager
- Print Spooler
- Remote Registry Service
- Removable Storage
- RUN as Service
- System Event Notification
- Task Scheduler

Microsoft SQL Server 2000 Startup Parameters

Microsoft SQL Server 2000 Startup Parameters

c:\Program Files\Microsoft SQL Server\MSSQL\Binn\sqlservr.exe -c -x -t3502 -g150

Where:

-c Start SQL Server independent of the Service Control Manager
-x Disable the keeping of CPU time and cache hit ratio statistics
-t3502 Writes a message to the SQL Server Errorlog showing the beginning and ending time of each checkpoint
-g150 Specifies the amount of memory that is set aside for allocations not from the buffer pool

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 " "

 ------------------------------
 Oct 30 2002  3:10:36:810PM

(1 row affected)

1> 2> 3>
select @@version



 ------------------------------------------------------------------------
            ------------------------------------------------------------------
            ------------------------------------------------------------------
            ----------------------------------
 Microsoft SQL Server  2000 - 8.00.731 (Intel X86)
            Oct 20 2002 22:13:38
            Cop
            yright (c) 1988-2002 Microsoft Corporation
            Enterprise Edition on Windo
            ws NT 5.2 (Build 3663: )



(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 " "

 ------------------------------
 Oct 30 2002  3:10:37:873PM

(1 row affected)

1> 2> 3> DBCC execution completed. If DBCC printed error messages, contact
your system administrator.
Configuration option 'show advanced options' changed from 1 to 1. Run the
RECONFIGURE statement to install.

sp_configure "show advanced",1
1> 2> reconfigure with override
1> 2> sp_configure
 name                                                  minimum     maximum
config_value run_value
 ------------------------------------------------------------------- ----------- -----------
------------ -----------
 affinity mask                                        -2147483648  2147483647
   255        255
 allow updates                                                0          1          0
 0
 awe enabled                                                  0          1          1
 1
 c2 audit mode                                                0          1          0
 0
 cost threshold for parallelism                                     0      32767
5          5
 Cross DB Ownership Chaining                                        0          1
  0          0
 cursor threshold                                            -1  2147483647
-1         -1
```

```
 default full-text language                    0  2147483647
1033        1033
 default language                          0        9999           0
      0
 fill factor (%)                         0        100          0
0
 index create memory (KB)                      704  2147483647
         0          0
 lightweight pooling                       0          1          1
    1
 locks                                  5000  2147483647           0
       0
 max degree of parallelism                     0         32          0
         0
 max server memory (MB)                          4  2147483647
2147483647  2147483647
 max text repl size (B)                        0  2147483647
65536       65536
 max worker threads                           32       32767
232         232
 media retention                           0        365          0
    0
 min memory per query (KB)                           512  2147483647
         512         512
 min server memory (MB)                          0  2147483647
       0          0
 nested triggers                           0          1          1
1
 network packet size (B)                       512       65536
2048        2048
 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
84          84
 remote access                             0          1          1
 1
 remote login timeout (s)                      0  2147483647
 20          20
 remote proc trans                         0          1          0
   0
 remote query timeout (s)                      0  2147483647
 600         600
 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 .NET Enterprise Server 2003

SUT Information Report

System Information report written at: 10/30/02 11:04:28
System Name: COMANCHE
[System Summary]

Item	Value
OS Name	Microsoft® Windows® .NET Enterprise Server
Version	5.2.3663 Build 3663
OS Manufacturer	Microsoft Corporation
Activation Status	Activation Pending (56 days remaining)
System Name	COMANCHE
System Manufacturer	IBM___
System Model	SERVIGIL
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
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 - 1000, IBM BIOS Ver 1.06, 10/1/2002
Windows Directory	C:\WINDOWS
System Directory	C:\WINDOWS\system32
Boot Device	\Device\HarddiskVolume1
Locale	United States
Hardware Abstraction Layer	Version = "5.2.3663.0 (main.020715-1506)"
User Name	COMANCHE\Administrator
Time Zone	Eastern Standard Time
Total Physical Memory	32,766.97 MB
Available Physical Memory	83.90 MB
Total Virtual Memory	67.19 GB
Available Virtual Memory	3.66 GB
Page File Space	35.19 GB
Page File	C:\pagefile.sys

[Hardware Resources]

[Conflicts/Sharing]

Resource	Device
I/O Port 0x00000000-0x00001FFF	PCI bus
I/O Port 0x00000000-0x00001FFF	Direct memory access controller
Memory Address 0xA8000-0xAFFFF	PCI bus
Memory Address 0xA8000-0xAFFFF	PCI bus
Memory Address 0xA8000-0xAFFFF	PCI bus
Memory Address 0xB4000000-0xB7FFFFFF	PCI bus
Memory Address 0xB4000000-0xB7FFFFFF	DEC 21154 PCI to PCI bridge
Memory Address 0xB4000000-0xB7FFFFFF	Mylex eXtremeRAID 2000 Controller
Memory Address 0xB0000-0xB7FFF	PCI bus
Memory Address 0xB0000-0xB7FFF	PCI bus
Memory Address 0xB0000-0xB7FFF	PCI bus
Memory Address 0xA4000000-0xA60FFFFF	DEC 21154 PCI to PCI bridge
Memory Address 0xA4000000-0xA60FFFFF	Mylex eXtremeRAID 2000 Controller
I/O Port 0x00002000-0x000027FF	PCI bus

I/O Port 0x00002000-0x000027FF Adaptec AIC-7899 Ultra160 PCI SCSI Card

Memory Address 0xB8000-0xBFFFF PCI bus
Memory Address 0xB8000-0xBFFFF PCI bus
Memory Address 0xB8000-0xBFFFF PCI bus

Memory Address 0xD8000000-0xDBFFFFFF PCI bus
Memory Address 0xD8000000-0xDBFFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xD8000000-0xDBFFFFFF Mylex eXtremeRAID 2000 Disk Array Controller

I/O Port 0x00009000-0x00009FFF PCI bus
I/O Port 0x00009000-0x00009FFF DEC 21154 PCI to PCI bridge
I/O Port 0x00009000-0x00009FFF Mylex eXtremeRAID 2000 Disk Array Controller

I/O Port 0x00006000-0x00006FFF PCI bus
I/O Port 0x00006000-0x00006FFF DEC 21154 PCI to PCI bridge
I/O Port 0x00006000-0x00006FFF Mylex eXtremeRAID 2000 Controller

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 Controller

IRQ 47 VIA Rev 5 or later USB Universal Host Controller
IRQ 47 VIA Rev 5 or later USB Universal Host Controller

Memory Address 0xCC000000-0xCFFFFFFF PCI bus
Memory Address 0xCC000000-0xCFFFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xCC000000-0xCFFFFFFF Mylex eXtremeRAID 2000 Controller

Memory Address 0xC8000000-0xCBFFFFFF PCI bus
Memory Address 0xC8000000-0xCBFFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xC8000000-0xCBFFFFFF Mylex eXtremeRAID 2000 Controller

Memory Address 0xBD800000-0xBDBFFFFF PCI bus
Memory Address 0xBD800000-0xBDBFFFFF Other PCI Bridge Device

I/O Port 0x00002800-0x00002FFF PCI bus
I/O Port 0x00002800-0x00002FFF QLogic QLA23xx PCI Fibre Channel Adapter

Memory Address 0xD0000000-0xD3FFFFFF PCI bus
Memory Address 0xD0000000-0xD3FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xD0000000-0xD3FFFFFF Mylex eXtremeRAID 2000 Controller

Memory Address 0xAC000000-0xAFFFFFFF PCI bus
Memory Address 0xAC000000-0xAFFFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xAC000000-0xAFFFFFFF Mylex eXtremeRAID 2000 Controller

I/O Port 0x00005000-0x00005FFF DEC 21154 PCI to PCI bridge
I/O Port 0x00005000-0x00005FFF Mylex eXtremeRAID 2000 Controller

Memory Address 0xB8000000-0xBBFFFFFF PCI bus
Memory Address 0xB8000000-0xBBFFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xB8000000-0xBBFFFFFF Mylex eXtremeRAID 2000 Disk Array Controller

Memory Address 0xC0000000-0xC7FFFFFF PCI bus
Memory Address 0xC0000000-0xC7FFFFFF S3 Graphics Inc. Savage4 (Microsoft Corporation)

Memory Address 0xA0000-0xA7FFF PCI bus
Memory Address 0xA0000-0xA7FFF S3 Graphics Inc. Savage4 (Microsoft Corporation)
Memory Address 0xA0000-0xA7FFF PCI bus
Memory Address 0xA0000-0xA7FFF PCI bus

I/O Port 0x00007000-0x00007FFF PCI bus
I/O Port 0x00007000-0x00007FFF DEC 21154 PCI to PCI bridge
I/O Port 0x00007000-0x00007FFF Mylex eXtremeRAID 2000 Controller

Memory Address 0xBDE00000-0xBDEFFFFF PCI bus
Memory Address 0xBDE00000-0xBDEFFFFF Adaptec AIC-7899 Ultra160 PCI SCSI Card

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 Controller

Memory Address 0xA0000000-0xA7FFFFFF PCI bus
Memory Address 0xA0000000-0xA7FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xA0000000-0xA7FFFFFF Mylex eXtremeRAID 2000 Controller

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 Controller

Memory Address 0xD4000000-0xD7FFFFFF PCI bus
Memory Address 0xD4000000-0xD7FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xD4000000-0xD7FFFFFF Mylex eXtremeRAID 2000 Controller

Memory Address 0xDC000000-0xDDFFFFFF PCI bus
Memory Address 0xDC000000-0xDDFFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xDC000000-0xDDFFFFFF Mylex eXtremeRAID 2000 Controller

Memory Address 0xCA000000-0xCBFFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xCA000000-0xCBFFFFFF Mylex eXtremeRAID 2000 Controller

Memory Address 0xB0000000-0xB3FFFFFF PCI bus
Memory Address 0xB0000000-0xB3FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xB0000000-0xB3FFFFFF Mylex eXtremeRAID 2000 Controller

Memory Address 0xA8000000-0xABFFFFFF PCI bus
Memory Address 0xA8000000-0xABFFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xA8000000-0xABFFFFFF Mylex eXtremeRAID 2000 Controller

[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
0x000003B0-0x000003BB S3 Graphics Inc. Savage4 (Microsoft Corporation) OK
0x000003C0-0x000003DF S3 Graphics Inc. Savage4 (Microsoft Corporation) OK
0x00001800-0x0000187F 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
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
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
0x00001880-0x0000189F VIA Rev 5 or later USB Universal Host Controller OK
0x000018A0-0x000018BF VIA Rev 5 or later USB Universal Host Controller OK
0x00002000-0x000027FF PCI bus OK
0x00002000-0x000027FF Adaptec AIC-7899 Ultra160 PCI SCSI Card OK
0x00002100-0x000021FF Adaptec AIC-7899 Ultra160 PCI SCSI Card OK
0x00004000-0x00005FFF PCI bus OK
0x00004000-0x00005FFF DEC 21154 PCI to PCI bridge OK
0x00004000-0x00005FFF Mylex eXtremeRAID 2000 Controller OK
0x00005000-0x00005FFF DEC 21154 PCI to PCI bridge OK
0x00005000-0x00005FFF Mylex eXtremeRAID 2000 Controller OK
0x00002800-0x00002FFF PCI bus OK
0x00002800-0x00002FFF 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 Controller OK
0x00006000-0x00006FFF PCI bus OK
0x00006000-0x00006FFF DEC 21154 PCI to PCI bridge OK
0x00006000-0x00006FFF Mylex eXtremeRAID 2000 Controller OK
0x00007000-0x00007FFF PCI bus OK
0x00007000-0x00007FFF DEC 21154 PCI to PCI bridge OK
0x00007000-0x00007FFF Mylex eXtremeRAID 2000 Controller OK
0x00008000-0x00008FFF PCI bus OK
0x00008000-0x00008FFF DEC 21154 PCI to PCI bridge OK
0x00008000-0x00008FFF Mylex eXtremeRAID 2000 Controller OK
0x00009000-0x00009FFF PCI bus OK
0x00009000-0x00009FFF DEC 21154 PCI to PCI bridge OK
0x00009000-0x00009FFF Mylex eXtremeRAID 2000 Disk Array Controller OK

[IRQs]

Resource Device Status
IRQ 36 Microsoft ACPI-Compliant System OK
IRQ 5 Other PCI Bridge Device 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 47 VIA Rev 5 or later USB Universal Host Controller OK
IRQ 47 VIA Rev 5 or later USB Universal Host Controller OK
IRQ 40 Adaptec AIC-7899 Ultra160 PCI SCSI Card OK
IRQ 41 Adaptec AIC-7899 Ultra160 PCI SCSI Card OK
IRQ 51 Mylex eXtremeRAID 2000 Controller OK
IRQ 55 Mylex eXtremeRAID 2000 Controller OK
IRQ 71 QLogic QLA23xx PCI Fibre Channel Adapter OK
IRQ 67 Mylex eXtremeRAID 2000 Controller OK
IRQ 59 Mylex eXtremeRAID 2000 Controller OK
IRQ 116 Mylex eXtremeRAID 2000 Controller OK
IRQ 109 Mylex eXtremeRAID 2000 Controller OK
IRQ 102 Mylex eXtremeRAID 2000 Disk Array Controller OK

[Memory]

Resource Device Status
0xA0000-0xA7FFF PCI bus OK
0xA0000-0xA7FFF S3 Graphics Inc. Savage4 (Microsoft Corporation) OK
0xA0000-0xA7FFF PCI bus OK
0xA0000-0xA7FFF PCI bus OK
0xA8000-0xAFFFF PCI bus OK
0xA8000-0xAFFFF PCI bus OK
0xA8000-0xAFFFF PCI bus OK
0xB0000-0xB7FFF PCI bus OK
0xB0000-0xB7FFF PCI bus OK
0xB0000-0xB7FFF PCI bus OK
0xB8000-0xBFFFF PCI bus OK
0xB8000-0xBFFFF PCI bus OK
0xB8000-0xBFFFF PCI bus OK
0xBD800000-0xBDBFFFFF PCI bus OK

0xBD800000-0xBDBFFFFF Other PCI Bridge Device OK
0xC0000000-0xC7FFFFFF PCI bus OK
0xC0000000-0xC7FFFFFF S3 Graphics Inc. Savage4 (Microsoft Corporation) OK
0xBDA00000-0xBDA7FFFF S3 Graphics Inc. Savage4 (Microsoft Corporation) OK
0xBDE00000-0xBDEFFFFF PCI bus OK
0xBDE00000-0xBDEFFFFF Adaptec AIC-7899 Ultra160 PCI SCSI Card OK
0xBDE01000-0xBDE01FFF Adaptec AIC-7899 Ultra160 PCI SCSI Card OK
0xA0000000-0xA7FFFFFF PCI bus OK
0xA0000000-0xA7FFFFFF DEC 21154 PCI to PCI bridge OK
0xA0000000-0xA7FFFFFF Mylex eXtremeRAID 2000 Controller OK
0xC8000000-0xCBFFFFFF PCI bus OK
0xC8000000-0xCBFFFFFF DEC 21154 PCI to PCI bridge OK
0xC8000000-0xCBFFFFFF Mylex eXtremeRAID 2000 Controller OK
0xA4000000-0xA60FFFFF DEC 21154 PCI to PCI bridge OK
0xA4000000-0xA60FFFFF Mylex eXtremeRAID 2000 Controller OK
0xCA000000-0xCBFFFFFF DEC 21154 PCI to PCI bridge OK
0xCA000000-0xCBFFFFFF Mylex eXtremeRAID 2000 Controller OK
0xBE000000-0xBE0FFFFF PCI bus OK
0xBE020000-0xBE020FFF QLogic QLA23xx PCI Fibre Channel Adapter OK
0xA8000000-0xABFFFFFF PCI bus OK
0xA8000000-0xABFFFFFF DEC 21154 PCI to PCI bridge OK
0xA8000000-0xABFFFFFF Mylex eXtremeRAID 2000 Controller OK
0xDC000000-0xDDFFFFFF PCI bus OK
0xDC000000-0xDDFFFFFF DEC 21154 PCI to PCI bridge OK
0xDC000000-0xDDFFFFFF Mylex eXtremeRAID 2000 Controller OK
0xAC000000-0xAFFFFFFF PCI bus OK
0xAC000000-0xAFFFFFFF DEC 21154 PCI to PCI bridge OK
0xAC000000-0xAFFFFFFF Mylex eXtremeRAID 2000 Controller OK
0xCC000000-0xCFFFFFFF PCI bus OK
0xCC000000-0xCFFFFFFF DEC 21154 PCI to PCI bridge OK
0xCC000000-0xCFFFFFFF Mylex eXtremeRAID 2000 Controller OK
0xB0000000-0xB3FFFFFF PCI bus OK
0xB0000000-0xB3FFFFFF DEC 21154 PCI to PCI bridge OK
0xB0000000-0xB3FFFFFF Mylex eXtremeRAID 2000 Controller OK
0xD0000000-0xD3FFFFFF PCI bus OK
0xD0000000-0xD3FFFFFF DEC 21154 PCI to PCI bridge OK
0xD0000000-0xD3FFFFFF Mylex eXtremeRAID 2000 Controller OK
0xB4000000-0xB7FFFFFF PCI bus OK
0xB4000000-0xB7FFFFFF DEC 21154 PCI to PCI bridge OK
0xB4000000-0xB7FFFFFF Mylex eXtremeRAID 2000 Controller OK
0xD4000000-0xD7FFFFFF PCI bus OK
0xD4000000-0xD7FFFFFF DEC 21154 PCI to PCI bridge OK
0xD4000000-0xD7FFFFFF Mylex eXtremeRAID 2000 Controller OK
0xB8000000-0xBBFFFFFF PCI bus OK
0xB8000000-0xBBFFFFFF DEC 21154 PCI to PCI bridge OK
0xB8000000-0xBBFFFFFF Mylex eXtremeRAID 2000 Disk Array Controller OK
0xD8000000-0xDBFFFFFF PCI bus OK
0xD8000000-0xDBFFFFFF DEC 21154 PCI to PCI bridge OK
0xD8000000-0xDBFFFFFF Mylex eXtremeRAID 2000 Disk Array Controller OK
0xBC000000-0xBC7FFFFF PCI bus OK
0xDE000000-0xDE7FFFFF PCI bus OK
0xBC800000-0xBCFFFFFF PCI bus OK
0xDE800000-0xDEFFFFFF PCI bus OK
0xBD000000-0xBD7FFFFF PCI bus OK
0xDF000000-0xDF7FFFFF PCI bus OK

[Components]

[Multimedia]

[Audio Codecs]

CODEC Manufacturer Description Status File Version Size Creation Date
c:\windows\system32\msgsm32.acm Microsoft Corporation OK C:\WINDOWS\system32\MSGSM32.ACM 5.2.3663.0 (main.020715-1506) 20.00 KB (20,480 bytes) 7/18/2002 8:00 AM
c:\windows\system32\l3codeca.acm Fraunhofer Institut Integrierte Schaltungen IIS Fraunhofer IIS MPEG Layer-3 Codec OK C:\WINDOWS\system32\L3CODECA.ACM 1, 9, 0, 0305 284.00 KB (290,816 bytes) 7/18/2002 8:00 AM
c:\windows\system32\sl_anet.acm Sipro Lab Telecom Inc. Sipro Lab Telecom Audio Codec OK C:\WINDOWS\system32\SL_ANET.ACM 3.02 84.00 KB (86,016 bytes) 7/18/2002 8:00 AM
c:\windows\system32\msaud32.acm Microsoft Corporation Windows Media Audio Codec OK C:\WINDOWS\system32\MSAUD32.ACM 8.00.00.4477 288.00 KB (294,912 bytes) 7/18/2002 8:00 AM
c:\windows\system32\msg723.acm Microsoft Corporation OK C:\WINDOWS\system32\MSG723.ACM 4.4.4000 116.00 KB (118,784 bytes) 10/25/2002 1:52 PM
c:\windows\system32\msg711.acm Microsoft Corporation OK C:\WINDOWS\system32\MSG711.ACM 5.2.3663.0 (main.020715-1506) 10.00 KB (10,240 bytes) 7/18/2002 8:00 AM
c:\windows\system32\msadp32.acm Microsoft Corporation OK C:\WINDOWS\system32\MSADP32.ACM 5.2.3663.0 (main.020715-1506) 14.50 KB (14,848 bytes) 7/18/2002 8:00 AM
c:\windows\system32\imaadp32.acm Microsoft Corporation OK C:\WINDOWS\system32\IMAADP32.ACM 5.2.3663.0 (main.020715-1506) 15.50 KB (15,872 bytes) 7/18/2002 8:00 AM
c:\windows\system32\tssoft32.acm DSP GROUP, INC. OK C:\WINDOWS\system32\TSSOFT32.ACM 1.01 9.50 KB (9,728 bytes) 7/18/2002 8:00 AM

[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 280.00 KB (286,720 bytes) 7/16/2002 9:46 AM
c:\windows\system32\msh261.drv Microsoft Corporation OK C:\WINDOWS\system32\MSH261.DRV 4.4.4000 180.00 KB (184,320 bytes) 10/25/2002 1:52 PM
c:\windows\system32\tsbyuv.dll Microsoft Corporation OK C:\WINDOWS\system32\TSBYUV.DLL 5.2.3663.0 (main.020715-1506) 8.00 KB (8,192 bytes) 7/16/2002 9:48 AM
c:\windows\system32\iccvid.dll Radius Inc. OK C:\WINDOWS\system32\ICCVID.DLL 1.10.0.6 108.00 KB (110,592 bytes) 7/18/2002 8:00 AM

c:\windows\system32\msyuv.dll Microsoft Corporation
OK C:\WINDOWS\system32\MSYUV.DLL 5.2.3663.0
(main.020715-1506) 16.50 KB (16,896 bytes) 7/16/2002 9:47 AM
c:\windows\system32\msrle32.dll Microsoft Corporation
OK C:\WINDOWS\system32\MSRLE32.DLL 5.2.3663.0
(main.020715-1506) 10.50 KB (10,752 bytes) 7/18/2002 8:00 AM
c:\windows\system32\msvidc32.dll Microsoft Corporation
OK C:\WINDOWS\system32\MSVIDC32.DLL 5.2.3663.0
(main.020715-1506) 26.50 KB (27,136 bytes) 7/18/2002 8:00 AM
c:\windows\system32\ir32_32.dll Not Available OK
C:\WINDOWS\system32\IR32_32.DLL Not Available 194.50 KB
(199,168 bytes) 7/18/2002 8:00 AM
c:\windows\system32\iyuv_32.dll Microsoft Corporation
OK C:\WINDOWS\system32\IYUV_32.DLL 5.2.3663.0
(main.020715-1506) 45.00 KB (46,080 bytes) 7/16/2002 9:47 AM

[CD-ROM]

Item Value
Drive D:
Description CD-ROM Drive
Media Loaded No
Media Type CD-ROM
Name LG CD-ROM CRN-8245B
Manufacturer (Standard CD-ROM drives)
Status OK
Transfer Rate Not Available
SCSI Target ID 0
PNP Device ID
IDE\CDROMLG_CD-ROM_CRN-8245B_____1.16____\5
&2CDE688A&0&0.0.0
Driver c:\windows\system32\drivers\cdrom.sys (5.2.3663.0
(main.020715-1506), 47.75 KB (48,896 bytes), 7/18/2002 8:00 AM)

[Sound Device]

Item Value

[Display]

Item Value
Name S3 Graphics Inc. Savage4 (Microsoft Corporation)
PNP Device ID
PCI\VEN_5333&DEV_8A22&SUBSYS_01C51014&REV_06\3&267A616A
&0&18
Adapter Type S3 Savage4, S3 Graphics, Inc. compatible
Adapter Description S3 Graphics Inc. Savage4 (Microsoft Corporation)
Adapter RAM 8.00 MB (8,388,608 bytes)
Installed Drivers S3gsav4.dll
Driver Version 6.13.10.8009-13.95.09
INF File s3gsav4.inf (S3SAVAGE4 section)
Color Planes 1
Color Table Entries 4294967296
Resolution 800 x 600 x 85 hertz
Bits/Pixel 32
Memory Address 0xBDA00000-0xBDA7FFFF
Memory Address 0xC0000000-0xC7FFFFFF
I/O Port 0x000003B0-0x000003BB
I/O Port 0x000003C0-0x000003DF
Memory Address 0xA0000-0xA7FFF
Driver c:\windows\system32\drivers\s3gsav4m.sys (6.13.10.8009-13.95.09,
132.00 KB (135,168 bytes), 10/25/2002 9:44 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 (5.2.3663.0
(main.020715-1506), 50.50 KB (51,712 bytes), 7/18/2002 8:00 AM)

[Pointing Device]

Item Value
Hardware Type PS/2 Compatible Mouse
Number of Buttons 3
Status OK
PNP Device ID ACPI\PNP0F13\4&7FD7688&0
Power Management Supported No
Double Click Threshold 6
Handedness Right Handed Operation
IRQ Channel IRQ 12
Driver c:\windows\system32\drivers\i8042prt.sys (5.2.3663.0
(main.020715-1506), 50.50 KB (51,712 bytes), 7/18/2002 8:00 AM)

[Modem]

Item Value

[Network]

[Adapter]

Item Value
Name [00000001] Broadcom NetXtreme Gigabit Ethernet
Adapter Type Not Available
Product Type Broadcom NetXtreme Gigabit Ethernet
Installed Yes
PNP Device ID Not Available
Last Reset 10/30/2002 8:00 AM
Index 1
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 [00000002] RAS Async Adapter
Adapter Type Not Available
Product Type RAS Async Adapter
Installed Yes
PNP Device ID Not Available
Last Reset 10/30/2002 8:00 AM
Index 2
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 [00000003] WAN Miniport (L2TP)
Adapter Type Not Available
Product Type WAN Miniport (L2TP)
Installed Yes
PNP Device ID ROOT\MS_L2TPMINIPORT\0000
Last Reset 10/30/2002 8:00 AM
Index 3
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 (5.2.3663.0 (main.020715-1506), 61.63 KB (63,104 bytes), 7/18/2002 8:00 AM)

Name [00000004] 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 10/30/2002 8:00 AM
Index 4
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 (5.2.3663.0 (main.020715-1506), 56.00 KB (57,344 bytes), 7/18/2002 8:00 AM)

Name [00000005] 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 10/30/2002 8:00 AM
Index 5
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 (5.2.3663.0 (main.020715-1506), 36.88 KB (37,760 bytes), 7/18/2002 8:00 AM)

Name [00000006] Direct Parallel
Adapter Type Not Available
Product Type Direct Parallel
Installed Yes
PNP Device ID ROOT\MS_PTIMINIPORT\0000
Last Reset 10/30/2002 8:00 AM
Index 6
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 (5.2.3663.0 (main.020715-1506), 16.38 KB (16,768 bytes), 7/18/2002 8:00 AM)

Name [00000007] WAN Miniport (IP)
Adapter Type Not Available
Product Type WAN Miniport (IP)
Installed Yes
PNP Device ID ROOT\MS_NDISWANIP\0000
Last Reset 10/30/2002 8:00 AM
Index 7
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 (5.2.3663.0 (main.020715-1506), 87.13 KB (89,216 bytes), 7/18/2002 8:00 AM)

[Protocol]

Item Value
Name MSAFD Tcpip [TCP/IP]
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 16 bytes
Maximum Message Size 0 bytes
Message Oriented No
Minimum Address Size 16 bytes
Pseudo Stream Oriented No
Supports Broadcasting No
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data Yes
Supports Graceful Closing Yes
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD Tcpip [UDP/IP]
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 16 bytes
Maximum Message Size 63.93 KB (65,467 bytes)
Message Oriented Yes
Minimum Address Size 16 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No

Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting Yes

Name RSVP UDP Service Provider
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 16 bytes
Maximum Message Size 63.93 KB (65,467 bytes)
Message Oriented Yes
Minimum Address Size 16 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption Yes
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting Yes

Name RSVP TCP Service Provider
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 16 bytes
Maximum Message Size 0 bytes
Message Oriented No
Minimum Address Size 16 bytes
Pseudo Stream Oriented No
Supports Broadcasting No
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption Yes
Supports Expedited Data Yes
Supports Graceful Closing Yes
Supports Guaranteed Bandwidth No
Supports Multicasting No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{D30DD4F6-8B96-4913-A712-3B57B838074B}] 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_{D30DD4F6-8B96-4913-A712-3B57B838074B}] 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_{605F024E-6C48-4E1A-A79D-3BFBFF5F17DE}] 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_{605F024E-6C48-4E1A-A79D-3BFBFF5F17DE}] 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_{0C66D2C7-5222-4349-AC56-7F75A24C09B0}] 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_{0C66D2C7-5222-4349-AC56-7F75A24C09B0}]
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 5.2.3663.0 (main.020715-1506)

[Ports]

[Serial]

Item Value

[Parallel]

Item Value

[Storage]

[Drives]

Item Value
Drive A:
Description 3 1/2 Inch Floppy Drive

Drive C:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 16.60 GB (17,824,145,408 bytes)
Free Space 11.53 GB (12,383,117,312 bytes)
Volume Name
Volume Serial Number A44D8363

Drive D:
Description CD-ROM Disc

Drive E:
Description Local Fixed Disk
Compressed Not Available
File System Not Available
Size Not Available
Free Space Not Available
Volume Name Not Available
Volume Serial Number Not Available

Drive F:
Description Local Fixed Disk
Compressed Not Available
File System Not Available
Size Not Available
Free Space Not Available
Volume Name Not Available
Volume Serial Number Not Available

Drive G:
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 H:
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 I:
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 J:
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 K:
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 Y:

Description Local Fixed Disk
Compressed No
File System NTFS
Size 292.97 GB (314,575,798,272 bytes)
Free Space 66.09 GB (70,958,637,056 bytes)
Volume Name Backup_cool
Volume Serial Number D438FE1A

Drive Z:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 292.97 GB (314,575,798,272 bytes)
Free Space 65.20 GB (70,003,871,744 bytes)
Volume Name Backup_cool
Volume Serial Number 44475F39

[Disks]

Item Value
Description Disk drive
Manufacturer (Standard disk drives)
Model IBM-PSG ST318203LC !# 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 12
Sectors/Track 63
Size 16.94 GB (18,194,319,360 bytes)
Total Cylinders 2,212
Total Sectors 35,535,780
Total Tracks 564,060
Tracks/Cylinder 255
Partition Disk #1, Partition #0
Partition Size 16.60 GB (17,824,149,504 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE3
Manufacturer Not Available
Model Not Available
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 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 78.17 GB (83,938,950,144 bytes)
Partition Starting Offset 8,257,536 bytes
Partition Disk #3, Partition #1
Partition Size 292.97 GB (314,575,801,344 bytes)
Partition Starting Offset 83,947,239,936 bytes

Description \\.\PHYSICALDRIVE7
Manufacturer Not Available
Model Not Available
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 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 78.17 GB (83,938,950,144 bytes)
Partition Starting Offset 8,257,536 bytes
Partition Disk #7, Partition #1
Partition Size 292.97 GB (314,575,801,344 bytes)
Partition Starting Offset 83,947,239,936 bytes

Description \\.\PHYSICALDRIVE8
Manufacturer Not Available
Model Not Available
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 #8, Partition #0
Partition Size 78.17 GB (83,938,950,144 bytes)
Partition Starting Offset 8,257,536 bytes
Partition Disk #8, Partition #1
Partition Size 292.97 GB (314,575,801,344 bytes)
Partition Starting Offset 83,947,239,936 bytes

Description \\.\PHYSICALDRIVE2
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus 4
SCSI Logical Unit 0
SCSI Port 5
SCSI Target ID 0
Sectors/Track 63
Size 237.01 GB (254,490,163,200 bytes)
Total Cylinders 30,940
Total Sectors 497,051,100
Total Tracks 7,889,700
Tracks/Cylinder 255
Partition Disk #2, Partition #0
Partition Size 185.60 GB (199,282,051,584 bytes)
Partition Starting Offset 8,257,536 bytes

Description \\.\PHYSICALDRIVE4
Manufacturer Not Available

Model Not Available
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 812.62 GB (872,545,927,680 bytes)
Total Cylinders 106,081
Total Sectors 1,704,191,265
Total Tracks 27,050,655
Tracks/Cylinder 255
Partition Disk #4, Partition #0
Partition Size 166.07 GB (178,315,812,864 bytes)
Partition Starting Offset 8,257,536 bytes
Partition Disk #4, Partition #1
Partition Size 292.97 GB (314,575,801,344 bytes)
Partition Starting Offset 178,324,102,656 bytes

Description \\.\PHYSICALDRIVE6
Manufacturer Not Available
Model Not Available
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 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 78.17 GB (83,938,950,144 bytes)
Partition Starting Offset 8,257,536 bytes
Partition Disk #6, Partition #1
Partition Size 292.97 GB (314,575,801,344 bytes)
Partition Starting Offset 83,947,239,936 bytes

Description \\.\PHYSICALDRIVE5
Manufacturer Not Available
Model Not Available
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 #5, Partition #0
Partition Size 78.17 GB (83,938,950,144 bytes)
Partition Starting Offset 8,257,536 bytes
Partition Disk #5, Partition #1
Partition Size 292.97 GB (314,575,801,344 bytes)
Partition Starting Offset 83,947,239,936 bytes

Description Disk drive
Manufacturer (Standard disk drives)
Model QLOGIC PSEUDO LUN SCSI Disk Device
Bytes/Sector 512
Media Loaded No
Media Type Fixed hard disk
Partitions Not Available
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 2
SCSI Target ID 127
Sectors/Track 0
Size 0 bytes
Total Cylinders 0
Total Sectors 0
Total Tracks 0
Tracks/Cylinder 0

[SCSI]

Item Value
Name Adaptec AIC-7899 Ultra160 PCI SCSI Card
Manufacturer Adaptec
Status OK
PNP Device ID
PCI\VEN_9005&DEV_00CF&SUBSYS_09AF1014&REV_01\3&13C0B0C5&0&18
I/O Port 0x00002000-0x000027FF
Memory Address 0xBDE00000-0xBDEFFFFF
IRQ Channel IRQ 40
Driver c:\windows\system32\drivers\adpu160m.sys (RTC_XP07 (lab01_n(storbuild).010917-1031), 99.63 KB (102,016 bytes), 7/18/2002 8:00 AM)

Name Adaptec AIC-7899 Ultra160 PCI SCSI Card
Manufacturer Adaptec
Status OK
PNP Device ID
PCI\VEN_9005&DEV_00CF&SUBSYS_09AF1014&REV_01\3&13C0B0C5&0&19
I/O Port 0x00002100-0x000021FF
Memory Address 0xBDE01000-0xBDE01FFF
IRQ Channel IRQ 41
Driver c:\windows\system32\drivers\adpu160m.sys (RTC_XP07 (lab01_n(storbuild).010917-1031), 99.63 KB (102,016 bytes), 7/18/2002 8:00 AM)

Name Mylex eXtremeRAID 2000 Controller
Manufacturer Mylex
Status OK
PNP Device ID
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&235BDD1F&0&4008
Memory Address 0xA4000000-0xA60FFFFF
I/O Port 0x00005000-0x00005FFF
Memory Address 0xCA000000-0xCBFFFFFF
IRQ Channel IRQ 51
Driver c:\windows\system32\drivers\dac2w2k.sys (80.00-01 built by: WinDDK, 170.50 KB (174,592 bytes), 1/18/2002 12:31 PM)

Name Mylex eXtremeRAID 2000 Controller
Manufacturer Mylex
Status OK
PNP Device ID
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&6CA15C9&0&4010

Memory Address 0xA0000000-0xA7FFFFFF
I/O Port 0x00004000-0x00005FFF
Memory Address 0xC8000000-0xCBFFFFFF
IRQ Channel IRQ 55
Driver c:\windows\system32\drivers\dac2w2k.sys (80.00-01 built by: WinDDK, 170.50 KB (174,592 bytes), 1/18/2002 12:31 PM)

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 0x00002800-0x00002FFF
Memory Address 0xBE020000-0xBE020FFF
IRQ Channel IRQ 71
Driver c:\windows\system32\drivers\ql2300.sys (8.2.0 Beta 3 (W2K VI), 429.70 KB (440,012 bytes), 9/26/2002 10:10 AM)

Name Mylex eXtremeRAID 2000 Controller
Manufacturer Mylex
Status OK
PNP Device ID PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&3A39F236&0&4018
Memory Address 0xA8000000-0xABFFFFFF
I/O Port 0x00003000-0x00003FFF
Memory Address 0xDC000000-0xDDFFFFFF
IRQ Channel IRQ 67
Driver c:\windows\system32\drivers\dac2w2k.sys (80.00-01 built by: WinDDK, 170.50 KB (174,592 bytes), 1/18/2002 12:31 PM)

Name Mylex eXtremeRAID 2000 Controller
Manufacturer Mylex
Status OK
PNP Device ID PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&18212E42&0&4008
Memory Address 0xAC000000-0xAFFFFFFF
I/O Port 0x00006000-0x00006FFF
Memory Address 0xCC000000-0xCFFFFFFF
IRQ Channel IRQ 59
Driver c:\windows\system32\drivers\dac2w2k.sys (80.00-01 built by: WinDDK, 170.50 KB (174,592 bytes), 1/18/2002 12:31 PM)

Name Mylex eXtremeRAID 2000 Controller
Manufacturer Mylex
Status OK
PNP Device ID PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&170105DA&0&4008
Memory Address 0xB0000000-0xB3FFFFFF
I/O Port 0x00007000-0x00007FFF
Memory Address 0xD0000000-0xD3FFFFFF
IRQ Channel IRQ 116
Driver c:\windows\system32\drivers\dac2w2k.sys (80.00-01 built by: WinDDK, 170.50 KB (174,592 bytes), 1/18/2002 12:31 PM)

Name Mylex eXtremeRAID 2000 Controller
Manufacturer Mylex
Status OK
PNP Device ID PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&19AD16C8&0&4008
Memory Address 0xB4000000-0xB7FFFFFF
I/O Port 0x00008000-0x00008FFF
Memory Address 0xD4000000-0xD7FFFFFF
IRQ Channel IRQ 109
Driver c:\windows\system32\drivers\dac2w2k.sys (80.00-01 built by: WinDDK, 170.50 KB (174,592 bytes), 1/18/2002 12:31 PM)

Name Mylex eXtremeRAID 2000 Disk Array Controller
Manufacturer Mylex
Status OK
PNP Device ID PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&13078EE0&0&4008
Memory Address 0xB8000000-0xBBFFFFFF
I/O Port 0x00009000-0x00009FFF
Memory Address 0xD8000000-0xDBFFFFFF
IRQ Channel IRQ 102
Driver c:\windows\system32\drivers\dac2w2k.sys (80.00-01 built by: WinDDK, 170.50 KB (174,592 bytes), 1/18/2002 12:31 PM)

Name QLogic VI Kernel Agent driver
Manufacturer QLogic
Status Degraded
PNP Device ID ROOT\SCSIADAPTER\0000
Driver c:\windows\system32\drivers\qlvika.sys (1.00.14 (W2K), 48.75 KB (49,916 bytes), 9/26/2002 10:10 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, 5.13 KB (5,248 bytes), 7/18/2002 8:00 AM)

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 (5.2.3663.0 (main.020715-1506), 90.38 KB (92,544 bytes), 7/18/2002 8:00 AM)

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 (5.2.3663.0 (main.020715-1506), 90.38 KB (92,544 bytes), 7/18/2002 8:00 AM)

[Printing]

Name Driver Port Name Server Name

[Problem Devices]

Device PNP Device ID Error Code
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.
Not Available ACPI\IBM37D4\2&DABA3FF&0 The drivers for this device are not installed.

[USB]

Device PNP Device ID
VIA Rev 5 or later USB Universal Host Controller
PCI\VEN_1106&DEV_3038&SUBSYS_12340925&REV_16\3&267A616A&0&2A
USB Root Hub USB\ROOT_HUB\4&A764813&0
VIA Rev 5 or later USB Universal Host Controller
PCI\VEN_1106&DEV_3038&SUBSYS_12340925&REV_16\3&267A616A&0&2B
USB Root Hub USB\ROOT_HUB\4&8436892&0

[Software Environment]

[System Drivers]

Name Description File Type Started Start Mode
State Status Error Control Accept Pause Accept Stop
abiosdsk Abiosdsk Not Available Kernel Driver No
Disabled Stopped OK Ignore No No
acpi Microsoft ACPI Driver
c:\windows\system32\drivers\acpi.sys Kernel Driver Yes
Boot Running OK Normal No Yes
acpiec ACPIEC c:\windows\system32\drivers\acpiec.sys Kernel
Driver No Disabled Stopped OK Normal No
No
adpu160m adpu160m c:\windows\system32\drivers\adpu160m.sys Kernel
Driver Yes Boot Running OK Normal No
Yes
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
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 No
Manual Stopped OK Normal No No
beep Beep c:\windows\system32\drivers\beep.sys Kernel
Driver Yes System Running OK Normal No
Yes
cbidf2k cbidf2k c:\windows\system32\drivers\cbidf2k.sys Kernel
Driver No Disabled Stopped OK Normal No
No
cd20xrnt cd20xrnt Not Available Kernel Driver No
Disabled Stopped OK Normal No No
cdfs Cdfs c:\windows\system32\drivers\cdfs.sys File System
Driver Yes Disabled Running OK Normal No
Yes
cdrom CD-ROM Driver c:\windows\system32\drivers\cdrom.sys
Kernel Driver Yes System Running OK Normal
No Yes
changer Changer Not Available Kernel Driver No
System Stopped OK Ignore No No
clusdisk Cluster Disk Driver c:\windows\system32\drivers\clusdisk.sys
Kernel Driver No Disabled Stopped OK Normal
No No
cmdide CmdIde Not Available Kernel Driver No
Disabled Stopped OK Normal No No
cpqarray Cpqarray Not Available Kernel Driver No
Disabled Stopped OK Normal No No
cpqarry2 cpqarry2 Not Available Kernel Driver No
Disabled Stopped OK Normal No No
cpqcissm cpqcissm Not Available Kernel Driver No
Disabled Stopped OK Normal No No
cpqfcalm cpqfcalm Not Available Kernel Driver No
Disabled Stopped OK Normal No No
crcdisk CRC Disk Filter Driver
c:\windows\system32\drivers\crcdisk.sys Kernel Driver Yes
Boot Running OK Normal No Yes
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
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
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
macdisk macdisk c:\windows\system32\drivers\mac2w2k.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
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 No
Manual Stopped OK Normal No No
ndiswan Remote Access NDIS WAN Driver
c:\windows\system32\drivers\ndiswan.sys Kernel Driver Yes
Manual Running OK Normal No Yes
ndproxy NDIS Proxy c:\windows\system32\drivers\ndproxy.sys
Kernel Driver Yes Manual Running OK Normal
No Yes
netbios NetBIOS Interface c:\windows\system32\drivers\netbios.sys
File System Driver Yes System Running OK Normal
No Yes
netbt NetBios over Tcpip c:\windows\system32\drivers\netbt.sys
Kernel Driver Yes System Running OK Normal
No Yes
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
parvdm ParVdm c:\windows\system32\drivers\parvdm.sys Kernel
Driver No Auto Stopped OK Ignore No
No
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
```

pecosnumadrv PECOSNUMADrv
\??\c:\ibmvptt\drv\pecosnumadrv.sys Kernel Driver No
Manual Stopped OK Normal 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
s3savage4 S3SAVAGE4 c:\windows\system32\drivers\s3gsav4m.sys
Kernel Driver Yes Manual Running OK Ignore
No Yes
secdrv Secdrv c:\windows\system32\drivers\secdrv.sys Kernel
Driver No Manual Stopped OK Normal No
No
serial Serial c:\windows\system32\drivers\serial.sys Kernel
Driver No Auto Stopped OK Ignore No
No
sfloppy Sfloppy c:\windows\system32\drivers\sfloppy.sys Kernel
Driver No System Stopped OK Ignore No
No
simbad Simbad Not Available Kernel Driver No
Disabled Stopped OK Normal No No
sparrow Sparrow Not Available Kernel Driver No
Disabled Stopped OK Normal No No
srv Srv c:\windows\system32\drivers\srv.sys File System
Driver Yes Manual Running OK Normal No
Yes
swenum Software Bus Driver c:\windows\system32\drivers\swenum.sys
Kernel Driver Yes Manual Running OK Normal
No Yes
symc810 symc810 Not Available Kernel Driver No
Disabled Stopped OK Normal No No
symc8xx symc8xx Not Available Kernel Driver No
Disabled Stopped OK Normal No No
symmpi symmpi Not Available Kernel Driver No
Disabled Stopped OK Normal No No
sym_hi sym_hi Not Available Kernel Driver No
Disabled Stopped OK Normal No No
sym_u3 sym_u3 Not Available Kernel Driver No
Disabled Stopped OK Normal No No
tcpip TCP/IP Protocol Driver
c:\windows\system32\drivers\tcpip.sys Kernel Driver Yes
System Running OK Normal No Yes
tdpipe TDPIPE c:\windows\system32\drivers\tdpipe.sys Kernel
Driver No Manual Stopped OK Ignore No
No
tdtcp TDTCP c:\windows\system32\drivers\tdtcp.sys Kernel
Driver No Manual Stopped OK Ignore No
No
termdd Terminal Device Driver
c:\windows\system32\drivers\termdd.sys Kernel Driver Yes
System Running OK Normal No Yes
toside TosIde Not Available Kernel Driver No
Disabled Stopped OK Normal No No
udfs Udfs c:\windows\system32\drivers\udfs.sys File System
Driver No Disabled Stopped OK Normal No
No
ultra ultra Not Available Kernel Driver No
Disabled Stopped OK Normal No No
update Microcode Update Driver
c:\windows\system32\drivers\update.sys Kernel Driver Yes
Manual Running OK Normal No Yes
usbhub USB2 Enabled Hub c:\windows\system32\drivers\usbhub.sys
Kernel Driver Yes Manual Running OK Normal
No Yes
usbuhci Microsoft USB Universal Host Controller Miniport Driver
c:\windows\system32\drivers\usbuhci.sys Kernel Driver Yes
Manual Running OK Normal No Yes
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 VolSnap 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
Not Available HTREE\ROOT\0
ACPI Multiprocessor PC Yes COMPUTER 5.2.3663.0
7/15/2002 (Standard computers) hal.inf Not Available
ROOT\ACPI_HAL\0000
Microsoft ACPI-Compliant System Yes SYSTEM 5.2.3663.0
7/15/2002 Microsoft acpi.inf Not Available
ACPI_HAL\PNP0C08\0
Processor Yes PROCESSOR 5.2.3663.0 7/15/2002 (Standard
processor types) cpu.inf Not Available
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2_0
Processor Yes PROCESSOR 5.2.3663.0 7/15/2002 (Standard
processor types) cpu.inf Not Available
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2_1
Processor Yes PROCESSOR 5.2.3663.0 7/15/2002 (Standard
processor types) cpu.inf Not Available
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2_2
Processor Yes PROCESSOR 5.2.3663.0 7/15/2002 (Standard
processor types) cpu.inf Not Available
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2_3
Processor Yes PROCESSOR 5.2.3663.0 7/15/2002 (Standard
processor types) cpu.inf Not Available
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2_4
Processor Yes PROCESSOR 5.2.3663.0 7/15/2002 (Standard
processor types) cpu.inf Not Available
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2_5
Processor Yes PROCESSOR 5.2.3663.0 7/15/2002 (Standard
processor types) cpu.inf Not Available
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2_6
Processor Yes PROCESSOR 5.2.3663.0 7/15/2002 (Standard
processor types) cpu.inf Not Available
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2_7
PCI bus Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system
devices) machine.inf Not Available ACPI\PNP0A03\0
PCI standard host CPU bridge Yes SYSTEM 5.2.3663.0 7/15/2002
(Standard system devices) machine.inf Not Available
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_03\3&267A616A&
0&00
S3 Graphics Inc. Savage4 (Microsoft Corporation) Yes DISPLAY
6.13.10.8009 7/2/2001 S3 Graphics, Inc. s3gsav4.inf
Not Available
PCI\VEN_5333&DEV_8A22&SUBSYS_01C51014&REV_06\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&509B198&0&11223344&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 5.2.3663.0 7/15/2002
VIA machine.inf Not Available
PCI\VEN_1106&DEV_0686&SUBSYS_00000000&REV_40\3&267A616A&
0&28
ISAPNP Read Data Port Yes SYSTEM 5.2.3663.0 7/15/2002
(Standard system devices) machine.inf Not Available
ISAPNP\READDATAPORT\0
Motherboard resources Yes SYSTEM 5.2.3663.0 7/15/2002
(Standard system devices) machine.inf Not Available
ACPI\PNP0C02\2
Standard 101/102-Key or Microsoft Natural PS/2 Keyboard Yes
KEYBOARD 5.2.3663.0 7/15/2002 (Standard keyboards) keyboard.inf
Not Available ACPI\PNP0303\4&7FD7688&0
PS/2 Compatible Mouse Yes MOUSE 5.2.3663.0 7/15/2002
Microsoft msmouse.inf Not Available
ACPI\PNP0F13\4&7FD7688&0
Standard floppy disk controller Yes FDC 5.2.3663.0 7/15/2002
(Standard floppy disk controllers) fdc.inf Not Available
ACPI\PNP0700\4&7FD7688&0
Floppy disk drive Yes FLOPPYDISK 5.2.3663.0 7/15/2002
(Standard floppy disk drives) flpydisk.inf Not Available
FDC\GENERIC_FLOPPY_DRIVE\5&17D92A40&0&0
Advanced programmable interrupt controller Yes SYSTEM 5.2.3663.0
7/15/2002 (Standard system devices) machine.inf Not
Available ACPI\PNP0003\4&7FD7688&0
Direct memory access controller Yes SYSTEM 5.2.3663.0 7/15/2002
(Standard system devices) machine.inf Not Available
ACPI\PNP0200\4&7FD7688&0
System timer Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard
system devices) machine.inf Not Available
ACPI\PNP0100\4&7FD7688&0
System CMOS/real time clock Yes SYSTEM 5.2.3663.0 7/15/2002
(Standard system devices) machine.inf Not Available
ACPI\PNP0B00\4&7FD7688&0
System speaker Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard
system devices) machine.inf Not Available
ACPI\PNP0800\4&7FD7688&0
Numeric data processor Yes SYSTEM 5.2.3663.0 7/15/2002
(Standard system devices) machine.inf Not Available
ACPI\PNP0C04\4&7FD7688&0
Motherboard resources Yes SYSTEM 5.2.3663.0 7/15/2002
(Standard system devices) machine.inf Not Available
ACPI\PNP0C02\3
VIA Bus Master IDE Controller Yes HDC 5.2.3663.0 7/15/2002
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 5.2.3663.0 7/15/2002 (Standard
IDE ATA/ATAPI controllers) mshdc.inf Not Available
PCIIDE\IDECHANNEL\4&1C0B4DED&0&0
CD-ROM Drive Yes CDROM 5.2.3663.0 7/15/2002 (Standard
CD-ROM drives) cdrom.inf Not Available
IDE\CDROMLG_CD-ROM_CRN-8245B_____1.16____\5
&2CDE688A&0&0.0.0
Secondary IDE Channel Yes HDC 5.2.3663.0 7/15/2002
(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
5.2.3663.0 7/15/2002 VIA Technologies usbport.inf Not Available
PCI\VEN_1106&DEV_3038&SUBSYS_12340925&REV_16\3&267A616A&
0&2A
USB Root Hub Yes USB 5.2.3663.0 7/15/2002 (Standard
USB Host Controller) usbport.inf Not Available
USB\ROOT_HUB\4&A764813&0
VIA Rev 5 or later USB Universal Host Controller Yes USB
5.2.3663.0 7/15/2002 VIA Technologies usbport.inf Not Available
PCI\VEN_1106&DEV_3038&SUBSYS_12340925&REV_16\3&267A616A&
0&2B

USB Root Hub Yes USB 5.2.3663.0 7/15/2002 (Standard USB Host Controller) usbport.inf Not Available USB\ROOT_HUB\4&8436892&0
VIA Tech Power Management controller Yes SYSTEM 5.2.3663.0 7/15/2002 VIA machine.inf Not Available PCI\VEN_1106&DEV_3057&SUBSYS_00000000&REV_40\3&267A616A&0&2C
PCI bus Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\1
PCI standard host CPU bridge Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_03\3&13C0B0C5&0&00
Adaptec AIC-7899 Ultra160 PCI SCSI Card Yes SCSIADAPTER 5.2.3663.0 7/15/2002 Adaptec pnpscsi.inf Not Available PCI\VEN_9005&DEV_00CF&SUBSYS_09AF1014&REV_01\3&13C0B0C5&0&18
Adaptec AIC-7899 Ultra160 PCI SCSI Card Yes SCSIADAPTER 5.2.3663.0 7/15/2002 Adaptec pnpscsi.inf Not Available PCI\VEN_9005&DEV_00CF&SUBSYS_09AF1014&REV_01\3&13C0B0C5&0&19
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_GNHV1_S2&REV_0\4&25A2C38F&0&090
Disk drive Yes DISKDRIVE 5.2.3663.0 7/15/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_IBM-PSG&PROD_ST318203LC____!#&REV_B222\4&25A2C38F&0&0C0
PCI bus Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\2
PCI standard host CPU bridge Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_03\3&1070020&0&00
DEC 21154 PCI to PCI bridge Yes SYSTEM 5.2.3663.0 7/15/2002 DEC machine.inf Not Available PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&1070020&0&08
Mylex eXtremeRAID 2000 Controller Yes SCSIADAPTER 5.2.3663.0 7/15/2002 Mylex pnpscsi.inf Not Available PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&235BDD1F&0&4008
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&22275B46&0&0F0
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&22275B46&0&1F0
Mylex Accelerated Driver No DISKDRIVE Not Available 9/8/2000 Mylex oem4.inf Not Available SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0700\5&22275B46&0&400
Mylex GAM Device Yes SYSTEM 5.2.3663.0 7/15/2002 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 5.2.3663.0 7/15/2002 DEC machine.inf Not Available PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&1070020&0&10
Mylex eXtremeRAID 2000 Controller Yes SCSIADAPTER 5.2.3663.0 7/15/2002 Mylex pnpscsi.inf Not Available PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&6CA15C9&0&4010
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&38B2B567&0&0F0
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&38B2B567&0&1F0
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&38B2B567&0&2F0
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&38B2B567&0&3F0
Mylex Accelerated Driver No DISKDRIVE Not Available 9/8/2000 Mylex oem4.inf Not Available SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0700\5&38B2B567&0&400
Mylex GAM Device Yes SYSTEM 5.2.3663.0 7/15/2002 Mylex scsidev.inf Not Available SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&38B2B567&0&660
PCI bus Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\3
PCI standard host CPU bridge Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_03\3&29E81982&0&00
QLogic QLA23xx PCI Fibre Channel Adapter No SCSIADAPTER 8.2.0.0 8/5/2002 QLogic oem2.inf Not Available PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\3&29E81982&0&20
Disk drive Yes DISKDRIVE 5.2.3663.0 7/15/2002 (Standard disk drives) disk.inf Not Available SCSI\DISK&VEN_QLOGIC&PROD_PSEUDO_LUN&REV_\4&26403335&0&07F0
PCI bus Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\4
PCI standard host CPU bridge Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_03\3&172E68DD&0&00
DEC 21154 PCI to PCI bridge Yes SYSTEM 5.2.3663.0 7/15/2002 DEC machine.inf Not Available PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&172E68DD&0&18
Mylex eXtremeRAID 2000 Controller Yes SCSIADAPTER 5.2.3663.0 7/15/2002 Mylex pnpscsi.inf Not Available PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&3A39F236&0&4018
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&5BC43E6&0&0F0
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&5BC43E6&0&1F0
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&5BC43E6&0&2F0
Mylex Accelerated Driver No DISKDRIVE Not Available 9/8/2000 Mylex oem4.inf Not Available

SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0700\5&5BC43E6&0&400
Mylex GAM Device Yes SYSTEM 5.2.3663.0 7/15/2002 Mylex scsidev.inf Not Available
SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&5BC43E6&0&660
PCI bus Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\5
PCI standard host CPU bridge Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_03\3&474B838&0&00
DEC 21154 PCI to PCI bridge Yes SYSTEM 5.2.3663.0 7/15/2002 DEC machine.inf Not Available
PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&474B838&0&08
Mylex eXtremeRAID 2000 Controller Yes SCSIADAPTER 5.2.3663.0 7/15/2002 Mylex pnpscsi.inf Not Available
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&18212E42&0&4008
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D011\5&185D32FD&0&0F0
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&185D32FD&0&1F0
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&185D32FD&0&2F0
Mylex Accelerated Driver No DISKDRIVE Not Available 9/8/2000 Mylex oem4.inf Not Available
SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0700\5&185D32FD&0&400
Mylex GAM Device Yes SYSTEM 5.2.3663.0 7/15/2002 Mylex scsidev.inf Not Available
SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&185D32FD&0&660
Motherboard resources Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0C02\10
Not Available Not Available Not Available Not Available Not Available Not Available Not Available Not Available ACPI\IBM37D4\2&DABA3FF&0
ACPI Fixed Feature Button Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available
ACPI\FIXEDBUTTON\2&DABA3FF&0
PCI bus Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\10
PCI standard host CPU bridge Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_03\3&A985F74&0&00
DEC 21154 PCI to PCI bridge Yes SYSTEM 5.2.3663.0 7/15/2002 DEC machine.inf Not Available
PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&A985F74&0&08
Mylex eXtremeRAID 2000 Controller Yes SCSIADAPTER 5.2.3663.0 7/15/2002 Mylex pnpscsi.inf Not Available
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&170105DA&0&4008
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&16092258&0&0F0
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&16092258&0&1F0
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&16092258&0&2F0
Mylex Accelerated Driver No DISKDRIVE Not Available 9/8/2000 Mylex oem4.inf Not Available
SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0700\5&16092258&0&400
Mylex GAM Device Yes SYSTEM 5.2.3663.0 7/15/2002 Mylex scsidev.inf Not Available
SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&16092258&0&660
PCI bus Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\11
PCI standard host CPU bridge Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_03\3&1D521019&0&00
DEC 21154 PCI to PCI bridge Yes SYSTEM 5.2.3663.0 7/15/2002 DEC machine.inf Not Available
PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&1D521019&0&08
Mylex eXtremeRAID 2000 Controller Yes SCSIADAPTER 5.2.3663.0 7/15/2002 Mylex pnpscsi.inf Not Available
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&19AD16C8&0&4008
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&84AA231&0&0F0
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&84AA231&0&1F0
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&84AA231&0&2F0
Mylex Accelerated Driver No DISKDRIVE Not Available 9/8/2000 Mylex oem4.inf Not Available
SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0700\5&84AA231&0&400
Mylex GAM Device Yes SYSTEM 5.2.3663.0 7/15/2002 Mylex scsidev.inf Not Available
SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&84AA231&0&660
PCI bus Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\12
PCI standard host CPU bridge Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available
PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_03\3&300BC0BE&0&00
DEC 21154 PCI to PCI bridge Yes SYSTEM 5.2.3663.0 7/15/2002 DEC machine.inf Not Available
PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&300BC0BE&0&08
Mylex eXtremeRAID 2000 Disk Array Controller No SCSIADAPTER 9.0.4.0 9/8/2000 Mylex oem3.inf Not Available
PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&13078EE0&0&4008
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available

SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&159CDCA6&0&0F0
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&159CDCA6&0&1F0
SCSI Processor Device Yes SYSTEM 5.2.3663.0 7/15/2002 IBM scsidev.inf Not Available
SCSI\PROCESSOR&VEN_IBM&PROD_EXP300___S160&REV_D014\5&159CDCA6&0&2F0
Mylex Accelerated Driver No DISKDRIVE Not Available 9/8/2000 Mylex oem4.inf Not Available
SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0700\5&159CDCA6&0&400
Mylex GAM Device Yes SYSTEM 5.2.3663.0 7/15/2002 Mylex scsidev.inf Not Available
SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&159CDCA6&0&660
Motherboard resources Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0C02\20
PCI bus Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\20
PCI standard host CPU bridge Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_03\3&4F64EAC&0&00
PCI bus Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\21
PCI standard host CPU bridge Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_03\3&2DD7680E&0&00
PCI bus Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\22
PCI standard host CPU bridge Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available PCI\VEN_1014&DEV_0302&SUBSYS_00000000&REV_03\3&1B1DB769&0&00
Motherboard resources Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0C02\21
Logical Disk Manager Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ROOT\DMIO\0000
Volume Manager Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ROOT\FTDISK\0000
Generic volume Yes VOLUME 5.2.3663.0 7/15/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE6C6C6C6COFFSET7E00LENGTH42666F000
Generic volume Yes VOLUME 5.2.3663.0 7/15/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE1A45CF24OFFSET7E0000LENGTH2E6622CA00
Generic volume Yes VOLUME 5.2.3663.0 7/15/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE55CCD35AOFFSET7E0000LENGTH2984736000
Generic volume Yes VOLUME 5.2.3663.0 7/15/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE55CCD35AOFFSET2984F1DE00LENGTH493E2DCC00
Generic volume Yes VOLUME 5.2.3663.0 7/15/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE5527E38DOFFSET7E0000LENGTH138B26BC00
Generic volume Yes VOLUME 5.2.3663.0 7/15/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE5527E38DOFFSET138BA53A00LENGTH493E2DCC00
Generic volume Yes VOLUME 5.2.3663.0 7/15/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE4DEE4318OFFSET7E0000LENGTH138B26BC00
Generic volume Yes VOLUME 5.2.3663.0 7/15/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE4DEE4318OFFSET138BA53A00LENGTH493E2DCC00
Generic volume Yes VOLUME 5.2.3663.0 7/15/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE1OFFSET7E0000LENGTH138B26BC00
Generic volume Yes VOLUME 5.2.3663.0 7/15/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE1OFFSET138BA53A00LENGTH493E2DCC00
Generic volume Yes VOLUME 5.2.3663.0 7/15/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE5527E38COFFSET7E0000LENGTH138B26BC00
Generic volume Yes VOLUME 5.2.3663.0 7/15/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE5527E38COFFSET138BA53A00LENGTH493E2DCC00
Generic volume Yes VOLUME 5.2.3663.0 7/15/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE4DEE4317OFFSET7E0000LENGTH138B26BC00
Generic volume Yes VOLUME 5.2.3663.0 7/15/2002 Microsoft volume.inf Not Available STORAGE\VOLUME\1&30A96598&0&SIGNATURE4DEE4317OFFSET138BA53A00LENGTH493E2DCC00
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 Not Available ROOT\LEGACY_BEEP\0000
CRC Disk Filter Driver Not Available LEGACYDRIVER Not Available 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 Not Available ROOT\LEGACY_DMBOOT\0000
dmload Not Available LEGACYDRIVER Not Available 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 Not Available ROOT\LEGACY_FIPS\0000
Generic Packet Classifier Not Available LEGACYDRIVER Not Available 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 Not Available ROOT\LEGACY_IPSEC\0000
ksecdd Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_KSECDD\0000
macdisk Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_MACDISK\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
ParVdm Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_PARVDM\0000
PECOSNUMADrv Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available ROOT\LEGACY_PECOSNUMADRV\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 5.2.3663.0 7/15/2002 (Standard system devices) wave.inf Not Available ROOT\MEDIA\MS_MMACM
Legacy Audio Drivers Yes MEDIA 5.2.3663.0 7/15/2002 (Standard system devices) wave.inf Not Available ROOT\MEDIA\MS_MMDRV
Media Control Devices Yes MEDIA 5.2.3663.0 7/15/2002 (Standard system devices) wave.inf Not Available ROOT\MEDIA\MS_MMMCI
Legacy Video Capture Devices Yes MEDIA 5.2.3663.0 7/15/2002 (Standard system devices) wave.inf Not Available ROOT\MEDIA\MS_MMVCD
Video Codecs Yes MEDIA 5.2.3663.0 7/15/2002 (Standard system devices) wave.inf Not Available ROOT\MEDIA\MS_MMVID
WAN Miniport (L2TP) Yes NET 5.2.3663.0 7/15/2002 Microsoft netrasa.inf Not Available ROOT\MS_L2TPMINIPORT\0000
WAN Miniport (IP) Yes NET 5.2.3663.0 7/15/2002 Microsoft netrasa.inf Not Available ROOT\MS_NDISWANIP\0000
WAN Miniport (PPPOE) Yes NET 5.2.3663.0 7/15/2002 Microsoft netrasa.inf Not Available ROOT\MS_PPPOEMINIPORT\0000
WAN Miniport (PPTP) Yes NET 5.2.3663.0 7/15/2002 Microsoft netrasa.inf Not Available ROOT\MS_PPTPMINIPORT\0000
Direct Parallel Yes NET 5.2.3663.0 7/15/2002 Microsoft netrasa.inf Not Available ROOT\MS_PTIMINIPORT\0000
Terminal Server Device Redirector Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ROOT\RDPDR\0000
Terminal Server Keyboard Driver Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ROOT\RDP_KBD\0000
Terminal Server Mouse Driver Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ROOT\RDP_MOU\0000
QLogic VI Kernel Agent driver No SCSIADAPTER Not Available Not Available Not Available oem1.inf Not Available ROOT\SCSIADAPTER\0000
Plug and Play Software Device Enumerator Yes SYSTEM 5.2.3663.0 7/15/2002 (Standard system devices) machine.inf Not Available ROOT\SYSTEM\0000
Microcode Update Device Yes SYSTEM 5.2.3663.0 7/15/2002 (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 8 <SYSTEM>
OS Windows_NT <SYSTEM>
Path %SystemRoot%\system32;%SystemRoot%;%SystemRoot%\System32\Wbem;C:\Program Files\Microsoft SQL Server\MSSQL\BINN;C:\Program Files\Microsoft SQL Server\80\Tools\BINN;c:\dot_net_kernrate <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 COMANCHE\Administrator

TMP %USERPROFILE%\Local Settings\Temp
COMANCHE\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

[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 c:\windows\system32\smss.exe 360 11 204800 1413120 10/30/2002 8:01 AM 5.2.3663.0 (main.020715-1506) 46.00 KB (47,104 bytes) 7/18/2002 8:00 AM
csrss.exe Not Available 408 13 Not Available Not Available 10/30/2002 8:01 AM Not Available Not Available Not Available
winlogon.exe c:\windows\system32\winlogon.exe 432 13 204800 1413120 10/30/2002 8:01 AM 5.2.3663.0 (main.020715-1506) 512.00 KB (524,288 bytes) 7/18/2002 8:00 AM
services.exe c:\windows\system32\services.exe 476 9 204800 1413120 10/30/2002 8:01 AM 5.2.3663.0 (main.020715-1506) 99.00 KB (101,376 bytes) 7/18/2002 8:00 AM
lsass.exe c:\windows\system32\lsass.exe 488 9 204800 1413120 10/30/2002 8:01 AM 5.2.3663.0 (main.020715-1506) 13.00 KB (13,312 bytes) 7/18/2002 8:00 AM
svchost.exe c:\windows\system32\svchost.exe 648 8 204800 1413120 10/30/2002 8:01 AM 5.2.3663.0 (main.020715-1506) 12.00 KB (12,288 bytes) 7/18/2002 8:00 AM
svchost.exe c:\windows\system32\svchost.exe 684 8 204800 1413120 10/30/2002 8:01 AM 5.2.3663.0 (main.020715-1506) 12.00 KB (12,288 bytes) 7/18/2002 8:00 AM
svchost.exe Not Available 844 8 Not Available Not Available 10/30/2002 8:01 AM Not Available Not Available Not Available
svchost.exe c:\windows\system32\svchost.exe 872 8 204800 1413120 10/30/2002 8:01 AM 5.2.3663.0 (main.020715-1506) 12.00 KB (12,288 bytes) 7/18/2002 8:00 AM
msdtc.exe Not Available 908 8 Not Available Not Available 10/30/2002 8:01 AM Not Available Not Available Not Available
locator.exe Not Available 1096 8 Not Available Not Available 10/30/2002 8:01 AM Not Available Not Available Not Available
explorer.exe c:\windows\explorer.exe 1400 8 204800 1413120 10/30/2002 8:01 AM 6.00.3663.0 (main.020715-1506) 989.50 KB (1,013,248 bytes) 7/18/2002 8:00 AM
gamscm.exe c:\windows\system32\gamserv\gamscm.exe 1536 8 204800 1413120 10/30/2002 8:02 AM Not Available 137.36 KB (140,656 bytes) 10/25/2002 7:46 PM
gamdrv.exe c:\windows\system32\gamserv\gamdrv.exe 1548 8 204800 1413120 10/30/2002 8:02 AM Not Available 304.05 KB (311,343 bytes) 10/25/2002 7:46 PM
gamserv.exe c:\windows\system32\gamserv\gamserv.exe 1556 8 204800 1413120 10/30/2002 8:02 AM Not Available 196.05 KB (200,753 bytes) 10/25/2002 7:46 PM
gamevent.exe c:\windows\system32\gamserv\gamevent.exe 1564 8 204800 1413120 10/30/2002 8:02 AM Not Available 176.05 KB (180,274 bytes) 10/25/2002 7:46 PM
gamevlog.exe c:\windows\system32\gamserv\gamevlog.exe 1572 8 204800 1413120 10/30/2002 8:02 AM Not Available 236.05 KB (241,714 bytes) 10/25/2002 7:46 PM
wpabaln.exe c:\windows\system32\wpabaln.exe 1832 8 204800 1413120 10/30/2002 8:03 AM 5.2.3663.0 (main.020715-1506) 31.00 KB (31,744 bytes) 7/18/2002 8:00 AM
cmd.exe c:\windows\system32\cmd.exe 808 8 204800 1413120 10/30/2002 8:11 AM 5.2.3663.0 (main.020715-1506) 371.00 KB (379,904 bytes) 7/18/2002 8:00 AM
cmd.exe c:\windows\system32\cmd.exe 1688 8 204800 1413120 10/30/2002 9:35 AM 5.2.3663.0 (main.020715-1506) 371.00 KB (379,904 bytes) 7/18/2002 8:00 AM
mmc.exe c:\windows\system32\mmc.exe 1888 8 204800 1413120 10/30/2002 9:47 AM 5.2.3663.0 (main.020715-1506) 758.00 KB (776,192 bytes) 7/18/2002 8:00 AM
rundll32.exe c:\windows\system32\rundll32.exe 1848 8 204800 1413120 10/30/2002 9:47 AM 5.2.3663.0 (main.020715-1506) 32.00 KB (32,768 bytes) 7/18/2002 8:00 AM
sqlservr.exe c:\program files\microsoft sql server\mssql\binn\sqlservr.exe 604 13 204800 1413120 10/30/2002 10:23 AM 2000.080.0731.00 7.17 MB (7,516,244 bytes) 10/25/2002 4:08 PM
isqlw.exe c:\program files\microsoft sql server\80\tools\binn\isqlw.exe 1964 8 204800 1413120 10/30/2002 10:23 AM 2000.080.0731.00 344.56 KB (352,828 bytes) 10/25/2002 4:08 PM
mmc.exe c:\windows\system32\mmc.exe 2012 8 204800 1413120 10/30/2002 10:55 AM 5.2.3663.0 (main.020715-1506) 758.00 KB (776,192 bytes) 7/18/2002 8:00 AM
vds.exe c:\windows\system32\vds.exe 412 8 204800 1413120 10/30/2002 10:55 AM 5.2.3663.0 (main.020715-1506) 136.00 KB (139,264 bytes) 7/18/2002 8:00 AM
dmadmin.exe c:\windows\system32\dmadmin.exe 1320 8 204800 1413120 10/30/2002 10:55 AM 5.2.3663.0 (main.020715-1506) 212.00 KB (217,088 bytes) 7/18/2002 8:00 AM
helpsvc.exe c:\windows\pchealth\helpctr\binaries\helpsvc.exe 1932 8 204800 1413120 10/30/2002 10:55 AM 5.2.3663.0 (main.020715-1506) 683.50 KB (699,904 bytes) 10/25/2002 1:52 PM
wmiprvse.exe Not Available 1764 8 Not Available Not Available 10/30/2002 10:55 AM Not Available Not Available Not Available
helpctr.exe c:\windows\pchealth\helpctr\binaries\helpctr.exe 2244 8 204800 1413120 10/30/2002 11:02 AM 5.2.3663.0 (main.020715-1506) 670.00 KB (686,080 bytes) 10/25/2002 1:52 PM

[Loaded Modules]

Name Version Size File Date Manufacturer Path
smss 5.2.3663.0 (main.020715-1506) 46.00 KB (47,104 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\smss.exe
ntdll 5.2.3663.0 (main.020715-1506) 697.50 KB (714,240 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\ntdll.dll
winlogon 5.2.3663.0 (main.020715-1506) 512.00 KB (524,288 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\winlogon.exe
kernel32 5.2.3663.0 (main.020715-1506) 934.50 KB (956,928 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\kernel32.dll
msvcrt 7.0.3663.0 (main.020715-1506) 319.50 KB (327,168 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\msvcrt.dll

advapi32 5.2.3663.0 (main.020715-1506) 526.00 KB (538,624 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\advapi32.dll
rpcrt4 5.2.3663.0 (main.020715-1506) 544.50 KB (557,568 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\rpcrt4.dll
user32 5.2.3663.0 (main.020715-1506) 547.50 KB (560,640 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\user32.dll
gdi32 5.2.3663.0 (main.020715-1506) 246.00 KB (251,904 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\gdi32.dll
userenv 5.2.3663.0 (main.020715-1506) 710.00 KB (727,040 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\userenv.dll
nddeapi 5.2.3663.0 (main.020715-1506) 15.00 KB (15,360 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\nddeapi.dll
crypt32 5.131.3663.0 (main.020715-1506) 545.00 KB (558,080 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\crypt32.dll
msasn1 5.2.3663.0 (main.020715-1506) 51.00 KB (52,224 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\msasn1.dll
secur32 5.2.3663.0 (main.020715-1506) 57.00 KB (58,368 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\secur32.dll
winsta 5.2.3663.0 (main.020715-1506) 48.00 KB (49,152 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\winsta.dll
netapi32 5.2.3663.0 (main.020715-1506) 309.50 KB (316,928 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\netapi32.dll
profmap 5.2.3663.0 (main.020715-1506) 21.00 KB (21,504 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\profmap.dll
regapi 5.2.3663.0 (main.020715-1506) 47.00 KB (48,128 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\regapi.dll
ws2_32 5.2.3663.0 (main.020715-1506) 77.00 KB (78,848 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\ws2_32.dll
ws2help 5.2.3663.0 (main.020715-1506) 19.00 KB (19,456 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\ws2help.dll
authz 5.2.3663.0 (main.020715-1506) 56.50 KB (57,856 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\authz.dll
psapi 5.2.3663.0 (main.020715-1506) 21.00 KB (21,504 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\psapi.dll
version 5.2.3663.0 (main.020715-1506) 16.50 KB (16,896 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\version.dll
setupapi 5.2.3663.0 (main.020715-1506) 917.50 KB (939,520 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\setupapi.dll
msgina 5.2.3663.0 (main.020715-1506) 1.19 MB (1,252,864 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\msgina.dll
shsvcs 6.00.3663.0 (main.020715-1506) 122.50 KB (125,440 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\shsvcs.dll
shlwapi 6.00.3663.0 (main.020715-1506) 269.00 KB (275,456 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\shlwapi.dll
sfc 5.2.3663.0 (main.020715-1506) 4.50 KB (4,608 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\sfc.dll
sfc_os 5.2.3663.0 (main.020715-1506) 130.00 KB (133,120 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\sfc_os.dll
wintrust 5.131.3663.0 (main.020715-1506) 155.00 KB (158,720 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\wintrust.dll
ole32 5.2.3663.0 (main.020715-1506) 1.08 MB (1,134,592 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\ole32.dll
imagehlp 5.2.3663.0 (main.020715-1506) 123.00 KB (125,952 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\imagehlp.dll
comctl32 6.0 (main.020715-1506) 905.00 KB (926,720 bytes) 10/25/2002 9:40 AM Microsoft Corporation c:\windows\winsxs\x86_microsoft.windows.common-controls_6595b64144ccf1df_6.0.100.0_x-ww_8417450b\comctl32.dll
winscard 5.2.3663.0 (main.020715-1506) 93.50 KB (95,744 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\winscard.dll
wtsapi32 5.2.3663.0 (main.020715-1506) 17.00 KB (17,408 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\wtsapi32.dll
sxs 5.2.3663.0 (main.020715-1506) 685.50 KB (701,952 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\sxs.dll
winmm 5.2.3663.0 (main.020715-1506) 163.00 KB (166,912 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\winmm.dll
rsaenh 5.2.3663.0 (main.020715-1506) 174.07 KB (178,248 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\rsaenh.dll
wldap32 5.2.3663.0 (main.020715-1506) 167.00 KB (171,008 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\wldap32.dll
cscdll 5.2.3663.0 (main.020715-1506) 92.50 KB (94,720 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\cscdll.dll
wlnotify 5.2.3663.0 (main.020715-1506) 84.50 KB (86,528 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\wlnotify.dll
winspool 5.2.3663.0 (main.020715-1506) 131.50 KB (134,656 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\winspool.drv
mpr 5.2.3663.0 (main.020715-1506) 55.00 KB (56,320 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\mpr.dll
shell32 6.00.3663.0 (main.020715-1506) 7.69 MB (8,067,072 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\shell32.dll
comctl32 5.82 (main.020715-1506) 559.50 KB (572,928 bytes) 10/25/2002 9:40 AM Microsoft Corporation c:\windows\winsxs\x86_microsoft.windows.common-controls_6595b64144ccf1df_5.82.0.0_x-ww_8a69ba05\comctl32.dll
uxtheme 6.00.3663.0 (main.020715-1506) 190.50 KB (195,072 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\uxtheme.dll
samlib 5.2.3663.0 (main.020715-1506) 40.50 KB (41,472 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\samlib.dll
cscui 5.2.3663.0 (main.020715-1506) 299.00 KB (306,176 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\cscui.dll
mprapi 5.2.3663.0 (main.020715-1506) 78.00 KB (79,872 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\mprapi.dll
activeds 5.2.3663.0 (main.020715-1506) 184.50 KB (188,928 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\activeds.dll

adsldpc 5.2.3663.0 (main.020715-1506) 139.50 KB (142,848 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\adsldpc.dll
credui 5.2.3663.0 (main.020715-1506) 161.00 KB (164,864 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\credui.dll
atl 3.05.2144 82.00 KB (83,968 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\atl.dll
oleaut32 5.2.3663.0 483.50 KB (495,104 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\oleaut32.dll
rtutils 5.2.3663.0 (main.020715-1506) 31.00 KB (31,744 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\rtutils.dll
ntmarta 5.2.3663.0 (main.020715-1506) 110.50 KB (113,152 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\ntmarta.dll
clbcatq 2001.12.4593.0 (main.020715-1506) 465.50 KB (476,672 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\clbcatq.dll
comres 2001.12.4593.0 (main.020715-1506) 778.00 KB (796,672 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\comres.dll
wbemprox 5.2.3663.0 (main.020715-1506) 16.00 KB (16,384 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\wbem\wbemprox.dll
wbemcomn 5.2.3663.0 (main.020715-1506) 205.00 KB (209,920 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\wbem\wbemcomn.dll
wbemsvc 5.2.3663.0 (main.020715-1506) 42.50 KB (43,520 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\wbem\wbemsvc.dll
fastprox 5.2.3663.0 (main.020715-1506) 434.50 KB (444,928 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\wbem\fastprox.dll
msvcp60 6.05.2144.0 388.00 KB (397,312 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\msvcp60.dll
ntdsapi 5.2.3663.0 (main.020715-1506) 67.00 KB (68,608 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\ntdsapi.dll
dnsapi 5.2.3663.0 (main.020715-1506) 141.50 KB (144,896 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\dnsapi.dll
services 5.2.3663.0 (main.020715-1506) 99.00 KB (101,376 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\services.exe
scesrv 5.2.3663.0 (main.020715-1506) 301.00 KB (308,224 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\scesrv.dll
umpnpmgr 5.2.3663.0 (main.020715-1506) 115.00 KB (117,760 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\umpnpmgr.dll
ncobjapi 5.2.3663.0 (main.020715-1506) 33.00 KB (33,792 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\ncobjapi.dll
eventlog 5.2.3663.0 (main.020715-1506) 58.50 KB (59,904 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\eventlog.dll
lsass 5.2.3663.0 (main.020715-1506) 13.00 KB (13,312 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\lsass.exe
lsasrv 5.2.3663.0 (main.020715-1506) 711.00 KB (728,064 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\lsasrv.dll
samsrv 5.2.3663.0 (main.020715-1506) 408.00 KB (417,792 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\samsrv.dll
cryptdll 5.2.3663.0 (main.020715-1506) 30.00 KB (30,720 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\cryptdll.dll
msprivs 5.2.3663.0 (main.020715-1506) 44.00 KB (45,056 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\msprivs.dll
kerberos 5.2.3663.0 (main.020715-1506) 299.00 KB (306,176 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\kerberos.dll
msv1_0 5.2.3663.0 (main.020715-1506) 114.50 KB (117,248 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\msv1_0.dll
netlogon 5.2.3663.0 (main.020715-1506) 401.50 KB (411,136 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\netlogon.dll
w32time 5.2.3663.0 (main.020715-1506) 205.50 KB (210,432 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\w32time.dll
iphlpapi 5.2.3663.0 (main.020715-1506) 80.50 KB (82,432 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\iphlpapi.dll
schannel 5.2.3663.0 (main.020715-1506) 138.50 KB (141,824 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\schannel.dll
wdigest 5.2.3663.0 (main.020715-1506) 59.50 KB (60,928 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\wdigest.dll
rassfm 5.2.3663.0 (main.020715-1506) 20.50 KB (20,992 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\rassfm.dll
kdcsvc 5.2.3663.0 (main.020715-1506) 190.50 KB (195,072 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\kdcsvc.dll
ntdsa 5.2.3663.0 (main.020715-1506) 1.40 MB (1,465,344 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\ntdsa.dll
ntdsatq 5.2.3663.0 (main.020715-1506) 27.50 KB (28,160 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\ntdsatq.dll
mswsock 5.2.3663.0 (main.020715-1506) 243.50 KB (249,344 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\mswsock.dll
esent 5.2.3663.0 (main.020715-1506) 925.50 KB (947,712 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\esent.dll
certcli 5.2.3663.0 (main.020715-1506) 215.00 KB (220,160 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\certcli.dll
cryptui 5.131.3663.0 (main.020715-1506) 463.50 KB (474,624 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\cryptui.dll
scecli 5.2.3663.0 (main.020715-1506) 174.00 KB (178,176 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\scecli.dll
pstorsvc 5.2.3663.0 (main.020715-1506) 24.00 KB (24,576 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\pstorsvc.dll
psbase 5.2.3663.0 (main.020715-1506) 81.00 KB (82,944 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\psbase.dll
dssenh 5.2.3663.0 (main.020715-1506) 129.07 KB (132,168 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\dssenh.dll
svchost 5.2.3663.0 (main.020715-1506) 12.00 KB (12,288 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\svchost.exe

rpcss 5.2.3663.0 (main.020715-1506) 266.00 KB (272,384 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\rpcss.dll
wshtcpip 5.2.3663.0 (main.020715-1506) 17.00 KB (17,408 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\wshtcpip.dll
termsrv 5.2.3663.0 (main.020715-1506) 215.00 KB (220,160 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\termsrv.dll
icaapi 5.2.3663.0 (main.020715-1506) 10.00 KB (10,240 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\icaapi.dll
mstlsapi 5.2.3663.0 (main.020715-1506) 103.00 KB (105,472 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\mstlsapi.dll
wkssvc 5.2.3663.0 (main.020715-1506) 122.00 KB (124,928 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\wkssvc.dll
cryptsvc 5.2.3663.0 (main.020715-1506) 49.00 KB (50,176 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\cryptsvc.dll
vssapi 5.2.3663.0 (main.020715-1506) 471.00 KB (482,304 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\vssapi.dll
dmserver 5.2.3663.0 (main.020715-1506) 22.00 KB (22,528 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\dmserver.dll
es 2001.12.4593.0 (main.020715-1506) 218.00 KB (223,232 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\es.dll
srvsvc 5.2.3663.0 (main.020715-1506) 87.50 KB (89,600 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\srvsvc.dll
seclogon 5.2.3663.0 (main.020715-1506) 15.50 KB (15,872 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\seclogon.dll
wmisvc 5.2.3663.0 (main.020715-1506) 113.50 KB (116,224 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\wbem\wmisvc.dll
wuauserv 5.4.3663.0 (main.020715-1506) 9.00 KB (9,216 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\wuauserv.dll
wuaueng 5.4.3663.0 (main.020715-1506) 183.00 KB (187,392 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\wuaueng.dll
advpack 6.00.3663.0 (main.020715-1506) 93.00 KB (95,232 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\advpack.dll
wininet 6.00.3663.0 (main.020715-1506) 581.00 KB (594,944 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\wininet.dll
sens 5.2.3663.0 (main.020715-1506) 35.00 KB (35,840 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\sens.dll
netman 5.2.3663.0 (main.020715-1506) 147.00 KB (150,528 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\netman.dll
rasapi32 5.2.3663.0 (main.020715-1506) 217.00 KB (222,208 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\rasapi32.dll
rasman 5.2.3663.0 (main.020715-1506) 55.00 KB (56,320 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\rasman.dll
tapi32 5.2.3663.0 (main.020715-1506) 169.50 KB (173,568 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\tapi32.dll
wzcsvc 5.2.3663.0 (main.020715-1506) 271.00 KB (277,504 bytes) 7/16/2002 9:48 AM Microsoft Corporation c:\windows\system32\wzcsvc.dll
wmi 5.2.3663.0 (main.020715-1506) 6.50 KB (6,656 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\wmi.dll
dhcpcsvc 5.2.3663.0 (main.020715-1506) 101.00 KB (103,424 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\dhcpcsvc.dll
wzcsapi 5.2.3663.0 (main.020715-1506) 24.00 KB (24,576 bytes) 7/16/2002 9:48 AM Microsoft Corporation c:\windows\system32\wzcsapi.dll
netshell 5.2.3663.0 (main.020715-1506) 1.57 MB (1,648,128 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\netshell.dll
clusapi 5.2.3663.0 (main.020715-1506) 54.50 KB (55,808 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\clusapi.dll
rasdlg 5.2.3663.0 (main.020715-1506) 637.00 KB (652,288 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\rasdlg.dll
rasadhlp 5.2.3663.0 (main.020715-1506) 6.00 KB (6,144 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\rasadhlp.dll
winhttp 5.2.3663.0 (main.020715-1506) 322.50 KB (330,240 bytes) 10/25/2002 9:41 AM Microsoft Corporation c:\windows\winsxs\x86_microsoft.windows.winhttp_6595b64144ccf1df_5.1.0.0_x-ww_e0651936\winhttp.dll
wbemcore 5.2.3663.0 (main.020715-1506) 448.50 KB (459,264 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\wbem\wbemcore.dll
esscli 5.2.3663.0 (main.020715-1506) 232.00 KB (237,568 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\wbem\esscli.dll
wmiutils 5.2.3663.0 (main.020715-1506) 88.50 KB (90,624 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\wbem\wmiutils.dll
repdrvfs 5.2.3663.0 (main.020715-1506) 140.00 KB (143,360 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\wbem\repdrvfs.dll
wmiprvsd 5.2.3663.0 (main.020715-1506) 403.50 KB (413,184 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\wbem\wmiprvsd.dll
wbemess 5.2.3663.0 (main.020715-1506) 253.00 KB (259,072 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\wbem\wbemess.dll
ncprov 5.2.3663.0 (main.020715-1506) 42.50 KB (43,520 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\wbem\ncprov.dll
sensapi 5.2.3663.0 (main.020715-1506) 6.00 KB (6,144 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\sensapi.dll
wbemcons 5.2.3663.0 (main.020715-1506) 69.00 KB (70,656 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\wbem\wbemcons.dll
pchsvc 5.2.3663.0 (main.020715-1506) 30.00 KB (30,720 bytes) 10/25/2002 1:52 PM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\pchsvc.dll
explorer 6.00.3663.0 (main.020715-1506) 989.50 KB (1,013,248 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\explorer.exe
browseui 6.00.3663.0 (main.020715-1506) 999.50 KB (1,023,488 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\browseui.dll
shdocvw 6.00.3663.0 (main.020715-1506) 1.28 MB (1,341,952 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\shdocvw.dll
apphelp 5.2.3663.0 (main.020715-1506) 117.00 KB (119,808 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\apphelp.dll
themeui 6.00.3663.0 (main.020715-1506) 360.00 KB (368,640 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\themeui.dll

msimg32 5.2.3663.0 (main.020715-1506) 4.50 KB (4,608 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\msimg32.dll
linkinfo 5.2.3663.0 (main.020715-1506) 15.50 KB (15,872 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\linkinfo.dll
ntshrui 6.00.3663.0 (main.020715-1506) 134.50 KB (137,728 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\ntshrui.dll
urlmon 6.00.3663.0 (main.020715-1506) 442.00 KB (452,608 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\urlmon.dll
webcheck 6.00.3663.0 (main.020715-1506) 253.50 KB (259,584 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\webcheck.dll
wsock32 5.2.3663.0 (main.020715-1506) 22.00 KB (22,528 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\wsock32.dll
stobject 5.2.3663.0 (main.020715-1506) 116.50 KB (119,296 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\stobject.dll
batmeter 6.00.3663.0 (main.020715-1506) 28.00 KB (28,672 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\batmeter.dll
powrprof 6.00.3663.0 (main.020715-1506) 14.00 KB (14,336 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\powrprof.dll
printui 5.2.3663.0 (main.020715-1506) 522.00 KB (534,528 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\printui.dll
cfgmgr32 5.2.3663.0 (main.020715-1506) 17.00 KB (17,408 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\cfgmgr32.dll
drprov 5.2.3663.0 (main.020715-1506) 12.00 KB (12,288 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\drprov.dll
ntlanman 5.2.3663.0 (main.020715-1506) 39.50 KB (40,448 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\ntlanman.dll
netui0 5.2.3663.0 (main.020715-1506) 73.00 KB (74,752 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\netui0.dll
netui1 5.2.3663.0 (main.020715-1506) 176.50 KB (180,736 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\netui1.dll
davclnt 5.2.3663.0 (main.020715-1506) 23.00 KB (23,552 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\davclnt.dll
browselc 6.00.3663.0 (main.020715-1506) 61.50 KB (62,976 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\browselc.dll
shdoclc 6.00.3663.0 (main.020715-1506) 521.00 KB (533,504 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\shdoclc.dll
mydocs 6.00.3663.0 (main.020715-1506) 87.00 KB (89,088 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\mydocs.dll
gamscm Not Available 137.36 KB (140,656 bytes) 10/25/2002 7:46 PM Not Available c:\windows\system32\gamserv\gamscm.exe
gamdrv Not Available 304.05 KB (311,343 bytes) 10/25/2002 7:46 PM Not Available c:\windows\system32\gamserv\gamdrv.exe
winrnr 5.2.3663.0 (main.020715-1506) 14.50 KB (14,848 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\winrnr.dll
gamserv Not Available 196.05 KB (200,753 bytes) 10/25/2002 7:46 PM Not Available c:\windows\system32\gamserv\gamserv.exe
gamevent Not Available 176.05 KB (180,274 bytes) 10/25/2002 7:46 PM Not Available c:\windows\system32\gamserv\gamevent.exe
gamevlog Not Available 236.05 KB (241,714 bytes) 10/25/2002 7:46 PM Not Available c:\windows\system32\gamserv\gamevlog.exe
wpabaln 5.2.3663.0 (main.020715-1506) 31.00 KB (31,744 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\wpabaln.exe
cmd 5.2.3663.0 (main.020715-1506) 371.00 KB (379,904 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\cmd.exe
mmc 5.2.3663.0 (main.020715-1506) 758.00 KB (776,192 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\mmc.exe
mfc42u 6.05.2178.0 960.00 KB (983,040 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\mfc42u.dll
oleacc 4.2.5406.0 (main.020715-1506) 164.50 KB (168,448 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\oleacc.dll
mmcbase 5.2.3663.0 (main.020715-1506) 68.00 KB (69,632 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\mmcbase.dll
comdlg32 6.00.3663.0 (main.020715-1506) 255.00 KB (261,120 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\comdlg32.dll
mmcndmgr 5.2.3663.0 (main.020715-1506) 1.08 MB (1,136,640 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\mmcndmgr.dll
msxml3 8.40.8806.0 1.06 MB (1,107,968 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\msxml3.dll
filemgmt 5.2.3663.0 (main.020715-1506) 313.50 KB (321,024 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\filemgmt.dll
mshtml 6.00.3663.0 (main.020715-1506) 2.57 MB (2,690,560 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\mshtml.dll
mlang 6.00.3663.0 (main.020715-1506) 564.50 KB (578,048 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\mlang.dll
msimtf 5.2.3663.0 (main.020715-1506) 141.00 KB (144,384 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\msimtf.dll
msctf 5.2.3663.0 (main.020715-1506) 273.00 KB (279,552 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\msctf.dll
jscript 5.6.0.7727 412.00 KB (421,888 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\jscript.dll
msls31 3.10.349.0 137.00 KB (140,288 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\msls31.dll
imm32 5.2.3663.0 (main.020715-1506) 104.00 KB (106,496 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\imm32.dll
imgutil 6.00.3663.0 (main.020715-1506) 30.00 KB (30,720 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\imgutil.dll
mshtmled 6.00.3663.0 (main.020715-1506) 424.00 KB (434,176 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\mshtmled.dll
rundll32 5.2.3663.0 (main.020715-1506) 32.00 KB (32,768 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\rundll32.exe
timedate 5.2.3663.0 (main.020715-1506) 89.50 KB (91,648 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\timedate.cpl
sqlservr 2000.080.0731.00 7.17 MB (7,516,244 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\mssql\binn\sqlservr.exe
opends60 2000.080.0194.00 24.06 KB (24,639 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\mssql\binn\opends60.dll

ums 2000.080.0731.00 52.55 KB (53,808 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\mssql\binn\ums.dll
sqlsort 2000.080.0731.00 576.56 KB (590,396 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\mssql\binn\sqlsort.dll
msvcirt 7.0.3663.0 (main.020715-1506) 49.50 KB (50,688 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\msvcirt.dll
sqlevn70 2000.080.0731.00 28.00 KB (28,672 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\mssql\binn\resources\1033\sqlevn70.rll
xolehlp 2001.12.4593.0 (main.020715-1506) 8.00 KB (8,192 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\xolehlp.dll
msdtcprx 2001.12.4593.0 (main.020715-1506) 405.50 KB (415,232 bytes) 10/25/2002 1:48 PM Microsoft Corporation c:\windows\system32\msdtcprx.dll
mtxclu 2001.12.4593.0 (main.020715-1506) 72.50 KB (74,240 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\mtxclu.dll
resutils 5.2.3663.0 (main.020715-1506) 56.00 KB (57,344 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\resutils.dll
ssnetlib 2000.080.0731.00 80.56 KB (82,492 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\mssql\binn\ssnetlib.dll
ssnmpn70 2000.080.0534.00 24.56 KB (25,148 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\mssql\binn\ssnmpn70.dll
security 5.2.3663.0 (main.020715-1506) 5.00 KB (5,120 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\security.dll
ssmslpcn 2000.080.0731.00 28.56 KB (29,244 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\mssql\binn\ssmslpcn.dll
ssmsgnet 2000.080.0384.00 32.09 KB (32,859 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\mssql\binn\ssmsgnet.dll
qlvipl Not Available 92.05 KB (94,262 bytes) 9/26/2002 10:10 AM Not Available c:\windows\system32\qlvipl.dll
sqlftqry 2000.080.0731.00 192.57 KB (197,196 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\mssql\binn\sqlftqry.dll
sqloledb 2000.081.8713.02 484.00 KB (495,616 bytes) 10/25/2002 1:01 PM Microsoft Corporation c:\program files\common files\system\ole db\sqloledb.dll
msdart 2.72.8713.0 built by: (dagbuild) 140.00 KB (143,360 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\msdart.dll
msdatl3 2.72.8713.0 built by: (dagbuild) 84.00 KB (86,016 bytes) 10/25/2002 1:01 PM Microsoft Corporation c:\program files\common files\system\ole db\msdatl3.dll
oledb32 2.72.8713.0 built by: (dagbuild) 424.00 KB (434,176 bytes) 10/25/2002 1:01 PM Microsoft Corporation c:\program files\common files\system\ole db\oledb32.dll
oledb32r 2.72.8713.0 built by: (dagbuild) 68.00 KB (69,632 bytes) 10/25/2002 1:01 PM Microsoft Corporation c:\program files\common files\system\ole db\oledb32r.dll
isqlw 2000.080.0731.00 344.56 KB (352,828 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\isqlw.exe
sqlunirl 2000.080.0380.00 176.56 KB (180,800 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\sqlunirl.dll
sqlresld 2000.080.0382.00 28.56 KB (29,248 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\sqlresld.dll
sqlgui 2000.080.0731.00 444.56 KB (455,232 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\sqlgui.dll
w95scm 2000.080.0731.00 48.56 KB (49,728 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\w95scm.dll
odbc32 3.520.8713.0 212.00 KB (217,088 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\odbc32.dll
sqlsvc 2000.080.0731.00 92.56 KB (94,784 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\sqlsvc.dll
odbcbcp 2000.081.8713.02 24.00 KB (24,576 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\odbcbcp.dll
sqlqry 2000.080.0731.00 392.56 KB (401,984 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\sqlqry.dll
pfutil80 2000.080.0731.00 272.56 KB (279,104 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\pfutil80.dll
semsfc 2000.080.0731.00 228.56 KB (234,048 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\semsfc.dll
pfclnt80 2000.080.0731.00 404.56 KB (414,272 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\pfclnt80.dll
odbcint 3.520.8713.0 92.00 KB (94,208 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\odbcint.dll
sqlsvc 2000.080.0194.00 24.00 KB (24,576 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\resources\1033\sqlsvc.rll
sqlgui 2000.080.0194.00 56.00 KB (57,344 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\resources\1033\sqlgui.rll
semsfc 2000.080.0194.00 24.00 KB (24,576 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\resources\1033\semsfc.rll
pfclnt80 2000.080.0194.00 28.00 KB (28,672 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\resources\1033\pfclnt80.rll
pfutil80 2000.080.0382.00 144.00 KB (147,456 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\resources\1033\pfutil80.rll
sqlqry 2000.080.0194.00 180.00 KB (184,320 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\resources\1033\sqlqry.rll
isqlw 2000.080.0382.00 240.00 KB (245,760 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\resources\1033\isqlw.rll
odbccp32 3.520.8713.0 100.00 KB (102,400 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\odbccp32.dll
objmgr 2000.080.0731.00 308.56 KB (315,968 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\objmgr.dll
objmgr 2000.080.0731.00 56.00 KB (57,344 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\resources\1033\objmgr.rll
sqllex 2000.080.0194.00 148.06 KB (151,616 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\program files\microsoft sql server\80\tools\binn\sqllex.dll
sqlsrv32 2000.081.8713.02 384.00 KB (393,216 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\sqlsrv32.dll
sqlsrv32 2000.081.8713.02 88.00 KB (90,112 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\sqlsrv32.rll
dbnetlib 2000.081.8713 72.00 KB (73,728 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\dbnetlib.dll
dbmslpcn 2000.080.0731.00 28.56 KB (29,244 bytes) 10/25/2002 4:08 PM Microsoft Corporation c:\windows\system32\dbmslpcn.dll

mycomput 5.2.3663.0 (main.020715-1506) 91.00 KB (93,184 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\mycomput.dll
ntmsmgr 5.2.3663.0 (main.020715-1506) 475.50 KB (486,912 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\ntmsmgr.dll
ntmsapi 5.2.3663.0 (main.020715-1506) 42.00 KB (43,008 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\ntmsapi.dll
dfrgsnap 5.2.3663.0 (main.020715-1506) 36.00 KB (36,864 bytes) 7/18/2002 8:00 AM Microsoft Corp. and Executive Software International, Inc. c:\windows\system32\dfrgsnap.dll
dfrgres 5.2.3663.0 (main.020715-1506) 50.50 KB (51,712 bytes) 7/18/2002 8:00 AM Microsoft Corp. and Executive Software International, Inc. c:\windows\system32\dfrgres.dll
dmdskmgr 5.2.3663.0 (main.020715-1506) 153.50 KB (157,184 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\dmdskmgr.dll
dmutil 5.2.3663.0 (main.020715-1506) 50.50 KB (51,712 bytes) 7/16/2002 9:46 AM Microsoft Corporation c:\windows\system32\dmutil.dll
dmdskres 5.2.3663.0 (main.020715-1506) 116.00 KB (118,784 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\dmdskres.dll
els 5.2.3663.0 (main.020715-1506) 168.00 KB (172,032 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\els.dll
riched32 5.2.3663.0 (main.020715-1506) 3.50 KB (3,584 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\riched32.dll
riched20 5.31.23.1217 394.50 KB (403,968 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\riched20.dll
localsec 5.2.3663.0 (main.020715-1506) 206.00 KB (210,944 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\localsec.dll
adsnt 5.2.3663.0 (main.020715-1506) 236.50 KB (242,176 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\adsnt.dll
smlogcfg 5.2.3663.0 (main.020715-1506) 333.00 KB (340,992 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\smlogcfg.dll
pdh 5.2.3663.0 (main.020715-1506) 262.00 KB (268,288 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\pdh.dll
devmgr 5.2.3663.0 (main.020715-1506) 263.00 KB (269,312 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\devmgr.dll
dmdlgs 5.2.3663.0 (main.020715-1506) 271.00 KB (277,504 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\dmdlgs.dll
dmview 5.2.3663.0 (main.020715-1506) 61.50 KB (62,976 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\dmview.ocx
vds_ps 5.2.3663.0 (main.020715-1506) 21.00 KB (21,504 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\vds_ps.dll
dmvdsitf 5.2.3663.0 (main.020715-1506) 86.00 KB (88,064 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\dmvdsitf.dll
vds 5.2.3663.0 (main.020715-1506) 136.00 KB (139,264 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\vds.exe
osuninst 5.2.3663.0 (main.020715-1506) 114.50 KB (117,248 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\osuninst.dll
cabinet 5.2.3663.0 (main.020715-1506) 54.00 KB (55,296 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\cabinet.dll
vdsutil 5.2.3663.0 (main.020715-1506) 35.50 KB (36,352 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\vdsutil.dll
vdsbas 5.2.3663.0 (main.020715-1506) 94.00 KB (96,256 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\vdsbas.dll
fmifs 5.2.3663.0 (main.020715-1506) 17.00 KB (17,408 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\fmifs.dll
ulib 5.2.3663.0 (main.020715-1506) 265.00 KB (271,360 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\ulib.dll
ifsutil 5.2.3663.0 (main.020715-1506) 71.50 KB (73,216 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\ifsutil.dll
vdsdyndr 5.2.3663.0 (main.020715-1506) 288.50 KB (295,424 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\vdsdyndr.dll
dmintf 5.2.3663.0 (main.020715-1506) 19.50 KB (19,968 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\dmintf.dll
dmadmin 5.2.3663.0 (main.020715-1506) 212.00 KB (217,088 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\dmadmin.exe
helpsvc 5.2.3663.0 (main.020715-1506) 683.50 KB (699,904 bytes) 10/25/2002 1:52 PM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\helpsvc.exe
hcappres 5.2.3663.0 (main.020715-1506) 6.50 KB (6,656 bytes) 10/25/2002 1:52 PM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\hcappres.dll
itss 5.2.3663.0 (main.020715-1506) 118.50 KB (121,344 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\itss.dll
helpctr 5.2.3663.0 (main.020715-1506) 670.00 KB (686,080 bytes) 10/25/2002 1:52 PM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\helpctr.exe
pchshell 5.2.3663.0 (main.020715-1506) 94.00 KB (96,256 bytes) 10/25/2002 1:52 PM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\pchshell.dll
vbscript 5.6.0.7727 388.00 KB (397,312 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\vbscript.dll
mfc42 6.05.2178.0 960.00 KB (983,040 bytes) 7/18/2002 8:00 AM Microsoft Corporation c:\windows\system32\mfc42.dll
msinfo 5.2.3663.0 (main.020715-1506) 352.00 KB (360,448 bytes) 10/25/2002 1:52 PM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\msinfo.dll

[Services]

Display Name Name State Start Mode Service Type Path Error Control Start Name Tag ID
Alerter Alerter Stopped Manual Share Process c:\windows\system32\svchost.exe -k localservice Normal NT AUTHORITY\LocalService 0
Application Layer Gateway Service ALG Stopped Manual Own Process c:\windows\system32\alg.exe Normal NT AUTHORITY\LocalService 0
Application Management AppMgmt Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Windows Audio AudioSrv Stopped Disabled Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Background Intelligent Transfer Service BITS Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Computer Browser Browser Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

Indexing Service CiSvc Stopped Manual Share Process c:\windows\system32\cisvc.exe Normal LocalSystem 0
ClipBook ClipSrv Stopped Disabled Own Process c:\windows\system32\clipsrv.exe Normal LocalSystem 0
COM+ System Application COMSysApp Stopped Manual Own Process c:\windows\system32\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 Stopped Manual Own Process c:\windows\system32\dfssvc.exe Normal LocalSystem 0
DHCP Client Dhcp Stopped Manual Share Process c:\windows\system32\svchost.exe -k networkservice Normal NT AUTHORITY\NetworkService 0
Logical Disk Manager Administrative Service dmadmin Running 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 Stopped Manual Share Process c:\windows\system32\svchost.exe -k networkservice Normal NT AUTHORITY\NetworkService 0
Error Reporting Service ERSvc Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Ignore LocalSystem 0
Event Log Eventlog Running Auto Share Process c:\windows\system32\services.exe Normal LocalSystem 0
COM+ Event System EventSystem Running Auto Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Mylex Global Array Manager Server gamscm Running Manual Own Process system32\gamserv\gamscm.exe Normal LocalSystem 0
Help and Support helpsvc Running Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Human Interface Device Access HidServ Stopped Disabled Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
HTTP SSLHTTPFilter Stopped Manual Share Process c:\windows\system32\lsass.exe Normal LocalSystem 0
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 Manual Own Process c:\windows\system32\llssrv.exe Normal NT AUTHORITY\NetworkService 0
TCP/IP NetBIOS Helper LmHosts Running Auto Share Process c:\windows\system32\svchost.exe -k localservice Normal NT AUTHORITY\LocalService 0
Messenger Messenger Stopped Disabled Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
NetMeeting Remote Desktop Sharing mnmsrvc Stopped Disabled Own Process c:\windows\system32\mnmsrvc.exe Normal LocalSystem 0
Distributed Transaction Coordinator MSDTC Running Auto Own Process c:\windows\system32\msdtc.exe Normal NT AUTHORITY\NetworkService 0
Windows Installer MSIServer Stopped Manual Share Process c:\windows\system32\msiexec.exe /v Normal LocalSystem 0
Microsoft Search MSSEARCH Stopped Manual Share Process "c:\program files\common files\system\mssearch\bin\mssearch.exe" 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 Stopped Manual Share Process c:\windows\system32\lsass.exe Normal LocalSystem 0
Protected Storage ProtectedStorage Running Auto Share Process c:\windows\system32\lsass.exe Normal LocalSystem 0
Remote Access Auto Connection Manager RasAuto Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Remote Access Connection Manager RasMan Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Remote Desktop Help Session Manager RDSessMgr Stopped Manual Own Process c:\windows\system32\sessmgr.exe Normal LocalSystem 0
Routing and Remote Access RemoteAccess Stopped Disabled Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Remote Registry RemoteRegistry Stopped Manual Share Process c:\windows\system32\svchost.exe -k regsvc Normal NT AUTHORITY\LocalService 0
Remote Procedure Call (RPC) Locator RpcLocator Running Auto 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 Manual 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 Stopped Manual 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
Internet Connection Firewall (ICF) / Internet Connection Sharing (ICS) SharedAccess Stopped Disabled Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Shell Hardware Detection ShellHWDetection Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Ignore LocalSystem 0
Print Spooler Spooler Stopped Manual Own Process c:\windows\system32\spoolsv.exe Normal LocalSystem 0
SQLSERVERAGENT SQLSERVERAGENT Stopped Manual Own Process c:\progra~1\micros~1\mssql\binn\sqlagent.exe Normal LocalSystem 0
Windows Image Acquisition (WIA) stisvc Stopped Disabled Share Process c:\windows\system32\svchost.exe -k imgsvc Normal NT AUTHORITY\LocalService 0
Microsoft Software Shadow Copy Provider swprv Stopped Manual Own Process c:\windows\system32\svchost.exe -k swprv Normal LocalSystem 0
Performance Logs and Alerts SysmonLog Stopped Manual Own Process c:\windows\system32\smlogsvc.exe Normal NT Authority\NetworkService 0
Telephony TapiSrv Stopped Manual Share Process c:\windows\system32\svchost.exe -k tapisrv Normal LocalSystem 0
Terminal Services TermService Running Manual Share Process c:\windows\system32\svchost.exe -k termsvcs Normal LocalSystem 0
Themes Themes Stopped Disabled Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0
Telnet TlntSvr Stopped Disabled Own Process c:\windows\system32\tlntsvr.exe Normal NT AUTHORITY\LOCAL SERVICE 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 Stopped Manual 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 NT AUTHORITY\LocalService 0
Virtual Disk Service vds Running 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 WmdmPmSp 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 Stopped Manual Share Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem 0

[Program Groups]

Group Name Name User Name
Accessories Default User:Accessories Default User
Accessories\Accessibility Default User:Accessories\Accessibility Default User
Accessories\Entertainment Default User:Accessories\Entertainment Default User
Startup Default User:Startup Default User
Accessories All Users:Accessories All Users
Accessories\Accessibility All Users:Accessories\Accessibility All Users
Accessories\Communications All Users:Accessories\Communications All Users
Accessories\Entertainment All Users:Accessories\Entertainment All Users
Accessories\System Tools All Users:Accessories\System Tools All Users
Administrative Tools All Users:Administrative Tools All Users
Microsoft SQL Server All Users:Microsoft SQL Server All Users
Microsoft SQL Server - Switch All Users:Microsoft SQL Server - Switch 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 COMANCHE\Administrator:Accessories COMANCHE\Administrator
Accessories\Accessibility COMANCHE\Administrator:Accessories\Accessibility COMANCHE\Administrator
Accessories\Entertainment COMANCHE\Administrator:Accessories\Entertainment COMANCHE\Administrator
Administrative Tools COMANCHE\Administrator:Administrative Tools COMANCHE\Administrator
Startup COMANCHE\Administrator:Startup COMANCHE\Administrator

[Startup Programs]

Program Command User NameLocation
desktop desktop.ini NT AUTHORITY\SYSTEM Startup

desktop desktop.ini COMANCHE\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
Windows Media Player 7 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 6.0.3663.0
Build 63663
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 6.0.3663.0 95 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
advpack.dll 6.0.3663.0 93 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
asctrls.ocx 6.0.3663.0 89 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
browselc.dll 6.0.3663.0 62 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
browseui.dll 6.0.3663.0 1,000 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
cdfview.dll 6.0.3663.0 141 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
comctl32.dll 5.82.3663.0 560 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
dxtrans.dll 6.3.3663.0 188 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
dxtmsft.dll 6.3.3663.0 332 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
iecont.dll <File Missing> Not Available Not Available
Not Available Not Available
iecontlc.dll <File Missing> Not Available Not Available
Not Available Not Available
iedkcs32.dll 16.0.3663.0 292 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
iepeers.dll 6.0.3663.0 229 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
iesetup.dll 6.0.3663.0 59 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
ieuinit.inf Not Available 19 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Not Available
iexplore.exe 6.0.3663.0 90 KB 7/18/2002 7:00:00 AM
C:\Program Files\Internet Explorer Microsoft Corporation
imgutil.dll 6.0.3663.0 30 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
inetcpl.cpl 6.0.3663.0 296 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
inetcplc.dll 6.0.3663.0 108 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
inseng.dll 6.0.3663.0 71 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
mlang.dll 6.0.3663.0 565 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
msencode.dll 2000.7.25.0 92 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Not Available
mshta.exe 6.0.3663.0 27 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
mshtml.dll 6.0.3663.0 2,628 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
mshtml.tlb 6.0.3663.0 1,319 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
mshtmled.dll 6.0.3663.0 424 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
mshtmler.dll 6.0.3663.0 55 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
msident.dll 6.0.3663.0 47 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
msidntld.dll 6.0.3663.0 15 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
msieftp.dll 6.0.3663.0 232 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
msrating.dll 6.0.3663.0 132 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
mstime.dll 6.0.3663.0 490 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
occache.dll 6.0.3663.0 88 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
proctexe.ocx 6.3.3663.0 78 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Intel Corporation
sendmail.dll 6.0.3663.0 54 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
shdoclc.dll 6.0.3663.0 521 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
shdocvw.dll 6.0.3663.0 1,311 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
shfolder.dll 6.0.3663.0 23 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
shlwapi.dll 6.0.3663.0 269 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
tdc.ocx 1.3.0.3130 57 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
url.dll 6.0.3663.0 40 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
urlmon.dll 6.0.3663.0 442 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
webcheck.dll 6.0.3663.0 254 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation
wininet.dll 6.0.3663.0 581 KB 7/18/2002 7:00:00 AM
C:\WINDOWS\system32 Microsoft Corporation

[Connectivity]

Item Value
Connection Preference Never dial

LAN Settings

AutoConfigProxy Not Available
AutoProxyDetectMode Enabled
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.NT AUTHORITY\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 Low
Internet Medium
Restricted sites High

QLogic Network Adapter - Registry Parameters

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika
Class Name: <NO CLASS>
Last Write Time: 10/31/2002 - 5:40 PM
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: 10/25/2002 - 2:45 PM

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B07D6AF
Class Name: <NO CLASS>
Last Write Time: 10/25/2002 - 2:46 PM
Value 0
Name: IPAddress
Type: REG_MULTI_SZ
Data: 192.168.201.3

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Parameters
Class Name: <NO CLASS>
Last Write Time: 10/25/2002 - 2:49 PM
Value 0
Name: MaxRegisterMBytes
Type: REG_DWORD
Data: 0x200

Value 1
Name: MaxRegisterRdmaMBytes

Type: REG_DWORD
Data: 0x200

Value 2
Name: MaxCQEntries
Type: REG_DWORD
Data: 0x2000

Value 3
Name: MaxRegisterRegions
Type: REG_DWORD
Data: 0x1000

Value 4
Name: MaxVIs
Type: REG_DWORD
Data: 0x400

Value 5
Name: MaxCQs
Type: REG_DWORD
Data: 0x400

Value 6
Name: MaxTransferSize
Type: REG_DWORD
Data: 0x10000

Value 7
Name: MaxPTags
Type: REG_DWORD
Data: 0x800

Value 8
Name: IuBuffers
Type: REG_DWORD
Data: 0x100

Value 9
Name: SendDescQuota
Type: REG_DWORD
Data: 0x8

Value 10
Name: RecvDescQuota
Type: REG_DWORD
Data: 0x8

Value 11
Name: SupportPrototypeCards
Type: REG_DWORD
Data: 0

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\qlvika\Security
Class Name: <NO CLASS>
Last Write Time: 10/25/2002 - 2:39 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: 10/31/2002 - 5:40 PM
Value 0
Name: 0
Type: REG_SZ
Data: Root\SCSIADAPTER\0000

Value 1
Name: Count
Type: REG_DWORD
Data: 0x1

Value 2
Name: NextInstance
Type: REG_DWORD
Data: 0x1

Disk Controller Configuration Parameters

Mylex eXtremeRAID 2000 Adapter 1

GCFVERSION=2.00;

Begin

BeginGroup

PhysicalDevice0 = Channel=0, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice1 = Channel=1, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice2 = Channel=0, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice3 = Channel=1, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice4 = Channel=0, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice5 = Channel=1, Target=2, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice6 = Channel=0, Target=3, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice7 = Channel=1, Target=3, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice8 = Channel=0, Target=4, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice9 = Channel=1, Target=4, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice10 = Channel=0, Target=5, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice11 = Channel=1, Target=5, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice12 = Channel=0, Target=6, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice13 = Channel=1, Target=6, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice14 = Channel=0, Target=8, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice15 = Channel=1, Target=8, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice16 = Channel=0, Target=9, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice17 = Channel=1, Target=9, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice18 = Channel=0, Target=10, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice19 = Channel=1, Target=10, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice20 = Channel=0, Target=11, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice21 = Channel=1, Target=11, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice22 = Channel=0, Target=12, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice23 = Channel=1, Target=12, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice24 = Channel=0, Target=13, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice25 = Channel=1, Target=13, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice26 = Channel=0, Target=14, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice27 = Channel=1, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

IntermediateDevice0 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=17336MB,

(PhysicalDevice0, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice1, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

IntermediateDevice1 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=17336MB,

(PhysicalDevice2, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice3, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

IntermediateDevice2 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=17336MB,

(PhysicalDevice4, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice5, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

IntermediateDevice3 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=17336MB,

(PhysicalDevice6, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice7, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

IntermediateDevice4 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=17336MB,

(PhysicalDevice8, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice9, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

IntermediateDevice5 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=17336MB,

(PhysicalDevice10, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice11, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

IntermediateDevice6 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=17336MB,

(PhysicalDevice12, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice13, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

IntermediateDevice7 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=17336MB,

(PhysicalDevice14, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice15, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

IntermediateDevice8 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=17336MB,

(PhysicalDevice16, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice17, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

IntermediateDevice9 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=17336MB,

(PhysicalDevice18, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice19, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

IntermediateDevice10 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=17336MB,

(PhysicalDevice20, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice21, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

IntermediateDevice11 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=17336MB,

(PhysicalDevice22, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice23, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

IntermediateDevice12 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=17336MB,

(PhysicalDevice24, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice25, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

IntermediateDevice13 = StripeSize=64KB, Raid=1, WriteThrough=1, Size=17336MB,

(PhysicalDevice26, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks),

(PhysicalDevice27, StartAddress=0MB/0Blocks, Size=17336MB/35504128Blocks);

LogicalDevice0 = StripeSize=64KB, Raid=12, WriteThrough=1, Size=242704MB, BIOSGeometry=8GB,

```
                (IntermediateDevice0, StartAddress=0MB,
Size=17336MB),
                (IntermediateDevice1, StartAddress=0MB,
Size=17336MB),
                (IntermediateDevice2, StartAddress=0MB,
Size=17336MB),
                (IntermediateDevice3, StartAddress=0MB,
Size=17336MB),
                (IntermediateDevice4, StartAddress=0MB,
Size=17336MB),
                (IntermediateDevice5, StartAddress=0MB,
Size=17336MB),
                (IntermediateDevice6, StartAddress=0MB,
Size=17336MB),
                (IntermediateDevice7, StartAddress=0MB,
Size=17336MB),
                (IntermediateDevice8, StartAddress=0MB,
Size=17336MB),
                (IntermediateDevice9, StartAddress=0MB,
Size=17336MB),
                (IntermediateDevice10, StartAddress=0MB,
Size=17336MB),
                (IntermediateDevice11, StartAddress=0MB,
Size=17336MB),
                (IntermediateDevice12, StartAddress=0MB,
Size=17336MB),
                (IntermediateDevice13, StartAddress=0MB,
Size=17336MB);
 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 Adapter 2

```
GCFVERSION=2.00;
Begin
 BeginGroup
        PhysicalDevice0 = Channel=0, Target=0, Size=17340MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;
        PhysicalDevice1 = Channel=0, Target=1, Size=17340MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;
        PhysicalDevice2 = Channel=0, Target=2, Size=17340MB,
State=Online,
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;
```

PhysicalDevice3 = Channel=0, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice4 = Channel=0, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice5 = Channel=0, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice6 = Channel=0, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice7 = Channel=0, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice8 = Channel=0, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice9 = Channel=0, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice10 = Channel=0, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice11 = Channel=0, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice12 = Channel=0, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice13 = Channel=0, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice14 = Channel=1, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice15 = Channel=1, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice16 = Channel=1, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice17 = Channel=1, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice18 = Channel=1, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice19 = Channel=1, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice20 = Channel=1, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice21 = Channel=1, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice22 = Channel=1, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice23 = Channel=1, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice24 = Channel=1, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice25 = Channel=1, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice26 = Channel=1, Target=13, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice27 = Channel=1, Target=14, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice28 = Channel=2, Target=0, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice29 = Channel=2, Target=1, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice30 = Channel=2, Target=2, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice31 = Channel=2, Target=3, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice32 = Channel=2, Target=4, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice33 = Channel=2, Target=5, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice34 = Channel=2, Target=6, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice35 = Channel=2, Target=8, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice36 = Channel=2, Target=9, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice37 = Channel=2, Target=10, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice38 = Channel=2, Target=11, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice39 = Channel=2, Target=12, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice40 = Channel=2, Target=13, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice41 = Channel=2, Target=14, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

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 Adapter 3

```
GCFVERSION=2.00;

Begin

 BeginGroup

        PhysicalDevice0 = Channel=0, Target=0, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice1 = Channel=0, Target=1, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice2 = Channel=0, Target=2, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice3 = Channel=0, Target=3, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice4 = Channel=0, Target=4, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice5 = Channel=0, Target=5, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice6 = Channel=0, Target=6, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice7 = Channel=0, Target=8, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice8 = Channel=0, Target=9, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice9 = Channel=0, Target=10, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice10 = Channel=0, Target=11, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice11 = Channel=0, Target=12, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice12 = Channel=0, Target=13, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice13 = Channel=0, Target=14, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;
```

PhysicalDevice14 = Channel=3, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice15 = Channel=3, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice16 = Channel=1, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice17 = Channel=1, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice18 = Channel=1, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice19 = Channel=1, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice20 = Channel=1, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice21 = Channel=1, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice22 = Channel=1, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice23 = Channel=1, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice24 = Channel=1, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice25 = Channel=1, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice26 = Channel=1, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice27 = Channel=1, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice28 = Channel=1, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice29 = Channel=1, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice30 = Channel=3, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice31 = Channel=3, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice32 = Channel=2, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice33 = Channel=2, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice34 = Channel=2, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice35 = Channel=2, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice36 = Channel=2, Target=4, Size=17340MB, State=Online,

```
                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice37 = Channel=2, Target=5, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice38 = Channel=2, Target=6, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice39 = Channel=2, Target=8, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice40 = Channel=2, Target=9, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice41 = Channel=2, Target=10, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice42 = Channel=2, Target=11, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice43 = Channel=2, Target=12, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice44 = Channel=2, Target=13, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice45 = Channel=2, Target=14, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice46 = Channel=3, Target=4, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice47 = Channel=3, Target=5, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        IntermediateDevice0 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=277376MB,

                (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),

                (PhysicalDevice14, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice15, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks);

        IntermediateDevice1 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=277376MB,

                (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),

                (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);

        IntermediateDevice2 = StripeSize=64KB, Raid=0, WriteThrough=1,
Size=277376MB,

                (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),

                (PhysicalDevice42, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice43, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice44, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice45, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice46, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks),

                (PhysicalDevice47, StartAddress=0MB/0Blocks,
Size=17336MB/35504128Blocks);

        LogicalDevice0 = StripeSize=64KB, Raid=12, WriteThrough=1,
Size=832128MB, BIOSGeometry=8GB,

                (IntermediateDevice0, StartAddress=0MB,
Size=277376MB),

                (IntermediateDevice1, StartAddress=0MB,
Size=277376MB),

                (IntermediateDevice2, StartAddress=0MB,
Size=277376MB);

 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 Adapter 4

GCFVERSION=2.00;

Begin

BeginGroup

PhysicalDevice0 = Channel=0, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice1 = Channel=0, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice2 = Channel=0, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice3 = Channel=0, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice4 = Channel=0, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice5 = Channel=0, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice6 = Channel=0, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice7 = Channel=0, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice8 = Channel=0, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice9 = Channel=0, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice10 = Channel=0, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice11 = Channel=0, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice12 = Channel=0, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice13 = Channel=0, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice14 = Channel=1, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice15 = Channel=1, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice16 = Channel=1, Target=2, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice17 = Channel=1, Target=3, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice18 = Channel=1, Target=4, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice19 = Channel=1, Target=5, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice20 = Channel=1, Target=6, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice21 = Channel=1, Target=8, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice22 = Channel=1, Target=9, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice23 = Channel=1, Target=10, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice24 = Channel=1, Target=11, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice25 = Channel=1, Target=12, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice26 = Channel=1, Target=13, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice27 = Channel=1, Target=14, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice28 = Channel=2, Target=0, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice29 = Channel=2, Target=1, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice30 = Channel=2, Target=2, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice31 = Channel=2, Target=3, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice32 = Channel=2, Target=4, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice33 = Channel=2, Target=5, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice34 = Channel=2, Target=6, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice35 = Channel=2, Target=8, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice36 = Channel=2, Target=9, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice37 = Channel=2, Target=10, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice38 = Channel=2, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice39 = Channel=2, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice40 = Channel=2, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice41 = Channel=2, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

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 Adapter 5

```
GCFVERSION=2.00;

Begin

 BeginGroup

        PhysicalDevice0 = Channel=0, Target=0, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice1 = Channel=0, Target=1, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice2 = Channel=0, Target=2, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

        PhysicalDevice3 = Channel=0, Target=3, Size=17340MB,
State=Online,

                TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;
```

PhysicalDevice4 = Channel=0, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice5 = Channel=0, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice6 = Channel=0, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice7 = Channel=0, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice8 = Channel=0, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice9 = Channel=0, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice10 = Channel=0, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice11 = Channel=0, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice12 = Channel=0, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice13 = Channel=0, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice14 = Channel=1, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice15 = Channel=1, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice16 = Channel=1, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice17 = Channel=1, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice18 = Channel=1, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice19 = Channel=1, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice20 = Channel=1, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice21 = Channel=1, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice22 = Channel=1, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice23 = Channel=1, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice24 = Channel=1, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice25 = Channel=1, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice26 = Channel=1, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice27 = Channel=1, Target=14, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice28 = Channel=2, Target=0, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice29 = Channel=2, Target=1, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice30 = Channel=2, Target=2, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice31 = Channel=2, Target=3, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice32 = Channel=2, Target=4, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice33 = Channel=2, Target=5, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice34 = Channel=2, Target=6, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice35 = Channel=2, Target=8, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice36 = Channel=2, Target=9, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice37 = Channel=2, Target=10, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice38 = Channel=2, Target=11, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice39 = Channel=2, Target=12, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice40 = Channel=2, Target=13, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice41 = Channel=2, Target=14, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

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 Adapter 6

GCFVERSION=2.00;

Begin

BeginGroup

PhysicalDevice0 = Channel=0, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice1 = Channel=0, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice2 = Channel=0, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice3 = Channel=0, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice4 = Channel=0, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice5 = Channel=0, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice6 = Channel=0, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice7 = Channel=0, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice8 = Channel=0, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice9 = Channel=0, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice10 = Channel=0, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice11 = Channel=0, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice12 = Channel=0, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice13 = Channel=0, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice14 = Channel=1, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice15 = Channel=1, Target=1, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice16 = Channel=1, Target=2, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice17 = Channel=1, Target=3, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice18 = Channel=1, Target=4, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice19 = Channel=1, Target=5, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice20 = Channel=1, Target=6, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice21 = Channel=1, Target=8, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice22 = Channel=1, Target=9, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice23 = Channel=1, Target=10, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice24 = Channel=1, Target=11, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice25 = Channel=1, Target=12, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice26 = Channel=1, Target=13, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice27 = Channel=1, Target=14, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice28 = Channel=2, Target=0, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice29 = Channel=2, Target=1, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice30 = Channel=2, Target=2, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice31 = Channel=2, Target=3, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice32 = Channel=2, Target=4, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice33 = Channel=2, Target=5, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice34 = Channel=2, Target=6, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice35 = Channel=2, Target=8, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice36 = Channel=2, Target=9, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice37 = Channel=2, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice38 = Channel=2, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice39 = Channel=2, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice40 = Channel=2, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice41 = Channel=2, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

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 Adapter 7

GCFVERSION=2.00;

Begin

BeginGroup

PhysicalDevice0 = Channel=0, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice1 = Channel=0, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice2 = Channel=0, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice3 = Channel=0, Target=3, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice4 = Channel=0, Target=4, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice5 = Channel=0, Target=5, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice6 = Channel=0, Target=6, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice7 = Channel=0, Target=8, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice8 = Channel=0, Target=9, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice9 = Channel=0, Target=10, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice10 = Channel=0, Target=11, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice11 = Channel=0, Target=12, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice12 = Channel=0, Target=13, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice13 = Channel=0, Target=14, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice14 = Channel=1, Target=0, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice15 = Channel=1, Target=1, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice16 = Channel=1, Target=2, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice17 = Channel=1, Target=3, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice18 = Channel=1, Target=4, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice19 = Channel=1, Target=5, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice20 = Channel=1, Target=6, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice21 = Channel=1, Target=8, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice22 = Channel=1, Target=9, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice23 = Channel=1, Target=10, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice24 = Channel=1, Target=11, Size=17340MB,
State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit,
MaxTag=16;

PhysicalDevice25 = Channel=1, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice26 = Channel=1, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice27 = Channel=1, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice28 = Channel=2, Target=0, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice29 = Channel=2, Target=1, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice30 = Channel=2, Target=2, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice31 = Channel=2, Target=3, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice32 = Channel=2, Target=4, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice33 = Channel=2, Target=5, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice34 = Channel=2, Target=6, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice35 = Channel=2, Target=8, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice36 = Channel=2, Target=9, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice37 = Channel=2, Target=10, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice38 = Channel=2, Target=11, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice39 = Channel=2, Target=12, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice40 = Channel=2, Target=13, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

PhysicalDevice41 = Channel=2, Target=14, Size=17340MB, State=Online,

TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;

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
```

Microsoft Windows 2000 Server

Client System Information Report

The system configuration is identical for all four clients.

```
System Information report written at: 10/30/2002 10:59:08 AM
[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 2 Build 2195
OS Manufacturer       Microsoft Corporation
System Name           CLIENT10
System Manufacturer   IBM
System Model          IBM eserver xSeries 220 -[86465AX]-
System Type           X86-based PC
Processor   x86 Family 6 Model 11 Stepping 1 GenuineIntel ~1396 Mhz
Processor   x86 Family 6 Model 11 Stepping 1 GenuineIntel ~1396 Mhz
BIOS Version          IBM BIOS Ver 2.0
Windows Directory     C:\WINNT
System Directory      C:\WINNT\System32
Boot Device           \Device\Harddisk0\Partition1
Locale       United States
User NameCLIENT10\Administrator
Time ZoneEastern Standard Time
Total Physical Memory          785,872 KB
Available Physical Memory      681,280 KB
Total Virtual Memory2,706,932 KB
Available Virtual Memory       2,536,900 KB
Page File Space       1,921,060 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
2          Standard floppy disk controller    OK
4          Direct memory access controller  OK

[Forced Hardware]

Device      PNP Device ID
No Forced Hardware

[I/O]

Address Range         Device      Status
0x0000-0x03AF         PCI bus     OK
0x0000-0x03AF         PCI bus     OK
0x0000-0x03AF         PCI bus     OK
0x0000-0x03AF         Direct memory access controller  OK
0x03B0-0x03BB         PCI bus     OK
0x03B0-0x03BB         S3 Inc. Savage4         OK
0x03BC-0x03BF         PCI bus     OK
0x03C0-0x03DF         PCI bus     OK
0x03C0-0x03DF         S3 Inc. Savage4         OK
0x03E0-0x3FFF         PCI bus     OK
0x2200-0x223F         IBM 10/100 Ethernet Server Adapter          OK
0x3000-0x3FFF         DEC 21152 PCI to PCI bridge     OK
0x3000-0x3FFF         Intel(R) PRO/100+ Dual Port Server Adapter
OK
0x3020-0x303F         Intel(R) PRO/100+ Dual Port Server Adapter #2
OK
0x0A79-0x0A79         ISAPNP Read Data Port           OK
0x0279-0x0279         ISAPNP Read Data Port           OK
0x02F4-0x02F7         ISAPNP Read Data Port           OK
0x002E-0x002F         Motherboard resources           OK
0x0438-0x0439         Motherboard resources           OK
0x0430-0x0437         Motherboard resources           OK
0x0430-0x0437         Not Available          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
0x03F0-0x03F5         Standard floppy disk controller    OK
0x03F7-0x03F7         Standard floppy disk controller    OK
```

0x0378-0x037F Printer Port (LPT1) OK
0x03F8-0x03FF Communications Port (COM1) OK
0x02F8-0x02FF Communications Port (COM2) OK
0x0020-0x0021 Advanced programmable interrupt controller OK
0x00A0-0x00A1 Advanced programmable interrupt controller OK
0x0080-0x008F 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
0x0600-0x0600 Motherboard resources OK
0x0374-0x0375 Motherboard resources OK
0x0377-0x0377 Motherboard resources OK
0x0F50-0x0F58 Motherboard resources OK
0x0700-0x070F Standard Dual Channel PCI IDE Controller 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
0x4000-0xFFFF PCI bus OK
0x4000-0xFFFF DEC 21152 PCI to PCI bridge OK
0x4000-0xFFFF Intel(R) PRO/100+ Dual Port Server Adapter #3 OK
0x5000-0x50FF Adaptec AIC-7892 Ultra160/m PCI SCSI Card OK
0x5100-0x51FF QLogic QLA23xx PCI Fibre Channel Adapter OK
0x4020-0x403F Intel(R) PRO/100+ Dual Port Server Adapter #4 OK

[IRQs]

IRQ Number Device
30 Microsoft ACPI-Compliant System
31 S3 Inc. Savage4
27 IBM 10/100 Ethernet Server Adapter
16 Intel(R) PRO/100+ Dual Port Server Adapter
17 Intel(R) PRO/100+ Dual Port Server Adapter #2
1 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
12 PS/2 Compatible Mouse
6 Standard floppy disk controller
4 Communications Port (COM1)
3 Communications Port (COM2)
8 System CMOS/real time clock
13 Numeric data processor
14 Primary IDE Channel
10 Standard OpenHCD USB Host Controller
28 Adaptec AIC-7892 Ultra160/m PCI SCSI Card
20 QLogic QLA23xx PCI Fibre Channel Adapter
24 Intel(R) PRO/100+ Dual Port Server Adapter #3
25 Intel(R) PRO/100+ Dual Port Server Adapter #4

[Memory]

Range Device Status
0xA0000-0xBFFFF PCI bus OK
0xA0000-0xBFFFF S3 Inc. Savage4 OK
0xF0000000-0xFBFFFFFF PCI bus OK
0xF0000000-0xFBFFFFFF S3 Inc. Savage4 OK
0xFC000000-0xFFFFFFFF PCI bus OK
0xFEB80000-0xFEBFFFFF S3 Inc. Savage4 OK
0xFEB7F000-0xFEB7FFFF IBM 10/100 Ethernet Server Adapter OK
0xFEB40000-0xFEB5FFFF IBM 10/100 Ethernet Server Adapter OK
0xFD000000-0xFE1FFFFF DEC 21152 PCI to PCI bridge OK
0xFBF00000-0xFBFFFFFF DEC 21152 PCI to PCI bridge OK
0xFBF00000-0xFBFFFFFF Intel(R) PRO/100+ Dual Port Server Adapter OK
0xFE000000-0xFE0FFFFF Intel(R) PRO/100+ Dual Port Server Adapter OK
0xFBF01000-0xFBF01FFF Intel(R) PRO/100+ Dual Port Server Adapter #2 OK
0xFE100000-0xFE1FFFFF Intel(R) PRO/100+ Dual Port Server Adapter #2 OK
0xFEB7E000-0xFEB7EFFF Standard OpenHCD USB Host Controller OK
0x30000000-0xECFFFFFF PCI bus OK
0xED000000-0xEFFFFFFF PCI bus OK
0xEFFFF000-0xEFFFFFFF Adaptec AIC-7892 Ultra160/m PCI SCSI Card OK
0xEFFFE000-0xEFFFEFFF QLogic QLA23xx PCI Fibre Channel Adapter OK
0xEE000000-0xEF1FFFFF DEC 21152 PCI to PCI bridge OK
0xECF00000-0xECFFFFFF DEC 21152 PCI to PCI bridge OK
0xECF00000-0xECFFFFFF Intel(R) PRO/100+ Dual Port Server Adapter #3 OK
0xEF000000-0xEF0FFFFF Intel(R) PRO/100+ Dual Port Server Adapter #3 OK
0xECF01000-0xECF01FFF Intel(R) PRO/100+ Dual Port Server Adapter #4 OK
0xEF100000-0xEF1FFFFF Intel(R) PRO/100+ Dual Port Server Adapter #4 OK

[Components]

[Following are sub-categories of this main category]

[Multimedia]

[Following are sub-categories of this main category]

[Audio Codecs]

Codec Manufacturer Description Status File Version Size Creation Date
c:\winnt\system32\iac25_32.ax Intel Corporation Indeo® audio software OK C:\WINNT\System32\IAC25_32.AX 2.05.53 195.00 KB (199,680 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\lhacm.acm Microsoft Corporation OK C:\WINNT\System32\LHACM.ACM 4.4.3385 33.27 KB (34,064 bytes) 12/19/2001 4:33:30 PM
c:\winnt\system32\msg723.acm Microsoft Corporation OK C:\WINNT\System32\MSG723.ACM 4.4.3385 106.77 KB (109,328 bytes) 12/19/2001 4:33:29 PM
c:\winnt\system32\tssoft32.acm DSP GROUP, INC. OK C:\WINNT\System32\TSSOFT32.ACM 1.01 9.27 KB (9,488 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\msgsm32.acm Microsoft Corporation OK C:\WINNT\System32\MSGSM32.ACM 5.00.2134.1 22.27 KB (22,800 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\msg711.acm Microsoft Corporation OK C:\WINNT\System32\MSG711.ACM 5.00.2134.1 10.27 KB (10,512 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\msadp32.acm Microsoft Corporation OK C:\WINNT\System32\MSADP32.ACM 5.00.2134.1 14.77 KB (15,120 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\imaadp32.acm Microsoft Corporation OK C:\WINNT\System32\IMAADP32.ACM 5.00.2134.1 16.27 KB (16,656 bytes) 12/7/1999 7:00:00 AM

[Video Codecs]

Codec Manufacturer Description Status File Version Size Creation Date

c:\winnt\system32\ir50_32.dll Intel Corporation Indeo® video 5.10
OK C:\WINNT\System32\IR50_32.DLL R.5.10.15.2.55
737.50 KB (755,200 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\msh261.drv Microsoft Corporation
OK C:\WINNT\System32\MSH261.DRV 4.4.3385 163.77 KB
(167,696 bytes) 12/19/2001 4:33:29 PM
c:\winnt\system32\msh263.drv Microsoft Corporation
OK C:\WINNT\System32\MSH263.DRV 4.4.3385 252.27 KB
(258,320 bytes) 12/19/2001 4:33:03 PM
c:\winnt\system32\iccvid.dll Radius Inc. OK
C:\WINNT\System32\ICCVID.DLL 1.10.0.6 108.00 KB (110,592
bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\msvidc32.dll Microsoft Corporation
OK C:\WINNT\System32\MSVIDC32.DLL 5.00.2134.1
27.27 KB (27,920 bytes) 12/7/1999 7:00:00 AM
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

[CD-ROM]

Item Value
Drive D:
Description CD-ROM Drive
Media Loaded False
Media Type CD-ROM
Name LITEON CD-ROM LTN486S
Manufacturer (Standard CD-ROM drives)
Status OK
Transfer Rate Not Available
SCSI Target ID 0
PNP Device ID
IDE\CDROMLITEON_CD-ROM_LTN486S_____YUS6___
_\5&326853DD&0&0.0.0

[Sound Device]

Item Value
No sound devices

[Display]

Item Value
Name S3 Inc. Savage4
PNP Device ID
PCI\VEN_5333&DEV_8A22&SUBSYS_01C51014&REV_06\3&267A616A
&0&08
Adapter Type S3 Savage4, S3 compatible
Adapter Description S3 Inc. Savage4
Adapter RAM 8.00 MB (8,388,608 bytes)
Installed Drivers s3sav4.dll
Driver Version 5.01.840.0001
INF File s3sav4.inf (S3Inc section)
Color Planes 1
Color Table Entries 4294967296
Resolution 1024 x 768 x 60 hertz
Bits/Pixel 32

[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&389C1010&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&389C1010&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] Intel(R) PRO/100+ Dual Port Server Adapter
Adapter Type Ethernet 802.3
Product Name Intel(R) PRO/100+ Dual Port Server Adapter
Installed True
PNP Device ID
PCI\VEN_8086&DEV_1229&SUBSYS_10F08086&REV_05\4&273796BB&
0&2048
Last Reset 10/30/2002 5:26:38 AM
Index 0
Service Name E100B
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 00:90:27:E8:6B:7C
Service Name E100B
IRQ Number 16
I/O Port 0x3000-0x3FFF
Driver c:\winnt\system32\drivers\e100bnt5.sys (119056, 5.40.11.0000)

Name [00000001] Intel(R) PRO/100+ Dual Port Server Adapter
Adapter Type Ethernet 802.3
Product Name Intel(R) PRO/100+ Dual Port Server Adapter
Installed True

PNP Device ID
PCI\VEN_8086&DEV_1229&SUBSYS_10F08086&REV_05\4&273796BB&0&2848
Last Reset 10/30/2002 5:26:38 AM
Index 1
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 00:90:27:E8:6B:7D
Service Name E100B
IRQ Number 17
I/O Port 0x3020-0x303F
Driver c:\winnt\system32\drivers\e100bnt5.sys (119056, 5.40.11.0000)

Name [00000002] Intel(R) PRO/100+ Dual Port Server Adapter
Adapter Type Ethernet 802.3
Product Name Intel(R) PRO/100+ Dual Port Server Adapter
Installed True
PNP Device ID
PCI\VEN_8086&DEV_1229&SUBSYS_10F08086&REV_05\4&27ABF15E&0&2038
Last Reset 10/30/2002 5:26:38 AM
Index 2
Service Name E100B
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 00:03:47:0D:AD:B8
Service Name E100B
IRQ Number 24
I/O Port 0x4000-0xFFFF
Driver c:\winnt\system32\drivers\e100bnt5.sys (119056, 5.40.11.0000)

Name [00000003] Intel(R) PRO/100+ Dual Port Server Adapter
Adapter Type Ethernet 802.3
Product Name Intel(R) PRO/100+ Dual Port Server Adapter
Installed True
PNP Device ID
PCI\VEN_8086&DEV_1229&SUBSYS_10F08086&REV_05\4&27ABF15E&0&2838
Last Reset 10/30/2002 5:26:38 AM
Index 3
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 00:03:47:0D:AD:B9
Service Name E100B
IRQ Number 25
I/O Port 0x4020-0x403F
Driver c:\winnt\system32\drivers\e100bnt5.sys (119056, 5.40.11.0000)

Name [00000004] RAS Async Adapter
Adapter Type Not Available
Product Name RAS Async Adapter
Installed True
PNP Device ID Not Available
Last Reset 10/30/2002 5:26:38 AM
Index 4
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 [00000005] WAN Miniport (L2TP)
Adapter Type Not Available
Product Name WAN Miniport (L2TP)
Installed True
PNP Device ID ROOT\MS_L2TPMINIPORT\0000
Last Reset 10/30/2002 5:26:38 AM
Index 5
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 (50800, 5.00.2179.1)

Name [00000006] 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 10/30/2002 5:26:38 AM
Index 6
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 (47856, 5.00.2160.1)

Name [00000007] Direct Parallel
Adapter Type Not Available
Product Name Direct Parallel
Installed True
PNP Device ID ROOT\MS_PTIMINIPORT\0000
Last Reset 10/30/2002 5:26:38 AM
Index 7
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 [00000008] WAN Miniport (IP)
Adapter Type Not Available
Product Name WAN Miniport (IP)
Installed True
PNP Device ID ROOT\MS_NDISWANIP\0000
Last Reset 10/30/2002 5:26:38 AM
Index 8
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 (90096, 5.00.2195.2779)

Name [00000009] IBM 10/100 Ethernet Server Adapter
Adapter Type Ethernet 802.3
Product Name IBM 10/100 Ethernet Server Adapter
Installed True
PNP Device ID
PCI\VEN_8086&DEV_1229&SUBSYS_01F11014&REV_0C\3&267A616A&0&10
Last Reset 10/30/2002 5:26:38 AM
Index 9
Service Name E100B
IP Address 192.168.200.10
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 00:09:6B:98:26:2F
Service Name E100B
IRQ Number 27
I/O Port 0x2200-0x223F
Driver c:\winnt\system32\drivers\e100bnt5.sys (119056, 5.40.11.0000)

[Protocol]

Item Value
Name MSAFD Tcpip [TCP/IP]
ConnectionlessService False
GuaranteesDelivery True
GuaranteesSequencing True
MaximumAddressSize 16 bytes
MaximumMessageSize 0 bytes
MessageOriented False
MinimumAddressSize 16 bytes
PseudoStreamOriented False
SupportsBroadcasting False
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData True
SupportsGracefulClosing True
SupportsGuaranteedBandwidth False
SupportsMulticasting False

Name MSAFD Tcpip [UDP/IP]
ConnectionlessService True
GuaranteesDelivery False
GuaranteesSequencing False
MaximumAddressSize 16 bytes
MaximumMessageSize 65467 bytes
MessageOriented True
MinimumAddressSize 16 bytes
PseudoStreamOriented False
SupportsBroadcasting True
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting True

Name RSVP UDP Service Provider
ConnectionlessService True
GuaranteesDelivery False
GuaranteesSequencing False
MaximumAddressSize 16 bytes
MaximumMessageSize 65467 bytes
MessageOriented True
MinimumAddressSize 16 bytes
PseudoStreamOriented False
SupportsBroadcasting True
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption True
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting True

Name RSVP TCP Service Provider
ConnectionlessService False
GuaranteesDelivery True
GuaranteesSequencing True
MaximumAddressSize 16 bytes
MaximumMessageSize 0 bytes
MessageOriented False
MinimumAddressSize 16 bytes
PseudoStreamOriented False
SupportsBroadcasting False
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption True
SupportsExpeditedData True
SupportsGracefulClosing True
SupportsGuaranteedBandwidth False
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{2E61D224-2FB1-4BC0-BF97-BA2A93755FCF}]
SEQPACKET 6
ConnectionlessService False
GuaranteesDelivery True
GuaranteesSequencing True
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize 20 bytes
PseudoStreamOriented False
SupportsBroadcasting False
SupportsConnectData False
SupportsDisconnectData False

SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{2E61D224-2FB1-4BC0-BF97-BA2A93755FCF}] 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_{8D0D6D8E-E12C-474B-BAC7-29B4ACA73888}] 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_{8D0D6D8E-E12C-474B-BAC7-29B4ACA73888}] 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_{BC11CA4F-388B-44A8-93A9-94E4F54A360D}] 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_{BC11CA4F-388B-44A8-93A9-94E4F54A360D}] 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_{D2CC1391-4038-4C20-8961-7F8DF8817DB9}] 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_{D2CC1391-4038-4C20-8961-7F8DF8817DB9}] 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

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{BF79F0BE-46DB-40AA-A5F8-DB451495E9A7}] 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_{BF79F0BE-46DB-40AA-A5F8-DB451495E9A7}] 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_{A8022C73-405E-4DA5-8990-28705F55E576}] 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_{A8022C73-405E-4DA5-8990-28705F55E576}] 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_{72185BBE-1D07-44F8-8D5F-CA273C34BEE0}] 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_{72185BBE-1D07-44F8-8D5F-CA273C34BEE0}] 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

[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 5.00.2195.2871
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 (62416, 5.00.2195.2780)

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 (62416, 5.00.2195.2780)

[Parallel]

Item Value
Name LPT1
PNP Device ID ACPI\PNP0400\1

[Storage]

[Following are sub-categories of this main category]

[Drives]

Item Value
Drive A:
Description 3 1/2 Inch Floppy Drive

Drive C:
Description Local Fixed Disk
Compressed False
File System NTFS
Size 16.94 GB (18,186,059,776 bytes)
Free Space 13.91 GB (14,939,439,104 bytes)
Volume Name
Volume Serial Number 28657D53
Partition Disk #0, Partition #0
Partition Size 16.94 GB (18,186,061,824 bytes)
Starting Offset 32256 bytes
Drive Description Disk drive
Drive Manufacturer (Standard disk drives)
Drive Model IBM-PSG ST318404LC !# 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 0
Drive SectorsPerTrack 63
Drive Size 18194319360 bytes
Drive TotalCylinders 2212
Drive TotalSectors 35535780
Drive TotalTracks 564060
Drive TracksPerCylinder 255

Drive E:
Description Network Connection
Provider Name \\192.168.200.99\c$

[SCSI]

Item Value
Name Adaptec AIC-7892 Ultra160/m PCI SCSI Card
Caption Adaptec AIC-7892 Ultra160/m PCI SCSI Card
Driver adpu160m
Status OK
PNP Device ID
PCI\VEN_9005&DEV_008F&SUBSYS_008F1014&REV_02\3&13C0B0C5&0&18
Device ID
PCI\VEN_9005&DEV_008F&SUBSYS_008F1014&REV_02\3&13C0B0C5&0&18
Device Map Not Available
Index Not Available
Max Number Controlled Not Available
IRQ Number 28
I/O Port 0x5000-0x50FF
Driver c:\winnt\system32\drivers\adpu160m.sys (64432, v3.10a)

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\3&13C0B0C5&0&28
Device ID
PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\3&13C0B0C5&0&28
Device Map Not Available
Index Not Available
Max Number Controlled Not Available
IRQ Number 20
I/O Port 0x5100-0x51FF
Driver c:\winnt\system32\drivers\ql2300.sys (440012, 8.2.0 Beta 3 (W2K VI))

Name QLogic VI Kernel Agent driver
Caption QLogic VI Kernel Agent driver
Driver qlvika
Status OK
PNP Device ID ROOT\SCSIADAPTER\0000
Device ID ROOT\SCSIADAPTER\0000
Device Map Not Available
Index Not Available
Max Number Controlled Not Available
Driver c:\winnt\system32\drivers\qlvika.sys (49916, 1.00.14 (W2K))

[Printing]

Name Port Name Server Name
No printing information

[Problem Devices]

Device PNP Device ID Error Code
Not Available ACPI\IBM37D1\4&389C1010&0 28

[USB]

Device PNP Device ID
Standard OpenHCD USB Host Controller
PCI\VEN_1166&DEV_0220&SUBSYS_02201166&REV_04\3&267A616A&0&7A
USB Root Hub USB\ROOT_HUB\4&372644EA&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
adpu160m adpu160m c:\winnt\system32\drivers\adpu160m.sys Kernel Driver True Boot 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
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
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
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
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
gnindis     cLAN NDIS Driver        c:\winnt\system32\drivers\gnindis.sys
Kernel Driver          False       Manual     Stopped OK          Normal
False       False
gnivia      cLAN VIA Driver         c:\winnt\system32\drivers\gnivia.sys
Kernel Driver          False       Manual     Stopped OK          Normal
False       False
gpc         Generic Packet Classifier
c:\winnt\system32\drivers\msgpc.sys                Kernel Driver          True
Manual      Running     OK          Normal     False   True
i8042prt    i8042 Keyboard and PS/2 Mouse Port Driver
c:\winnt\system32\drivers\i8042prt.sys             Kernel Driver          True
System      Running     OK          Normal     False   True
ini910u     ini910u     Not Available                  Kernel Driver          False
Disabled    Stopped     OK          Normal     False   False
intelide    IntelIde    Not Available                  Kernel Driver          False
Disabled    Stopped     OK          Normal     False   False
ipfilterdriver          IP Traffic Filter Driver
c:\winnt\system32\drivers\ipfltdrv.sys             Kernel Driver          False
Manual      Stopped     OK          Normal     False   False
ipinip      IP in IP Tunnel Driverc:\winnt\system32\drivers\ipinip.sys
Kernel Driver          False       Manual     Stopped OK          Normal
False       False
ipnat       IP Network Address Translator   c:\winnt\system32\drivers\ipnat.sys
Kernel Driver          False       Manual     Stopped OK          Normal
False       False
ipsec       IPSEC driver            c:\winnt\system32\drivers\ipsec.sys
Kernel Driver          True        Manual     Running OK          Normal
False       True
ipsraidn    ipsraidn    Not Available                  Kernel Driver          False
Disabled    Stopped     OK          Normal     False   False
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
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
openhci   Microsoft USB Open Host Controller Driver
c:\winnt\system32\drivers\openhci.sys     Kernel Driver         True
Manual    Running   OK          Normal    False       True
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
rdpdr     Terminal Server Device Redirector Driver
c:\winnt\system32\drivers\rdpdr.sys       Kernel Driver         True
Manual    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
s3inc S3Inc c:\winnt\system32\drivers\s3sav4m.sys Kernel
Driver True Manual Running OK Ignore False
True
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
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
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
sym_hi sym_hi Not Available Kernel Driver False
Disabled Stopped OK Normal False False
tcpip TCP/IP Protocol Driver c:\winnt\system32\drivers\tcpip.sys
Kernel Driver True System Running OK Normal
False True
tdasync TDASYNC c:\winnt\system32\drivers\tdasync.sys
Kernel Driver False Manual Stopped OK Ignore
False False
tdipx TDIPX c:\winnt\system32\drivers\tdipx.sys Kernel
Driver False Manual Stopped OK Ignore False
False
tdnetb TDNETB c:\winnt\system32\drivers\tdnetb.sys Kernel
Driver False Manual Stopped OK Ignore False
False
tdpipe TDPIPE c:\winnt\system32\drivers\tdpipe.sys Kernel
Driver False Manual Stopped OK Ignore False
False
tdspx TDSPX c:\winnt\system32\drivers\tdspx.sys Kernel
Driver False Manual Stopped OK Ignore False
False
tdtcp TDTCP c:\winnt\system32\drivers\tdtcp.sys Kernel
Driver False Manual Stopped OK Ignore False
False
termdd Terminal Device Driver
c:\winnt\system32\drivers\termdd.sys Kernel Driver True
Auto Running OK Normal False True
tga tga Not Available Kernel Driver False
System Stopped OK Ignore False False
udfs Udfs c:\winnt\system32\drivers\udfs.sys File System
Driver False Disabled Stopped OK Normal False
False
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
usbhub Microsoft USB Standard Hub Driver
c:\winnt\system32\drivers\usbhub.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

[Environment Variables]

Variable Value User Name
ComSpec %SystemRoot%\system32\cmd.exe <SYSTEM>
Os2LibPath %SystemRoot%\system32\os2\dll; <SYSTEM>
Path
%SystemRoot%\system32;%SystemRoot%;%SystemRoot%\System32\Wbem;
C:\Program Files\Microsoft SQL Server\80\Tools\BINN <SYSTEM>
windir %SystemRoot% <SYSTEM>
OS Windows_NT <SYSTEM>
PROCESSOR_ARCHITECTURE x86 <SYSTEM>
PROCESSOR_LEVEL 6 <SYSTEM>
PROCESSOR_IDENTIFIER x86 Family 6 Model 11 Stepping 1,
GenuineIntel <SYSTEM>
PROCESSOR_REVISION 0b01 <SYSTEM>
NUMBER_OF_PROCESSORS 2 <SYSTEM>
PATHEXT
.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH <SYSTEM>
TEMP %SystemRoot%\TEMP <SYSTEM>
TMP %SystemRoot%\TEMP <SYSTEM>
TEMP %USERPROFILE%\Local Settings\Temp
CLIENT10\Administrator
TMP %USERPROFILE%\Local Settings\Temp
CLIENT10\Administrator

[Jobs]

[Following are sub-categories of this main category]

[Print]

Document Size Owner Notify Status Time Submitted
Start Time Until Time Elapsed Time Pages Printed Job ID
Priority Parameters Driver Name Print Processor Host Print
Queue Data Type Name
Unknown Unknown Unknown Unknown Unknown Unknown Unknown
Unknown Unknown Unknown Unknown Unknown Unknown Unknown
Unknown Unknown Unknown Unknown

[Network Connections]

Local Name Remote Name Type Status User Name
E: \\192.168.200.99\c$ Disk OK
CLIENT10\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 180 11 204800 1413120 10/30/2002 10:27:03 AM 5.00.2195.2901 44.27 KB (45,328 bytes) 12/7/1999 7:00:00 AM
csrss.exe Not Available 204 13 Not Available Not Available 10/30/2002 10:27:07 AM Unknown Unknown Unknown
winlogon.exe c:\winnt\system32\winlogon.exe 200 13 204800 1413120 10/30/2002 10:27:10 AM 5.00.2195.2953 173.77 KB (177,936 bytes) 12/7/1999 7:00:00 AM
services.exe c:\winnt\system32\services.exe 256 9 204800 1413120 10/30/2002 10:27:11 AM 5.00.2195.2780 86.77 KB (88,848 bytes) 12/7/1999 7:00:00 AM
lsass.exe c:\winnt\system32\lsass.exe 268 9 204800 1413120 10/30/2002 10:27:11 AM 5.00.2195.2964 32.77 KB (33,552 bytes) 12/7/1999 7:00:00 AM
svchost.exe c:\winnt\system32\svchost.exe 420 8 204800 1413120 10/30/2002 10:27:13 AM 5.00.2134.1 7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM
msdtc.exe c:\winnt\system32\msdtc.exe 452 8 204800 1413120 10/30/2002 10:27:15 AM 1999.9.3421.3 6.77 KB (6,928 bytes) 12/19/2001 12:38:54 PM
svchost.exe c:\winnt\system32\svchost.exe 576 8 204800 1413120 10/30/2002 10:27:16 AM 5.00.2134.1 7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM
rsys.exe Not Available 708 8 Not Available Not Available 10/30/2002 10:27:18 AM Unknown Unknown Unknown
rshsvc.exe c:\winnt\system32\rshsvc.exe 656 8 204800 1413120 10/30/2002 10:27:30 AM Not Available 53.50 KB (54,784 bytes) 1/21/2002 1:37:26 PM
tcpsvcs.exe c:\winnt\system32\tcpsvcs.exe 748 8 204800 1413120 10/30/2002 10:27:30 AM 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 784 8 204800 1413120 10/30/2002 10:27:31 AM 1.50.1085.0029 192.08 KB (196,685 bytes) 12/20/2001 9:39:12 AM
inetinfo.exe c:\winnt\system32\inetsrv\inetinfo.exe 808 8 204800 1413120 10/30/2002 10:27:31 AM 5.00.0984 14.27 KB (14,608 bytes) 12/20/2001 9:39:58 AM
dfssvc.exe c:\winnt\system32\dfssvc.exe 904 8 204800 1413120 10/30/2002 10:27:36 AM 5.00.2195.2841 88.27 KB (90,384 bytes) 12/20/2001 9:38:41 AM
explorer.exe c:\winnt\explorer.exe 1068 8 204800 1413120 10/30/2002 10:28:05 AM 5.00.3315.2846 237.27 KB (242,960 bytes) 12/20/2001 9:39:07 AM
svchost.exe c:\winnt\system32\svchost.exe 1116 8 204800 1413120 10/30/2002 10:28:07 AM 5.00.2134.1 7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM
mmc.exe c:\winnt\system32\mmc.exe 1200 8 204800 1413120 10/30/2002 10:57:52 AM 5.00.2195.2301 589.27 KB (603,408 bytes) 12/20/2001 9:38:48 AM
rsvp.exe c:\winnt\system32\rsvp.exe 1264 8 204800 1413120 10/30/2002 10:58:54 AM 5.00.2167.1 172.77 KB (176,912 bytes) 12/7/1999 7:00:00 AM

[Loaded Modules]

Name Version Size File Date Manufacturer Path
traffic.dll 5.00.2139.1 30.77 KB (31,504 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\traffic.dll
rsvp.exe 5.00.2167.1 172.77 KB (176,912 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\rsvp.exe
wbemprox.dll 1.50.1085.0045 40.08 KB (41,040 bytes) 12/20/2001 9:39:12 AM Microsoft Corporation c:\winnt\system32\wbem\wbemprox.dll
mlang.dll 5.00.3103.1000 510.77 KB (523,024 bytes) 12/20/2001 9:38:48 AM Microsoft Corporation c:\winnt\system32\mlang.dll
rassapi.dll 5.00.2188.1 14.27 KB (14,608 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\rassapi.dll
adsnt.dll 5.00.2195.2778 195.27 KB (199,952 bytes) 12/20/2001 9:38:37 AM Microsoft Corporation c:\winnt\system32\adsnt.dll
dbghelp.dll 5.00.2195.2104 159.27 KB (163,088 bytes) 5/4/2001 1:05:02 PM Microsoft Corporation c:\winnt\system32\dbghelp.dll
localsec.dll 5.00.2195.2130 230.27 KB (235,792 bytes) 12/20/2001 9:38:48 AM Microsoft Corporation c:\winnt\system32\localsec.dll
devmgr.dll 5.00.2166.1 215.77 KB (220,944 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\devmgr.dll
filemgmt.dll 5.00.2195.2165 287.27 KB (294,160 bytes) 12/20/2001 9:38:44 AM Microsoft Corporation c:\winnt\system32\filemgmt.dll
pdh.dll 5.00.2195.2739 147.77 KB (151,312 bytes) 12/20/2001 9:39:00 AM Microsoft Corporation c:\winnt\system32\pdh.dll
smlogcfg.dll 5.00.2195.2485 273.27 KB (279,824 bytes) 12/20/2001 9:39:04 AM 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 5.00.2177.1 312.27 KB (319,760 bytes) 12/19/2001 4:33:26 PM Microsoft Corporation c:\program files\common files\microsoft shared\msinfo\msinfo32.dll
riched20.dll 5.30.23.1205 421.27 KB (431,376 bytes) 12/20/2001 9:39:01 AM 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 5.00.2175.1 151.27 KB (154,896 bytes) 12/7/1999 7:00:00 AM 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 5.00.2195.2104 41.77 KB (42,768 bytes) 12/20/2001 9:38:41 AM Executive Software International, Inc. c:\winnt\system32\dfrgsnap.dll
dmdskres.dll 2195.2104.297.3 119.50 KB (122,368 bytes) 12/20/2001 9:38:42 AM Microsoft Corp., VERITAS Software c:\winnt\system32\dmdskres.dll
dmutil.dll 2195.2104.297.3 42.27 KB (43,280 bytes) 12/20/2001 9:38:42 AM VERITAS Software Corp. c:\winnt\system32\dmutil.dll

ntmsapi.dll5.00.1948.1 51.77 KB (53,008 bytes) 12/20/2001 9:38:57 AM Microsoft Corporation c:\winnt\system32\ntmsapi.dll
dmdskmgr.dll 2215.2215.297.3 160.27 KB (164,112 bytes) 12/20/2001 9:38:42 AM 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 5.00.2178.1 815.27 KB (834,832 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\mmcndmgr.dll
mmc.exe 5.00.2195.2301 589.27 KB (603,408 bytes) 12/20/2001 9:38:48 AM Microsoft Corporation c:\winnt\system32\mmc.exe
tapisrv.dll 5.00.2195.2955 169.27 KB (173,328 bytes) 12/20/2001 9:39:05 AM Microsoft Corporation c:\winnt\system32\tapisrv.dll
wininet.dll 5.00.3315.1000 456.77 KB (467,728 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\system32\wininet.dll
netplwiz.dll 5.00.2195.2370 169.77 KB (173,840 bytes) 12/20/2001 9:38:56 AM 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
comdlg32.dll 5.00.3103.1000 236.77 KB (242,448 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\comdlg32.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 5.00.2195.2104 54.77 KB (56,080 bytes) 12/20/2001 9:38:49 AM Microsoft Corporation c:\winnt\system32\mprui.dll
urlmon.dll 5.00.3315.1000 441.27 KB (451,856 bytes) 12/20/2001 9:39:05 AM Microsoft Corporation c:\winnt\system32\urlmon.dll
faxshell.dll5.00.2134.1 8.27 KB (8,464 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\faxshell.dll
msacm32.dll 5.00.2134.1 65.27 KB (66,832 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msacm32.dll
avifil32.dll5.00.2134.1 76.27 KB (78,096 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\avifil32.dll
msvfw32.dll 5.00.2134.1 113.77 KB (116,496 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msvfw32.dll
docprop2.dll 5.00.2178.1 297.77 KB (304,912 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\docprop2.dll
linkinfo.dll5.00.2134.1 15.77 KB (16,144 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\linkinfo.dll
browselc.dll 5.00.3315.2846 34.50 KB (35,328 bytes) 12/20/2001 9:38:38 AM Microsoft Corporation c:\winnt\system32\browselc.dll
msi.dll 2.0.2600.0 1.90 MB (1,991,168 bytes) 12/20/2001 9:38:51 AM Microsoft Corporation c:\winnt\system32\msi.dll
powrprof.dll 5.00.3103.1000 13.27 KB (13,584 bytes) 12/20/2001 9:39:00 AM Microsoft Corporation c:\winnt\system32\powrprof.dll
batmeter.dll 5.00.3103.1000 20.27 KB (20,752 bytes) 12/20/2001 9:38:38 AM Microsoft Corporation c:\winnt\system32\batmeter.dll
stobject.dll5.00.2195.2780 79.27 KB (81,168 bytes) 12/20/2001 9:39:04 AM Microsoft Corporation c:\winnt\system32\stobject.dll
webcheck.dll 5.00.3315.1000 251.77 KB (257,808 bytes) 12/20/2001 9:39:06 AM Microsoft Corporation c:\winnt\system32\webcheck.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.dll5.00.2920.0000 55.77 KB (57,104 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\mydocs.dll
hhsetup.dll4.74.8702 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 5.00.3315.2846 788.77 KB (807,696 bytes) 12/20/2001 9:38:38 AM Microsoft Corporation c:\winnt\system32\browseui.dll
shdocvw.dll 5.00.3315.2879 1.05 MB (1,104,144 bytes) 12/20/2001 9:39:03 AM Microsoft Corporation c:\winnt\system32\shdocvw.dll
explorer.exe 5.00.3315.2846 237.27 KB (242,960 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\explorer.exe
dfssvc.exe 5.00.2195.2841 88.27 KB (90,384 bytes) 12/20/2001 9:38:41 AM Microsoft Corporation c:\winnt\system32\dfssvc.exe
ntfsdrv.dll 5.00.0984 36.77 KB (37,648 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\ntfsdrv.dll
iislog.dll 5.00.0984 75.27 KB (77,072 bytes) 12/20/2001 9:39:58 AM Microsoft Corporation c:\winnt\system32\inetsrv\iislog.dll
httpext.dll 0.9.3940.21 435.27 KB (445,712 bytes) 12/20/2001 9:39:57 AM Microsoft Corporation c:\winnt\system32\inetsrv\httpext.dll
rpcproxy.dll 5.00.2195.2780 16.27 KB (16,656 bytes) 12/20/2001 9:39:48 AM Microsoft Corporation c:\winnt\system32\rpcproxy\rpcproxy.dll
fpexedll.dll 4.0.2.4324 20.06 KB (20,541 bytes) 12/20/2001 9:39:46 AM Microsoft Corporation c:\program files\common files\microsoft shared\web server extensions\40\bin\fpexedll.dll
md5filt.dll 5.00.0984 32.77 KB (33,552 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\md5filt.dll
aqueue.dll 5.00.0984 312.77 KB (320,272 bytes) 12/20/2001 9:39:48 AM Microsoft Corporation c:\winnt\system32\inetsrv\aqueue.dll
gzip.dll 5.00.0984 30.27 KB (30,992 bytes) 12/20/2001 9:39:57 AM Microsoft Corporation c:\winnt\system32\inetsrv\gzip.dll
compfilt.dll 5.00.0984 22.77 KB (23,312 bytes) 12/20/2001 9:39:57 AM Microsoft Corporation c:\winnt\system32\inetsrv\compfilt.dll
seo.dll 5.00.0984 229.27 KB (234,768 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\seo.dll
sspifilt.dll 5.00.0984 43.27 KB (44,304 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\sspifilt.dll
iscomlog.dll 5.00.0984 24.77 KB (25,360 bytes) 12/20/2001 9:39:58 AM Microsoft Corporation c:\winnt\system32\inetsrv\iscomlog.dll
lonsint.dll 5.00.0984 11.77 KB (12,048 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\lonsint.dll
inetsloc.dll5.00.0984 20.27 KB (20,752 bytes) 12/20/2001 9:38:46 AM Microsoft Corporation c:\winnt\system32\inetsloc.dll

w3svc.dll 5.00.0984 343.27 KB (351,504 bytes) 12/20/2001 9:40:00 AM Microsoft Corporation c:\winnt\system32\inetsrv\w3svc.dll
staxmem.dll 5.00.0984 8.27 KB (8,464 bytes) 12/19/2001 12:39:33 PM Microsoft Corporation c:\winnt\system32\staxmem.dll
exstrace.dll 5.00.0984 13.77 KB (14,096 bytes) 12/19/2001 12:39:35 PM Microsoft Corporation c:\winnt\system32\exstrace.dll
rwnh.dll 5.00.0984 10.77 KB (11,024 bytes) 12/19/2001 12:41:05 PM Microsoft Corporation c:\winnt\system32\rwnh.dll
fcachdll.dll 5.00.0984 43.77 KB (44,816 bytes) 12/19/2001 12:41:05 PM Microsoft Corporation c:\winnt\system32\fcachdll.dll
iisfecnv.dll 5.00.0984 7.27 KB (7,440 bytes) 12/19/2001 12:39:34 PM Microsoft Corporation c:\winnt\system32\inetsrv\iisfecnv.dll
isatq.dll 5.00.0984 60.27 KB (61,712 bytes) 12/20/2001 9:39:58 AM Microsoft Corporation c:\winnt\system32\inetsrv\isatq.dll
infocomm.dll 5.00.0984 238.27 KB (243,984 bytes) 12/20/2001 9:39:58 AM Microsoft Corporation c:\winnt\system32\inetsrv\infocomm.dll
smtpsvc.dll 5.00.0984 420.27 KB (430,352 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\smtpsvc.dll
security.dll 5.00.2154.1 5.77 KB (5,904 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\security.dll
svcext.dll 5.00.0984 39.77 KB (40,720 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\svcext.dll
admexs.dll 5.00.0984 27.77 KB (28,432 bytes) 12/20/2001 9:39:56 AM Microsoft Corporation c:\winnt\system32\inetsrv\admexs.dll
wamreg.dll 5.00.0984 45.77 KB (46,864 bytes) 12/20/2001 9:40:00 AM Microsoft Corporation c:\winnt\system32\inetsrv\wamreg.dll
metadata.dll 5.00.0984 68.77 KB (70,416 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\metadata.dll
iismap.dll 5.00.0984 55.77 KB (57,104 bytes) 12/20/2001 9:38:45 AM Microsoft Corporation c:\winnt\system32\iismap.dll
nsepm.dll 5.00.0984 43.27 KB (44,304 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\nsepm.dll
admwprox.dll 5.00.0984 31.77 KB (32,528 bytes) 12/19/2001 12:39:35 PM Microsoft Corporation c:\winnt\system32\admwprox.dll
coadmin.dll 5.00.0984 39.27 KB (40,208 bytes) 12/20/2001 9:39:57 AM Microsoft Corporation c:\winnt\system32\inetsrv\coadmin.dll
iisadmin.dll 5.00.0984 15.27 KB (15,632 bytes) 12/20/2001 9:39:58 AM Microsoft Corporation c:\winnt\system32\inetsrv\iisadmin.dll
rpcref.dll 5.00.0984 4.27 KB (4,368 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\rpcref.dll
iisrtl.dll 5.00.0984 119.77 KB (122,640 bytes) 12/20/2001 9:38:45 AM Microsoft Corporation c:\winnt\system32\iisrtl.dll
inetinfo.exe 5.00.0984 14.27 KB (14,608 bytes) 12/20/2001 9:39:58 AM Microsoft Corporation c:\winnt\system32\inetsrv\inetinfo.exe
netui1.dll 5.00.2134.1 210.27 KB (215,312 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\netui1.dll
netui0.dll 5.00.2134.1 70.27 KB (71,952 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\netui0.dll
ntlanman.dll 5.00.2157.1 35.27 KB (36,112 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\ntlanman.dll
ntmarta.dll 5.00.2195.2862 98.77 KB (101,136 bytes) 12/20/2001 9:38:57 AM Microsoft Corporation c:\winnt\system32\ntmarta.dll
perfos.dll 5.00.2155.1 21.27 KB (21,776 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\perfos.dll
provthrd.dll 1.50.1085.0000 68.07 KB (69,708 bytes) 12/19/2001 4:33:18 PM Microsoft Corporation c:\winnt\system32\wbem\provthrd.dll
ntevt.dll 1.50.1085.0000 192.06 KB (196,669 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\wbem\ntevt.dll
psapi.dll 5.00.2134.1 28.27 KB (28,944 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\psapi.dll
framedyn.dll 1.50.1085.0000 164.05 KB (167,992 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\wbem\framedyn.dll
cimwin32.dll 1.50.1085.0038 1.02 MB (1,073,232 bytes) 12/20/2001 9:39:11 AM Microsoft Corporation c:\winnt\system32\wbem\cimwin32.dll
wbemsvc.dll 1.50.1085.0007 40.07 KB (41,036 bytes) 12/20/2001 9:39:12 AM Microsoft Corporation c:\winnt\system32\wbem\wbemsvc.dll
wbemess.dll 1.50.1085.0039 364.07 KB (372,804 bytes) 12/20/2001 9:39:12 AM Microsoft Corporation c:\winnt\system32\wbem\wbemess.dll
fastprox.dll 1.50.1085.0037 144.08 KB (147,536 bytes) 12/20/2001 9:39:11 AM Microsoft Corporation c:\winnt\system32\wbem\fastprox.dll
wbemcore.dll 1.50.1085.0036 628.07 KB (643,140 bytes) 12/20/2001 9:39:12 AM Microsoft Corporation c:\winnt\system32\wbem\wbemcore.dll
wbemcomn.dll 1.50.1085.0021 692.07 KB (708,675 bytes) 12/20/2001 9:39:11 AM Microsoft Corporation c:\winnt\system32\wbem\wbemcomn.dll
winmgmt.exe 1.50.1085.0029 192.08 KB (196,685 bytes) 12/20/2001 9:39:12 AM Microsoft Corporation c:\winnt\system32\wbem\winmgmt.exe
simptcp.dll 5.00.2134.1 19.27 KB (19,728 bytes) 12/19/2001 12:38:49 PM 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
rshsvc.dll Not Available 18.00 KB (18,432 bytes) 1/21/2002 1:37:26 PM Not Available c:\winnt\system32\rshsvc.dll
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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 5.00.2195.2779 457.27 KB (468,240 bytes) 12/20/2001 9:38:56 AM Microsoft Corporation c:\winnt\system32\netshell.dll
netman.dll 5.00.2195.2779 89.27 KB (91,408 bytes) 12/20/2001 9:38:56 AM Microsoft Corporation c:\winnt\system32\netman.dll
rasdlg.dll 5.00.2195.2671 514.27 KB (526,608 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\rasdlg.dll
netcfgx.dll 5.00.2195.2228 534.77 KB (547,600 bytes) 12/20/2001 9:38:55 AM Microsoft Corporation c:\winnt\system32\netcfgx.dll
rasmans.dll 5.00.2195.2728 147.27 KB (150,800 bytes) 12/20/2001 9:39:01 AM Microsoft Corporation c:\winnt\system32\rasmans.dll

ntmsdba.dll 5.00.2195.2779 167.27 KB (171,280 bytes) 12/20/2001 9:38:57 AM 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
ntmssvc.dll 5.00.2195.2779 391.27 KB (400,656 bytes) 12/20/2001 9:38:57 AM Microsoft Corporation c:\winnt\system32\ntmssvc.dll
es.dll 2000.2.3471.1 222.27 KB (227,600 bytes) 12/20/2001 9:38:44 AM Microsoft Corporation c:\winnt\system32\es.dll
mtxoci.dll 2000.2.3471.1 101.77 KB (104,208 bytes) 12/20/2001 9:38:55 AM Microsoft Corporation c:\winnt\system32\mtxoci.dll
resutils.dll 5.00.2195.2787 39.77 KB (40,720 bytes) 12/20/2001 9:39:01 AM Microsoft Corporation c:\winnt\system32\resutils.dll
clusapi.dll 5.00.2195.2104 54.27 KB (55,568 bytes) 12/20/2001 9:38:40 AM Microsoft Corporation c:\winnt\system32\clusapi.dll
msvcp50.dll 5.00.7051 552.50 KB (565,760 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msvcp50.dll
xolehlp.dll 1999.9.3421.3 17.27 KB (17,680 bytes) 12/19/2001 12:38:55 PM Microsoft Corporation c:\winnt\system32\xolehlp.dll
msdtclog.dll 1999.9.3421.3 89.77 KB (91,920 bytes) 12/19/2001 12:38:54 PM Microsoft Corporation c:\winnt\system32\msdtclog.dll
mtxclu.dll 2000.2.3471.1 51.27 KB (52,496 bytes) 12/20/2001 9:38:55 AM Microsoft Corporation c:\winnt\system32\mtxclu.dll
msdtcprx.dll 2000.2.3471.1 665.77 KB (681,744 bytes) 12/20/2001 9:38:49 AM Microsoft Corporation c:\winnt\system32\msdtcprx.dll
txfaux.dll 2000.2.3471.1 374.27 KB (383,248 bytes) 12/20/2001 9:39:05 AM Microsoft Corporation c:\winnt\system32\txfaux.dll
msdtctm.dll 2000.2.3471.1 1.07 MB (1,120,528 bytes) 12/20/2001 9:38:50 AM Microsoft Corporation c:\winnt\system32\msdtctm.dll
msdtc.exe 1999.9.3421.3 6.77 KB (6,928 bytes) 12/19/2001 12:38:54 PM Microsoft Corporation c:\winnt\system32\msdtc.exe
rpcss.dll 5.00.2195.2815 231.27 KB (236,816 bytes) 12/20/2001 9:39:02 AM Microsoft Corporation c:\winnt\system32\rpcss.dll
svchost.exe 5.00.2134.1 7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\svchost.exe
dssenh.dll 5.00.2195.2228 142.77 KB (146,192 bytes) 12/20/2001 9:39:50 AM Microsoft Corporation c:\winnt\system32\dssenh.dll
oakley.dll 5.00.2195.2785 378.77 KB (387,856 bytes) 12/20/2001 9:38:58 AM Microsoft Corporation c:\winnt\system32\oakley.dll
mfc42u.dll 6.00.8665.0 972.05 KB (995,384 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\mfc42u.dll
polagent.dll 5.00.2183.1 108.27 KB (110,864 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\polagent.dll
scecli.dll 5.00.2195.2780 105.27 KB (107,792 bytes) 12/20/2001 9:39:02 AM Microsoft Corporation c:\winnt\system32\scecli.dll
atl.dll 3.00.8449 57.56 KB (58,938 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\atl.dll
certcli.dll 5.00.2195.2778 130.77 KB (133,904 bytes) 12/20/2001 9:38:39 AM Microsoft Corporation c:\winnt\system32\certcli.dll
esent.dll 6.0.3940.13 1.08 MB (1,135,376 bytes) 12/20/2001 9:38:44 AM Microsoft Corporation c:\winnt\system32\esent.dll
ntdsatq.dll 5.00.2195.2878 31.27 KB (32,016 bytes) 12/20/2001 9:38:57 AM Microsoft Corporation c:\winnt\system32\ntdsatq.dll
ntdsa.dll 5.00.2195.2899 990.77 KB (1,014,544 bytes) 12/20/2001 9:38:56 AM Microsoft Corporation c:\winnt\system32\ntdsa.dll
kdcsvc.dll 5.00.2195.2878 137.77 KB (141,072 bytes) 12/20/2001 9:38:48 AM Microsoft Corporation c:\winnt\system32\kdcsvc.dll
sfmapi.dll 5.00.2134.1 38.77 KB (39,696 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\sfmapi.dll
rassfm.dll 5.00.2195.2671 21.27 KB (21,776 bytes) 12/20/2001 9:39:01 AM Microsoft Corporation c:\winnt\system32\rassfm.dll
mpr.dll 5.00.2195.2779 53.27 KB (54,544 bytes) 12/20/2001 9:38:49 AM Microsoft Corporation c:\winnt\system32\mpr.dll
rsabase.dll 5.00.2195.2228 128.27 KB (131,344 bytes) 5/4/2001 1:05:02 PM Microsoft Corporation c:\winnt\system32\rsabase.dll
schannel.dll 5.00.2195.2922 138.27 KB (141,584 bytes) 5/4/2001 1:05:02 PM Microsoft Corporation c:\winnt\system32\schannel.dll
netlogon.dll 5.00.2195.2865 357.77 KB (366,352 bytes) 12/20/2001 9:38:56 AM Microsoft Corporation c:\winnt\system32\netlogon.dll
msv1_0.dll 5.00.2195.2900 111.77 KB (114,448 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msv1_0.dll
kerberos.dll 5.00.2195.2913 198.77 KB (203,536 bytes) 12/20/2001 9:38:48 AM Microsoft Corporation c:\winnt\system32\kerberos.dll
msprivs.dll 5.00.2154.1 41.50 KB (42,496 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msprivs.dll
samsrv.dll 5.00.2195.2918 369.77 KB (378,640 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\samsrv.dll
lsasrv.dll 5.00.2195.2964 492.77 KB (504,592 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\lsasrv.dll
lsass.exe 5.00.2195.2964 32.77 KB (33,552 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\lsass.exe
ntlsapi.dll 5.00.2134.1 6.77 KB (6,928 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\ntlsapi.dll
wmicore.dll 5.00.2195.2842 72.27 KB (74,000 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\system32\wmicore.dll
trkwks.dll 5.00.2166.1 88.77 KB (90,896 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\trkwks.dll
seclogon.dll 5.00.2135.1 15.77 KB (16,144 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\seclogon.dll
psbase.dll 5.00.2195.2779 111.77 KB (114,448 bytes) 12/20/2001 9:39:00 AM Microsoft Corporation c:\winnt\system32\psbase.dll
cryptsvc.dll 5.00.2181.1 61.77 KB (63,248 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\cryptsvc.dll

cryptdll.dll 5.00.2135.1 41.27 KB (42,256 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\cryptdll.dll
wkssvc.dll 5.00.2195.2780 95.27 KB (97,552 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\wkssvc.dll
srvsvc.dll 5.00.2195.2904 79.27 KB (81,168 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 2195.2778.297.3 11.77 KB (12,048 bytes) 12/20/2001 9:38:42 AM VERITAS Software Corp. c:\winnt\system32\dmserver.dll
lmhsvc.dll 5.00.2195.2778 9.77 KB (10,000 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\lmhsvc.dll
eventlog.dll 5.00.2178.1 43.77 KB (44,816 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\eventlog.dll
ntdsapi.dll 5.00.2195.2661 55.77 KB (57,104 bytes) 12/20/2001 9:38:57 AM Microsoft Corporation c:\winnt\system32\ntdsapi.dll
scesrv.dll 5.00.2195.2780 226.27 KB (231,696 bytes) 12/20/2001 9:39:02 AM Microsoft Corporation c:\winnt\system32\scesrv.dll
umpnpmgr.dll 5.00.2182.1 86.27 KB (88,336 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\umpnpmgr.dll
services.exe 5.00.2195.2780 86.77 KB (88,848 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\services.exe
cscui.dll 5.00.2195.2959 228.27 KB (233,744 bytes) 12/20/2001 9:38:41 AM Microsoft Corporation c:\winnt\system32\cscui.dll
rasadhlp.dll 5.00.2168.1 7.27 KB (7,440 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\rasadhlp.dll
wshnetbs.dll 5.00.2134.1 7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\wshnetbs.dll
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
clbcatq.dll 2000.2.3471.1 496.77 KB (508,688 bytes) 12/20/2001 9:38:39 AM Microsoft Corporation c:\winnt\system32\clbcatq.dll
dhcpcsvc.dll 5.00.2195.2778 88.77 KB (90,896 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\dhcpcsvc.dll
tapi32.dll 5.00.2182.1 123.27 KB (126,224 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\tapi32.dll
rasman.dll 5.00.2195.2780 54.77 KB (56,080 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\rasman.dll
rasapi32.dll 5.00.2195.2671 189.77 KB (194,320 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 5.00.2195.2842 127.27 KB (130,320 bytes) 12/20/2001 9:38:36 AM Microsoft Corporation c:\winnt\system32\adsldpc.dll
activeds.dll 5.00.2195.2778 174.77 KB (178,960 bytes) 12/20/2001 9:38:31 AM Microsoft Corporation c:\winnt\system32\activeds.dll
oleaut32.dll 2.40.4517 612.27 KB (626,960 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\oleaut32.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
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
iphlpapi.dll 5.00.2173.2 67.77 KB (69,392 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\iphlpapi.dll
rnr20.dll 5.00.2195.2871 35.77 KB (36,624 bytes) 12/20/2001 9:39:01 AM Microsoft Corporation c:\winnt\system32\rnr20.dll
wshtcpip.dll 5.00.2195.2104 17.27 KB (17,680 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\system32\wshtcpip.dll
msafd.dll 5.00.2195.2779 106.77 KB (109,328 bytes) 12/20/2001 9:38:49 AM Microsoft Corporation c:\winnt\system32\msafd.dll
mswsock.dll 5.00.2195.2871 62.77 KB (64,272 bytes) 12/20/2001 9:38:55 AM Microsoft Corporation c:\winnt\system32\mswsock.dll
winspool.drv 5.00.2195.2780 109.77 KB (112,400 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 5.00.2195.2780 53.77 KB (55,056 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\system32\wlnotify.dll
cscdll.dll 5.00.2195.2401 98.27 KB (100,624 bytes) 12/20/2001 9:38:41 AM Microsoft Corporation c:\winnt\system32\cscdll.dll
lz32.dll 5.00.2134.1 9.77 KB (10,000 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\lz32.dll
version.dll 5.00.2134.1 15.77 KB (16,144 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\version.dll
rsaenh.dll 5.00.2195.2228 130.77 KB (133,904 bytes) 12/20/2001 9:39:50 AM 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 5.00.2195.2887 969.77 KB (993,040 bytes) 12/20/2001 9:39:00 AM Microsoft Corporation c:\winnt\system32\ole32.dll
imagehlp.dll 5.00.2195.2778 125.77 KB (128,784 bytes) 5/4/2001 1:05:02 PM Microsoft Corporation c:\winnt\system32\imagehlp.dll
msasn1.dll 5.00.2134.1 51.27 KB (52,496 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msasn1.dll
crypt32.dll 5.131.2195.2833 451.27 KB (462,096 bytes) 12/20/2001 9:38:40 AM Microsoft Corporation c:\winnt\system32\crypt32.dll
wintrust.dll 5.131.2195.2779 162.27 KB (166,160 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\system32\wintrust.dll
shlwapi.dll 5.00.3315.1000 282.77 KB (289,552 bytes) 12/20/2001 9:39:04 AM Microsoft Corporation c:\winnt\system32\shlwapi.dll

shell32.dll 5.00.3315.2902 2.25 MB (2,359,056 bytes) 12/20/2001 9:39:03 AM Microsoft Corporation c:\winnt\system32\shell32.dll
msgina.dll 5.00.2195.2779 324.27 KB (332,048 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msgina.dll
comctl32.dll 5.81 537.77 KB (550,672 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\comctl32.dll
setupapi.dll 5.00.2195.2663 555.77 KB (569,104 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
winsta.dll 5.00.2195.2386 36.77 KB (37,648 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\system32\winsta.dll
wsock32.dll 5.00.2195.2871 21.27 KB (21,776 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\system32\wsock32.dll
dnsapi.dll 5.00.2195.2785 130.77 KB (133,904 bytes) 12/20/2001 9:38:42 AM Microsoft Corporation c:\winnt\system32\dnsapi.dll
wldap32.dll 5.00.2195.2797 125.27 KB (128,272 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\system32\wldap32.dll
ws2help.dll 5.00.2134.1 17.77 KB (18,192 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\ws2help.dll
ws2_32.dll 5.00.2195.2780 67.77 KB (69,392 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\system32\ws2_32.dll
samlib.dll 5.00.2195.2780 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 5.00.2195.2808 303.77 KB (311,056 bytes) 12/20/2001 9:38:55 AM Microsoft Corporation c:\winnt\system32\netapi32.dll
profmap.dll 5.00.2181.1 29.27 KB (29,968 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\profmap.dll
secur32.dll 5.00.2195.2862 46.77 KB (47,888 bytes) 12/20/2001 9:39:02 AM Microsoft Corporation c:\winnt\system32\secur32.dll
sfc.dll 5.00.2195.2896 92.11 KB (94,320 bytes) 12/20/2001 9:39:02 AM Microsoft Corporation c:\winnt\system32\sfc.dll
nddeapi.dll 5.00.2137.1 15.27 KB (15,632 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\nddeapi.dll
userenv.dll 5.00.2195.2780 361.77 KB (370,448 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\userenv.dll
user32.dll 5.00.2195.2821 392.77 KB (402,192 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\user32.dll
gdi32.dll 5.00.2195.2778 228.77 KB (234,256 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\gdi32.dll
rpcrt4.dll 5.00.2195.2832 437.27 KB (447,760 bytes) 12/20/2001 9:39:02 AM Microsoft Corporation c:\winnt\system32\rpcrt4.dll
advapi32.dll 5.00.2195.2867 351.77 KB (360,208 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\advapi32.dll
kernel32.dll 5.00.2195.2778 714.77 KB (731,920 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\kernel32.dll
msvcrt.dll 6.10.8924.0 284.05 KB (290,869 bytes) 5/4/2001 1:05:02 PM Microsoft Corporation c:\winnt\system32\msvcrt.dll
winlogon.exe 5.00.2195.2953 173.77 KB (177,936 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\winlogon.exe
sfcfiles.dll 5.00.2195.2967 948.27 KB (971,024 bytes) 12/20/2001 9:39:02 AM Microsoft Corporation c:\winnt\system32\sfcfiles.dll
ntdll.dll 5.00.2195.2779 478.77 KB (490,256 bytes) 5/4/2001 1:05:02 PM Microsoft Corporation c:\winnt\system32\ntdll.dll
smss.exe 5.00.2195.2901 44.27 KB (45,328 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 Stopped Manual 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
Computer Browser Browser Stopped Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
Indexing Service cisvc Stopped Manual Share Process c:\winnt\system32\cisvc.exe Normal LocalSystem 0
ClipBook ClipSrv Stopped Manual Own Process c:\winnt\system32\clipsrv.exe Normal LocalSystem 0
Distributed File System Dfs Running Auto Own Process c:\winnt\system32\dfssvc.exe Normal LocalSystem 0
DHCP Client Dhcp Stopped Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
DHCP Server DHCPServer Stopped Manual Share Process c:\winnt\system32\tcpsvcs.exe Normal LocalSystem 0
Logical Disk Manager Administrative Service dmadmin Stopped Manual Share Process c:\winnt\system32\dmadmin.exe /com Normal LocalSystem 0
Logical Disk Managerdmserver Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
DNS Client Dnscache Stopped Manual 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
cLAN Connection Manager GniConMgr Stopped Manual Own Process c:\winnt\system32\gnconmgr.exe 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 Stopped Manual Own Process c:\winnt\system32\llssrv.exe Normal LocalSystem 0
TCP/IP NetBIOS Helper Service LmHosts Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
Messenger Messenger Stopped Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
NetMeeting Remote Desktop Sharing mnmsrvc Stopped Manual Own Process c:\winnt\system32\mnmsrvc.exe Normal LocalSystem 0
Distributed Transaction Coordinator MSDTC Running Auto Own Process c:\winnt\system32\msdtc.exe Normal LocalSystem 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 Stopped Manual 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
Remote Shell Service RshSvc Running Auto Own Process c:\winnt\system32\rshsvc.exe 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 Stopped Manual 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 Running Auto Share Process c:\winnt\system32\inetsrv\inetinfo.exe Normal LocalSystem 0
Print Spooler Spooler Stopped Manual Own Process c:\winnt\system32\spoolsv.exe Normal LocalSystem 0
Performance Logs and Alerts SysmonLog Stopped Manual Own Process c:\winnt\system32\smlogsvc.exe Normal LocalSystem 0
Telephony TapiSrv Running Manual Share Process c:\winnt\system32\svchost.exe -k tapisrv Normal LocalSystem 0
Terminal Services TermService Stopped Disabled Own Process c:\winnt\system32\termsrv.exe Normal LocalSystem 0
Telnet TlntSvr Stopped Manual Own Process c:\winnt\system32\tlntsvr.exe Normal LocalSystem 0
Distributed Link Tracking Server TrkSvr Stopped Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
Distributed Link Tracking Client TrkWks Running Auto Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
Uninterruptible Power Supply UPS Stopped Manual Own Process c:\winnt\system32\ups.exe Normal LocalSystem 0
Utility Manager UtilMan Stopped Manual Own Process c:\winnt\system32\utilman.exe Normal LocalSystem 0
Windows Time W32Time Stopped Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
World Wide Web Publishing Service W3SVC Running Auto Share Process c:\winnt\system32\inetsrv\inetinfo.exe Normal LocalSystem 0
Windows Management Instrumentation WinMgmt Running Auto Own Process c:\winnt\system32\wbem\winmgmt.exe Ignore LocalSystem 0
Windows Management Instrumentation Driver Extensions Wmi Running Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

[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 CLIENT10\Administrator:Accessories
CLIENT10\Administrator
Accessories\Accessibility
CLIENT10\Administrator:Accessories\Accessibility
CLIENT10\Administrator
Accessories\Entertainment
CLIENT10\Administrator:Accessories\Entertainment
CLIENT10\Administrator
Accessories\System Tools CLIENT10\Administrator:Accessories\System
Tools CLIENT10\Administrator
Administrative Tools CLIENT10\Administrator:Administrative Tools
CLIENT10\Administrator
Benchcraft CLIENT10\Administrator:Benchcraft
CLIENT10\Administrator
Startup CLIENT10\Administrator:Startup
CLIENT10\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 mspaint.exe

[Internet Explorer 5]

[Following are sub-categories of this main category]

[Summary]

Item Value
Version 5.00.3315.1000
Build 53315.1000
Product ID 51876-270-7822934-05782
Application Path C:\Program Files\Internet Explorer
Language English (United States)
Active Printer Not Available

Cipher Strength 168-bit
Content Advisor Disabled
IEAK Install No

[File Versions]

File Version Size Date Path Company
advapi32.dll 5.0.2195.2867 352 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
advpack.dll 5.0.3103.1000 87 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
browselc.dll 5.0.3315.2846 35 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
browseui.dll 5.0.3315.2846 789 KB 5/4/2001 12:05:02 PM
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 5.81.3103.1000 538 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
crypt32.dll 5.131.2195.2833 451 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
enhsig.dll <File Missing> Not Available Not Available
Not Available Not Available
iemigrat.dll <File Missing> Not Available Not
Available Not Available Not Available
iesetup.dll 5.0.3103.1000 57 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
iexplore.exe 5.0.2920.0 59 KB 12/7/1999 7:00:00 AM
C:\Program Files\Internet Explorer Microsoft Corporation
imagehlp.dll 5.0.2195.2778 126 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
imghelp.dll <File Missing> Not Available Not
Available Not Available Not Available
inseng.dll 5.0.3103.1000 72 KB 5/4/2001 12:05:02 PM
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 5.1.0.5907 476 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
jsproxy.dll 5.0.2920.0 13 KB 12/7/1999 7:00:00 AM
C:\WINNT\system32 Microsoft Corporation
msaahtml.dll <File Missing> Not Available Not
Available Not Available Not Available
mshtml.dll 5.0.3315.2870 2290 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
msjava.dll 5.0.3802.0 923 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
msoss.dll <File Missing> Not Available Not Available
Not Available Not Available
msxml.dll 8.0.5718.1 493 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
occache.dll 5.0.3103.1000 86 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
ole32.dll 5.0.2195.2887 970 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
oleaut32.dll 2.40.4517.0 612 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
olepro32.dll 5.0.4517.0 160 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
rsabase.dll 5.0.2195.2228 128 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
rsaenh.dll 5.0.2195.2228 131 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
rsapi32.dll <File Missing> Not Available Not Available
Not Available Not Available
rsasig.dll <File Missing> Not Available Not Available
Not Available Not Available
schannel.dll 5.1.2195.0 138 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
shdoc401.dll <File Missing> Not Available Not
Available Not Available Not Available
shdocvw.dll 5.0.3315.2879 1078 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
shell32.dll 5.0.3315.2902 2304 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
shlwapi.dll 5.0.3315.1000 283 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation

url.dll 5.0.2920.0 82 KB 12/7/1999 7:00:00 AM
C:\WINNT\system32 Microsoft Corporation
urlmon.dll 5.0.3315.1000 441 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
vbscript.dll 5.1.0.5907 428 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
webcheck.dll 5.0.3315.1000 252 KB 5/4/2001 12:05:02 PM
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 5.0.3315.1000 457 KB 5/4/2001 12:05:02 PM
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 5.131.2195.2779 162 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
wsock.vxd <File Missing> Not Available Not Available
Not Available Not Available
wsock32.dll 5.0.2195.2871 21 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
wsock32n.dll <File Missing> Not Available Not
Available Not Available Not Available

[Connectivity]

Item Value
Connection Preference Never dial
EnableHttp1.1 1
ProxyHttp1.1 0

LAN Settings

AutoConfigProxy wininet.dll
AutoProxyDetectMode Enabled
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 17343 MB
Available Disk Space 14247 MB
Maximum Cache Size 541 MB
Available Cache Size 542 MB

[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
Administrator Administrator 12/20/2001 to 11/26/2101
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 Medium-low
Trusted sites Low
Internet Medium
Restricted sites High
System Information report written at: 10/30/2002 10:59:08 AM
[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 2 Build 2195
OS Manufacturer Microsoft Corporation
System Name CLIENT10
System Manufacturer IBM
System Model IBM eserver xSeries 220 -[86465AX]-
System Type X86-based PC
Processor x86 Family 6 Model 11 Stepping 1 GenuineIntel ~1396 Mhz
Processor x86 Family 6 Model 11 Stepping 1 GenuineIntel ~1396 Mhz
BIOS Version IBM BIOS Ver 2.0
Windows Directory C:\WINNT
System Directory C:\WINNT\System32
Boot Device \Device\Harddisk0\Partition1
Locale United States
User Name CLIENT10\Administrator
Time Zone Eastern Standard Time
Total Physical Memory 785,872 KB
Available Physical Memory 681,280 KB
Total Virtual Memory 2,706,932 KB
Available Virtual Memory 2,536,900 KB
Page File Space 1,921,060 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
2 Standard floppy disk controller OK
4 Direct memory access controller OK

[Forced Hardware]

Device PNP Device ID
No Forced Hardware

[I/O]

Address Range Device Status
0x0000-0x03AF PCI bus OK
0x0000-0x03AF PCI bus OK
0x0000-0x03AF PCI bus OK
0x0000-0x03AF Direct memory access controller OK
0x03B0-0x03BB PCI bus OK
0x03B0-0x03BB S3 Inc. Savage4 OK
0x03BC-0x03BF PCI bus OK
0x03C0-0x03DF PCI bus OK
0x03C0-0x03DF S3 Inc. Savage4 OK
0x03E0-0x3FFF PCI bus OK
0x2200-0x223F IBM 10/100 Ethernet Server Adapter OK
0x3000-0x3FFF DEC 21152 PCI to PCI bridge OK
0x3000-0x3FFF Intel(R) PRO/100+ Dual Port Server Adapter OK
0x3020-0x303F Intel(R) PRO/100+ Dual Port Server Adapter #2 OK
0x0A79-0x0A79 ISAPNP Read Data Port OK
0x0279-0x0279 ISAPNP Read Data Port OK
0x02F4-0x02F7 ISAPNP Read Data Port OK
0x002E-0x002F Motherboard resources OK
0x0438-0x0439 Motherboard resources OK
0x0430-0x0437 Motherboard resources OK
0x0430-0x0437 Not Available 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
0x03F0-0x03F5 Standard floppy disk controller OK
0x03F7-0x03F7 Standard floppy disk controller OK
0x0378-0x037F Printer Port (LPT1) OK
0x03F8-0x03FF Communications Port (COM1) OK
0x02F8-0x02FF Communications Port (COM2) OK
0x0020-0x0021 Advanced programmable interrupt controller OK
0x00A0-0x00A1 Advanced programmable interrupt controller OK
0x0080-0x008F 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
0x0600-0x0600 Motherboard resources OK
0x0374-0x0375 Motherboard resources OK
0x0377-0x0377 Motherboard resources OK
0x0F50-0x0F58 Motherboard resources OK
0x0700-0x070F Standard Dual Channel PCI IDE Controller 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
0x4000-0xFFFF PCI bus OK
0x4000-0xFFFF DEC 21152 PCI to PCI bridge OK
0x4000-0xFFFF Intel(R) PRO/100+ Dual Port Server Adapter #3 OK
0x5000-0x50FF Adaptec AIC-7892 Ultra160/m PCI SCSI Card OK
0x5100-0x51FF QLogic QLA23xx PCI Fibre Channel Adapter OK
0x4020-0x403F Intel(R) PRO/100+ Dual Port Server Adapter #4 OK

[IRQs]

IRQ Number Device
30 Microsoft ACPI-Compliant System
31 S3 Inc. Savage4
27 IBM 10/100 Ethernet Server Adapter
16 Intel(R) PRO/100+ Dual Port Server Adapter
17 Intel(R) PRO/100+ Dual Port Server Adapter #2
1 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
12 PS/2 Compatible Mouse
6 Standard floppy disk controller
4 Communications Port (COM1)
3 Communications Port (COM2)
8 System CMOS/real time clock
13 Numeric data processor
14 Primary IDE Channel
10 Standard OpenHCD USB Host Controller
28 Adaptec AIC-7892 Ultra160/m PCI SCSI Card
20 QLogic QLA23xx PCI Fibre Channel Adapter
24 Intel(R) PRO/100+ Dual Port Server Adapter #3
25 Intel(R) PRO/100+ Dual Port Server Adapter #4

[Memory]

Range Device Status
0xA0000-0xBFFFF PCI bus OK
0xA0000-0xBFFFF S3 Inc. Savage4 OK
0xF0000000-0xFBFFFFFF PCI bus OK
0xF0000000-0xFBFFFFFF S3 Inc. Savage4 OK
0xFC000000-0xFFFFFFFF PCI bus OK
0xFEB80000-0xFEBFFFFF S3 Inc. Savage4 OK
0xFEB7F000-0xFEB7FFFF IBM 10/100 Ethernet Server Adapter OK
0xFEB40000-0xFEB5FFFF IBM 10/100 Ethernet Server Adapter OK
0xFD000000-0xFE1FFFFF DEC 21152 PCI to PCI bridge OK
0xFBF00000-0xFBFFFFFF DEC 21152 PCI to PCI bridge OK
0xFBF00000-0xFBFFFFFF Intel(R) PRO/100+ Dual Port Server Adapter OK
0xFE000000-0xFE0FFFFF Intel(R) PRO/100+ Dual Port Server Adapter OK
0xFBF01000-0xFBF01FFF Intel(R) PRO/100+ Dual Port Server Adapter #2 OK
0xFE100000-0xFE1FFFFF Intel(R) PRO/100+ Dual Port Server Adapter #2 OK
0xFEB7E000-0xFEB7EFFF Standard OpenHCD USB Host Controller OK
0x30000000-0xECFFFFFF PCI bus OK
0xED000000-0xEFFFFFFF PCI bus OK
0xEFFFF000-0xEFFFFFFF Adaptec AIC-7892 Ultra160/m PCI SCSI Card OK
0xEFFFE000-0xEFFFEFFF QLogic QLA23xx PCI Fibre Channel Adapter OK
0xEE000000-0xEF1FFFFF DEC 21152 PCI to PCI bridge OK
0xECF00000-0xECFFFFFF DEC 21152 PCI to PCI bridge OK
0xECF00000-0xECFFFFFF Intel(R) PRO/100+ Dual Port Server Adapter #3 OK
0xEF000000-0xEF0FFFFF Intel(R) PRO/100+ Dual Port Server Adapter #3 OK
0xECF01000-0xECF01FFF Intel(R) PRO/100+ Dual Port Server Adapter #4 OK
0xEF100000-0xEF1FFFFF Intel(R) PRO/100+ Dual Port Server Adapter #4 OK

[Components]

[Following are sub-categories of this main category]

[Multimedia]

[Following are sub-categories of this main category]

[Audio Codecs]

Codec Manufacturer Description Status File Version Size Creation Date
c:\winnt\system32\iac25_32.ax Intel Corporation Indeo® audio software OK C:\WINNT\System32\IAC25_32.AX 2.05.53 195.00 KB (199,680 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\lhacm.acm Microsoft Corporation OK C:\WINNT\System32\LHACM.ACM 4.4.3385 33.27 KB (34,064 bytes) 12/19/2001 4:33:30 PM
c:\winnt\system32\msg723.acm Microsoft Corporation OK C:\WINNT\System32\MSG723.ACM 4.4.3385 106.77 KB (109,328 bytes) 12/19/2001 4:33:29 PM
c:\winnt\system32\tssoft32.acm DSP GROUP, INC. OK C:\WINNT\System32\TSSOFT32.ACM 1.01 9.27 KB (9,488 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\msgsm32.acm Microsoft Corporation OK C:\WINNT\System32\MSGSM32.ACM 5.00.2134.1 22.27 KB (22,800 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\msg711.acm Microsoft Corporation OK C:\WINNT\System32\MSG711.ACM 5.00.2134.1 10.27 KB (10,512 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\msadp32.acm Microsoft Corporation OK C:\WINNT\System32\MSADP32.ACM 5.00.2134.1 14.77 KB (15,120 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\imaadp32.acm Microsoft Corporation OK C:\WINNT\System32\IMAADP32.ACM 5.00.2134.1 16.27 KB (16,656 bytes) 12/7/1999 7:00:00 AM

[Video Codecs]

Codec Manufacturer Description Status File Version Size Creation Date
c:\winnt\system32\ir50_32.dll Intel Corporation Indeo® video 5.10 OK C:\WINNT\System32\IR50_32.DLL R.5.10.15.2.55 737.50 KB (755,200 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\msh261.drv Microsoft Corporation OK C:\WINNT\System32\MSH261.DRV 4.4.3385 163.77 KB (167,696 bytes) 12/19/2001 4:33:29 PM
c:\winnt\system32\msh263.drv Microsoft Corporation OK C:\WINNT\System32\MSH263.DRV 4.4.3385 252.27 KB (258,320 bytes) 12/19/2001 4:33:03 PM
c:\winnt\system32\iccvid.dll Radius Inc. OK C:\WINNT\System32\ICCVID.DLL 1.10.0.6 108.00 KB (110,592 bytes) 12/7/1999 7:00:00 AM
c:\winnt\system32\msvidc32.dll Microsoft Corporation OK C:\WINNT\System32\MSVIDC32.DLL 5.00.2134.1 27.27 KB (27,920 bytes) 12/7/1999 7:00:00 AM
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

[CD-ROM]

Item Value
Drive D:
Description CD-ROM Drive
Media Loaded False
Media Type CD-ROM
Name LITEON CD-ROM LTN486S
Manufacturer (Standard CD-ROM drives)
Status OK
Transfer Rate Not Available
SCSI Target ID 0
PNP Device ID IDE\CDROMLITEON_CD-ROM_LTN486S_____YUS6___\5&326853DD&0&0.0.0

[Sound Device]

Item Value
No sound devices

[Display]

Item Value
Name S3 Inc. Savage4
PNP Device ID PCI\VEN_5333&DEV_8A22&SUBSYS_01C51014&REV_06\3&267A616A&0&08
Adapter Type S3 Savage4, S3 compatible
Adapter Description S3 Inc. Savage4
Adapter RAM 8.00 MB (8,388,608 bytes)
Installed Drivers s3sav4.dll
Driver Version 5.01.840.0001
INF File s3sav4.inf (S3Inc section)
Color Planes 1
Color Table Entries 4294967296
Resolution 1024 x 768 x 60 hertz
Bits/Pixel 32

[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&389C1010&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&389C1010&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] Intel(R) PRO/100+ Dual Port Server Adapter
Adapter Type Ethernet 802.3
Product Name Intel(R) PRO/100+ Dual Port Server Adapter
Installed True
PNP Device ID
PCI\VEN_8086&DEV_1229&SUBSYS_10F08086&REV_05\4&273796BB&0&2048
Last Reset 10/30/2002 5:26:38 AM
Index 0
Service Name E100B
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 00:90:27:E8:6B:7C
Service Name E100B
IRQ Number 16
I/O Port 0x3000-0x3FFF
Driver c:\winnt\system32\drivers\e100bnt5.sys (119056, 5.40.11.0000)

Name [00000001] Intel(R) PRO/100+ Dual Port Server Adapter
Adapter Type Ethernet 802.3
Product Name Intel(R) PRO/100+ Dual Port Server Adapter
Installed True
PNP Device ID
PCI\VEN_8086&DEV_1229&SUBSYS_10F08086&REV_05\4&273796BB&0&2848
Last Reset 10/30/2002 5:26:38 AM
Index 1
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 00:90:27:E8:6B:7D
Service Name E100B
IRQ Number 17
I/O Port 0x3020-0x303F
Driver c:\winnt\system32\drivers\e100bnt5.sys (119056, 5.40.11.0000)

Name [00000002] Intel(R) PRO/100+ Dual Port Server Adapter
Adapter Type Ethernet 802.3
Product Name Intel(R) PRO/100+ Dual Port Server Adapter
Installed True
PNP Device ID
PCI\VEN_8086&DEV_1229&SUBSYS_10F08086&REV_05\4&27ABF15E&0&2038
Last Reset 10/30/2002 5:26:38 AM
Index 2
Service Name E100B
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 00:03:47:0D:AD:B8
Service Name E100B
IRQ Number 24
I/O Port 0x4000-0xFFFF
Driver c:\winnt\system32\drivers\e100bnt5.sys (119056, 5.40.11.0000)

Name [00000003] Intel(R) PRO/100+ Dual Port Server Adapter
Adapter Type Ethernet 802.3
Product Name Intel(R) PRO/100+ Dual Port Server Adapter
Installed True
PNP Device ID
PCI\VEN_8086&DEV_1229&SUBSYS_10F08086&REV_05\4&27ABF15E&0&2838
Last Reset 10/30/2002 5:26:38 AM
Index 3
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 00:03:47:0D:AD:B9
Service Name E100B
IRQ Number 25
I/O Port 0x4020-0x403F
Driver c:\winnt\system32\drivers\e100bnt5.sys (119056, 5.40.11.0000)

Name [00000004] RAS Async Adapter
Adapter Type Not Available
Product Name RAS Async Adapter
Installed True
PNP Device ID Not Available
Last Reset 10/30/2002 5:26:38 AM
Index 4
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 [00000005] WAN Miniport (L2TP)
Adapter Type Not Available
Product Name WAN Miniport (L2TP)
Installed True
PNP Device ID ROOT\MS_L2TPMINIPORT\0000
Last Reset 10/30/2002 5:26:38 AM
Index 5
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 (50800, 5.00.2179.1)

Name [00000006] 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 10/30/2002 5:26:38 AM
Index 6
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 (47856, 5.00.2160.1)

Name [00000007] Direct Parallel
Adapter Type Not Available
Product Name Direct Parallel
Installed True
PNP Device ID ROOT\MS_PTIMINIPORT\0000
Last Reset 10/30/2002 5:26:38 AM
Index 7
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 [00000008] WAN Miniport (IP)
Adapter Type Not Available
Product Name WAN Miniport (IP)
Installed True
PNP Device ID ROOT\MS_NDISWANIP\0000
Last Reset 10/30/2002 5:26:38 AM
Index 8
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 (90096, 5.00.2195.2779)

Name [00000009] IBM 10/100 Ethernet Server Adapter
Adapter Type Ethernet 802.3
Product Name IBM 10/100 Ethernet Server Adapter
Installed True
PNP Device ID
PCI\VEN_8086&DEV_1229&SUBSYS_01F11014&REV_0C\3&267A616A&0&10
Last Reset 10/30/2002 5:26:38 AM
Index 9
Service Name E100B
IP Address 192.168.200.10
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 00:09:6B:98:26:2F
Service Name E100B
IRQ Number 27
I/O Port 0x2200-0x223F
Driver c:\winnt\system32\drivers\e100bnt5.sys (119056, 5.40.11.0000)

[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_{2E61D224-2FB1-4BC0-BF97-BA2A93755FCF}] 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_{2E61D224-2FB1-4BC0-BF97-BA2A93755FCF}] 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_{8D0D6D8E-E12C-474B-BAC7-29B4ACA73888}] 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_{8D0D6D8E-E12C-474B-BAC7-29B4ACA73888}] 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_{BC11CA4F-388B-44A8-93A9-94E4F54A360D}] 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_{BC11CA4F-388B-44A8-93A9-94E4F54A360D}] 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_{D2CC1391-4038-4C20-8961-7F8DF8817DB9}] 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_{D2CC1391-4038-4C20-8961-7F8DF8817DB9}] 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

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{BF79F0BE-46DB-40AA-A5F8-DB451495E9A7}] 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_{BF79F0BE-46DB-40AA-A5F8-DB451495E9A7}] 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_{A8022C73-405E-4DA5-8990-28705F55E576}] 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_{A8022C73-405E-4DA5-8990-28705F55E576}] 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_{72185BBE-1D07-44F8-8D5F-CA273C34BEE0}] SEQPACKET 5
ConnectionlessService False
GuaranteesDelivery True
GuaranteesSequencing True
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes

MessageOriented True
MinimumAddressSize 20 bytes
PseudoStreamOriented False
SupportsBroadcasting False
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{72185BBE-1D07-44F8-8D5F-CA273C34BEE0}]
DATAGRAM 5
ConnectionlessService True
GuaranteesDelivery False
GuaranteesSequencing False
MaximumAddressSize 20 bytes
MaximumMessageSize 64000 bytes
MessageOriented True
MinimumAddressSize 20 bytes
PseudoStreamOriented False
SupportsBroadcasting True
SupportsConnectData False
SupportsDisconnectData False
SupportsEncryption False
SupportsExpeditedData False
SupportsGracefulClosing False
SupportsGuaranteedBandwidth False
SupportsMulticasting False

[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 5.00.2195.2871
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 (62416, 5.00.2195.2780)

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 (62416, 5.00.2195.2780)

[Parallel]

Item Value
Name LPT1
PNP Device ID ACPI\PNP0400\1

[Storage]

[Following are sub-categories of this main category]

[Drives]

Item Value
Drive A:
Description 3 1/2 Inch Floppy Drive

Drive C:
Description Local Fixed Disk
Compressed False
File System NTFS
Size 16.94 GB (18,186,059,776 bytes)
Free Space 13.91 GB (14,939,439,104 bytes)
Volume Name
Volume Serial Number 28657D53
Partition Disk #0, Partition #0
Partition Size 16.94 GB (18,186,061,824 bytes)
Starting Offset 32256 bytes
Drive Description Disk drive
Drive Manufacturer (Standard disk drives)
Drive Model IBM-PSG ST318404LC !# 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 0
Drive SectorsPerTrack 63
Drive Size 18194319360 bytes
Drive TotalCylinders 2212
Drive TotalSectors 35535780
Drive TotalTracks 564060
Drive TracksPerCylinder 255

Drive E:
Description Network Connection
Provider Name \\192.168.200.99\c$

[SCSI]

Item Value
Name Adaptec AIC-7892 Ultra160/m PCI SCSI Card
Caption Adaptec AIC-7892 Ultra160/m PCI SCSI Card
Driver adpu160m
Status OK
PNP Device ID
PCI\VEN_9005&DEV_008F&SUBSYS_008F1014&REV_02\3&13C0B0C5&0&18
Device ID
PCI\VEN_9005&DEV_008F&SUBSYS_008F1014&REV_02\3&13C0B0C5&0&18
Device Map Not Available
Index Not Available
Max Number Controlled Not Available
IRQ Number 28
I/O Port 0x5000-0x50FF
Driver c:\winnt\system32\drivers\adpu160m.sys (64432, v3.10a)

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\3&13C0B0C5&0&28
Device ID
PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\3&13C0B0C5&0&28
Device Map Not Available
Index Not Available
Max Number Controlled Not Available
IRQ Number 20
I/O Port 0x5100-0x51FF
Driver c:\winnt\system32\drivers\ql2300.sys (440012, 8.2.0 Beta 3 (W2K VI))

Name QLogic VI Kernel Agent driver
Caption QLogic VI Kernel Agent driver
Driver qlvika
Status OK
PNP Device ID ROOT\SCSIADAPTER\0000
Device ID ROOT\SCSIADAPTER\0000
Device Map Not Available
Index Not Available
Max Number Controlled Not Available
Driver c:\winnt\system32\drivers\qlvika.sys (49916, 1.00.14 (W2K))

[Printing]

Name Port Name Server Name
No printing information

[Problem Devices]

Device PNP Device ID Error Code
Not Available ACPI\IBM37D1\4&389C1010&0 28

[USB]

Device PNP Device ID
Standard OpenHCD USB Host Controller
PCI\VEN_1166&DEV_0220&SUBSYS_02201166&REV_04\3&267A616A&0&7A
USB Root Hub USB\ROOT_HUB\4&372644EA&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
adpu160m  adpu160m  c:\winnt\system32\drivers\adpu160m.sys         Kernel
Driver    True      Boot        Running    OK          Normal      False
True
afd       AFD Networking Support Environment
c:\winnt\system32\drivers\afd.sysKernel Driver       True        Auto
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
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
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.sysFile 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
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.sysFile 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
gnindis   cLAN NDIS Driver      c:\winnt\system32\drivers\gnindis.sys
Kernel Driver       False       Manual     Stopped     OK          Normal
False     False
gnivia    cLAN VIA Driver       c:\winnt\system32\drivers\gnivia.sys
Kernel Driver       False       Manual     Stopped     OK          Normal
False     False
gpc       Generic Packet Classifier
c:\winnt\system32\drivers\msgpc.sys      Kernel Driver          True
Manual    Running   OK          Normal     False       True
i8042prt  i8042 Keyboard and PS/2 Mouse Port Driver
c:\winnt\system32\drivers\i8042prt.sys   Kernel Driver          True
System    Running   OK          Normal     False       True
ini910u   ini910u   Not Available          Kernel Driver          False
Disabled  Stopped   OK          Normal     False       False
intelide  IntelIde  Not Available          Kernel Driver          False
Disabled  Stopped   OK          Normal     False       False
```

ipfilterdriver IP Traffic Filter Driver
c:\winnt\system32\drivers\ipfltdrv.sys Kernel Driver False
Manual Stopped OK Normal False False
ipinip IP in IP Tunnel Driverc:\winnt\system32\drivers\ipinip.sys
Kernel Driver False Manual Stopped OK Normal
False False
ipnat IP Network Address Translator c:\winnt\system32\drivers\ipnat.sys
Kernel Driver False Manual Stopped OK Normal
False False
ipsec IPSEC driver c:\winnt\system32\drivers\ipsec.sys
Kernel Driver True Manual Running OK Normal
False True
ipsraidn ipsraidn Not Available Kernel Driver False
Disabled Stopped OK Normal False False
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
ksecdd KSecDD c:\winnt\system32\drivers\ksecdd.sys Kernel
Driver True Boot Running OK Normal False
True
lbrtfdc lbrtfdc Not Available Kernel Driver False
System Stopped OK Ignore False False
lp6nds35 lp6nds35 Not Available Kernel Driver False
Disabled Stopped OK Normal False False
mnmdd mnmdd c:\winnt\system32\drivers\mnmdd.sys Kernel
Driver True System Running OK Ignore False
True
modem Modem c:\winnt\system32\drivers\modem.sys Kernel
Driver False Manual Stopped OK Ignore False
False
mouclass Mouse Class Driver c:\winnt\system32\drivers\mouclass.sys
Kernel Driver True System Running OK Normal
False True
mountmgr MountMgr c:\winnt\system32\drivers\mountmgr.sys Kernel
Driver True Boot Running OK Normal False
True
mraid35x mraid35x Not Available Kernel Driver False
Disabled Stopped OK Normal False False
mrxsmb MRXSMB c:\winnt\system32\drivers\mrxsmb.sys File System
Driver True System Running OK Normal False
True
msfs Msfs c:\winnt\system32\drivers\msfs.sys File System
Driver True System Running OK Normal False
True
msksrv Microsoft Streaming Service Proxy
c:\winnt\system32\drivers\msksrv.sys Kernel Driver False
Manual Stopped OK Normal False False
mspclock Microsoft Streaming Clock Proxy
c:\winnt\system32\drivers\mspclock.sys Kernel Driver False
Manual Stopped OK Normal False False
mspqm Microsoft Streaming Quality Manager Proxy
c:\winnt\system32\drivers\mspqm.sys Kernel Driver False
Manual Stopped OK Normal False False
mup Mup c:\winnt\system32\drivers\mup.sys File System
Driver True Boot Running OK Normal False
True
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
openhci Microsoft USB Open Host Controller Driver
c:\winnt\system32\drivers\openhci.sys Kernel Driver True
Manual Running OK Normal False True
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
rdpdr Terminal Server Device Redirector Driver
c:\winnt\system32\drivers\rdpdr.sys Kernel Driver True
Manual 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
s3inc S3Inc c:\winnt\system32\drivers\s3sav4m.sys Kernel
Driver True Manual Running OK Ignore False
True
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
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
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
sym_hi sym_hi Not Available Kernel Driver False
Disabled Stopped OK Normal False False
tcpip TCP/IP Protocol Driver c:\winnt\system32\drivers\tcpip.sys
Kernel Driver True System Running OK Normal
False True
tdasync TDASYNC c:\winnt\system32\drivers\tdasync.sys
Kernel Driver False Manual Stopped OK Ignore
False False
tdipx TDIPX c:\winnt\system32\drivers\tdipx.sys Kernel
Driver False Manual Stopped OK Ignore False
False
tdnetb TDNETB c:\winnt\system32\drivers\tdnetb.sys Kernel
Driver False Manual Stopped OK Ignore False
False
tdpipe TDPIPE c:\winnt\system32\drivers\tdpipe.sys Kernel
Driver False Manual Stopped OK Ignore False
False
tdspx TDSPX c:\winnt\system32\drivers\tdspx.sys Kernel
Driver False Manual Stopped OK Ignore False
False
tdtcp TDTCP c:\winnt\system32\drivers\tdtcp.sys Kernel
Driver False Manual Stopped OK Ignore False
False
termdd Terminal Device Driver
c:\winnt\system32\drivers\termdd.sys Kernel Driver True
Auto Running OK Normal False True
tga tga Not Available Kernel Driver False
System Stopped OK Ignore False False
udfs Udfs c:\winnt\system32\drivers\udfs.sys File System
Driver False Disabled Stopped OK Normal False
False
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
usbhub Microsoft USB Standard Hub Driver
c:\winnt\system32\drivers\usbhub.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

[Environment Variables]

Variable Value User Name
ComSpec %SystemRoot%\system32\cmd.exe <SYSTEM>
Os2LibPath %SystemRoot%\system32\os2\dll; <SYSTEM>
Path
%SystemRoot%\system32;%SystemRoot%;%SystemRoot%\System32\Wbem;
C:\Program Files\Microsoft SQL Server\80\Tools\BINN <SYSTEM>
windir %SystemRoot% <SYSTEM>
OS Windows_NT <SYSTEM>
PROCESSOR_ARCHITECTURE x86 <SYSTEM>
PROCESSOR_LEVEL 6 <SYSTEM>
PROCESSOR_IDENTIFIER x86 Family 6 Model 11 Stepping 1,
GenuineIntel <SYSTEM>
PROCESSOR_REVISION 0b01 <SYSTEM>
NUMBER_OF_PROCESSORS 2 <SYSTEM>

PATHEXT
.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH <SYSTEM>
TEMP %SystemRoot%\TEMP <SYSTEM>
TMP %SystemRoot%\TEMP <SYSTEM>
TEMP %USERPROFILE%\Local Settings\Temp
CLIENT10\Administrator
TMP %USERPROFILE%\Local Settings\Temp
CLIENT10\Administrator

[Jobs]

[Following are sub-categories of this main category]

[Print]

Document Size Owner Notify Status Time Submitted
Start Time Until Time Elapsed Time Pages Printed Job ID
Priority Parameters Driver Name Print Processor Host Print
Queue Data Type Name
Unknown Unknown Unknown Unknown Unknown Unknown Unknown
Unknown Unknown Unknown Unknown Unknown Unknown Unknown
Unknown Unknown Unknown Unknown

[Network Connections]

Local Name Remote Name Type Status User Name
E: \\192.168.200.99\c$ Disk OK
CLIENT10\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 180 11 204800
1413120 10/30/2002 10:27:03 AM 5.00.2195.2901 44.27 KB
(45,328 bytes) 12/7/1999 7:00:00 AM
csrss.exe Not Available 204 13 Not Available
Not Available 10/30/2002 10:27:07 AM Unknown Unknown
Unknown
winlogon.exe c:\winnt\system32\winlogon.exe 200 13
204800 1413120 10/30/2002 10:27:10 AM 5.00.2195.2953
173.77 KB (177,936 bytes) 12/7/1999 7:00:00 AM
services.exe c:\winnt\system32\services.exe 256 9
204800 1413120 10/30/2002 10:27:11 AM 5.00.2195.2780
86.77 KB (88,848 bytes) 12/7/1999 7:00:00 AM
lsass.exe c:\winnt\system32\lsass.exe 268 9 204800
1413120 10/30/2002 10:27:11 AM 5.00.2195.2964 32.77 KB
(33,552 bytes) 12/7/1999 7:00:00 AM
svchost.exe c:\winnt\system32\svchost.exe 420 8
204800 1413120 10/30/2002 10:27:13 AM 5.00.2134.1
7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM
msdtc.exe c:\winnt\system32\msdtc.exe 452 8 204800
1413120 10/30/2002 10:27:15 AM 1999.9.3421.3 6.77 KB
(6,928 bytes) 12/19/2001 12:38:54 PM
svchost.exe c:\winnt\system32\svchost.exe 576 8
204800 1413120 10/30/2002 10:27:16 AM 5.00.2134.1
7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM
rsys.exe Not Available 708 8 Not Available
Not Available 10/30/2002 10:27:18 AM Unknown Unknown
Unknown
rshsvc.exe c:\winnt\system32\rshsvc.exe 656 8 204800
1413120 10/30/2002 10:27:30 AM Not Available 53.50 KB
(54,784 bytes) 1/21/2002 1:37:26 PM
tcpsvcs.exe c:\winnt\system32\tcpsvcs.exe 748 8
204800 1413120 10/30/2002 10:27:30 AM 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 784 8
204800 1413120 10/30/2002 10:27:31 AM 1.50.1085.0029
192.08 KB (196,685 bytes) 12/20/2001 9:39:12 AM
inetinfo.exe c:\winnt\system32\inetsrv\inetinfo.exe 808 8
204800 1413120 10/30/2002 10:27:31 AM 5.00.0984 14.27 KB
(14,608 bytes) 12/20/2001 9:39:58 AM
dfssvc.exe c:\winnt\system32\dfssvc.exe 904 8 204800
1413120 10/30/2002 10:27:36 AM 5.00.2195.2841 88.27 KB
(90,384 bytes) 12/20/2001 9:38:41 AM
explorer.exe c:\winnt\explorer.exe 1068 8 204800
1413120 10/30/2002 10:28:05 AM 5.00.3315.2846 237.27 KB
(242,960 bytes) 12/20/2001 9:39:07 AM
svchost.exe c:\winnt\system32\svchost.exe 1116 8
204800 1413120 10/30/2002 10:28:07 AM 5.00.2134.1
7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM
mmc.exe c:\winnt\system32\mmc.exe 1200 8 204800
1413120 10/30/2002 10:57:52 AM 5.00.2195.2301 589.27 KB
(603,408 bytes) 12/20/2001 9:38:48 AM
rsvp.exe c:\winnt\system32\rsvp.exe 1264 8 204800
1413120 10/30/2002 10:58:54 AM 5.00.2167.1 172.77 KB
(176,912 bytes) 12/7/1999 7:00:00 AM

[Loaded Modules]

Name Version Size File Date Manufacturer Path
traffic.dll 5.00.2139.1 30.77 KB (31,504 bytes) 12/7/1999
7:00:00 AM Microsoft Corporation
c:\winnt\system32\traffic.dll
rsvp.exe 5.00.2167.1 172.77 KB (176,912 bytes) 12/7/1999
7:00:00 AM Microsoft Corporation
c:\winnt\system32\rsvp.exe
wbemprox.dll 1.50.1085.0045 40.08 KB (41,040 bytes)
12/20/2001 9:39:12 AM Microsoft Corporation
c:\winnt\system32\wbem\wbemprox.dll
mlang.dll 5.00.3103.1000 510.77 KB (523,024 bytes) 12/20/2001
9:38:48 AM Microsoft Corporation
c:\winnt\system32\mlang.dll
rassapi.dll 5.00.2188.1 14.27 KB (14,608 bytes) 12/7/1999
7:00:00 AM Microsoft Corporation
c:\winnt\system32\rassapi.dll
adsnt.dll 5.00.2195.2778 195.27 KB (199,952 bytes) 12/20/2001
9:38:37 AM Microsoft Corporation
c:\winnt\system32\adsnt.dll
dbghelp.dll 5.00.2195.2104 159.27 KB (163,088 bytes)
5/4/2001 1:05:02 PM Microsoft Corporation
c:\winnt\system32\dbghelp.dll
localsec.dll 5.00.2195.2130 230.27 KB (235,792 bytes)
12/20/2001 9:38:48 AM Microsoft Corporation
c:\winnt\system32\localsec.dll
devmgr.dll 5.00.2166.1 215.77 KB (220,944 bytes) 12/7/1999
7:00:00 AM Microsoft Corporation
c:\winnt\system32\devmgr.dll
filemgmt.dll 5.00.2195.2165 287.27 KB (294,160 bytes)
12/20/2001 9:38:44 AM Microsoft Corporation
c:\winnt\system32\filemgmt.dll
pdh.dll 5.00.2195.2739 147.77 KB (151,312 bytes) 12/20/2001
9:39:00 AM Microsoft Corporation
c:\winnt\system32\pdh.dll
smlogcfg.dll 5.00.2195.2485 273.27 KB (279,824 bytes)
12/20/2001 9:39:04 AM 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 5.00.2177.1 312.27 KB (319,760 bytes) 12/19/2001 4:33:26 PM Microsoft Corporation c:\program files\common files\microsoft shared\msinfo\msinfo32.dll
riched20.dll 5.30.23.1205 421.27 KB (431,376 bytes) 12/20/2001 9:39:01 AM 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 5.00.2175.1 151.27 KB (154,896 bytes) 12/7/1999 7:00:00 AM 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.dll1.50.1085.0000 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 5.00.2195.2104 41.77 KB (42,768 bytes) 12/20/2001 9:38:41 AM Executive Software International, Inc. c:\winnt\system32\dfrgsnap.dll
dmdskres.dll 2195.2104.297.3 119.50 KB (122,368 bytes) 12/20/2001 9:38:42 AM Microsoft Corp., VERITAS Software c:\winnt\system32\dmdskres.dll
dmutil.dll 2195.2104.297.3 42.27 KB (43,280 bytes) 12/20/2001 9:38:42 AM VERITAS Software Corp. c:\winnt\system32\dmutil.dll
ntmsapi.dll5.00.1948.1 51.77 KB (53,008 bytes) 12/20/2001 9:38:57 AM Microsoft Corporation c:\winnt\system32\ntmsapi.dll
dmdskmgr.dll 2215.2215.297.3 160.27 KB (164,112 bytes) 12/20/2001 9:38:42 AM 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 5.00.2178.1 815.27 KB (834,832 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\mmcndmgr.dll
mmc.exe 5.00.2195.2301 589.27 KB (603,408 bytes) 12/20/2001 9:38:48 AM Microsoft Corporation c:\winnt\system32\mmc.exe
tapisrv.dll 5.00.2195.2955 169.27 KB (173,328 bytes) 12/20/2001 9:39:05 AM Microsoft Corporation c:\winnt\system32\tapisrv.dll
wininet.dll 5.00.3315.1000 456.77 KB (467,728 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\system32\wininet.dll
netplwiz.dll 5.00.2195.2370 169.77 KB (173,840 bytes) 12/20/2001 9:38:56 AM 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
comdlg32.dll 5.00.3103.1000 236.77 KB (242,448 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\comdlg32.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 5.00.2195.2104 54.77 KB (56,080 bytes) 12/20/2001 9:38:49 AM Microsoft Corporation c:\winnt\system32\mprui.dll
urlmon.dll 5.00.3315.1000 441.27 KB (451,856 bytes) 12/20/2001 9:39:05 AM Microsoft Corporation c:\winnt\system32\urlmon.dll
faxshell.dll5.00.2134.1 8.27 KB (8,464 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\faxshell.dll
msacm32.dll 5.00.2134.1 65.27 KB (66,832 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msacm32.dll
avifil32.dll5.00.2134.1 76.27 KB (78,096 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\avifil32.dll
msvfw32.dll 5.00.2134.1 113.77 KB (116,496 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msvfw32.dll
docprop2.dll 5.00.2178.1 297.77 KB (304,912 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\docprop2.dll
linkinfo.dll5.00.2134.1 15.77 KB (16,144 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\linkinfo.dll
browselc.dll 5.00.3315.2846 34.50 KB (35,328 bytes) 12/20/2001 9:38:38 AM Microsoft Corporation c:\winnt\system32\browselc.dll
msi.dll 2.0.2600.0 1.90 MB (1,991,168 bytes) 12/20/2001 9:38:51 AM Microsoft Corporation c:\winnt\system32\msi.dll
powrprof.dll 5.00.3103.1000 13.27 KB (13,584 bytes) 12/20/2001 9:39:00 AM Microsoft Corporation c:\winnt\system32\powrprof.dll
batmeter.dll 5.00.3103.1000 20.27 KB (20,752 bytes) 12/20/2001 9:38:38 AM Microsoft Corporation c:\winnt\system32\batmeter.dll
stobject.dll5.00.2195.2780 79.27 KB (81,168 bytes) 12/20/2001 9:39:04 AM Microsoft Corporation c:\winnt\system32\stobject.dll
webcheck.dll 5.00.3315.1000 251.77 KB (257,808 bytes) 12/20/2001 9:39:06 AM Microsoft Corporation c:\winnt\system32\webcheck.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.dll5.00.2920.0000 55.77 KB (57,104 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\mydocs.dll
hhsetup.dll4.74.8702 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 5.00.3315.2846 788.77 KB (807,696 bytes) 12/20/2001 9:38:38 AM Microsoft Corporation c:\winnt\system32\browseui.dll
shdocvw.dll 5.00.3315.2879 1.05 MB (1,104,144 bytes) 12/20/2001 9:39:03 AM Microsoft Corporation c:\winnt\system32\shdocvw.dll
explorer.exe 5.00.3315.2846 237.27 KB (242,960 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\explorer.exe
dfssvc.exe 5.00.2195.2841 88.27 KB (90,384 bytes) 12/20/2001 9:38:41 AM Microsoft Corporation c:\winnt\system32\dfssvc.exe
ntfsdrv.dll 5.00.0984 36.77 KB (37,648 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\ntfsdrv.dll
iislog.dll 5.00.0984 75.27 KB (77,072 bytes) 12/20/2001 9:39:58 AM Microsoft Corporation c:\winnt\system32\inetsrv\iislog.dll

httpext.dll 0.9.3940.21 435.27 KB (445,712 bytes) 12/20/2001 9:39:57 AM Microsoft Corporation c:\winnt\system32\inetsrv\httpext.dll
rpcproxy.dll 5.00.2195.2780 16.27 KB (16,656 bytes) 12/20/2001 9:39:48 AM Microsoft Corporation c:\winnt\system32\rpcproxy\rpcproxy.dll
fpexedll.dll 4.0.2.4324 20.06 KB (20,541 bytes) 12/20/2001 9:39:46 AM Microsoft Corporation c:\program files\common files\microsoft shared\web server extensions\40\bin\fpexedll.dll
md5filt.dll 5.00.0984 32.77 KB (33,552 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\md5filt.dll
aqueue.dll 5.00.0984 312.77 KB (320,272 bytes) 12/20/2001 9:39:48 AM Microsoft Corporation c:\winnt\system32\inetsrv\aqueue.dll
gzip.dll 5.00.0984 30.27 KB (30,992 bytes) 12/20/2001 9:39:57 AM Microsoft Corporation c:\winnt\system32\inetsrv\gzip.dll
compfilt.dll 5.00.0984 22.77 KB (23,312 bytes) 12/20/2001 9:39:57 AM Microsoft Corporation c:\winnt\system32\inetsrv\compfilt.dll
seo.dll 5.00.0984 229.27 KB (234,768 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\seo.dll
sspifilt.dll 5.00.0984 43.27 KB (44,304 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\sspifilt.dll
iscomlog.dll 5.00.0984 24.77 KB (25,360 bytes) 12/20/2001 9:39:58 AM Microsoft Corporation c:\winnt\system32\inetsrv\iscomlog.dll
lonsint.dll 5.00.0984 11.77 KB (12,048 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\lonsint.dll
inetsloc.dll 5.00.0984 20.27 KB (20,752 bytes) 12/20/2001 9:38:46 AM Microsoft Corporation c:\winnt\system32\inetsloc.dll
w3svc.dll 5.00.0984 343.27 KB (351,504 bytes) 12/20/2001 9:40:00 AM Microsoft Corporation c:\winnt\system32\inetsrv\w3svc.dll
staxmem.dll 5.00.0984 8.27 KB (8,464 bytes) 12/19/2001 12:39:33 PM Microsoft Corporation c:\winnt\system32\staxmem.dll
exstrace.dll 5.00.0984 13.77 KB (14,096 bytes) 12/19/2001 12:39:35 PM Microsoft Corporation c:\winnt\system32\exstrace.dll
rwnh.dll 5.00.0984 10.77 KB (11,024 bytes) 12/19/2001 12:41:05 PM Microsoft Corporation c:\winnt\system32\rwnh.dll
fcachdll.dll 5.00.0984 43.77 KB (44,816 bytes) 12/19/2001 12:41:05 PM Microsoft Corporation c:\winnt\system32\fcachdll.dll
iisfecnv.dll 5.00.0984 7.27 KB (7,440 bytes) 12/19/2001 12:39:34 PM Microsoft Corporation c:\winnt\system32\inetsrv\iisfecnv.dll
isatq.dll 5.00.0984 60.27 KB (61,712 bytes) 12/20/2001 9:39:58 AM Microsoft Corporation c:\winnt\system32\inetsrv\isatq.dll
infocomm.dll 5.00.0984 238.27 KB (243,984 bytes) 12/20/2001 9:39:58 AM Microsoft Corporation c:\winnt\system32\inetsrv\infocomm.dll
smtpsvc.dll 5.00.0984 420.27 KB (430,352 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\smtpsvc.dll
security.dll 5.00.2154.1 5.77 KB (5,904 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\security.dll
svcext.dll 5.00.0984 39.77 KB (40,720 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\svcext.dll
admexs.dll 5.00.0984 27.77 KB (28,432 bytes) 12/20/2001 9:39:56 AM Microsoft Corporation c:\winnt\system32\inetsrv\admexs.dll
wamreg.dll 5.00.0984 45.77 KB (46,864 bytes) 12/20/2001 9:40:00 AM Microsoft Corporation c:\winnt\system32\inetsrv\wamreg.dll
metadata.dll 5.00.0984 68.77 KB (70,416 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\metadata.dll
iismap.dll 5.00.0984 55.77 KB (57,104 bytes) 12/20/2001 9:38:45 AM Microsoft Corporation c:\winnt\system32\iismap.dll
nsepm.dll 5.00.0984 43.27 KB (44,304 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\nsepm.dll
admwprox.dll 5.00.0984 31.77 KB (32,528 bytes) 12/19/2001 12:39:35 PM Microsoft Corporation c:\winnt\system32\admwprox.dll
coadmin.dll 5.00.0984 39.27 KB (40,208 bytes) 12/20/2001 9:39:57 AM Microsoft Corporation c:\winnt\system32\inetsrv\coadmin.dll
iisadmin.dll 5.00.0984 15.27 KB (15,632 bytes) 12/20/2001 9:39:58 AM Microsoft Corporation c:\winnt\system32\inetsrv\iisadmin.dll
rpcref.dll 5.00.0984 4.27 KB (4,368 bytes) 12/20/2001 9:39:59 AM Microsoft Corporation c:\winnt\system32\inetsrv\rpcref.dll
iisrtl.dll 5.00.0984 119.77 KB (122,640 bytes) 12/20/2001 9:38:45 AM Microsoft Corporation c:\winnt\system32\iisrtl.dll
inetinfo.exe 5.00.0984 14.27 KB (14,608 bytes) 12/20/2001 9:39:58 AM Microsoft Corporation c:\winnt\system32\inetsrv\inetinfo.exe
netui1.dll 5.00.2134.1 210.27 KB (215,312 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\netui1.dll
netui0.dll 5.00.2134.1 70.27 KB (71,952 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\netui0.dll
ntlanman.dll 5.00.2157.1 35.27 KB (36,112 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\ntlanman.dll
ntmarta.dll 5.00.2195.2862 98.77 KB (101,136 bytes) 12/20/2001 9:38:57 AM Microsoft Corporation c:\winnt\system32\ntmarta.dll
perfos.dll 5.00.2155.1 21.27 KB (21,776 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\perfos.dll
provthrd.dll 1.50.1085.0000 68.07 KB (69,708 bytes) 12/19/2001 4:33:18 PM Microsoft Corporation c:\winnt\system32\wbem\provthrd.dll
ntevt.dll 1.50.1085.0000 192.06 KB (196,669 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\wbem\ntevt.dll
psapi.dll 5.00.2134.1 28.27 KB (28,944 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\psapi.dll
framedyn.dll 1.50.1085.0000 164.05 KB (167,992 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\wbem\framedyn.dll
cimwin32.dll 1.50.1085.0038 1.02 MB (1,073,232 bytes) 12/20/2001 9:39:11 AM Microsoft Corporation c:\winnt\system32\wbem\cimwin32.dll
wbemsvc.dll 1.50.1085.0007 40.07 KB (41,036 bytes) 12/20/2001 9:39:12 AM Microsoft Corporation c:\winnt\system32\wbem\wbemsvc.dll
wbemess.dll 1.50.1085.0039 364.07 KB (372,804 bytes) 12/20/2001 9:39:12 AM Microsoft Corporation c:\winnt\system32\wbem\wbemess.dll
fastprox.dll 1.50.1085.0037 144.08 KB (147,536 bytes) 12/20/2001 9:39:11 AM Microsoft Corporation c:\winnt\system32\wbem\fastprox.dll
wbemcore.dll 1.50.1085.0036 628.07 KB (643,140 bytes) 12/20/2001 9:39:12 AM Microsoft Corporation c:\winnt\system32\wbem\wbemcore.dll

wbemcomn.dll 1.50.1085.0021 692.07 KB (708,675 bytes) 12/20/2001 9:39:11 AM Microsoft Corporation c:\winnt\system32\wbem\wbemcomn.dll
winmgmt.exe 1.50.1085.0029 192.08 KB (196,685 bytes) 12/20/2001 9:39:12 AM Microsoft Corporation c:\winnt\system32\wbem\winmgmt.exe
simptcp.dll 5.00.2134.1 19.27 KB (19,728 bytes) 12/19/2001 12:38:49 PM 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
rshsvc.dll Not Available 18.00 KB (18,432 bytes) 1/21/2002 1:37:26 PM Not Available c:\winnt\system32\rshsvc.dll
rshsvc.exe Not Available 53.50 KB (54,784 bytes) 1/21/2002 1:37:26 PM Not Available c:\winnt\system32\rshsvc.exe
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 5.00.2195.2779 457.27 KB (468,240 bytes) 12/20/2001 9:38:56 AM Microsoft Corporation c:\winnt\system32\netshell.dll
netman.dll 5.00.2195.2779 89.27 KB (91,408 bytes) 12/20/2001 9:38:56 AM Microsoft Corporation c:\winnt\system32\netman.dll
rasdlg.dll 5.00.2195.2671 514.27 KB (526,608 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\rasdlg.dll
netcfgx.dll 5.00.2195.2228 534.77 KB (547,600 bytes) 12/20/2001 9:38:55 AM Microsoft Corporation c:\winnt\system32\netcfgx.dll
rasmans.dll 5.00.2195.2728 147.27 KB (150,800 bytes) 12/20/2001 9:39:01 AM Microsoft Corporation c:\winnt\system32\rasmans.dll
ntmsdba.dll 5.00.2195.2779 167.27 KB (171,280 bytes) 12/20/2001 9:38:57 AM 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
ntmssvc.dll 5.00.2195.2779 391.27 KB (400,656 bytes) 12/20/2001 9:38:57 AM Microsoft Corporation c:\winnt\system32\ntmssvc.dll
es.dll 2000.2.3471.1 222.27 KB (227,600 bytes) 12/20/2001 9:38:44 AM Microsoft Corporation c:\winnt\system32\es.dll
mtxoci.dll 2000.2.3471.1 101.77 KB (104,208 bytes) 12/20/2001 9:38:55 AM Microsoft Corporation c:\winnt\system32\mtxoci.dll
resutils.dll 5.00.2195.2787 39.77 KB (40,720 bytes) 12/20/2001 9:39:01 AM Microsoft Corporation c:\winnt\system32\resutils.dll
clusapi.dll 5.00.2195.2104 54.27 KB (55,568 bytes) 12/20/2001 9:38:40 AM Microsoft Corporation c:\winnt\system32\clusapi.dll
msvcp50.dll 5.00.7051 552.50 KB (565,760 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msvcp50.dll
xolehlp.dll 1999.9.3421.3 17.27 KB (17,680 bytes) 12/19/2001 12:38:55 PM Microsoft Corporation c:\winnt\system32\xolehlp.dll
msdtclog.dll 1999.9.3421.3 89.77 KB (91,920 bytes) 12/19/2001 12:38:54 PM Microsoft Corporation c:\winnt\system32\msdtclog.dll
mtxclu.dll 2000.2.3471.1 51.27 KB (52,496 bytes) 12/20/2001 9:38:55 AM Microsoft Corporation c:\winnt\system32\mtxclu.dll
msdtcprx.dll 2000.2.3471.1 665.77 KB (681,744 bytes) 12/20/2001 9:38:49 AM Microsoft Corporation c:\winnt\system32\msdtcprx.dll
txfaux.dll 2000.2.3471.1 374.27 KB (383,248 bytes) 12/20/2001 9:39:05 AM Microsoft Corporation c:\winnt\system32\txfaux.dll
msdtctm.dll 2000.2.3471.1 1.07 MB (1,120,528 bytes) 12/20/2001 9:38:50 AM Microsoft Corporation c:\winnt\system32\msdtctm.dll
msdtc.exe 1999.9.3421.3 6.77 KB (6,928 bytes) 12/19/2001 12:38:54 PM Microsoft Corporation c:\winnt\system32\msdtc.exe
rpcss.dll 5.00.2195.2815 231.27 KB (236,816 bytes) 12/20/2001 9:39:02 AM Microsoft Corporation c:\winnt\system32\rpcss.dll
svchost.exe 5.00.2134.1 7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\svchost.exe
dssenh.dll 5.00.2195.2228 142.77 KB (146,192 bytes) 12/20/2001 9:39:50 AM Microsoft Corporation c:\winnt\system32\dssenh.dll
oakley.dll 5.00.2195.2785 378.77 KB (387,856 bytes) 12/20/2001 9:38:58 AM Microsoft Corporation c:\winnt\system32\oakley.dll
mfc42u.dll 6.00.8665.0 972.05 KB (995,384 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\mfc42u.dll
polagent.dll 5.00.2183.1 108.27 KB (110,864 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\polagent.dll
scecli.dll 5.00.2195.2780 105.27 KB (107,792 bytes) 12/20/2001 9:39:02 AM Microsoft Corporation c:\winnt\system32\scecli.dll
atl.dll 3.00.8449 57.56 KB (58,938 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\atl.dll
certcli.dll 5.00.2195.2778 130.77 KB (133,904 bytes) 12/20/2001 9:38:39 AM Microsoft Corporation c:\winnt\system32\certcli.dll
esent.dll 6.0.3940.13 1.08 MB (1,135,376 bytes) 12/20/2001 9:38:44 AM Microsoft Corporation c:\winnt\system32\esent.dll
ntdsatq.dll 5.00.2195.2878 31.27 KB (32,016 bytes) 12/20/2001 9:38:57 AM Microsoft Corporation c:\winnt\system32\ntdsatq.dll
ntdsa.dll 5.00.2195.2899 990.77 KB (1,014,544 bytes) 12/20/2001 9:38:56 AM Microsoft Corporation c:\winnt\system32\ntdsa.dll
kdcsvc.dll 5.00.2195.2878 137.77 KB (141,072 bytes) 12/20/2001 9:38:48 AM Microsoft Corporation c:\winnt\system32\kdcsvc.dll
sfmapi.dll 5.00.2134.1 38.77 KB (39,696 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\sfmapi.dll
rassfm.dll 5.00.2195.2671 21.27 KB (21,776 bytes) 12/20/2001 9:39:01 AM Microsoft Corporation c:\winnt\system32\rassfm.dll
mpr.dll 5.00.2195.2779 53.27 KB (54,544 bytes) 12/20/2001 9:38:49 AM Microsoft Corporation c:\winnt\system32\mpr.dll
rsabase.dll 5.00.2195.2228 128.27 KB (131,344 bytes) 5/4/2001 1:05:02 PM Microsoft Corporation c:\winnt\system32\rsabase.dll
schannel.dll 5.00.2195.2922 138.27 KB (141,584 bytes) 5/4/2001 1:05:02 PM Microsoft Corporation c:\winnt\system32\schannel.dll
netlogon.dll 5.00.2195.2865 357.77 KB (366,352 bytes) 12/20/2001 9:38:56 AM Microsoft Corporation c:\winnt\system32\netlogon.dll

msv1_0.dll 5.00.2195.2900 111.77 KB (114,448 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msv1_0.dll
kerberos.dll 5.00.2195.2913 198.77 KB (203,536 bytes) 12/20/2001 9:38:48 AM Microsoft Corporation c:\winnt\system32\kerberos.dll
msprivs.dll 5.00.2154.1 41.50 KB (42,496 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msprivs.dll
samsrv.dll 5.00.2195.2918 369.77 KB (378,640 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\samsrv.dll
lsasrv.dll 5.00.2195.2964 492.77 KB (504,592 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\lsasrv.dll
lsass.exe 5.00.2195.2964 32.77 KB (33,552 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\lsass.exe
ntlsapi.dll 5.00.2134.1 6.77 KB (6,928 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\ntlsapi.dll
wmicore.dll 5.00.2195.2842 72.27 KB (74,000 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\system32\wmicore.dll
trkwks.dll 5.00.2166.1 88.77 KB (90,896 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\trkwks.dll
seclogon.dll 5.00.2135.1 15.77 KB (16,144 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\seclogon.dll
psbase.dll 5.00.2195.2779 111.77 KB (114,448 bytes) 12/20/2001 9:39:00 AM Microsoft Corporation c:\winnt\system32\psbase.dll
cryptsvc.dll 5.00.2181.1 61.77 KB (63,248 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\cryptsvc.dll
cryptdll.dll 5.00.2135.1 41.27 KB (42,256 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\cryptdll.dll
wkssvc.dll 5.00.2195.2780 95.27 KB (97,552 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\wkssvc.dll
srvsvc.dll 5.00.2195.2904 79.27 KB (81,168 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 2195.2778.297.3 11.77 KB (12,048 bytes) 12/20/2001 9:38:42 AM VERITAS Software Corp. c:\winnt\system32\dmserver.dll
lmhsvc.dll 5.00.2195.2778 9.77 KB (10,000 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\lmhsvc.dll
eventlog.dll 5.00.2178.1 43.77 KB (44,816 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\eventlog.dll
ntdsapi.dll 5.00.2195.2661 55.77 KB (57,104 bytes) 12/20/2001 9:38:57 AM Microsoft Corporation c:\winnt\system32\ntdsapi.dll
scesrv.dll 5.00.2195.2780 226.27 KB (231,696 bytes) 12/20/2001 9:39:02 AM Microsoft Corporation c:\winnt\system32\scesrv.dll
umpnpmgr.dll 5.00.2182.1 86.27 KB (88,336 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\umpnpmgr.dll
services.exe 5.00.2195.2780 86.77 KB (88,848 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\services.exe
cscui.dll 5.00.2195.2959 228.27 KB (233,744 bytes) 12/20/2001 9:38:41 AM Microsoft Corporation c:\winnt\system32\cscui.dll
rasadhlp.dll 5.00.2168.1 7.27 KB (7,440 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\rasadhlp.dll
wshnetbs.dll 5.00.2134.1 7.77 KB (7,952 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\wshnetbs.dll
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
clbcatq.dll 2000.2.3471.1 496.77 KB (508,688 bytes) 12/20/2001 9:38:39 AM Microsoft Corporation c:\winnt\system32\clbcatq.dll
dhcpcsvc.dll 5.00.2195.2778 88.77 KB (90,896 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\dhcpcsvc.dll
tapi32.dll 5.00.2182.1 123.27 KB (126,224 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\tapi32.dll
rasman.dll 5.00.2195.2780 54.77 KB (56,080 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\rasman.dll
rasapi32.dll 5.00.2195.2671 189.77 KB (194,320 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 5.00.2195.2842 127.27 KB (130,320 bytes) 12/20/2001 9:38:36 AM Microsoft Corporation c:\winnt\system32\adsldpc.dll
activeds.dll 5.00.2195.2778 174.77 KB (178,960 bytes) 12/20/2001 9:38:31 AM Microsoft Corporation c:\winnt\system32\activeds.dll
oleaut32.dll 2.40.4517 612.27 KB (626,960 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\oleaut32.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
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
iphlpapi.dll 5.00.2173.2 67.77 KB (69,392 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\iphlpapi.dll
rnr20.dll 5.00.2195.2871 35.77 KB (36,624 bytes) 12/20/2001 9:39:01 AM Microsoft Corporation c:\winnt\system32\rnr20.dll
wshtcpip.dll 5.00.2195.2104 17.27 KB (17,680 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\system32\wshtcpip.dll
msafd.dll 5.00.2195.2779 106.77 KB (109,328 bytes) 12/20/2001 9:38:49 AM Microsoft Corporation c:\winnt\system32\msafd.dll
mswsock.dll 5.00.2195.2871 62.77 KB (64,272 bytes) 12/20/2001 9:38:55 AM Microsoft Corporation c:\winnt\system32\mswsock.dll
winspool.drv 5.00.2195.2780 109.77 KB (112,400 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 5.00.2195.2780 53.77 KB (55,056 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\system32\wlnotify.dll

cscdll.dll 5.00.2195.2401 98.27 KB (100,624 bytes) 12/20/2001 9:38:41 AM Microsoft Corporation c:\winnt\system32\cscdll.dll
lz32.dll 5.00.2134.1 9.77 KB (10,000 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\lz32.dll
version.dll 5.00.2134.1 15.77 KB (16,144 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\version.dll
rsaenh.dll 5.00.2195.2228 130.77 KB (133,904 bytes) 12/20/2001 9:39:50 AM 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 5.00.2195.2887 969.77 KB (993,040 bytes) 12/20/2001 9:39:00 AM Microsoft Corporation c:\winnt\system32\ole32.dll
imagehlp.dll 5.00.2195.2778 125.77 KB (128,784 bytes) 5/4/2001 1:05:02 PM Microsoft Corporation c:\winnt\system32\imagehlp.dll
msasn1.dll 5.00.2134.1 51.27 KB (52,496 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msasn1.dll
crypt32.dll 5.131.2195.2833 451.27 KB (462,096 bytes) 12/20/2001 9:38:40 AM Microsoft Corporation c:\winnt\system32\crypt32.dll
wintrust.dll 5.131.2195.2779 162.27 KB (166,160 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\system32\wintrust.dll
shlwapi.dll 5.00.3315.1000 282.77 KB (289,552 bytes) 12/20/2001 9:39:04 AM Microsoft Corporation c:\winnt\system32\shlwapi.dll
shell32.dll 5.00.3315.2902 2.25 MB (2,359,056 bytes) 12/20/2001 9:39:03 AM Microsoft Corporation c:\winnt\system32\shell32.dll
msgina.dll 5.00.2195.2779 324.27 KB (332,048 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\msgina.dll
comctl32.dll 5.81 537.77 KB (550,672 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\comctl32.dll
setupapi.dll 5.00.2195.2663 555.77 KB (569,104 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
winsta.dll 5.00.2195.2386 36.77 KB (37,648 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\system32\winsta.dll
wsock32.dll 5.00.2195.2871 21.27 KB (21,776 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\system32\wsock32.dll
dnsapi.dll 5.00.2195.2785 130.77 KB (133,904 bytes) 12/20/2001 9:38:42 AM Microsoft Corporation c:\winnt\system32\dnsapi.dll
wldap32.dll 5.00.2195.2797 125.27 KB (128,272 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\system32\wldap32.dll
ws2help.dll 5.00.2134.1 17.77 KB (18,192 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\ws2help.dll
ws2_32.dll 5.00.2195.2780 67.77 KB (69,392 bytes) 12/20/2001 9:39:07 AM Microsoft Corporation c:\winnt\system32\ws2_32.dll
samlib.dll 5.00.2195.2780 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 5.00.2195.2808 303.77 KB (311,056 bytes) 12/20/2001 9:38:55 AM Microsoft Corporation c:\winnt\system32\netapi32.dll
profmap.dll 5.00.2181.1 29.27 KB (29,968 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\profmap.dll
secur32.dll 5.00.2195.2862 46.77 KB (47,888 bytes) 12/20/2001 9:39:02 AM Microsoft Corporation c:\winnt\system32\secur32.dll
sfc.dll 5.00.2195.2896 92.11 KB (94,320 bytes) 12/20/2001 9:39:02 AM Microsoft Corporation c:\winnt\system32\sfc.dll
nddeapi.dll 5.00.2137.1 15.27 KB (15,632 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\nddeapi.dll
userenv.dll 5.00.2195.2780 361.77 KB (370,448 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\userenv.dll
user32.dll 5.00.2195.2821 392.77 KB (402,192 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\user32.dll
gdi32.dll 5.00.2195.2778 228.77 KB (234,256 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\gdi32.dll
rpcrt4.dll 5.00.2195.2832 437.27 KB (447,760 bytes) 12/20/2001 9:39:02 AM Microsoft Corporation c:\winnt\system32\rpcrt4.dll
advapi32.dll 5.00.2195.2867 351.77 KB (360,208 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\advapi32.dll
kernel32.dll 5.00.2195.2778 714.77 KB (731,920 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\kernel32.dll
msvcrt.dll 6.10.8924.0 284.05 KB (290,869 bytes) 5/4/2001 1:05:02 PM Microsoft Corporation c:\winnt\system32\msvcrt.dll
winlogon.exe 5.00.2195.2953 173.77 KB (177,936 bytes) 12/7/1999 7:00:00 AM Microsoft Corporation c:\winnt\system32\winlogon.exe
sfcfiles.dll 5.00.2195.2967 948.27 KB (971,024 bytes) 12/20/2001 9:39:02 AM Microsoft Corporation c:\winnt\system32\sfcfiles.dll
ntdll.dll 5.00.2195.2779 478.77 KB (490,256 bytes) 5/4/2001 1:05:02 PM Microsoft Corporation c:\winnt\system32\ntdll.dll
smss.exe 5.00.2195.2901 44.27 KB (45,328 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 Stopped Manual 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
Computer Browser Browser Stopped Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
Indexing Service cisvc Stopped Manual Share Process c:\winnt\system32\cisvc.exe Normal LocalSystem 0

ClipBook ClipSrv Stopped Manual Own Process
c:\winnt\system32\clipsrv.exe Normal LocalSystem 0
Distributed File System Dfs Running Auto Own
Process c:\winnt\system32\dfssvc.exe Normal LocalSystem 0
DHCP Client Dhcp Stopped Manual Share Process
c:\winnt\system32\services.exe Normal LocalSystem 0
DHCP Server DHCPServer Stopped Manual Share
Process c:\winnt\system32\tcpsvcs.exe Normal LocalSystem 0
Logical Disk Manager Administrative Service dmadmin Stopped
Manual Share Process c:\winnt\system32\dmadmin.exe /com
Normal LocalSystem 0
Logical Disk Managerdmserver Running Auto Share Process
c:\winnt\system32\services.exe Normal LocalSystem 0
DNS Client Dnscache Stopped Manual 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
cLAN Connection Manager GniConMgr Stopped Manual
Own Process c:\winnt\system32\gnconmgr.exe 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 Stopped Manual
Own Process c:\winnt\system32\llssrv.exe Normal
LocalSystem 0
TCP/IP NetBIOS Helper Service LmHosts Running Auto Share
Process c:\winnt\system32\services.exe Normal LocalSystem 0
Messenger Messenger Stopped Manual Share Process
c:\winnt\system32\services.exe Normal LocalSystem 0
NetMeeting Remote Desktop Sharing mnmsrvc Stopped Manual
Own Process c:\winnt\system32\mnmsrvc.exe Normal
LocalSystem 0
Distributed Transaction Coordinator MSDTC Running Auto
Own Process c:\winnt\system32\msdtc.exe Normal
LocalSystem 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 Stopped Manual
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
Remote Shell Service RshSvc Running Auto Own Process
c:\winnt\system32\rshsvc.exe 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 Stopped Manual 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 Running
Auto Share Process c:\winnt\system32\inetsrv\inetinfo.exe
Normal LocalSystem 0
Print Spooler Spooler Stopped Manual Own Process
c:\winnt\system32\spoolsv.exe Normal LocalSystem 0
Performance Logs and Alerts SysmonLog Stopped Manual
Own Process c:\winnt\system32\smlogsvc.exe Normal
LocalSystem 0
Telephony TapiSrv Running Manual Share Process
c:\winnt\system32\svchost.exe -k tapisrv Normal LocalSystem 0
Terminal Services TermService Stopped Disabled Own
Process c:\winnt\system32\termsrv.exe Normal LocalSystem 0
Telnet TlntSvr Stopped Manual Own Process
c:\winnt\system32\tlntsvr.exe Normal LocalSystem 0
Distributed Link Tracking Server TrkSvr Stopped Manual Share
Process c:\winnt\system32\services.exe Normal LocalSystem 0
Distributed Link Tracking Client TrkWks Running Auto Share
Process c:\winnt\system32\services.exe Normal LocalSystem 0

Uninterruptible Power Supply UPS Stopped Manual Own Process c:\winnt\system32\ups.exe Normal LocalSystem 0
Utility Manager UtilMan Stopped Manual Own Process c:\winnt\system32\utilman.exe Normal LocalSystem 0
Windows Time W32Time Stopped Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0
World Wide Web Publishing Service W3SVC Running Auto Share Process c:\winnt\system32\inetsrv\inetinfo.exe Normal LocalSystem 0
Windows Management Instrumentation WinMgmt Running Auto Own Process c:\winnt\system32\wbem\winmgmt.exe Ignore LocalSystem 0
Windows Management Instrumentation Driver Extensions Wmi Running Manual Share Process c:\winnt\system32\services.exe Normal LocalSystem 0

[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 CLIENT10\Administrator:Accessories CLIENT10\Administrator
Accessories\Accessibility CLIENT10\Administrator:Accessories\Accessibility CLIENT10\Administrator
Accessories\Entertainment CLIENT10\Administrator:Accessories\Entertainment CLIENT10\Administrator
Accessories\System Tools CLIENT10\Administrator:Accessories\System Tools CLIENT10\Administrator
Administrative Tools CLIENT10\Administrator:Administrative Tools CLIENT10\Administrator
Benchcraft CLIENT10\Administrator:Benchcraft CLIENT10\Administrator
Startup CLIENT10\Administrator:Startup CLIENT10\Administrator

[Startup Programs]

Program Command User Name Location
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 mspaint.exe

[Internet Explorer 5]

[Following are sub-categories of this main category]

[Summary]

Item Value
Version 5.00.3315.1000
Build 53315.1000
Product ID 51876-270-7822934-05782
Application Path C:\Program Files\Internet Explorer
Language English (United States)
Active Printer Not Available

Cipher Strength 168-bit
Content Advisor Disabled
IEAK Install No

[File Versions]

File Version Size Date Path Company
advapi32.dll 5.0.2195.2867 352 KB 5/4/2001 12:05:02 PM C:\WINNT\system32 Microsoft Corporation
advpack.dll 5.0.3103.1000 87 KB 5/4/2001 12:05:02 PM C:\WINNT\system32 Microsoft Corporation
browselc.dll 5.0.3315.2846 35 KB 5/4/2001 12:05:02 PM C:\WINNT\system32 Microsoft Corporation
browseui.dll 5.0.3315.2846 789 KB 5/4/2001 12:05:02 PM 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 5.81.3103.1000 538 KB 5/4/2001 12:05:02 PM C:\WINNT\system32 Microsoft Corporation
crypt32.dll 5.131.2195.2833 451 KB 5/4/2001 12:05:02 PM C:\WINNT\system32 Microsoft Corporation
enhsig.dll <File Missing> Not Available Not Available Not Available Not Available
iemigrat.dll <File Missing> Not Available Not Available Not Available Not Available
iesetup.dll 5.0.3103.1000 57 KB 5/4/2001 12:05:02 PM C:\WINNT\system32 Microsoft Corporation
iexplore.exe 5.0.2920.0 59 KB 12/7/1999 7:00:00 AM C:\Program Files\Internet Explorer Microsoft Corporation
imagehlp.dll 5.0.2195.2778 126 KB 5/4/2001 12:05:02 PM C:\WINNT\system32 Microsoft Corporation
imghelp.dll <File Missing> Not Available Not Available Not Available Not Available
inseng.dll 5.0.3103.1000 72 KB 5/4/2001 12:05:02 PM 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 5.1.0.5907 476 KB 5/4/2001 12:05:02 PM C:\WINNT\system32 Microsoft Corporation
jsproxy.dll 5.0.2920.0 13 KB 12/7/1999 7:00:00 AM C:\WINNT\system32 Microsoft Corporation
msaahtml.dll <File Missing> Not Available Not Available Not Available Not Available

mshtml.dll 5.0.3315.2870 2290 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
msjava.dll 5.0.3802.0 923 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
msoss.dll <File Missing> Not Available Not Available
Not Available Not Available
msxml.dll 8.0.5718.1 493 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
occache.dll 5.0.3103.1000 86 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
ole32.dll 5.0.2195.2887 970 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
oleaut32.dll 2.40.4517.0 612 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
olepro32.dll 5.0.4517.0 160 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
rsabase.dll 5.0.2195.2228 128 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
rsaenh.dll 5.0.2195.2228 131 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
rsapi32.dll <File Missing> Not Available Not Available
Not Available Not Available
rsasig.dll <File Missing> Not Available Not Available
Not Available Not Available
schannel.dll 5.1.2195.0 138 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
shdoc401.dll <File Missing> Not Available Not
Available Not Available Not Available
shdocvw.dll 5.0.3315.2879 1078 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
shell32.dll 5.0.3315.2902 2304 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
shlwapi.dll 5.0.3315.1000 283 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
url.dll 5.0.2920.0 82 KB 12/7/1999 7:00:00 AM
C:\WINNT\system32 Microsoft Corporation
urlmon.dll 5.0.3315.1000 441 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
vbscript.dll 5.1.0.5907 428 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
webcheck.dll 5.0.3315.1000 252 KB 5/4/2001 12:05:02 PM
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 5.0.3315.1000 457 KB 5/4/2001 12:05:02 PM
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 5.131.2195.2779 162 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
wsock.vxd <File Missing> Not Available Not Available
Not Available Not Available
wsock32.dll 5.0.2195.2871 21 KB 5/4/2001 12:05:02 PM
C:\WINNT\system32 Microsoft Corporation
wsock32n.dll <File Missing> Not Available Not
Available Not Available Not Available

[Connectivity]

Item Value
Connection Preference Never dial
EnableHttp1.1 1
ProxyHttp1.1 0

LAN Settings

AutoConfigProxy wininet.dll
AutoProxyDetectMode Enabled
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 17343 MB
Available Disk Space 14247 MB
Maximum Cache Size 541 MB
Available Cache Size 542 MB

[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
Administrator Administrator 12/20/2001 to 11/26/2101
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 Medium-low
Trusted sites Low
Internet Medium
Restricted sites High

Client Configuration Parameters

Client Configuration Parameters
COM+ Settings
TPCC.AllTxns:
Activation:
Enable Object Pooling selected
Minimum Pool Size: 46
Maximum Pool Size: 46

```
        Creating Timeout: 60,000
        Enable Object Construction
        Enable Just in Time Activation
    Concurrency:
        Concurrency Required
```

TPCC Application Registry Parameters

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\TPCC]
"Path"="c:\\inetpub\\wwwroot\\"
"NumberOfDeliveryThreads"=dword:0x6
"MaxConnections"=dword:0x3e80
"MaxPendingDeliveries"=dword:0x640
"DB_Protocol"="ODBC"
"TxnMonitor"="COM"
"DbServer"="comanche"
"DbName"="tpcc"
"DbUser"="sa"
"DbPassword"=""
"COM_SinglePool"="YES"
```

Microsoft Internet Information Service Registry Parameters

```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Parameters]
"ListenBackLog"=dword:0x19
"DispatchEntries"=hex(7):4c,00,44,00,41,00,50,00,53,00,56,00,43,00,00,00,00,00
"PoolThreadLimit"=dword:0xbe
"ThreadTimeout"=dword:0x15180

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Performance]
"Library"="infoctrs.dll"
"Open"="OpenINFOPerformanceData"
"Close"="CloseINFOPerformanceData"
"Collect"="CollectINFOPerformanceData"
"Last Counter"=dword:0x842
"Last Help"=dword:0x843
"First Counter"=dword:0x802
```

World Wide Web Service Registry Parameters

```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC]
"Type"=dword:0x20
"Start"=dword:0x2
"ErrorControl"=dword:0x1
"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."

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\ASP]
"NOTE"="This is for backward compatibility only."

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\ASP\Parameters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters]
"MajorVersion"=dword:00000005
"MinorVersion"=dword:00000000
"InstallPath"="C:\\WINNT\\System32\\inetsrv"
"CertMapList"="C:\\WINNT\\System32\\inetsrv\\iiscrmap.dll"
"AccessDeniedMessage"="Error: Access is Denied."
"Filter DLLs"=""
"LogFileDirectory"="C:\\WINNT\\System32\\LogFiles"
"AcceptExOutstanding"=dword:00000028

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch\AdvancedDataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch\RDSServer.DataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\Script Map]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\Virtual Roots]
"/"="c:\\inetpub\\wwwroot,,205"
"/Scripts"="c:\\inetpub\\scripts,,1"
"/IISAdmin"="C:\\WINNT\\System32\\inetsrv\\iisadmin,,1"
"/IISSamples"="c:\\inetpub\\iissamples,,1"
"/MSADC"="c:\\program files\\common files\\system\\msadc,,1"
"/IISHelp"="c:\\winnt\\help\\iishelp,,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:000008f2
"Last Help"=dword:000008f3
"First Counter"=dword:00000850
"First Help"=dword:00000851

[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
```

QLogic Network Adapters - Registry Parameters

Client 10

Key Name: SYSTEM\CurrentControlSet\Services\qlvika
Class Name: <NO CLASS>
Last Write Time: 6/25/2002 - 3:29 PM
Value 0
Name: ErrorControl
Type: REG_DWORD
Data: 0x1

Value 1
Name: group
Type: REG_SZ
Data: MVIA

Value 2
Name: ImagePath
Type: REG_EXPAND_SZ
Data: System32\DRIVERS\qlvika.sys

Value 3
Name: start
Type: REG_DWORD
Data: 0x2

Value 4
Name: Tag
Type: REG_DWORD
Data: 0x1

Value 5
Name: type
Type: REG_DWORD
Data: 0x1

Key Name: SYSTEM\CurrentControlSet\Services\qlvika\Adapters
Class Name: <NO CLASS>
Last Write Time: 6/25/2002 - 4:20 PM

Key Name:
SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B0747A0
Class Name: <NO CLASS>
Last Write Time: 6/26/2002 - 4:40 PM
Value 0
Name: IPAddress
Type: REG_MULTI_SZ
Data: 192.168.201.11

Key Name: SYSTEM\CurrentControlSet\Services\qlvika\Enum
Class Name: <NO CLASS>
Last Write Time: 11/1/2002 - 12:04 PM
Value 0
Name: 0
Type: REG_SZ
Data: Root\LEGACY_QLVIKA\0000

Value 1
Name: 1
Type: REG_SZ
Data: Root\SCSIADAPTER\0000

Value 2
Name: Count
Type: REG_DWORD
Data: 0x2

Value 3
Name: NextInstance
Type: REG_DWORD
Data: 0x2

Key Name: SYSTEM\CurrentControlSet\Services\qlvika\Parameters
Class Name: <NO CLASS>
Last Write Time: 9/24/2002 - 12:04 PM
Value 0
Name: IuBuffers
Type: REG_DWORD
Data: 0x100

Value 1
Name: MaxCQEntries
Type: REG_DWORD
Data: 0x2000

Value 2
Name: MaxCQs
Type: REG_DWORD
Data: 0x400

Value 3
Name: MaxPTags
Type: REG_DWORD
Data: 0x800

Value 4
Name: MaxRegisterMBytes
Type: REG_DWORD
Data: 0x200

Value 5
Name: MaxRegisterRdmaMBytes
Type: REG_DWORD
Data: 0x200

Value 6
Name: MaxRegisterRegions
Type: REG_DWORD
Data: 0x1000

Value 7
Name: MaxTransferSize
Type: REG_DWORD
Data: 0x10000

Value 8
Name: MaxVIs
Type: REG_DWORD
Data: 0x400

Value 9
Name: RecvDescQuota
Type: REG_DWORD
Data: 0x8

Value 10
Name: SendDescQuota
Type: REG_DWORD
Data: 0x8

```
Value 11
 Name:          SupportPrototypeCards
 Type:          REG_DWORD
 Data:          0


Key Name:       SYSTEM\CurrentControlSet\Services\qlvika\Security
Class Name:     <NO CLASS>
Last Write Time:  6/25/2002 - 3:29 PM
Value 0
 Name:          Security
 Type:          REG_BINARY
 Data:
00000000  01 00 14 80 a0 00 00 00 - ac 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 70 00 04 00 00 00 - 00 00 18 00 fd 01 02 00  ..p.........ý...
00000040  01 01 00 00 00 00 00 05 - 12 00 00 00 72 76 69 63  ............rvic
00000050  00 00 1c 00 ff 01 0f 00 - 01 02 00 00 00 00 00 05  ....ÿ...........
00000060  20 00 00 00 20 02 00 00 - 65 00 00 00 00 00 18 00   ... ...e.......
00000070  8d 01 02 00 01 01 00 00 - 00 00 00 05 0b 00 00 00  ................
00000080  20 02 00 00 00 00 1c 00 - fd 01 02 00 01 02 00 00   .......ý.......
00000090  00 00 00 05 20 00 00 00 - 23 02 00 00 65 00 00 00  .... ...#...e...
000000a0  01 01 00 00 00 00 00 05 - 12 00 00 00 01 01 00 00  ................
000000b0  00 00 00 05 12 00 00 00 -                          ........
```

Client 20

```
Key Name:       SYSTEM\CurrentControlSet\Services\qlvika
Class Name:     <NO CLASS>
Last Write Time:  6/25/2002 - 4:52 PM
Value 0
 Name:          ErrorControl
 Type:          REG_DWORD
 Data:          0x1

Value 1
 Name:          group
 Type:          REG_SZ
 Data:          MVIA

Value 2
 Name:          ImagePath
 Type:          REG_EXPAND_SZ
 Data:          System32\DRIVERS\qlvika.sys

Value 3
 Name:          start
 Type:          REG_DWORD
 Data:          0x2

Value 4
 Name:          Tag
 Type:          REG_DWORD
 Data:          0x1

Value 5
 Name:          type
 Type:          REG_DWORD
 Data:          0x1


Key Name:       SYSTEM\CurrentControlSet\Services\qlvika\Adapters
Class Name:     <NO CLASS>
Last Write Time:  6/25/2002 - 5:01 PM

Key Name:
SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B0721A0
Class Name:     <NO CLASS>
Last Write Time:  6/25/2002 - 6:07 PM
Value 0
 Name:          IPAddress
 Type:          REG_MULTI_SZ
 Data:          192.168.201.21


Key Name:       SYSTEM\CurrentControlSet\Services\qlvika\Enum
Class Name:     <NO CLASS>
Last Write Time:  11/1/2002 - 12:04 PM
Value 0
 Name:          0
 Type:          REG_SZ
 Data:          Root\SCSIADAPTER\0000

Value 1
 Name:          Count
 Type:          REG_DWORD
 Data:          0x1

Value 2
 Name:          NextInstance
 Type:          REG_DWORD
 Data:          0x1


Key Name:       SYSTEM\CurrentControlSet\Services\qlvika\Parameters
Class Name:     <NO CLASS>
Last Write Time:  9/24/2002 - 12:10 PM
Value 0
 Name:          IuBuffers
 Type:          REG_DWORD
 Data:          0x100

Value 1
 Name:          MaxCQEntries
 Type:          REG_DWORD
 Data:          0x2000

Value 2
 Name:          MaxCQs
 Type:          REG_DWORD
 Data:          0x400

Value 3
 Name:          MaxPTags
 Type:          REG_DWORD
 Data:          0x800

Value 4
 Name:          MaxRegisterMBytes
 Type:          REG_DWORD
 Data:          0x200

Value 5
 Name:          MaxRegisterRdmaMBytes
 Type:          REG_DWORD
 Data:          0x200

Value 6
 Name:          MaxRegisterRegions
 Type:          REG_DWORD
```

```
 Data:          0x1000

Value 7
 Name:          MaxTransferSize
 Type:          REG_DWORD
 Data:          0x10000

Value 8
 Name:          MaxVIs
 Type:          REG_DWORD
 Data:          0x400

Value 9
 Name:          RecvDescQuota
 Type:          REG_DWORD
 Data:          0x8

Value 10
 Name:          SendDescQuota
 Type:          REG_DWORD
 Data:          0x8

Value 11
 Name:          SupportPrototypeCards
 Type:          REG_DWORD
 Data:          0


Key Name:       SYSTEM\CurrentControlSet\Services\qlvika\Security
Class Name:     <NO CLASS>
Last Write Time:  6/25/2002 - 4:52 PM
Value 0
 Name:          Security
 Type:          REG_BINARY
 Data:
00000000  01 00 14 80 a0 00 00 00 - ac 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 70 00 04 00 00 00 - 00 00 18 00 fd 01 02 00  ..p.........ý...
00000040  01 01 00 00 00 00 00 05 - 12 00 00 00 6e 00 61 00  ............n.a.
00000050  00 00 1c 00 ff 01 0f 00 - 01 02 00 00 00 00 00 05  ....ÿ...........
00000060  20 00 00 00 20 02 00 00 - 67 00 65 00 00 00 18 00   ... ...g.e.....
00000070  8d 01 02 00 01 01 00 00 - 00 00 00 05 0b 00 00 00  ................
00000080  20 02 00 00 00 00 1c 00 - fd 01 02 00 01 02 00 00   .......ý.......
00000090  00 00 00 05 20 00 00 00 - 23 02 00 00 67 00 65 00  .... ...#...g.e.
000000a0  01 01 00 00 00 00 00 05 - 12 00 00 00 01 01 00 00  ................
000000b0  00 00 00 05 12 00 00 00 -                          ........
```

Client 30

```
Key Name:       SYSTEM\CurrentControlSet\Services\qlvika
Class Name:     <NO CLASS>
Last Write Time:  6/25/2002 - 5:18 PM
Value 0
 Name:          ErrorControl
 Type:          REG_DWORD
 Data:          0x1

Value 1
 Name:          group
 Type:          REG_SZ
 Data:          MVIA

Value 2
 Name:          ImagePath
 Type:          REG_EXPAND_SZ
 Data:          System32\DRIVERS\qlvika.sys

Value 3
 Name:          start
 Type:          REG_DWORD
 Data:          0x2

Value 4
 Name:          Tag
 Type:          REG_DWORD
 Data:          0x1

Value 5
 Name:          type
 Type:          REG_DWORD
 Data:          0x1


Key Name:       SYSTEM\CurrentControlSet\Services\qlvika\Adapters
Class Name:     <NO CLASS>
Last Write Time:  6/25/2002 - 5:23 PM

Key Name:
SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B07D5AF
Class Name:     <NO CLASS>
Last Write Time:  6/26/2002 - 8:18 AM
Value 0
 Name:          IPAddress
 Type:          REG_MULTI_SZ
 Data:          192.168.201.31


Key Name:       SYSTEM\CurrentControlSet\Services\qlvika\Enum
Class Name:     <NO CLASS>
Last Write Time:  11/1/2002 - 12:04 PM
Value 0
 Name:          0
 Type:          REG_SZ
 Data:          Root\SCSIADAPTER\0000

Value 1
 Name:          Count
 Type:          REG_DWORD
 Data:          0x1

Value 2
 Name:          NextInstance
 Type:          REG_DWORD
 Data:          0x1


Key Name:       SYSTEM\CurrentControlSet\Services\qlvika\Parameters
Class Name:     <NO CLASS>
Last Write Time:  9/24/2002 - 12:12 PM
Value 0
 Name:          IuBuffers
 Type:          REG_DWORD
 Data:          0x100

Value 1
 Name:          MaxCQEntries
 Type:          REG_DWORD
 Data:          0x2000

Value 2
 Name:          MaxCQs
 Type:          REG_DWORD
 Data:          0x400
```

Value 3
 Name: MaxPTags
 Type: REG_DWORD
 Data: 0x800

Value 4
 Name: MaxRegisterMBytes
 Type: REG_DWORD
 Data: 0x200

Value 5
 Name: MaxRegisterRdmaMBytes
 Type: REG_DWORD
 Data: 0x200

Value 6
 Name: MaxRegisterRegions
 Type: REG_DWORD
 Data: 0x1000

Value 7
 Name: MaxTransferSize
 Type: REG_DWORD
 Data: 0x10000

Value 8
 Name: MaxVIs
 Type: REG_DWORD
 Data: 0x400

Value 9
 Name: RecvDescQuota
 Type: REG_DWORD
 Data: 0x8

Value 10
 Name: SendDescQuota
 Type: REG_DWORD
 Data: 0x8

Value 11
 Name: SupportPrototypeCards
 Type: REG_DWORD
 Data: 0

Key Name: SYSTEM\CurrentControlSet\Services\qlvika\Security
Class Name: <NO CLASS>
Last Write Time: 6/25/2002 - 5:18 PM
Value 0
 Name: Security
 Type: REG_BINARY
 Data:
00000000 01 00 14 80 a0 00 00 00 - ac 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 70 00 04 00 00 00 - 00 00 18 00 fd 01 02 00 ..p.....ý...
00000040 01 01 00 00 00 00 00 05 - 12 00 00 00 00 00 00 00 ....
00000050 00 00 1c 00 ff 01 0f 00 - 01 02 00 00 00 00 00 05 ....ÿ...........
00000060 20 00 00 00 20 02 00 00 - 00 00 00 00 00 00 18 00 ... .
00000070 8d 01 02 00 01 01 00 00 - 00 00 00 05 0b 00 00 00 ....
00000080 20 02 00 00 00 00 1c 00 - fd 01 02 00 01 02 00 00 ....ý.......
00000090 00 00 00 05 20 00 00 00 - 23 02 00 00 00 00 00 00 ....#.......
000000a0 01 01 00 00 00 00 00 05 - 12 00 00 00 01 01 00 00 ....
000000b0 00 00 00 05 12 00 00 00 - ....

Key Name: SYSTEM\CurrentControlSet\Services\qlvika
Class Name: <NO CLASS>
Last Write Time: 7/16/2002 - 4:25 PM
Value 0
 Name: ErrorControl
 Type: REG_DWORD
 Data: 0x1

Value 1
 Name: group
 Type: REG_SZ
 Data: MVIA

Value 2
 Name: ImagePath
 Type: REG_EXPAND_SZ
 Data: System32\DRIVERS\qlvika.sys

Value 3
 Name: start
 Type: REG_DWORD
 Data: 0x2

Value 4
 Name: Tag
 Type: REG_DWORD
 Data: 0x1

Value 5
 Name: type
 Type: REG_DWORD
 Data: 0x1

Key Name: SYSTEM\CurrentControlSet\Services\qlvika\Adapters
Class Name: <NO CLASS>
Last Write Time: 7/16/2002 - 5:07 PM

Key Name:
SYSTEM\CurrentControlSet\Services\qlvika\Adapters\210000E08B07D4AF
Class Name: <NO CLASS>
Last Write Time: 7/16/2002 - 6:10 PM
Value 0
 Name: IPAddress
 Type: REG_MULTI_SZ
 Data: 192.168.201.41

Key Name: SYSTEM\CurrentControlSet\Services\qlvika\Enum
Class Name: <NO CLASS>
Last Write Time: 11/1/2002 - 12:04 PM
Value 0
 Name: 0
 Type: REG_SZ
 Data: Root\SCSIADAPTER\0000

Value 1
 Name: Count
 Type: REG_DWORD
 Data: 0x1

Value 2
 Name: NextInstance
 Type: REG_DWORD
 Data: 0x1

Client 40

```
Key Name:       SYSTEM\CurrentControlSet\Services\qlvika\Parameters
Class Name:     <NO CLASS>
Last Write Time:  9/24/2002 - 12:13 PM
Value 0
 Name:          IuBuffers
 Type:          REG_DWORD
 Data:          0x100

Value 1
 Name:          MaxCQEntries
 Type:          REG_DWORD
 Data:          0x2000

Value 2
 Name:          MaxCQs
 Type:          REG_DWORD
 Data:          0x400

Value 3
 Name:          MaxPTags
 Type:          REG_DWORD
 Data:          0x800

Value 4
 Name:          MaxRegisterMBytes
 Type:          REG_DWORD
 Data:          0x200

Value 5
 Name:          MaxRegisterRdmaMBytes
 Type:          REG_DWORD
 Data:          0x200

Value 6
 Name:          MaxRegisterRegions
 Type:          REG_DWORD
 Data:          0x1000

Value 7
 Name:          MaxTransferSize
 Type:          REG_DWORD
 Data:          0x10000

Value 8
 Name:          MaxVIs
 Type:          REG_DWORD
 Data:          0x400

Value 9
 Name:          RecvDescQuota
 Type:          REG_DWORD
 Data:          0x8

Value 10
 Name:          SendDescQuota
 Type:          REG_DWORD
 Data:          0x8

Value 11
 Name:          SupportPrototypeCards
 Type:          REG_DWORD
 Data:          0


Key Name:       SYSTEM\CurrentControlSet\Services\qlvika\Security
Class Name:     <NO CLASS>
Last Write Time:  7/16/2002 - 4:25 PM
Value 0
 Name:          Security
 Type:          REG_BINARY
 Data:
00000000  01 00 14 80 a0 00 00 00 - ac 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 70 00 04 00 00 00 - 00 00 18 00 fd 01 02 00  ..p.........ý...
00000040  01 01 00 00 00 00 00 05 - 12 00 00 00 00 00 00 00  ................
00000050  00 00 1c 00 ff 01 0f 00 - 01 02 00 00 00 00 00 05  ....ÿ...........
00000060  20 00 00 00 20 02 00 00 - 00 00 00 00 00 00 18 00   ... ...........
00000070  8d 01 02 00 01 01 00 00 - 00 00 00 05 0b 00 00 00  ................
00000080  20 02 00 00 00 00 1c 00 - fd 01 02 00 01 02 00 00   .......ý.......
00000090  00 00 00 05 20 00 00 00 - 23 02 00 00 00 00 00 00  .... ...#.......
000000a0  01 01 00 00 00 00 00 05 - 12 00 00 00 01 01 00 00  ................
000000b0  00 00 00 05 12 00 00 00 -                          ........
```

RTE Input Parameters

```
Profile:    6160wh(60000users)_4clients
File Path:  C:\Program Files\BenchCraft\6160wh(60000users)_4clients.pro
Version:    3

            Number of Engines: 55

                        Name: rte10a
                        Description: 10a
                        Directory: c:\rtelogs\log10a.log
                        Machine: RTE10
                        Parameter Set: PARAM2
                        Index: 0
                        Seed: 2831
                        Configured Users: 1100
                        Pipe Name: DRIVER1159965062
                        Connect Rate: 600
                        Start Rate: 0
                        Max. Concurrency: 1120
                        Concurrency Rate: 10
                        CLIENT_NURAND: 233
                        CPU: 0

                        Name: rte10b
                        Description: 10b
                        Directory: c:\rtelogs\log10b.log
                        Machine: RTE10
                        Parameter Set: PARAM2
                        Index: 30000000
                        Seed: 2831
                        Configured Users: 1100
                        Pipe Name: DRIVER2160902656
                        Connect Rate: 600
                        Start Rate: 0
                        Max. Concurrency: 1120
                        Concurrency Rate: 10
                        CLIENT_NURAND: 233
                        CPU: 1

                        Name: rte10c
                        Description: 10c
                        Directory: c:\rtelogs\log10c.log
                        Machine: RTE10
                        Parameter Set: PARAM2
                        Index: 60000000
                        Seed: 2831
                        Configured Users: 1100
                        Pipe Name: DRIVER3160971359
                        Connect Rate: 600
```

Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte10d
Description: 10d
Directory: c:\rtelogs\log10d.log
Machine: RTE10
Parameter Set: PARAM2
Index: 90000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER4161019671
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte10e
Description: 10e
Directory: c:\rtelogs\log10e.log
Machine: RTE10
Parameter Set: PARAM2
Index: 120000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER5161058781
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte10f
Description: 10f
Directory: c:\rtelogs\log10f.log
Machine: RTE10
Parameter Set: PARAM2
Index: 150000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER6161146031
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte10g
Description: 10g
Directory: c:\rtelogs\log10g.log
Machine: RTE10
Parameter Set: PARAM2
Index: 180000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER7161186328
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte10h
Description: 10h
Directory: c:\rtelogs\log10h.log
Machine: RTE10
Parameter Set: PARAM2
Index: 210000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER8161271359
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte10i
Description: 10i
Directory: c:\rtelogs\log10i.log
Machine: RTE10
Parameter Set: PARAM2
Index: 240000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER9161335203
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte10j
Description: 10j
Directory: c:\rtelogs\log10j.log
Machine: RTE10
Parameter Set: PARAM2
Index: 270000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER10161411968
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte10k
Description: 10k
Directory: c:\rtelogs\log10k.log
Machine: RTE10
Parameter Set: PARAM2
Index: 300000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER11161450671
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte10l
Description: 10l

Directory: c:\rtelogs\log10l.log
Machine: RTE10
Parameter Set: PARAM2
Index: 330000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER12161501640
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte10m
Description: 10m
Directory: c:\rtelogs\log10m.log
Machine: RTE10
Parameter Set: PARAM2
Index: 360000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER13161540312
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte20a
Description: 20a
Directory: c:\rtelogs\log20a.log
Machine: RTE20
Parameter Set: PARAM2
Index: 420000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER15161657843
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte20b
Description: 20b
Directory: c:\rtelogs\log20b.log
Machine: RTE20
Parameter Set: PARAM2
Index: 450000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER16161745703
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte20c
Description: 20c
Directory: c:\rtelogs\log20c.log
Machine: RTE20
Parameter Set: PARAM2
Index: 480000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER17161788984
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte20d
Description: 20d
Directory: c:\rtelogs\log20d.log
Machine: RTE20
Parameter Set: PARAM2
Index: 510000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER18161861453
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte20e
Description: 20e
Directory: c:\rtelogs\log20e.log
Machine: RTE20
Parameter Set: PARAM2
Index: 540000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER19161899578
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte20f
Description: 20f
Directory: c:\rtelogs\log20f.log
Machine: RTE20
Parameter Set: PARAM2
Index: 570000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER20161946031
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte20g
Description: 20g
Directory: c:\rtelogs\log20g.log
Machine: RTE20
Parameter Set: PARAM2
Index: 600000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER21161975281
Connect Rate: 600

Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte20h
Description: 20h
Directory: c:\rtelogs\log20h.log
Machine: RTE20
Parameter Set: PARAM2
Index: 630000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER22162004421
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte20i
Description: 20i
Directory: c:\rtelogs\log20i.log
Machine: RTE20
Parameter Set: PARAM2
Index: 660000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER23162040421
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte20j
Description: 20j
Directory: c:\rtelogs\log20j.log
Machine: RTE20
Parameter Set: PARAM2
Index: 690000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER24162793421
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte20k
Description: 20k
Directory: c:\rtelogs\log20k.log
Machine: RTE20
Parameter Set: PARAM2
Index: 720000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER25162841500
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte20l
Description: 20l
Directory: c:\rtelogs\log20l.log
Machine: RTE20
Parameter Set: PARAM2
Index: 750000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER26162878921
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte20m
Description: 20m
Directory: c:\rtelogs\log20m.log
Machine: RTE20
Parameter Set: PARAM2
Index: 780000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER27162912421
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte30a
Description: 30a
Directory: c:\rtelogs\log30a.log
Machine: RTE30
Parameter Set: PARAM2
Index: 840000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER29163035625
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte30b
Description: 30b
Directory: c:\rtelogs\log30b.log
Machine: RTE30
Parameter Set: PARAM2
Index: 870000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER30163087593
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte30c
Description: 30c

Directory: c:\rtelogs\log30c.log
Machine: RTE30
Parameter Set: PARAM2
Index: 900000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER31163124171
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte30d
Description: 30d
Directory: c:\rtelogs\log30d.log
Machine: RTE30
Parameter Set: PARAM2
Index: 930000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER32163169500
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte30e
Description: 30e
Directory: c:\rtelogs\log30e.log
Machine: RTE30
Parameter Set: PARAM2
Index: 960000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER33163207546
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte30f
Description: 30f
Directory: c:\rtelogs\log30f.log
Machine: RTE30
Parameter Set: PARAM2
Index: 990000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER34163440843
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte30g
Description: 30g
Directory: c:\rtelogs\log30g.log
Machine: RTE30
Parameter Set: PARAM2
Index: 1020000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER35163616968
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte30h
Description: 30h
Directory: c:\rtelogs\log30h.log
Machine: RTE30
Parameter Set: PARAM2
Index: 1050000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER36163657828
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte30i
Description: 30i
Directory: c:\rtelogs\log30i.log
Machine: RTE30
Parameter Set: PARAM2
Index: 1080000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER37163693218
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte30j
Description: 30j
Directory: c:\rtelogs\log30j.log
Machine: RTE30
Parameter Set: PARAM2
Index: 1110000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER38163731000
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte30k
Description: 30k
Directory: c:\rtelogs\log30k.log
Machine: RTE30
Parameter Set: PARAM2
Index: 1140000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER39163786750
Connect Rate: 600

Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte30l
Description: 30l
Directory: c:\rtelogs\log30l.log
Machine: RTE30
Parameter Set: PARAM2
Index: 1170000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER40163822156
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte30m
Description: 30m
Directory: c:\rtelogs\log30m.log
Machine: RTE30
Parameter Set: PARAM2
Index: 1200000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER41163857453
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte40a
Description: 40a
Directory: c:\rtelogs\log40a.log
Machine: RTE40
Parameter Set: PARAM2
Index: 1260000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER43163985750
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte40b
Description: 40b
Directory: c:\rtelogs\log40b.log
Machine: RTE40
Parameter Set: PARAM2
Index: 1290000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER44164033296
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte40c
Description: 40c
Directory: c:\rtelogs\log40c.log
Machine: RTE40
Parameter Set: PARAM2
Index: 1320000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER45164073218
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte40d
Description: 40d
Directory: c:\rtelogs\log40d.log
Machine: RTE40
Parameter Set: PARAM2
Index: 1350000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER46164105640
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte40e
Description: 40e
Directory: c:\rtelogs\log40e.log
Machine: RTE40
Parameter Set: PARAM2
Index: 1380000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER47164140171
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte40f
Description: 40f
Directory: c:\rtelogs\log40f.log
Machine: RTE40
Parameter Set: PARAM2
Index: 1410000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER48164179203
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte40g
Description: 40g

Directory: c:\rtelogs\log40g.log
Machine: RTE40
Parameter Set: PARAM2
Index: 1440000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER49164214328
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte40h
Description: 40h
Directory: c:\rtelogs\log40h.log
Machine: RTE40
Parameter Set: PARAM2
Index: 1470000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER50164254265
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte40i
Description: 40i
Directory: c:\rtelogs\log40i.log
Machine: RTE40
Parameter Set: PARAM2
Index: 1500000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER51164285125
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte40j
Description: 40j
Directory: c:\rtelogs\log40j.log
Machine: RTE40
Parameter Set: PARAM2
Index: 1530000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER52166806468
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte40k
Description: 40k
Directory: c:\rtelogs\log40k.log
Machine: RTE40
Parameter Set: PARAM2
Index: 1560000000
Seed: 2831
Configured Users: 1100
Pipe Name: DRIVER53166860578
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte40l
Description: 40l
Directory: c:\rtelogs\log40l.log
Machine: RTE40
Parameter Set: PARAM2
Index: 1590000000
Seed: 2831
Configured Users: 1000
Pipe Name: DRIVER54166907640
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte40m
Description: 40m
Directory: c:\rtelogs\log40m.log
Machine: RTE40
Parameter Set: PARAM2
Index: 1620000000
Seed: 2831
Configured Users: 1000
Pipe Name: DRIVER55166945546
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 0

Name: rte10n
Description: 10n
Directory: c:\rtelogs\log10n.log
Machine: RTE10
Parameter Set: PARAM2
Index: 905032704
Seed: 2831
Configured Users: 1000
Pipe Name: DRIVER53517774203
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte20n
Description: 20n
Directory: c:\rtelogs\log20n.log
Machine: RTE20
Parameter Set: PARAM2
Index: 1005032704
Seed: 2831
Configured Users: 1000
Pipe Name: DRIVER54517882281
Connect Rate: 600

Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Name: rte30n
Description: 30n
Directory: c:\rtelogs\log30n.log
Machine: RTE30
Parameter Set: PARAM2
Index: 1105032704
Seed: 2831
Configured Users: 1000
Pipe Name: DRIVER55517954062
Connect Rate: 600
Start Rate: 0
Max. Concurrency: 1120
Concurrency Rate: 10
CLIENT_NURAND: 233
CPU: 1

Number of User groups: 55

Driver Engine: rte10a
IIS Server: client10a
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1 - 110
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte10b
IIS Server: client10a
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 111 - 220
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte10c
IIS Server: client10a
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 221 - 330
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte10d
IIS Server: client10a
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 331 - 440
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte10e
IIS Server: client10d
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 441 - 550
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte10f
IIS Server: client10b
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 551 - 660
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte10g
IIS Server: client10b
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 661 - 770
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte10h
IIS Server: client10b
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 771 - 880
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte10i
IIS Server: client10b
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 881 - 990
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte10j
IIS Server: client10c
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 991 - 1100
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte10k
IIS Server: client10c
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1101 - 1210
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte10l
IIS Server: client10c
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1211 - 1320
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte10m
IIS Server: client10d
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1321 - 1430
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte20a
IIS Server: client20a
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1431 - 1540
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte20b
IIS Server: client20a
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1541 - 1650
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte20c
IIS Server: client20a
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1651 - 1760
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte20d
IIS Server: client20a
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1761 - 1870
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte20e
IIS Server: client20d
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1871 - 1980
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal

User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte20f
IIS Server: client20b
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1981 - 2090
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte20g
IIS Server: client20b
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2091 - 2200
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte20h
IIS Server: client20b
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2201 - 2310
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte20i
IIS Server: client20b
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2311 - 2420
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte20j
IIS Server: client20c
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2421 - 2530
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte20k
IIS Server: client20c
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2531 - 2640
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte20l
IIS Server: client20c
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2641 - 2750
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte20m
IIS Server: client20d
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2751 - 2860
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte30a
IIS Server: client30a
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2861 - 2970
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte30b
IIS Server: client30a
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML

w_id Range: 2971 - 3080
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte30c
IIS Server: client30a
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3081 - 3190
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte30d
IIS Server: client30a
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3191 - 3300
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte30e
IIS Server: client30d
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3301 - 3410
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte30f
IIS Server: client30b
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3411 - 3520
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte30g
IIS Server: client30b
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3521 - 3630
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte30h
IIS Server: client30b
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3631 - 3740
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte30i
IIS Server: client30b
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3741 - 3850
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte30j
IIS Server: client30c
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3851 - 3960
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte30k
IIS Server: client30c
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3961 - 4070
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte30l
IIS Server: client30c

SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4071 - 4180
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte30m
IIS Server: client30d
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4181 - 4290
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte40a
IIS Server: client40a
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4291 - 4400
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte40b
IIS Server: client40a
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4401 - 4510
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte40c
IIS Server: client40a
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4511 - 4620
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte40d
IIS Server: client40a
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4621 - 4730
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte40e
IIS Server: client40d
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4731 - 4840
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte40f
IIS Server: client40b
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4841 - 4950
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte40g
IIS Server: client40b
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4951 - 5060
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte40h
IIS Server: client40b
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5061 - 5170
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1

Scale Down: No

Driver Engine: rte40i
IIS Server: client40b
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5171 - 5280
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte40j
IIS Server: client40c
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5281 - 5390
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte40k
IIS Server: client40c
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5391 - 5500
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1100
District id: 1
Scale Down: No

Driver Engine: rte40l
IIS Server: client40c
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5501 - 5600
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1000
District id: 1
Scale Down: No

Driver Engine: rte40m
IIS Server: client40d
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5601 - 5700
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1000
District id: 1
Scale Down: No

Driver Engine: rte10n
IIS Server: client10d
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5701 - 5800
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1000
District id: 1
Scale Down: No

Driver Engine: rte20n
IIS Server: client20d
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5801 - 5900
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1000
District id: 1
Scale Down: No

Driver Engine: rte30n
IIS Server: client30d
SQL Server: comanche
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5901 - 6000
w_id Min Warehouse: 1
w_id Max Warehouse: 6000
Scale: Normal
User Count: 1000
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

	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	6,160				tpmC	74,206.27
Table	Rows	Data KB	Index KB	Extra 5% KB	8HR Space	Total Space KB
Warehouse	6,160	664	16	34.00		714.00
District	61,600	6,848	32	344.00		7,224.00
Item	100,000	9,528	32	478.00		10,038.00
New-Order	55,440,000	876,528	2,000		492,800.00	1,371,328.00
History	184,800,000	10,266,680	24		1,978,833.86	12,245,537.86
Orders	184,800,000	5,664,368	2,575,808		1,588,235.07	9,828,411.07
Customer	184,800,000	134,400,000	8,014,048	7,120,702.40		149,534,750.40
Order-Line	1,847,997,761	115,499,864	244,448		22,308,889.39	138,053,201.39
Stock	616,000,000	197,120,000	368,216	9,874,410.80		207,362,626.80
Totals		463,844,480	11,204,624	16,995,969.20	26,368,758.32	518,413,831.52
Segment	LogDev Cnt.	Segment Size	Needed	Overhead		Not Needed
misc	1	174,080,000	161,516,454	1,615,165		10,948,381.14
big	5	409,600,000	356,897,377	3,568,974		49,133,649.03
master, msdb,model	1	13,312	13,312			
tpcc_root	1	8,192	8,192			
tempdb	1	8,704	8,704			
Totals		583,710,208.00	518,444,039.52	5,184,138.32		60,082,030.16
Dynamic Space	133,430,912.00	Sum of Data for Order, Order-Line and History				
Static Space	365,798,299.52	Data + Index + 5% Space + Overhead - Dynamic Space				
Free Space	26,398,966.32	Total Segment Size - Dynamic Space - Static Space - Not needed				
Daily Growth	25,332,369.50	(Dynamic Space/W * 62.5)* tpmC				
Daily Spread	(11,599,587.92)	Free Space - 1.5 * Daily Growth (Zero If Negative)				
60-Day Space (KB)	1,885,740,469.26	Static Space + 60 (Daily Growth + Daily Spread)				
60-Day Space (GB)	1,798.38	60-Day Space in GB (Excludes OS,Paging and RDBMS Logs)				
Available (GB)	4,367.94	Total storage configured and available for database, minus logs, in RAID-0 configuration.				
Log File Storage Requirement						
Log Size (MB)	190,000.00	Total Size of Log File				
% Log Used	27.2724	% of Log File Used During Entire Run				
Total N-O Txn	11,408,879.00	Total Count of New-Order Transactions during Entire Run				
Log / N-O Txn	4.65	KB of Log per New-Order Transaction				
8 Hour Log (GB)	157.98	8 Hours of Log in GB (Excluding Space for Redundancy)				
Log Configured (GB)	237.02					
Disk Capacity	MB	GB				
18.2GB Drive	17,736	16.93				
Space Usage	GB Needed		Disks Priced	Disk Size	GB Priced	GB Usable
60-Day (RAID-0)	1,798.38		258	18.2GB	4,367.94	4,367.94
					Total DB	4,367.94
8hr Log (RAID-1)	157.98		28	18.2GB	474.04	237.02
					Total Log	237.02
OS, SQL Server	4.00		1	18.2GB	16.93	16.93
Total Space	1,960.37		287		4,858.91	4,621.89

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

October 25, 2002

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 32-bit** *Per processor licensing* *Discount Schedule: Open Program Level C* *Unit Price reflects a 17% discount from the retail unit price of $19,999.*	$16,541	4	$66,164
C11-00821	**Windows 2000 Server 32-bit** *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
N/A	**.Net Enterprise Server 2003 32-bit** *Server license only - No CALs* *Discount Schedule: Open Program - No Level* *Unit Price reflects a 18% discount from the retail unit price of $3,299.*	$2,699	1	$2,699
048-00317	**Visual C++ Professional 6.0 Win32** *No discounts applied*	$549	1	$549
PRO-PRORS-16U-01	**Database Server Support Package** *1 Year Term*	$1,950	3	$5,850

Some products may not be currently orderable but will be available through Microsoft's normal distribution channels by December 31, 2002.

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.

QUOTATION

Date 10/31/2002
Quote No. 98036035

Customer
Attn: Chris King
IBM/RTP
3039 Cornwallis Road
RTP, NC 27709
919-5-43--0349
919-5-43--4045 (fax)

Quoted By: Kristina Homan
G2FSE: CRAIG BORSACK
Manufacturer QLOGIC
Quote valid for 30 days, unless noted
F.O.B.: Shipping Point

cc: Kristi Link

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	$2,568.000	10-12 weeks
	Unit price quote is valid for quantity of 1-500.				

Quote valid for 60 days.

Thank you for the opportunity to quote your requirements.
Please let me know if you have any questions or need additional

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Product Info			Price	QTY
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