



Hewlett-Packard Company

TPC Benchmark™ C
Full Disclosure Report
for
HP ProLiant DL585G5/2.5 GHz
using
Microsoft SQL Server 2005 Enterprise x64 Edition SP2
and
Windows Server 2003 R2 Enterprise x64 Edition SP1

**First Edition
Submitted for Review
July 14, 2008**

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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 Specifications Version 5.9.

TPC Benchmark C Overview

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

TPC Benchmark™ C (TPC-C) is an 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 such 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.

Although these specifications express implementation in terms of a relational data model with conventional locking scheme, the database may be implemented using any commercially available database management system (DBMS), database server, file system, or other data repository that provides a functionally equivalent implementation. The terms "table", "row", and "column" are used in this document only as examples of logical data structures.

TPC-C uses terminology and metrics that are similar to other benchmarks, originated by the TPC or others. Such similarity in terminology does not in any way imply that TPC-C results are comparable to other benchmarks. The only benchmark results comparable to TPC-C are other TPC-C results conformant with the same revision.

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.

Abstract

Overview

This report documents the methodology and results of the TPC Benchmark C test conducted on the HP ProLiant DL585G5. The operating system used for the benchmark was Windows Server R2 2003, Enterprise x64 Edition. The DBMS used was Microsoft SQL Server 2005 Enterprise x64 Edition SP2.

TPC Benchmark C Metrics

The standard TPC Benchmark C metrics, tpmC (transactions per minute), price per tpmC (three year capital cost per measured tpmC), and the availability date are reported as:

471,883tpmC

USD \$1.17 per tpmC

The availability date is July 14, 2008.

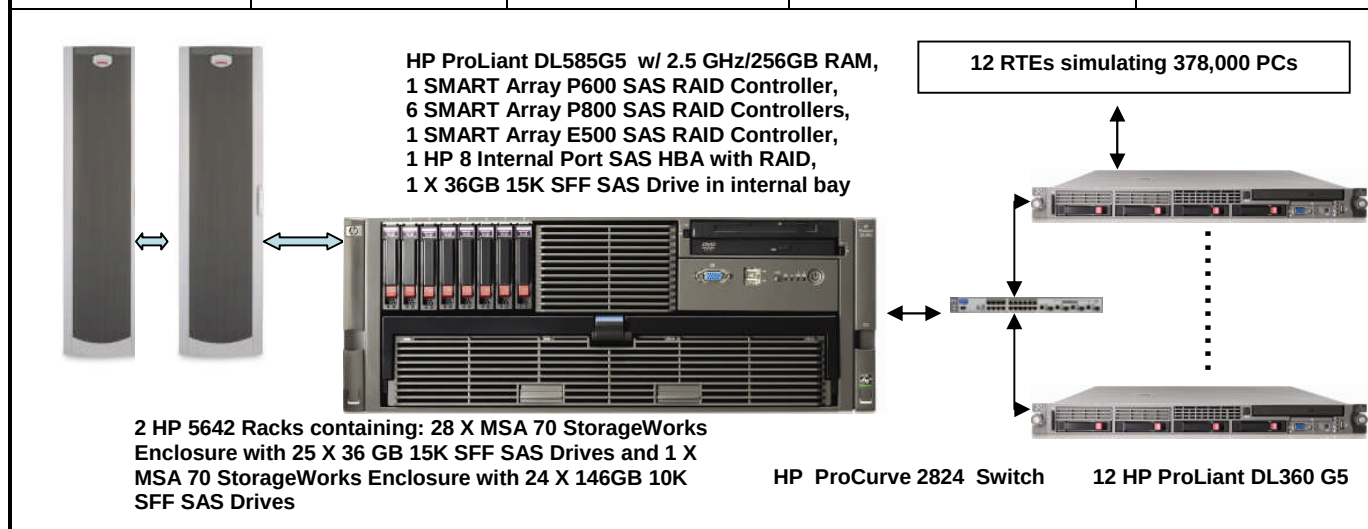
Standard and Executive Summary Statements

The following pages contain executive summary of results for this benchmark.

Auditor

The benchmark configuration, environment and methodology were audited by Lorna Livingtree of Performance Metrics, Inc. to verify compliance with the relevant TPC specifications.

Hewlett-Packard Company		HP ProLiant DL585 G5 2.5GHz/2MB		TPC-C Rev. 5.9
		C/S with 12 HP ProLiant DL360 G5		Report Date: July 14, 2008
Total System Cost		TPC-C Throughput	Price/Performance	Availability Date
USD \$549,952		471,883	USD \$1.17	July 14, 2008
Database Server Processors /Cores/Threads	Database Manager	Operating System	Other Software	Number of Users
4/16/16 AMD 8360 SE 2.5 GHz QC	Microsoft SQL Server 2005 Enterprise x64 Edition SP2	Windows Server 2003 R2 Enterprise x64 Edition SP1	Microsoft Visual C++ Microsoft COM+	378000



	Server		Each Client	
System Components	Quantity	Description	Quantity	Description
Processors/Cores/Threads	4/16/16	AMD 8360 2.5 GHz 2MB cache	1/2/2	2 GHz Intel Xeon w/ 4MB cache
Memory	256GB	(32x 8GB) GB DDR2	1GB	1024 MB
Disk Controllers	1 6 1 1	Smart P600 Controller Smart P800 Controller Smart E500 Controller 8 Internal Port SAS HBA	1	Integrated Smart Array E200i Controller
Disk Drives	24 700 1	146GB 10K SFF SAS 36 GB 15K SFF SAS 36 GB 15K SFF SAS	2	36 GB SCSI Drive
Total Storage		27,555.20 GB		36 GB

Hewlett-Packard Company	HP ProLiant DL585G5			TPC-C Rev. 5.9		
				Report Date	14-Jul-08	
Description	Part Number	Brand	Unit Price	Qty	Extended Price	3 yr. Maint. Price
Server Hardware						
HP ProLiant DL585 G5 Rack 2.5GHz 4P/8GB dual port NIC	448190-001	1	17,699	1	17,699	
16GB PC2-5300 2 x 8GB Kit	408855-B21	1	4,499	16	71,984	
HP Smart Array P800/512MB SAS Controller	381513-B21	1	949	6	5,694	
HP Smart Array E500/256 SAS Controller	435129-B21	1	109	1	109	
HP SA Cache Battery Kit	383280-B21	1	499	1	499	
HP 8 Internal Port SAS HBA with RAID	347786-B21	1	199	1	199	
HP SMART Array P600 3G SAS/SATA RAID Controller	337972-B21	1	729	1	729	
HP L1506 LCD Monitor	PX848AA#ABA	1	209	1	209	
HP PS/2 Standard Keyboard	DZ204AV#ABA	1	5	1	5	
HP PS/2 Scroll Mouse	GH536AV	1	5	1	5	
HP 5642 Pallet Unassembled Rack	358254-B21	1	865	2	1,730	
HP R1.5 kVA 1U NA UPS	AF419A	1	739	1	739	
HP 36GB 15k 2.5 Single Port HP SAS Drive	431933-B21	1	349	700	244,300	
HP 36GB 15k 2.5 Single Port HP SAS Drive (10% Spares)	431933-B21	1	349	70		24,430
HP 146 GB 3G SAS 10K SFF SP HDD	431958-B21	1	329	24	7,896	
HP 146 GB 3G SAS 10K SFF SP HDD (10% Spares)	431958-B21	1	329	3		987
HP 36GB 15k 2.5 Single Port HP SAS Drive	431933-B21	1	349	1	349	
HP StorageWorks MSA-70 Storage	418800-B21	1	3,199	29	92,771	
HP StorageWorks MSA-70 Storage (10% Spares)	418408-B21	1	3,199	3		9,597
HP 3y 4h 24x7 ProLiant D58x HW Support ,Proliant Server DL58x	U4608E	1	1,575	1		1,575
Subtotal					444,917	36,589
Server Software						
Microsoft SQL Server 2005 Enterprise X64 Edition(per processor)	810-03134	2	23,432	4	93,728	Incl Below
Visual Studio Standard 2005	127-0012	2	250	1	250	Incl Below
Microsoft Windows 2003 Server R2 Enterprise X64 Edition	P72-01684	2	2,334	1	2,334	Incl Below
Microsoft Problem Resolution Services		2	245	1		245
Subtotal					96,312	245
Client Hardware						
HP DL360G5 5130 1G Entry US Svr	416561-001	1	2,189	12	26,268	
Dual Integrated Gigabit NIC, Integrated Smart Array Controller E200i						
HP 36GB 15k 2.5 Single Port HP SAS Drive	431933-B21	1	349	24	8,376	
HP L1506 LCD Monitor	PX848AA#ABA	1	209	12	2,508	
HP PS/2 Standard Keyboard	DZ204AV#ABA	1	5	12	60	
HP PS/2 Scroll Mouse	GH536AV	1	5	12	60	
HP CP 3Y 4H 24x7 HW Entry300 4-Hour 24 Hour x 7 Day Coverage 3 Years	U4497E	1	596	12		7,152
Subtotal					37,272	7,152
Client Software						
Windows Server 2003 R2 Standard Edition	P73-01972	2	719	12	8,628	Incl. Above
Subtotal					8,628	0
User Connectivity						
HP ProCurve Switch 2824	J4903A#ABA	1	2,499	1	2,499	
HP CP for HP ProCurve Networking products 3 Yr 4 hr/24x7	U2856E	1	1,000	1		1,000
10 foot Cat6 molded Patch Cables	CB242-10BL	3	3	14	40	
10 foot Cat6 molded Patch Cables (10% Spares)	CB242-10BL	3	3	2		6
Subtotal					2,539	1,006
Large Purchase and Net 30 discount (See Note 1)					(\$77,550)	(\$7,159)
Total					\$512,118	\$37,833
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 pricing specifications. If you find that the stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org. Thank you.						
					Three-Year Cost of Ownership: USD	\$549,952
					tpmC Rating:	471,883
					\$ / tpmC: USD	\$1.17
Pricing: 1=HP Direct 800-203-6748 2= Microsoft 3= deepsurplus.com						
Note 1 = Discount based on HP Direct guidance applies to all lines where pricing = 1						
Note 2 = The benchmark results were audited by Lorna Livingtree of Performance Metrics						

Numerical Quantities Summary

MQTH, Computed Maximum Qualified Throughput

471,883 tpmC

Response Times (in seconds)	Average	90%	Maximum
New-Order	0.44	1.38	6.65
Payment	0.42	1.36	6.27
Order-Status	0.45	1.37	6.65
Delivery (interactive portion)	0.12	0.14	1.62
Delivery (deferred portion)	0.11	0.14	5.05
Stock-Level	0.47	1.42	3.39
Menu	0.12	0.14	1.63

Transaction Mix, in percent of total transaction

New-Order	44.94%
Payment	43.02%
Order-Status	4.02%
Delivery	4.01%
Stock-Level	4.01%

Emulation Delay (in seconds)	Resp.Time	Menu
New-Order	0.10	0.10
Payment	0.10	0.10
Order-Status	0.10	0.10
Delivery (interactive)	0.10	0.10
Stock-Level	0.10	0.10

Keying/Think Times (in seconds)	Min.	Average	Max.
New-Order	18.02/0.00	18.03/12.05	18.47/120.69
Payment	3.02/0.00	3.03/12.04	3.47/120.43
Order-Status	2.02/0.00	2.03/10.03	2.47/100.33
Delivery (interactive)	2.02/0.00	2.03/5.05	2.44/50.33
Stock-Level	2.02/0.00	2.03/5.05	2.44/50.33

Test Duration

Ramp-up time	51 minutes
Measurement interval	120 minutes
Transactions (all types) completed during measurement interval	131,069,209
Ramp down time	2 minutes

Checkpointing

Number of checkpoints	4
Checkpoint interval	30 minutes

General Items

Test Sponsor

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

This benchmark was sponsored by Hewlett-Packard Company. The benchmark was developed and engineered by Hewlett-Packard Company. Testing took place at HP benchmarking laboratories in Houston, Texas.

Application Code 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 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 which have been changed from the defaults found in actual products, including by not limited to:

- *Database options*
- *Recover/commit options*
- *Consistency locking options*
- *Operating system and application configuration parameters*

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

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

Configuration Items

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

The configuration diagram for both the tested and priced systems are included on the following page.

Figure 1. Benchmarked Configuration

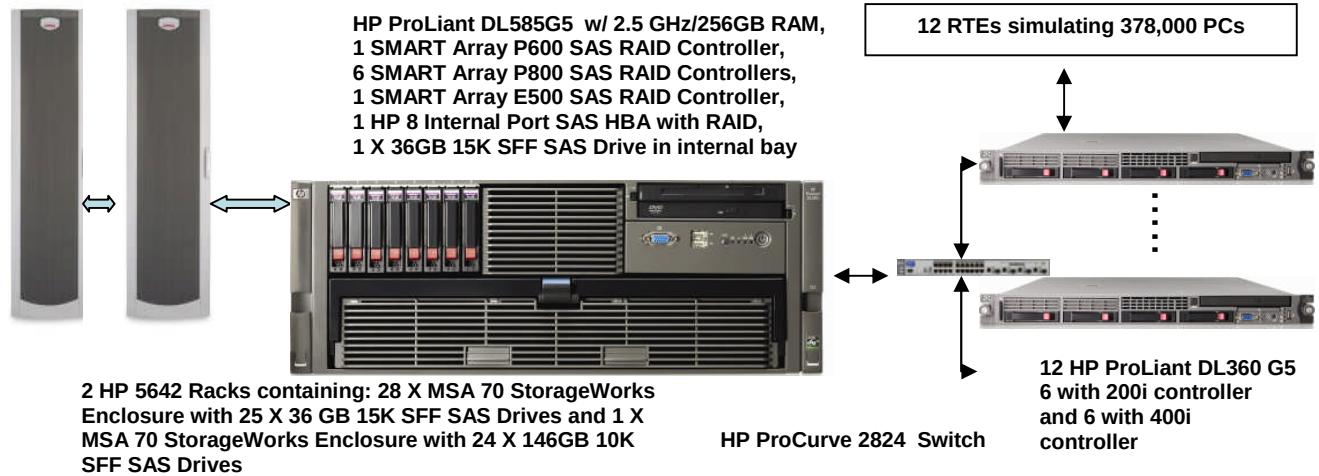
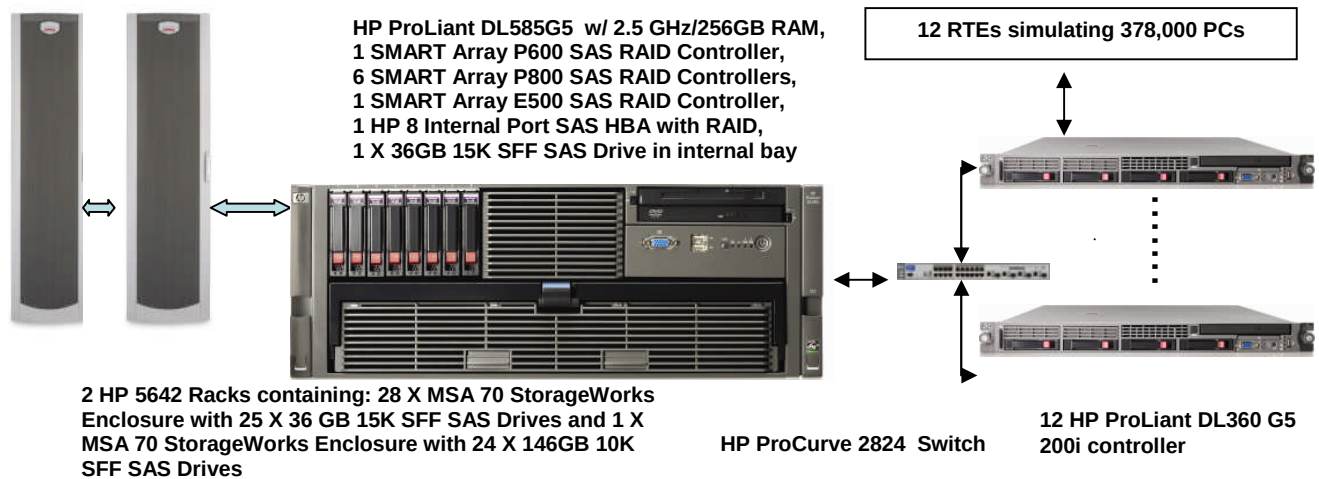


Figure 1. Priced Configuration



Clause 1 Related Items

Table Definitions

Listing 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 Database

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

The tested configuration consisted of 700 drives at 36GB for database data, one 36GB drives for the operating system, and 24 drives at 146GB for database log. There were 600 X 36GB drives for database data on 6 SMART P800 controllers, 100 X 36GB drives for database data on 1 SMART E500 controller, 24 X 146 GB drives on the SMART P600 controller for database log, and 1 X 36GB drives on the 8 Internal Port SAS HBA for the operating system.

Benchmarked Configuration:

8 Internal Port SAS HBA, Slot 1, Array A

<u>LOGICAL DRIVE C:</u>	<u>Total Capacity = 33.51 GB</u>	<u>RAID 0</u>
Microsoft Windows Server R2 2003 Enterprise X64 Edition		

SMART- P600 Controller, Slot 2, Array A

<u>LOGICAL DRIVE E:</u>	<u>Total Capacity = 1640.41 GB</u>	<u>RAID 0+1</u>
MSSQL_tpc_log		

SMART-P800 Controller, Slot 3A, Array A

<u>LOGICAL DRIVE C:\stk\stk1:</u>	<u>Total Capacity = 205.08GB</u>	<u>RAID 0</u>
stk_fg		
<u>LOGICAL DRIVE C:\cs\cs1:</u>	<u>Total Capacity = 136.71GB</u>	<u>RAID 0</u>
cs_fg		
<u>LOGICAL DRIVE C:\ol\ol1:</u>	<u>Total Capacity = 150.39GB</u>	<u>RAID 0</u>
ol_fg		
<u>LOGICAL DRIVE C:\misc\misc1:</u>	<u>Total Capacity = 30.27GB</u>	<u>RAID 0</u>
Misc_fg		
<u>LOGICAL DRIVE U:</u>	<u>Total Capacity = 1433.13GB</u>	<u>RAID 0+1</u>
Tpccback1		

SMART-P800 Controller, Slot 4A, Array A

<u>LOGICAL DRIVE C:\stk\stk2:</u>	<u>Total Capacity = 205.08GB</u>	<u>RAID 0</u>
stk_fg		
<u>LOGICAL DRIVE C:\cs\cs2:</u>	<u>Total Capacity = 136.71GB</u>	<u>RAID 0</u>
cs_fg		
<u>LOGICAL DRIVE C:\ol\ol2:</u>	<u>Total Capacity = 150.39GB</u>	<u>RAID 0</u>
ol_fg		
<u>LOGICAL DRIVE C:\misc\misc2:</u>	<u>Total Capacity = 30.27GB</u>	<u>RAID 0</u>
Misc_fg		
<u>LOGICAL DRIVE V:</u>	<u>Total Capacity = 1433.13GB</u>	<u>RAID 0+1</u>
Tpccback2		

SMART-P800 Controller, Slot 5A, Array A

<u>LOGICAL DRIVE C:\stk\stk3:</u> stk_fg	<u>Total Capacity = 205.08GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE C:\cs\cs3:</u> cs_fg	<u>Total Capacity = 136.71GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE C:\ol\ol3:</u> ol_fg	<u>Total Capacity = 150.39GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE C:\misc\misc3:</u> Misc_fg	<u>Total Capacity = 30.27GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE W:</u> Tpccback3	<u>Total Capacity = 1433.13GB</u>	<u>RAID 0+1</u>

SMART-P800 Controller, Slot 6A, Array A

<u>LOGICAL DRIVE C:\stk\stk4:</u> stk_fg	<u>Total Capacity = 205.08GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE C:\cs\cs4:</u> cs_fg	<u>Total Capacity = 136.71GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE C:\ol\ol4:</u> ol_fg	<u>Total Capacity = 150.39GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE C:\misc\misc4:</u> Misc_fg	<u>Total Capacity = 30.27GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE X:</u> Tpccback4	<u>Total Capacity = 1433.13GB</u>	<u>RAID 0+1</u>

SMART-P800 Controller, Slot 7A, Array A

<u>LOGICAL DRIVE C:\stk\stk5:</u> stk_fg	<u>Total Capacity = 205.08GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE C:\cs\cs5:</u> cs_fg	<u>Total Capacity = 136.71GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE C:\ol\ol5:</u> ol_fg	<u>Total Capacity = 150.39GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE C:\misc\misc5:</u> Misc_fg	<u>Total Capacity = 30.27GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE Y:</u> Tpccback1	<u>Total Capacity = 1433.13GB</u>	<u>RAID 0+1</u>

SMART-P800 Controller, Slot 8A, Array A

<u>LOGICAL DRIVE C:\stk\stk6:</u> stk_fg	<u>Total Capacity = 205.08GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE C:\cs\cs6:</u> cs_fg	<u>Total Capacity = 136.71GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE C:\ol\ol6:</u> ol_fg	<u>Total Capacity = 150.39GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE C:\misc\misc6:</u> Misc_fg	<u>Total Capacity = 30.27GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE Z:</u> Tpccback6	<u>Total Capacity = 1433.13GB</u>	<u>RAID 0+1</u>

SMART-P800 Controller, Slot 9, Array A

<u>LOGICAL DRIVE C:\stk\stk7:</u> stk_fg	<u>Total Capacity = 205.08GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE C:\cs\cs7:</u> cs_fg	<u>Total Capacity = 136.71GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE C:\ol\ol7:</u> ol_fg	<u>Total Capacity = 150.39GB</u>	<u>RAID 0</u>
<u>LOGICAL DRIVE C:\misc\misc7:</u> Misc_fg	<u>Total Capacity = 30.27GB</u>	<u>RAID 0</u>

Priced Configuration vs. Measured Configuration:

The benchmarked configuration used 6 client systems with the 200I controller and 6 with the 400I controller. The priced configuration priced all systems with the 200I controller. The processors and all other aspects of the priced vs. benchmarked system were the same.

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 restrictions 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 minimum key value for these new rows.

All insert and delete functions were fully operational during the entire benchmark.

Partitioning

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

No partitioning was used in this benchmark.

Replication, Duplication or Additions

Replication of tables, if used, must be disclosed. Additional and/or duplicated attributes in any table must be disclosed along with a statement on the impact on performance.

No replications, duplications or additional attributes were used in this benchmark.

Clause 2 Related Items

Random Number Generation

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

In the Benchcraft RTE from Microsoft, each driver engine uses an independent random number sequence. All of the users within a given driver draw from the same sequence.

The Benchcraft RTE computes random integers as described in "Random Numbers Generators: Good Ones Are Hard to Find." Communications of the ACM - October 1988 Volume 31 Number 10.

The seeds for each user were captured and verified by the auditor to be unique. In addition, the contents of the database were systematically searched, and randomly sampled by the auditor for patterns that would indicate the random number generator had affected any kind of a discernible pattern; none was found.

Input/Output Screen Layout

The actual layout of the terminal input/output screens must be disclosed.

All screen layouts followed the specifications exactly.

Priced Terminal Feature 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 for the demonstration in 8.1.3.3 must be disclosed and commercially available (including supporting software and maintenance).

The terminal attributes were verified by the auditor. The auditor manually exercised each specification on a representative HP ProLiant web server.

Presentation Manager or Intelligent Terminal

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

Application code running on the client machines implemented the TPC-C user interface. No presentation manager software or intelligent terminal features were used. The source code for the forms applications is listed in Appendix A.

Transaction Statistics

Table 2.1 lists the numerical quantities that Clauses 8.1.3.5 to 8.1.3.11 require.

Table 2.1 Transaction Statistics

Statistic		Value
New Order	Home warehouse order lines	99.00%
	Remote warehouse order lines	1.00%
	Rolled back transactions	1.00%
	Average items per order	10.00
Payment	Home warehouse payments	85.00%
	Remote warehouse payments	15.00%
	Accessed by last name	59.99%
Order Status	Accessed by last name	60.04%
Transaction Mix	New Order	44.94%
	Payment	43.02%
	Order status	4.02%
	Delivery	4.01%
	Stock level	4.01%

Queuing Mechanism

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

Microsoft COM+ on each client machine served as the queuing mechanism to the database. Each delivery request was submitted to Microsoft COM+ asynchronously with control being returned to the client process immediately and the deferred delivery part completing asynchronously.

The source code is listed in Appendix A.

Clause 3 Related Items

Transaction System Properties (ACID)

The results of the ACID tests 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.

All ACID property tests were successful. The executions are described below.

Atomicity

The system under test must guarantee that the 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.

Completed Transactions

A row was selected in a script from the warehouse, district and customer tables, and the balances noted. A payment transaction was started with the same warehouse, district and customer identifiers and a known amount. The payment transaction was committed and the rows were verified to contain correctly updated balances.

Aborted Transactions

A row was selected in a script from the warehouse, district and customer tables, and the balances noted. A payment transaction was started with the same warehouse, district and customer identifiers and a known amount. The payment transaction was rolled back and the rows were verified to contain the original balances.

Consistency

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 script to issue queries to the database. The results of the queries verified that the database was consistent for all four tests.

A run was executed under full load lasting over two hours and included a checkpoint.

The script was executed again. The result of the same queries verified that the database remained consistent after the run.

Isolation

Sufficient conditions must be enabled at either the system or application level to ensure the required isolation defined above (clause 3.4.1) is obtained.

Isolation tests one through nine were executed 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 to files. The captured files were verified by the auditor to demonstrate the required isolation had been met.

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

For Isolation test seven, case A was followed.

Durability

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

Durable Media Failure

Loss of Data and Log

To demonstrate recovery from a permanent failure of durable medium containing DBMS logs and TPC-C tables, the following steps were executed. This test was executed on a fully scaled database of 38376 warehouses of which 3840 were used under a load of 38400 users.

- The total number of New Orders was determined by the sum of D_NEXT_O_ID of all rows in the DISTRICT table giving the beginning count.
- The RTEs were started with 38400 users.
- The test was allowed to run for a minimum of 10 minutes.
- One disk was removed from one of the MSA 70 cabinets containing the log disks.
- Since the disk was mirrored, processing was not interrupted. This was verified by checking the user's status on the RTE.
- One of the data disks was removed from one MSA 70 data drive cabinet.
- When Microsoft SQL Server recorded errors about not being able to access the database, the RTE was shut down, and a database transaction log dump was taken.
- Microsoft SQL Server was shutdown, and the system rebooted after replacing the pulled drives with new drives.
- After the RAID recovery process finished Microsoft SQL Server was started.
- The database was restored from backup and the transaction log dump was applied.
- Consistency condition #3 was executed and verified.
- Step 2 was repeated and the difference between the first and second counts was noted.
- An RTE report was generated for the entire run time giving the number of NEW-ORDERS successfully returned to the RTE.
- The counts in steps 12 and 13 were compared and the results verified that all committed transactions had been successfully recovered.
- Samples were taken from the RTE files and used to query the database to demonstrate successful transactions had corresponding rows in the ORDER table.

Instantaneous Interruption and Loss of Memory

Because loss of power erases the contents of memory, the instantaneous interruption and the loss of memory tests were combined into a single test. This test was executed on a fully scaled database of 37800 warehouses under a full load of 378000 users. The following steps were executed:

- The total number of New Orders was determined by the sum of D_NEXT_O_ID of all rows in the DISTRICT table giving the beginning count.
- The RTE was started with 320040 users.
- The test was allowed to run for a minimum of 10 minutes.
- Pulling the power cords from the SUT induced system crash and loss of memory. No battery backup or Uninterruptible Power Supply (UPS) were used to preserve the contents of memory.
- The RTE was paused then stopped.
- Power was restored and the system restarted.
- Microsoft SQL Server was restarted and performed an automatic recovery.
- Consistency condition #3 was executed and verified.
- Step 1 was repeated and the difference between the first and second counts was noted.
- An RTE report was generated for the entire run time giving the number of NEW-ORDERS successfully returned to the RTE.
- The counts in step 9 and 10 were compared and the results verified that all committed transactions had been successfully recovered.
- Samples were taken from the RTE files and used to query the database to demonstrate successful transactions had corresponding rows in the ORDER table.

Clause 4 Related Items

Initial Cardinality of Tables

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

Table 4.1 Number of Rows for Server

Table	Cardinality as built
Warehouse	38,376
District	383,760
Customer	1,151,280,000
History	1,151,280,000
Orders	1,151,280,000
New Order	345,384,000
Order Line	11,512,769,038
Stock	3,837,600,000
Item	100,000
Unused Warehouses	576

Database Layout

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

The benchmarked configuration used 700 SAS drives at 36GB for database data, one 36GB SAS drive for the operating system, and 24 SAS drives at 146GB for database log. Six SMART P800 controllers connected to 2 MSA70 drive boxes for each of two ports. Each MSA70 contained (25) 36GB SAS drives. Both ports were configured as one array. The array was configured with 4 RAID 0 logical drives for data and a RAID 0+1 logical drive for database backup files. One SMART E500 controller was connected to 2 MSA70 drive boxes for each of two ports configured as one array. The array was configured with 4 RAID 0 logical drives for data. The SMART P600 controller was connected to 1 MSA70 drive box which contained 24 X 146GB SAS drives configured as a RAID 0+1 logical drive. The Array Accelerators on the data controllers were configured as 100% write cache and were enabled for the OL, cust, and Misc logical drives. The SMART P600 controller had cache disabled for the transaction log. All RAID volumes used hardware RAID. The 8 Internal Port SAS HBA was connected to the internal drive cage with 1 X 36GB drives for the operating system.

Section 1.2 of this report details the distribution of database tables across all disks. The code that creates the file groups and tables is included in Appendix B.

Type of Database

A statement must be provided that describes:

- *The data model implemented by DBMS used (e.g. relational, network, hierarchical).*
- *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 transaction. If more than one interface/access language is used to implement TPC-C, each interface/access language must be described and a list of which interface/access language is used with which transaction type must be disclosed.*

Microsoft SQL Server 2005 Enterprise x64 Edition is a relational DBMS.

The interface used was Microsoft SQL Server stored procedures accessed with Remote Procedure Calls embedded in C code.

Database Mapping

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

The database was not replicated.

60 Day Space

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.

To calculate the space required to sustain the database log for 8 hours of growth at steady state, the following steps were followed:

- The free space on the log file was queried using *dbcc sqlperf(logspace)*.
- Transactions were run against the database with a full load of users.
- The free space was again queried using *dbcc sqlperf(logspace)*.
- The space used was calculated as the difference between the first and second query.
- The number of NEW-ORDERS was verified from the difference in the sum(d_next_o_id) taken from before and after the run.
- The space used was divided by the number of NEW-ORDERS giving a space used per NEW-ORDER transaction.
- The space used per transaction was multiplied by the measured tpmC rate times 480 minutes.

The same methodology was used to compute growth requirements for dynamic tables Order, Order-Line and History.

Details of both the 8-hour transaction log space requirements and the 60-day space requirements are shown in Appendix D.

Clause 5 Related Items

Throughput

Measured tpmC must be reported

Measured tpmC 471,883tpmC
Price per tpmC USD \$1.17

Response Times

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

Table 5.2: Response Times

Type	Average	90 th %	Maximum
New-Order	0.44	1.38	6.65
Payment	0.42	1.36	6.27
Order-Status	0.45	1.37	6.65
Interactive Delivery	0.12	0.14	1.62
Deferred Delivery	0.11	0.14	5.05
Stock-Level	0.47	1.42	3.39
Menu	0.12	0.14	1.63

Keying and Think Times

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

Table 5.3: Keying Times

Type	Minimum	Average	Maximum
New-Order	18.02	18.03	18.47
Payment	3.02	3.03	3.47
Order-Status	2.02	2.03	2.47
Interactive Delivery	2.02	2.03	2.44
Stock-Level	2.02	2.03	2.44

Table 5.4: Think Times

Type	Minimum	Average	Maximum
New-Order	0.00	12.05	120.69
Payment	0.00	12.04	120. 43
Order-Status	0.00	10.03	100. 33
Interactive Delivery	0.00	5.05	50.33
Stock-Level	0.00	5.05	50. 33

Response Time Frequency Distribution Curves and Other Graphs

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

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

Think Time frequency distribution curves (see Clause 5.6.3) must be reported for each transaction type.

Keying Time frequency distribution curves (see Clause 5.6.4) must be reported for each transaction type.

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

Figure 3. New Order Response Time Distribution

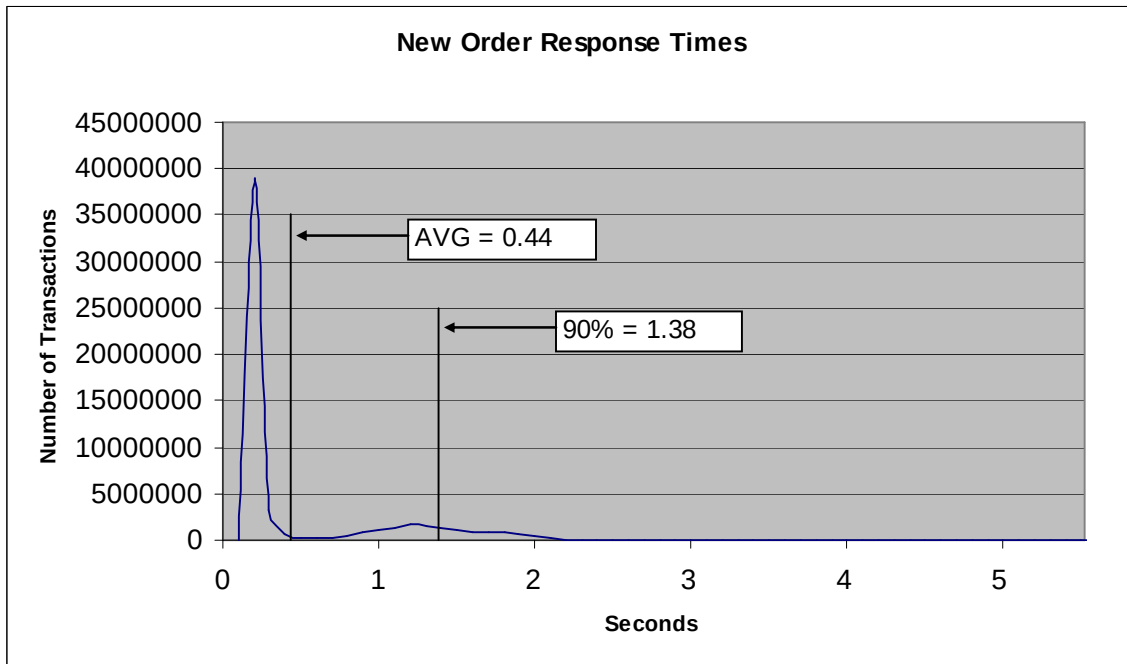


Figure 4. Payment Response Time Distribution

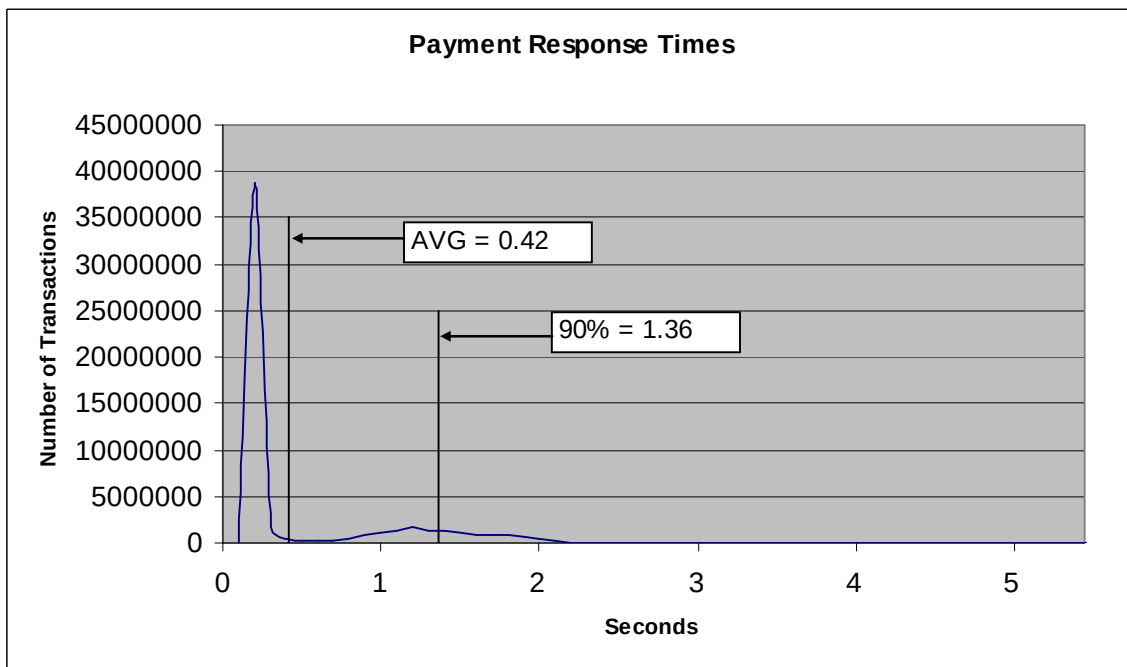


Figure 5. Order Status Response Time Distribution

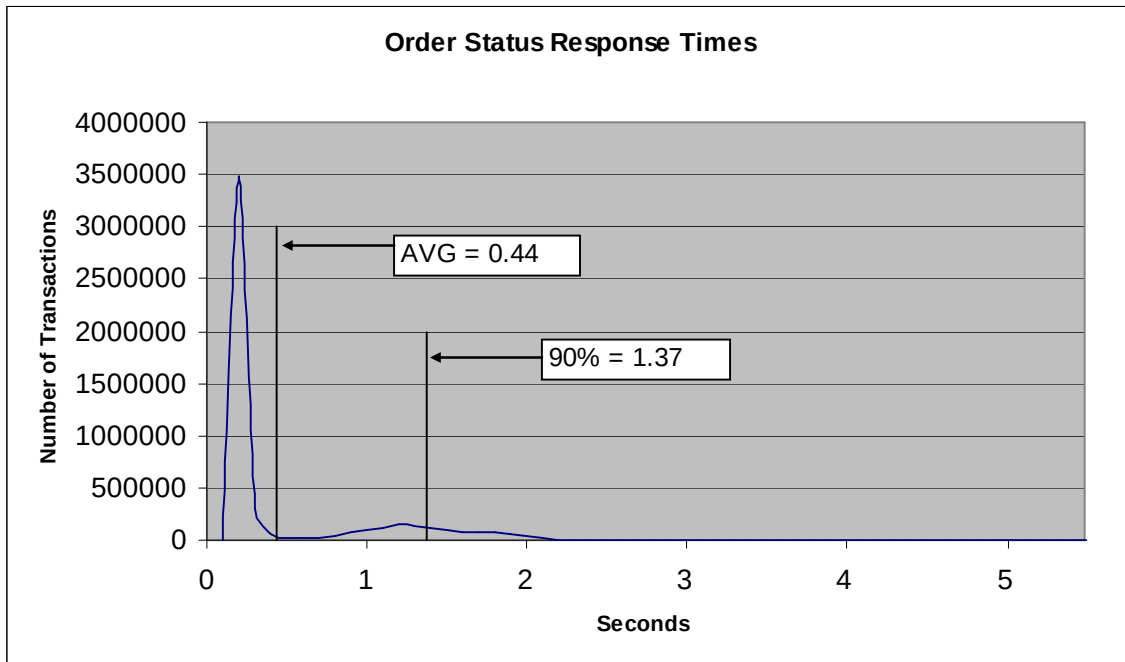


Figure 6. Delivery Response Time Distribution

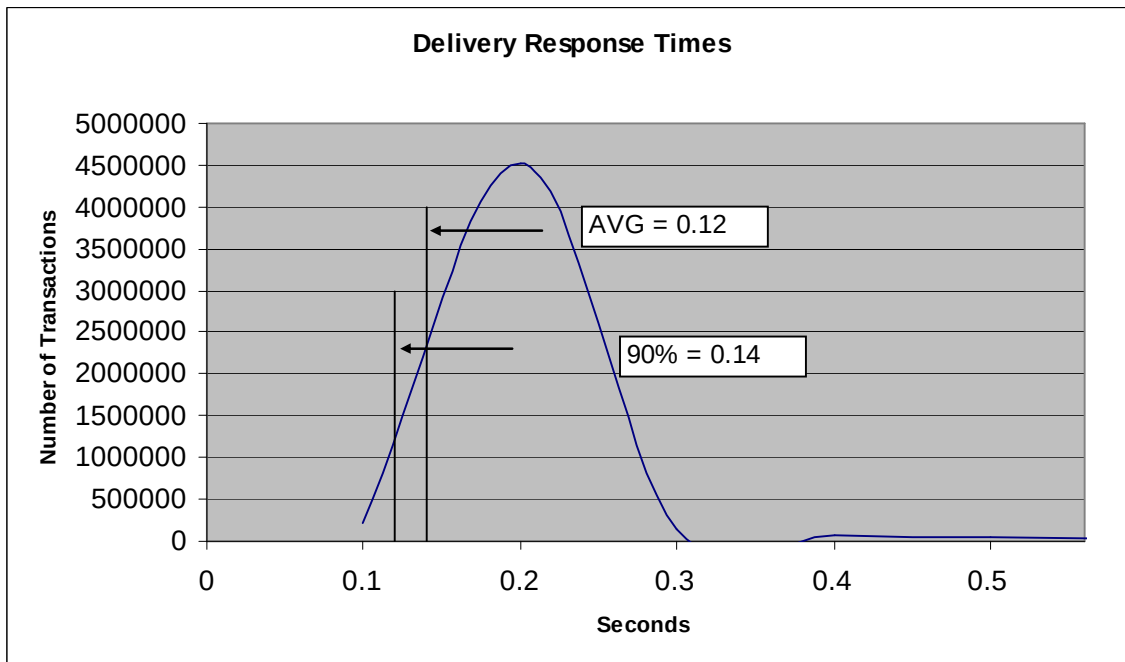


Figure 7. Stock Level Response Time Distribution

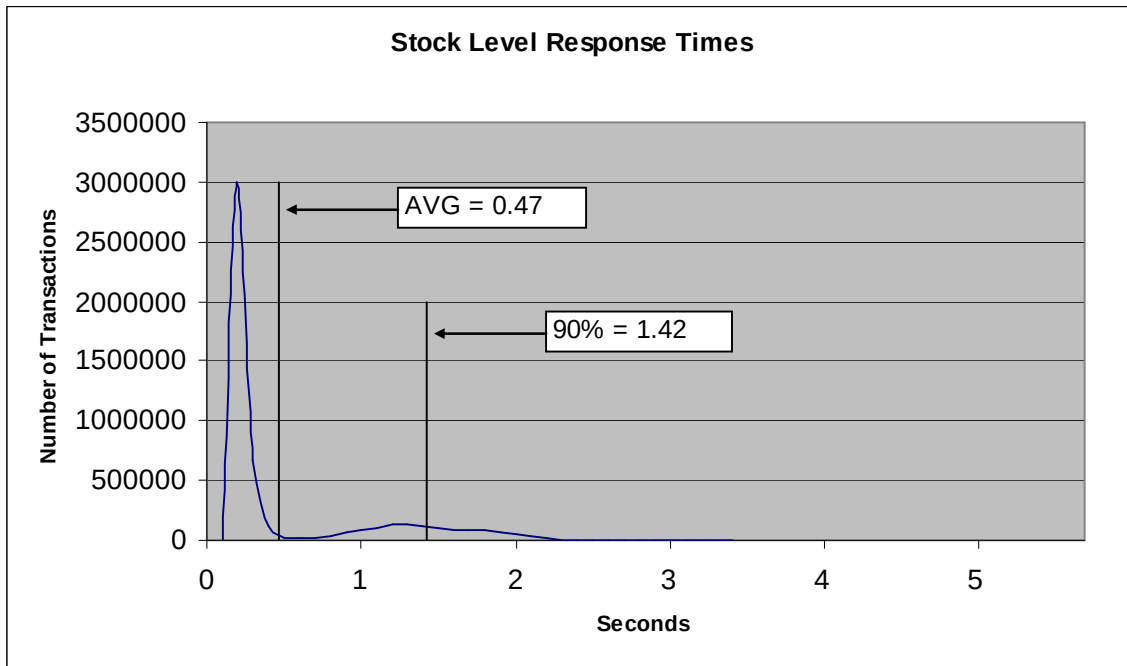


Figure 8. Response Time vs. Throughput

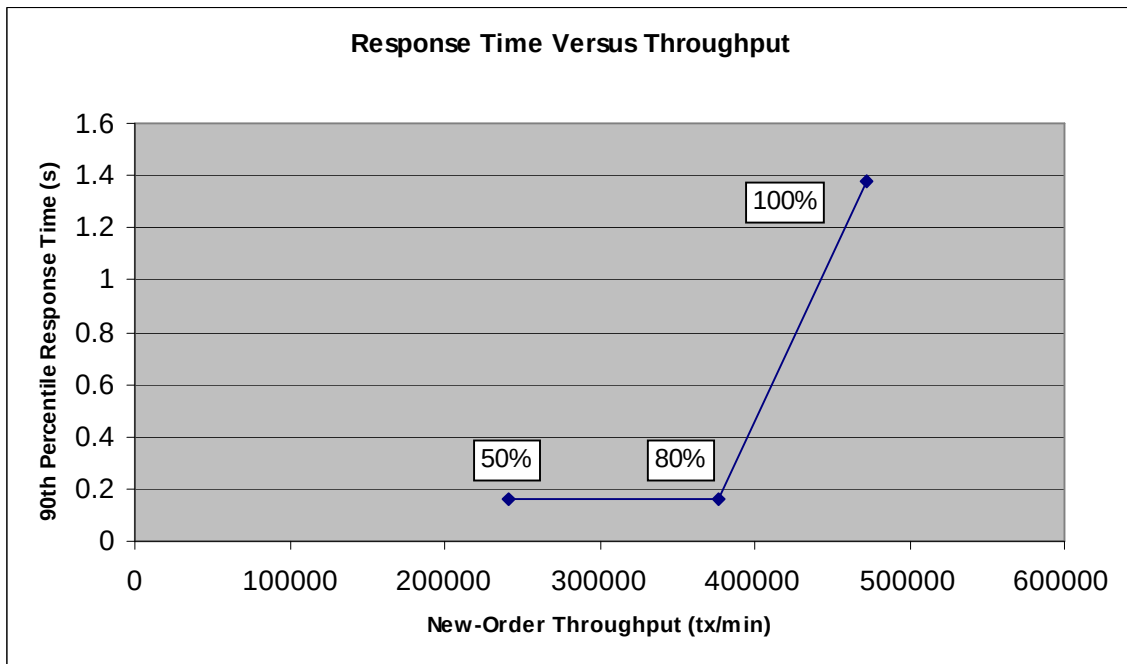


Figure 9. New Order Think Time Distribution

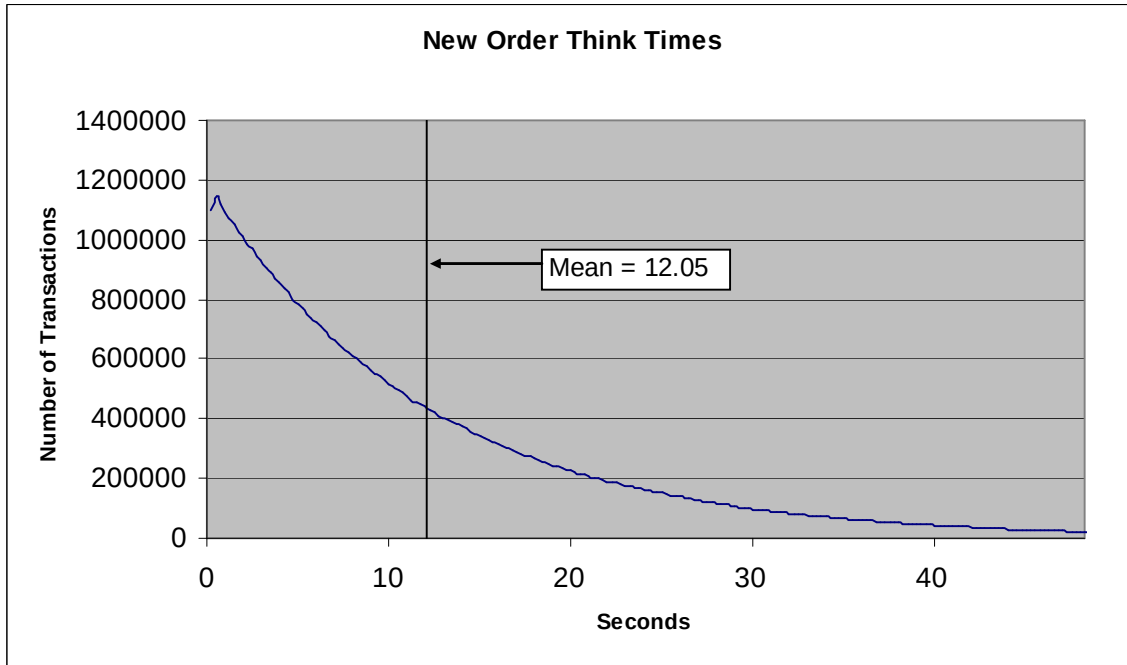
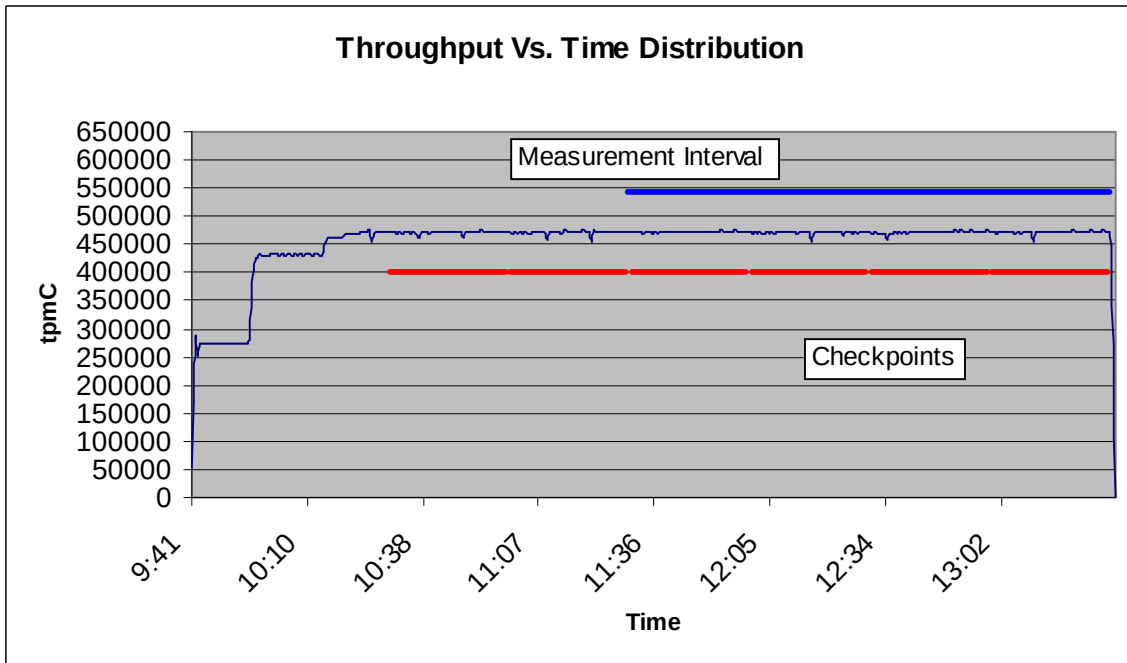


Figure 10. Throughput vs. Time Distribution



Steady State Determination

The method used to determine that the SUT had reached a steady state prior to commencing the measurement interval must be disclosed.

Steady state was determined using real time monitor utilities from the RTE. Steady state was further confirmed by the throughput data collected during the run and graphed in Figure 10.

Work Performed During Steady State

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

The RTE generated the required input data to choose a transaction from the menu. This data was timestamped. The input screen for the requested transaction was returned and timestamped. The difference between these two timestamps was the menu response time. The RTE writes to the log file once per transaction on selective fields such as order id. There is one log file per driver engine.

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 timestamped. The return of the screen with the required response data was timestamped. The difference between these two timestamps was the response time for that transaction.

The RTE then waited the required think time interval before repeating the process starting at selecting a 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 gigabit Ethernet LANs using ODBC and RPC calls.

To perform checkpoints at specific intervals, the SQL Server *recovery interval* was set to 32767 and a script was written to schedule multiple checkpoints at specific intervals. The script included a wait time between each checkpoint equal to 30 minutes. The measurement interval was 120 minutes. The checkpoint script was started manually after the RTE had all users logged in and the database had achieved steady state.

At each checkpoint, Microsoft SQL Server wrote to disk all memory pages that had been updated but not yet physically written to disk. The positioning of the measurement interval is depicted on the graph in Figure 9.

Measurement Period Duration

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

The reported measured interval was exactly 120 minutes long.

Regulation of 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.

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

Transaction Statistics

The percentage of the total mix for each transaction type must be disclosed. The percentage of New-Order transactions rolled back as a result of invalid item number must be disclosed. The average number of order-lines entered per New-Order transaction must be disclosed. The percentage of remote order lines per New-Order transaction must be disclosed. The percentage of remote Payment transactions must be disclosed. The percentage of customer selections by customer last name in the Payment and Order-Status transactions must be disclosed. The percentage of Delivery transactions skipped due to there being fewer than necessary orders in the New-Order table must be disclosed.

Table 5.5: Transaction Statistics

Statistic		Value
New Order	Home warehouse order lines	99.00%
	Remote warehouse order lines	1.00%
	Rolled back transactions	1.00%
	Average items per order	10.00
Payment	Home warehouse payments	85.00%
	Remote warehouse payments	15.00%
	Accessed by last name	59.99%
Delivery	Skipped transactions (interactive)	0
	Skipped transactions (deferred)	0
Order Status	Accessed by last name	60.04%
Transaction Mix	New Order	44.94%
	Payment	43.02%
	Order status	4.02%
	Delivery	4.01%
	Stock level	4.01%

Checkpoint Count and Location

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.

The initial checkpoint was started 109 minutes after the start of the ramp-up. Subsequent checkpoints occurred every 30 minutes. Each checkpoint in the measurement interval lasted 28 minutes and 45 seconds. The measurement interval contains four checkpoints.

Checkpoint Duration

The start time and duration in seconds of at least the four longest checkpoints during the Measurement Interval must be disclosed.

Checkpoint Start Time	Duration
11:30:39.17 am	28 minutes, 45 seconds
12:00:36.20 pm	28 minutes, 45 seconds
12:30:33.17 pm	28 minutes, 45 seconds
13:00:30.16 pm	28 minutes, 45 seconds

Clause 6 Related Items

RTE Descriptions

If the RTE is commercially available, then its inputs must be specified. Otherwise, a description must be supplied of what inputs (e.g., scripts) to the RTE had been used.

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

Emulated Components

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

The driver system consisted of 12 HP ProLiant servers. These driver machines emulated the users' web browsers.

Functional Diagrams

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

The driver system performed the data generation and input functions of the priced display device. It also captured the input and output data and timestamps for post-processing of the reported metrics. No other functionality was included on the driver system.

Section 1.4 of this report contains detailed diagrams of both the benchmark configuration and the priced configuration.

Networks

The network configuration of both the tested services and proposed (target) services that 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.

The bandwidth of the networks used in the tested/priced configuration must be disclosed.

In the tested configuration, the driver (RTE) machines were connected through a gigabit Ethernet switch to the client machines at 1Gbps, thus providing the path from the RTEs to the clients. The server (SUT) was connected to the clients through a gigabit Ethernet switch on a separate LAN.

The priced configuration was connected in the same manner as the tested configuration.

Operator Intervention

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

This configuration does not require any operator intervention to sustain eight hours of the reported throughput.

Clause 7 Related Items

System Pricing

A detailed list of hardware and software used in the priced system must be reported. Each separately orderable item must have vendor part number, description, and release/revision level, and either general availability status or committed delivery data. 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 and effective date(s) of price(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.

The details of the hardware and software are reported in the front of this report as part of the executive summary. All third party quotations are included at the end of this report as Appendix E.

Availability, Throughput, and Price Performance

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

A statement of the measured tpmC as well as the respective calculations for the 5-year pricing, price/performance (price/tpmC), and the availability date must be included.

- | | |
|---------------------------------------|----------------------------|
| • Maximum Qualified Throughput | 471,883tpmC |
| • Price per tpmC | USD \$1.17 per tpmC |
| • Availability | July 14, 2008 |

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

This system is being 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:

- 12 Microsoft Windows Server R2 2003 Standard Edition
- 1 Microsoft Windows Server R2 2003 Enterprise x64 Edition
- 1 Microsoft SQL Server 2005 Enterprise x64 Edition (per processor) SP2
- 1 Microsoft Visual C++
- HP Servers include 3 years of support.

Clause 9 Related Items

Auditor's Report

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 Benchmark C was audited by Lorna Livingtree of Performance Metrics, Inc.

Performance Metrics, Inc.
PO Box 984
Klamath CA 95548
(phone) 707-482-0523
(fax) 707-482-0575
e-mail: lornaL@perfmetrics.com

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.

Requests for this TPC Benchmark C Full Disclosure Report should be sent to:

TPC
Presidio of San Francisco
Building 572B Ruger St. (surface)
P.O. Box 29920 (mail)
San Francisco, CA 94129-0920

or

Hewlett-Packard Company
Database Performance Engineering
P.O. Box 692000
Houston, TX 77269-2000



PERFORMANCE METRICS INC.
TPC Certified Auditors

Mr. David Adams
Database Performance Engineer
Hewlett-Packard Company
20555 SH 249
Houston, TX 77070

July 7, 2008

I have verified by remote the TPC Benchmark™ C for the following configuration:

Platform: HP ProLiant DL585 G5
Database Manager: Microsoft SQL Server 2005 Enterprise X64 Edition
Operating System: Microsoft Windows 2003 Server R2 Enterprise X64 Edition
Transaction Monitor: Microsoft COM+

System Under Test:				
CPU's	Memory	Disks (total)	90% Response	TpmC
4 AMD quad core @ 2.51 Ghz	Main: 256 GB	700 @ 36 GB 24 @ 146 GB 1 @ 36 GB OS	1.38	471,883
Clients: 12 DL360 G5				
1 Intel dual core @ 2.00 Ghz	1 GB	1 @ 36 GB	NA	NA

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

- The transactions were correctly implemented.
- The database files were properly sized.
- The database was properly scaled with 38,376 warehouses, 37,800 of which were active during the measured interval.
- The ACID properties were successfully demonstrated.
- Input data was generated according to the specified percentages.
- Eight hours of mirrored log space was present on the tested system.
- Eight hours of growth space for the dynamic tables was present on the tested system.
- The data for the 60 days space calculation was verified.
- The steady state portion of the test was 120 minutes.
- There was one complete checkpoint in steady state before the measured interval.
- There were 4 checkpoints started and completed inside the measured interval.
- The system pricing was checked for major components and maintenance.
- Third party quotes were verified for compliance.

Auditor Notes: None

Sincerely,

Lorna Livingtree, Certified Auditor

Appendix A: Source Code

The client source code is listed below.

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;
    char szMsg[256];
    //message to sent to browser
} SERRORMSG;

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

#define ERR_TYPE_LOGIC -1
//logic error in program; internal error
#define ERR_SUCCESS 0
//success (a non-error error)
#define ERR_BAD_ITEM_ID 1
//expected abort record in txnRecord
```

```
#define ERR_TYPE_DELIVERY_POST 2
//expected delivery post failed
#define ERR_TYPE_WEBDDL 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
//Benchcraft automation errors
#define ERR_TYPE_DRIVER
//Driver engine errors
#define ERR_TYPE RTE_BASE
//Framework errors
#define ERR_BUF_OVERFLOW
//Buffer overflow during receive
#define ERR_TYPE_SOAP_HTTP
//HTTP/SOAP dll generated error
#define ERR_TYPE_OLEDB
//OLE-DB generated error
#define ERR_TYPE_TPCC_OLEDB
//error from tpcc ole-db txn module
// TPC-W error types
#define ERR_TYPE_TPCW_CONN
//Benchcraft connection class
#define ERR_TYPE_TPCW_HTML
//error from TpcwHtml dll
#define ERR_TYPE_TPCW_USER
//error from TPC-W user class
#define ERR_TYPE_TPCW_ENG_BASE
#define ERR_TYPE_TPCW_ENG_OS
#define ERR_TYPE_HTML_RESP
#define ERR_TYPE_TPCW_ODBC
#define ERR_TYPE_SCHANNEL
#define ERR_TYPE_THINK_LIST
//----- end TPC-W -----
#define ERR_TYPE_XML_PROFILE
// TPC-E error types
#define ERR_TYPE_TPCE_CONN
//TPC-E pipe connection errors
#define ERR_TYPE_TPCE RTE
//TPC-E Rte errors
#define ERR_TYPE_TPCE_ENG_BASE
//Tpce Driver engine errors
#define ERR_TYPE_TPCE_ENG_OS
//Tpce Driver
//Tpce MEE
#define ERR_TYPE_TPCE_MEE_ENG_BASE
//Tpce MEE
Driver engine errors

```

```

//define ERR_TYPE_TPCE_MEE_ENG_OS
//Tpce MEE
Driver engine system errors

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

class CBaseErr
{
public:
    enum Action
    {
        eNone = 0
    };

    CBaseErr(LPCTSTR szLoc = NULL)
    {
        m_idMsg =
        GetLastError(); //take the error code
        immediately before it is reset by other functions

        if (szLoc)
        {
            m_szLoc = new
            char[strlen(szLoc)+1/*m_szLoc_size*/];
            strcpy(m_szLoc, szLoc);
        }
        else
            m_szLoc = NULL;

        m_szApp = new
        char[m_szApp_size];

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

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

        if (szLoc)
        {
            m_szLoc = new
            char[strlen(szLoc)+1/*m_szLoc_size*/];
            strcpy(m_szLoc, szLoc);
        }
        else
            m_szLoc = NULL;
    }
}

```

```

m_szApp = new
char[m_szApp_size];

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

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

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

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

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

virtual int ErrorType() = 0; // a value
which distinguishes the kind of error that occurred
virtual char *ErrorTypeStr() = 0; // text
representation of the error type
virtual char *ErrorText() = 0; // a string
(i.e., human readable) representation of the error
virtual int ErrorAction() { return eNone; }
// the function call that caused the error

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

//short m_errType;
};

```

```

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

    CSocketErr(Action eAction, LPCTSTR
szLocation = NULL);

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

    Action      m_eAction;
    char        *m_szErrorText;

    int          ErrorType() { return
ERR_TYPE_SOCKET;};
    char*        ErrorTypeStr() { return "SOCKET";
}
    char*        ErrorText(void);
    int          ErrorAction() { return
(int)m_eAction; }

};

class CSystemErr : public CBaseErr
{
public:
    enum Action
    {
        eNone = 0,
        eTransactNamedPipe,
        eWaitNamedPipe,
        eSetNamedPipeHandleState,
        eCreateFile,
        eCreateProcess,
        eCallNamedPipe,

```

```

        eCreateEvent,
        eCreateThread,
        eVirtualAlloc,
        eReadFile = 10,
        eWriteFile,
        eMapViewOfFile,
        eCreateFileMapping,
        eInitializeSecurityDescriptor,
        eSetSecurityDescriptorDacl,
        eCreateNamedPipe,
        eConnectNamedPipe,
        eWaitForSingleObject,
        eRegOpenKeyEx,
        eRegQueryValueEx = 20,
        ebeginthread,
        eRegEnumValue,
        eRegSetValueEx,
        eRegCreateKeyEx,
        eWaitForMultipleObjects,
        eRegisterClassEx,
        eCreateWindow,
        eCreateSemaphore,
        eReleaseSemaphore,
        eFSeek,
        eFRead,
        eFWrite,
        eTmpFile,
        eSetFilePointer,
        eNew,
        eCloseHandle,
        eGetOverlappedResult
    };

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

    Action      m_eAction;

private:
    char m_szMsg[ERR_MSG_BUF_SIZE];
};

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

    int          ErrorType() {return
ERR_TYPE_MEMORY;};
    char*        ErrorTypeStr() { return "OUT OF
MEMORY"; }

```

```

    char*        ErrorText() {return
ERR_INS_MEMORY;};
};

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

    int          ErrorType() {return
ERR_BUF_OVERFLOW;};
    char*        ErrorTypeStr() { return "BUFFER
OVERFLOW"; }
    char*        ErrorText() {return
ERR_INS_BUF_OVERFLOW;};
};

// Exception type for XML profiles
class CXMLProfileErr : public CBaseErr
{
public:
    enum Action
    {
        LoadProfile = 1,
        LoadSchema,
        ValidateProfile,
        SaveProfile,
        LoadFromXML,
        SaveToXML,
    };

    ApplyProcessingInstruction,
    ApplyAttribute,
    ApplyNode
    };

    CXMLProfileErr(Action eAction,
int eCode, LPCTSTR szLocation)
    {
        m_eAction = eAction;
        m_eCode = eCode;
        m_bOverload = true;
    };

    CXMLProfileErr(Action eAction,
int eCode, LPCTSTR szLocation, char * szMsg)
    {
        m_eAction = eAction;
        m_eCode = eCode;
        strcpy(m_szMsg, szMsg);
        m_bOverload = false;
    };

    virtual int
ErrorType() { return
ERR_TYPE_XML_PROFILE;};
    virtual char
*ErrorTypeStr() { return "XML PROFILE"; };
    virtual char
*ErrorText();

    virtual int
ErrorCode() { return m_eCode; };
    int
ErrorAction() { return (int)m_eAction; }

```

```

        //virtual void Draw(HWND
hwnd, LPCTSTR szStr = NULL)
        //{
        //    ::MessageBox(hwnd,
szStr, m_szLoc, MB_OK);
        //};
    private:
        char
m_szMsg[ERR_MSG_BUF_SIZE];
        LPCTSTR m_szLoc;
        int m_eCode;
        bool m_bOverload;
        Action m_eAction;
};

```

install.c

```

/* FILE: INSTALL.C
 * Microsoft
TPC-C Kit Ver. 4.51.000
 * Copyright
Microsoft, 2003
 * 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
 * 4.50.000 - added IIS6 configuration options
 * 4.51.000 - added routines to copy
Visual Studio runtime module (MSVCR70.DLL)
 * to
SystemRoot\System32
 */

#include <windows.h>
#include <direct.h>
#include <io.h>
#include <stdlib.h>
#include <tchar.h>
#include <stdio.h>
#include <commctrl.h>
#include "..\..\common\src\ReadRegistry.h"
#include <process.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 iMaxPoolThreads;
static int iThreadTimeout;
static int iListenBackLog;
static int iAcceptExOutstanding;
static int iUriEnableCache;
static int iUriScavengerPeriod;
static int iMaxConnections;

static int iIISMajorVersion;
static int iNumberOfProcessors;

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, char *szWindowsPath);
static void
ReadRegistrySettings(void);
static void
WriteRegistrySettings(char *szDllPath);
static BOOL RegisterDLL(char
*szFileName);
static int
CopyFiles(HWND hDlg, char *szDllPath, char
*szWindowsPath);
static BOOL GetInstallPath(char
*szDllPath);
static BOOL
GetWindowsInstallPath(char *szWindowsPath);
static void GetVersionInfo(char
*szDLLPath, char *szExePath);
static BOOL
CheckWWebService(void);
static BOOL
StartWWebService(void);
static BOOL StopWWebService(void);
static void UpdateDialog(HWND
hDlg);
static void
ConfigureIIS6(HWND
hwnd, HWND hDlg);

SYSTEM_INFO siSysInfo;

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 szWindowsPath[256];
    static char szExePath[256];

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

            if (
GetWindowsInstallPath(szWindowsPath) )
            {
                MessageBox(hwnd, "Error: Cannot determine
Windows System Root.", NULL, MB_ICONSTOP | MB_OK);

                EndDialog(hwnd, FALSE);
                return TRUE;
            }

            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 =
ODBC;

            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();

            // copy the hardware
            information to the SYSTEM_INFO structure
            GetSystemInfo(&siSysInfo);
            // store the number of
            processors on this system
            iNumberOfProcessors =
siSysInfo.dwNumberOfProcessors;

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

            wsprintf(szTmp,
"Version %d.%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_THREAD_POOL_LIMIT, iPoolThreadLimit,
FALSE);
            SetDlgItemInt(hwnd,
ED_IIS_THREAD_TIMEOUT, iThreadTimeout, FALSE);
        }
    }
}

```

```

        SetDlgItemInt(hwnd,
ED_IIS_LISTEN_BACKLOG, iListenBackLog, FALSE);
        SetDlgItemInt(hwnd,
ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE,
iAcceptExOutstanding, FALSE);

        // 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_MTS, 0);
                switch (Reg.eTxnMon)
                {
                        case None:
                                CheckDlgButton(hwnd, IDC_TM_NONE, 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 IDOK:

```

```

ProcessOK(hwnd, szDllPath, szWindowsPath);

return TRUE;

case IDCANCEL:
EndDialog(hwnd, FALSE);

return TRUE;

default:
return FALSE;
}
}
break;
default:
break;
}
return FALSE;
}

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

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

        // Check whether Service Pack 1 has been
        installed if
        // running on Windows Server 2003. The RTM
        version has
        // a limitation on the number of concurrent
        HTTP connections.
        //
        OSVERSIONINFOEX    VersionInfo;

        VersionInfo.dwOSVersionInfoSize =
sizeof(OSVERSIONINFOEX);
        if
        (GetVersionEx((LPOSVERSIONINFO)&VersionInfo))
        {
                if (VersionInfo.dwMajorVersion ==
5 && // Windows 2000/2003 Server?
                VersionInfo.dwMinorVersion == 2 && //
Windows 2003 Server?
                VersionInfo.wServicePackMajor == 0) //
Service Pack installed?
                {
                        TCHAR szMsg[256];

                        _sntprintf(szMsg,
sizeof(szMsg),

```

```

"Warning:
running on Windows Server 2003 without at least
Service Pack 1\n"
"limits the
number of concurrent HTTP connections to around
8000.");
        MessageBox(hwnd, szMsg,
_T("Service Pack not Installed"), MB_ICONEXCLAMATION
| MB_OK);
        }
        // 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_TM_NONE)
)
                Reg.eTxnMon = None;
        else if ( IsDlgButtonChecked(hwnd,
IDC_TM_MTS) )
                Reg.eTxnMon = COM;

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

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

        // check to see if the web services are
        running
        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);
    }

    // write binaries to inetpub\wwwroot
    rc = CopyFiles(hDlg, szDllPath,
szWindowsPath);
    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;
    }

    // while we have the web services shutdown,
check to see if this
    // is IIS6. If it is, then call
ConfigureIIS6
    if ( iIISMajorVersion == 6 )
    {
        ConfigureIIS6(hwnd, 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();
    }

    // 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,
"SOFTWARE\\Microsoft\\InetSrv", 0, KEY_READ, &hKey)
== ERROR_SUCCESS )
    {
        size = sizeof(iIISMajorVersion);
        if ( RegQueryValueEx(hKey,
"MajorVersion", 0, &type, (char *)&iIISMajorVersion,
&size) == ERROR_SUCCESS )
        {
            if ( !iIISMajorVersion )
            {
                iIISMajorVersion = 5;
            }

            if ( RegOpenKeyEx(HKEY_LOCAL_MACHINE,
"SYSTEM\\CurrentControlSet\\Services\\Inetinfo\\Param
eters", 0, KEY_READ, &hKey) == ERROR_SUCCESS )
            {
                if ( iIISMajorVersion == 6 )
                {

```

```

// since IIS6 handles
the pool thread parameters differently, we need to
fill in the dialog

// with the
MaxPoolThreads rather than PoolThreadLimit
// for ease of coding,
we are just going to stuff the value into
iPoolThreadLimit
    size = sizeof(iPoolThreadLimit);
    if (
RegQueryValueEx(hKey, "MaxPoolThreads", 0, &type,
(char *)&iPoolThreadLimit, &size) == ERROR_SUCCESS )
    {
        if ( !iPoolThreadLimit )
        {
            iPoolThreadLimit = iMaxPhysicalMemory * 2;
        }
        else
        {
            size =
sizeof(iPoolThreadLimit);
            if (
RegQueryValueEx(hKey, "MaxPoolThreads", 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\\Paramete
rs", 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);
    }
    if ( RegOpenKeyEx(HKEY_LOCAL_MACHINE,
"SYSTEM\\CurrentControlSet\\Services\\HTTP\\Parameter
s", 0, KEY_READ, &hKey) == ERROR_SUCCESS )
    {
        size = sizeof(iUriEnableCache);
        if ( RegQueryValueEx(hKey,
"UriEnableCache", 0, &type, (char *)&iUriEnableCache,
&size) == ERROR_SUCCESS )
            if ( !iUriEnableCache )

                iUriEnableCache = 0;

        size =
sizeof(iUriScavengerPeriod);
        if ( RegQueryValueEx(hKey,
"UriScavengerPeriod", 0, &type, (char
*)&iUriScavengerPeriod, &size) == ERROR_SUCCESS )
            if (
!iUriScavengerPeriod )

                iUriScavengerPeriod = 10800;

        size = sizeof(iMaxConnections);
        if ( RegQueryValueEx(hKey,
"MaxConnections", 0, &type, (char *)&iMaxConnections,
&size) == ERROR_SUCCESS )
            if ( !iMaxConnections )

                iMaxConnections = 100000;

        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\\Param
eters", 0, NULL, REG_OPTION_NON_VOLATILE,
KEY_ALL_ACCESS, NULL, &hKey, &dwDisposition)) ==
ERROR_SUCCESS )
    {
        // if this is IIS6, then we need
to treat the PoolThreadLimit differently
        // if IIS6, then PoolThreadLimit
is the maximum number of threads for the entire
system.
        // IIS6 added MaxPoolThreads
which controls the number of threads per processor.
For IIS6
        // we will set MaxPoolThreads to
the value the user provided in the dialog and then
set
        // PoolThreadLimit to
MaxPoolThreads * number of processors on this system
        if ( iIISMajorVersion == 6 )
        {
            iMaxPoolThreads =

iPoolThreadLimit;
            iPoolThreadLimit =
iMaxPoolThreads * iNumberOfProcessors;

```

```

        RegSetValueEx(hKey,
"PoolThreadLimit", 0, REG_DWORD, (char
*)&iPoolThreadLimit, sizeof(iPoolThreadLimit));

        RegSetValueEx(hKey,
"MaxPoolThreads", 0, REG_DWORD, (char
*)&iMaxPoolThreads, sizeof(iMaxPoolThreads));
    }
    else
    {
        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\\Paramete
rs", 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, 13));
        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, char
*szWindowsPath)
{
    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 MSVCR71.DLL
        strcpy( szLastFileName, "msvcr71.dll" );
        if (!FileFromResource( "MSVCR71",
IDR_MSVC71, szWindowsPath, 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 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);

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

        return 1;
    }

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

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

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

        return bRc;
    }

static BOOL GetWindowsInstallPath(char
*szWindowsPath)

```

```

{
    HKEY hKey;
    BYTE szData[256];
    DWORD sv;
    BOOL bRc;
    int len;
    int iRc;

    // Registry key
    HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows
    NT\CurrentVersion\SystemRoot is used to find the
    // system root to install the VC70 DLL.

    szWindowsPath[0] = 0;
    bRc = TRUE;
    if ( RegOpenKeyEx(HKEY_LOCAL_MACHINE,
    "SOFTWARE\Microsoft\Windows NT\CurrentVersion", 0,
    KEY_ALL_ACCESS, &hKey) == ERROR_SUCCESS )
    {
        sv = sizeof(szData);
        iRc = RegQueryValueEx( hKey,
        "SystemRoot", NULL, NULL, szData, &sv );
        if (iRc == ERROR_SUCCESS)
        {
            bRc = FALSE;
            strcpy(szWindowsPath,
            szData);
            len =
            strlen(szWindowsPath);
            if ( szWindowsPath[len-
            1] != '\\' )
            {
                szWindowsPath[len] = '\\';
                szWindowsPath[len+1] = 0;
            }
            // now append the path
            strcat(szWindowsPath,
            to SYSTEM32
            "SYSTEM32\\");
        }

        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 CheckWWebService(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 StartWWebService(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 StartWWebErr;
    //start Service pending, Check the status
    until the service is running.
    if (! QueryServiceStatus(schService,
    &ssStatus) )
        goto StartWWebErr;
    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 StartWWebErr;

    CloseServiceHandle(schService);

```

```

        return TRUE;

StartWWebErr:
    CloseServiceHandle(schService);
    return FALSE;
}

static BOOL StopWWebService(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);
    schService = OpenService(schSCManager,
    TEXT("IISADMIN"), SERVICE_ALL_ACCESS);
    if (schService == NULL)
        return FALSE;

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

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

    CloseServiceHandle(schService);
    return TRUE;

```

```

StopWWebErr:
    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;
}

static void ConfigureIIS6(HWND hwnd, HWND hDlg)
{
    int         irc;
    char        szErrTxt[128];
    FILE        *fErrorFile;

    SetDlgItemText(hDlg, IDC_STATUS,
    "Configuring IIS6...");
    //SendDlgItemMessage(hDlg, IDC_PROGRESS1,
    PBM_STEPIT, 0, 0);
    UpdateDialog(hDlg);

    irc = system("IIS6_CONFIG.CMD");

    // since the return code from the command
    file is always 1,
    // check to see if the file iis6_config.err
    exists
    // if it does, then something hosed
    fErrorFile = fopen("IIS6_CONFIG.err", "r");
    if ( fErrorFile != NULL )
    {
        ShowWindow(hwnd, SW_SHOWNA);
        DestroyWindow(hDlg);
        strcpy( szErrTxt, "IIS6
        configuration error." );
        strcat( szErrTxt, "Check
        iis6_config.err" );
        MessageBox(hwnd, szErrTxt, NULL,
        MB_ICONSTOP | MB_OK);
        EndDialog(hwnd, 0);
        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_THREAD_POOL_LIMIT 1015
#define ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE 1017
#define ED_IIS_THREAD_TIMEOUT 1018
#define ED_IIS_LISTEN_BACKLOG 1019
#define IDC_ODBC              1022
#define IDC_CONNECT_POOL      1023
#define ED_USER_CONNECT_DELAY_TIME 1024

```

```

// Next default values for new objects
//

```

install.rc

```

// Microsoft Visual C++ 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, 324
STYLE DS_SETFONT | DS_MODALFRAME | DS_CENTER |
WS_MINIMIZEBOX | WS_POPUP |
WS_CAPTION | WS_SYSMENU
CAPTION "TPC-C Web Client Installation Utility"
FONT 8, "MS Sans Serif", 0, 0, 0x1
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, 104, 33, 10
    CONTROL
"COM", IDC_TM_MTS, "Button", BS_AUTORADIOBUTTON |
WS_TABSTOP, 94, 104, 32, 10

    EDITTEXT
ED_DB_SERVER, 131, 145, 67, 12, ES_AUTOHSCROLL
    EDITTEXT
ED_DB_USER_ID, 131, 158, 67, 12, ES_AUTOHSCROLL
    EDITTEXT
ED_DB_PASSWORD, 131, 171, 67, 12, ES_AUTOHSCROLL
    EDITTEXT
ED_DB_NAME, 131, 184, 67, 12, ES_AUTOHSCROLL
    EDITTEXT
ED_IIS_MAX_THREAD_POOL_LIMIT, 164, 226, 34, 12, ES_RIGHT |
ES_NUMBER, WS_EX_RTLREADING

    EDITTEXT
ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE, 164, 240, 34, 12, ES_RI
GHT |
ES_NUMBER, WS_EX_RTLREADING

    EDITTEXT
ED_IIS_THREAD_TIMEOUT, 164, 254, 34, 12, ES_RIGHT |
ES_NUMBER,
WS_EX_RTLREADING

```

```

EDITTEXT
ED_IIS_LISTEN_BACKLOG, 164, 268, 34, 12, ES_RIGHT |
ES_NUMBER,
WS_EX_RTLREADING

DEFPUSHBUTTON    "OK", IDOK, 53, 296, 50, 14
PUSHBUTTON       "Cancel", IDCANCEL, 119, 296, 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, 226, 115, 12
LTEXT            "Web Service Backlog Queue
Size:", IDC_STATIC, 36, 240, 115,
12
LTEXT            "IIS Thread Timeout
(seconds):", IDC_STATIC, 36, 254, 115, 12
LTEXT            "IIS Listen
Backlog:", IDC_STATIC, 36, 270, 115, 10
LTEXT            "Installation
directory:", IDC_STATIC, 35, 29, 71, 10
GROUPBOX         "Transaction
Monitor", IDC_STATIC, 33, 90, 165, 33
LTEXT            "Server
Name:", IDC_STATIC, 35, 148, 56, 8
LTEXT            "User ID:", IDC_STATIC, 35, 161, 60, 8
LTEXT            "User
Password:", IDC_STATIC, 35, 174, 83, 8
LTEXT            "Database
Name:", IDC_STATIC, 35, 187, 54, 8
GROUPBOX         "SQL Server Connection
Properties", IDC_STATIC, 22, 132, 187,
74
GROUPBOX         "Web Client
Properties", IDC_STATIC, 22, 15, 187, 113
GROUPBOX         "IIS
Settings", IDC_STATIC, 22, 210, 187, 79
LTEXT            "Max Pending
Deliveries:", IDC_STATIC, 35, 59, 115, 12
END

IDD_DIALOG2 DIALOGEX 0, 0, 117, 62
STYLE DS_SETFONT | 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 0, 0, 91, 40

```

```

STYLE DS_SYSMODAL | DS_SETFONT | 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_BORD
ER,
7, 20, 77, 13

    CTEXT
"Static", IDC_STATUS, 7, 7, 77, 12, SS_SUNKEN
END

IDD_DIALOG4 DIALOG 0, 0, 291, 202
STYLE DS_SETFONT | 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
BEGIN
    IDD_DIALOG1, DIALOG
    BEGIN
        LEFTMARGIN, 22
        RIGHTMARGIN, 209
        VERTGUIDE, 35
        VERTGUIDE, 198
        TOPMARGIN, 4
        BOTTOMMARGIN, 318
    END

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

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

```

```

        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
BEGIN
    "resource.h\0"
END

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

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

#endif // APSTUDIO_INVOKED

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

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

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

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

```

```

////////////////////////////////////
////////////////////////////////////
//
// Version
//

VS_VERSION_INFO VERSIONINFO
FILEVERSION 0,4,50,0
PRODUCTVERSION 0,4,50,0
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"
            VALUE "CompanyName", "Microsoft"
            VALUE "FileDescription", "install"
            VALUE "FileVersion", "0, 4, 20, 0"
            VALUE "InternalName", "install"
            VALUE "LegalCopyright", "Copyright ©
1999"
            VALUE "OriginalFilename", "install.exe"
            VALUE "ProductName", "Microsoft install"
            VALUE "ProductVersion", "0, 4, 20, 0"
        END
    END
    BLOCK "VarFileInfo"
    BEGIN
        VALUE "Translation", 0x409, 1200
    END
END

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

IDR_LICENSE1            LICENSE
    "license.txt"

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

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

```

```

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

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

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

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

////////////////////////////////////
////////////////////////////////////
//
// COM_ALL_DLL
//

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

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

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

////////////////////////////////////
////////////////////////////////////
//
// MSVCRT71
//

IDR_MSVCRT71            MSVCRT71
    "C:\\WINDOWS\\system32\\msvcrt71.dll"
#endif // English (U.S.) resources
////////////////////////////////////
////////////////////////////////////

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

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

```

install_com.cpp

```
/*      FILE:          INSTALL_COM.CPP
 *      Microsoft
 *      TPC-C Kit Ver. 4.51.000
 *      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 (wcsncmp(vTmp.bstrVal, L"TPC-
C"))
        {
            lCount--;
            continue;
        }
        else
        {
```

```
            hr =
pCatalogCollectionApp->Remove(lCount - 1);
            if (!SUCCEEDED(hr))
                goto Error;
            break;
        }
    }

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

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

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

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

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

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

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

    pCatalogObjectApp->Release();
    pCatalogObjectApp = NULL;

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



```

        bstrTemp4 = bstrDllPath +
"tpcc_com_ps.dll"; // proxy/stub dll

        hr = pCOMAdminCat-
>InstallComponent(bstrTemp,

        bstrTemp2,

        bstrTemp3,

        bstrTemp4);
        if (!SUCCEEDED(hr)) goto Error;

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

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

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

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

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

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

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

            bstrTemp =
"JustInTimeActivation";
            bTmp = TRUE;

```

```

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

        bstrTemp = "MaxPoolSize";
        vTmp.Clear(); // clear
        variant so it isn't stored as a bool (_variant_t
        feature)

        vTmp = (long)30;
        hr = pCatalogObjectCo-
>put_Value(bstrTemp, vTmp);
        if (!SUCCEEDED(hr)) goto Error;

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

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

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

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

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

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

            // 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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Redmond, Washington 98052 6399.

Methods.h

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

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

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

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

    ~CCOMPONENT_ERR()
    {
        if (m_szTextDetail !=
NULL)
```

```

                                delete []
m_szTextDetail;
                                if (m_szErrorText !=
NULL)
                                delete []
m_szErrorText;
                                };
                                COMPONENT_ERROR    m_Error;
                                char
                                *m_szTextDetail;
                                char
                                *m_szErrorText;
                                DWORD
                                m_SystemErr;

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

};

static void WriteMessageToEventLog(LPTSTR lpszMsg);

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

    CTPCC_Common();
    ~CTPCC_Common();

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

    HRESULT __stdcall CallSetComplete();

```

```

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

// IObjectConstruct
    STDMETHODIMP Construct(IDispatch * punk);

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

    struct COM_DATA
    {
        int retval;
        int error;
        union
        {
            NEW_ORDER_DATA
            Payment;
            DELIVERY_DATA
            StockLevel;
            ORDER_STATUS_DATA
        } u;
    };

};

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

    BEGIN_COM_MAP(CTPCC)
        //COM_INTERFACE_ENTRY2(IUnknown,
CComObjectRootEx<CComSingleThreadModel>)
        COM_INTERFACE_ENTRY2(IUnknown, ITPCC)
        COM_INTERFACE_ENTRY_CHAIN(CTPCC_Common)
    END_COM_MAP()

};

////////////////////////////////////
////////////////////////////////////
// CNewOrder
class CNewOrder :

```

```

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

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

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

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

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

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

```

```

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

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

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

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

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

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

```

```

        HRESULT __stdcall OrderStatus(
        VARIANT txn_in, VARIANT* txn_out) {return
E_NOTIMPL;}
};

```

ReadRegistry. cpp

```

/*      FILE:      READREGISTRY.CPP
*
*      TPC-C Kit Ver. 4.20.000
*
*      Copyright
*      Microsoft, 1999
*      All Rights Reserved
*
*      not yet
*      audited
*
*      PURPOSE: Implementation for TPC-C 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 TPC 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;
always has to be ODBC
    pReg->eDB_Protocol = ODBC;
    size = sizeof(szTmp);
    //if ( RegQueryValueEx(hKey, "DB_Protocol",
0, &type, (BYTE *)&szTmp, &size) == ERROR_SUCCESS )
    //{
        //if ( !strcmp(szTmp,
szDBNames[ODBC]) )

```

```

        //      pReg->eDB_Protocol =
ODBC;
        //}

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

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

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

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

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

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

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

```

```

        pReg->szDbServer[0] = 0;

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

        pReg->szDbName[0] = 0;

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

        pReg->szDbUser[0] = 0;

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

        pReg->szDbPassword[0] = 0;

        size = sizeof( pReg->szSPPrefix );
        if ( RegQueryValueEx(hKey, "SPPrefix", 0,
&type, (BYTE *)&pReg->szSPPrefix, &size) !=
ERROR_SUCCESS )

        pReg->szSPPrefix[0] = L'\0';

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

                && (type == REG_DWORD) )

                pReg->dwConnectDelay = dwTmp;

        pReg->bCallNoDuplicatesNewOrder = FALSE;
        size = sizeof(dwTmp);
        if ( ( RegQueryValueEx(hKey,
"CallNoDuplicatesNewOrder", 0, &type, (LPBYTE)&dwTmp,
&size) == ERROR_SUCCESS )

                && (type == REG_DWORD) )

                pReg->bCallNoDuplicatesNewOrder =

dwTmp;

        RegCloseKey(hKey);

        return FALSE;
}

```

ReadRegistry.h

```

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

```

```

* 4.20.000 - first version
*/

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

enum TXNMON { None, COM };
const char *szTxnMonNames[] = { "NONE", "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];
        wchar_t szSPPrefix[32];
        //tpcc_odbc.dll stored procedures prefix
        DWORD dwConnectDelay; // delay in
ms to use in pacing connection open and close
        BOOL bCallNoDuplicatesNewOrder; //
whether to check for non-duplicate item ids and call
a different New Order SP
} TPCCREGISTRYDATA, *PTPCCREGISTRYDATA;

BOOL ReadTPCCRegistrySettings( TPCCREGISTRYDATA *pReg
);

```

RESOURCE.H

```

//{{NO_DEPENDENCIES}}
// Microsoft Visual C++ 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_ODBC_DLL 123
#define IDR_COM_DLL 126
#define IDR_COMPS_DLL 127
#define IDR_COMALL_DLL 128
#define IDR_COMTYPLIB_DLL 129
#define IDR_MSVC71 130
#define BN_LOG 1001
#define ED_KEEP 1002
#define ED_THREADS 1003

```

```

#define ED_THREADS2 1004
#define IDC_PATH 1007
#define IDC_VERSION 1009
#define IDC_RESULTS 1010
#define IDC_PROGRESS1 1011
#define IDC_STATUS 1012
#define IDC_BUTTON1 1013
#define ED_MAXCONNECTION 1014
#define ED_IIS_MAX_THREAD_POOL_LIMIT 1015
#define ED_MAXDELIVERIES 1016
#define ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE 1017
#define ED_IIS_THREAD_TIMEOUT 1018
#define ED_IIS_LISTEN_BACKLOG 1019
#define IDC_DBLIB 1021
#define IDC_LICENSE 1022
#define IDC_ODBC 1022
#define IDC_CONNECT_POOL 1023
#define ED_DB_SERVER 1023
#define ED_USER_CONNECT_DELAY_TIME 1024
#define ED_DB_USER_ID 1024
#define IDC_MTS 1025
#define IDC_TM_MTS 1025
#define IDC_TM_TUXEDO 1026
#define IDC_TM_NONE 1027
#define ED_DB_PASSWORD 1028
#define ED_DB_NAME 1029
#define IDC_TM_ENCINA 1030

```

```

// Next default values for new objects
//
#ifdef APSTUDIO_INVOKED
#ifndef APSTUDIO_READONLY_SYMBOLS
#define _APS_NEXT_RESOURCE_VALUE 131
#define _APS_NEXT_COMMAND_VALUE 40001
#define _APS_NEXT_CONTROL_VALUE 1031
#define _APS_NEXT_SYMED_VALUE 101
#endif
#endif

```

tpcc.cpp

```

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

```

```

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

#include <sqltypes.h>

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

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

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

// Database layer includes
#include "..\..\db_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 "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 "420"

static CRITICAL_SECTION
TermCriticalSection;

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

TYPE_CTPCC_ODBC *pCTPCC_ODBC_new;
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

// Critical section to synchronize connection open
and close.
//
CRITICAL_SECTION hConnectCriticalSection;

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

```

```

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

BOOL 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();

        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 == 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() );
        }

        // Check
whether Service Pack 1 has been installed if
// running on
Windows Server 2003. The RTM version has
// a
limitation on concurrent HTTP connections.
//
        OSVERSIONINFOEX VersionInfo;

        VersionInfo.dwOSVersionInfoSize =
sizeof(OSVERSIONINFOEX);
        if
(GetVersionEx((LPOSVERSIONINFO)&VersionInfo))
        {
            if
(VersionInfo.dwMajorVersion == 5 && // Windows
2000/2003 Server?
            VersionInfo.dwMinorVersion == 2 && //
Windows 2003 Server?
            VersionInfo.wServicePackMajor == 0) //
Service Pack installed?
            {
                TCHAR szMsg[256];

                _sntprintf(szMsg, sizeof(szMsg),
                    "\nRunning on
Windows Server 2003 without at least Service Pack
1\n"
                    "limits the
number of concurrent HTTP connections to around
8000");

                // Use event logging to log the error.

                //
                HANDLE hEventSource =
RegisterEventSource(NULL, TEXT("TPCC.DLL"));

                LPTSTR lpszStrings[1] = { szMsg };

                if (hEventSource != NULL)

```

```

        {
            ReportEvent(hEventSource, //
handle of event source
            EVENTLOG_WARNING_TYPE,
            // event type
            0,
            // event category
            0,
            // event ID
            NULL,
            // current user's SID
            1,
            // strings in lpszStrings
            0,
            // no bytes of raw data
            (LPCTSTR *)lpszStrings,
            // array of error strings
            NULL);

            // no raw data

            (VOID)
DeregisterEventSource(hEventSource);
        }

    }

    if
(dwNumDeliveryThreads)
    {
        //
Initialize delivery delay critical section
        //
        InitializeCriticalSection(&hConnectCritical
Section);

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

        InitializeCriticalSection(&DelBuffCriticalS
ection);

        hWorkerSemaphore = CreateSemaphore( NULL,
0, dwDelBuffSize, NULL );

```



```

*           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          TermId,
iSyncId;
    char          szBuffer[4096];

    int          lpbSize;
    static char  szHeader[] = "200 Ok";
    DWORD        dwSize = 6;
    // initial value is strlen(szHeader)
    char          szHeader1[4096];
    DWORD        dwAddr; // used to
store Win32 exception address

```

```

LPEXCEPTION_POINTERS
pExceptionInfo; // pointer to Win32
exception info

#ifdef ICECAP
    StartCAP();
#endif

// Use structured exception handling for
Win32 exceptions
//
try
{
    ProcessCommand(pECB, szBuffer,
TermId, iSyncId);
}
except (
    pExceptionInfo =
GetExceptionInformation(), // can call
GetExceptionInformation only in filter (not handler)
    dwAddr =
(DWORD)pExceptionInfo->ExceptionRecord-
>ExceptionAddress, // save the address

EXCEPTION_EXECUTE_HANDLER) // handle all
exceptions
{
    char
szMsg[512];
    int
ilen;

    MEMORY_BASIC_INFORMATION mbi ;
    VirtualQuery( (void*)dwAddr,
&mbi, sizeof( mbi ) );
    DWORD hInstance =
(DWORD)mbi.AllocationBase ;

    ilen = wsprintf(szMsg,
TEXT("Unhandled exception (%#x) in Web Client's
HttpExtensionProc. "
    "Occured at
address %#x, base %#x, tpcc_com.dll at %#x, tpcc.dll
at %#x, tpcc_com_all.dll at %#x"),
    GetExceptionCode(), dwAddr, hInstance,
    GetModuleHandle("tpcc_com.dll"),
GetModuleHandle("tpcc.dll"),
GetModuleHandle("tpcc_com_all.dll"));

    if (txnDelilog != NULL)
    {
        txnDelilog-
>WriteCtrlRecToLog(TXN_EVENT_WARNING, szMsg, ilen +
1);
    }

    ErrorForm( pECB, ERR_TYPE_WEBDLL,
GetExceptionCode(), TermId, iSyncId, szMsg, szBuffer
);
}

```

```

#ifdef ICECAP
    StopCAP();
#endif

    lpbSize = strlen(szBuffer);
    dwSize += lpbSize;
    dwSize += 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;
}

/* FUNCTION: ProcessCommand
* PURPOSE:      This function parses the commands
from the driver and executes corresponding
transactions.
* ARGUMENTS:    EXTENSION_CONTROL_BLOCK
*               *pECB      structure pointer to passed in
internet
*
*           service information.
* RETURNS:      None (outputs into the
szBuffer parameter).
*
* COMMENTS:      Separated from HttpExtensionProc
to be able to use structured exception handling in
*
    HttpExtensionProc (cannot mix C++ and Win32
exceptions in one functions).
*/
void ProcessCommand(EXTENSION_CONTROL_BLOCK *pECB,
char* szBuffer, int& TermId, int& iSyncId)
{
    int          iCmd, FormId;

    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;
    }
    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;
    }
}
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)
        {
            if (Reg.dwConnectDelay
            > 0)
            {
                //
                Synchronize connect (for VIA)
                //
                EnterCriticalSection(&hConnectCriticalSection);

                Sleep(Reg.dwConnectDelay);

                LeaveCriticalSection(&hConnectCriticalSection);
            }

            pTxn = pCTPCC_ODBC_new(
            Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword,
                szMyComputerName, Reg.szDbName,
                Reg.szSPPrefix,
            Reg.bCallNoDuplicatesNewOrder );
        }
        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);
        n);

        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-
        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, "%s
            Error (code %d) in Delivery Txn thread. %s",

```

```

e->ErrorTypeStr(), e->ErrorNum(), 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:
if (Reg.dwConnectDelay > 0)
{
    // Synchronize disconnect (for
VIA)
    //
    EnterCriticalSection(&hConnectCriticalSecti
on);
    Sleep(Reg.dwConnectDelay);
}
delete pTxn;
if (Reg.dwConnectDelay > 0)
{
    // Synchronize disconnect (for
VIA)
    //
    LeaveCriticalSection(&hConnectCriticalSecti
on);
}
_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(long w_id, short o_carrier_id)
{
    BOOL bError;

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

        "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=6><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]      = { 0 };

    "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 CWBCLNT_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 CWEBCLN_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 CWEBCLN_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 == 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, Reg.szSPPrefix,

                Reg.bCallNoDuplicatesNewOrder );
        }
        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 *CWEBCLN_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. GetProcAddress
error. DLL="

        },

        { ERR_HTML_ILL_FORMED,

        "Required key field is missing from HTML
string."

        },

        { ERR_INVALID_SYNC_CONNECTION,

        "Invalid Terminal Sync ID."

        },

        { ERR_INVALID_TERMID,

        "Invalid Terminal ID."

        },

        { ERR_LOADDLL_FAILED,

        "Load of DLL failed. DLL="

        },

        { ERR_MAX_CONNECTIONS_EXCEEDED,

        "No connections available. Max Connections
is probably too low."

        },

        { ERR_MISSING_REGISTRY_ENTRIES,

        "Required registry entries are missing.
Rerun INSTALL to correct."

        },

        { ERR_NEWORDER_CUSTOMER_INVALID,

        "New Order customer id invalid
data type, range = 1 to 3000."

        },

        { ERR_NEWORDER_CUSTOMER_KEY,

        "New Order missing Customer key
\"CID*\"."

        },

        { ERR_NEWORDER_DISTRICT_INVALID,

        "New Order District ID Invalid
range 1 - 10."

        },

        { ERR_NEWORDER_FORM_MISSING_DID,

        "New Order missing District key
\"DID*\"."

        },

        { ERR_NEWORDER_ITEMID_INVALID,

        "New Order Item Id is wrong data type, must
be numeric."

        },

        { ERR_NEWORDER_ITEMID_RANGE,

        "New Order Item Id is out of
range. Range = 1 to 999999."

        },

        { ERR_NEWORDER_ITEMID_WITHOUT_SUPPW,

        "New Order Item_Id field entered without a
corresponding Supp_W."

        },

        { ERR_NEWORDER_MISSING_IID_KEY,

        "New Order missing Item Id key \"IID*\"."

```

```

    },
    {
        ERR_NEWORDER_MISSING_QTY_KEY,
        "New Order Missing Qty key \"Qty##*\"."
    },
    {
        ERR_NEWORDER_MISSING_SUPPW_KEY,
        "New Order missing Supp_W key
        \"SP##*\"."
    },
    {
        ERR_NEWORDER_NOITEMS_ENTERED,
        "New Order No order lines entered."
    },
    {
        ERR_NEWORDER_QTY_INVALID,
        "New Order Qty invalid must be
        numeric range 1 - 99."
    },
    {
        ERR_NEWORDER_QTY_RANGE,
        "New Order Qty is out of range. Range = 1
        to 99."
    },
    {
        ERR_NEWORDER_QTY_WITHOUT_SUPPW,
        "New Order Qty field entered
        without a corresponding Supp_W."
    },
    {
        ERR_NEWORDER_SUPPW_INVALID,
        "New Order Supp_W invalid data
        type must be numeric."
    },
    {
        ERR_NO_SERVER_SPECIFIED,
        "No Server name specified."
    },
    {
        ERR_ORDERSTATUS_CID_AND_CLT,
        "Order Status Only Customer ID or Last Name
        may be entered, not both."
    },
    {
        ERR_ORDERSTATUS_CID_INVALID,
        "Order Status Customer ID invalid, range
        must be numeric 1 - 3000."
    },
    {
        ERR_ORDERSTATUS_CLT_RANGE,
        "Order Status Customer last name
        longer than 16 characters."
    },
    {
        ERR_ORDERSTATUS_DID_INVALID,
        "Order Status District invalid, value must
        be numeric 1 - 10."
    },
    {
        ERR_ORDERSTATUS_MISSING_CID_CLT,
        "Order Status Either Customer ID or Last
        Name must be entered."
    },
    {
        ERR_ORDERSTATUS_MISSING_CID_KEY,
        "Order Status missing Customer key

```

```

        \"CID*\"."
    },
    {
        ERR_ORDERSTATUS_MISSING_CLT_KEY,
        "Order Status missing Customer Last Name
        key \"CLT*\"."
    },
    {
        ERR_ORDERSTATUS_MISSING_DID_KEY,
        "Order Status missing District key
        \"DID*\"."
    },
    {
        ERR_PAYMENT_CDI_INVALID,
        "Payment Customer district
        invalid must be numeric."
    },
    {
        ERR_PAYMENT_CID_AND_CLT,
        "Payment Only Customer ID or Last
        Name may be entered, not both."
    },
    {
        ERR_PAYMENT_CUSTOMER_INVALID,
        "Payment Customer data type invalid, must
        be numeric."
    },
    {
        ERR_PAYMENT_CWI_INVALID,
        "Payment Customer Warehouse
        invalid, must be numeric."
    },
    {
        ERR_PAYMENT_DISTRICT_INVALID,
        "Payment District ID is invalid, must be 1
        - 10."
    },
    {
        ERR_PAYMENT_HAM_INVALID,
        "Payment Amount invalid data type
        must be numeric."
    },
    {
        ERR_PAYMENT_HAM_RANGE,
        "Payment Amount out of range, 0 - 9999.99."
    },
    {
        ERR_PAYMENT_LAST_NAME_TO_LONG,
        "Payment Customer last name
        longer than 16 characters."
    },
    {
        ERR_PAYMENT_MISSING_CDI_KEY,
        "Payment missing Customer district key
        \"CDI*\"."
    },
    {
        ERR_PAYMENT_MISSING_CID_CLT,
        "Payment Either Customer ID or Last Name
        must be entered."
    },
    {
        ERR_PAYMENT_MISSING_CID_KEY,
        "Payment missing Customer Key \"CID*\"."
    },
    {

```

```

    {
        ERR_PAYMENT_MISSING_CLT_KEY,
        "Payment missing Customer Last Name key
        \"CLT*\"."
    },
    {
        ERR_PAYMENT_MISSING_CWI_KEY,
        "Payment missing Customer Warehouse key
        \"CWI*\"."
    },
    {
        ERR_PAYMENT_MISSING_DID_KEY,
        "Payment missing District Key \"DID*\"."
    },
    {
        ERR_PAYMENT_MISSING_HAM_KEY,
        "Payment missing Amount key \"HAM*\"."
    },
    {
        ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY,
        "Stock Level; missing Threshold key
        \"TT*\"."
    },
    {
        ERR_STOCKLEVEL_THRESHOLD_INVALID,
        "Stock Level; Threshold value must be in
        the range = 1 - 99."
    },
    {
        ERR_STOCKLEVEL_THRESHOLD_RANGE,
        "Stock Level Threshold out of
        range, range must be 1 - 99."
    },
    {
        ERR_VERSION_MISMATCH,
        "Invalid version field. RTE and Web Client
        are probably out of sync."
    },
    {
        ERR_W_ID_INVALID,
        "Invalid Warehouse ID."
    },
    {
        0,
        ""
    },
    {
};
char szTmp[256];
int i = 0;
while (TRUE)
{
    if (errorMsgs[i].szMsg[0] == 0)
    {
        strcpy( szTmp, "Unknown
        error number." );
        break;
    }
    if (m_Error ==
        errorMsgs[i].iError)
    {

```



```

        strcpy( szTmp,
errorMsgs[i].szMsg );
        break;
    }
    i++;
}
if (m_szTextDetail)
    strcat( szTmp, m_szTextDetail );
if (m_SystemErr)
    sprintf( szTmp+strlen(szTmp), "
Error=%d", m_SystemErr );

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

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

```

```

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

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

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

*pQueryString = ptr;
return;

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

/* FUNCTION: GetIntKeyValue
 * PURPOSE:      This function parses a http
formatted string for a specific key value.
 * ARGUMENTS:   char
                *pQueryString      http string from client
browser
                *pKey              char          key
value to look for
                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 CWBCLNT_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 CWBCLNT_ERR(
ERR_MAX_CONNECTIONS_EXCEEDED );
    }

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

    LeaveCriticalSection(&TermCriticalSection);
    return iNewTerm;
}

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

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

        // put onto free list

        EnterCriticalSection(&TermCriticalSection);

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

        LeaveCriticalSection(&TermCriticalSection);
    }
}

/* FUNCTION: MakeErrorForm
*/

void ErrorForm(EXTENSION_CONTROL_BLOCK *pECB, int
iType, int iErrorNum, int iTermId, int iSyncId, char
*szErrorText, char *szBuffer )
{

```

```

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

/* FUNCTION: MakeMainMenuForm
*/

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

```

```

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

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

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

    c = 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=\"TERMINID\" VALUE=\"%d\">"
        "<INPUT TYPE=\"hidden\"
NAME=\"SYNCID\" VALUE=\"%d\">"
        "<PRE><font face=\"Courier\">
Stock-Level<BR>"
        "Warehouse: %6.6d 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></PRE><HR>"
            "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Process\">"
            "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Menu\">"
            "</FORM></HTML>" );
    }
    else
    {
        wsprintf(szForm+c,
            "Stock Level Threshold:
%2.2d<BR> <BR>"
            "Low stock:
%3.3d</font> <BR> <BR> <BR> <BR> <BR> <BR> <BR>
<BR>"
            " <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR></PRE><HR>"
            "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..NewOrder..\">"
            "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Payment..\">"
            "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Delivery..\">"
            "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Order-Status..\">"
            "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Stock-Level..\">"
            "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Exit..\">"
            "</FORM></HTML>"
            , pStockLevelData-
>threshold, pStockLevelData->low_stock);
    }
}

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

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

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

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

```

```

        c = sprintf(szForm,
            "<HTML><HEAD><TITLE>TPC-C New
Order</TITLE></HEAD><BODY>"
            "<FORM ACTION='tpcc.dll'"
            "METHOD='GET'">"
            "<INPUT TYPE='hidden'"
            "NAME='STATUSID' VALUE='%d'">"
            "<INPUT TYPE='hidden'"
            "NAME='ERROR' VALUE='0'">"
            "<INPUT TYPE='hidden'"
            "NAME='FORMID' VALUE='%d'">"
            "<INPUT TYPE='hidden'"
            "NAME='TERMINID' VALUE='%d'">"
            "<INPUT TYPE='hidden'"
            "NAME='SYNCID' VALUE='%d'">"
            "<PRE><font face='Courier'">
New Order<BR>"
            , bValid ? 0 : ERR_BAD_ITEM_ID,
NEW_ORDER_FORM, iTermId,
Term.pClientData[iTermId].iSyncId);

        if ( bInput )
        {
            c += sprintf(szForm+c,
"Warehouse: %6.6d    ", Term.pClientData[iTermId].w_id
);

            strcpy( szForm+c,
                "District: <INPUT
NAME='DID*' SIZE=1>
Date:<BR>"
                "Customer: <INPUT
NAME='CID*' SIZE=4> Name:
Credit:      %Disc:<BR>"
                "Order Number:
Number of Lines:      W_tax:      D_tax:<BR>
<BR>"
                " Supp_W Item_Id Item
Name      Qty Stock B/G Price
Amount<BR>"
                " <INPUT
NAME='SP00*' SIZE=4> <INPUT NAME='IID00*'
SIZE=6>
NAME='Qty00*' SIZE=1><BR>"
                " <INPUT
NAME='SP01*' SIZE=4> <INPUT NAME='IID01*'
SIZE=6>
NAME='Qty01*' SIZE=1><BR>"
                " <INPUT
NAME='SP02*' SIZE=4> <INPUT NAME='IID02*'
SIZE=6>
NAME='Qty02*' SIZE=1><BR>"
                " <INPUT
NAME='SP03*' SIZE=4> <INPUT NAME='IID03*'
SIZE=6>
NAME='Qty03*' SIZE=1><BR>"
                " <INPUT
NAME='SP04*' SIZE=4> <INPUT NAME='IID04*'
SIZE=6>
NAME='Qty04*' SIZE=1><BR>"
                " <INPUT
NAME='SP05*' SIZE=4> <INPUT NAME='IID05*"

```

```

SIZE=6>
NAME='Qty05*' SIZE=1><BR>"
                " <INPUT
NAME='SP06*' SIZE=4> <INPUT NAME='IID06*'
SIZE=6>
NAME='Qty06*' SIZE=1><BR>"
                " <INPUT
NAME='SP07*' SIZE=4> <INPUT NAME='IID07*'
SIZE=6>
NAME='Qty07*' SIZE=1><BR>"
                " <INPUT
NAME='SP08*' SIZE=4> <INPUT NAME='IID08*'
SIZE=6>
NAME='Qty08*' SIZE=1><BR>"
                " <INPUT
NAME='SP09*' SIZE=4> <INPUT NAME='IID09*'
SIZE=6>
NAME='Qty09*' SIZE=1><BR>"
                " <INPUT
NAME='SP10*' SIZE=4> <INPUT NAME='IID10*'
SIZE=6>
NAME='Qty10*' SIZE=1><BR>"
                " <INPUT
NAME='SP11*' SIZE=4> <INPUT NAME='IID11*'
SIZE=6>
NAME='Qty11*' SIZE=1><BR>"
                " <INPUT
NAME='SP12*' SIZE=4> <INPUT NAME='IID12*'
SIZE=6>
NAME='Qty12*' SIZE=1><BR>"
                " <INPUT
NAME='SP13*' SIZE=4> <INPUT NAME='IID13*'
SIZE=6>
NAME='Qty13*' SIZE=1><BR>"
                " <INPUT
NAME='SP14*' SIZE=4> <INPUT NAME='IID14*'
SIZE=6>
NAME='Qty14*' SIZE=1><BR>"
                "Execution Status:
Total:<BR>"
                "</font></PRE><HR>"
                "<INPUT TYPE='submit'"
                "<INPUT TYPE='submit'"
                "</FORM></HTML>"
            );
        }
        else
        {
            c += sprintf(szForm+c,
"Warehouse: %6.6d    District: %2.2d
Date: ",
                pNewOrderData->w_id,
pNewOrderData->d_id);

            if ( bValid )
            {
                c += sprintf(szForm+c,
"%2.2d-%2.2d-%4.4d %2.2d:%2.2d:%2.2d",
pNewOrderData->o_entry_d.day,

```

```

pNewOrderData->o_entry_d.month,
pNewOrderData->o_entry_d.year,
pNewOrderData->o_entry_d.hour,
pNewOrderData->o_entry_d.minute,
pNewOrderData->o_entry_d.second);
        }
        c += sprintf(szForm+c,
"<BR>Customer:  %4.4d  Name: %-16s  Credit: %-2s
",
                pNewOrderData->c_id,
pNewOrderData->c_last, pNewOrderData->c_credit);

        if ( bValid )
        {
            c += sprintf(szForm+c,
                "%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, "%6.6d %6.6d %-24s %2.2d
%3.3d %1.1s $%6.2f $%7.2f <BR>",
pNewOrderData->OL[i].ol_supply_w_id,
pNewOrderData->OL[i].ol_i_id,
pNewOrderData->OL[i].ol_i_name,
pNewOrderData->OL[i].ol_quantity,
pNewOrderData->OL[i].ol_stock,
pNewOrderData->OL[i].ol_brand_generic,
pNewOrderData->OL[i].ol_i_price,
pNewOrderData->OL[i].ol_amount );
            }
        }
    }

```

```

    }
    else
    {
        c += sprintf(szForm+c,
            "%Disc:<BR>"
            "Order
Number: %8.8d Number of Lines: W_tax:
D_tax:<BR> <BR>"
            " Supp_W
Item_Id Item Name Qty Stock B/G
Price Amount<BR>"
            ,
pNewOrderData->o_id);

        i = 0;
    }
    strncpy( szForm+c, szBR, (15-i)*5
);
    c += (15-i)*5;

    if ( bValid )
        c += sprintf(szForm+c,
"Execution Status: Transaction committed.
Total: $%8.2f ",
        pNewOrderData->total_amount);
    else
        c += sprintf(szForm+c,
"Execution Status: Item number is not valid.
Total:");

    strcpy(szForm+c,
        "
<BR></font></PRE><HR>"
        "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..NewOrder..\">"
        "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Payment..\">"
        "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Delivery..\">"
        "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Order-Status..\">"
        "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Stock-Level..\">"
        "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Exit..\">"
        "</FORM></HTML>"
        );
    }
}

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

```

```

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

    c = sprintf(szForm,
        "<HTML><HEAD><TITLE>TPC-C
Payment</TITLE></HEAD><BODY>"
        "<FORM ACTION=\"tpcc.dll\"
METHOD=\"GET\">"
        "<INPUT TYPE=\"hidden\"
NAME=\"STATUSID\" VALUE=\"0\">"
        "<INPUT TYPE=\"hidden\"
NAME=\"ERROR\" VALUE=\"0\">"
        "<INPUT TYPE=\"hidden\"
NAME=\"FORMID\" VALUE=\"%d\">"
        "<INPUT TYPE=\"hidden\"
NAME=\"TERMINID\" VALUE=\"%d\">"
        "<INPUT TYPE=\"hidden\"
NAME=\"SYNCID\" VALUE=\"%d\">"
        "<PRE><font face=\"Courier\">
Payment<BR>"
        "Date: "
        , PAYMENT_FORM, iTermId,
Term.pClientData[iTermId].iSyncId);

    if ( !bInput )
    {
        c += sprintf(szForm+c, "%2.2d-
%2.2d-%4.4d %2.2d:%2.2d:%2.2d",
        pPaymentData-
>h_date.day,
        pPaymentData-
>h_date.month,
        pPaymentData-
>h_date.year,
        pPaymentData-
>h_date.hour,
        pPaymentData-
>h_date.minute,
        pPaymentData-
>h_date.second);
    }

    if ( bInput )
    {
        c += sprintf(szForm+c,
            "<BR> <BR>Warehouse:
%6.6d"
            "
District: <INPUT NAME=\"DID\" SIZE=1><BR> <BR> <BR>
<BR> <BR>
NAME=\"CID\" SIZE=4>"
            "Customer: <INPUT
NAME=\"CWI\" SIZE=4> "
            "Cust-Warehouse: <INPUT
NAME=\"CDI\" SIZE=1><BR>
Name:
<INPUT NAME=\"CLT\" SIZE=16>
Since:<BR>
"
            "
Credit:<BR>"
        );
    }
}

```

```

"
Disc:<BR>"
"
Phone:<BR> <BR>"
"Amount Paid:
$<INPUT NAME=\"HAM\" SIZE=7> New Cust-
Balance:<BR>"
"Credit Limit:<BR>
<BR>Cust-Data: <BR> <BR> <BR> <BR>
<BR></font></PRE><HR>"
"<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Process\"><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Menu\">"
"</BODY></FORM></HTML>"

Term.pClientData[iTermId].w_id);
}
else
{
    c += sprintf(szForm+c,
        "<BR> <BR>Warehouse:
%6.6d District: %2.2d<BR>"
        "%-20s
        "%-20s
        "%-20s<BR>"
        "%-20s
        "%-20s %2s %5.5s-%4.4s
        "%-20s %2s %5.5s-%4.4s<BR> <BR>"
        "Customer: %4.4d Cust-
Warehouse: %6.6d 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>",

```



```

        pOrderStatusData-
>OL[i].ol_delivery_d.month,

        pOrderStatusData-
>OL[i].ol_delivery_d.year);
    }

    strncpy( szForm+c, szBR, (15-i)*5
);
    c += (15-i)*5;
    strcpy(szForm+c,

        "</font></PRE><HR><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"\"..NewOrder..\">\"
        \"<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"\"..Payment..\">\"
        \"<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"\"..Delivery..\">\"
        \"<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"\"..Order-Status..\">\"
        \"<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"\"..Stock-Level..\">\"
        \"<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"\"..Exit..\">\"
        \"</BODY></FORM></HTML>\"
);
    }

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

void MakeDeliveryForm(int iTermId, DELIVERY_DATA
*pDeliveryData, BOOL bInput, char *szForm)
{
    int    c;

    c = sprintf(szForm,
        "<HTML><HEAD><TITLE>TPC-C
Delivery</TITLE></HEAD><BODY>\"
        \"<FORM ACTION=\"\"tpcc.dll\"\"
METHOD=\"\"GET\"\">\"
        \"<INPUT TYPE=\"\"hidden\"\"
NAME=\"\"STATUSID\"\" VALUE=\"\"%d\"\">\"
        \"<INPUT TYPE=\"\"hidden\"\"
NAME=\"\"ERROR\"\" VALUE=\"\"0\"\">\"
        \"<INPUT TYPE=\"\"hidden\"\"
NAME=\"\"FORMID\"\" VALUE=\"\"%d\"\">\"
        \"<INPUT TYPE=\"\"hidden\"\"
NAME=\"\"TERMINID\"\" VALUE=\"\"%d\"\">\"
        \"<INPUT TYPE=\"\"hidden\"\"
NAME=\"\"SYNCID\"\" VALUE=\"\"%d\"\">\"
        \"<PRE><font face=\"\"Courier\"\">
Delivery<BR>\"

```

```

        "Warehouse: %6.6d<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> </font></PRE><HR>\"
            \"<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"\"Process\"\">\"
            \"<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"\"Menu\"\">\"
            \"</BODY></FORM></HTML>\"
);
    }
    else
    {
        sprintf( szForm+c,
            "Carrier Number:
            \"Execution Status: %s
<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 CWBCLNT_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 CWBCLNT_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]
=
    "SP03*", "SP04*",      { "SP00*", "SP01*", "SP02*",
    "SP08*", "SP09*",      "SP05*", "SP06*", "SP07*",
    "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
CWEBCCLNT_ERR( ERR_NEWORDER_SUPPW_INVALID );
            pNewOrderData->ol_supply_w_id = atoi(szTmp);

            ol_i_id =
pNewOrderData->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
CWEBCCLNT_ERR( ERR_NEWORDER_ITEMID_RANGE );
            ol_quantity =
pNewOrderData->ol_quantity =
                GetIntKeyValue(&ptr, szQty[i],
ERR_NEWORDER_MISSING_QTY_KEY,
ERR_NEWORDER_QTY_INVALID);
            if ( ol_quantity > 99
|| ol_quantity < 1 )
                throw new
CWEBCCLNT_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
CWEBCCLNT_ERR( ERR_NEWORDER_ITEMID_WITHOUT_SUPPW );
            GetKeyValue(&ptr,
szQty[i], szTmp, sizeof(szTmp),
ERR_NEWORDER_MISSING_QTY_KEY);
            if ( szTmp[0] )
                throw new
CWEBCCLNT_ERR( ERR_NEWORDER_QTY_WITHOUT_SUPPW );
        }
        if ( items == 0 )
            throw new CWEBCCLNT_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
*
*                *pPaymentData      PAYMENT_DATA
payment data structure      pointer to
*/

void GetPaymentData(LPSTR lpszQueryString,
PAYMENT_DATA *pPaymentData)
{
    char        szTmp[26];
    char        *ptr = lpszQueryString;
    BOOL        bCustIdBlank;
    int          ilen;

```

```

        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 CWEBCCLNT_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 CWEBCCLNT_ERR(
ERR_PAYMENT_MISSING_CID_CLT );

            _strupr( szTmp );
            if ( strlen(szTmp) >
LAST_NAME_LEN )
                throw new CWEBCCLNT_ERR(
ERR_PAYMENT_LAST_NAME_TO_LONG );

            strcpy(pPaymentData->c_last,
szTmp);
            // pad with spaces so that the
client layer doesn't have to do it
            // before passing parameters to
stored procedure
            ilen = strlen(pPaymentData->
>c_last);
            memset(pPaymentData->c_last +
ilen, ' ', LAST_NAME_LEN - ilen);
            pPaymentData->
>c_last[LAST_NAME_LEN] = 0;
        }
        else
        {
            // parse customer id and verify
that last name was NOT entered
            GetKeyValue(&ptr, "CLT*", szTmp,
sizeof(szTmp), ERR_PAYMENT_MISSING_CLT_KEY);
            if ( szTmp[0] != 0 )

```

```

        throw new CWBCLNT_ERR(
ERR_PAYMENT_CID_AND_CLT );
    }

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

/* FUNCTION: GetOrderStatusData
 *
 * PURPOSE:      This function extracts and
validates the payment form data from an http command
string.
 */
void GetOrderStatusData(LPSTR lpszQueryString,
ORDER_STATUS_DATA *pOrderStatusData)
{
    char        szTmp[26];
    char        *ptr = lpszQueryString;
    int         ilen;

    pOrderStatusData->d_id =
GetIntKeyValue(&ptr, "DID*",
ERR_ORDERSTATUS_MISSING_DID_KEY,
ERR_ORDERSTATUS_DID_INVALID);

    GetKeyValue(&ptr, "CID*", szTmp,
sizeof(szTmp), ERR_ORDERSTATUS_MISSING_CID_KEY);
    if ( szTmp[0] == 0 )
    {
        // customer id is blank, so last
name must be entered
        pOrderStatusData->c_id = 0;
        GetKeyValue(&ptr, "CLT*", szTmp,
sizeof(szTmp), ERR_ORDERSTATUS_MISSING_CLT_KEY);
        if ( szTmp[0] == 0 )
            throw new CWBCLNT_ERR(
ERR_ORDERSTATUS_MISSING_CID_CLT );

        _strupr( szTmp );
        if ( strlen(szTmp) >
LAST_NAME_LEN )
            throw new CWBCLNT_ERR(
ERR_ORDERSTATUS_CLT_RANGE );

        strcpy(pOrderStatusData->c_last,
szTmp);
        // pad with spaces so that the
client layer doesn't have to do it
        // before passing parameters to
stored procedure
        ilen = strlen(pOrderStatusData-
>c_last);
        memset(pOrderStatusData->c_last +
ilen, ' ', LAST_NAME_LEN - ilen);

```

```

        pOrderStatusData-
>c_last[LAST_NAME_LEN] = 0;
    }
    else
    {
        // parse customer id and verify
that last name was NOT entered
        if ( !IsNumeric(szTmp) )
            throw new CWBCLNT_ERR(
ERR_ORDERSTATUS_CID_INVALID );
        pOrderStatusData->c_id =
atoi(szTmp);
        GetKeyValue(&ptr, "CLT*", szTmp,
sizeof(szTmp), ERR_ORDERSTATUS_MISSING_CLT_KEY);
        if ( szTmp[0] != 0 )
            throw new CWBCLNT_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;
    //synchronization 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;
    //synchronization 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;};
    char *ErrorTypeStr() { return
"WEBCLIENT"; }
    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(long w_id, short o_carrier_id);
BOOL IsNumeric(char *ptr);
BOOL IsDecimal(char *ptr);
void DeliveryWorkerThread(void *ptr);
// Separate function to be able to use Win32
exception handling in
// HttpExtensionProc.
void ProcessCommand(EXTENSION_CONTROL_BLOCK *pECB,
char* szBuffer, int& TermId, int& iSyncId);

```

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

#ifdef _AFX_RESOURCE_DLL ||
defined(_AFX_TARG_ENU)
#ifdef _WIN32
LANGUAGE LANG_ENGLISH, SUBLANG_ENGLISH_US
#pragma code_page(1252)
#endif // _WIN32

#ifdef _MAC
////////////////////////////////////
////////////////////////////////////
//
// Version
//

VS_VERSION_INFO VERSIONINFO
FILEVERSION 0,4,0,0
PRODUCTVERSION 0,4,0,0
FILEFLAGSMASK 0x3fL
#ifdef _DEBUG
FILEFLAGS 0x1L
#else
FILEFLAGS 0x0L
#endif
FILEOS 0x40004L
FILETYPE 0x2L
FILESUBTYPE 0x0L
BEGIN
    BLOCK "StringFileInfo"
    BEGIN
        BLOCK "040904b0"
        BEGIN
            VALUE "Comments", "TPC-C HTML DLL
Server\0"
            VALUE "CompanyName", "Microsoft\0"
            VALUE "FileDescription", "TPC-C HTML DLL
Server\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
////////////////////////////////////

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

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

tpcc_com.cpp
/* FILE: TPCCOM.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
definitions of structures specific to TPC-C
#include "..\..\common\src\error.h"
#include "..\..\common\src\txn_base.h"
#include "..\..\common\src\tpcc_errorcode.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) && hr != E_TPCCCOM)
            throw new CCOMERR( hr ); //
COM call didn't succeed and there is no output
structure

        memcpy(m_pTxn, (void *)vTxn_out.parray-
>pvData, vTxn_out.parray->rgsabound[0].cElements);
        hr = SafeArrayDestroy(vTxn_out.parray);
        if (hr != S_OK)
            throw new CCOMERR( hr );

        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) && hr != E_TPCCCOM)
        throw new CCOMERR( hr ); //
COM call didn't succeed and there is no output
structure

    memcpy(m_pTxn, (void *)vTxn_out.parray-
>pvData, vTxn_out.parray->rgsabound[0].cElements);
    hr = SafeArrayDestroy(vTxn_out.parray);
    if (hr != S_OK)
        throw new CCOMERR( hr );

    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) && hr != E_TPCCCOM)
        throw new CCOMERR( hr ); //
COM call didn't succeed and there is no output
structure

    memcpy(m_pTxn, (void *)vTxn_out.parray-
>pvData, vTxn_out.parray->rgsabound[0].cElements);
    hr = SafeArrayDestroy(vTxn_out.parray);
    if (hr != S_OK)
        throw new CCOMERR( hr );

    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) && hr != E_TPCCCOM)
        throw new CCOMERR( hr ); //
COM call didn't succeed and there is no output
structure

    memcpy(m_pTxn, (void *)vTxn_out.parray-
>pvData, vTxn_out.parray->rgsabound[0].cElements);
    hr = SafeArrayDestroy(vTxn_out.parray);
    if (hr != S_OK)
        throw new CCOMERR( hr );

    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
 * 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;
        }

        char *ErrorTypeStr() { return
        "COM"; }

        int ErrorNum()
        {
            if (m_iErrorType == 0)
                return m_hr;
            // return COM error
            else
                return
                m_iError; // return impersonated error
        }

        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;

        public:
            CTPCC_COM(BOOL bSinglePool);
            ~CTPCC_COM(void);

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

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

```

```

        void Delivery ();
        { throw new CCOMERR(E_NOTIMPL); } // not supported
    };

    inline void ReleaseInterface(IUnknown *pUnk)
    {
        if (pUnk)
        {
            pUnk->Release();
            pUnk = NULL;
        }
    }

    // wrapper routine for class constructor
    extern "C" __declspec(dllexport) CTPCC_COM*
    CTPCC_COM_new(BOOL);

    typedef CTPCC_COM* (TYPE_CTPCC_COM)(BOOL);

    tpcc_com_all.
cpp
    /* FILE: TPCC_COM_ALL.CPP
    * Microsoft
    * TPC-C Kit Ver. 4.20.000
    * Copyright
    * Microsoft, 1999
    * All Rights Reserved
    * Version
    * 4.10.000 audited by Richard Gimarc, Performance
    * Metrics, 3/17/99
    * PURPOSE: Implementation for TPC-C class.
    * Contact: Charles Levine
    * (clevine@microsoft.com)
    * Change history:
    * 4.20.000 - updated rev number to
    match kit
    */

    #define STRICT
    #define _WIN32_WINNT 0x0400
    #define _ATL_APARTMENT_THREADED

    #include <stdio.h>
    #include <atlbase.h>
    //You may derive a class from CComModule and use it
    if you want to override
    //something, but do not change the name of _Module
    extern CComModule _Module;

    #include <atlcom.h>
    #include <initguid.h>
    #include <transact.h>

```

```

// #include <atlimpl.cpp>
#include <comsvcs.h>

#include <sqltypes.h>
#include <sql.h>
#include <sqlext.h>

#include "tpcc_com_ps.h"
#include "..\..\common\src\trans.h"
// tpckit transaction
header contains definations of structures specific to
TPC-C
#include "..\..\common\src\txn_base.h"
#include "..\..\common\src\error.h"
#include "..\..\common\src\ReadRegistry.h"
#include "..\..\common\src\tpcc_com_errorcode.h"
#include "..\..\db_odbc_dll\src\tpcc_odbc.h"
// ODBC implementation of TPC-C txns

#include "resource.h"
#include "tpcc_com_all.h"
#include "tpcc_com_all_i.c"
#include "Methods.h"
#include "..\..\tpcc_com_ps\src\tpcc_com_ps_i.c"
#include "..\..\common\src\ReadRegistry.cpp"

CComModule _Module;

BEGIN_OBJECT_MAP(ObjectMap)
    OBJECT_ENTRY(CLSID_TPCC, CTPCC)
    OBJECT_ENTRY(CLSID_NewOrder, CNewOrder)
    OBJECT_ENTRY(CLSID_OrderStatus,
COrderStatus)
    OBJECT_ENTRY(CLSID_Payment, CPayment)
    OBJECT_ENTRY(CLSID_StockLevel, CStockLevel)
END_OBJECT_MAP()

// configuration settings from registry
TPCCREGISTRYDATA Reg;
char
    szMyComputerName[MAX_COMPUTERNAME_LENGTH+1]
;

static HINSTANCE hLibInstanceDb = NULL;

TYPE_CTPCC_ODBC                *pCTPCC_ODBC_new;

// Critical section to synchronize connection open
and close.
//
CRITICAL_SECTION hConnectCriticalSection;

////////////////////////////////////////
// DLL Entry Point

extern "C"
BOOL WINAPI DllMain(HINSTANCE hInstance, DWORD
dwReason, LPVOID /*lpReserved*/)
{
    char szDllName[128];

```

```

        try
        {
            if (dwReason ==
DLL_PROCESS_ATTACH)
            {
                _Module.Init(ObjectMap,
hInstance);

                DisableThreadLibraryCalls(hInstance);

                DWORD dwSize =
MAX_COMPUTERNAME_LENGTH+1;

                GetComputerName(szMyComputerName, &dwSize);

                szMyComputerName[dwSize] = 0;

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

                if (Reg.eDB_Protocol ==
ODBC)
                {
                    strcpy(
szDllName, Reg.szPath );

                    strcat(
szDllName, "tpcc_odbc.dll");

                    hLibInstanceDb = LoadLibrary( szDllName );
                    if
(hLibInstanceDb == NULL)
                        throw new CCOMPONENT_ERR(
ERR_LOADDLL_FAILED, szDllName, GetLastError() );

                    // get
function pointer to wrapper for class constructor

                    pCTPCC_ODBC_new = (TYPE_CTPCC_ODBC*)
GetProcAddress(hLibInstanceDb, "CTPCC_ODBC_new");
                    if
(pCTPCC_ODBC_new == NULL)
                        throw new CCOMPONENT_ERR(
ERR_GETPROCADDR_FAILED, szDllName, GetLastError() );
                    else
                        throw new
CCOMPONENT_ERR( ERR_UNKNOWN_DB_PROTOCOL );

                    if (Reg.dwConnectDelay
> 0)
                    {
                        InitializeCriticalSection(&hConnectCritical
Section);
                    }
                }
                else if (dwReason ==
DLL_PROCESS_DETACH)

```

```

                _Module.Term();
            }
            catch (CBaseErr *e)
            {
                TCHAR szMsg[256];

                _sntprintf(szMsg, sizeof(szMsg),
"%s error, code %d: %s",
e-
>ErrorTypeStr(), e->ErrorNum(), e->ErrorText());
                WriteMessageToEventLog( szMsg );

                delete e;
                return FALSE;
            }
            catch (...)
            {
                WriteMessageToEventLog(TEXT("Unhandled
exception in object DllMain"));
                return FALSE;
            }

            return TRUE; // OK
        }

////////////////////////////////////////
////////////////////////////////////////
// Used to determine whether the DLL can be unloaded
by OLE

STDAPI DllCanUnloadNow(void)
{
    return (_Module.GetLockCount()==0) ? S_OK :
S_FALSE;
}

////////////////////////////////////////
////////////////////////////////////////
// Returns a class factory to create an object of the
requested type

STDAPI DllGetClassObject(REFCLSID rclsid, REFIID
riid, LPVOID* ppv)
{
    return _Module.GetClassObject(rclsid, riid,
ppv);
}

////////////////////////////////////////
////////////////////////////////////////
// DllRegisterServer - Adds entries to the system
registry

STDAPI DllRegisterServer(void)
{
    // registers object, typelib and all
interfaces in typelib
    return _Module.RegisterServer(TRUE);
}

```



```

////////////////////////////////////
////////////////////////////////////
// DllUnregisterServer - Removes entries from the
// system registry

STDAPI DllUnregisterServer(void)
{
    _Module.UnregisterServer();
    return S_OK;
}

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

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

    _sprintf(szMsg, TEXT("Error in COM+ TPC-C
Component: "));
    lpszStrings[0] = szMsg;
    lpszStrings[1] = lpszMsg;

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

        (VOID) DeregisterEventSource(hEventSource);
    }
}

inline void ReleaseInterface(IUnknown *pUnk)
{
    if (pUnk)
    {
        pUnk->Release();
        pUnk = NULL;
    }
}

/* FUNCTION: CCOMPONENT_ERR::ErrorText
*/
char* CCOMPONENT_ERR::ErrorText(void)

```

```

{
    static SERRMSG errorMsgs[] =
    {
        { ERR_MISSING_REGISTRY_ENTRIES,
        "Required entries missing from registry."
        },
        { ERR_LOADDLL_FAILED,
        "Load of DLL failed. DLL="
        },
        { ERR_GETPROCADDR_FAILED,
        "Could not map proc in DLL. GetProcAddress
error. DLL="
        },
        { ERR_UNKNOWN_DB_PROTOCOL,
        "Unknown database protocol specified in
registry."
        },
        { 0, ""
        }
    };

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

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

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

CTPCC_Common::CTPCC_Common()
{
    m_pTxn = NULL;
    m_bCanBePooled = TRUE;
}

CTPCC_Common::~CTPCC_Common()
{

```

```

// Pace connection close for VIA.
//
if (Reg.dwConnectDelay > 0)
{
    EnterCriticalSection(&hConnectCriticalSecti
on);

    Sleep(Reg.dwConnectDelay);

    LeaveCriticalSection(&hConnectCriticalSecti
on);
}

if (m_pTxn)
{
    delete m_pTxn;
}

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

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

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

    try
    {
        // Pace connection creation for
VIA.
        //
        if (Reg.dwConnectDelay > 0)
        {
            EnterCriticalSection(&hConnectCriticalSecti
on);

            Sleep(Reg.dwConnectDelay);

```

<pre> on); LeaveCriticalSection(&hConnectCriticalSection); } if (Reg.eDB_Protocol == ODBC) m_pTxn = pCTPCC_ODBC_new(Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, szMyComputerName, Reg.szDbName, Reg.szSPPrefix, Reg.bCallNoDuplicatesNewOrder); } catch (CBaseErr *e) { TCHAR szMsg[256]; _sntprintf(szMsg, sizeof(szMsg), "%s error in CTPCC_Common::Construct, code %d: %s", e- >ErrorTypeStr(), e->ErrorNum(), e->ErrorText()); WriteMessageToEventLog(szMsg); delete e; return E_FAIL; } catch (...) { WriteMessageToEventLog(TEXT("Unhandled exception in object ::Construct")); return E_FAIL; } return S_OK; HRESULT CTPCC_Common::NewOrder(VARIANT txn_in, VARIANT* txn_out) { PNEW_ORDER_DATA pNewOrder; COM_DATA *pData; COM_DATA *pOutData; try { // Allocate output structure first because it is also used in the catch clauses. // VariantInit(txn_out); txn_out->vt = VT_SAFEARRAY; txn_out->parray = SafeArrayCreateVector(VT_UI1, txn_in.parray->rgsabound- >cElements, txn_in.parray->rgsabound- >cElements); </pre>	<pre> if (txn_out->parray == NULL) // sanity error checking - for very rare case, but to be sure { return E_OUTOFMEMORY; } pOutData = (COM_DATA*)txn_out- >parray->pvData; pData = (COM_DATA*)txn_in.parray- >pvData; pNewOrder = m_pTxn- >BuffAddr_NewOrder(); memcpy(pNewOrder, &pData- >u.NewOrder, sizeof(NEW_ORDER_DATA)); m_pTxn->NewOrder(); // do the actual txn memcpy(&pOutData->u.NewOrder, pNewOrder, sizeof(NEW_ORDER_DATA)); pOutData->retval = ERR_SUCCESS; pOutData->error = 0; return S_OK; } catch (CBaseErr *e) { // check for lost database connection; if yes, component is toast if (((e->ErrorType() == ERR_TYPE_ODBC) && (e->ErrorNum() == 10054))) m_bCanBePooled = FALSE; pOutData->retval = e- >ErrorType(); pOutData->error = e->ErrorNum(); delete e; return E_TPCCCOM; } catch (...) { WriteMessageToEventLog(TEXT("Unhandled exception in CTPCC_Common::NewOrder. ")); pOutData->retval = ERR_TYPE_LOGIC; pOutData->error = 0; m_bCanBePooled = FALSE; return E_TPCCCOM; } } HRESULT CTPCC_Common::Payment(VARIANT txn_in, VARIANT* txn_out) { PPAYMENT_DATA pPayment; COM_DATA *pData; COM_DATA *pOutData; try </pre>	<pre> { // Allocate output structure first because it is also used in the catch clauses. // VariantInit(txn_out); txn_out->vt = VT_SAFEARRAY; txn_out->parray = SafeArrayCreateVector(VT_UI1, txn_in.parray->rgsabound- >cElements, txn_in.parray->rgsabound- >cElements); if (txn_out->parray == NULL) // sanity error checking - for very rare case, but to be sure { return E_OUTOFMEMORY; } pOutData = (COM_DATA*)txn_out- >parray->pvData; pData = (COM_DATA*)txn_in.parray- >pvData; pPayment = m_pTxn- >BuffAddr_Payment(); memcpy(pPayment, &pData- >u.Payment, sizeof(PAYMENT_DATA)); m_pTxn->Payment(); // do the actual txn memcpy(&pOutData->u.Payment, pPayment, sizeof(PAYMENT_DATA)); pOutData->retval = ERR_SUCCESS; pOutData->error = 0; return S_OK; } catch (CBaseErr *e) { // check for lost database connection; if yes, component is toast if (((e->ErrorType() == ERR_TYPE_ODBC) && (e->ErrorNum() == 10054))) m_bCanBePooled = FALSE; pOutData->retval = e- >ErrorType(); pOutData->error = e->ErrorNum(); delete e; return E_TPCCCOM; } catch (...) { WriteMessageToEventLog(TEXT("Unhandled exception in CTPCC_Common::Payment. ")); pOutData->retval = ERR_TYPE_LOGIC; </pre>
---	---	--

```

        pOutData->error = 0;
        m_bCanBePooled = FALSE;
        return E_TPCCCOM;
    }
}

HRESULT CTPCC_Common::StockLevel(VARIANT txn_in,
VARIANT* txn_out)
{
    PSTOCK_LEVEL_DATA pStockLevel;
    COM_DATA *pData;
    COM_DATA *pOutData;

    try
    {
        // Allocate output structure
        // VariantInit(txn_out);
        txn_out->vt = VT_SAFEARRAY;
        txn_out->parray =
SafeArrayCreateVector( VT_UI1,
        txn_in.parray->rgsabound-
>cElements,
        txn_in.parray->rgsabound-
>cElements);
        if (txn_out->parray == NULL) //
sanity error checking - for very rare case, but to be
sure
        {
            return E_OUTOFMEMORY;
        }

        pOutData = (COM_DATA*)txn_out-
>parray->pvData;

        pData = (COM_DATA*)txn_in.parray-
>pvData;
        pStockLevel = m_pTxn-
>BuffAddr_StockLevel();
        memcpy(pStockLevel, &pData-
>u.StockLevel, sizeof(STOCK_LEVEL_DATA));

        m_pTxn->StockLevel();

        memcpy( &pOutData->u.StockLevel,
pStockLevel, sizeof(STOCK_LEVEL_DATA));

        pOutData->retval = ERR_SUCCESS;
        pOutData->error = 0;
        return S_OK;
    }
    catch (CBaseErr *e)
    {
        // check for lost database
        connection; if yes, component is toast
        if ( ((e->ErrorType() ==
ERR_TYPE_ODBC) && (e->ErrorNum() == 10054)) )
            m_bCanBePooled = FALSE;
    }
}

```

```

        pOutData->retval = e-
>ErrorType();
        pOutData->error = e->ErrorNum();
        delete e;
        return E_TPCCCOM;
    }
    catch (...)
    {
        WriteMessageToEventLog(TEXT("Unhandled
exception in CTPCC_Common::StockLevel."));
        pOutData->retval =
ERR_TYPE_LOGIC;
        pOutData->error = 0;
        m_bCanBePooled = FALSE;
        return E_TPCCCOM;
    }
}

HRESULT CTPCC_Common::OrderStatus(VARIANT txn_in,
VARIANT* txn_out)
{
    PORDER_STATUS_DATA pOrderStatus;
    COM_DATA *pData;
    COM_DATA *pOutData;
    try
    {
        // Allocate output structure
        // VariantInit(txn_out);
        txn_out->vt = VT_SAFEARRAY;
        txn_out->parray =
SafeArrayCreateVector( VT_UI1,
        txn_in.parray->rgsabound-
>cElements,
        txn_in.parray->rgsabound-
>cElements);
        if (txn_out->parray == NULL) //
sanity error checking - for very rare case, but to be
sure
        {
            return E_OUTOFMEMORY;
        }

        pOutData = (COM_DATA*)txn_out-
>parray->pvData;

        pData = (COM_DATA*)txn_in.parray-
>pvData;
        pOrderStatus = m_pTxn-
>BuffAddr_OrderStatus();

        memcpy(pOrderStatus, &pData-
>u.OrderStatus, sizeof(ORDER_STATUS_DATA));

        m_pTxn->OrderStatus();

        memcpy( &pOutData->u.OrderStatus,
pOrderStatus, sizeof(ORDER_STATUS_DATA));
    }
}

```

```

        pOutData->retval = ERR_SUCCESS;
        pOutData->error = 0;
        return S_OK;
    }
    catch (CBaseErr *e)
    {
        // check for lost database
        connection; if yes, component is toast
        if ( ((e->ErrorType() ==
ERR_TYPE_ODBC) && (e->ErrorNum() == 10054)) )
            m_bCanBePooled = FALSE;
    }

    pOutData->retval = e-
>ErrorType();
    pOutData->error = e->ErrorNum();
    delete e;
    return E_TPCCCOM;
}
    catch (...)
    {
        WriteMessageToEventLog(TEXT("Unhandled
exception in CTPCC_Common::OrderStatus."));
        pOutData->retval =
ERR_TYPE_LOGIC;
        pOutData->error = 0;
        m_bCanBePooled = FALSE;
        return E_TPCCCOM;
    }
}

```

tpcc_com_all. def

; tpcc_com_all.def : Declares the module parameters.

```

LIBRARY      "tpcc_com_all.dll"

EXPORTS
    DllCanUnloadNow      PRIVATE
    DllGetClassObject    PRIVATE
    DllRegisterServer     PRIVATE
    DllUnregisterServer  PRIVATE

```

tpcc_com_all.h

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

```

/* File created by MIDL compiler version 6.00.0361
*/
/* at Thu Mar 16 18:21:15 2006
*/
/* Compiler settings for .\src\tpcc_com_all.idl:
    Oicf, W1, Zp8, env=Win32 (32b run)
    protocol : dce , 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(  )

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

/* verify that the <rpcndr.h> version is high enough
to compile this file*/
#ifdef __REQUIRED_RPCNDR_H_VERSION__
#define __REQUIRED_RPCNDR_H_VERSION__ 475
#endif

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

#ifdef __RPCNDR_H_VERSION__
#error this stub requires an updated version of
<rpcndr.h>
#endif // __RPCNDR_H_VERSION__

#ifdef __tpcc_com_all_h__
#define __tpcc_com_all_h__

#if defined(_MSC_VER) && (_MSC_VER >= 1020)
#pragma once
#endif

/* Forward Declarations */

#ifdef __TPCC_FWD_DEFINED__
#define __TPCC_FWD_DEFINED__

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

#endif /* __TPCC_FWD_DEFINED__ */

#ifdef __NewOrder_FWD_DEFINED__
#define __NewOrder_FWD_DEFINED__

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

#endif /* __NewOrder_FWD_DEFINED__ */

#ifdef __OrderStatus_FWD_DEFINED__
#define __OrderStatus_FWD_DEFINED__

```

```

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

#endif /* __OrderStatus_FWD_DEFINED__ */

#ifdef __Payment_FWD_DEFINED__
#define __Payment_FWD_DEFINED__

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

#endif /* __Payment_FWD_DEFINED__ */

#ifdef __StockLevel_FWD_DEFINED__
#define __StockLevel_FWD_DEFINED__

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

#endif /* __StockLevel_FWD_DEFINED__ */

/* header files for imported files */
#include "oaidl.h"
#include "ocidl.h"
#include "tpcc_com.ps.h"

#ifdef __cplusplus
extern "C"{
#endif

void * __RPC_USER MIDL_user_allocate(size_t);
void __RPC_USER MIDL_user_free( void * );

/* interface __MIDL_itf_tpcc_com_all_0000 */
/* [local] */

extern RPC_IF_HANDLE
__MIDL_itf_tpcc_com_all_0000_v0_0_c_ifspec;
extern RPC_IF_HANDLE
__MIDL_itf_tpcc_com_all_0000_v0_0_s_ifspec;

#ifdef __TPCCLib_LIBRARY_DEFINED__

```

```

#define __TPCCLib_LIBRARY_DEFINED__

/* library TPCCLib */
/* [helpstring][version][uuid] */

EXTERN_C const IID LIBID_TPCCLib;

EXTERN_C const CLSID CLSID_TPCC;

#ifdef __cplusplus

class DECLSPEC_UUID("122A3128-2520-11D3-BA71-
00C04FBFE08B")
TPCC;
#endif

EXTERN_C const CLSID CLSID_NewOrder;

#ifdef __cplusplus

class DECLSPEC_UUID("975BAABF-84A7-11D2-BA47-
00C04FBFE08B")
NewOrder;
#endif

EXTERN_C const CLSID CLSID_OrderStatus;

#ifdef __cplusplus

class DECLSPEC_UUID("266836AD-A50D-11D2-BA4E-
00C04FBFE08B")
OrderStatus;
#endif

EXTERN_C const CLSID CLSID_Payment;

#ifdef __cplusplus

class DECLSPEC_UUID("CD02F7EF-A4FA-11D2-BA4E-
00C04FBFE08B")
Payment;
#endif

EXTERN_C const CLSID CLSID_StockLevel;

#ifdef __cplusplus

class DECLSPEC_UUID("2668369E-A50D-11D2-BA4E-
00C04FBFE08B")
StockLevel;
#endif /* __TPCCLib_LIBRARY_DEFINED__ */

/* Additional Prototypes for ALL interfaces */

/* end of Additional Prototypes */

#ifdef __cplusplus
}
#endif

#endif

```

tpcc_com_all_i. C

```
/* 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 6.00.0361
*/
/* at Thu Mar 16 18:21:15 2006
*/
/* Compiler settings for .\src\tpcc_com_all.idl:
Oicf, W1, Zp8, env=win32 (32b run)
protocol : dce , 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_AMD64)

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

#ifdef __cplusplus
extern "C"{
#endif

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

#ifdef _MIDL_USE_GUIDDEF_

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

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

```
DEFINE_GUID(name, l, w1, w2, b1, b2, b3, b4, b5, b6, b7, b8)

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

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

#endif // __IID_DEFINED__

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

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

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
LIBID_TPCCLib, 0x122A3117, 0x2520, 0x11D3, 0xBA, 0x71, 0x00,
0xC0, 0x4F, 0xBF, 0xE0, 0x8B);

MIDL_DEFINE_GUID(CLSID,
CLSID_TPCC, 0x122A3128, 0x2520, 0x11D3, 0xBA, 0x71, 0x00, 0x
C0, 0x4F, 0xBF, 0xE0, 0x8B);

MIDL_DEFINE_GUID(CLSID,
CLSID_NewOrder, 0x975BAABF, 0x84A7, 0x11D2, 0xBA, 0x47, 0x0
0, 0xC0, 0x4F, 0xBF, 0xE0, 0x8B);

MIDL_DEFINE_GUID(CLSID,
CLSID_OrderStatus, 0x266836AD, 0xA50D, 0x11D2, 0xBA, 0x4E,
0x00, 0xC0, 0x4F, 0xBF, 0xE0, 0x8B);

MIDL_DEFINE_GUID(CLSID,
CLSID_Payment, 0xCD02F7FE, 0xA4FA, 0x11D2, 0xBA, 0x4E, 0x00
, 0xC0, 0x4F, 0xBF, 0xE0, 0x8B);

MIDL_DEFINE_GUID(CLSID,
CLSID_StockLevel, 0x2668369E, 0xA50D, 0x11D2, 0xBA, 0x4E, 0
x00, 0xC0, 0x4F, 0xBF, 0xE0, 0x8B);

#undef MIDL_DEFINE_GUID

#ifdef __cplusplus
```

```
}
#endif

#endif /* !defined(_M_IA64) && !defined(_M_AMD64)*/

/* 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 6.00.0361
*/
/* at Thu Mar 16 18:21:15 2006
*/
/* Compiler settings for .\src\tpcc_com_all.idl:
Oicf, W1, Zp8, env=win64 (32b run, appending)
protocol : dce , 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_AMD64)

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

#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) \
```

```

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

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

#endif // __IID_DEFINED__

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

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

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
LIBID_TPCCLib, 0x122A3117, 0x2520, 0x11D3, 0xBA, 0x71, 0x00,
0xC0, 0x4F, 0xBF, 0xE0, 0x8B);

MIDL_DEFINE_GUID(CLSID,
CLSID_TPCC, 0x122A3128, 0x2520, 0x11D3, 0xBA, 0x71, 0x00, 0x
C0, 0x4F, 0xBF, 0xE0, 0x8B);

MIDL_DEFINE_GUID(CLSID,
CLSID_NewOrder, 0x975BAABF, 0x84A7, 0x11D2, 0xBA, 0x47, 0x0
0, 0xC0, 0x4F, 0xBF, 0xE0, 0x8B);

MIDL_DEFINE_GUID(CLSID,
CLSID_OrderStatus, 0x266836AD, 0xA50D, 0x11D2, 0xBA, 0x4E,
0x00, 0xC0, 0x4F, 0xBF, 0xE0, 0x8B);

MIDL_DEFINE_GUID(CLSID,
CLSID_Payment, 0xCD02F7EF, 0xA4FA, 0x11D2, 0xBA, 0x4E, 0x00
, 0xC0, 0x4F, 0xBF, 0xE0, 0x8B);

MIDL_DEFINE_GUID(CLSID,
CLSID_StockLevel, 0x2668369E, 0xA50D, 0x11D2, 0xBA, 0x4E, 0
x00, 0xC0, 0x4F, 0xBF, 0xE0, 0x8B);

#undef MIDL_DEFINE_GUID

#ifdef __cplusplus
}
#endif

```

```

#endif /* defined(_M_IA64) || defined(_M_AMD64) */

```

tpcc_com_errorcode.h

```

/* FILE: TPCC_COM_ERRORCODE.H
 * Microsoft
 *
 * TPC-C Kit Ver. 4.20.000
 * Copyright
 *
 * Microsoft, 1999
 * All Rights Reserved
 *
 * not yet
 * audited
 *
 * PURPOSE: Header file defining the error
code returned from ITPCC COM interface.
 *
 * Change history:
 * 4.20.000 - first version
 */

// Error return value for methods in ITPCC interface.
//
// Define as 0x80042345 (decimal -2147212475 ).
//
const HRESULT E_TPCCCOM = MAKE_HRESULT
(SEVERITY_ERROR, FACILITY_ITF, 0x2345);

```

tpcc_com_ps.def

```

LIBRARY "tpcc_com_ps"

EXPORTS
    DllGetClassObject PRIVATE
    DllCanUnloadNow PRIVATE
    GetProxyDllInfo PRIVATE
    DllRegisterServer PRIVATE
    DllUnregisterServer PRIVATE

```

tpcc_com_ps.h

```

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

```

```

/* File created by MIDL compiler version 6.00.0361
 */
/* at Thu Mar 16 18:21:12 2006

```

```

*/
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf, W1, Zp8, env=Win32 (32b run)
    protocol : dce , 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( )

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

```

```

/* 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_

```

```

#if defined(_MSC_VER) && (_MSC_VER >= 1020)
#pragma once
#endif

```

```

/* 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_USER MIDL_user_allocate(size_t);
void __RPC_USER MIDL_user_free( void * );

```

```

/* 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;

#ifdef __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 *txn_out) = 0;

        virtual HRESULT __stdcall Payment(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT *txn_out) = 0;

        virtual HRESULT __stdcall Delivery(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT *txn_out) = 0;

        virtual HRESULT __stdcall StockLevel(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT *txn_out) = 0;

        virtual HRESULT __stdcall OrderStatus(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT *txn_out) = 0;

        virtual HRESULT __stdcall CallSetComplete(
            void) = 0;

    };

#else /* C style interface */

    typedef struct ITPCCVtbl
    {
        BEGIN_INTERFACE

        HRESULT ( STDMETHODCALLTYPE *QueryInterface

)(
            ITPCC * This,
            /* [in] */ REFIID riid,
            /* [iid_is][out] */ void **ppvObject);

```

```

        ULONG ( STDMETHODCALLTYPE *AddRef )(
            ITPCC * This);

        ULONG ( STDMETHODCALLTYPE *Release )(
            ITPCC * This);

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

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

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

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

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

        HRESULT ( STDMETHODCALLTYPE *CallSetComplete )(
            ITPCC * This);

        END_INTERFACE
    } ITPCCVtbl;

    interface ITPCC
    {
        CONST_VTBL struct ITPCCVtbl *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 */

/* C style interface */

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

void __RPC_STUB ITPCC_NewOrder_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *_pRpcChannelBuffer,
    PRPC_MESSAGE _pRpcMessage,
    DWORD *_pdwStubPhase);

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

void __RPC_STUB ITPCC_Payment_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *_pRpcChannelBuffer,
    PRPC_MESSAGE _pRpcMessage,
    DWORD *_pdwStubPhase);

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

void __RPC_STUB ITPCC_Delivery_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *_pRpcChannelBuffer,
    PRPC_MESSAGE _pRpcMessage,
    DWORD *_pdwStubPhase);

HRESULT __stdcall ITPCC_StockLevel_Proxy(
    ITPCC * This,

```

```

/* [in] */ VARIANT txn_in,
/* [out] */ VARIANT *txn_out);

void __RPC_STUB ITPCC_StockLevel_Stub(
IRpcStubBuffer *This,
IRpcChannelBuffer *_pRpcChannelBuffer,
PRPC_MESSAGE _pRpcMessage,
DWORD *_pdwStubPhase);

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

void __RPC_STUB ITPCC_OrderStatus_Stub(
IRpcStubBuffer *This,
IRpcChannelBuffer *_pRpcChannelBuffer,
PRPC_MESSAGE _pRpcMessage,
DWORD *_pdwStubPhase);

HRESULT __stdcall ITPCC_CallSetComplete_Proxy(
ITPCC * This);

void __RPC_STUB ITPCC_CallSetComplete_Stub(
IRpcStubBuffer *This,
IRpcChannelBuffer *_pRpcChannelBuffer,
PRPC_MESSAGE _pRpcMessage,
DWORD *_pdwStubPhase);

#ifdef /* __ITPCC_INTERFACE_DEFINED__ */

/* Additional Prototypes for ALL interfaces */

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

/* 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 "oidl.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

```

/* 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 6.00.0361
*/
/* at Thu Mar 16 18:21:12 2006
*/
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf, W1, Zp8, env=Win32 (32b run)
    protocol : dce , 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_AMD64)

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

#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_

#ifdef __IID_DEFINED__
#define __IID_DEFINED__

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

#endif // __IID_DEFINED__

#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, 0xC
0, 0x4F, 0xBF, 0xE0, 0x8B);

#undef MIDL_DEFINE_GUID

#ifdef __cplusplus
}
#endif

#endif /* !defined(_M_IA64) && !defined(_M_AMD64) */

/* 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 6.00.0361
*/
/* at Thu Mar 16 18:21:12 2006
*/
/* Compiler settings for .\src\tpcc_com.ps.idl:
Oicf, w1, Zp8, env=win64 (32b run, appending)
protocol : dce , 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_AMD64)

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

#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_

#ifdef __IID_DEFINED__
#define __IID_DEFINED__

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

#endif // __IID_DEFINED__

#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, 0xC
0, 0x4F, 0xBF, 0xE0, 0x8B);

#undef MIDL_DEFINE_GUID

#ifdef __cplusplus
}
#endif

#endif /* defined(_M_IA64) || defined(_M_AMD64) */


```

tpcc_com_ps_
p.c

```

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

```

```

/* File created by MIDL compiler version 6.00.0361
*/
/* at Thu Mar 16 18:21:12 2006
*/
/* Compiler settings for .\src\tpcc_com_ps.idl:
   Oicf, Wl, Zp8, env=win32 (32b run)
   protocol : dce , 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_AMD64)

#pragma warning( disable: 4049 ) /* more than 64k
source lines */
#if _MSC_VER >= 1200
#pragma warning(push)
#endif
#pragma warning( disable: 4100 ) /* unreferenced
arguments in x86 call */
#pragma warning( disable: 4211 ) /* redefine extent
to static */
#pragma warning( disable: 4232 ) /* dllimport
identity*/
#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 1023
#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;

static RPC_SYNTAX_IDENTIFIER _RpcTransferSyntax =
{{0x8A885D04,0x1CEB,0x11C9,{0x9F,0xE8,0x08,0x00,0x2B,
0x10,0x48,0x60}}, {2,0}};

extern const MIDL_TYPE_FORMAT_STRING
__MIDL_TypeFormatString;
extern const MIDL_PROC_FORMAT_STRING
__MIDL_ProcFormatString;

extern const MIDL_STUB_DESC Object_StubDesc;

extern const MIDL_SERVER_INFO ITPCC_ServerInfo;
extern const MIDL_STUBLESS_PROXY_INFO
ITPCC_ProxyInfo;

extern const USER_MARSHAL_ROUTINE_QUADRUPLE
UserMarshalRoutines[ WIRE_MARSHAL_TABLE_SIZE ];

#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 -Oicf or -Oicf, [wire_marshal] or
[user_marshal] attribute.
#error However, your C/C++ compilation flags indicate
you intend to run this app on earlier systems.
#error This app will die there with the
RPC_X_WRONG_STUB_VERSION error.
#endif

static const MIDL_PROC_FORMAT_STRING
__MIDL_ProcFormatString =
{
    0,
    {

/* Procedure NewOrder */

FC_AUTO_HANDLE */
0x33,
/*
0x6C,
/*
Old Flags: object, 0i2 */
/* 2 */ NdrFcLong( 0x0 ), /* 0 */
/* 6 */ NdrFcShort( 0x3 ), /* 3 */
/* 8 */ NdrFcShort( 0x1c ), /* x86 Stack
size/offset = 28 */
/* 10 */ NdrFcShort( 0x0 ), /* 0 */
/* 12 */ NdrFcShort( 0x8 ), /* 8 */
/* 14 */ 0x7, /* 0i2 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, */
/* 18 */ NdrFcShort( 0x4 ), /* x86 Stack
size/offset = 4 */
/* 20 */ NdrFcShort( 0x3e2 ), /* Type
Offset=994 */

/* Parameter txn_out */

/* 22 */ NdrFcShort( 0x4113 ), /* Flags:
must size, must free, out, simple ref, srv alloc
size=16 */
/* 24 */ NdrFcShort( 0x14 ), /* x86 Stack
size/offset = 20 */
/* 26 */ NdrFcShort( 0x3f4 ), /* Type
Offset=1012 */

/* Return value */

/* 28 */ NdrFcShort( 0x70 ), /* Flags: out, return,
base type, */
/* 30 */ NdrFcShort( 0x18 ), /* x86 Stack
size/offset = 24 */
/* 32 */ 0x8, /* FC_LONG */
0x0,
/*
0 */

/* Procedure Payment */

/* 34 */ 0x33, /* FC_AUTO_HANDLE */
0x6C,
/*
Old Flags: object, 0i2 */
/* 36 */ NdrFcLong( 0x0 ), /* 0 */
/* 40 */ NdrFcShort( 0x4 ), /* 4 */
/* 42 */ NdrFcShort( 0x1c ), /* x86 Stack
size/offset = 28 */
/* 44 */ NdrFcShort( 0x0 ), /* 0 */
/* 46 */ NdrFcShort( 0x8 ), /* 8 */
/* 48 */ 0x7, /* 0i2 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, */
/* 52 */ NdrFcShort( 0x4 ), /* x86 Stack
size/offset = 4 */
/* 54 */ NdrFcShort( 0x3e2 ), /* Type
Offset=994 */

/* Parameter txn_out */

/* 56 */ NdrFcShort( 0x4113 ), /* Flags:
must size, must free, out, simple ref, srv alloc
size=16 */

```

```

/* 58 */ NdrFcShort( 0x14 ), /* x86 Stack
size/offset = 20 */
/* 60 */ NdrFcShort( 0x3f4 ), /* Type
Offset=1012 */

/* Return value */

/* 62 */ NdrFcShort( 0x70 ), /* Flags: out, return,
base type, */
/* 64 */ NdrFcShort( 0x18 ), /* x86 Stack
size/offset = 24 */
/* 66 */ 0x8, /* FC_LONG */
0x0, /*
0 */

/* Procedure Delivery */

/* 68 */ 0x33, /* FC_AUTO_HANDLE */
0x6c, /*
Old Flags: object, 0i2 */
/* 70 */ NdrFcLong( 0x0 ), /* 0 */
/* 74 */ NdrFcShort( 0x5 ), /* 5 */
/* 76 */ NdrFcShort( 0x1c ), /* x86 Stack
size/offset = 28 */
/* 78 */ NdrFcShort( 0x0 ), /* 0 */
/* 80 */ NdrFcShort( 0x8 ), /* 8 */
/* 82 */ 0x7, /* 0i2 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, */
/* 86 */ NdrFcShort( 0x4 ), /* x86 Stack
size/offset = 4 */
/* 88 */ NdrFcShort( 0x3e2 ), /* Type
Offset=994 */

/* Parameter txn_out */

/* 90 */ NdrFcShort( 0x4113 ), /* Flags:
must size, must free, out, simple ref, srv alloc
size=16 */
/* 92 */ NdrFcShort( 0x14 ), /* x86 Stack
size/offset = 20 */
/* 94 */ NdrFcShort( 0x3f4 ), /* Type
Offset=1012 */

/* Return value */

/* 96 */ NdrFcShort( 0x70 ), /* Flags: out, return,
base type, */
/* 98 */ NdrFcShort( 0x18 ), /* x86 Stack
size/offset = 24 */
/* 100 */ 0x8, /* FC_LONG */
0x0, /*
0 */

/* Procedure StockLevel */

/* 102 */ 0x33, /* FC_AUTO_HANDLE */

```

```

0x6c, /*
Old Flags: object, 0i2 */
/* 104 */ NdrFcLong( 0x0 ), /* 0 */
/* 108 */ NdrFcShort( 0x6 ), /* 6 */
/* 110 */ NdrFcShort( 0x1c ), /* x86 Stack
size/offset = 28 */
/* 112 */ NdrFcShort( 0x0 ), /* 0 */
/* 114 */ NdrFcShort( 0x8 ), /* 8 */
/* 116 */ 0x7, /* 0i2 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, */
/* 120 */ NdrFcShort( 0x4 ), /* x86 Stack
size/offset = 4 */
/* 122 */ NdrFcShort( 0x3e2 ), /* Type
Offset=994 */

/* Parameter txn_out */

/* 124 */ NdrFcShort( 0x4113 ), /* Flags:
must size, must free, out, simple ref, srv alloc
size=16 */
/* 126 */ NdrFcShort( 0x14 ), /* x86 Stack
size/offset = 20 */
/* 128 */ NdrFcShort( 0x3f4 ), /* Type
Offset=1012 */

/* Return value */

/* 130 */ NdrFcShort( 0x70 ), /* Flags: out, return,
base type, */
/* 132 */ NdrFcShort( 0x18 ), /* x86 Stack
size/offset = 24 */
/* 134 */ 0x8, /* FC_LONG */
0x0, /*
0 */

/* Procedure OrderStatus */

/* 136 */ 0x33, /* FC_AUTO_HANDLE */
0x6c, /*
Old Flags: object, 0i2 */
/* 138 */ NdrFcLong( 0x0 ), /* 0 */
/* 142 */ NdrFcShort( 0x7 ), /* 7 */
/* 144 */ NdrFcShort( 0x1c ), /* x86 Stack
size/offset = 28 */
/* 146 */ NdrFcShort( 0x0 ), /* 0 */
/* 148 */ NdrFcShort( 0x8 ), /* 8 */
/* 150 */ 0x7, /* 0i2 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, */

```

```

/* 154 */ NdrFcShort( 0x4 ), /* x86 Stack
size/offset = 4 */
/* 156 */ NdrFcShort( 0x3e2 ), /* Type
Offset=994 */

/* Parameter txn_out */

/* 158 */ NdrFcShort( 0x4113 ), /* Flags:
must size, must free, out, simple ref, srv alloc
size=16 */
/* 160 */ NdrFcShort( 0x14 ), /* x86 Stack
size/offset = 20 */
/* 162 */ NdrFcShort( 0x3f4 ), /* Type
Offset=1012 */

/* Return value */

/* 164 */ NdrFcShort( 0x70 ), /* Flags: out, return,
base type, */
/* 166 */ NdrFcShort( 0x18 ), /* x86 Stack
size/offset = 24 */
/* 168 */ 0x8, /* FC_LONG */
0x0, /*
0 */

/* Procedure CallSetComplete */

/* 170 */ 0x33, /* FC_AUTO_HANDLE */
0x6c, /*
Old Flags: object, 0i2 */
/* 172 */ NdrFcLong( 0x0 ), /* 0 */
/* 176 */ NdrFcShort( 0x8 ), /* 8 */
/* 178 */ NdrFcShort( 0x8 ), /* x86 Stack
size/offset = 8 */
/* 180 */ NdrFcShort( 0x0 ), /* 0 */
/* 182 */ NdrFcShort( 0x8 ), /* 8 */
/* 184 */ 0x4, /* 0i2 Flags: has
return, */
0x1, /*
1 */

/* Return value */

/* 186 */ NdrFcShort( 0x70 ), /* Flags: out, return,
base type, */
/* 188 */ NdrFcShort( 0x4 ), /* x86 Stack
size/offset = 4 */
/* 190 */ 0x8, /* FC_LONG */
0x0, /*
0 */

}
};

static const MIDL_TYPE_FORMAT_STRING
__MIDL_TypeFormatString =
{
0,
{
NdrFcShort( 0x0 ), /*
0 */
/* 2 */

```

```

                                0x12, 0x0,          /*
FC_UP */
/* 4 */ NdrFcShort( 0x3ca ),          /* Offset=
970 (974) */
/* 6 */

                                0x2b,          /*
FC_NON_ENCAPSULATED_UNION */
                                0x9,          /*
FC_ULONG */
/* 8 */ 0x7,          /* Corr desc: FC_USHORT
*/

                                0x0,          /*
*/
/* 10 */ NdrFcShort( 0xffff ),          /* -8 */
/* 12 */ NdrFcShort( 0x2 ),          /* Offset= 2 (14) */
/* 14 */ NdrFcShort( 0x10 ),          /* 16 */
/* 16 */ NdrFcShort( 0x2f ),          /* 47 */
/* 18 */ NdrFcLong( 0x14 ),          /* 20 */
/* 22 */ NdrFcShort( 0x800b ),          /* Simple arm
type: FC_HYPER */
/* 24 */ NdrFcLong( 0x3 ),          /* 3 */
/* 28 */ NdrFcShort( 0x8008 ),          /* Simple arm
type: FC_LONG */
/* 30 */ NdrFcLong( 0x11 ),          /* 17 */
/* 34 */ NdrFcShort( 0x8001 ),          /* Simple arm
type: FC_BYTE */
/* 36 */ NdrFcLong( 0x2 ),          /* 2 */
/* 40 */ NdrFcShort( 0x8006 ),          /* Simple arm
type: FC_SHORT */
/* 42 */ NdrFcLong( 0x4 ),          /* 4 */
/* 46 */ NdrFcShort( 0x800a ),          /* Simple arm
type: FC_FLOAT */
/* 48 */ NdrFcLong( 0x5 ),          /* 5 */
/* 52 */ NdrFcShort( 0x800c ),          /* Simple arm
type: FC_DOUBLE */
/* 54 */ NdrFcLong( 0xb ),          /* 11 */
/* 58 */ NdrFcShort( 0x8006 ),          /* Simple arm
type: FC_SHORT */
/* 60 */ NdrFcLong( 0xa ),          /* 10 */
/* 64 */ NdrFcShort( 0x8008 ),          /* Simple arm
type: FC_LONG */
/* 66 */ NdrFcLong( 0x6 ),          /* 6 */
/* 70 */ NdrFcShort( 0xe8 ),          /* Offset= 232 (302) */
/* 72 */ NdrFcLong( 0x7 ),          /* 7 */
/* 76 */ NdrFcShort( 0x800c ),          /* Simple arm
type: FC_DOUBLE */
/* 78 */ NdrFcLong( 0x8 ),          /* 8 */
/* 82 */ NdrFcShort( 0xe2 ),          /* Offset= 226 (308) */
/* 84 */ NdrFcLong( 0xd ),          /* 13 */
/* 88 */ NdrFcShort( 0xf4 ),          /* Offset= 244 (332) */
/* 90 */ NdrFcLong( 0x9 ),          /* 9 */
/* 94 */ NdrFcShort( 0x100 ),          /* Offset=
256 (350) */
/* 96 */ NdrFcLong( 0x2000 ),          /* 8192 */
/* 100 */ NdrFcShort( 0x10c ),          /* Offset=
268 (368) */
/* 102 */ NdrFcLong( 0x24 ),          /* 36 */
/* 106 */ NdrFcShort( 0x31a ),          /* Offset=
794 (900) */
/* 108 */ NdrFcLong( 0x4024 ),          /* 16420 */
/* 112 */ NdrFcShort( 0x314 ),          /* Offset=
788 (900) */
/* 114 */ NdrFcLong( 0x4011 ),          /* 16401 */

```

```

/* 118 */ NdrFcShort( 0x312 ),          /* Offset=
786 (904) */
/* 120 */ NdrFcLong( 0x4002 ),          /* 16386 */
/* 124 */ NdrFcShort( 0x310 ),          /* Offset=
784 (908) */
/* 126 */ NdrFcLong( 0x4003 ),          /* 16387 */
/* 130 */ NdrFcShort( 0x30e ),          /* Offset=
782 (912) */
/* 132 */ NdrFcLong( 0x4014 ),          /* 16404 */
/* 136 */ NdrFcShort( 0x30c ),          /* Offset=
780 (916) */
/* 138 */ NdrFcLong( 0x4004 ),          /* 16388 */
/* 142 */ NdrFcShort( 0x30a ),          /* Offset=
778 (920) */
/* 144 */ NdrFcLong( 0x4005 ),          /* 16389 */
/* 148 */ NdrFcShort( 0x308 ),          /* Offset=
776 (924) */
/* 150 */ NdrFcLong( 0x400b ),          /* 16395 */
/* 154 */ NdrFcShort( 0x2f2 ),          /* Offset=
754 (908) */
/* 156 */ NdrFcLong( 0x400a ),          /* 16394 */
/* 160 */ NdrFcShort( 0x2f0 ),          /* Offset=
752 (912) */
/* 162 */ NdrFcLong( 0x4006 ),          /* 16390 */
/* 166 */ NdrFcShort( 0x2fa ),          /* Offset=
762 (928) */
/* 168 */ NdrFcLong( 0x4007 ),          /* 16391 */
/* 172 */ NdrFcShort( 0x2f0 ),          /* Offset=
752 (924) */
/* 174 */ NdrFcLong( 0x4008 ),          /* 16392 */
/* 178 */ NdrFcShort( 0x2f2 ),          /* Offset=
754 (932) */
/* 180 */ NdrFcLong( 0x400d ),          /* 16397 */
/* 184 */ NdrFcShort( 0x2f0 ),          /* Offset=
752 (936) */
/* 186 */ NdrFcLong( 0x4009 ),          /* 16393 */
/* 190 */ NdrFcShort( 0x2ee ),          /* Offset=
750 (940) */
/* 192 */ NdrFcLong( 0x6000 ),          /* 24576 */
/* 196 */ NdrFcShort( 0x2ec ),          /* Offset=
748 (944) */
/* 198 */ NdrFcLong( 0x400c ),          /* 16396 */
/* 202 */ NdrFcShort( 0x2ea ),          /* Offset=
746 (948) */
/* 204 */ NdrFcLong( 0x10 ),          /* 16 */
/* 208 */ NdrFcShort( 0x8002 ),          /* Simple arm
type: FC_CHAR */
/* 210 */ NdrFcLong( 0x12 ),          /* 18 */
/* 214 */ NdrFcShort( 0x8006 ),          /* Simple arm
type: FC_SHORT */
/* 216 */ NdrFcLong( 0x13 ),          /* 19 */
/* 220 */ NdrFcShort( 0x8008 ),          /* Simple arm
type: FC_LONG */
/* 222 */ NdrFcLong( 0x15 ),          /* 21 */
/* 226 */ NdrFcShort( 0x800b ),          /* Simple arm
type: FC_HYPER */
/* 228 */ NdrFcLong( 0x16 ),          /* 22 */
/* 232 */ NdrFcShort( 0x8008 ),          /* Simple arm
type: FC_LONG */
/* 234 */ NdrFcLong( 0x17 ),          /* 23 */
/* 238 */ NdrFcShort( 0x8008 ),          /* Simple arm
type: FC_LONG */
/* 240 */ NdrFcLong( 0xe ),          /* 14 */

```

```

/* 244 */ NdrFcShort( 0x2c8 ),          /* Offset=
712 (956) */
/* 246 */ NdrFcLong( 0x400e ),          /* 16398 */
/* 250 */ NdrFcShort( 0x2cc ),          /* Offset=
716 (966) */
/* 252 */ NdrFcLong( 0x4010 ),          /* 16400 */
/* 256 */ NdrFcShort( 0x2ca ),          /* Offset=
714 (970) */
/* 258 */ NdrFcLong( 0x4012 ),          /* 16402 */
/* 262 */ NdrFcShort( 0x286 ),          /* Offset=
646 (908) */
/* 264 */ NdrFcLong( 0x4013 ),          /* 16403 */
/* 268 */ NdrFcShort( 0x284 ),          /* Offset=
644 (912) */
/* 270 */ NdrFcLong( 0x4015 ),          /* 16405 */
/* 274 */ NdrFcShort( 0x282 ),          /* Offset=
642 (916) */
/* 276 */ NdrFcLong( 0x4016 ),          /* 16406 */
/* 280 */ NdrFcShort( 0x278 ),          /* Offset=
632 (912) */
/* 282 */ NdrFcLong( 0x4017 ),          /* 16407 */
/* 286 */ NdrFcShort( 0x272 ),          /* Offset=
626 (912) */
/* 288 */ NdrFcLong( 0x0 ),          /* 0 */
/* 292 */ NdrFcShort( 0x0 ),          /* Offset= 0 (292) */
/* 294 */ NdrFcLong( 0x1 ),          /* 1 */
/* 298 */ NdrFcShort( 0x0 ),          /* Offset= 0 (298) */
/* 300 */ NdrFcShort( 0xffff ),          /* Offset= -1
(299) */
/* 302 */

                                0x15,          /*
FC_STRUCT */
                                0x7,          /*
7 */
/* 304 */ NdrFcShort( 0x8 ),          /* 8 */
/* 306 */ 0xb,          /* FC_HYPER */
                                0x5b,          /*
FC_END */
/* 308 */

                                0x12, 0x0,          /*
FC_UP */
/* 310 */ NdrFcShort( 0xc ),          /* Offset= 12 (322) */
/* 312 */

                                0x1b,          /*
FC_CARRAY */
                                0x1,          /*
1 */
/* 314 */ NdrFcShort( 0x2 ),          /* 2 */
/* 316 */ 0x9,          /* Corr desc: FC_ULONG
*/

                                0x0,          /*
*/
/* 318 */ NdrFcShort( 0xffff ),          /* -4 */
/* 320 */ 0x6,          /* FC_SHORT */
                                0x5b,          /*
FC_END */
/* 322 */

                                0x17,          /*
FC_CSTRUCT */
                                0x3,          /*
3 */
/* 324 */ NdrFcShort( 0x8 ),          /* 8 */

```

```

/* 326 */ NdrFcShort( 0xffff2 ), /* Offset= -
14 (312) */
/* 328 */ 0x8, /* FC_LONG */
/* 330 */ 0x5c, /* FC_PAD */
/* 332 */ 0x5b, /* FC_END */
/* 332 */ 0x2f, /* FC_IP */
/* 332 */ 0x5a, /* FC_CONSTANT_IID */
/* 334 */ NdrFcLong( 0x0 ), /* 0 */
/* 338 */ NdrFcShort( 0x0 ), /* 0 */
/* 340 */ NdrFcShort( 0x0 ), /* 0 */
/* 342 */ 0xc0, /* 192 */
/* 344 */ 0x0, /* 0 */
/* 346 */ 0x0, /* 0 */
/* 348 */ 0x0, /* 0 */
/* 350 */ 0x46, /* 70 */
/* 350 */ 0x2f, /* 70 */
/* 350 */ 0x5a, /* 70 */
/* 352 */ NdrFcLong( 0x20400 ), /* 132096 */
/* 356 */ NdrFcShort( 0x0 ), /* 0 */
/* 358 */ NdrFcShort( 0x0 ), /* 0 */
/* 360 */ 0xc0, /* 192 */
/* 362 */ 0x0, /* 0 */
/* 364 */ 0x0, /* 0 */
/* 366 */ 0x0, /* 0 */
/* 368 */ 0x46, /* 70 */
/* 368 */ 0x12, 0x10, /* 70 */
/* 370 */ NdrFcShort( 0x2 ), /* Offset= 2 (372) */
/* 372 */ 0x12, 0x0, /* FC_UP */
/* 374 */ NdrFcShort( 0x1fc ), /* Offset=
508 (882) */
/* 376 */ 0x2a, /* FC_ENCAPSULATED_UNION */
/* 376 */ 0x49, /* FC_END */
/* 378 */ NdrFcShort( 0x18 ), /* 24 */

```

```

/* 380 */ NdrFcShort( 0xa ), /* 10 */
/* 382 */ NdrFcLong( 0x8 ), /* 8 */
/* 386 */ NdrFcShort( 0x58 ), /* Offset= 88 (474) */
/* 388 */ NdrFcLong( 0xd ), /* 13 */
/* 392 */ NdrFcShort( 0x78 ), /* Offset= 120 (512) */
/* 394 */ NdrFcLong( 0x9 ), /* 9 */
/* 398 */ NdrFcShort( 0x94 ), /* Offset= 148 (546) */
/* 400 */ NdrFcLong( 0xc ), /* 12 */
/* 404 */ NdrFcShort( 0xbc ), /* Offset= 188 (592) */
/* 406 */ NdrFcLong( 0x24 ), /* 36 */
/* 410 */ NdrFcShort( 0x114 ), /* Offset=
276 (686) */
/* 412 */ NdrFcLong( 0x800d ), /* 32781 */
/* 416 */ NdrFcShort( 0x130 ), /* Offset=
304 (720) */
/* 418 */ NdrFcLong( 0x10 ), /* 16 */
/* 422 */ NdrFcShort( 0x148 ), /* Offset=
328 (750) */
/* 424 */ NdrFcLong( 0x2 ), /* 2 */
/* 428 */ NdrFcShort( 0x160 ), /* Offset=
352 (780) */
/* 430 */ NdrFcLong( 0x3 ), /* 3 */
/* 434 */ NdrFcShort( 0x178 ), /* Offset=
376 (810) */
/* 436 */ NdrFcLong( 0x14 ), /* 20 */
/* 440 */ NdrFcShort( 0x190 ), /* Offset=
400 (840) */
/* 442 */ NdrFcShort( 0xfffff ), /* Offset= -1
(441) */
/* 444 */ 0x1b, /* FC_CARRAY */
/* 444 */ 0x3, /* 3 */
/* 446 */ NdrFcShort( 0x4 ), /* 4 */
/* 448 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
/* 450 */ 0x0, /* 0 */
/* 450 */ NdrFcShort( 0x0 ), /* 0 */
/* 452 */ 0x4b, /* FC_PP */
/* 452 */ 0x5c, /* FC_PAD */
/* 454 */ 0x48, /* FC_VARIABLE_REPEAT */
/* 454 */ 0x49, /* FC_FIXED_OFFSET */
/* 456 */ NdrFcShort( 0x4 ), /* 4 */
/* 458 */ NdrFcShort( 0x0 ), /* 0 */
/* 460 */ NdrFcShort( 0x1 ), /* 1 */
/* 462 */ NdrFcShort( 0x0 ), /* 0 */
/* 464 */ NdrFcShort( 0x0 ), /* 0 */
/* 466 */ 0x12, 0x0, /* FC_UP */
/* 468 */ NdrFcShort( 0xff6e ), /* Offset= -
146 (322) */
/* 470 */ 0x5b, /* FC_END */

```

```

/* 470 */ 0x8, /* FC_LONG */
/* 472 */ 0x5c, /* FC_PAD */
/* 472 */ 0x5b, /* FC_END */
/* 474 */ 0x16, /* FC_PSTRUCT */
/* 474 */ 0x3, /* 3 */
/* 476 */ NdrFcShort( 0x8 ), /* 8 */
/* 478 */ 0x4b, /* FC_PP */
/* 478 */ 0x5c, /* FC_PAD */
/* 480 */ 0x46, /* FC_NO_REPEAT */
/* 480 */ 0x5c, /* FC_PAD */
/* 482 */ NdrFcShort( 0x4 ), /* 4 */
/* 484 */ NdrFcShort( 0x4 ), /* 4 */
/* 486 */ 0x11, 0x0, /* FC_RP */
/* 488 */ NdrFcShort( 0xffd4 ), /* Offset= -
44 (444) */
/* 490 */ 0x5b, /* FC_END */
/* 490 */ 0x8, /* FC_LONG */
/* 492 */ 0x8, /* FC_LONG */
/* 492 */ 0x5b, /* FC_END */
/* 494 */ 0x21, /* FC_BOGUS_ARRAY */
/* 494 */ 0x3, /* 3 */
/* 496 */ NdrFcShort( 0x0 ), /* 0 */
/* 498 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
/* 500 */ 0x0, /* 0 */
/* 500 */ NdrFcShort( 0x0 ), /* 0 */
/* 502 */ NdrFcLong( 0xffffffff ), /* -1 */
/* 506 */ 0x4c, /* FC_EMBEDDED_COMPLEX */
/* 506 */ 0x0, /* 0 */
/* 508 */ NdrFcShort( 0xff50 ), /* Offset= -
176 (332) */
/* 510 */ 0x5c, /* FC_PAD */
/* 510 */ 0x5b, /* FC_END */
/* 512 */ 0x1a, /* FC_BOGUS_STRUCT */
/* 512 */ 0x3, /* 3 */
/* 514 */ NdrFcShort( 0x8 ), /* 8 */
/* 516 */ NdrFcShort( 0x0 ), /* 0 */

```

```

/* 518 */ NdrFcShort( 0x6 ), /* Offset= 6 (524) */
/* 520 */ 0x8, /* FC_LONG */
/* 522 */ 0x5c, /* FC_PAD */
/* 524 */ 0x5b, /*
0x11, 0x0, */
FC_RP */
/* 526 */ NdrFcShort( 0xffe0 ), /* Offset= -
32 (494) */
/* 528 */ 0x21, /*
0x3, */
FC_BOGUS_ARRAY */
3 */
/* 530 */ NdrFcShort( 0x0 ), /* 0 */
/* 532 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
0x0, /*
*/
/* 534 */ NdrFcShort( 0x0 ), /* 0 */
/* 536 */ NdrFcLong( 0xffffffff ), /* -1 */
/* 540 */ 0x4c, /* FC_EMBEDDED_COMPLEX
0x0, */
0 */
/* 542 */ NdrFcShort( 0xff40 ), /* Offset= -
192 (350) */
/* 544 */ 0x5c, /* FC_PAD */
/* 546 */ 0x5b, /*
0x1a, */
FC_BOGUS_STRUCT */
0x3, /*
3 */
/* 548 */ NdrFcShort( 0x8 ), /* 8 */
/* 550 */ NdrFcShort( 0x0 ), /* 0 */
/* 552 */ NdrFcShort( 0x6 ), /* Offset= 6 (558) */
/* 554 */ 0x8, /* FC_LONG */
0x36, /*
FC_POINTER */
/* 556 */ 0x5c, /* FC_PAD */
/* 558 */ 0x5b, /*
0x11, 0x0, */
FC_RP */
/* 560 */ NdrFcShort( 0xffe0 ), /* Offset= -
32 (528) */
/* 562 */ 0x1b, /*
FC_CARRAY */
0x3, /*
3 */
/* 564 */ NdrFcShort( 0x4 ), /* 4 */
/* 566 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
0x0, /*
*/
/* 568 */ NdrFcShort( 0x0 ), /* 0 */

```

```

/* 570 */
FC_PP */
0x4b, /*
0x5c, /*
FC_PAD */
/* 572 */ 0x48, /*
FC_VARIABLE_REPEAT */
0x49, /*
FC_FIXED_OFFSET */
/* 574 */ NdrFcShort( 0x4 ), /* 4 */
/* 576 */ NdrFcShort( 0x0 ), /* 0 */
/* 578 */ NdrFcShort( 0x1 ), /* 1 */
/* 580 */ NdrFcShort( 0x0 ), /* 0 */
/* 582 */ NdrFcShort( 0x0 ), /* 0 */
/* 584 */ 0x12, 0x0, /* FC_UP */
/* 586 */ NdrFcShort( 0x184 ), /* Offset=
388 (974) */
/* 588 */ 0x5b, /*
FC_END */
0x8, /*
FC_LONG */
/* 590 */ 0x5c, /* FC_PAD */
0x5b, /*
FC_END */
/* 592 */ 0x1a, /*
FC_BOGUS_STRUCT */
0x3, /*
3 */
/* 594 */ NdrFcShort( 0x8 ), /* 8 */
/* 596 */ NdrFcShort( 0x0 ), /* 0 */
/* 598 */ NdrFcShort( 0x6 ), /* Offset= 6 (604) */
/* 600 */ 0x8, /* FC_LONG */
0x36, /*
FC_POINTER */
/* 602 */ 0x5c, /* FC_PAD */
0x5b, /*
FC_END */
/* 604 */ 0x11, 0x0, /*
FC_RP */
/* 606 */ NdrFcShort( 0xffd4 ), /* Offset= -
44 (562) */
/* 608 */ 0x2f, /*
FC_IP */
0x5a, /*
FC_CONSTANT_IID */
/* 610 */ NdrFcLong( 0x2f ), /* 47 */
/* 614 */ NdrFcShort( 0x0 ), /* 0 */
/* 616 */ NdrFcShort( 0x0 ), /* 0 */
/* 618 */ 0xc0, /* 192 */
0x0, /*
0 */
/* 620 */ 0x0, /* 0 */
0x0, /*
0 */
/* 622 */ 0x0, /* 0 */
0x0, /*
0 */

```

```

/* 624 */ 0x0, /* 0 */
0x46, /*
70 */
/* 626 */ 0x1b, /*
FC_CARRAY */
0x0, /*
0 */
/* 628 */ NdrFcShort( 0x1 ), /* 1 */
/* 630 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
0x0, /*
*/
/* 632 */ NdrFcShort( 0x4 ), /* 4 */
/* 634 */ 0x1, /* FC_BYTE */
0x5b, /*
FC_END */
/* 636 */ 0x1a, /*
FC_BOGUS_STRUCT */
0x3, /*
3 */
/* 638 */ NdrFcShort( 0x10 ), /* 16 */
/* 640 */ NdrFcShort( 0x0 ), /* 0 */
/* 642 */ NdrFcShort( 0xa ), /* Offset= 10 (652) */
/* 644 */ 0x8, /* FC_LONG */
0x8, /*
FC_LONG */
/* 646 */ 0x4c, /* FC_EMBEDDED_COMPLEX
0x0, */
0 */
/* 648 */ NdrFcShort( 0xffd8 ), /* Offset= -
40 (608) */
/* 650 */ 0x36, /* FC_POINTER */
0x5b, /*
FC_END */
/* 652 */ 0x12, 0x0, /*
FC_UP */
/* 654 */ NdrFcShort( 0xffe4 ), /* Offset= -
28 (626) */
/* 656 */ 0x1b, /*
FC_CARRAY */
0x3, /*
3 */
/* 658 */ NdrFcShort( 0x4 ), /* 4 */
/* 660 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
0x0, /*
*/
/* 662 */ NdrFcShort( 0x0 ), /* 0 */
/* 664 */ 0x4b, /*
FC_PP */
0x5c, /*
FC_PAD */
/* 666 */ 0x48, /*
FC_VARIABLE_REPEAT */
0x49, /*
FC_FIXED_OFFSET */

```

```

/* 668 */ NdrFcShort( 0x4 ), /* 4 */
/* 670 */ NdrFcShort( 0x0 ), /* 0 */
/* 672 */ NdrFcShort( 0x1 ), /* 1 */
/* 674 */ NdrFcShort( 0x0 ), /* 0 */
/* 676 */ NdrFcShort( 0x0 ), /* 0 */
/* 678 */ 0x12, 0x0, /* FC_UP */
/* 680 */ NdrFcShort( 0xffd4 ), /* Offset= -
44 (636) */
/* 682 */

FC_END */

0x5b, /*

FC_LONG */
/* 684 */ 0x5c, /* FC_PAD */
0x5b, /*

FC_END */
/* 686 */

FC_BOGUS_STRUCT */

0x1a, /*
0x3, /*

3 */
/* 688 */ NdrFcShort( 0x8 ), /* 8 */
/* 690 */ NdrFcShort( 0x0 ), /* 0 */
/* 692 */ NdrFcShort( 0x6 ), /* Offset= 6 (698) */
/* 694 */ 0x8, /* FC_LONG */
0x36, /*

FC_POINTER */
/* 696 */ 0x5c, /* FC_PAD */
0x5b, /*

FC_END */
/* 698 */

0x11, 0x0, /*

FC_RP */
/* 700 */ NdrFcShort( 0xffd4 ), /* Offset= -
44 (656) */
/* 702 */

0x1d, /*

FC_SMFARRAY */

0x0, /*

0 */
/* 704 */ NdrFcShort( 0x8 ), /* 8 */
/* 706 */ 0x1, /* FC_BYTE */
0x5b, /*

FC_END */
/* 708 */

0x15, /*

FC_STRUCT */

0x3, /*

3 */
/* 710 */ NdrFcShort( 0x10 ), /* 16 */
/* 712 */ 0x8, /* FC_LONG */
0x6, /*

FC_SHORT */
/* 714 */ 0x6, /* FC_SHORT */
0x4c, /*

FC_EMBEDDED_COMPLEX */
/* 716 */ 0x0, /* 0 */
NdrFcShort( 0xffff1 ),
/* Offset= -15 (702) */
0x5b, /*

FC_END */
/* 720 */

```

```

FC_BOGUS_STRUCT */

0x1a, /*
0x3, /*

3 */
/* 722 */ NdrFcShort( 0x18 ), /* 24 */
/* 724 */ NdrFcShort( 0x0 ), /* 0 */
/* 726 */ NdrFcShort( 0xa ), /* Offset= 10 (736) */
/* 728 */ 0x8, /* FC_LONG */
0x36, /*

FC_POINTER */
/* 730 */ 0x4c, /* FC_EMBEDDED_COMPLEX */
0x0, /*

0 */
/* 732 */ NdrFcShort( 0xffe8 ), /* Offset= -
24 (708) */
/* 734 */ 0x5c, /* FC_PAD */
0x5b, /*

FC_END */
/* 736 */

0x11, 0x0, /*

FC_RP */
/* 738 */ NdrFcShort( 0xff0c ), /* Offset= -
244 (494) */
/* 740 */

FC_CARRAY */

0x1b, /*
0x0, /*

0 */
/* 742 */ NdrFcShort( 0x1 ), /* 1 */
/* 744 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
0x0, /*

*/
/* 746 */ NdrFcShort( 0x0 ), /* 0 */
/* 748 */ 0x1, /* FC_BYTE */
0x5b, /*

FC_END */
/* 750 */

0x16, /*

FC_PSTRUCT */

0x3, /*

3 */
/* 752 */ NdrFcShort( 0x8 ), /* 8 */
/* 754 */

0x4b, /*

FC_PP */

0x5c, /*

FC_PAD */
/* 756 */

0x46, /*

FC_NO_REPEAT */

0x5c, /*

FC_PAD */
/* 758 */ NdrFcShort( 0x4 ), /* 4 */
/* 760 */ NdrFcShort( 0x4 ), /* 4 */
/* 762 */ 0x12, 0x0, /* FC_UP */
/* 764 */ NdrFcShort( 0xffe8 ), /* Offset= -
24 (740) */
/* 766 */

0x5b, /*

FC_END */

```

```

0x8, /*

FC_LONG */
/* 768 */ 0x8, /* FC_LONG */
0x5b, /*

FC_END */
/* 770 */

0x1b, /*

FC_CARRAY */

0x1, /*

1 */
/* 772 */ NdrFcShort( 0x2 ), /* 2 */
/* 774 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
0x0, /*

*/
/* 776 */ NdrFcShort( 0x0 ), /* 0 */
/* 778 */ 0x6, /* FC_SHORT */
0x5b, /*

FC_END */
/* 780 */

0x16, /*

FC_PSTRUCT */

0x3, /*

3 */
/* 782 */ NdrFcShort( 0x8 ), /* 8 */
/* 784 */

0x4b, /*

FC_PP */

0x5c, /*

FC_PAD */
/* 786 */

0x46, /*

FC_NO_REPEAT */

0x5c, /*

FC_PAD */
/* 788 */ NdrFcShort( 0x4 ), /* 4 */
/* 790 */ NdrFcShort( 0x4 ), /* 4 */
/* 792 */ 0x12, 0x0, /* FC_UP */
/* 794 */ NdrFcShort( 0xffe8 ), /* Offset= -
24 (770) */
/* 796 */

0x5b, /*

FC_END */

0x8, /*

FC_LONG */
/* 798 */ 0x8, /* FC_LONG */
0x5b, /*

FC_END */
/* 800 */

0x1b, /*

FC_CARRAY */

0x3, /*

3 */
/* 802 */ NdrFcShort( 0x4 ), /* 4 */
/* 804 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
0x0, /*

*/
/* 806 */ NdrFcShort( 0x0 ), /* 0 */
/* 808 */ 0x8, /* FC_LONG */
0x5b, /*

FC_END */

```

```

/* 810 */
FC_PSTRUCT */
0x16,
3 */
/* 812 */ NdrFcShort( 0x8 ), /* 8 */
/* 814 */
0x4b,
FC_PP */
0x5c,
FC_PAD */
/* 816 */
0x46,
FC_NO_REPEAT */
0x5c,
FC_PAD */
/* 818 */ NdrFcShort( 0x4 ), /* 4 */
/* 820 */ NdrFcShort( 0x4 ), /* 4 */
/* 822 */ 0x12, 0x0, /* FC_UP */
/* 824 */ NdrFcShort( 0xffe8 ), /* Offset= -
24 (800) */
/* 826 */
0x5b,
FC_END */
0x8,
FC_LONG */
/* 828 */ 0x8, /* FC_LONG */
0x5b,
FC_END */
/* 830 */
0x1b,
FC_CARRAY */
0x7,
7 */
/* 832 */ NdrFcShort( 0x8 ), /* 8 */
/* 834 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
0x0,
/*
/* 836 */ NdrFcShort( 0x0 ), /* 0 */
/* 838 */ 0xb, /* FC_HYPER */
0x5b,
FC_END */
/* 840 */
0x16,
FC_PSTRUCT */
0x3,
3 */
/* 842 */ NdrFcShort( 0x8 ), /* 8 */
/* 844 */
0x4b,
FC_PP */
0x5c,
FC_PAD */
/* 846 */
0x46,
FC_NO_REPEAT */
0x5c,
FC_PAD */
/* 848 */ NdrFcShort( 0x4 ), /* 4 */
/* 850 */ NdrFcShort( 0x4 ), /* 4 */
/* 852 */ 0x12, 0x0, /* FC_UP */

```

```

/* 854 */ NdrFcShort( 0xffe8 ), /* Offset= -
24 (830) */
/* 856 */
0x5b,
FC_END */
0x8,
FC_LONG */
/* 858 */ 0x8, /* FC_LONG */
0x5b,
FC_END */
/* 860 */
0x15,
FC_STRUCT */
0x3,
3 */
/* 862 */ NdrFcShort( 0x8 ), /* 8 */
/* 864 */ 0x8, /* FC_LONG */
0x8,
FC_LONG */
/* 866 */ 0x5c, /* FC_PAD */
0x5b,
FC_END */
/* 868 */
0x1b,
FC_CARRAY */
0x3,
3 */
/* 870 */ NdrFcShort( 0x8 ), /* 8 */
/* 872 */ 0x7, /* Corr desc: FC_USHORT
*/
0x0,
/*
/* 874 */ NdrFcShort( 0xffd8 ), /* -40 */
/* 876 */ 0x4c, /* FC_EMBEDDED_COMPLEX
*/
0x0,
0 */
/* 878 */ NdrFcShort( 0xffee ), /* Offset= -
18 (860) */
/* 880 */ 0x5c, /* FC_PAD */
0x5b,
FC_END */
/* 882 */
0x1a,
FC_BOGUS_STRUCT */
0x3,
3 */
/* 884 */ NdrFcShort( 0x28 ), /* 40 */
/* 886 */ NdrFcShort( 0xffee ), /* Offset= -
18 (868) */
/* 888 */ NdrFcShort( 0x0 ), /* Offset= 0 (888) */
/* 890 */ 0x6, /* FC_SHORT */
0x6,
FC_SHORT */
/* 892 */ 0x8, /* FC_LONG */
0x8,
FC_LONG */
/* 894 */ 0x4c, /* FC_EMBEDDED_COMPLEX
*/
0x0,
0 */

```

```

/* 896 */ NdrFcShort( 0xfd8 ), /* Offset= -
520 (376) */
/* 898 */ 0x5c, /* FC_PAD */
0x5b,
FC_END */
/* 900 */
0x12, 0x0,
FC_UP */
/* 902 */ NdrFcShort( 0xfef6 ), /* Offset= -
266 (636) */
/* 904 */
0x12, 0x8,
FC_UP [simple_pointer] */
/* 906 */ 0x1, /* FC_BYTE */
0x5c,
FC_PAD */
/* 908 */
0x12, 0x8,
FC_UP [simple_pointer] */
/* 910 */ 0x6, /* FC_SHORT */
0x5c,
FC_PAD */
/* 912 */
0x12, 0x8,
FC_UP [simple_pointer] */
/* 914 */ 0x8, /* FC_LONG */
0x5c,
FC_PAD */
/* 916 */
0x12, 0x8,
FC_UP [simple_pointer] */
/* 918 */ 0xb, /* FC_HYPER */
0x5c,
FC_PAD */
/* 920 */
0x12, 0x8,
FC_UP [simple_pointer] */
/* 922 */ 0xa, /* FC_FLOAT */
0x5c,
FC_PAD */
/* 924 */
0x12, 0x8,
FC_UP [simple_pointer] */
/* 926 */ 0xc, /* FC_DOUBLE */
0x5c,
FC_PAD */
/* 928 */
0x12, 0x0,
FC_UP */
/* 930 */ NdrFcShort( 0xfd8c ), /* Offset= -
628 (302) */
/* 932 */
0x12, 0x10,
FC_UP [pointer_deref] */
/* 934 */ NdrFcShort( 0xfd8e ), /* Offset= -
626 (308) */
/* 936 */
0x12, 0x10,
FC_UP [pointer_deref] */
/* 938 */ NdrFcShort( 0xfda2 ), /* Offset= -
606 (332) */
/* 940 */

```



```

0x12, 0x10, /*
FC_UP [pointer_deref] */
/* 942 */ NdrFcShort( 0xfdb0 ), /* Offset= -
592 (350) */
/* 944 */

0x12, 0x10, /*
FC_UP [pointer_deref] */
/* 946 */ NdrFcShort( 0xfdb0 ), /* Offset= -
578 (368) */
/* 948 */

0x12, 0x10, /*
FC_UP [pointer_deref] */
/* 950 */ NdrFcShort( 0x2 ), /* Offset= 2 (952) */
/* 952 */

0x12, 0x0, /*
FC_UP */
/* 954 */ NdrFcShort( 0x14 ), /* Offset= 20 (974) */
/* 956 */

0x15, /*
FC_STRUCT */

0x7, /*
7 */
/* 958 */ NdrFcShort( 0x10 ), /* 16 */
/* 960 */ 0x6, /* FC_SHORT */

0x1, /*
FC_BYTE */
/* 962 */ 0x1, /* FC_BYTE */

0x8, /*
FC_LONG */
/* 964 */ 0xb, /* FC_HYPER */

0x5b, /*
FC_END */
/* 966 */

0x12, 0x0, /*
FC_UP */
/* 968 */ NdrFcShort( 0xffff4 ), /* Offset= -
12 (956) */
/* 970 */

0x12, 0x8, /*
FC_UP [simple_pointer] */
/* 972 */ 0x2, /* FC_CHAR */

0x5c, /*
FC_PAD */
/* 974 */

0x1a, /*
FC_BOGUS_STRUCT */

0x7, /*
7 */
/* 976 */ NdrFcShort( 0x20 ), /* 32 */
/* 978 */ NdrFcShort( 0x0 ), /* 0 */
/* 980 */ NdrFcShort( 0x0 ), /* Offset= 0 (980) */
/* 982 */ 0x8, /* FC_LONG */

0x8, /*
FC_LONG */
/* 984 */ 0x6, /* FC_SHORT */

0x6, /*
FC_SHORT */
/* 986 */ 0x6, /* FC_SHORT */

0x6, /*
FC_SHORT */
/* 988 */ 0x4c, /* FC_EMBEDDED_COMPLEX
*/

```

```

0x0, /*
0 */
/* 990 */ NdrFcShort( 0xfc28 ), /* Offset= -
984 (6) */
/* 992 */ 0x5c, /* FC_PAD */

0x5b, /*
FC_END */
/* 994 */ 0xb4, /* FC_USER_MARSHAL */

0x83, /*
131 */
/* 996 */ NdrFcShort( 0x0 ), /* 0 */
/* 998 */ NdrFcShort( 0x10 ), /* 16 */
/* 1000 */ NdrFcShort( 0x0 ), /* 0 */
/* 1002 */ NdrFcShort( 0xfc18 ), /*
Offset= -1000 (2) */
/* 1004 */

0x11, 0x4, /*
FC_RP [allocated_on_stack] */
/* 1006 */ NdrFcShort( 0x6 ), /* Offset= 6
(1012) */
/* 1008 */

0x13, 0x0, /*
FC_OP */
/* 1010 */ NdrFcShort( 0xffdc ), /*
Offset= -36 (974) */
/* 1012 */ 0xb4, /*
FC_USER_MARSHAL */

0x83, /*
131 */
/* 1014 */ NdrFcShort( 0x0 ), /* 0 */
/* 1016 */ NdrFcShort( 0x10 ), /* 16 */
/* 1018 */ NdrFcShort( 0x0 ), /* 0 */
/* 1020 */ NdrFcShort( 0xffff4 ), /*
Offset= -12 (1008) */

0x0
}
};

static const USER_MARSHAL_ROUTINE_QUADRUPLE
UserMarshalRoutines[ WIRE_MARSHAL_TABLE_SIZE ] =
{
{
VARIANT_UserSize
,VARIANT_UserMarshal
,VARIANT_UserUnmarshal
,VARIANT_UserFree
}
};

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

/* Object interface: IUnknown, ver. 0.0,

```

```

GUID={0x00000000, 0x0000, 0x0000, {0xc0, 0x00, 0x00, 0x00, 0
x00, 0x00, 0x00, 0x46}} */

/* Object interface: ITPCC, ver. 0.0,
GUID={0xfEEE6AA2, 0x84B1, 0x11d2, {0xBA, 0x47, 0x00, 0xc0, 0
x4F, 0xBF, 0xE0, 0x8B}} */

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

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

static const MIDL_SERVER_INFO ITPCC_ServerInfo =
{
&Object_StubDesc,
0,
__MIDL_ProcFormatString.Format,
&ITPCC_FormatStringOffsetTable[-3],
0,
0,
0,
0
};
CINTERFACE_PROXY_VTABLE(9) _ITPCCProxyVtbl =
{
&ITPCC_ProxyInfo,
&IID_ITPCC,
IUnknown_QueryInterface_Proxy,
IUnknown_AddRef_Proxy,
IUnknown_Release_Proxy,
(void *) (INT_PTR) -1 /* ITPCC::NewOrder */ ,
(void *) (INT_PTR) -1 /* ITPCC::Payment */ ,
(void *) (INT_PTR) -1 /* ITPCC::Delivery */ ,
(void *) (INT_PTR) -1 /* ITPCC::StockLevel */ ,
(void *) (INT_PTR) -1 /* ITPCC::OrderStatus */ ,
(void *) (INT_PTR) -1 /* ITPCC::CallSetComplete */
};

const CInterfaceStubVtbl _ITPCCStubVtbl =
{
&IID_ITPCC,

```



```

#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, 0i2 */
/* 2 */ NdrFcLong( 0x0 ), /* 0 */
/* 6 */ NdrFcShort( 0x3 ), /* 3 */
/* 8 */ NdrFcShort( 0x30 ), /* ia64 Stack
size/offset = 48 */
/* 10 */ NdrFcShort( 0x0 ), /* 0 */
/* 12 */ NdrFcShort( 0x8 ), /* 8 */
/* 14 */ 0x47, /* 0i2 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, */
/* 28 */ NdrFcShort( 0x8 ), /* ia64 Stack
size/offset = 8 */
/* 30 */ NdrFcShort( 0x3ce ), /* Type
Offset=974 */

        /* Parameter txn_out */

/* 32 */ NdrFcShort( 0x6113 ), /* Flags:
must size, must free, out, simple ref, srv alloc
size=24 */
/* 34 */ NdrFcShort( 0x20 ), /* ia64 Stack
size/offset = 32 */
/* 36 */ NdrFcShort( 0x3e0 ), /* Type
Offset=992 */

        /* Return value */

/* 38 */ NdrFcShort( 0x70 ), /* Flags: out, return,
base type, */
/* 40 */ NdrFcShort( 0x28 ), /* ia64 Stack
size/offset = 40 */
/* 42 */ 0x8, /* FC_LONG */
                                0x0,          /*
0 */

```

```

/* Procedure Payment */

/* 44 */ 0x33, /* FC_AUTO_HANDLE */
                                0x6c,          /*
Old Flags: object, 0i2 */
/* 46 */ NdrFcLong( 0x0 ), /* 0 */
/* 50 */ NdrFcShort( 0x4 ), /* 4 */
/* 52 */ NdrFcShort( 0x30 ), /* ia64 Stack
size/offset = 48 */
/* 54 */ NdrFcShort( 0x0 ), /* 0 */
/* 56 */ NdrFcShort( 0x8 ), /* 8 */
/* 58 */ 0x47, /* 0i2 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, */
/* 72 */ NdrFcShort( 0x8 ), /* ia64 Stack
size/offset = 8 */
/* 74 */ NdrFcShort( 0x3ce ), /* Type
Offset=974 */

        /* Parameter txn_out */

/* 76 */ NdrFcShort( 0x6113 ), /* Flags:
must size, must free, out, simple ref, srv alloc
size=24 */
/* 78 */ NdrFcShort( 0x20 ), /* ia64 Stack
size/offset = 32 */
/* 80 */ NdrFcShort( 0x3e0 ), /* Type
Offset=992 */

        /* Return value */

/* 82 */ NdrFcShort( 0x70 ), /* Flags: out, return,
base type, */
/* 84 */ NdrFcShort( 0x28 ), /* ia64 Stack
size/offset = 40 */
/* 86 */ 0x8, /* FC_LONG */
                                0x0,          /*
0 */

        /* Procedure Delivery */

/* 88 */ 0x33, /* FC_AUTO_HANDLE */
                                0x6c,          /*
Old Flags: object, 0i2 */
/* 90 */ NdrFcLong( 0x0 ), /* 0 */
/* 94 */ NdrFcShort( 0x5 ), /* 5 */
/* 96 */ NdrFcShort( 0x30 ), /* ia64 Stack
size/offset = 48 */

```

```

/* 98 */ NdrFcShort( 0x0 ), /* 0 */
/* 100 */ NdrFcShort( 0x8 ), /* 8 */
/* 102 */ 0x47, /* 0i2 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, */
/* 116 */ NdrFcShort( 0x8 ), /* ia64 Stack
size/offset = 8 */
/* 118 */ NdrFcShort( 0x3ce ), /* Type
Offset=974 */

        /* Parameter txn_out */

/* 120 */ NdrFcShort( 0x6113 ), /* Flags:
must size, must free, out, simple ref, srv alloc
size=24 */
/* 122 */ NdrFcShort( 0x20 ), /* ia64 Stack
size/offset = 32 */
/* 124 */ NdrFcShort( 0x3e0 ), /* Type
Offset=992 */

        /* Return value */

/* 126 */ NdrFcShort( 0x70 ), /* Flags: out, return,
base type, */
/* 128 */ NdrFcShort( 0x28 ), /* ia64 Stack
size/offset = 40 */
/* 130 */ 0x8, /* FC_LONG */
                                0x0,          /*
0 */

        /* Procedure StockLevel */

/* 132 */ 0x33, /* FC_AUTO_HANDLE */
                                0x6c,          /*
Old Flags: object, 0i2 */
/* 134 */ NdrFcLong( 0x0 ), /* 0 */
/* 138 */ NdrFcShort( 0x6 ), /* 6 */
/* 140 */ NdrFcShort( 0x30 ), /* ia64 Stack
size/offset = 48 */
/* 142 */ NdrFcShort( 0x0 ), /* 0 */
/* 144 */ NdrFcShort( 0x8 ), /* 8 */
/* 146 */ 0x47, /* 0i2 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, */
/* 160 */ NdrFcShort( 0x8 ), /* ia64 Stack
size/offset = 8 */
/* 162 */ NdrFcShort( 0x3ce ), /* Type
Offset=974 */

/* Parameter txn_out */

/* 164 */ NdrFcShort( 0x6113 ), /* Flags:
must size, must free, out, simple ref, srv alloc
size=24 */
/* 166 */ NdrFcShort( 0x20 ), /* ia64 Stack
size/offset = 32 */
/* 168 */ NdrFcShort( 0x3e0 ), /* Type
Offset=992 */

/* Return value */

/* 170 */ NdrFcShort( 0x70 ), /* Flags: out, return,
base type, */
/* 172 */ NdrFcShort( 0x28 ), /* ia64 Stack
size/offset = 40 */
/* 174 */ 0x8, /* FC_LONG */
0x0, /*
0 */

/* Procedure OrderStatus */

/* 176 */ 0x33, /* FC_AUTO_HANDLE */
0x6c, /*
Old Flags: object, 0i2 */
/* 178 */ NdrFcLong( 0x0 ), /* 0 */
/* 182 */ NdrFcShort( 0x7 ), /* 7 */
/* 184 */ NdrFcShort( 0x30 ), /* ia64 Stack
size/offset = 48 */
/* 186 */ NdrFcShort( 0x0 ), /* 0 */
/* 188 */ NdrFcShort( 0x8 ), /* 8 */
/* 190 */ 0x47, /* 0i2 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, */

```

```

/* 204 */ NdrFcShort( 0x8 ), /* ia64 Stack
size/offset = 8 */
/* 206 */ NdrFcShort( 0x3ce ), /* Type
Offset=974 */

/* Parameter txn_out */

/* 208 */ NdrFcShort( 0x6113 ), /* Flags:
must size, must free, out, simple ref, srv alloc
size=24 */
/* 210 */ NdrFcShort( 0x20 ), /* ia64 Stack
size/offset = 32 */
/* 212 */ NdrFcShort( 0x3e0 ), /* Type
Offset=992 */

/* Return value */

/* 214 */ NdrFcShort( 0x70 ), /* Flags: out, return,
base type, */
/* 216 */ NdrFcShort( 0x28 ), /* ia64 Stack
size/offset = 40 */
/* 218 */ 0x8, /* FC_LONG */
0x0, /*
0 */

/* Procedure CallSetComplete */

/* 220 */ 0x33, /* FC_AUTO_HANDLE */
0x6c, /*
Old Flags: object, 0i2 */
/* 222 */ NdrFcLong( 0x0 ), /* 0 */
/* 226 */ NdrFcShort( 0x8 ), /* 8 */
/* 228 */ NdrFcShort( 0x10 ), /* ia64 Stack
size/offset = 16 */
/* 230 */ NdrFcShort( 0x0 ), /* 0 */
/* 232 */ NdrFcShort( 0x8 ), /* 8 */
/* 234 */ 0x44, /* 0i2 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 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( 0x3b6 ), /* Offset=
950 (954) */
/* 6 */
0x2b, /*
FC_NON_ENCAPSULATED_UNION */
0x9, /*
FC_ULONG */
/* 8 */ 0x7, /* Corr desc: FC_USHORT
*/
0x0, /*
*/
/* 10 */ NdrFcShort( 0xffff8 ), /* -8 */
/* 12 */ NdrFcShort( 0x1 ), /* Corr flags: early,
*/
/* 14 */ NdrFcShort( 0x2 ), /* Offset= 2 (16) */
/* 16 */ NdrFcShort( 0x10 ), /* 16 */
/* 18 */ NdrFcShort( 0x2f ), /* 47 */
/* 20 */ NdrFcLong( 0x14 ), /* 20 */
/* 24 */ NdrFcShort( 0x800b ), /* Simple arm
type: FC_HYPER */
/* 26 */ NdrFcLong( 0x3 ), /* 3 */
/* 30 */ NdrFcShort( 0x8008 ), /* Simple arm
type: FC_LONG */
/* 32 */ NdrFcLong( 0x11 ), /* 17 */
/* 36 */ NdrFcShort( 0x8001 ), /* Simple arm
type: FC_BYTE */
/* 38 */ NdrFcLong( 0x2 ), /* 2 */
/* 42 */ NdrFcShort( 0x8006 ), /* Simple arm
type: FC_SHORT */
/* 44 */ NdrFcLong( 0x4 ), /* 4 */
/* 48 */ NdrFcShort( 0x800a ), /* Simple arm
type: FC_FLOAT */
/* 50 */ NdrFcLong( 0x5 ), /* 5 */
/* 54 */ NdrFcShort( 0x800c ), /* Simple arm
type: FC_DOUBLE */
/* 56 */ NdrFcLong( 0xb ), /* 11 */
/* 60 */ NdrFcShort( 0x8006 ), /* Simple arm
type: FC_SHORT */
/* 62 */ NdrFcLong( 0xa ), /* 10 */
/* 66 */ NdrFcShort( 0x8008 ), /* Simple arm
type: FC_LONG */
/* 68 */ NdrFcLong( 0x6 ), /* 6 */
/* 72 */ NdrFcShort( 0xe8 ), /* Offset= 232 (304) */
/* 74 */ NdrFcLong( 0x7 ), /* 7 */
/* 78 */ NdrFcShort( 0x800c ), /* Simple arm
type: FC_DOUBLE */
/* 80 */ NdrFcLong( 0x8 ), /* 8 */
/* 84 */ NdrFcShort( 0xe2 ), /* Offset= 226 (310) */
/* 86 */ NdrFcLong( 0xd ), /* 13 */
/* 90 */ NdrFcShort( 0xf6 ), /* Offset= 246 (336) */
/* 92 */ NdrFcLong( 0x9 ), /* 9 */
/* 96 */ NdrFcShort( 0x102 ), /* Offset=
258 (354) */

```

```

/* 98 */ NdrFcLong( 0x2000 ), /* 8192 */
/* 102 */ NdrFcShort( 0x10e ), /* Offset=
270 (372) */
/* 104 */ NdrFcLong( 0x24 ), /* 36 */
/* 108 */ NdrFcShort( 0x304 ), /* Offset=
772 (880) */
/* 110 */ NdrFcLong( 0x4024 ), /* 16420 */
/* 114 */ NdrFcShort( 0x2fe ), /* Offset=
766 (880) */
/* 116 */ NdrFcLong( 0x4011 ), /* 16401 */
/* 120 */ NdrFcShort( 0x2fc ), /* Offset=
764 (884) */
/* 122 */ NdrFcLong( 0x4002 ), /* 16386 */
/* 126 */ NdrFcShort( 0x2fa ), /* Offset=
762 (888) */
/* 128 */ NdrFcLong( 0x4003 ), /* 16387 */
/* 132 */ NdrFcShort( 0x2f8 ), /* Offset=
760 (892) */
/* 134 */ NdrFcLong( 0x4014 ), /* 16404 */
/* 138 */ NdrFcShort( 0x2f6 ), /* Offset=
758 (896) */
/* 140 */ NdrFcLong( 0x4004 ), /* 16388 */
/* 144 */ NdrFcShort( 0x2f4 ), /* Offset=
756 (900) */
/* 146 */ NdrFcLong( 0x4005 ), /* 16389 */
/* 150 */ NdrFcShort( 0x2f2 ), /* Offset=
754 (904) */
/* 152 */ NdrFcLong( 0x400b ), /* 16395 */
/* 156 */ NdrFcShort( 0x2dc ), /* Offset=
732 (888) */
/* 158 */ NdrFcLong( 0x400a ), /* 16394 */
/* 162 */ NdrFcShort( 0x2da ), /* Offset=
730 (892) */
/* 164 */ NdrFcLong( 0x4006 ), /* 16390 */
/* 168 */ NdrFcShort( 0x2e4 ), /* Offset=
740 (908) */
/* 170 */ NdrFcLong( 0x4007 ), /* 16391 */
/* 174 */ NdrFcShort( 0x2da ), /* Offset=
730 (904) */
/* 176 */ NdrFcLong( 0x4008 ), /* 16392 */
/* 180 */ NdrFcShort( 0x2dc ), /* Offset=
732 (912) */
/* 182 */ NdrFcLong( 0x400d ), /* 16397 */
/* 186 */ NdrFcShort( 0x2da ), /* Offset=
730 (916) */
/* 188 */ NdrFcLong( 0x4009 ), /* 16393 */
/* 192 */ NdrFcShort( 0x2d8 ), /* Offset=
728 (920) */
/* 194 */ NdrFcLong( 0x6000 ), /* 24576 */
/* 198 */ NdrFcShort( 0x2d6 ), /* Offset=
726 (924) */
/* 200 */ NdrFcLong( 0x400c ), /* 16396 */
/* 204 */ NdrFcShort( 0x2d4 ), /* Offset=
724 (928) */
/* 206 */ NdrFcLong( 0x10 ), /* 16 */
/* 210 */ NdrFcShort( 0x8002 ), /* Simple arm
type: FC_CHAR */
/* 212 */ NdrFcLong( 0x12 ), /* 18 */
/* 216 */ NdrFcShort( 0x8006 ), /* Simple arm
type: FC_SHORT */
/* 218 */ NdrFcLong( 0x13 ), /* 19 */
/* 222 */ NdrFcShort( 0x8008 ), /* Simple arm
type: FC_LONG */

```

```

/* 224 */ NdrFcLong( 0x15 ), /* 21 */
/* 228 */ NdrFcShort( 0x800b ), /* Simple arm
type: FC_HYPER */
/* 230 */ NdrFcLong( 0x16 ), /* 22 */
/* 234 */ NdrFcShort( 0x8008 ), /* Simple arm
type: FC_LONG */
/* 236 */ NdrFcLong( 0x17 ), /* 23 */
/* 240 */ NdrFcShort( 0x8008 ), /* Simple arm
type: FC_LONG */
/* 242 */ NdrFcLong( 0xe ), /* 14 */
/* 246 */ NdrFcShort( 0x2b2 ), /* Offset=
690 (936) */
/* 248 */ NdrFcLong( 0x400e ), /* 16398 */
/* 252 */ NdrFcShort( 0x2b6 ), /* Offset=
694 (946) */
/* 254 */ NdrFcLong( 0x4010 ), /* 16400 */
/* 258 */ NdrFcShort( 0x2b4 ), /* Offset=
692 (950) */
/* 260 */ NdrFcLong( 0x4012 ), /* 16402 */
/* 264 */ NdrFcShort( 0x270 ), /* Offset=
624 (888) */
/* 266 */ NdrFcLong( 0x4013 ), /* 16403 */
/* 270 */ NdrFcShort( 0x26e ), /* Offset=
622 (892) */
/* 272 */ NdrFcLong( 0x4015 ), /* 16405 */
/* 276 */ NdrFcShort( 0x26c ), /* Offset=
620 (896) */
/* 278 */ NdrFcLong( 0x4016 ), /* 16406 */
/* 282 */ NdrFcShort( 0x262 ), /* Offset=
610 (892) */
/* 284 */ NdrFcLong( 0x4017 ), /* 16407 */
/* 288 */ NdrFcShort( 0x25c ), /* Offset=
604 (892) */
/* 290 */ NdrFcLong( 0x0 ), /* 0 */
/* 294 */ NdrFcShort( 0x0 ), /* Offset= 0 (294) */
/* 296 */ NdrFcLong( 0x1 ), /* 1 */
/* 300 */ NdrFcShort( 0x0 ), /* Offset= 0 (300) */
/* 302 */ NdrFcShort( 0xffff ), /* Offset= -1
(301) */
/* 304 */

FC_STRUCT */
0x15, /*
0x7, /*
7 */
/* 306 */ NdrFcShort( 0x8 ), /* 8 */
/* 308 */ 0xb, /* FC_HYPER */
0x5b, /*
FC_END */
/* 310 */
0x12, 0x0, /*
FC_UP */
/* 312 */ NdrFcShort( 0xe ), /* Offset= 14 (326) */
/* 314 */
0x1b, /*
FC_CARRAY */
0x1, /*
1 */
/* 316 */ NdrFcShort( 0x2 ), /* 2 */
/* 318 */ 0x9, /* Corr desc: FC_ULONG */
*/
0x0, /*
*/
/* 320 */ NdrFcShort( 0xfffc ), /* -4 */

```

```

/* 322 */ NdrFcShort( 0x1 ), /* Corr flags: early,
*/
/* 324 */ 0x6, /* FC_SHORT */
0x5b, /*
FC_END */
/* 326 */
FC_CSTRUCT */
0x17, /*
0x3, /*
3 */
/* 328 */ NdrFcShort( 0x8 ), /* 8 */
/* 330 */ NdrFcShort( 0xffff ), /* Offset= -
16 (314) */
/* 332 */ 0x8, /* FC_LONG */
0x8, /*
FC_LONG */
/* 334 */ 0x5c, /* FC_PAD */
0x5b, /*
FC_END */
/* 336 */
0x2f, /*
FC_IP */
0x5a, /*
FC_CONSTANT_IID */
/* 338 */ NdrFcLong( 0x0 ), /* 0 */
/* 342 */ NdrFcShort( 0x0 ), /* 0 */
/* 344 */ NdrFcShort( 0x0 ), /* 0 */
/* 346 */ 0xc0, /* 192 */
0x0, /*
0 */
/* 348 */ 0x0, /* 0 */
0x0, /*
0 */
/* 350 */ 0x0, /* 0 */
0x0, /*
0 */
/* 352 */ 0x0, /* 0 */
0x46, /*
70 */
/* 354 */
0x2f, /*
FC_IP */
0x5a, /*
FC_CONSTANT_IID */
/* 356 */ NdrFcLong( 0x20400 ), /* 132096 */
/* 360 */ NdrFcShort( 0x0 ), /* 0 */
/* 362 */ NdrFcShort( 0x0 ), /* 0 */
/* 364 */ 0xc0, /* 192 */
0x0, /*
0 */
/* 366 */ 0x0, /* 0 */
0x0, /*
0 */
/* 368 */ 0x0, /* 0 */
0x0, /*
0 */
/* 370 */ 0x0, /* 0 */
0x46, /*
70 */
/* 372 */
0x12, 0x10, /*
FC_UP [pointer_deref] */
/* 374 */ NdrFcShort( 0x2 ), /* Offset= 2 (376) */

```

```

/* 376 */
FC_UP */
/* 378 */ NdrFcShort( 0x1e4 ), /* Offset=
484 (862) */
/* 380 */

FC_ENCAPSULATED_UNION */
0x2a, /*
0x89, /*
137 */
/* 382 */ NdrFcShort( 0x20 ), /* 32 */
/* 384 */ NdrFcShort( 0xa ), /* 10 */
/* 386 */ NdrFcLong( 0x8 ), /* 8 */
/* 390 */ NdrFcShort( 0x50 ), /* Offset= 80 (470) */
/* 392 */ NdrFcLong( 0xd ), /* 13 */
/* 396 */ NdrFcShort( 0x70 ), /* Offset= 112 (508) */
/* 398 */ NdrFcLong( 0x9 ), /* 9 */
/* 402 */ NdrFcShort( 0x90 ), /* Offset= 144 (546) */
/* 404 */ NdrFcLong( 0xc ), /* 12 */
/* 408 */ NdrFcShort( 0xb0 ), /* Offset= 176 (584) */
/* 410 */ NdrFcLong( 0x24 ), /* 36 */
/* 414 */ NdrFcShort( 0x102 ), /* Offset=
258 (672) */
/* 416 */ NdrFcLong( 0x800d ), /* 32781 */
/* 420 */ NdrFcShort( 0x11e ), /* Offset=
286 (706) */
/* 422 */ NdrFcLong( 0x10 ), /* 16 */
/* 426 */ NdrFcShort( 0x138 ), /* Offset=
312 (738) */
/* 428 */ NdrFcLong( 0x2 ), /* 2 */
/* 432 */ NdrFcShort( 0x14e ), /* Offset=
334 (766) */
/* 434 */ NdrFcLong( 0x3 ), /* 3 */
/* 438 */ NdrFcShort( 0x164 ), /* Offset=
356 (794) */
/* 440 */ NdrFcLong( 0x14 ), /* 20 */
/* 444 */ NdrFcShort( 0x17a ), /* Offset=
378 (822) */
/* 446 */ NdrFcShort( 0xffff ), /* Offset= -1
(445) */
/* 448 */

FC_BOGUS_ARRAY */
0x21, /*
0x3, /*
3 */
/* 450 */ NdrFcShort( 0x0 ), /* 0 */
/* 452 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
0x0, /*
*/
/* 454 */ NdrFcShort( 0x0 ), /* 0 */
/* 456 */ NdrFcShort( 0x1 ), /* Corr flags: early,
*/
/* 458 */ NdrFcLong( 0xffffffff ), /* -1 */
/* 462 */ NdrFcShort( 0x0 ), /* Corr flags: */
/* 464 */

0x12, 0x0, /*
FC_UP */
/* 466 */ NdrFcShort( 0xff74 ), /* Offset= -
140 (326) */
/* 468 */ 0x5c, /* FC_PAD */
0x5b, /*
FC_END */

```

```

/* 470 */
FC_BOGUS_STRUCT */
0x1a, /*
0x3, /*
3 */
/* 472 */ NdrFcShort( 0x10 ), /* 16 */
/* 474 */ NdrFcShort( 0x0 ), /* 0 */
/* 476 */ NdrFcShort( 0x6 ), /* Offset= 6 (482) */
/* 478 */ 0x8, /* FC_LONG */
0x40, /*
FC_STRUCTPAD4 */
/* 480 */ 0x36, /* FC_POINTER */
0x5b, /*
FC_END */
/* 482 */

0x11, 0x0, /*
FC_RP */
/* 484 */ NdrFcShort( 0xffdc ), /* Offset= -
36 (448) */
/* 486 */

0x21, /*
0x3, /*
3 */
/* 488 */ NdrFcShort( 0x0 ), /* 0 */
/* 490 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
0x0, /*
*/
/* 492 */ NdrFcShort( 0x0 ), /* 0 */
/* 494 */ NdrFcShort( 0x1 ), /* Corr flags: early,
*/
/* 496 */ NdrFcLong( 0xffffffff ), /* -1 */
/* 500 */ NdrFcShort( 0x0 ), /* Corr flags: */
/* 502 */ 0x4c, /* FC_EMBEDDED_COMPLEX
*/
0x0, /*
0 */
/* 504 */ NdrFcShort( 0xff58 ), /* Offset= -
168 (336) */
/* 506 */ 0x5c, /* FC_PAD */
0x5b, /*
FC_END */
/* 508 */

0x1a, /*
0x3, /*
3 */
/* 510 */ NdrFcShort( 0x10 ), /* 16 */
/* 512 */ NdrFcShort( 0x0 ), /* 0 */
/* 514 */ NdrFcShort( 0x6 ), /* Offset= 6 (520) */
/* 516 */ 0x8, /* FC_LONG */
0x40, /*
FC_STRUCTPAD4 */
/* 518 */ 0x36, /* FC_POINTER */
0x5b, /*
FC_END */
/* 520 */

0x11, 0x0, /*
FC_RP */
/* 522 */ NdrFcShort( 0xffdc ), /* Offset= -
36 (486) */
/* 524 */

```

```

FC_BOGUS_ARRAY */
0x21, /*
0x3, /*
3 */
/* 526 */ NdrFcShort( 0x0 ), /* 0 */
/* 528 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
0x0, /*
*/
/* 530 */ NdrFcShort( 0x0 ), /* 0 */
/* 532 */ NdrFcShort( 0x1 ), /* Corr flags: early,
*/
/* 534 */ NdrFcLong( 0xffffffff ), /* -1 */
/* 538 */ NdrFcShort( 0x0 ), /* Corr flags: */
/* 540 */ 0x4c, /* FC_EMBEDDED_COMPLEX
*/
0x0, /*
0 */
/* 542 */ NdrFcShort( 0xff44 ), /* Offset= -
188 (354) */
/* 544 */ 0x5c, /* FC_PAD */
0x5b, /*
FC_END */
/* 546 */

FC_BOGUS_STRUCT */
0x1a, /*
0x3, /*
3 */
/* 548 */ NdrFcShort( 0x10 ), /* 16 */
/* 550 */ NdrFcShort( 0x0 ), /* 0 */
/* 552 */ NdrFcShort( 0x6 ), /* Offset= 6 (558) */
/* 554 */ 0x8, /* FC_LONG */
0x40, /*
FC_STRUCTPAD4 */
/* 556 */ 0x36, /* FC_POINTER */
0x5b, /*
FC_END */
/* 558 */

0x11, 0x0, /*
FC_RP */
/* 560 */ NdrFcShort( 0xffdc ), /* Offset= -
36 (524) */
/* 562 */

0x21, /*
0x3, /*
3 */
/* 564 */ NdrFcShort( 0x0 ), /* 0 */
/* 566 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
0x0, /*
*/
/* 568 */ NdrFcShort( 0x0 ), /* 0 */
/* 570 */ NdrFcShort( 0x1 ), /* Corr flags: early,
*/
/* 572 */ NdrFcLong( 0xffffffff ), /* -1 */
/* 576 */ NdrFcShort( 0x0 ), /* Corr flags: */
/* 578 */

0x12, 0x0, /*
FC_UP */
/* 580 */ NdrFcShort( 0x176 ), /* Offset=
374 (954) */
/* 582 */ 0x5c, /* FC_PAD */

```

```

0x5b, /*
FC_END */
/* 584 */
0x1a, /*
FC_BOGUS_STRUCT */
0x3, /*
3 */
/* 586 */ NdrFcShort( 0x10 ), /* 16 */
/* 588 */ NdrFcShort( 0x0 ), /* 0 */
/* 590 */ NdrFcShort( 0x6 ), /* Offset= 6 (596) */
/* 592 */ 0x8, /* FC_LONG */
0x40, /*
FC_STRUCTPAD4 */
/* 594 */ 0x36, /* FC_POINTER */
0x5b, /*
FC_END */
/* 596 */
0x11, 0x0, /*
FC_RP */
/* 598 */ NdrFcShort( 0xffdc ), /* Offset= -
36 (562) */
/* 600 */
0x2f, /*
FC_IP */
0x5a, /*
FC_CONSTANT_IID */
/* 602 */ NdrFcLong( 0x2f ), /* 47 */
/* 606 */ NdrFcShort( 0x0 ), /* 0 */
/* 608 */ NdrFcShort( 0x0 ), /* 0 */
/* 610 */ 0xc0, /* 192 */
0x0, /*
0 */
/* 612 */ 0x0, /* 0 */
0x0, /*
0 */
/* 614 */ 0x0, /* 0 */
0x0, /*
0 */
/* 616 */ 0x0, /* 0 */
0x46, /*
70 */
/* 618 */
0x1b, /*
FC_CARRAY */
0x0, /*
0 */
/* 620 */ NdrFcShort( 0x1 ), /* 1 */
/* 622 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
0x0, /*
*/
/* 624 */ NdrFcShort( 0x4 ), /* 4 */
/* 626 */ NdrFcShort( 0x1 ), /* Corr flags: early,
*/
/* 628 */ 0x1, /* FC_BYTE */
0x5b, /*
FC_END */
/* 630 */
0x1a, /*
FC_BOGUS_STRUCT */
0x3, /*
3 */
/* 632 */ NdrFcShort( 0x18 ), /* 24 */

```

```

/* 634 */ NdrFcShort( 0x0 ), /* 0 */
/* 636 */ NdrFcShort( 0xa ), /* Offset= 10 (646) */
/* 638 */ 0x8, /* FC_LONG */
0x8, /*
FC_LONG */
/* 640 */ 0x4c, /* FC_EMBEDDED_COMPLEX
*/
0x0, /*
0 */
/* 642 */ NdrFcShort( 0xffd6 ), /* Offset= -
42 (600) */
/* 644 */ 0x36, /* FC_POINTER */
0x5b, /*
FC_END */
/* 646 */
0x12, 0x0, /*
FC_UP */
/* 648 */ NdrFcShort( 0xffe2 ), /* Offset= -
30 (618) */
/* 650 */
0x21, /*
FC_BOGUS_ARRAY */
0x3, /*
3 */
/* 652 */ NdrFcShort( 0x0 ), /* 0 */
/* 654 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
0x0, /*
*/
/* 656 */ NdrFcShort( 0x0 ), /* 0 */
/* 658 */ NdrFcShort( 0x1 ), /* Corr flags: early,
*/
/* 660 */ NdrFcLong( 0xffffffff ), /* -1 */
/* 664 */ NdrFcShort( 0x0 ), /* Corr flags: */
/* 666 */
0x12, 0x0, /*
FC_UP */
/* 668 */ NdrFcShort( 0xffda ), /* Offset= -
38 (630) */
/* 670 */ 0x5c, /* FC_PAD */
0x5b, /*
FC_END */
/* 672 */
0x1a, /*
FC_BOGUS_STRUCT */
0x3, /*
3 */
/* 674 */ NdrFcShort( 0x10 ), /* 16 */
/* 676 */ NdrFcShort( 0x0 ), /* 0 */
/* 678 */ NdrFcShort( 0x6 ), /* Offset= 6 (684) */
/* 680 */ 0x8, /* FC_LONG */
0x40, /*
FC_STRUCTPAD4 */
/* 682 */ 0x36, /* FC_POINTER */
0x5b, /*
FC_END */
/* 684 */
0x11, 0x0, /*
FC_RP */
/* 686 */ NdrFcShort( 0xffdc ), /* Offset= -
36 (650) */
/* 688 */

```

```

0x1d, /*
FC_SMFARRAY */
0x0, /*
0 */
/* 690 */ NdrFcShort( 0x8 ), /* 8 */
/* 692 */ 0x1, /* FC_BYTE */
0x5b, /*
FC_END */
/* 694 */
0x15, /*
FC_STRUCT */
0x3, /*
3 */
/* 696 */ NdrFcShort( 0x10 ), /* 16 */
/* 698 */ 0x8, /* FC_LONG */
0x6, /*
FC_SHORT */
/* 700 */ 0x6, /* FC_SHORT */
0x4c, /*
FC_EMBEDDED_COMPLEX */
/* 702 */ 0x0, /* 0 */
NdrFcShort( 0xffff ),
/* Offset= -15 (688) */
0x5b, /*
FC_END */
/* 706 */
0x1a, /*
FC_BOGUS_STRUCT */
0x3, /*
3 */
/* 708 */ NdrFcShort( 0x20 ), /* 32 */
/* 710 */ NdrFcShort( 0x0 ), /* 0 */
/* 712 */ NdrFcShort( 0xa ), /* Offset= 10 (722) */
/* 714 */ 0x8, /* FC_LONG */
0x40, /*
FC_STRUCTPAD4 */
/* 716 */ 0x36, /* FC_POINTER */
0x4c, /*
FC_EMBEDDED_COMPLEX */
/* 718 */ 0x0, /* 0 */
NdrFcShort( 0xffe7 ),
/* Offset= -25 (694) */
0x5b, /*
FC_END */
/* 722 */
0x11, 0x0, /*
FC_RP */
/* 724 */ NdrFcShort( 0xff12 ), /* Offset= -
238 (486) */
/* 726 */
0x1b, /*
FC_CARRAY */
0x0, /*
0 */
/* 728 */ NdrFcShort( 0x1 ), /* 1 */
/* 730 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
0x0, /*
*/
/* 732 */ NdrFcShort( 0x0 ), /* 0 */
/* 734 */ NdrFcShort( 0x1 ), /* Corr flags: early,
*/
/* 736 */ 0x1, /* FC_BYTE */

```

```

0x5b, /*
FC_END */
/* 738 */
FC_BOGUS_STRUCT */
0x1a, /*
0x3, /*
3 */
/* 740 */ NdrFcShort( 0x10 ), /* 16 */
/* 742 */ NdrFcShort( 0x0 ), /* 0 */
/* 744 */ NdrFcShort( 0x6 ), /* Offset= 6 (750) */
/* 746 */ 0x8, /* FC_LONG */
0x40, /*
FC_STRUCTPAD4 */
/* 748 */ 0x36, /* FC_POINTER */
0x5b, /*
FC_END */
/* 750 */
0x12, 0x0, /*
FC_UP */
/* 752 */ NdrFcShort( 0xffe6 ), /* Offset= -
26 (726) */
/* 754 */
0x1b, /*
FC_CARRAY */
0x1, /*
1 */
/* 756 */ NdrFcShort( 0x2 ), /* 2 */
/* 758 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
0x0, /*
/* 760 */ NdrFcShort( 0x0 ), /* 0 */
/* 762 */ NdrFcShort( 0x1 ), /* Corr flags: early,
*/
/* 764 */ 0x6, /* FC_SHORT */
0x5b, /*
FC_END */
/* 766 */
0x1a, /*
FC_BOGUS_STRUCT */
0x3, /*
3 */
/* 768 */ NdrFcShort( 0x10 ), /* 16 */
/* 770 */ NdrFcShort( 0x0 ), /* 0 */
/* 772 */ NdrFcShort( 0x6 ), /* Offset= 6 (778) */
/* 774 */ 0x8, /* FC_LONG */
0x40, /*
FC_STRUCTPAD4 */
/* 776 */ 0x36, /* FC_POINTER */
0x5b, /*
FC_END */
/* 778 */
0x12, 0x0, /*
FC_UP */
/* 780 */ NdrFcShort( 0xffe6 ), /* Offset= -
26 (754) */
/* 782 */
0x1b, /*
FC_CARRAY */
0x3, /*
3 */
/* 784 */ NdrFcShort( 0x4 ), /* 4 */

```

```

/* 786 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
0x0, /*
/* 788 */ NdrFcShort( 0x0 ), /* 0 */
/* 790 */ NdrFcShort( 0x1 ), /* Corr flags: early,
*/
/* 792 */ 0x8, /* FC_LONG */
0x5b, /*
FC_END */
/* 794 */
0x1a, /*
FC_BOGUS_STRUCT */
0x3, /*
3 */
/* 796 */ NdrFcShort( 0x10 ), /* 16 */
/* 798 */ NdrFcShort( 0x0 ), /* 0 */
/* 800 */ NdrFcShort( 0x6 ), /* Offset= 6 (806) */
/* 802 */ 0x8, /* FC_LONG */
0x40, /*
FC_STRUCTPAD4 */
/* 804 */ 0x36, /* FC_POINTER */
0x5b, /*
FC_END */
/* 806 */
0x12, 0x0, /*
FC_UP */
/* 808 */ NdrFcShort( 0xffe6 ), /* Offset= -
26 (782) */
/* 810 */
0x1b, /*
FC_CARRAY */
0x7, /*
7 */
/* 812 */ NdrFcShort( 0x8 ), /* 8 */
/* 814 */ 0x19, /* Corr desc: field
pointer, FC_ULONG */
0x0, /*
/* 816 */ NdrFcShort( 0x0 ), /* 0 */
/* 818 */ NdrFcShort( 0x1 ), /* Corr flags: early,
*/
/* 820 */ 0xb, /* FC_HYPER */
0x5b, /*
FC_END */
/* 822 */
0x1a, /*
FC_BOGUS_STRUCT */
0x3, /*
3 */
/* 824 */ NdrFcShort( 0x10 ), /* 16 */
/* 826 */ NdrFcShort( 0x0 ), /* 0 */
/* 828 */ NdrFcShort( 0x6 ), /* Offset= 6 (834) */
/* 830 */ 0x8, /* FC_LONG */
0x40, /*
FC_STRUCTPAD4 */
/* 832 */ 0x36, /* FC_POINTER */
0x5b, /*
FC_END */
/* 834 */
0x12, 0x0, /*
FC_UP */

```

```

/* 836 */ NdrFcShort( 0xffe6 ), /* Offset= -
26 (810) */
/* 838 */
0x15, /*
FC_STRUCT */
0x3, /*
3 */
/* 840 */ NdrFcShort( 0x8 ), /* 8 */
/* 842 */ 0x8, /* FC_LONG */
0x8, /*
FC_LONG */
/* 844 */ 0x5c, /* FC_PAD */
0x5b, /*
FC_END */
/* 846 */
0x1b, /*
FC_CARRAY */
0x3, /*
3 */
/* 848 */ NdrFcShort( 0x8 ), /* 8 */
/* 850 */ 0x7, /* Corr desc: FC_USHORT
*/
0x0, /*
/* 852 */ NdrFcShort( 0xffc8 ), /* -56 */
/* 854 */ NdrFcShort( 0x1 ), /* Corr flags: early,
*/
/* 856 */ 0x4c, /* FC_EMBEDDED_COMPLEX
*/
0x0, /*
0 */
/* 858 */ NdrFcShort( 0xffec ), /* Offset= -
20 (838) */
/* 860 */ 0x5c, /* FC_PAD */
0x5b, /*
FC_END */
/* 862 */
0x1a, /*
FC_BOGUS_STRUCT */
0x3, /*
3 */
/* 864 */ NdrFcShort( 0x38 ), /* 56 */
/* 866 */ NdrFcShort( 0xffec ), /* Offset= -
20 (846) */
/* 868 */ NdrFcShort( 0x0 ), /* Offset= 0 (868) */
/* 870 */ 0x6, /* FC_SHORT */
0x6, /*
FC_SHORT */
/* 872 */ 0x8, /* FC_LONG */
0x8, /*
FC_LONG */
/* 874 */ 0x40, /* FC_STRUCTPAD4 */
0x4c, /*
FC_EMBEDDED_COMPLEX */
/* 876 */ 0x0, /* 0 */
NdrFcShort( 0xfe0f ),
/* Offset= -497 (380) */
0x5b, /*
FC_END */
/* 880 */
0x12, 0x0, /*
FC_UP */

```



```

/* 882 */ NdrFcShort( 0xff04 ), /* Offset= -
252 (630) */
/* 884 */
FC_UP [simple_pointer] */
/* 886 */ 0x1, /* FC_BYTE */
/* 888 */ 0x5c,
FC_PAD */
/* 890 */ 0x12, 0x8, /*
/* 892 */ 0x5c, /* FC_SHORT */
FC_UP [simple_pointer] */
/* 894 */ 0x8, /* FC_LONG */
/* 896 */ 0x5c,
FC_PAD */
/* 898 */ 0x12, 0x8, /*
/* 900 */ 0xb, /* FC_HYPER */
/* 902 */ 0x5c,
FC_UP [simple_pointer] */
/* 904 */ 0xa, /* FC_FLOAT */
/* 906 */ 0x5c,
FC_UP [simple_pointer] */
/* 908 */ 0xc, /* FC_DOUBLE */
/* 910 */ 0x12, 0x0, /*
/* 912 */ 0x12, 0x10, /*
FC_UP [pointer_deref] */
/* 914 */ NdrFcShort( 0xfda4 ), /* Offset= -
604 (310) */
/* 916 */ 0x12, 0x10, /*
FC_UP [pointer_deref] */
/* 918 */ NdrFcShort( 0xfdba ), /* Offset= -
582 (336) */
/* 920 */ 0x12, 0x10, /*
FC_UP [pointer_deref] */
/* 922 */ NdrFcShort( 0xfdc8 ), /* Offset= -
568 (354) */
/* 924 */ 0x12, 0x10, /*
FC_UP [pointer_deref] */
/* 926 */ NdrFcShort( 0xfdd6 ), /* Offset= -
554 (372) */

```

```

/* 928 */
FC_UP [pointer_deref] */
/* 930 */ NdrFcShort( 0x2 ), /* Offset= 2 (932) */
/* 932 */ 0x12, 0x0, /*
FC_UP */
/* 934 */ NdrFcShort( 0x14 ), /* Offset= 20 (954) */
/* 936 */ 0x15, /*
FC_STRUCT */
/* 938 */ 0x7, /*
7 */
/* 938 */ NdrFcShort( 0x10 ), /* 16 */
/* 940 */ 0x6, /* FC_SHORT */
/* 942 */ 0x1, /* FC_BYTE */
/* 944 */ 0xb, /* FC_LONG */
/* 946 */ 0x5b, /* FC_HYPER */
FC_END */
/* 948 */ NdrFcShort( 0xffff4 ), /* Offset= -
12 (936) */
/* 950 */ 0x12, 0x8, /*
FC_UP [simple_pointer] */
/* 952 */ 0x2, /* FC_CHAR */
/* 954 */ 0x5c, /*
FC_PAD */
/* 956 */ 0x1a, /*
FC_BOGUS_STRUCT */
/* 958 */ 0x7, /*
7 */
/* 956 */ NdrFcShort( 0x20 ), /* 32 */
/* 958 */ NdrFcShort( 0x0 ), /* 0 */
/* 960 */ NdrFcShort( 0x0 ), /* Offset= 0 (960) */
/* 962 */ 0x8, /* FC_LONG */
/* 964 */ 0x6, /* FC_SHORT */
/* 966 */ 0x6, /* FC_SHORT */
/* 968 */ 0x4c, /* FC_EMBEDDED_COMPLEX */
/* 970 */ 0x0, /*
0 */
/* 970 */ NdrFcShort( 0xfc3c ), /* Offset= -
964 (6) */
/* 972 */ 0x5c, /* FC_PAD */
/* 974 */ 0x5b, /*
FC_END */
/* 976 */ 0xb4, /* FC_USER_MARSHAL */
/* 978 */ 0x83, /*
131 */

```

```

/* 976 */ NdrFcShort( 0x0 ), /* 0 */
/* 978 */ NdrFcShort( 0x18 ), /* 24 */
/* 980 */ NdrFcShort( 0x0 ), /* 0 */
/* 982 */ NdrFcShort( 0xfc2c ), /* Offset= -
980 (2) */
/* 984 */ 0x11, 0x4, /*
FC_RP [allocated_on_stack] */
/* 986 */ NdrFcShort( 0x6 ), /* Offset= 6 (992) */
/* 988 */ 0x13, 0x0, /*
FC_OP */
/* 990 */ NdrFcShort( 0xffdc ), /* Offset= -
36 (954) */
/* 992 */ 0xb4, /* FC_USER_MARSHAL */
/* 994 */ 0x83, /*
131 */
/* 994 */ NdrFcShort( 0x0 ), /* 0 */
/* 996 */ NdrFcShort( 0x18 ), /* 24 */
/* 998 */ NdrFcShort( 0x0 ), /* 0 */
/* 1000 */ NdrFcShort( 0xffff4 ), /* Offset= -12 (988) */
0x0
}
};
static const USER_MARSHAL_ROUTINE_QUADRUPLE
UserMarshalRoutines[ WIRE_MARSHAL_TABLE_SIZE ] =
{
{
VARIANT_UserSize
,VARIANT_UserMarshal
,VARIANT_UserUnmarshal
,VARIANT_UserFree
}
};
/* Standard interface: __MIDL_itf_tpc_com_ps_0000,
ver. 0.0,
GUID={0x00000000,0x0000,0x0000,{0x00,0x00,0x00,0x00,0
x00,0x00,0x00,0x00}} */
/* Object interface: IUnknown, ver. 0.0,
GUID={0x00000000,0x0000,0x0000,{0xc0,0x00,0x00,0x00,0
x00,0x00,0x00,0x46}} */
/* Object interface: ITPCC, ver. 0.0,
GUID={0xFEEE6AA2,0x84B1,0x11d2,{0xBA,0x47,0x00,0xC0,0
x4F,0xBF,0xE0,0x8B}} */
#pragma code_seg(".orpc")
static const unsigned short
ITPCC_FormatStringOffsetTable[] =

```

```

{
0,
44,
88,
132,
176,
220
};

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

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

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

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

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,
    0x6000169, /* MIDL Version 6.0.361 */
    0,
    UserMarshalRoutines,
    0, /* notify & notify_flag routine table */
    0x1, /* MIDL flag */
    0, /* cs routines */
    0, /* proxy/server info */
    0 /* Reserved5 */
};

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 */
};
#ifdef _MSC_VER >= 1200
#pragma warning(pop)
#endif

#ifdef /* defined(_M_IA64) || defined(_M_AMD64)*/

tpcc_dblib.cpp
/* FILE: TPCC_DBLIB.CPP
Microsoft
TPC-C Kit Ver. 4.42.000
Copyright
Microsoft, 2002
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:
4.42.000 - changed w_id fields
from short to long to support >32K warehouses
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 <sqlldb.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[] = "4.20.000";

const iMaxRetries = 10;
// how many retries on deadlock
static long iConnectionCount = 0; // number
of current dblib connections

const int iErr0leDbProvider = 7312;
const char sErrTimeoutExpired[] = "Timeout expired";

BOOL WINAPIENTRY 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
*
* msgstate
message state
*
* severity
message severity
*
* msgtext
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 pDest 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);

            DBSETUSER(login, szUser);
            DBSETPWD(login, szPassword);
            DBSETLHOST(login, szHost);
            DBSETLPACKET(login, (unsigned
short)DEFCLPACKSIZE);
            DBSETVERSION(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 (dbsqlxexec(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,
dbdatalen(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 RETCODE rc;
    iRowsRead = 0;

    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 RETCODE rc;
    iResultsRead = 0;

    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, SQLINT4, -1, -1, (BYTE *)
&m_txn.StockLevel.w_id); // @w_id int
            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); // @threshold
            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
            == iErr0leDbProvider &&
            >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;
    DBDATAREC daterec;

    int iTryCount =
    0;

    const BYTE *pData;

    ResetError();

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

```

```

            dbrpcparam(m_dbproc,
            NULL, 0, SQLINT4, -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, SQLINT4, -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_ge
                neric, 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
== iErr0leDbProvider &&
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;
    DBDATERECD          daterec;

    int                  iTryCount =
0;
    const BYTE           *pData;

    ResetError();

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

            dbrpcparam(m_dbproc,
NULL, 0, SQLINT4, -1, -1, (BYTE *)
&m_txn.Payment.w_id);

            dbrpcparam(m_dbproc,
NULL, 0, SQLINT4, -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
||
== iErrOleDbProvider &&
>m_msgtext, sErrTimeoutExpired) != NULL)) &&
        {
            if ((e->m_msgno
== 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;
    DBDATETIME daterec;

    int iTryCount =
0;

    RETCODE rc;
    const BYTE *pData;

    ResetError();

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

```

```

            dbrpcparam(m_dbproc,
NULL, 0, SQLINT4, -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.minut
e = daterec.minute;
                                    m_txn.OrderStatus.OL[i].ol_delivery_d.secon
d = 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,
(LPBYTE)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

||
== iErrOleDbProvider &&
(e->m_msgno
>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, SQLINT4, -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

||
== iErrOleDbProvider &&
(e->m_msgno
>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_odbc.cpp

```

/* FILE: TPC_C_ODBC.CPP
 * Microsoft
 * TPC-C Kit Ver. 4.42.000
 * Copyright
 * Microsoft, 2002
 * 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:
 * 4.42.000 - changed w_id fields
 * from short to long to support >32K warehouses
 * 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>

// #define COMPILE_FOR_SNAC // define that to
// compile for SQL Native Client; comment out to use
// MDAC

#ifdef COMPILE_FOR_SNAC
#include <odbcss.h>
#else
// Compile for SNAC
#include <sqlncli.h>
#endif

#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[] = "4.20.000";

const iMaxRetries = 3; // how many
retries on deadlock
//const iMaxRetries = 0; // for
// debugging

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." },
        { ERR_INVALID_NEW_ORDER_PARAM,
        "New Order parameter invalid." },
        { 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
        LPCWSTR szSPPrefix,          // prefix to
append to the stored procedure names
        BOOL bCallNoDuplicatesNewOrder ) // whether
to check for non-duplicate items in NewOrder and call
a new SP
{
    return new CTPCC_ODBC( szServer, szUser,
szPassword, szHost, szDatabase, szSPPrefix,
bCallNoDuplicatesNewOrder );
}

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
    LPCWSTR szSPPrefix,
    // prefix to append to the stored procedure
names
    BOOL bCallNoDuplicatesNewOrder //
whether to check for non-duplicate items in NewOrder
and call a new SP
)
:
m_bCallNoDuplicatesNewOrder(bCallNoDuplicatesNewOrder)
{
    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;

    wcsncpy(m_szSPPrefix, szSPPrefix,
sizeof(m_szSPPrefix)/sizeof(m_szSPPrefix[0]));

    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;

#ifdef COMPILE_FOR_SNAC
            sprintf( szConnectStr,
"DIVER=SQL
Server;SERVER=%s;UID=%s;PWD=%s;DATABASE=%s",
szServer, szUser,
szPassword, szDatabase );
#else
            // Compile for SNAC
            sprintf( szConnectStr,
"DIVER=SQL Native
Client;SERVER=%s;UID=%s;PWD=%s;DATABASE=%s",
szServer, szUser,
szPassword, szDatabase );
#endif
            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 )
    void CTPCC_ODBC::ThrowError( RETCODE eAction )
    {
        RETCODE          rc;
        SDWORD
        char
        char
        szMsg[SQL_MAX_MESSAGE_LENGTH];
        lnativeError;
        szState[6];

```

```

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_eAction =
(CODBCERR::ACTION)eAction;
pODBCerr->m_bDeadLock = FALSE;

szTmp[0] = 0;
szMsg[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;
    }
    if (rc != SQL_SUCCESS)
    {
        break;
    }
    // check for deadlock
    if (lNativeError == 1205 ||
(lNativeError == iErrorDbProvider &&
    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_SLONG, SQL_INTEGER, 0, 0,
&m_txn.StockLevel.w_id, 0, NULL) != SQL_SUCCESS
|| SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_TINYINT, 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);

    //Compose Stock Level statement
    _snprintf(m_szStockLevelCommand,
sizeof(m_szStockLevelCommand)/sizeof(m_szStockLevelCo
mmand[0]),
        L"{call %stpcck_stocklevel
(?,?,?)}", m_szSPPrefix);
}

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

    m_hstmt = m_hstmtStockLevel;

    while (TRUE)
    {
        try
        {

```

```

            rc =
SQLExecDirectW(m_hstmt, m_szStockLevelCommand,
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)
                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_STMT, m_hdbc,
&m_hstmtNewOrderNoDuplicates) != SQL_SUCCESS
||
SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descNewOrderCols1) != SQL_SUCCESS
||
SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descNewOrderCols2) != SQL_SUCCESS
||
SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descNewOrderNoDuplicatesCols1) != SQL_SUCCESS
||
SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descNewOrderNoDuplicatesCols2) != 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_SLONG, SQL_INTEGER, 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_SLONG, SQL_INTEGER, 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);

        //Compose the New Order statement
        _snprintf(m_szNewOrderCommand,
sizeof(m_szNewOrderCommand)/sizeof(m_szNewOrderComman
d[0]),
                // 0      1      2
                //
012345678901234567890123456789
                L"call
%stpcw_neworder(?,?,?,?,,?,?,,?,?,,?,?,,?,?,,?,?,,?,?,,?,?,,?),", m_szSPPrefix);

        L"?,?,?,?,,?,?,,?,?,,?,?,,?,?,,?,?,,?,?,,?,?,,?,?,,?,?,,?,?,,?),", m_szSPPrefix);

```

```

        m_iBeginNewOrderVariablePart = 29 +
wcslen(m_szSPPrefix); // fixed part + prefix
part

        ////////////////////////////////////////////////////
        //
        // Now initialize New Order that
works on no duplicate (w_id,i_id) pairs
        // and returns one result set for
lineitem details.
        //
        //
        m_hstmt = m_hstmtNewOrderNoDuplicates;

        if ( SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_APP_ROW_DESC,
m_descNewOrderNoDuplicatesCols1, SQL_IS_POINTER ) !=
SQL_SUCCESS )

        ThrowError(CODBCERR::eSetStmtAttr);

        i = 0;
        if ( SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 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_SLONG, SQL_INTEGER, 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);
        }

```



```

        m_txn.NewOrder.o_all_local = 0; // at
least one remote warehouse
    }
    break;
}
while (TRUE)
{
    try
    {
        m_BindOffset = 0;
        rc =
SQLExecDirectW(m_hstmt, 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))
                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);
}

//
// No lineitem duplicates optimized version.
//
void CTPCC_ODBC::NewOrderNoDuplicates()
{
    int
    i;
    RETCODE                                rc;
    int
    iTryCount = 0;

    0      1      2      3
    //
    //
    0123456789012345678901234567890123
    wchar_t
    szSqlTemplate[IMAX_SP_NAME_LEN];

    tpcc_neworder_new(?,?,?,?,"
    // L"{call
    L"?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?"
    //

```

```

        //
        L"?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?"
        //
        L"?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?";

        m_hstmt = m_hstmtNewOrderNoDuplicates;

        // associate the parameter and column
bindings for this transaction
        if ( SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_APP_ROW_DESC,
m_descNewOrderNoDuplicatesCols1, SQL_IS_POINTER ) !=
SQL_SUCCESS )
            ThrowError(CODBCERR::eSetStmtAttr);

        // clip statement buffer based on number of
parameters
        // fixed part is 33 chars and variable part
is 6 chars per line item
        wcsncpy(szSqlTemplate,
m_szNewOrderNoDuplicatesCommand);
        i =
m_iBeginNewOrderNoDuplicatesVariablePart +
m_txn.NewOrder.o_ol_cnt*6;
        wcsncpy( &szSqlTemplate[i], L")}" );

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

        while (TRUE)
        {
            try
            {
                // configure block
cursor
                if (
SQLSetStmtAttrW(m_hstmt, SQL_ATTR_ROW_ARRAY_SIZE,
(SQLPOINTER)1, 0) != SQL_SUCCESS )
                    ThrowError(CODBCERR::eSetStmtAttr);

                rc =
SQLExecDirectW(m_hstmt, szSqlTemplate, SQL_NTS);
                if (rc != SQL_SUCCESS
&& rc != SQL_SUCCESS_WITH_INFO)

```



```

        ThrowError(CODBCERR::eExecDirect);

        // configure block
        cursor
            if
            (SQLSetStmtAttrW(m_hstmt, SQL_ATTR_ROW_ARRAY_SIZE,
            (SQLPOINTER)MAX_OI_NEW_ORDER_ITEMS, 0) !=
            SQL_SUCCESS)

            ThrowError(CODBCERR::eSetStmtAttr);

            // Get order line
            results
                if ( SQLFetch(m_hstmt)
                == SQL_ERROR)

                ThrowError(CODBCERR::eFetch);

            m_txn.NewOrder.total_amount = 0;
            for (i = 0;
            i<m_txn.NewOrder.o_oi_cnt; i++)
            {

                m_txn.NewOrder.total_amount +=
                m_txn.NewOrder.OI[i].oi_amount;
            }

            // associate the column
            bindings for the second result set
            if ( SQLSetStmtAttrW(
            m_hstmt, SQL_ATTR_APP_ROW_DESC,
            m_descNewOrderNoDuplicatesCols2, SQL_IS_POINTER ) !=
            SQL_SUCCESS )

            ThrowError(CODBCERR::eSetStmtAttr);

            // move to the next
            resultset
                if (
            SQLMoreResults(m_hstmt) == SQL_ERROR )

            ThrowError(CODBCERR::eMoreResults);

            if ( (rc =
            SQLFetch(m_hstmt)) == SQL_ERROR)

            ThrowError(CODBCERR::eFetch);

            SQLFreeStmt(m_hstmt,
            SQL_CLOSE);

            // Check Fetch return
            code for no rows returned.
            // It means customer id
            or warehouse id were invalid.
            //
            if (rc == SQL_NO_DATA)

```

```

            throw new
            CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_INVALID_NEW_ORDER
            PARAM);

            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_SLONG, SQL_INTEGER, 0, 0,
    &m_txn.Payment.w_id, 0, NULL) != SQL_SUCCESS
    || SQLBindParameter(m_hstmt, ++i,
    SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 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);

    //Compose Payment statement
    _snwprintf(m_szPaymentCommand,
sizeof(m_szPaymentCommand)/sizeof(m_szPaymentCommand[
0])),
        L"{call %stppc_payment
(?,?,?,?,,?)}", m_szSPPrefix);

```

```

    }

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, m_szPaymentCommand, 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;
            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_SLONG, SQL_INTEGER, 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_SLONG, &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);

    //Compose Order Status statement
    _snprintf(m_szOrderStatusCommand,
sizeof(m_szOrderStatusCommand)/sizeof(m_szOrderStatus
Command[0]),
        L"call %stpc_orderstatus
(?,?,?,?)", m_szSPPrefix);
}

void CTPCC_ODBC::OrderStatus()
{
    int        iTryCount = 0;

    RETCODE
    rc;

```

```

    m_hstmt = m_hstmtOrderStatus;

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

    while (TRUE)
    {
        try
        {
            if ( SQLSetStmtAttrW(
m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descOrderStatusCols1, SQL_IS_POINTER ) !=
SQL_SUCCESS )

                ThrowError(CODBCERR::eSetStmtAttr);

            // configure block
            cursor
            if (
SQLSetStmtAttrW(m_hstmt, SQL_ATTR_ROW_ARRAY_SIZE,
(SQLPOINTER)1, 0) != SQL_SUCCESS )

                ThrowError(CODBCERR::eSetStmtAttr);

            rc =
SQLExecDirectW(m_hstmt, m_szOrderStatusCommand,
SQL_NTS);
            if (rc != SQL_SUCCESS
&& rc != SQL_SUCCESS_WITH_INFO)

                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) || ((rc == SQL_SUCCESS_WITH_INFO) &&
(m_RowsFetched != 0))) )
                if ( (rc !=
SQL_SUCCESS) )

                    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 )
                {
                    if ( (rc =
SQLMoreResults(m_hstmt)) != SQL_SUCCESS )
                    {
                        ThrowError(CODBCERR::eMoreResults);
                    }

                    //
                    if ( (rc =
SQLFetch(m_hstmt)) == SQL_ERROR)

                        if ( (rc =
SQLFetch(m_hstmt)) != SQL_SUCCESS)

                            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_SLONG, SQL_INTEGER, 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);
        }

        //Compose Delivery statement
        _snprintf(m_szDeliveryCommand,
sizeof(m_szDeliveryCommand)/sizeof(m_szDeliveryComman
d[0]),
            L"call %stpc_delivery (?,?)",
m_szSPPrefix);
    }

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

    m_hstmt = m_hstmtDelivery;

    while (TRUE)
    {
        try
        {
            rc =
SQLExecDirectW(m_hstmt, m_szDeliveryCommand,
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
 *
 *      TPC-C Kit Ver. 4.20.000
 *
 *      Copyright
 *      Microsoft, 1999
 *
 *      All Rights Reserved
 *
 *      Version
 *      4.10.000 audited by Richard Gimarc, Performance
 *      Metrics, 3/17/99
 *
 *      PURPOSE:  Header file for TPC-C txn class
 *      implementation.
 *
 *      Change history:
 *
 *      4.20.000 - updated rev number to
 *      match kit
 *      */
#pragma once

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

#define iMAX_SP_NAME_LEN 256 //maximum length of a
stored procedure name with parameters

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;};
    char*       ErrorTypeStr() { return
"ODBC"; }
    int         ErrorNum()
    {return m_NativeError;};
    char*       ErrorText() {return
m_odbcerrstr;};
    int         ErrorAction()
    { return (int)m_eAction; }
    };

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."

            ERR_INVALID_NEW_ORDER_PARAM // "New Order
parameter invalid."
        };

        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;};
            char*        ErrorTypeStr() { return
"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_hstmtNewOrderNoDuplicates; // NewOrder
with one result set for lineitem details

```

```

        SQLHSTMT         m_hstmtPayment;
        SQLHSTMT         m_hstmtDelivery;
        SQLHSTMT         m_hstmtOrderStatus;
        SQLHSTMT         m_hstmtStockLevel;

        SQLHDESC         m_descNewOrderCols1;
        SQLHDESC         m_descNewOrderCols2;
        SQLHDESC         m_descNewOrderNoDuplicatesCols1; //
NewOrder with one result set for lineitem details
        SQLHDESC         m_descNewOrderNoDuplicatesCols2; //
NewOrder with one result set for lineitem details
        SQLHDESC         m_descOrderStatusCols1;
        SQLHDESC         m_descOrderStatusCols2;

        wchar_t          m_szSPPrefix[32]; // stored procedures
prefix

        wchar_t          m_szNewOrderCommand[IMAX_SP_NAME_LEN];
        wchar_t          m_szNewOrderNoDuplicatesCommand[IMAX_SP_NAME
E_LEN];

        int              m_iBeginNewOrderVariablePart; // beginning
of the variable part in NewOrder statement
        int              m_iBeginNewOrderNoDuplicatesVariablePart;
// beginning of the variable part in
NewOrder statement
        wchar_t          m_szPaymentCommand[IMAX_SP_NAME_LEN];
        wchar_t          m_szDeliveryCommand[IMAX_SP_NAME_LEN];
        wchar_t          m_szOrderStatusCommand[IMAX_SP_NAME_LEN];
        wchar_t          m_szStockLevelCommand[IMAX_SP_NAME_LEN];

        // new-order specific fields
        SQLINTEGER        m_BindOffset;
        SQLINTEGER        m_RowsFetched;
        int               m_no_commit_flag;

        // tpcc_neworder_new flag
        BOOL              m_bCallNoDuplicatesNewOrder;

        //void ThrowError(
CODBCERR::ACTION eAction );
        void ThrowError( RETCODE 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;

        bool DuplicatesInNewOrder();
        void NewOrderDuplicates();
        void NewOrderNoDuplicates();

    public:
        CTPCC_ODBC( LPCSTR
szServer, LPCSTR szUser, LPCSTR szPassword,
LPCSTR szHost, LPCSTR szDatabase,
LPCWSTR szSPPrefix, BOOL
bCallNoDuplicatesNewOrder);
        ~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,
LPCWSTR szSPPrefix, BOOL
bCallNoDuplicatesNewOrder );

```

```
typedef CTPCC_ODBC* (TYPE_CTPCC_ODBC)(LPCSTR, LPCSTR,
LPCSTR, LPCSTR, LPCSTR, LPCWSTR, BOOL);
```

tpcc_oledb.cpp

```
/* FILE: TPCC_OLEDB.CPP
 * Microsoft
 * TPC-C Kit Ver. 4.42.000
 * Copyright
 * Microsoft, 2004
 * Written by
 * Sergey Vasilevskiy
 * All Rights Reserved
 *
 * PURPOSE: Implements OLEDB calls for TPC-C
 * txns.
 * Contact: Charles Levine
 * (clevine@microsoft.com)
 */

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

#define DBINITCONSTANTS
#include <oledb.h>
// #include <sqloledb.h> // Use MDAC
#include <sqlncli.h> // Use SNAC
#include <oledberr.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_oledb.h"

#ifdef SQL_MAX_MESSAGE_LENGTH
#define SQL_MAX_MESSAGE_LENGTH 512
#endif

// version string; must match return value from
tpcc_version stored proc
const char sVersion[] = "4.20.000";

const iMaxRetries = 10; // how many
retries on deadlock

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

```
// this needs to be the same as the max length of
machine/database/user/password in Benchcraft
(engstut.h)
const static int iMaxNameLen = 32;

BOOL APIENTRY DllMain(HMODULE hModule, DWORD
ul_reason_for_call, LPVOID lpReserved)
{
    switch( ul_reason_for_call )
    {
        case DLL_PROCESS_ATTACH:
            DisableThreadLibraryCalls(hModule);
            break;
        case DLL_PROCESS_DETACH:
            break;
        default:
            /* nothing */;
    }
    return TRUE;
}

/* FUNCTION: CTPCC_OLEDB_ERR::ErrorText
 * */
char* CTPCC_OLEDB_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_OLEDB* CTPCC_OLEDB_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
LPCWSTR szSPPrefix ) //
prefix to append to the stored procedure names
{
    return new CTPCC_OLEDB( szServer, szUser,
szPassword, szHost, szDatabase, szSPPrefix );
}

CTPCC_OLEDB::CTPCC_OLEDB (
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
LPCWSTR szSPPrefix
// prefix to append to the stored procedure
names
)
: m_pIMalloc(NULL)
{
    int
iRc;
int
i;
HRESULT hr;

IDBInitialize*
pIDBInitialize = NULL; //
data source interface
IDBProperties*
pIDBProperties = NULL;
ICommandText*
pICommandText;
// SQL command without parameters
wchar_t
szwServer[iMaxNameLen]; //
Unicode string used to convert to BSTR
```

```

        wchar_t
        szwDatabase[iMaxNameLen];    // Unicode
string used to convert to BSTR
        wchar_t
        szwUser[iMaxNameLen];        //
Unicode string used to convert to BSTR
        wchar_t
        szwPassword[iMaxNameLen];    // Unicode
string used to convert to BSTR

        // Copy stored procedures prefix
        wcsncpy(m_szsppPrefix, szsppPrefix,
sizeof(m_szsppPrefix)/sizeof(m_szsppPrefix[0]));

        // Convert single byte ANSI strings to
Unicode (for later conversion to BSTR)
        iRc = MultiByteToWideChar(CP_THREAD_ACP,
MB_PRECOMPOSED, szServer, (int)strlen(szServer)+1,
szwServer, iMaxNameLen);
        iRc = MultiByteToWideChar(CP_THREAD_ACP,
MB_PRECOMPOSED, szDatabase,
(int)strlen(szDatabase)+1, szwDatabase, iMaxNameLen);
        iRc = MultiByteToWideChar(CP_THREAD_ACP,
MB_PRECOMPOSED, szUser, (int)strlen(szUser)+1,
szwUser, iMaxNameLen);
        iRc = MultiByteToWideChar(CP_THREAD_ACP,
MB_PRECOMPOSED, szPassword,
(int)strlen(szPassword)+1, szwPassword, iMaxNameLen);

        // Initialize COM library to be able to use
OLE-DB interfaces
        CoInitialize(NULL);

        // Initialization - create SQLOLEDB
component
        //hr = CoCreateInstance(CLSID_SQLOLEDB, //
GUID of SQLOLEDB component
        // Compile for SNAC
        hr = CoCreateInstance(CLSID_SQLNCLI, //
GUID of SQLNCLI component
        NULL,
        // not defining an aggregate
component, so NULL
        CLSCTX_INPROC_SERVER, //
run the component in our process
        IID_IDBInitialize,
        (void **) &pIDBInitialize);

        /*
        Initialize the property values needed
        to establish the connection.
        */
        for(i = 0; i < 4; i++)
            VariantInit(&m_InitProperties[i].vValue);
        //Server name.
        m_InitProperties[0].dwPropertyID =
DBPROP_INIT_DATASOURCE;
        m_InitProperties[0].vValue.vt = VT_BSTR;
        m_InitProperties[0].vValue.bstrVal=
SysAllocString(szwServer);
        m_InitProperties[0].dwOptions =
DBPROP_OPTIONS_REQUIRED;
        m_InitProperties[0].colid = DB_NULLID;
        //Database.

```

```

        m_InitProperties[1].dwPropertyID =
DBPROP_INIT_CATALOG;
        m_InitProperties[1].vValue.vt = VT_BSTR;
        m_InitProperties[1].vValue.bstrVal=
SysAllocString(szwDatabase);
        m_InitProperties[1].dwOptions =
DBPROP_OPTIONS_REQUIRED;
        m_InitProperties[1].colid = DB_NULLID;
        //Username (login).
        m_InitProperties[2].dwPropertyID =
DBPROP_AUTH_USERID;
        m_InitProperties[2].vValue.vt = VT_BSTR;
        m_InitProperties[2].vValue.bstrVal=
SysAllocString(szwUser);
        m_InitProperties[2].dwOptions =
DBPROP_OPTIONS_REQUIRED;
        m_InitProperties[2].colid = DB_NULLID;
        //Password.
        m_InitProperties[3].dwPropertyID =
DBPROP_AUTH_PASSWORD;
        m_InitProperties[3].vValue.vt = VT_BSTR;
        m_InitProperties[3].vValue.bstrVal=
SysAllocString(szwPassword);
        m_InitProperties[3].dwOptions =
DBPROP_OPTIONS_REQUIRED;
        m_InitProperties[3].colid = DB_NULLID;
        /*
        Construct the DBPROPSET
        structure(m_rgInitPropSet). The
        DBPROPSET structure is used to pass an array of
        DBPROP
        structures (m_InitProperties) to the
        SetProperties method.
        */
        m_rgInitPropSet.guidPropertySet =
DBPROPSET_DBINIT;
        m_rgInitPropSet.cProperties = 4;
        m_rgInitPropSet.rgProperties =
m_InitProperties;
        //Set initialization properties.
        if (FAILED(hr = pIDBInitialize-
>QueryInterface(IID_IDBProperties,
        (void **) &pIDBProperties)))
        {
            ThrowError(pIDBInitialize,
COLEDBERR::eQueryInterface, "CTPCC_OLEDB()");
        }

        hr = pIDBProperties->SetProperties(1,
&m_rgInitPropSet);

        pIDBProperties->Release();
        //Now establish the connection to the data
source.
        hr = pIDBInitialize->Initialize();

        // Free BSTR property strings
        for(i = 0; i < 4; i++)
        {

```

```

        SysFreeString(m_InitProperties[i].vValue.bstrVal);
        }

        hr = pIDBInitialize-
>QueryInterface(IID_IDBCreateSession, (void
**) &m_pIDBCreateSession);

        // Releasing this has no effect on the SQL
Server connection
        // of the data source object because of the
reference maintained by
        // m_pIDBCreateSession.
        pIDBInitialize->Release();
        pIDBInitialize = NULL;

        hr = m_pIDBCreateSession-
>CreateSession(NULL, IID_IDBCreateCommand, (IUnknown
**) &m_pIDBCreateCommand);
        if (FAILED(hr))
        {
            ThrowError(m_pIDBCreateSession,
COLEDBERR::eCreateSession, "CTPCC_OLEDB()");
        }

        hr = m_pIDBCreateCommand-
>CreateCommand(NULL, IID ICommandText, (IUnknown
**) &pICommandText);
        if (FAILED(hr))
        {
            ThrowError(m_pIDBCreateCommand,
COLEDBERR::eCreateCommand, "CTPCC_OLEDB()");
        }

        hr = pICommandText-
>SetCommandText(DBGUID_SQL, L"set nocount on set
XACT_ABORT ON");
        if (FAILED(hr))
        {
            ThrowError(pICommandText,
COLEDBERR::eSetCommandText, "CTPCC_OLEDB()");
        }

        hr = pICommandText->Execute(NULL, IID_NULL,
NULL, NULL, NULL);
        if (FAILED(hr))
        {
            ThrowError(pICommandText,
COLEDBERR::eExecute, "CTPCC_OLEDB()");
        }

        pICommandText->Release();

        // verify that version of stored procs on
server is correct
        CheckSPVersion();

        // Get IMalloc interface
        hr = CoGetMalloc(1, (LPMALLO
**) &m_pIMalloc);

```

```

        // Bind parameters for each of the
transactions
        InitNewOrderParams();
        InitPaymentParams();
        InitOrderStatusParams();
        InitDeliveryParams();
        InitStockLevelParams();
    }

CTPCC_OLEDB::CTPCC_OLEDB( void )
{
    if (m_pIMalloc != NULL)
    {
        m_pIMalloc->Release();
    }
    m_pIPaymentCommand->Release();
    m_pIDBCreateCommand->Release();
    m_pIDBCreateSession->Release();

    CoUninitialize(); // uninitialize COM
}

library
{
    /*
    *      Check stored procedures version on the
server.
    */
    void CTPCC_OLEDB::CheckSPVersion()
    {
        HRESULT                hr;
        char
        db_sp_version[10];
        ICommandText*          pICommandText;
        IAccessor*              pIAccessor;
        IRowset*                pRowset;
        const ULONG             nOutputParams
= 1;
        // output 1st result set columns
        HACCESSOR
        hTpccVersionOutputAccessor;
        // Structure to bind in accessor
        DBBINDING
        acOutputDBBinding[nOutputParams];
        DBBINDSTATUS
        acOutputDBBindStatus[nOutputParams];
        LONG                    cRows = 1;
        // number of rows returned in the rowset
        ULONG
        cRowsObtained;
        HROW                    rghRow;
        //returned row handles
        HROW*                   prghRow =
&rghRow;

        hr = m_pIDBCreateCommand-
>CreateCommand(NULL, IID_ICommandText, (IUnknown
**) &pICommandText);
        if (FAILED(hr))
        {
            ThrowError(m_pIDBCreateCommand,
COLEDBERR::eCreateCommand, "CheckSPVersion()");
        }
    }
}

```

```

        hr = pICommandText-
>SetCommandText(DBGUID_SQL, L"{call tpcc_version}");
        if (FAILED(hr))
        {
            ThrowError(pICommandText,
COLEDBERR::eSetCommandText, "CheckSPVersion()");
        }

        hr = pICommandText-
>QueryInterface(IID_IAccessor, (void **) &pIAccessor);
        if (FAILED(hr))
        {
            ThrowError(pICommandText,
COLEDBERR::eQueryInterface, "CheckSPVersion()");
        }

        // Now fill the binding information for
result set 1 output columns
        InitBindings(&acOutputDBBinding[0],
nOutputParams, eOutputColumn);

        // Binding for a rowset
        SetBinding(&acOutputDBBinding[0], 0,
sizeof(db_sp_version), DBTYPE_STR);

        hr = pIAccessor->CreateAccessor(
DBACCESSOR_ROWDATA,
nOutputParams,
acOutputDBBinding,
sizeof(db_sp_version),

&hTpccVersionOutputAccessor,
acOutputDBBindStatus);
        if (FAILED(hr))
        {
            ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor, "CheckSPVersion()");
        }

        hr = pICommandText->Execute(NULL,
IID_IRowset, NULL, NULL, (IUnknown **) &pRowset);
        if (FAILED(hr))
        {
            ThrowError(pICommandText,
COLEDBERR::eExecute, "CheckSPVersion()");
        }

        // Fetch the result row handle(s)
        hr = pRowset->GetNextRows(DB_NULL_HCHAPTER,
0, cRows, &cRowsObtained, &prghRow);
        if (FAILED(hr))
        {
            ThrowError(pICommandText,
COLEDBERR::eGetNextRows, "CheckSPVersion()");
        }

        // Fetch the actual row data by handle
        hr = pRowset->GetData(rghRow,
hTpccVersionOutputAccessor, &db_sp_version);
        if (FAILED(hr))
        {
            ThrowError(pICommandText,
COLEDBERR::eGetData, "CheckSPVersion()");
        }
    }
}

```

```

    }

    // Release row(s)
    hr = pRowset->Release();

    pICommandText->Release();

    // Check the retrieved version
    if (strcmp(db_sp_version, sVersion))
        throw new
CTPCC_OLEDB_ERR(
CTPCC_OLEDB_ERR::ERR_WRONG_SP_VERSION );
}

void CTPCC_OLEDB::ThrowError( IUnknown*
pObjectWithError, COLEDBERR::ACTION eAction, LPCTSTR
szLocation)
{
    HRESULT
    hr;
    //char
    szState[6];
    char
    szMsg[SQL_MAX_MESSAGE_LENGTH];
    char
    szTmp[6*SQL_MAX_MESSAGE_LENGTH];
    COLEDBERR
    *pOLEDBErr;
    //
    not allocated until needed (maybe never)
    int
    iLen;
    // Interfaces
    IErrorInfo*                pIErrorInfoAll
= NULL;
    IErrorInfo*                pIErrorInfoRecord
= NULL;
    IErrorRecords*             pIErrorRecords
= NULL;
    ISupportErrorInfo*          pISupportErrorInfo
= NULL;
    ISQLServerErrorInfo*
pISQLServerErrorInfo = NULL;
    ISQLErrorInfo*
pISQLErrorInfo = NULL;

    // Information used when cannot get custom
error object
    ERRORINFO
    BasicErrorInfo;
    BSTR
    bstrDescription;
    // Number of error records.
    ULONG                      nRecs;
    ULONG                      nRec;

    // SQL Server error information from
ISQLServerErrorInfo.
    SSERRORINFO*                pSSErrorInfo =
NULL;
    OLECHAR*                    pSSErrorStrings =
NULL;

    assert(pObjectWithError != NULL);
}

```



```

        pOLEDBErr = new COLEDBERR(szLocation);

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

        szTmp[0] = 0;

        // Only ask for error information if the
        interface supports it.
        // Note: SQLOLEDB provider supports error
        interface, so this check is
        // for good style only.
        hr = pObjectWithError->
        >QueryInterface(IID_ISupportErrorInfo, (void**)
        &pISupportErrorInfo);
        if (FAILED(hr))
        {
            _snprintf(szMsg, sizeof(szMsg),
            "SupportErrorInfo interface not supported (hr=0x%X)",
            hr);
            pOLEDBErr->m_OLEDBErrStr = new
            char[strlen(szMsg)+1];
            strcpy(pOLEDBErr->m_OLEDBErrStr,
            szMsg);
            throw pOLEDBErr;
        }
        /*if (FAILED(pISupportErrorInfo-
        >InterfaceSupportsErrorInfo(IID_InterfaceWithError)))
        {
            _snprintf(szMsg, sizeof(szMsg),
            "InterfaceWithError
            interface not supported");
            pOLEDBErr->m_OLEDBErrStr = new
            char[strlen(szMsg)+1];
            strcpy(pOLEDBErr->m_OLEDBErrStr,
            szMsg);
            return;
        }*/

        // Do not test the return of GetErrorInfo.
        It can succeed and return
        // a NULL pointer in pErrorInfoAll. Simply
        test the pointer.
        GetErrorInfo(0, &pErrorInfoAll);

        if (pErrorInfoAll != NULL)
        {
            // Test to see if it's a valid
            OLE DB IErrorInfo interface
            // exposing a list of records.
            if (SUCCEEDED(pErrorInfoAll-
            >QueryInterface(IID_IErrorRecords, (void**)
            &pIErrorRecords)))
            {
                pIErrorRecords->
                >GetRecordCount(&nRecs);

                // Within each record,
                retrieve information from each
                // of the defined
                interfaces.

```

```

        for (nRec = 0; nRec <
        nRecs; nRec++)
        {
            // Request
            the generic SQL error interface.

            pIErrorRecords->GetCustomErrorObject(nRec,

            IID_ISQLErrorInfo, // generic SQL error
            interface

            (IUnknown**) &pISQLErrorInfo);

            if
            (pISQLErrorInfo != NULL)
            {
                //
                Request SQL Server-specific error interface, not the
                generic SQL error interface.

                pISQLErrorInfo->QueryInterface(

                IID_ISQLServerErrorInfo, // SQL Server
                error interface

                (void**) &pISQLServerErrorInfo);
            }

            // Test to
            ensure the reference is valid, then
            // get error
            information from ISQLServerErrorInfo.
            if
            (pISQLServerErrorInfo != NULL)
            {
                pISQLServerErrorInfo->
                >GetErrorInfo(&pSSErrorInfo, &pSSErrorStrings);

                //
                ISQLServerErrorInfo::GetErrorInfo succeeds
                //
                even when it has nothing to return. Test the
                //
                pointers before using.
                if
                (pSSErrorInfo)
                {
                    // First, add the error message.

                    // Convert Unicode error string to ANSI.
                    WideCharToMultiByte(CP_THREAD_ACP, 0,

                    pSSErrorInfo->pwszMessage, -1,

                    szMsg, sizeof(szMsg),

                    NULL, NULL);

```

```

            // 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, "\r\n");

            // concatenate the error record to the
            overall error message
            strcat( szTmp, szMsg );

            // Second, add the stored procedure name
            and line number, if available.

            if (wcslen(pSSErrorInfo->pwszProcedure)>0)
            {
                // Prefix with a line break
                iLen = sprintf(szMsg,
                "\r\nProcedure: ");

                // Convert Unicode error string
                to ANSI.

                WideCharToMultiByte(CP_THREAD_ACP, 0,

                pSSErrorInfo->
                >pwszProcedure, -1,

                &szMsg[iLen],

                sizeof(szMsg) - iLen,

                NULL, NULL);

                // Check if have space to add the
                line number.

                // Assume the line number takes
                no more than 3 digits.
                if ((strlen(szMsg) + 4)<
                sizeof(szMsg))
                {

```

```

        _snprintf(&szMsg[strlen(szMsg)],
sizeof(szMsg),
                "%d",
pSSErrorInfo->wLineNumber);
    }

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

    // concatenate the error record
to the overall error message
    strcat( szTmp, szMsg );

    // copy the overall error string
to the exception
    pOLEDBErr->m_OLEDBErrStr = new
char[strlen(szTmp)+1];
    strcpy(pOLEDBErr->m_OLEDBErrStr,
szTmp);
}

    // Third, capture the (first) database
error
    if (pOLEDBErr->m_NativeError == 0 &&
pSSErrorInfo->lNative != 0)
    {
        pOLEDBErr->m_NativeError =
pSSErrorInfo->lNative;

        // Check for deadlock error code
and set the deadlock flag
        if (pSSErrorInfo->lNative ==
1205)
        {
            pOLEDBErr->m_bDeadLock
= TRUE;
        }
    }

```

```

    }

    // IMalloc::Free needed to release
references
    // on returned values.
    if (m_pIMalloc != NULL)
    {
        m_pIMalloc->Free(pSSErrorStrings);
        m_pIMalloc->Free(pSSErrorInfo);
    }
}

    pISQLServerErrorInfo->Release();
}
else
{
    // Custom error object is not supported.
    // Use general OLE-DB error interface.
    // Get the numeric error code
    pIErrorRecords->GetBasicErrorInfo(nRec,
&BasicErrorInfo);
    if
    (pOLEDBErr->m_NativeError == 0)
    {
        // Get the failed call HRESULT code, which
is not really the native error
        pOLEDBErr->m_NativeError =
BasicErrorInfo.hrError;
    }
    // Try to get the string description of the error.
    pIErrorRecords->GetErrorInfo(nRec,
LOCALE_USER_DEFAULT,
(IErrorInfo*)&pIErrorInfoRecord);
    if
    (pIErrorInfoRecord)
    {
        pIErrorInfoRecord->GetDescription(&bstrDescription);
    }
}

```

```

    // Convert Unicode error string to ANSI.
    WideCharToMultiByte(CP_THREAD_ACP, 0,
        bstrDescription, -1,
        szMsg, sizeof(szMsg),
        NULL, NULL);

    pOLEDBErr->m_OLEDBErrStr = new
char[strlen(szMsg)+1];
    strcpy(pOLEDBErr->m_OLEDBErrStr, szMsg);
}

    } // if
    } // for()
(SUCCEEDED(pIErrorInfoAll->QueryInterface(IID_IErrorRecords, (void**)
&pIErrorRecords)))
    {
        // No IErrorRecords
interface supported. Use default IErrorInfo.
        // Note: SQLOLEDB
supports IErrorRecords, so this check is for good
style only.
        _snprintf(szMsg,
sizeof(szMsg), "IErrorRecords interface not
supported");
        pOLEDBErr->m_OLEDBErrStr = new char[strlen(szMsg)+1];
        strcpy(pOLEDBErr->m_OLEDBErrStr, szMsg);
    }
    pIErrorInfoAll->Release();
} // if (pIErrorInfoAll != NULL)
else
{
    // No IErrorInfo interface
supported.
    // Note: SQLOLEDB supports
IErrorInfo, so this check is for good style only.
    _snprintf(szMsg, sizeof(szMsg),
"IErrorInfo interface not supported");
    pOLEDBErr->m_OLEDBErrStr = new
char[strlen(szMsg)+1];
    strcpy(pOLEDBErr->m_OLEDBErrStr,
szMsg);
}
    throw pOLEDBErr;
}
/*
*

```

```

*          Create a new command object from the SQL
text passed in.
*
*/
void CTPCC_OLEDB::CreateCommand(wchar_t*
szSQLCommand, // I: SQL
query for the command

                                ICommandText**
ppICommandText // O: returned command object

                                )
{
    HRESULT hr;

    // Create a new command object
    hr = m_pIDBCreateCommand-
>CreateCommand(NULL, IID_ICommandText, (IUnknown
**)ppICommandText);
    if (FAILED(hr))
    {
        ThrowError(m_pIDBCreateCommand,
COLEDBERR::eCreateCommand,
"CTPCC_OLEDB::CreateCommand");
    }

    // Set command text
    hr = (*ppICommandText)-
>SetCommandText(DBGUID_SQL, szSQLCommand);
    if (FAILED(hr))
    {
        ThrowError(*ppICommandText,
COLEDBERR::eSetCommandText,
"CTPCC_OLEDB::CreateCommand");
    }

    // Prepare the command
    PrepareCommand(*ppICommandText);
}

/*
*          QueryInterface and Prepare in one function
for simplicity.
*          DEFERRED PREPARE property is set to off to
prepare immediately.
*/
void CTPCC_OLEDB::PrepareCommand(ICommandText*
pICommandText)
{
    HRESULT hr;
    ICommandPrepare* pICommandPrepare;
    ICommandProperties* pICommandProperties;
    DBPROPSET
rowSetPropSet;
    DBPROP
rowSetProp;

    // Set the deferred prepare property to
false.
    rowSetProp.dwPropertyID =
SSPROP_DEFERPREPARE;
    memset(&rowSetProp.vValue, 0,
sizeof(rowSetProp.vValue));

```

```

    rowSetProp.dwOptions =
DBPROPOPTIONS_REQUIRED;
    rowSetProp.colid = DB_NULLID;

    rowSetPropSet.cProperties = 1;
    rowSetPropSet.guidPropertySet =
DBPROPSET_SQLSERVERROWSET;
    rowSetPropSet.rgProperties = &rowSetProp;

    // Query interface for setting properties
    hr = pICommandText-
>QueryInterface(IID_ICommandProperties, (void
**)&pICommandProperties);
    if (FAILED(hr))
    {
        ThrowError(pICommandText,
COLEDBERR::eQueryInterface,
"CTPCC_OLEDB::PrepareCommand");
    }

    // Set the property set
    hr = pICommandProperties->SetProperties(1,
&rowSetPropSet);
    if (FAILED(hr))
    {
        ThrowError(pICommandText,
COLEDBERR::eQueryInterface,
"CTPCC_OLEDB::PrepareCommand");
    }

    // Get interface for preparing commands
    hr = pICommandText-
>QueryInterface(IID_ICommandPrepare, (void
**)&pICommandPrepare);
    if (FAILED(hr))
    {
        ThrowError(pICommandText,
COLEDBERR::eQueryInterface,
"CTPCC_OLEDB::PrepareCommand");
    }

    // Prepare Payment command
    hr = pICommandPrepare->Prepare(0xFFFFFFFF);
    if (FAILED(hr))
    {
        ThrowError(pICommandPrepare,
COLEDBERR::ePrepare, "CTPCC_OLEDB::PrepareCommand");
    }
}

/*
*          Initialize fields of an array of bindings
structures.
*          Needs to be called before setting
individual parameter/column bindings.
*/
void CTPCC_OLEDB::InitBindings(DBBINDING*
pDBBindings, // IO: array of bindings

                                int iCount,
                                // I: number of
elements in the array

```

```

                                eBindingType BindingType) //
I: what the bindings will be used for
(parameters/columns)
{
    int i;

    for(i = 0; i < iCount; i++)
    {
        pDBBindings[i].iOrdinal = i + 1;
        pDBBindings[i].obLength = 0;
        pDBBindings[i].obStatus = 0;
        pDBBindings[i].pTypeInfo = NULL;
        pDBBindings[i].pObject = NULL;
        pDBBindings[i].pBindExt = NULL;
        pDBBindings[i].dwPart = DBPART_VALUE;

        switch (BindingType)
        {
            case eInputParameter:
                pDBBindings[i].eParamIO
= DBPARAMIO_INPUT;
                break;
            case eOutputParameter:
                pDBBindings[i].eParamIO
= DBPARAMIO_OUTPUT;
                break;
            case eInputOutputParameter:
                pDBBindings[i].eParamIO
= DBPARAMIO_INPUT | DBPARAMIO_OUTPUT;
                break;
            case eOutputColumn:
                pDBBindings[i].eParamIO
= DBPARAMIO_NOTPARAM;
                break;
            default:
                assert(false); //
this should never happen
        }

        pDBBindings[i].dwMemOwner =
DBMEMOWNER_CLIENTOWNED;
        pDBBindings[i].dwFlags = 0;
        pDBBindings[i].bPrecision = 0;
        pDBBindings[i].bScale = 0;
    }
}

/*
*          Perform binding for one parameter or output
column.
*/
void CTPCC_OLEDB::SetBinding(DBBINDING* pDBBinding,
// I: binding row structure

                                size_t obValue,
                                // I: parameter (column) offset in the user
buffer

                                size_t cbMaxLen, //
I: parameter (column) length

```

```

        DBTYPE wType
        // I: parameter (column) type
    )
}
pDBBinding->obValue = (ULONG)obValue;
pDBBinding->cbMaxLen = (ULONG)cbMaxLen;
pDBBinding->wType = wType;
}

void CTPCC_OLEDB::InitStockLevelParams()
{
    int i;
    HRESULT hr;
    wchar_t szName[IMAX_SP_NAME_LEN];
    IAccessor* pIAccessor;
    const ULONG
        nInputParams = 3; // input parameters
        nOutputParams = 1; // output 1st result
    set columns
        // Structure to bind in accessor
        DBBINDING
        acInputDBBinding[nInputParams];
        DBBINDSTATUS
        acInputDBBindStatus[nInputParams];
        DBBINDING
        acOutputDBBinding[nOutputParams];
        DBBINDSTATUS
        acOutputDBBindStatus[nOutputParams];

        // Set command text
        _snwprintf(szName,
        sizeof(szName)/sizeof(szName[0]),
        L"call
%stpcc_stocklevel (?,?,?)", m_szSPPrefix);

        // Create and Prepare a new command object
        for StockLevel.
        CreateCommand(szName,
        &m_pIStockLevelCommand);

        // Describe the consumer buffer by filling
        in the array
        // of DBBINDING structures. Each binding
        associates
        // a single parameter to the consumer's buffer.
        InitBindings(&acInputDBBinding[0],
        nInputParams, eInputParameter);

        i = 0;
        // StockLevel parameter 1
        SetBinding(&acInputDBBinding[i++],
        offsetof(STOCK_LEVEL_DATA, w_id),
        sizeof(m_txn.StockLevel.w_id), DBTYPE_I4);

        // StockLevel parameter 2

```

```

        SetBinding(&acInputDBBinding[i++],
        offsetof(STOCK_LEVEL_DATA, d_id),
        sizeof(m_txn.StockLevel.d_id), DBTYPE_UI1);

        // StockLevel parameter 3
        SetBinding(&acInputDBBinding[i++],
        offsetof(STOCK_LEVEL_DATA, threshold),
        sizeof(m_txn.StockLevel.threshold), DBTYPE_I2);

        hr = m_pIStockLevelCommand-
        >QueryInterface(IID_IAccessor, (void **)&pIAccessor);
        if (FAILED(hr))
        {
            ThrowError(m_pIStockLevelCommand,
            COLEDBERR::eQueryInterface,
            "InitStockLevelParams()");
        }

        hr = pIAccessor->CreateAccessor(
            DBACCESSOR_PARAMETERDATA,
            nInputParams,
            acInputDBBinding,
            sizeof(STOCK_LEVEL_DATA),

            &m_hStockLevelInputAccessor,
            acInputDBBindStatus);

        if (FAILED(hr))
        {
            ThrowError(pIAccessor,
            COLEDBERR::eCreateAccessor,
            "InitStockLevelParams()");
        }

        m_StockLevelExecuteParams.cParamSets = 1;
        m_StockLevelExecuteParams.hAccessor =
        m_hStockLevelInputAccessor;
        m_StockLevelExecuteParams.pData =
        &m_txn.StockLevel;

        // Now fill the binding information for
        result set 1 output columns
        InitBindings(&acOutputDBBinding[0],
        nOutputParams, eOutputColumn);

        // Binding for a rowset that may return
        more than one row.
        i = 0;
        // StockLevel output column 1
        SetBinding(&acOutputDBBinding[i++],
        offsetof(STOCK_LEVEL_DATA, low_stock),
        sizeof(m_txn.StockLevel.low_stock), DBTYPE_I4);

        hr = pIAccessor->CreateAccessor(
            DBACCESSOR_ROWDATA |
            DBACCESSOR_OPTIMIZED,
            nOutputParams,
            acOutputDBBinding,
            sizeof(STOCK_LEVEL_DATA),

            &m_hStockLevelOutputAccessor,
            acOutputDBBindStatus);

        if (FAILED(hr))
        {

```

```

            ThrowError(pIAccessor,
            COLEDBERR::eCreateAccessor,
            "InitStockLevelParams()");
        }
    }

    void CTPCC_OLEDB::StockLevel()
    {
        HRESULT hr;
        int iTryCount = 0;
        IRowset* pRowset;
        LONG cRows = 1;
        // number of rows returned in the rowset
        ULONG cRowsObtained;
        HROW rghRow;
        //returned row handles
        HROW* prghRow =

        &rghRow;

        while (TRUE)
        {
            try
            {
                // Execute the prepared
                command
                hr =
                m_pIStockLevelCommand->Execute(NULL, IID_IRowset,
                &m_StockLevelExecuteParams, NULL,

                (IUnknown **)&pRowset);
                if (FAILED(hr))
                {
                    ThrowError(m_pIStockLevelCommand,
                    COLEDBERR::eExecute, "StockLevel()");
                }

                // Fetch the result row
                handle(s)
                hr = pRowset-
                >GetNextRows(DB_NULL_HCHAPTER, 0, cRows,
                &cRowsObtained, &prghRow);
                if (FAILED(hr))
                {
                    ThrowError(m_pIStockLevelCommand,
                    COLEDBERR::eGetNextRows, "StockLevel()");
                }

                // Fetch the actual row
                data by handle
                hr = pRowset-
                >GetData(rghRow, m_hStockLevelOutputAccessor,
                &m_txn.StockLevel);
                if (FAILED(hr))
                {
                    ThrowError(m_pIStockLevelCommand,
                    COLEDBERR::eGetData, "StockLevel()");
                }
            }
        }
    }

```

```

        // Release row(s)
        hr = pRowset->ReleaseRows(cRowsObtained, prghRow, NULL, NULL, NULL);
        // Release rowset
        hr = pRowset->Release();

        m_txn.StockLevel.exec_status_code = eOK;

        break;
    }
    catch (COLEDBERR *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_OLEDB_ERR(CTPCC_OLEDB_ERR::ERR_RETRIED_TRANS, iTryCount);
}

void CTPCC_OLEDB::InitNewOrderParams()
{
    int i, j, iOlCount;
    HRESULT hr;
    wchar_t szName[iMAX_SP_NAME_LEN];
    IAccessor* pIAccessor;
    const ULONG nInputParams = 5 + 3 * MAX_OL_NEW_ORDER_ITEMS; // input parameters
    const ULONG nOutputParams = 5; // output 1st result set columns
    const ULONG nOutputParams2 = 8; // output 2nd result set columns
    // Structure to bind in accessor
    DBBINDING acInputDBBinding[nInputParams];
    DBBINDSTATUS acInputDBBindStatus[nInputParams];
    DBBINDING acOutputDBBinding[nOutputParams];
    DBBINDSTATUS acOutputDBBindStatus[nOutputParams];
    DBBINDING acOutputDBBinding2[nOutputParams2];

```

```

    DBBINDSTATUS acOutputDBBindStatus2[nOutputParams2];

    // Describe the consumer buffer by filling in the array
    // of DBBINDING structures. Each binding associates
    // a single parameter to the consumer's buffer.
    InitBindings(&acInputDBBinding[0], nInputParams, eInputParameter);

    i = 0;
    // NewOrder parameter 1
    SetBinding(&acInputDBBinding[i++], offsetof(NEW_ORDER_DATA, w_id), sizeof(m_txn.NewOrder.w_id), DBTYPE_I4);

    // NewOrder parameter 2
    SetBinding(&acInputDBBinding[i++], offsetof(NEW_ORDER_DATA, d_id), sizeof(m_txn.NewOrder.d_id), DBTYPE_UI1);

    // NewOrder parameter 3
    SetBinding(&acInputDBBinding[i++], offsetof(NEW_ORDER_DATA, c_id), sizeof(m_txn.NewOrder.c_id), DBTYPE_I4);

    // NewOrder parameter 4
    SetBinding(&acInputDBBinding[i++], offsetof(NEW_ORDER_DATA, o_ol_cnt), sizeof(m_txn.NewOrder.o_ol_cnt), DBTYPE_UI1);

    // NewOrder parameter 5
    SetBinding(&acInputDBBinding[i++], offsetof(NEW_ORDER_DATA, o_all_local), sizeof(m_txn.NewOrder.o_all_local), DBTYPE_UI1);

    for (j=0; j<MAX_OL_NEW_ORDER_ITEMS; j++)
    {
        SetBinding(&acInputDBBinding[i++], offsetof(NEW_ORDER_DATA, OL[j].ol_i_id), sizeof(m_txn.NewOrder.OL[j].ol_i_id), DBTYPE_I4);

        SetBinding(&acInputDBBinding[i++], offsetof(NEW_ORDER_DATA, OL[j].ol_supply_w_id), sizeof(m_txn.NewOrder.OL[j].ol_supply_w_id), DBTYPE_I4);

        SetBinding(&acInputDBBinding[i++], offsetof(NEW_ORDER_DATA, OL[j].ol_quantity), sizeof(m_txn.NewOrder.OL[j].ol_quantity), DBTYPE_I2);
    }

    // Now fill the binding information for result set 1 output columns
    InitBindings(&acOutputDBBinding[0], nOutputParams, eOutputColumn);

    // Binding for the order line rowsets (each consist of one row).

```

```

    // Bind to offsets of the OL_NEW_ORDER_DATA structure instead of NEW_ORDER_DATA.
    // IRowset::GetData() will be passed individual array slots OL[i] to fetch the data from the row set.

    i = 0;
    // NewOrder output column 1
    SetBinding(&acOutputDBBinding[i++], offsetof(OL_NEW_ORDER_DATA, ol_i_name), sizeof(m_txn.NewOrder.OL[0].ol_i_name), DBTYPE_STR);

    // NewOrder output column 2
    SetBinding(&acOutputDBBinding[i++], offsetof(OL_NEW_ORDER_DATA, ol_stock), sizeof(m_txn.NewOrder.OL[0].ol_stock), DBTYPE_I2);

    // NewOrder output column 3
    SetBinding(&acOutputDBBinding[i++], offsetof(OL_NEW_ORDER_DATA, ol_brand_generic), sizeof(m_txn.NewOrder.OL[0].ol_brand_generic), DBTYPE_STR);

    // NewOrder output column 4
    SetBinding(&acOutputDBBinding[i++], offsetof(OL_NEW_ORDER_DATA, ol_i_price), sizeof(m_txn.NewOrder.OL[0].ol_i_price), DBTYPE_R8);

    // NewOrder output column 5
    SetBinding(&acOutputDBBinding[i++], offsetof(OL_NEW_ORDER_DATA, ol_amount), sizeof(m_txn.NewOrder.OL[0].ol_amount), DBTYPE_R8);

    // Now fill the binding information for result set 2 output columns
    InitBindings(&acOutputDBBinding2[0], nOutputParams2, eOutputColumn);

    i = 0;
    // NewOrder output column 1
    SetBinding(&acOutputDBBinding2[i++], offsetof(NEW_ORDER_DATA, w_tax), sizeof(m_txn.NewOrder.w_tax), DBTYPE_R8);

    // NewOrder output column 2
    SetBinding(&acOutputDBBinding2[i++], offsetof(NEW_ORDER_DATA, d_tax), sizeof(m_txn.NewOrder.d_tax), DBTYPE_R8);

    // NewOrder output column 3
    SetBinding(&acOutputDBBinding2[i++], offsetof(NEW_ORDER_DATA, o_id), sizeof(m_txn.NewOrder.o_id), DBTYPE_I4);

    // NewOrder output column 4
    SetBinding(&acOutputDBBinding2[i++], offsetof(NEW_ORDER_DATA, c_last), sizeof(m_txn.NewOrder.c_last), DBTYPE_STR);

    // NewOrder output column 5

```

```

        SetBinding(&acOutputDBBinding2[i++],
offsetof(NEW_ORDER_DATA, c_discount),
sizeof(m_txn.NewOrder.c_discount), DBTYPE_R8);

        // NewOrder output column 6
        SetBinding(&acOutputDBBinding2[i++],
offsetof(NEW_ORDER_DATA, c_credit),
sizeof(m_txn.NewOrder.c_credit), DBTYPE_STR);

        // NewOrder output column 7
        SetBinding(&acOutputDBBinding2[i++],
offsetof(NEW_ORDER_DATA, o_entry_d),
sizeof(m_txn.NewOrder.o_entry_d),
DBTYPE_DBTIMESTAMP);

        // NewOrder output column 8
        SetBinding(&acOutputDBBinding2[i++],
offsetof(NEW_ORDER_DATA, o_commit_flag),
sizeof(m_txn.NewOrder.o_commit_flag), DBTYPE_I2);

        for (j=0; j<MAX_OL_NEW_ORDER_ITEMS; j++)
        {
            // Set command text first

            // Print the fixed first portion
of parameters
            i = _snwprintf(szName,
sizeof(szName)/sizeof(szName[0]),

            L"{call %stpc_neworder (?, ?, ?, ?, ?)",
m_szSPPrefix);

            // Now print the variable portion
depending on the number of order line parameters
            for (iOlCount = 0; iOlCount <= j;
++iOlCount)
            {
                i +=
                _snwprintf(&szName[i],
sizeof(szName)/sizeof(szName[0]) - i, L", ?, ?, ?");
            }

            // Print the fixed end
            if (j != MAX_OL_NEW_ORDER_ITEMS -
1)
            {
                // append 'default' for
the parameters that are not used
                i +=
                _snwprintf(&szName[i],
sizeof(szName)/sizeof(szName[0]) - i, L", default)");
            }
            else // using all 15 order
line parameters
            {
                i +=
                _snwprintf(&szName[i],
sizeof(szName)/sizeof(szName[0]) - i, L")");
            }

            // Create and Prepare a new
command object for NewOrder.

```

```

        CreateCommand(szName,
&m_pINewOrderCommand[j]);

        // Now create the input accessor
for this prepared command
        hr = m_pINewOrderCommand[j]-
>QueryInterface(IID_IAccessor, (void **)&pIAccessor);
        if (FAILED(hr))
        {
            ThrowError(m_pINewOrderCommand[j],
COLEDBERR::eQueryInterface, "InitNewOrderParams()");
        }

        hr = pIAccessor->CreateAccessor(

            DBACCESSOR_PARAMETERDATA,

            3 * (j + 1),

            5 +

            acInputDBBinding,

            sizeof(NEW_ORDER_DATA),

            &m_hNewOrderInputAccessor[j],

            acInputDBBindStatus);
        if (FAILED(hr))
        {
            ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor, "InitNewOrderParams()");
        }

        m_NewOrderExecuteParams[j].cParamSets = 1;
        //
m_NewOrderExecuteParams.hAccessor is set dynamically
at run-time
        // based on the number of new
order items for the particular transaction call.

        m_NewOrderExecuteParams[j].hAccessor =
m_hNewOrderInputAccessor[j];
        m_NewOrderExecuteParams[j].pData
= &m_txn.NewOrder;

        // Create accessor for the first
rowset
        hr = pIAccessor->CreateAccessor(
            DBACCESSOR_ROWDATA |
            DBACCESSOR_OPTIMIZED,

            nOutputParams,
            acOutputDBBinding,

            sizeof(OL_NEW_ORDER_DATA),

```

```

            &m_hNewOrderOutputAccessor[j],
            acOutputDBBindStatus);
        if (FAILED(hr))
        {
            ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor, "InitNewOrderParams()");
        }

        // Create accessor for the second
rowset
        hr = pIAccessor->CreateAccessor(
            DBACCESSOR_ROWDATA, //
cannot be optimized too because #1 accessor is
nOutputParams2,
            acOutputDBBinding2,
            sizeof(NEW_ORDER_DATA),

            &m_hNewOrderOutputAccessor2[j],
            acOutputDBBindStatus2);
        if (FAILED(hr))
        {
            ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor, "InitNewOrderParams()");
        }

        pIAccessor->Release();
    }

    void CTPCC_OLEDB::NewOrder()
    {
        HRESULT hr;
        int iTryCount = 0;
        IMultipleResults* pMultipleResults;
        IRowset* pRowset;
        IRowset* pRowset2;
        LONG cRows = 1; // number of rows
        returned in the 1st rowset
        ULONG cRowsObtained;
        HROW rghRows; //returned row handles
        for the 1st result set
        HROW* prghRows = &rghRows;
        LONG cRows2 = 1; // number of rows
        returned in the 2nd rowset
        ULONG cRowsObtained2;
        HROW rghRows2; //returned row handle
        for the 2nd result set
        HROW* prghRows2 = &rghRows2;
        int i;
        long lRowsAffected; // the number of
affected rows for a rowset

```

```

        int
        iHandleIndex; // index into the
handle arrays based on the orders count

        // 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;
            }
            iHandleIndex = m_txn.NewOrder.o_ol_cnt - 1;
            // for convenience
            while (TRUE)
            {
                try
                {
                    // Execute the prepared
command (according to the number of new orders)
                    // Ask for
IMultipleResults because it returns 2 rowsets.
                    hr =
m_pINewOrderCommand[iHandleIndex]->Execute(

                        NULL, IID_IMultipleResults,

                        &m_NewOrderExecuteParams[iHandleIndex],

                        NULL,

                        (IUnknown **)&pMultipleResults);
                    if (FAILED(hr))
                    {
                        ThrowError(m_pINewOrderCommand[iHandleIndex
], COLEDBERR::eExecute, "NewOrder()");
                    }

                    // Get order line
results

                    // Get order line
results

                    m_txn.NewOrder.total_amount = 0;
                    for (i = 0; i <
m_txn.NewOrder.o_ol_cnt; ++i)

```

```

        {
            // Get the
first rowset object
            hr =
pMultipleResults->GetResult(NULL, 0, IID_IRowset,
&lRowsAffected, (IUnknown **)&pRowset);
            if
(FAILED(hr))
            {
                char szTmp[256];

                _snprintf(szTmp, sizeof(szTmp), "NewOrder()
result set %d, hr=0x%X", i, hr);

                ThrowError(m_pINewOrderCommand[m_txn.NewOrd
er.o_ol_cnt - 1], COLEDBERR::eGetResult, szTmp);
            }

            // Fetch the
result row handle(s)
            hr = pRowset-
>GetNextRows(DB_NULL_HCHAPTER, 0, cRows,
&cRowsObtained, &prghRows);
            if
(FAILED(hr))
            {
                ThrowError(m_pINewOrderCommand[iHandleIndex
], COLEDBERR::eGetNextRows, "NewOrder()");
            }

            // Fetch the
actual row data by handle
            hr = pRowset-
>GetData(rghRows,
m_hNewOrderOutputAccessor[iHandleIndex],
&m_txn.NewOrder.OL[i]);
            if
(FAILED(hr))
            {
                ThrowError(m_pINewOrderCommand[iHandleIndex
], COLEDBERR::eGetData, "NewOrder()");
            }

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

            // Release
row(s)
            hr = pRowset-
>ReleaseRows(cRowsObtained, prghRows, NULL, NULL,
NULL);

            // Release
rowset
            hr = pRowset-
>Release();
        }
    }

```

```

        // Get the second
rowset object
        hr = pMultipleResults-
>GetResult(NULL, 0, IID_IRowset, &lRowsAffected,
(IUnknown **)&pRowset2);
        if (FAILED(hr))
        {
            char
szTmp[256];

            _snprintf(szTmp, sizeof(szTmp), "NewOrder()
result set %d, hr=%d", i, hr);

            ThrowError(m_pINewOrderCommand[iHandleIndex
], COLEDBERR::eGetResult, szTmp);
        }

        // Fetch the result row
handle(s)
        hr = pRowset2-
>GetNextRows(DB_NULL_HCHAPTER, 0, cRows2,
&cRowsObtained2, &prghRows2);
        if (FAILED(hr))
        {
            ThrowError(m_pINewOrderCommand[iHandleIndex
], COLEDBERR::eGetNextRows, "NewOrder()");
        }

        // Fetch the actual row
data by handle
        hr = pRowset2-
>GetData(rghRows2,
m_hNewOrderOutputAccessor2[iHandleIndex],
&m_txn.NewOrder);
        if (FAILED(hr))
        {
            ThrowError(m_pINewOrderCommand[iHandleIndex
], COLEDBERR::eGetData, "NewOrder()");
        }

        // Release row(s)
        hr = pRowset2-
>ReleaseRows(cRowsObtained2, prghRows2, NULL, NULL,
NULL);

        // Release rowset
        hr = pRowset2-
>Release();

        // Release the common
MultipleResults interface
        hr = pMultipleResults-
>Release();

        if
(m_txn.NewOrder.o_all_local == 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 (COLEDBERR *e)
    {
        if (!(e->m_bDeadLock))
        {
            throw;
        }
        // hit deadlock;
        backoff for increasingly longer period
        delete e;
        Sleep(10 * iTryCount);
    }
}

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

void CTPCC_OLEDB::InitPaymentParams()
{
    int
        i;
    HRESULT
        hr;
    wchar_t
        szName[IMAX_SP_NAME_LEN];
    IAccessor*
        pIAccessor;
    const ULONG
        nInputParams = 7; // input parameters
        const ULONG
        nOutputParams = 27; // output result set
columns
        // Structure to bind in accessor
        DBBINDING
        acInputDBBinding[nInputParams];
        DBBINDSTATUS
        acInputDBBindStatus[nInputParams];
        DBBINDING
        acOutputDBBinding[nOutputParams];
        DBBINDSTATUS
        acOutputDBBindStatus[nOutputParams];

        // Set command text

```

```

        _snwprintf(szName,
sizeof(szName)/sizeof(szName[0]), L"call
%stpc_payment(?,?,?,?,,?)", m_szSPPrefix);

        // Create and Prepare a new command object
        for Payment.
        CreateCommand(szName, &m_pIPaymentCommand);

        // Describe the consumer buffer by filling
        in the array
        // of DBBINDING structures. Each binding
        associates
        // a single parameter to the consumer's buffer.
        InitBindings(&acInputDBBinding[0],
nInputParams, eInputParameter);

        i = 0;
        // Payment parameter 1
        SetBinding(&acInputDBBinding[i++],
offsetof(PAYMENT_DATA, w_id),
sizeof(m_txn.Payment.w_id), DBTYPE_I4);

        // Payment parameter 2
        SetBinding(&acInputDBBinding[i++],
offsetof(PAYMENT_DATA, c_w_id),
sizeof(m_txn.Payment.c_w_id), DBTYPE_I4);

        // Payment parameter 3
        SetBinding(&acInputDBBinding[i++],
offsetof(PAYMENT_DATA, h_amount),
sizeof(m_txn.Payment.h_amount), DBTYPE_R8);

        // Payment parameter 4
        SetBinding(&acInputDBBinding[i++],
offsetof(PAYMENT_DATA, d_id),
sizeof(m_txn.Payment.d_id), DBTYPE_UI1);

        // Payment parameter 5
        SetBinding(&acInputDBBinding[i++],
offsetof(PAYMENT_DATA, c_d_id),
sizeof(m_txn.Payment.c_d_id), DBTYPE_UI1);

        // Payment parameter 6
        SetBinding(&acInputDBBinding[i++],
offsetof(PAYMENT_DATA, c_id),
sizeof(m_txn.Payment.c_id), DBTYPE_I4);

        // Payment parameter 7
        SetBinding(&acInputDBBinding[i++],
offsetof(PAYMENT_DATA, c_last),
sizeof(m_txn.Payment.c_last), DBTYPE_STR);

        hr = m_pIPaymentCommand-
>QueryInterface(IID_IAccessor, (void **)&pIAccessor);
        if (FAILED(hr))
        {
            ThrowError(m_pIPaymentCommand,
COLEDBERR::eQueryInterface, "InitPaymentParams()");
        }

        hr = pIAccessor->CreateAccessor(
DBACCESSOR_PARAMETERDATA,

```

```

nInputParams,
acInputDBBinding,
sizeof(PAYMENT_DATA),
&m_hPaymentInputAccessor,
acInputDBBindStatus);

        if (FAILED(hr))
        {
            ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor, "InitPaymentParams()");
        }

        m_PaymentExecuteParams.cParamSets = 1;
        m_PaymentExecuteParams.hAccessor =
m_hPaymentInputAccessor;
        m_PaymentExecuteParams.pData =
&m_txn.Payment;

        // Now fill the binding information for
        output columns
        InitBindings(&acOutputDBBinding[0],
nOutputParams, eOutputColumn);

        i = 0;
        // Payment output column 1
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_id),
sizeof(m_txn.Payment.c_id), DBTYPE_I4);

        // Payment output column 2
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_last),
sizeof(m_txn.Payment.c_last), DBTYPE_STR);

        // Payment output column 3
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, h_date),
sizeof(m_txn.Payment.h_date), DBTYPE_DBTIMESTAMP);

        // Payment output column 4
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, w_street_1),
sizeof(m_txn.Payment.w_street_1), DBTYPE_STR);

        // Payment output column 5
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, w_street_2),
sizeof(m_txn.Payment.w_street_2), DBTYPE_STR);

        // Payment output column 6
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, w_city),
sizeof(m_txn.Payment.w_city), DBTYPE_STR);

        // Payment output column 7
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, w_state),
sizeof(m_txn.Payment.w_state), DBTYPE_STR);

        // Payment output column 8
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, w_zip),
sizeof(m_txn.Payment.w_zip), DBTYPE_STR);

```



```

        // Payment output column 9
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_street_1),
sizeof(m_txn.Payment.d_street_1), DBTYPE_STR);

        // Payment output column 10
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_street_2),
sizeof(m_txn.Payment.d_street_2), DBTYPE_STR);

        // Payment output column 11
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_city),
sizeof(m_txn.Payment.d_city), DBTYPE_STR);

        // Payment output column 12
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_state),
sizeof(m_txn.Payment.d_state), DBTYPE_STR);

        // Payment output column 13
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_zip),
sizeof(m_txn.Payment.d_zip), DBTYPE_STR);

        // Payment output column 14
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_first),
sizeof(m_txn.Payment.c_first), DBTYPE_STR);

        // Payment output column 15
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_middle),
sizeof(m_txn.Payment.c_middle), DBTYPE_STR);

        // Payment output column 16
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_street_1),
sizeof(m_txn.Payment.d_street_1), DBTYPE_STR);

        // Payment output column 17
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_street_2),
sizeof(m_txn.Payment.d_street_2), DBTYPE_STR);

        // Payment output column 18
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_city),
sizeof(m_txn.Payment.d_city), DBTYPE_STR);

        // Payment output column 19
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_state),
sizeof(m_txn.Payment.d_state), DBTYPE_STR);

        // Payment output column 20
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_zip),
sizeof(m_txn.Payment.d_zip), DBTYPE_STR);

        // Payment output column 21

```

```

        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_phone),
sizeof(m_txn.Payment.c_phone), DBTYPE_STR);

        // Payment output column 22
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_since),
sizeof(m_txn.Payment.c_since), DBTYPE_DBTIMESTAMP);

        // Payment output column 23
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_credit),
sizeof(m_txn.Payment.c_credit), DBTYPE_STR);

        // Payment output column 24
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_credit_lim),
sizeof(m_txn.Payment.c_credit_lim), DBTYPE_R8);

        // Payment output column 25
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_discount),
sizeof(m_txn.Payment.c_discount), DBTYPE_R8);

        // Payment output column 26
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_balance),
sizeof(m_txn.Payment.c_balance), DBTYPE_R8);

        // Payment output column 27
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_data),
sizeof(m_txn.Payment.c_data), DBTYPE_STR);

        hr = pIAccessor->CreateAccessor(
            DBACCESSOR_ROWDATA |
            DBACCESSOR_OPTIMIZED,
            nOutputParams,
            acOutputDBBinding,
            sizeof(PAYMENT_DATA),
            &m_hPaymentOutputAccessor,
            acOutputDBBindStatus);
        if (FAILED(hr))
        {
            ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor, "InitPaymentParams()");
        }

        void CTPCC_OLEDB::Payment()
        {
            HRESULT          hr;
            int
            iTryCount = 0;
            IRowset*         pRowset;
            LONG              cRows = 1;
            // number of rows returned in the rowset
            ULONG
            cRowsObtained;
            HROW             rghRow;
            //returned row handles

```

```

        HROW*               prghRow =
        &rghRow;

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

        while (TRUE)
        {
            try
            {
                // Execute the prepared
                command
                hr =
                m_pIPaymentCommand->Execute(NULL, IID_IRowset,
                &m_PaymentExecuteParams, NULL,

                (IUnknown **)&pRowset);
                if (FAILED(hr))
                {
                    ThrowError(m_pIPaymentCommand,
COLEDBERR::eExecute, "Payment()");
                }

                // Fetch the result row
                handle(s)
                hr = pRowset->
                >GetNextRows(DB_NULL_HCHAPTER, 0, cRows,
                &cRowsObtained, &prghRow);
                if (FAILED(hr))
                {
                    ThrowError(m_pIPaymentCommand,
COLEDBERR::eGetNextRows, "Payment()");
                }

                // Fetch the actual row
                data by handle
                hr = pRowset->
                >GetData(rghRow, m_hPaymentOutputAccessor,
                &m_txn.Payment);
                if (FAILED(hr))
                {
                    ThrowError(m_pIPaymentCommand,
COLEDBERR::eGetData, "Payment()");
                }

                // Release row(s)
                hr = pRowset->
                >ReleaseRows(cRowsObtained, prghRow, NULL, NULL,
                NULL);

                // Release rowset
                hr = pRowset->
                >Release();

                if (m_txn.Payment.c_id
                == 0)
                {
                    throw new
                    CTPCC_OLEDB_ERR( CTPCC_OLEDB_ERR::ERR_INVALID_CUST );
                }
            }
            catch (...)
            {
                // ...
            }
        }

```

```

        m_txn.Payment.exec_status_code = eOK;
        break;
    }
    catch (COLEDBERR *e)
    {
        if (!(e->m_bDeadLock))
        {
            if (++iTryCount > iMaxRetries))
            {
                throw;
            }
            // hit deadlock;
            backoff for increasingly longer period
            delete e;
            Sleep(10 * iTryCount);
        }
    }
    // if (iTryCount)
    // throw new
    CTPCC_OLEDB_ERR(CTPCC_OLEDB_ERR::ERR_RETRIED_TRANS,
    iTryCount);
}

void CTPCC_OLEDB::InitOrderStatusParams()
{
    int i;
    HRESULT hr;
    wchar_t szName[IMAX_SP_NAME_LEN];
    IAccessor* pIAccessor;
    const ULONG
        nInputParams = 4; // input parameters
        const ULONG
        nOutputParams = 5; // output 1st result
set columns
        const ULONG
        nOutputParams2 = 8; // output 2nd result
set columns
    // Structure to bind in accessor
    DBBINDING
    acInputDBBinding[nInputParams];
    DBBINDSTATUS
    acInputDBBindStatus[nInputParams];
    DBBINDING
    acOutputDBBinding[nOutputParams];
    DBBINDSTATUS
    acOutputDBBindStatus[nOutputParams];
    DBBINDING
    acOutputDBBinding2[nOutputParams2];
    DBBINDSTATUS
    acOutputDBBindStatus2[nOutputParams2];

    // Set command text
    _snwprintf(szName,
    sizeof(szName)/sizeof(szName[0]),
    L"{call
%stpcc_orderstatus (?,?,?,?)}", m_szSPPrefix);

```

```

    // Create and Prepare a new command object
    for OrderStatus.
    CreateCommand(szName,
    &m_pIOrderStatusCommand);

    // Describe the consumer buffer by filling
    in the array
    // of DBBINDING structures. Each binding
    associates
    // a single parameter to the consumer's buffer.
    InitBindings(&acInputDBBinding[0],
    nInputParams, eInputParameter);

    i = 0;
    // OrderStatus parameter 1
    SetBinding(&acInputDBBinding[i++],
    offsetof(ORDER_STATUS_DATA, w_id),
    sizeof(m_txn.OrderStatus.w_id), DBTYPE_I4);

    // OrderStatus parameter 2
    SetBinding(&acInputDBBinding[i++],
    offsetof(ORDER_STATUS_DATA, d_id),
    sizeof(m_txn.OrderStatus.d_id), DBTYPE_UI1);

    // OrderStatus parameter 3
    SetBinding(&acInputDBBinding[i++],
    offsetof(ORDER_STATUS_DATA, c_id),
    sizeof(m_txn.OrderStatus.c_id), DBTYPE_I4);

    // OrderStatus parameter 4
    SetBinding(&acInputDBBinding[i++],
    offsetof(ORDER_STATUS_DATA, c_last),
    sizeof(m_txn.OrderStatus.c_last), DBTYPE_STR);

    hr = m_pIOrderStatusCommand-
    >QueryInterface(IID_IAccessor, (void **)&pIAccessor);
    if (FAILED(hr))
    {
        ThrowError(m_pIOrderStatusCommand,
        COLEDBERR::eQueryInterface,
        "InitOrderStatusParams()");
    }

    hr = pIAccessor->CreateAccessor(
        DBACCESSOR_PARAMETERDATA,
        nInputParams,
        acInputDBBinding,
        sizeof(ORDER_STATUS_DATA),
        &m_hOrderStatusInputAccessor,
        acInputDBBindStatus);

    if (FAILED(hr))
    {
        ThrowError(pIAccessor,
        COLEDBERR::eCreateAccessor,
        "InitOrderStatusParams()");
    }

    m_OrderStatusExecuteParams.cParamSets = 1;
    m_OrderStatusExecuteParams.hAccessor =
    m_hOrderStatusInputAccessor;

```

```

    m_OrderStatusExecuteParams.pData =
    &m_txn.OrderStatus;

    // Now fill the binding information for
    result set 1 output columns
    InitBindings(&acOutputDBBinding[0],
    nOutputParams, eOutputColumn);

    // Binding for a rowset that may return
    more than one row.
    // Bind to offsets of the
    OL_ORDER_STATUS_DATA structure instead of
    ORDER_STATUS_DATA.
    // IRowset::GetData() will be passed
    individual array slots OL[i] to fetch the data
    // from the row set.

    i = 0;
    // OrderStatus output column 1
    SetBinding(&acOutputDBBinding[i++],
    offsetof(OL_ORDER_STATUS_DATA, ol_supply_w_id),
    sizeof(m_txn.OrderStatus.OL[0].ol_supply_w_id),
    DBTYPE_I4);

    // OrderStatus output column 2
    SetBinding(&acOutputDBBinding[i++],
    offsetof(OL_ORDER_STATUS_DATA, ol_i_id),
    sizeof(m_txn.OrderStatus.OL[0].ol_i_id), DBTYPE_I4);

    // OrderStatus output column 3
    SetBinding(&acOutputDBBinding[i++],
    offsetof(OL_ORDER_STATUS_DATA, ol_quantity),
    sizeof(m_txn.OrderStatus.OL[0].ol_quantity),
    DBTYPE_I2);

    // OrderStatus output column 4
    SetBinding(&acOutputDBBinding[i++],
    offsetof(OL_ORDER_STATUS_DATA, ol_amount),
    sizeof(m_txn.OrderStatus.OL[0].ol_amount),
    DBTYPE_R8);

    // OrderStatus output column 5
    SetBinding(&acOutputDBBinding[i++],
    offsetof(OL_ORDER_STATUS_DATA, ol_delivery_d),
    sizeof(m_txn.OrderStatus.OL[0].ol_delivery_d),
    DBTYPE_DBTIMESTAMP);

    hr = pIAccessor->CreateAccessor(
        DBACCESSOR_OPTIMIZED,
        nOutputParams,
        acOutputDBBinding,
        sizeof(OL_ORDER_STATUS_DATA),
        &m_hOrderStatusOutputAccessor,
        acOutputDBBindStatus);

    if (FAILED(hr))
    {
        ThrowError(pIAccessor,
        COLEDBERR::eCreateAccessor,
        "InitOrderStatusParams()");
    }

```

```

// Now fill the binding information for
result set 2 output columns
InitBindings(&acOutputDBBinding2[0],
nOutputParams2, eOutputColumn);

i = 0;
// OrderStatus output column 1
SetBinding(&acOutputDBBinding2[i++],
offsetof(ORDER_STATUS_DATA, c_id),
sizeof(m_txn.OrderStatus.c_id), DBTYPE_I4);

// OrderStatus output column 2
SetBinding(&acOutputDBBinding2[i++],
offsetof(ORDER_STATUS_DATA, c_last),
sizeof(m_txn.OrderStatus.c_last), DBTYPE_STR);

// OrderStatus output column 3
SetBinding(&acOutputDBBinding2[i++],
offsetof(ORDER_STATUS_DATA, c_first),
sizeof(m_txn.OrderStatus.c_first), DBTYPE_STR);

// OrderStatus output column 4
SetBinding(&acOutputDBBinding2[i++],
offsetof(ORDER_STATUS_DATA, c_middle),
sizeof(m_txn.OrderStatus.c_middle), DBTYPE_STR);

// OrderStatus output column 5
SetBinding(&acOutputDBBinding2[i++],
offsetof(ORDER_STATUS_DATA, o_entry_d),
sizeof(m_txn.OrderStatus.o_entry_d),
DBTYPE_DBTIMESTAMP);

// OrderStatus output column 7
SetBinding(&acOutputDBBinding2[i++],
offsetof(ORDER_STATUS_DATA, o_carrier_id),
sizeof(m_txn.OrderStatus.o_carrier_id), DBTYPE_I2);

// OrderStatus output column 8
SetBinding(&acOutputDBBinding2[i++],
offsetof(ORDER_STATUS_DATA, c_balance),
sizeof(m_txn.OrderStatus.c_balance), DBTYPE_R8);

// OrderStatus output column 9
SetBinding(&acOutputDBBinding2[i++],
offsetof(ORDER_STATUS_DATA, o_id),
sizeof(m_txn.OrderStatus.o_id), DBTYPE_I4);

hr = pIAccessor->CreateAccessor(
DBACCESSOR_ROWDATA, //
cannot be optimized too because #1 accessor is
nOutputParams2,
acOutputDBBinding2,
sizeof(NEW_ORDER_DATA),
&m_hOrderStatusOutputAccessor2,
acOutputDBBindStatus2);

if (FAILED(hr))
{
ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor,
"InitOrderStatusParams()");
}

```

```

}

void CTPCC_OLEDB::OrderStatus()
{
HRESULT hr;
int iTryCount = 0;
IMultipleResults* pMultipleResults;
IRowset* pRowset;
IRowset* pRowset2;
LONG cRows = MAX_OL_ORDER_STATUS_ITEMS; //
number of rows returned in the 1st rowset
ULONG cRowsObtained;
HROW rghRows[MAX_OL_ORDER_STATUS_ITEMS];
//returned row handles for the 1st result
set
HROW* prghRows = &rghRows[0];
LONG cRows2 = 1; // number of rows
returned in the 2nd rowset
ULONG cRowsObtained2;
HROW rghRows2; //returned row handle
for the 2nd result set
HROW* prghRows2 = &rghRows2;
int i;
long lRowsAffected; // the number of
affected rows for a rowset

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

while (TRUE)
{
try
{
// Execute the prepared
command
// Ask for
IMultipleResults because it returns 2 rowsets.
hr =
m_pIOrderStatusCommand->Execute(NULL,
IID_IMultipleResults, &m_OrderStatusExecuteParams,
NULL,

(IUnknown **)&pMultipleResults);
if (FAILED(hr))
{
ThrowError(m_pIOrderStatusCommand,
COLEDBERR::eExecute, "OrderStatus()");
}
}
}

```

```

// Get order line
results

// Get the first rowset
object
hr = pMultipleResults-
>GetResult(NULL, 0, IID_IRowset, &lRowsAffected,
(IUnknown **)&pRowset);
if (FAILED(hr))
{
ThrowError(m_pIOrderStatusCommand,
COLEDBERR::eGetResult, "OrderStatus()");
}

// Fetch the result row
handle(s)
hr = pRowset-
>GetNextRows(DB_NULL_HCHAPTER, 0, cRows,
&cRowsObtained, &prghRows);
if (FAILED(hr))
{
ThrowError(m_pIOrderStatusCommand,
COLEDBERR::eGetNextRows, "OrderStatus()");
}

m_txn.OrderStatus.o_ol_cnt =
(short)cRowsObtained;

// Get the data from
multiple rows in this rowset
for (i = 0; i <
m_txn.OrderStatus.o_ol_cnt; ++i)
{
// Fetch the
actual row data by handle
hr = pRowset-
>GetData(rghRows[i], m_hOrderStatusOutputAccessor,
&m_txn.OrderStatus.OL[i]);
if
(FAILED(hr))
{
ThrowError(m_pIOrderStatusCommand,
COLEDBERR::eGetData, "OrderStatus()");
}

// Release row(s)
hr = pRowset-
>ReleaseRows(cRowsObtained, prghRows, NULL, NULL,
NULL);
// Release rowset
hr = pRowset-
>Release();
}

```

```

// Get the second
rowset object

// Fetch the
result row handle(s)
pRowset2->GetNextRows(DB_NULL_HCHAPTER, 0, cRows2,
&cRowsObtained2, &prghRows2);
(FAILED(hr))
{
    ThrowError(m_pIOrderStatusCommand,
COLEDBERR::eGetResult, "OrderStatus()");
}

// Fetch the
actual row data by handle
pRowset2->GetData(rghRows2,
m_hOrderStatusOutputAccessor2, &m_txn.OrderStatus);
(FAILED(hr))
{
    ThrowError(m_pIOrderStatusCommand,
COLEDBERR::eGetData, "OrderStatus()");
}

// Release
row(s)
pRowset2->Release();
}

// Release the common
MultipleResults interface
hr = pMultipleResults-
>Release();

if
(m_txn.OrderStatus.o_ol_cnt == 0)
    throw new
CTPCC_OLEDB_ERR( CTPCC_OLEDB_ERR::ERR_NO_SUCH_ORDER
);

```

```

else if
(m_txn.OrderStatus.c_id == 0 &&
m_txn.OrderStatus.c_last[0] == 0)
    throw new
CTPCC_OLEDB_ERR( CTPCC_OLEDB_ERR::ERR_INVALID_CUST );
else
    m_txn.OrderStatus.exec_status_code = eOK;

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

        // hit deadlock;
        delete e;
        Sleep(10 * iTryCount);
    }
}

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

void CTPCC_OLEDB::InitDeliveryParams()
{
    int i;
    HRESULT hr;
    wchar_t
szName[iMAX_SP_NAME_LEN];
    IAccessor*
pIAccessor;
    const
    ULONG
nInputParams = 2; // input parameters
    const
    ULONG
nOutputParams = 10; // output 1st result
    set columns
    // Structure to bind in accessor
    DBBINDING
acInputDBBinding[nInputParams];
    DBBINDSTATUS
acInputDBBindStatus[nInputParams];
    DBBINDING
acOutputDBBinding[nOutputParams];
    DBBINDSTATUS
acOutputDBBindStatus[nOutputParams];

    // Set command text
    _snwprintf(szName,
sizeof(szName)/sizeof(szName[0]),
L"call %stpc_delivery
(?,?)", m_szSPPrefix);
}

```

```

// Create and Prepare a new command object
for Delivery.
CreateCommand(szName,
&m_pIDeliveryCommand);

// Describe the consumer buffer by filling
in the array
// of DBBINDING structures. Each binding
associates
// a single parameter to the consumer's buffer.
InitBindings(&acInputDBBinding[0],
nInputParams, eInputParameter);

i = 0;
// Delivery parameter 1
SetBinding(&acInputDBBinding[i++],
offsetof(DELIVERY_DATA, w_id),
sizeof(m_txn.Delivery.w_id), DBTYPE_I4);

// Delivery parameter 2
SetBinding(&acInputDBBinding[i++],
offsetof(DELIVERY_DATA, o_carrier_id),
sizeof(m_txn.Delivery.o_carrier_id), DBTYPE_I2);

hr = m_pIDeliveryCommand-
>QueryInterface(IID_IAccessor, (void **)&pIAccessor);
if (FAILED(hr))
{
    ThrowError(m_pIDeliveryCommand,
COLEDBERR::eQueryInterface, "InitDeliveryParams()");
}

hr = pIAccessor->CreateAccessor(
DBACCESSOR_PARAMETERDATA,
nInputParams,
acInputDBBinding,
sizeof(DELIVERY_DATA),

&m_hDeliveryInputAccessor,
acInputDBBindStatus);

if (FAILED(hr))
{
    ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor, "InitDeliveryParams()");
}

m_DeliveryExecuteParams.cParamSets = 1;
m_DeliveryExecuteParams.hAccessor =
m_hDeliveryInputAccessor;
m_DeliveryExecuteParams.pData =
&m_txn.Delivery;

// Now fill the binding information for
result set 1 output columns
InitBindings(&acOutputDBBinding[0],
nOutputParams, eOutputColumn);

// Binding for a rowset that may return
more than one row.
for (i = 0; i < 10; ++i)
{
    // Delivery output column 1
}

```

```

        SetBinding(&acOutputDBBinding[i],
offsetof(DELIVERY_DATA, o_id[i]),
sizeof(m_txn.Delivery.o_id[i]), DBTYPE_I4);
    }

    hr = pIAccessor->CreateAccessor(
        DBACCESSOR_ROWDATA |
DBACCESSOR_OPTIMIZED,
        nOutputParams,
        acOutputDBBinding,
        sizeof(DELIVERY_DATA),
&m_hDeliveryOutputAccessor,
        acOutputDBBindStatus);
    if (FAILED(hr))
    {
        ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor, "InitDeliveryParams()");
    }
}

void CTPCC_OLEDB::Delivery()
{
    HRESULT                hr;
    int
    iTryCount = 0;
    IRowset*                pRowset;
    LONG                    cRows = 1;
    // number of rows returned in the rowset
    ULONG
    cRowsObtained;
    HROW                    rgRow;
    //returned row handles
    HROW*                   prghRow =
&rgRow;

    while (TRUE)
    {
        try
        {
            // Execute the prepared
command
                hr =
m_pIDeliveryCommand->Execute(NULL, IID_IRowset,
&m_DeliveryExecuteParams, NULL,

                (IUnknown **)&pRowset);
            if (FAILED(hr))
            {
                ThrowError(m_pIDeliveryCommand,
COLEDBERR::eExecute, "Delivery()");
            }

            // Fetch the result row
handle(s)
                hr = pRowset-
>GetNextRows(DB_NULL_HCHAPTER, 0, cRows,
&cRowsObtained, &prghRow);
            if (FAILED(hr))
            {

```

```

                ThrowError(m_pIDeliveryCommand,
COLEDBERR::eGetNextRows, "Delivery()");
            }

            // Fetch the actual row
data by handle
                hr = pRowset-
>GetData(rgRow, m_hDeliveryOutputAccessor,
&m_txn.Delivery);
            if (FAILED(hr))
            {
                ThrowError(m_pIDeliveryCommand,
COLEDBERR::eGetData, "Delivery()");
            }

            // Release row(s)
            hr = pRowset-
>ReleaseRows(cRowsObtained, prghRow, NULL, NULL,
NULL);
            // Release rowset
            hr = pRowset-
>Release();

            m_txn.Delivery.exec_status_code = eOK;

            break;
        }
        catch (COLEDBERR *e)
        {
            if (!e->m_bDeadLock)
            {
                throw;
            }
            // hit deadlock;
            backoff for increasingly longer period
            delete e;
            Sleep(10 * iTryCount);
        }
    }

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

```

tpcc_oledb.h

```

/* FILE: TPC_C_OLEDB.H
Microsoft
TPC-C Kit Ver. 4.20.000
Copyright
Microsoft, 1999-2004
Written by
Sergey Vasilevskiy
All Rights Reserved
*
*
*

```

```

* PURPOSE: Header file for TPC-C txn class
OLE DB implementation.
*
*
*/
#pragma once

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

#define iMAX_SP_NAME_LEN 256 //maximum length of a
stored procedure name with parameters

// Type of parameter and result set column bindings.
enum eBindingType
{
    eInputParameter,
    eOutputParameter,
    eInputOutputParameter,
    eOutputColumn
};

class COLEDBERR : public CBaseErr
{
public:
    enum ACTION
    {
        eNone,
        eUnknown,
        eQueryInterface,
        // error from QueryInterface
        eCreateSession,
        eCreateCommand,
        eSetCommandText,
        eExecute,

        // = 6
        eCreateAccessor,
        ePrepare,
        eGetNextRows,
        eGetData,
        eGetResult

        // = 11
    };

    COLEDBERR(LPCTSTR szLoc)
        : CBaseErr(szLoc)
    {
        m_eAction = eNone;
        m_NativeError = 0;
        m_bDeadLock = FALSE;
        m_OLEDBErrStr = NULL;
    };

    ~COLEDBERR()
    {
        if (m_OLEDBErrStr !=
            delete []
NULL)
        m_OLEDBErrStr;
    }

```

```

        };
        ACTION m_eAction;
        int m_NativeError;
        BOOL m_bDeadLock;
        char *m_OLEDBErrStr;

        int ErrorType()
        {return ERR_TYPE_OLEDB;};
        char* ErrorTypeStr() { return
        "OLEDB"; }
        int ErrorNum()
        {return m_NativeError;};
        char* ErrorText() {return
        m_OLEDBErrStr;};
        int ErrorAction()
        { return (int)m_eAction; }
    };

    class CTPCC_OLEDB_ERR : public CBaseErr
    {
    public:
        enum TPCC_OLEDB_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_OLEDB_ERR( int iErr ) {
m_errno = iErr; m_iTryCount = 0; };

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

        int m_errno;
        int m_iTryCount;

        int ErrorType()
        {return ERR_TYPE_TPCC_OLEDB;};
        char* ErrorTypeStr() { return
        "TPCC OLEDB"; }
        int ErrorNum()
        {return m_errno;};

        char* ErrorText();

    };

    class DllDecl CTPCC_OLEDB : 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

        DBPROPSET
        m_rgInitPropSet; //
        initialization property set used to establish a
        connection
        DBPROP
        m_InitProperties[4]; //
        individual initialization properties
        IDBCreateSession*
        m_pIDBCreateSession; // session
        (connection) interface
        IDBCreateCommand*
        m_pIDBCreateCommand; // SQL
        command creation interface

        IMalloc*
        m_pIMalloc;
        // Needed to release error strings.

        // StockLevel
        ICommandText*
        m_pIStockLevelCommand;
        HACCESSOR
        m_hStockLevelInputAccessor; // accessor
        to bind input parameters
        HACCESSOR
        m_hStockLevelOutputAccessor; // accessor
        to bind output columns
        DBPARAMS
        m_StockLevelExecuteParams; //
        parameter structure for Execute

        // NewOrder
        // One prepared command for each
        possible number of new order line items
        ICommandText*
        m_pINewOrderCommand[MAX_OL_NEW_ORDER_ITEMS]
        ;
        // accessors to bind input
        parameters
        // one for each possible number
        of new order line items
        HACCESSOR
        m_hNewOrderInputAccessor[MAX_OL_NEW_ORDER_I
        TEMS];
        // accessor to bind output
        columns of the first rowset
        HACCESSOR
        m_hNewOrderOutputAccessor[MAX_OL_NEW_ORDER_
        ITEMS];
        // accessor to bind output
        columns of the second rowset

```

```

        HACCESSOR
        m_hNewOrderOutputAccessor2[MAX_OL_NEW_ORDER
        _ITEMS];
        // parameter structure for
        Execute
        DBPARAMS
        m_NewOrderExecuteParams[MAX_OL_NEW_ORDER_IT
        EMS];

        // Payment
        ICommandText*
        m_pIPaymentCommand;
        HACCESSOR
        m_hPaymentInputAccessor; // accessor
        to bind input parameters
        HACCESSOR
        m_hPaymentOutputAccessor; // accessor
        to bind output columns
        DBPARAMS
        m_PaymentExecuteParams; //
        parameter structure for Execute

        // OrderStatus
        ICommandText*
        m_pIOrderStatusCommand;
        HACCESSOR
        m_hOrderStatusInputAccessor; // accessor
        to bind input parameters
        HACCESSOR
        m_hOrderStatusOutputAccessor; // accessor
        to bind output columns
        HACCESSOR
        m_hOrderStatusOutputAccessor2; //
        accessor to bind output columns
        DBPARAMS
        m_OrderStatusExecuteParams; //
        parameter structure for Execute

        // Delivery
        ICommandText*
        m_pIDeliveryCommand;
        HACCESSOR
        m_hDeliveryInputAccessor; // accessor
        to bind input parameters
        HACCESSOR
        m_hDeliveryOutputAccessor; // accessor
        to bind output columns
        DBPARAMS
        m_DeliveryExecuteParams; // parameter
        structure for Execute

        wchar_t
        m_szSPPrefix[32]; // stored
        procedures prefix

        // new-order specific fields
        int m_no_commit_flag;

        void ThrowError( IUnknown*
        pObjectWithError, COLEDBERR::ACTION eAction, LPCTSTR
        szLocation );

```

```

        void CheckSPVersion();

        void InitNewOrderParams();
        void InitPaymentParams();
        void InitDeliveryParams();
        void InitStockLevelParams();
        void InitOrderStatusParams();

        // Helper function to create and
prepare a command      void CreateCommand(wchar_t*
szSQLCommand, ICommandText* ppICommandText);
        // Helper function to prepare a
command               void PrepareCommand(ICommandText*
pICommand);

        // Helper function to fill one
binding               void SetBinding(DBBINDING*
and output column bindings
pDBBinding, size_t obValue, size_t cbMaxLen, DBTYPE
wType);

        // Helper function to initialize
an array of bindings  void InitBindings(DBBINDING*
pDBBindings, int iCount, eBindingType BindingType);

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

    public:
        CTPCC_OLEDB(LPCSTR szServer,
LPCSTR szUser, LPCSTR szPassword, LPCSTR szHost,
LPCSTR szDatabase, LPCWSTR szSPPrefix);
        ~CTPCC_OLEDB(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_OLEDB* CTPCC_OLEDB_new
( LPCSTR szServer, LPCSTR szUser, LPCSTR
szPassword, LPCSTR szHost, LPCSTR szDatabase, LPCWSTR
szSPPrefix );

typedef CTPCC_OLEDB* (TYPE_CTPCC_OLEDB)(LPCSTR,
LPCSTR, LPCSTR, LPCSTR, LPCSTR, LPCWSTR);

```

trans.h

```

/*      FILE:      TRANS.H
*
*      Microsoft
*      TPC-C Kit Ver. 4.42.000
*      Copyright
*      Microsoft, 2002
*      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:
*      *      4.42.000 - changed w_id fields
*      from short to long to support >32K warehouses
*      *      4.20.000 - updated rev number to
*      match kit
*      */
#pragma once

// String length constants
#define SERVER_NAME_LEN      20
#define DATABASE_NAME_LEN   20
#define USER_NAME_LEN       20
#define PASSWORD_LEN        20
#define TABLE_NAME_LEN    20
#define I_DATA_LEN          50
#define I_NAME_LEN          24
#define BRAND_LEN           1
#define LAST_NAME_LEN       16
#define W_NAME_LEN          10
#define ADDRESS_LEN         20
#define STATE_LEN           2

```

```

#define ZIP_LEN              9
#define S_DIST_LEN          24
#define S_DATA_LEN          50
#define D_NAME_LEN          10
#define FIRST_NAME_LEN      16
#define MIDDLE_NAME_LEN     2
#define PHONE_LEN           16
#define DATETIME_LEN        30
#define CREDIT_LEN          2
#define C_DATA_LEN          250
#define H_DATA_LEN          24
#define DIST_INFO_LEN       24
#define MAX_OL_NEW_ORDER_ITEMS 15
#define MAX_OL_ORDER_STATUS_ITEMS 15
#define STATUS_LEN          25
#define OL_DIST_INFO_LEN    24

// TIMESTAMP_STRUCT is provided by the ODBC header
file sqltypes.h, but is not available
// when compiling with dlib, so redefined here.
Note: we are using the symbol "SQLTYPES"
// (declared in sqltypes.h) as a way to determine if
TIMESTAMP_STRUCT has been declared.
#ifndef __SQLTYPES
    typedef struct
    {
        /* SQLSMALLINT */      short
                                year;
                                unsigned short
                                /*
SQLSMALLINT */      month;
                                unsigned short
                                /*
SQLSMALLINT */      day;
                                unsigned short
                                /*
SQLSMALLINT */      hour;
                                unsigned short
                                /*
SQLSMALLINT */      minute;
                                unsigned short
                                /*
SQLSMALLINT */      second;
                                unsigned long
                                /*
SQLINTEGER */      fraction;
    } TIMESTAMP_STRUCT;
#endif

// possible values for exec_status_code after
transaction completes
enum EXEC_STATUS
{
    eOK,                                // 0
    "Transaction committed."
    eInvalidItem,                        // 1
    "Item number
is not valid."
    eDeliveryFailed,                    // 2
    "Delivery
Post Failed."
};

// transaction structures
typedef struct
{
    // input params
    long
    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
    long                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
    long
    w_id;
    short
    d_id;
    long
    c_id;
    short
    c_d_id;
    long
    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;
    long
    ol_supply_w_id;
    short
    ol_quantity;
    double
    ol_amount;
    TIMESTAMP_STRUCT
    ol_delivery_d;
} OL_ORDER_STATUS_DATA;

```

```

typedef struct
{
    // input params
    long                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
    long                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
    long
    w_id;
    //delivery warehouse
    short
    o_carrier_id;
    //carrier id
} DELIVERY_TRANSACTION;

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

    // output params

```



```

EXEC_STATUS
exec_status_code;
long
low_stock;
} STOCK_LEVEL_DATA, *PSTOCK_LEVEL_DATA;

```

txn_base.h

```

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

#pragma once

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

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

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

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

```

```

virtual void OrderStatus
() = 0;
};

```

resource.h

```

//{{NO_DEPENDENCIES}}
// Microsoft Developer
// Studio generated
// include file.
// Used by
// tpcc_com_all.rc
//
#define IDS_PROJNAME
100
#define IDR_TPCC
101
#define IDR_NEWORDER
102
#define IDR_ORDERSTATUS
103
#define IDR_PAYMENT
104
#define IDR_STOCKLEVEL
105

// Next default values
// for new objects
//
#ifdef APSTUDIO_INVOKED
#ifdef
APSTUDIO_READONLY_SYMBOLS
#define
_APS_NEXT_RESOURCE_VALUE
E 202
#define
_APS_NEXT_COMMAND_VALUE
32768
#define
_APS_NEXT_CONTROL_VALUE
201
#define
_APS_NEXT_SYMED_VALUE
106
#endif
#endif

```

resource.h

```

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

// Next default values for new objects
//
#ifdef APSTUDIO_INVOKED
#ifdef APSTUDIO_READONLY_SYMBOLS
#define _APS_NEXT_RESOURCE_VALUE
102

```

```

#define _APS_NEXT_COMMAND_VALUE
40001
#define _APS_NEXT_CONTROL_VALUE
1000
#define _APS_NEXT_SYMED_VALUE
101
#endif

```

Appendix B:

Database Design

The TPC-C database was created with the following Transact-SQL scripts:

backup.sql

```
-----
-- File:    BACKUP.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.61
-- Copyright Microsoft, 2005
--
-----

DECLARE @startdate DATETIME,
        @enddate   DATETIME

SELECT  @startdate = GETDATE()
SELECT  'Start date:',
        CONVERT(VARCHAR(30),@startdate, 21)

DUMP DATABASE tpcc TO tpccback7, tpccback8, tpccback9, tpccback10, tpccback11,
tpccback12 WITH init, stats = 1

SELECT  @enddate = GETDATE()
SELECT  'End date: ',
        CONVERT(VARCHAR(30),@enddate, 21)
SELECT  'Elapsed time (in seconds): ',
        DATEDIFF(second, @startdate, @enddate)

GO
```

backupdev.sql

```
-----
-- File:    BACKUPDEV.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.68
-- Copyright Microsoft, 2005
--
-----

USE master
GO

-----
-- create backup devices
-----
EXEC sp_addumpdevice 'disk','tpccback7','U:\tpccback7.dmp'
```

```
GO
EXEC sp_addumpdevice 'disk','tpccback8','V:\tpccback8.dmp'
GO
EXEC sp_addumpdevice 'disk','tpccback9','W:\tpccback9.dmp'
GO
EXEC sp_addumpdevice 'disk','tpccback10','X:\tpccback10.dmp'
GO
EXEC sp_addumpdevice 'disk','tpccback11','Y:\tpccback11.dmp'
GO
EXEC sp_addumpdevice 'disk','tpccback12','Z:\tpccback12.dmp'
GO
```

createdb.sql

```
-----
-- File:    CREATEDB.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.68
-- Copyright Microsoft, 2005
--
-----

SET ANSI_NULL_DFLT_OFF ON
GO

USE master
GO

-----
-- Create temporary table for timing
-----
IF EXISTS( SELECT name FROM sysobjects WHERE name = 'tpcc_timer' )
    DROP TABLE tpcc_timer
GO

CREATE TABLE tpcc_timer
        (start_date CHAR(30),
         end_date   CHAR(30))

GO

INSERT INTO tpcc_timer VALUES(0,0)
GO

-----
-- Store starting time
-----
UPDATE tpcc_timer
SET start_date = (SELECT CONVERT(CHAR(30), GETDATE(), 21))
GO

-----
-- create main database files
-----
CREATE DATABASE tpcc
ON PRIMARY
(
    NAME             = MSSQL_tpcc_root,
    FILENAME         = 'c:\MSSQL_tpcc_root.mdf',
    SIZE              = 8MB,
    FILEGROWTH        = 0),
```

```

FILEGROUP MSSQL_stk_fg
(
    NAME = MSSQL_stk1,
    FILENAME = 'c:\stk\stk1\',
    SIZE = 200000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_stk2,
    FILENAME = 'c:\stk\stk2\',
    SIZE = 200000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_stk3,
    FILENAME = 'c:\stk\stk3\',
    SIZE = 200000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_stk4,
    FILENAME = 'c:\stk\stk4\',
    SIZE = 200000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_stk5,
    FILENAME = 'c:\stk\stk5\',
    SIZE = 200000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_stk6,
    FILENAME = 'c:\stk\stk6\',
    SIZE = 200000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_stk7,
    FILENAME = 'c:\stk\stk7\',
    SIZE = 200000MB,
    FILEGROWTH = 0),

```

```

FILEGROUP MSSQL_cust_fg
(
    NAME = MSSQL_cust1,
    FILENAME = 'c:\cust\cust1\',
    SIZE = 139000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_cust2,
    FILENAME = 'c:\cust\cust2\',
    SIZE = 139000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_cust3,
    FILENAME = 'c:\cust\cust3\',
    SIZE = 139000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_cust4,
    FILENAME = 'c:\cust\cust4\',
    SIZE = 139000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_cust5,
    FILENAME = 'c:\cust\cust5\',
    SIZE = 139000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_cust6,
    FILENAME = 'c:\cust\cust6\',
    SIZE = 139000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_cust7,
    FILENAME = 'c:\cust\cust7\',
    SIZE = 139000MB,
    FILEGROWTH = 0),

```

```

FILEGROUP MSSQL_ol_fg

```

```

(
    NAME = MSSQL_ol1,
    FILENAME = 'c:\ol\ol1\',
    SIZE = 152000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_ol2,
    FILENAME = 'c:\ol\ol2\',
    SIZE = 152000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_ol3,
    FILENAME = 'c:\ol\ol3\',
    SIZE = 152000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_ol4,
    FILENAME = 'c:\ol\ol4\',
    SIZE = 152000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_ol5,
    FILENAME = 'c:\ol\ol5\',
    SIZE = 152000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_ol6,
    FILENAME = 'c:\ol\ol6\',
    SIZE = 152000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_ol7,
    FILENAME = 'c:\ol\ol7\',
    SIZE = 152000MB,
    FILEGROWTH = 0),

```

```

FILEGROUP MSSQL_misc_fg
(
    NAME = MSSQL_misc1,
    FILENAME = 'c:\misc\misc1\',
    SIZE = 30000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_misc2,
    FILENAME = 'c:\misc\misc2\',
    SIZE = 30000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_misc3,
    FILENAME = 'c:\misc\misc3\',
    SIZE = 30000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_misc4,
    FILENAME = 'c:\misc\misc4\',
    SIZE = 30000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_misc5,
    FILENAME = 'c:\misc\misc5\',
    SIZE = 30000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_misc6,
    FILENAME = 'c:\misc\misc6\',
    SIZE = 30000MB,
    FILEGROWTH = 0),
(
    NAME = MSSQL_misc7,
    FILENAME = 'c:\misc\misc7\',
    SIZE = 30000MB,
    FILEGROWTH = 0),

```

```

LOG ON
(
    NAME = MSSQL_tpcc_log,

```

```

        FILENAME = 'E:',
        SIZE      = 1530663MB,
        FILEGROWTH = 0)
COLLATE Latin1_General_BIN
GO

-----
-- Store ending time
-----
UPDATE tpcc_timer
SET   end_date = (SELECT CONVERT(CHAR(30), GETDATE(), 21))
GO

SELECT DATEDIFF(second, (SELECT start_date FROM tpcc_timer), (SELECT end_date FROM
tpcc_timer))
GO

-----
-- 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. 4.68
-- Copyright Microsoft, 2006
--
-- Sets database options for load
--
-----
USE master
GO

ALTER DATABASE tpcc SET RECOVERY BULK_LOGGED
GO

EXEC sp_dboption tpcc, 'trunc. log on chkpt.', TRUE
GO

ALTER DATABASE tpcc SET TORN_PAGE_DETECTION OFF
GO

ALTER DATABASE tpcc SET PAGE_VERIFY NONE
GO

USE tpcc
GO

CHECKPOINT
GO

```

dbopt2.sql

```

-----
-- File:  DBOPT2.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.68
-- Copyright Microsoft, 2006
--
-- Sets database options after load
--
-----
ALTER DATABASE tpcc SET RECOVERY FULL
GO

USE tpcc
GO

CHECKPOINT
GO

sp_configure 'allow updates', 1
GO

RECONFIGURE WITH OVERRIDE
GO

DECLARE    @msg                      varchar(50)

-----
-- OPTIONS FOR SQL SERVER 2000
-- Set option values for user-defined indexes --
-----

SET    @msg = ' '
PRINT  @msg
SET    @msg = 'Setting SQL Server indexoptions'
PRINT  @msg
SET    @msg = ' '
PRINT  @msg

EXEC sp_indexoption 'customer', 'DisallowPageLocks', TRUE
EXEC sp_indexoption 'district', 'DisallowPageLocks', TRUE
EXEC sp_indexoption 'warehouse', 'DisallowPageLocks', TRUE
EXEC sp_indexoption 'stock', 'DisallowPageLocks', TRUE
EXEC sp_indexoption 'order_line', 'DisallowRowLocks', TRUE
EXEC sp_indexoption 'orders', 'DisallowRowLocks', TRUE
EXEC sp_indexoption 'new_order', 'DisallowRowLocks', TRUE
EXEC sp_indexoption 'item', 'DisallowRowLocks', TRUE
EXEC sp_indexoption 'item', 'DisallowPageLocks', False
GO

Print ' '
Print '*****'
Print 'Pre-specified Locking Hierarchy:'
Print '    Lockflag = 0 ==> No pre-specified hierarchy'
Print '    Lockflag = 1 ==> Lock at Page-level then Table-level'
Print '    Lockflag = 2 ==> Lock at Row-level then Table-level'
Print '    Lockflag = 3 ==> Lock at Table-level'
Print ' '

SELECT  name,

```

```

        lockflags
FROM    sysindexes
WHERE   object_id('warehouse') = id OR
        object_id('district') = id OR
        object_id('customer') = id OR
        object_id('stock') = id OR
        object_id('orders') = id OR
        object_id('order_line') = id OR
        object_id('history') = id OR
        object_id('new_order') = id OR
        object_id('item') = id
ORDER BY lockflags asc
GO

sp_configure 'allow updates',0
GO

RECONFIGURE WITH OVERRIDE
GO

EXEC sp_dboption tpcc,          'auto update statistics',    FALSE
EXEC sp_dboption tpcc,          'auto create statistics',    FALSE
GO

DECLARE @db_id int,
        @tbl_id int

SET      @db_id = DB_ID('tpcc')
SET      @tbl_id = OBJECT_ID('tpcc..warehouse')
DBCC PINTABLE (@db_id, @tbl_id)

SET      @tbl_id = OBJECT_ID('tpcc..district')
DBCC PINTABLE (@db_id, @tbl_id)

SET      @tbl_id = OBJECT_ID('tpcc..new_order')
DBCC PINTABLE (@db_id, @tbl_id)

SET      @tbl_id = OBJECT_ID('tpcc..item')
DBCC PINTABLE (@db_id, @tbl_id)
GO

```

delivery.sql

```

-----
--      File:    DELIVERY.SQL                      --
--      Microsoft TPC-C Benchmark Kit Ver. 4.68      --
--      Copyright Microsoft, 2006                    --
--                                                    --
--      Creates delivery stored procedure             --
--                                                    --
--      Interface Level:    4.20.000                 --
--                                                    --
-----
SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO

```

```

USE tpcc
GO

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

CREATE PROC tpcc_delivery
        @w_id          int,
        @o_carrier_id  smallint

AS
DECLARE @d_id          tinyint,
        @o_id          int,
        @c_id          int,
        @total         money,
        @oid1          int,
        @oid2          int,
        @oid3          int,
        @oid4          int,
        @oid5          int,
        @oid6          int,
        @oid7          int,
        @oid8          int,
        @oid9          int,
        @oid10         int

SELECT  @d_id  = 0

BEGIN TRANSACTION d
    WHILE (@d_id < 10)
        BEGIN
            SELECT  @d_id  = @d_id + 1,
                    @total = 0,
                    @o_id  = 0

            SELECT TOP 1
                @o_id  = no_o_id
            FROM    new_order WITH (serializable uplock)
            WHERE   no_w_id = @w_id AND
                    no_d_id = @d_id
            ORDER BY no_o_id ASC

            IF (@@rowcount <> 0)
                BEGIN
                    -- claim the order for this district
                    DELETE new_order
                    WHERE   no_w_id = @w_id AND
                            no_d_id = @d_id AND
                            no_o_id = @o_id

                    -- set carrier_id on this order (and get customer id)
                    UPDATE orders
                    SET      o_carrier_id = @o_carrier_id,
                            @c_id      = o_c_id
                    WHERE   o_w_id = @w_id AND
                            o_d_id = @d_id AND
                            o_id      = @o_id

                    -- set date in all lineitems for this order (and sum amounts)
                    UPDATE order_line
                    SET      ol_delivery_d = GETDATE(),

```

```

        @total      = @total + ol_amount
WHERE    ol_w_id    = @w_id AND
        ol_d_id    = @d_id AND
        ol_o_id    = @o_id

-- accumulate lineitem amounts for this order into customer
UPDATE   customer
SET      c_balance  = c_balance + @total,
        c_delivery_cnt = c_delivery_cnt + 1
WHERE    c_w_id    = @w_id AND
        c_d_id    = @d_id AND
        c_id      = @c_id
END

SELECT  @oid1 = CASE @d_id WHEN 1 THEN @o_id ELSE @oid1 END,
        @oid2 = CASE @d_id WHEN 2 THEN @o_id ELSE @oid2 END,
        @oid3 = CASE @d_id WHEN 3 THEN @o_id ELSE @oid3 END,
        @oid4 = CASE @d_id WHEN 4 THEN @o_id ELSE @oid4 END,
        @oid5 = CASE @d_id WHEN 5 THEN @o_id ELSE @oid5 END,
        @oid6 = CASE @d_id WHEN 6 THEN @o_id ELSE @oid6 END,
        @oid7 = CASE @d_id WHEN 7 THEN @o_id ELSE @oid7 END,
        @oid8 = CASE @d_id WHEN 8 THEN @o_id ELSE @oid8 END,
        @oid9 = CASE @d_id WHEN 9 THEN @o_id ELSE @oid9 END,
        @oid10 = CASE @d_id WHEN 10 THEN @o_id ELSE @oid10 END
END

COMMIT TRANSACTION d

-- return delivery data to client

SELECT  @oid1,
        @oid2,
        @oid3,
        @oid4,
        @oid5,
        @oid6,
        @oid7,
        @oid8,
        @oid9,
        @oid10

GO

SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO

```

getargs.c

```

//      File:          GETARGS.C
//
//      Microsoft TPC-C Kit Ver. 4.51
//      Copyright Microsoft, 1996, 1997, 1998, 1999,
2000, 2001, 2002, 2003
//      Purpose: Source file for command line processing

// Includes
#include "tpcc.h"

```

```

//=====
//
// Function name: GetArgsLoader
//
//=====

void GetArgsLoader(int argc, char **argv, TPCC_LDR_ARGS *pargs)
{
    int    i;
    char   *ptr;

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

    /* init args struct with some useful values */
    pargs->server      = SERVER;
    pargs->user         = USER;
    pargs->password     = PASSWORD;
    pargs->database     = DATABASE;
    pargs->batch        = BATCH;
    pargs->num_warehouses = UNDEF;
    pargs->tables_all   = TRUE;
    pargs->table_item   = FALSE;
    pargs->table_warehouse = FALSE;
    pargs->table_customer = FALSE;
    pargs->table_orders  = FALSE;
    pargs->loader_res_file = LOADER_RES_FILE;
    pargs->log_path      = LOADER_LOG_PATH;
    pargs->pack_size     = DEF_LD_PACKSIZE;
    pargs->starting_warehouse = DEF_STARTING_WAREHOUSE;
    pargs->build_index   = BUILD_INDEX;
    pargs->index_order   = INDEX_ORDER;
    pargs->index_script_path = INDEX_SCRIPT_PATH;
    pargs->scale_down    = SCALE_DOWN;

    /* check for zero command line args */
    if ( argc == 1 )
        GetArgsLoaderUsage();

    for ( i = 1; i < argc; ++i )
    {
        if ( argv[i][0] != '-' && argv[i][0] != '/' )
        {
            printf("\nUnrecognized command");
            GetArgsLoaderUsage();
            exit(1);
        }

        ptr = argv[i];

        switch ( ptr[1] )
        {
            case '?': /* Fall through */
                GetArgsLoaderUsage();
                break;

            case 'D':
                pargs->database = ptr+2;
                break;

            case 'P':
                pargs->password = ptr+2;

```

```

                break;

case 'S':
    pargs->server = ptr+2;
    break;

case 'U':
    pargs->user = ptr+2;
    break;

case 'b':
    pargs->batch = atol(ptr+2);
    break;

case 'W':
    pargs->num_warehouses = atol(ptr+2);
    break;

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

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

TRUE;
        == 0)
            else if (strcmp(ptr+2,"warehouse")
                pargs->table_warehouse =

TRUE;
        == 0)
            else if (strcmp(ptr+2,"customer")
                pargs->table_customer =

TRUE;
        0)
            else if (strcmp(ptr+2,"orders") ==
                pargs->table_orders =

TRUE;
            else
            {
                printf("\nUnrecognized command");
                GetArgsLoaderUsage();
                exit(1);
            }
            break;
        }

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

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

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

case 'i':

```

```

        pargs->build_index = atol(ptr+2);
        break;

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

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

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

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

}

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

return;
}

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

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

    printf("TPCCLDR:\n\n");
    printf("Parameter                                Default\n");
    printf("-----");
    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("-L Loader BCP Log Path                            %s\n",
LOADER_LOG_PATH);

```

```

        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);
}

```

idxcuscl.sql

```

-----
-- File:      IDXCUSCL.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.68
-- Copyright Microsoft, 2006
--
-- Creates clustered index on customer table
-----
USE tpcc
GO

DECLARE @startdate DATETIME,
        @enddate   DATETIME

SELECT @startdate = GETDATE()
SELECT 'Start date:',
       CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name = 'customer_c1' )
    DROP INDEX customer.customer_c1

CREATE UNIQUE CLUSTERED INDEX customer_c1 ON customer(c_w_id, c_d_id, c_id)
ON MSSQL_cust_fg

SELECT @enddate = GETDATE()
SELECT 'End date:',
       CONVERT(VARCHAR(30),@enddate,21)
SELECT 'Elapsed time (in seconds): ',
       DATEDIFF(second, @startdate, @enddate)

```

```

        DATEDIFF(second, @startdate, @enddate)
GO

```

idxcusnc.sql

```

-----
-- File:      IDXCUSNC.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.68
-- Copyright Microsoft, 2006
--
-- Creates non-clustered index on customer table
-----
USE tpcc
GO

DECLARE @startdate DATETIME,
        @enddate   DATETIME

SELECT @startdate = GETDATE()
SELECT 'Start date:',
       CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name = 'customer_nc1' )
    DROP INDEX customer.customer_nc1

CREATE UNIQUE NONCLUSTERED INDEX customer_nc1 ON customer(c_w_id, c_d_id, c_last,
c_first, c_id)
ON MSSQL_cust_fg

SELECT @enddate = GETDATE()
SELECT 'End date:',
       CONVERT(VARCHAR(30),@enddate,21)
SELECT 'Elapsed time (in seconds): ',
       DATEDIFF(second, @startdate, @enddate)
GO

```

idxdiscl.sql

```

-----
-- File:      IDXDISCL.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.68
-- Copyright Microsoft, 2006
--
-- Creates clustered index on district table
-----
USE tpcc
GO

DECLARE @startdate DATETIME,
        @enddate   DATETIME

SELECT @startdate = GETDATE()
SELECT 'Start date:',
       CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name = 'district_c1' )

```



```

DROP INDEX district.district_c1

CREATE UNIQUE CLUSTERED INDEX district_c1 ON district(d_w_id, d_id)
WITH FILLFACTOR=100 ON MSSQL_misc_fg

SELECT @enddate = GETDATE()
SELECT 'End date:',
       CONVERT(VARCHAR(30),@enddate,21)
SELECT 'Elapsed time (in seconds): ',
       DATEDIFF(second, @startdate, @enddate)
GO

```

idxhiscl.sql

```

-----
-- File:      IDXHISCL.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.68
-- Copyright Microsoft, 2006
--
-- Creates clustered index on history table
--
-- CAUTION: This index is only beneficial for systems
-- CAUTION: with 8 or more processors.
-- CAUTION: It may negatively impact performance on
-- CAUTION: systems with less than 8 processors.
--
-----
USE tpcc
GO

DECLARE @startdate DATETIME,
        @enddate   DATETIME

SELECT @startdate = GETDATE()
SELECT 'Start date:',
       CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name = 'history_c1' )
    DROP INDEX history.history_c1

CREATE UNIQUE CLUSTERED INDEX history_c1 ON history(h_c_w_id, h_date, h_c_d_id,
h_c_id, h_amount)
ON MSSQL_misc_fg

SELECT @enddate = GETDATE()
SELECT 'End date:',
       CONVERT(VARCHAR(30),@enddate,21)
SELECT 'Elapsed time (in seconds): ',
       DATEDIFF(second, @startdate, @enddate)
GO

```

idxitmcl.sql

```

-----
-- File:      IDXITMCL.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.68
--

```

```

-- Copyright Microsoft, 2006
--
-- Creates clustered index on item table
--
-----
USE tpcc
GO

DECLARE @startdate DATETIME,
        @enddate   DATETIME

SELECT @startdate = GETDATE()
SELECT 'Start date:',
       CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name = 'item_c1' )
    DROP INDEX item.item_c1

CREATE UNIQUE CLUSTERED INDEX item_c1 ON item(i_id)
ON MSSQL_misc_fg

SELECT @enddate = GETDATE()
SELECT 'End date:',
       CONVERT(VARCHAR(30),@enddate,21)
SELECT 'Elapsed time (in seconds): ',
       DATEDIFF(second, @startdate, @enddate)
GO

```

idxnodcl.sql

```

-----
-- File:      IDXNODCL.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.68
-- Copyright Microsoft, 2006
--
-- Creates clustered index on new-order table
--
-----
USE tpcc
GO

DECLARE @startdate DATETIME,
        @enddate   DATETIME

SELECT @startdate = GETDATE()
SELECT 'Start date:',
       CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name = 'new_order_c1' )
    DROP INDEX new_order.new_order_c1

CREATE UNIQUE CLUSTERED INDEX new_order_c1 ON new_order(no_w_id, no_d_id, no_o_id)
ON MSSQL_misc_fg

SELECT @enddate = GETDATE()
SELECT 'End date:',
       CONVERT(VARCHAR(30),@enddate,21)
SELECT 'Elapsed time (in seconds): ',

```

```
DATEDIFF(second, @startdate, @enddate)
GO
```

idxodlcl.sql

```
-----
-- File:      IDXODLCL.SQL                      --
-- Microsoft TPC-C Benchmark Kit Ver. 4.68      --
-- Copyright Microsoft, 2006                    --
--                                                --
--          Creates clustered index on order-line table --
--                                                --
-----
USE tpcc
GO

DECLARE @startdate DATETIME,
        @enddate   DATETIME

SELECT @startdate = GETDATE()
SELECT 'Start date:',
       CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name = 'order_line_c1' )
    DROP INDEX order_line.order_line_c1

CREATE UNIQUE CLUSTERED INDEX order_line_c1 ON order_line(ol_w_id, ol_d_id, ol_o_id,
ol_number)
    ON MSSQL_ol_fg

SELECT @enddate = GETDATE()
SELECT 'End date:',
       CONVERT(VARCHAR(30),@enddate,21)
SELECT 'Elapsed time (in seconds): ',
       DATEDIFF(second, @startdate, @enddate)
GO
```

idxordcl.sql

```
-----
-- File:      IDXORDCL.SQL                      --
-- Microsoft TPC-C Benchmark Kit Ver. 4.68      --
-- Copyright Microsoft, 2006                    --
--                                                --
--          Creates clustered index on orders table --
--                                                --
-----
USE tpcc
GO

DECLARE @startdate DATETIME,
        @enddate   DATETIME

SELECT @startdate = GETDATE()
SELECT 'Start date:',
       CONVERT(VARCHAR(30),@startdate,21)
```

```
IF EXISTS ( SELECT name FROM sysindexes WHERE name = 'orders_c1' )
    DROP INDEX orders.orders_c1

CREATE UNIQUE CLUSTERED INDEX orders_c1 ON orders(o_w_id, o_d_id, o_id)
    ON MSSQL_misc_fg

SELECT @enddate = GETDATE()
SELECT 'End date:',
       CONVERT(VARCHAR(30),@enddate,21)
SELECT 'Elapsed time (in seconds): ',
       DATEDIFF(second, @startdate, @enddate)
GO
```

idxstkcl.sql

```
-----
-- File:      IDXSTKCL.SQL                      --
-- Microsoft TPC-C Benchmark Kit Ver. 4.68      --
-- Copyright Microsoft, 2006                    --
--                                                --
--          Creates clustered index on stock table --
--                                                --
-----
USE tpcc
GO

DECLARE @startdate DATETIME,
        @enddate   DATETIME

SELECT @startdate = GETDATE()
SELECT 'Start date:',
       CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name = 'stock_c1' )
    DROP INDEX stock.stock_c1

CREATE UNIQUE CLUSTERED INDEX stock_c1 ON stock(s_i_id, s_w_id)
    ON MSSQL_stk_fg

SELECT @enddate = GETDATE()
SELECT 'End date:',
       CONVERT(VARCHAR(30),@enddate,21)
SELECT 'Elapsed time (in seconds): ',
       DATEDIFF(second, @startdate, @enddate)
GO
```

idxwarcl.sql

```
-----
-- File:      IDXWARCL.SQL                      --
-- Microsoft TPC-C Benchmark Kit Ver. 4.68      --
-- Copyright Microsoft, 2006                    --
--                                                --
--          Creates clustered index on warehouse table --
--                                                --
-----
```

```

-----
USE tpcc
GO

DECLARE @startdate DATETIME,
        @enddate   DATETIME

SELECT  @startdate = GETDATE()
SELECT  'Start date:',
        CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name = 'warehouse_c1' )
    DROP INDEX warehouse.warehouse_c1

CREATE UNIQUE CLUSTERED INDEX warehouse_c1 ON warehouse(w_id)
    WITH FILLFACTOR=100 ON MSSQL_misc_fg

SELECT  @enddate = GETDATE()
SELECT  'End date:',
        CONVERT(VARCHAR(30),@enddate,21)
SELECT  'Elapsed time (in seconds): ',
        DATEDIFF(second, @startdate, @enddate)
GO

```

NewOrd.sql

```

-----
-- File:      NEWORD.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.68
-- Copyright Microsoft, 2006
--
-- Creates neworder stored procedure
--
-- Interface Level: 4.20.000
--
-----
SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO

USE tpcc
GO

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

CREATE PROCEDURE tpcc_neworder
    @w_id      int,
    @d_id      tinyint,
    @c_id      int,
    @o_ol_cnt  tinyint,
    @o_all_local tinyint,
    @i_id1 int = 0, @s_w_id1 int = 0, @ol_qty1 smallint = 0,
    @i_id2 int = 0, @s_w_id2 int = 0, @ol_qty2 smallint = 0,
    @i_id3 int = 0, @s_w_id3 int = 0, @ol_qty3 smallint = 0,
    @i_id4 int = 0, @s_w_id4 int = 0, @ol_qty4 smallint = 0,

```

```

    @i_id5 int = 0, @s_w_id5 int = 0, @ol_qty5 smallint = 0,
    @i_id6 int = 0, @s_w_id6 int = 0, @ol_qty6 smallint = 0,
    @i_id7 int = 0, @s_w_id7 int = 0, @ol_qty7 smallint = 0,
    @i_id8 int = 0, @s_w_id8 int = 0, @ol_qty8 smallint = 0,
    @i_id9 int = 0, @s_w_id9 int = 0, @ol_qty9 smallint = 0,
    @i_id10 int = 0, @s_w_id10 int = 0, @ol_qty10 smallint = 0,
    @i_id11 int = 0, @s_w_id11 int = 0, @ol_qty11 smallint = 0,
    @i_id12 int = 0, @s_w_id12 int = 0, @ol_qty12 smallint = 0,
    @i_id13 int = 0, @s_w_id13 int = 0, @ol_qty13 smallint = 0,
    @i_id14 int = 0, @s_w_id14 int = 0, @ol_qty14 smallint = 0,
    @i_id15 int = 0, @s_w_id15 int = 0, @ol_qty15 smallint = 0

```

```

AS
DECLARE @w_tax      smallmoney,
        @d_tax      smallmoney,
        @c_last     char(16),
        @c_credit   char(2),
        @c_discount smallmoney,
        @i_price     smallmoney,
        @i_name      char(24),
        @i_data      char(50),
        @o_entry_d   datetime,
        @remote_flag int,
        @s_quantity  smallint,
        @s_data      char(50),
        @s_dist      char(24),
        @li_no       int,
        @o_id        int,
        @commit_flag tinyint,
        @li_id       int,
        @li_s_w_id   int,
        @li_qty       smallint,
        @ol_number    int,
        @c_id_local  int

```

BEGIN

BEGIN TRANSACTION n

```

-- get district tax and next available order id and update
-- plus initialize local variables

```

```

UPDATE district
SET    @d_tax      = d_tax,
        @o_id       = d_next_o_id,
        d_next_o_id = d_next_o_id + 1,
        @o_entry_d  = GETDATE(),
        @li_no      = 0,
        @commit_flag = 1
WHERE  d_w_id      = @w_id AND
        d_id        = @d_id

```

```

-- process orderlines

```

```

WHILE (@li_no < @o_ol_cnt)
BEGIN
    SELECT @li_no = @li_no + 1

```

```

-- set i_id, s_w_id, and qty for this lineitem

```

```

-----
SELECT  @li_id = CASE @li_no
        WHEN 1 THEN @i_id1
        WHEN 2 THEN @i_id2
        WHEN 3 THEN @i_id3
        WHEN 4 THEN @i_id4
        WHEN 5 THEN @i_id5
        WHEN 6 THEN @i_id6
        WHEN 7 THEN @i_id7
        WHEN 8 THEN @i_id8
        WHEN 9 THEN @i_id9
        WHEN 10 THEN @i_id10
        WHEN 11 THEN @i_id11
        WHEN 12 THEN @i_id12
        WHEN 13 THEN @i_id13
        WHEN 14 THEN @i_id14
        WHEN 15 THEN @i_id15
    END,

    @li_s_w_id = CASE @li_no
        WHEN 1 THEN @s_w_id1
        WHEN 2 THEN @s_w_id2
        WHEN 3 THEN @s_w_id3
        WHEN 4 THEN @s_w_id4
        WHEN 5 THEN @s_w_id5
        WHEN 6 THEN @s_w_id6
        WHEN 7 THEN @s_w_id7
        WHEN 8 THEN @s_w_id8
        WHEN 9 THEN @s_w_id9
        WHEN 10 THEN @s_w_id10
        WHEN 11 THEN @s_w_id11
        WHEN 12 THEN @s_w_id12
        WHEN 13 THEN @s_w_id13
        WHEN 14 THEN @s_w_id14
        WHEN 15 THEN @s_w_id15
    END,

    @li_qty = CASE  @li_no
        WHEN 1 THEN @ol_qty1
        WHEN 2 THEN @ol_qty2
        WHEN 3 THEN @ol_qty3
        WHEN 4 THEN @ol_qty4
        WHEN 5 THEN @ol_qty5
        WHEN 6 THEN @ol_qty6
        WHEN 7 THEN @ol_qty7
        WHEN 8 THEN @ol_qty8
        WHEN 9 THEN @ol_qty9
        WHEN 10 THEN @ol_qty10
        WHEN 11 THEN @ol_qty11
        WHEN 12 THEN @ol_qty12
        WHEN 13 THEN @ol_qty13
        WHEN 14 THEN @ol_qty14
        WHEN 15 THEN @ol_qty15
    END

-- get item data (no one updates item)
-----
SELECT  @i_price = i_price,
        @i_name  = i_name,
        @i_data  = i_data
FROM    item WITH (repeatableread)
WHERE   i_id     = @li_id

```

```

-----
-- update stock values
-----
UPDATE stock
SET     s_ytd      = s_ytd + @li_qty,
        @s_quantity = s_quantity - @li_qty +
        CASE WHEN (s_quantity - @li_qty < 10) THEN 91

ELSE 0 END,

        s_order_cnt = s_order_cnt + 1,
        s_remote_cnt = s_remote_cnt +
        CASE WHEN (@li_s_w_id = @w_id) THEN 0 ELSE 1

END,

        @s_data      = s_data,
        @s_dist      = CASE @d_id
                        WHEN 1 THEN s_dist_01
                        WHEN 2 THEN s_dist_02
                        WHEN 3 THEN s_dist_03
                        WHEN 4 THEN s_dist_04
                        WHEN 5 THEN s_dist_05
                        WHEN 6 THEN s_dist_06
                        WHEN 7 THEN s_dist_07
                        WHEN 8 THEN s_dist_08
                        WHEN 9 THEN s_dist_09
                        WHEN 10 THEN s_dist_10
                        END
WHERE   s_i_id      = @li_id AND
        s_w_id      = @li_s_w_id

-- if there actually is a stock (and item) with these ids, go to work
-----
IF (@@rowcount > 0)
BEGIN
-- insert order_line data (using data from item and stock)
-----
INSERT INTO order_line VALUES( @o_id,
                                @d_id,
                                @w_id,
                                @li_no,
                                @li_id,
                                'dec 31, 1899',
                                @i_price * @li_qty,
                                @li_s_w_id,
                                @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 WITH (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,
                                0,
                                @o_ol_cnt,
                                @o_all_local,
                                @o_entry_d)

-----
-- insert corresponding row into new-order table
-----
    INSERT INTO new_order VALUES ( @o_id,
                                    @d_id,
                                    @w_id)

-----
-- select warehouse tax
-----
    SELECT  @w_tax = w_tax
    FROM    warehouse WITH (repeatableread)
    WHERE   w_id   = @w_id

    IF (@commit_flag = 1)
        COMMIT TRANSACTION n
    ELSE
        ROLLBACK TRANSACTION n

-----
-- all that work for nuthin!!!
-----
    ROLLBACK TRANSACTION n

-----
-- return order data to client
-----
    SELECT  @w_tax,
            @d_tax,
            @o_id,
            @c_last,
            @c_discount,
            @c_credit,
            @o_entry_d,
            @commit_flag

```

```

END
GO

SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO

```

null-txns.sql

```

-----
--
-- File:      NULL-TXNS.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.68
-- Copyright Microsoft, 2006
--
-- This script will create stored procs which
-- accept the same parameters and return correctly
-- formed results sets to match the standard TPC-C
-- stored procs. Of course, the advantage is that
-- these stored procs place almost no load on
-- SQL Server and do not require a database.
--
-- Interface Level:      4.10.000
--
-----
USE tpcc
GO

IF EXISTS ( SELECT name FROM sysobjects WHERE name = 'tpcc_delivery' )
    DROP PROCEDURE tpcc_delivery
GO
IF EXISTS ( SELECT name FROM sysobjects WHERE name = 'tpcc_neworder' )
    DROP PROCEDURE tpcc_neworder
GO
IF EXISTS ( SELECT name FROM sysobjects WHERE name = 'tpcc_orderstatus' )
    DROP PROCEDURE tpcc_orderstatus
GO
IF EXISTS ( SELECT name FROM sysobjects WHERE name = 'tpcc_payment' )
    DROP PROCEDURE tpcc_payment
GO
IF EXISTS ( SELECT name FROM sysobjects WHERE name = 'tpcc_stocklevel' )
    DROP PROCEDURE tpcc_stocklevel
GO
IF EXISTS ( SELECT name FROM sysobjects WHERE name = 'tpcc_version' )
    DROP PROCEDURE tpcc_version
GO
IF EXISTS ( SELECT name FROM sysobjects WHERE name = 'order_line_null' )
    DROP PROCEDURE order_line_null
GO

CREATE PROCEDURE      tpcc_delivery
                    @w_id          int,
                    @o_carrier_id  smallint

AS
DECLARE @d_id      tinyint,
        @o_id      int,

```

```

@c_id      int,
@total     numeric(12,2),
@oid1      int,
@oid2      int,
@oid3      int,
@oid4      int,
@oid5      int,
@oid6      int,
@oid7      int,
@oid8      int,
@oid9      int,
@oid10     int,
@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 PROCEDURE tpcc_neworder
    @w_id      int,
    @d_id      tinyint,
    @c_id      int,
    @o_ol_cnt  tinyint,
    @o_all_local tinyint,
    @i_id1 int = 0, @s_w_id1 int = 0, @ol_qty1 smallint = 0,
    @i_id2 int = 0, @s_w_id2 int = 0, @ol_qty2 smallint = 0,
    @i_id3 int = 0, @s_w_id3 int = 0, @ol_qty3 smallint = 0,
    @i_id4 int = 0, @s_w_id4 int = 0, @ol_qty4 smallint = 0,
    @i_id5 int = 0, @s_w_id5 int = 0, @ol_qty5 smallint = 0,
    @i_id6 int = 0, @s_w_id6 int = 0, @ol_qty6 smallint = 0,
    @i_id7 int = 0, @s_w_id7 int = 0, @ol_qty7 smallint = 0,
    @i_id8 int = 0, @s_w_id8 int = 0, @ol_qty8 smallint = 0,
    @i_id9 int = 0, @s_w_id9 int = 0, @ol_qty9 smallint = 0,
    @i_id10 int = 0, @s_w_id10 int = 0, @ol_qty10 smallint = 0,
    @i_id11 int = 0, @s_w_id11 int = 0, @ol_qty11 smallint = 0,
    @i_id12 int = 0, @s_w_id12 int = 0, @ol_qty12 smallint = 0,
    @i_id13 int = 0, @s_w_id13 int = 0, @ol_qty13 smallint = 0,
    @i_id14 int = 0, @s_w_id14 int = 0, @ol_qty14 smallint = 0,
    @i_id15 int = 0, @s_w_id15 int = 0, @ol_qty15 smallint = 0

AS
DECLARE @w_tax      numeric(4,4),
        @d_tax      numeric(4,4),
        @c_last     char(16),
        @c_credit    char(2),
        @c_discount  numeric(4,4),
        @i_price     numeric(5,2),
        @i_name      char(24),
        @o_entry_d   datetime,
        @li_no       int,
        @o_id        int,
        @commit_flag tinyint,
        @li_id       int,
        @li_qty      smallint,
        @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 PROCEDURE    tpcc_orderstatus
        @w_id        int,
        @d_id        tinyint,

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

AS
DECLARE @c_balance    numeric(12,2),
        @c_first      char(16),
        @c_middle     char(2),
        @o_id         int,
        @o_entry_d    datetime,
        @o_carrier_id  smallint,
        @ol_cnt       smallint,
        @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 PROCEDURE    tpcc_payment
        @w_id        int,
        @c_w_id      int,
        @h_amount    numeric(6,2),
        @d_id        tinyint,
        @c_d_id      tinyint,
        @c_id        int,
        @c_last      char(16) = ''

AS
DECLARE @w_street_1  char(20),
        @w_street_2  char(20),
        @w_city       char(20),
        @w_state      char(2),
        @w_zip        char(9),
        @w_name       char(10),
        @d_street_1  char(20),
        @d_street_2  char(20),
        @d_city       char(20),
        @d_state      char(2),
        @d_zip        char(9),
        @d_name       char(10),
        @c_first      char(16),
        @c_middle     char(2),
        @c_street_1  char(20),
        @c_street_2  char(20),
        @c_city       char(20),
        @c_state      char(2),
        @c_zip        char(9),
        @c_phone      char(16),
        @c_since      datetime,
        @c_credit     char(2),
        @c_credit_lim numeric(12,2),
        @c_balance    numeric(12,2),
        @c_discount   numeric(4,4),
        @data         char(500),
        @c_data       char(500),
        @datetime     datetime,
        @w_ytd        numeric(12,2),
        @d_ytd        numeric(12,2),
        @cnt          smallint,
        @val          smallint,
        @screen_data  char(200),
        @d_id_local   tinyint,
        @w_id_local   int,
        @c_id_local   int,
        @delaytime    varchar(30)

-----
-- uniform random delay of 0 - 0.3 second; avg = 0.15
-----
SELECT  @delaytime = '00:00:0' + CAST(CAST((RAND())*0.20) 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  = 'dzKoC0bBqbc3yu',
       @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 PROCEDURE tpcc_stocklevel
    @w_id int,
    @d_id tinyint,
    @threshold smallint

AS
DECLARE @delaytime varchar(30)

-----
-- uniform random delay of 0 - 3.6 second; avg = 1.8
-----
SELECT @delaytime = '00:00:0' + CAST(CAST((RAND() * 0.20) AS decimal(4,3)) AS
char(5))

WAITFOR delay @delaytime

SELECT 49
GO

CREATE PROCEDURE tpcc_version

AS
DECLARE @version char(8)

BEGIN
    SELECT @version = '4.10.000'

    SELECT @version AS 'Version'
END
GO

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

INSERT INTO order_line_null VALUES ( 101, 1, GETDATE(), 1, 123.45 )
INSERT INTO order_line_null VALUES ( 102, 1, GETDATE(), 2, 123.45 )
INSERT INTO order_line_null VALUES ( 103, 1, GETDATE(), 3, 123.45 )
INSERT INTO order_line_null VALUES ( 104, 1, GETDATE(), 4, 123.45 )
INSERT INTO order_line_null VALUES ( 105, 1, GETDATE(), 5, 123.45 )
INSERT INTO order_line_null VALUES ( 106, 1, GETDATE(), 1, 123.45 )
INSERT INTO order_line_null VALUES ( 107, 1, GETDATE(), 2, 123.45 )
INSERT INTO order_line_null VALUES ( 108, 1, GETDATE(), 3, 123.45 )
INSERT INTO order_line_null VALUES ( 109, 1, GETDATE(), 4, 123.45 )
INSERT INTO order_line_null VALUES ( 110, 1, GETDATE(), 5, 123.45 )
INSERT INTO order_line_null VALUES ( 111, 1, GETDATE(), 1, 123.45 )
INSERT INTO order_line_null VALUES ( 112, 1, GETDATE(), 2, 123.45 )
INSERT INTO order_line_null VALUES ( 113, 1, GETDATE(), 3, 123.45 )
INSERT INTO order_line_null VALUES ( 114, 1, GETDATE(), 4, 123.45 )
INSERT INTO order_line_null VALUES ( 115, 1, GETDATE(), 5, 123.45 )
GO

```


ordstat.sql

```
-----
-- File:   ORDSTAT.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.68
-- Copyright Microsoft, 2006
--
-- Creates order status stored procedure
--
-- Interface Level:   4.20.000
--
-----
SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO

USE tpcc
GO

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

CREATE PROCEDURE    tpcc_orderstatus
        @w_id      int,
        @d_id      tinyint,

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

AS
DECLARE @c_balance    money,
        @c_first     char(16),
        @c_middle    char(2),
        @o_id        int,
        @o_entry_d    datetime,
        @o_carrier_id smallint,
        @cnt          smallint

BEGIN TRANSACTION o
IF (@c_id = 0)
    BEGIN
        -----
        -- get customer id and info using last name
        -----
        SELECT @cnt = (count(*)+1)/2
        FROM customer WITH (repeatableread)
        WHERE c_last = @c_last AND
              c_w_id = @w_id AND
              c_d_id = @d_id

        SET rowcount @cnt

        SELECT @c_id = c_id,
               @c_balance = c_balance,
               @c_first = c_first,
               @c_last = c_last,
               @c_middle = c_middle
```

```
FROM customer WITH (repeatableread)
WHERE c_last = @c_last AND
      c_w_id = @w_id AND
      c_d_id = @d_id

ORDER BY c_w_id, c_d_id, c_last, c_first

SET rowcount 0
END
ELSE
BEGIN
    -----
    -- get customer info if by id
    -----
    SELECT @c_balance = c_balance,
           @c_first = c_first,
           @c_middle = c_middle,
           @c_last = c_last
    FROM customer WITH (repeatableread)
    WHERE c_id = @c_id AND
          c_d_id = @d_id AND
          c_w_id = @w_id

    SELECT @cnt = @@rowcount
END

-----
-- if no such customer
-----
IF (@cnt = 0)
    BEGIN
        RAISERROR('Customer not found',18,1)
        GOTO custnotfound
    END

-----
-- get order info
-----
SELECT @o_id = o_id,
       @o_entry_d = o_entry_d,
       @o_carrier_id = o_carrier_id
FROM orders WITH (serializable)
WHERE o_c_id = @c_id AND
      o_d_id = @d_id AND
      o_w_id = @w_id

ORDER BY o_id ASC

-----
-- select order lines for the current order
-----
SELECT ol_supply_w_id,
       ol_i_id,
       ol_quantity,
       ol_amount,
       ol_delivery_d
FROM order_line WITH (repeatableread)
WHERE ol_o_id = @o_id AND
      ol_d_id = @d_id AND
      ol_w_id = @w_id

custnotfound:

COMMIT TRANSACTION 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

```

payment.sql

```

-----
-- File:  PAYMENT.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.68
-- Copyright Microsoft, 2006
--
-- Creates payment stored procedure
--
-- Interface Level:  4.20.000
--
-----
SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO

USE tpcc
GO

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

CREATE PROCEDURE    tpcc_payment
        @w_id      int,
        @c_w_id    int,
        @h_amount  smallmoney,
        @d_id      tinyint,
        @c_d_id    tinyint,
        @c_id      int,
        @c_last    char(16) = ""

AS
DECLARE @w_street_1 char(20),
        @w_street_2 char(20),
        @w_city     char(20),
        @w_state    char(2),
        @w_zip      char(9),
        @w_name      char(10),
        @d_street_1 char(20),
        @d_street_2 char(20),
        @d_city     char(20),
        @d_state    char(2),
        @d_zip      char(9),

```

```

        @d_name      char(10),
        @c_first     char(16),
        @c_middle    char(2),
        @c_street_1  char(20),
        @c_street_2  char(20),
        @c_city      char(20),
        @c_state     char(2),
        @c_zip       char(9),
        @c_phone     char(16),
        @c_since     datetime,
        @c_credit    char(2),
        @c_credit_lim money,
        @c_balance   money,
        @c_discount  smallmoney,
        @c_data      char(42),
        @datetime    datetime,
        @w_ytd       money,
        @d_ytd       money,
        @cnt         smallint,
        @val         smallint,
        @screen_data char(200),
        @d_id_local  tinyint,
        @w_id_local  int,
        @c_id_local  int

SELECT  @screen_data = ""

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

IF (@c_id = 0)
BEGIN
-- get customer id and info using last name
SELECT  @cnt = COUNT(*)
FROM    customer WITH (repeatableread)
WHERE   c_last = @c_last AND
        c_w_id = @c_w_id AND
        c_d_id = @c_d_id

SELECT  @val = (@cnt + 1) / 2

SET      rowcount @val

SELECT  @c_id = c_id
FROM    customer WITH (repeatableread)
WHERE   c_last = @c_last AND
        c_w_id = @c_w_id AND
        c_d_id = @c_d_id

ORDER  BY c_last, c_first

SET      rowcount 0
END

-- get customer info and update balances
UPDATE  customer
SET      @c_balance = c_balance - @h_amount,
        c_payment_cnt = c_payment_cnt + 1,
        c_ytd_payment = c_ytd_payment + @h_amount,
        @c_first = c_first,
        @c_middle = c_middle,
        @c_last = c_last,

```

```

        @c_street_1 = c_street_1,
        @c_street_2 = c_street_2,
        @c_city      = c_city,
        @c_state     = c_state,
        @c_zip       = c_zip,
        @c_phone     = c_phone,
        @c_credit    = c_credit,
        @c_credit_lim = c_credit_lim,
        @c_discount  = c_discount,
        @c_since     = c_since,
        @c_id_local  = c_id
WHERE   c_id      = @c_id AND
        c_w_id    = @c_w_id AND
        c_d_id    = @c_d_id

-- if customer has bad credit get some more info
IF (@c_credit = "BC")
BEGIN
    -- compute new info
    SELECT @c_data = convert(char(5),@c_id) +
                     convert(char(4),@c_d_id) +
                     convert(char(5),@c_w_id) +
                     convert(char(4),@d_id) +
                     convert(char(5),@w_id) +
                     convert(char(19),@h_amount)

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

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

-- get district data and update year-to-date
UPDATE district
SET   d_ytd      = d_ytd + @h_amount,
      @d_street_1 = d_street_1,
      @d_street_2 = d_street_2,
      @d_city     = d_city,
      @d_state    = d_state,
      @d_zip      = d_zip,
      @d_name     = d_name,
      @d_id_local = d_id
WHERE d_w_id    = @w_id AND
      d_id      = @d_id

-- get warehouse data and update year-to-date
UPDATE warehouse
SET   w_ytd      = w_ytd + @h_amount,
      @w_street_1 = w_street_1,
      @w_street_2 = w_street_2,
      @w_city     = w_city,
      @w_state    = w_state,
      @w_zip      = w_zip,
      @w_name     = w_name,
      @w_id_local = w_id
WHERE w_id      = @w_id

-- create history record
INSERT INTO      history VALUES (@c_id_local,

```

```

        @c_d_id,
        @c_w_id,
        @d_id_local,
        @w_id_local,
        @datetime,
        @h_amount,
        @w_name + ' ' + @d_name)

COMMIT TRANSACTION p

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

GO

SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO

```

random.c

```

//      File:                  RANDOM.C
//
//      Microsoft TPC-C Kit Ver. 4.62
//      Copyright Microsoft, 1996, 1997, 1998, 1999,
//      2000, 2001, 2002, 2005
//      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
//Original 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;
}

```

removedb.sql

```

-----
-- File:      REMOVEDB.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.61
-- Copyright Microsoft, 2005
--
-----

USE master
GO

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

EXEC sp_dbrremove tpcc, dropdev
GO

EXEC sp_dropdevice 'tpccback1'
GO
EXEC sp_dropdevice 'tpccback2'
GO
EXEC sp_dropdevice 'tpccback3'
GO
EXEC sp_dropdevice 'tpccback4'
GO
EXEC sp_dropdevice 'tpccback5'
GO
EXEC sp_dropdevice 'tpccback6'
GO

```

restore.sql

```

-----
-- File:      RESTORE.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.61
-- Copyright Microsoft, 2005
--
-----

DECLARE @startdate DATETIME,
        @enddate   DATETIME

SELECT @startdate = GETDATE()
SELECT 'Start date:',
       CONVERT(VARCHAR(30),@startdate, 21)

LOAD DATABASE tpcc FROM tpccback1, tpccback2, tpccback3, tpccback4, tpccback5,
tpccback6WITH stats = 1, replace

```

```

SELECT @enddate = GETDATE()
SELECT 'End date: ',
CONVERT(VARCHAR(30),@enddate, 21)
SELECT 'Elapsed time (in seconds): ',
DATEDIFF(second, @startdate, @enddate)
GO

```

RunSQLCfg.sql

```

-----
-- File:   RUNSQLCFG.SQL
--         Microsoft TPC-C Benchmark Kit Ver. 4.68
--         Copyright Microsoft, 2006
--
--         Sets suggested runtime server configuration
--         parameters
--
-----
EXEC sp_configure 'show advanced option', 1
GO

RECONFIGURE WITH OVERRIDE
GO

-----
-- change this value to approximately the number of connected users
-----
EXEC sp_configure 'max worker threads',255

-----
-- increase priority of user threads
-----
EXEC sp_configure 'priority boost',1

-----
-- disable automatic checkpointing
-----
EXEC sp_configure 'recovery interval',32767

-----
-- change to a mask appropriate for the number of processors on the server
-----
EXEC sp_configure 'affinity mask',0xf

-----
-- enable fibers
-----
EXEC sp_configure 'lightweight pooling',1
GO

RECONFIGURE WITH OVERRIDE
GO

```

sqlshutdown.sql

```

-----
-- File:   SQLSHUTDOWN.SQL
--         Microsoft TPC-C Benchmark Kit Ver. 4.68
--         Copyright Microsoft, 2006
--
--         Checkpoints tpcc database and issues a shutdown
--
-----
USE tpcc
GO

CHECKPOINT
GO

SHUTDOWN
GO

```

StockLev.sql

```

-----
-- File:   STOCKLEV.SQL
--         Microsoft TPC-C Benchmark Kit Ver. 4.68
--         Copyright Microsoft, 2006
--
--         Creates stock level stored procedure
--
--         Interface Level:   4.20.000
--
-----
SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO

USE tpcc
GO

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

CREATE PROCEDURE    tpcc_stocklevel
                   @w_id      int,
                   @d_id      tinyint,
                   @threshold  smallint
AS
DECLARE @o_id_low  int,
        @o_id_high int

SELECT  @o_id_low  = (d_next_o_id - 20),
        @o_id_high = (d_next_o_id - 1)
FROM    district
WHERE   d_w_id    = @w_id AND

```

```

        d_id          = @d_id

SELECT COUNT(DISTINCT(s_i_id))
FROM   stock,
       order_line
WHERE  ol_w_id        = @w_id AND
       ol_d_id        = @d_id and
       ol_o_id        BETWEEN @o_id_low AND
                           @o_id_high AND
       s_w_id         = ol_w_id AND
       s_i_id         = ol_i_id AND
       s_quantity     < @threshold
OPTION(ORDER GROUP)
GO

SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO

```

strings.c

```

//      File:                STRINGS.C
//
//      Microsoft TPC-C Kit Ver. 4.51
//      Copyright Microsoft, 1996, 1997, 1998, 1999,
2000, 2001, 2002, 2003
//      Purpose: Source file for database loader string functions

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

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

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

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

#ifdef DEBUG

```

```

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

    return;
}

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

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

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

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

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

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

    return;
}

```

```

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

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

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

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

    len= RandomNumber(x, y);

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

    return len;
}

int MakeAlphaStringPadded( int minLen, int maxLen, int padLen, char *str)
{
    int len;
    int i;
    char cc = 'a';
    static char chArray[] =
"0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz";
    static int chArrayMax = 61;

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

    len= RandomNumber(minLen, maxLen);

    for (i=0; i<len; i++)
        str[i] = chArray[RandomNumber(0,chArrayMax)];
    if (len < padLen)
        memset(str+len, ' ', padLen - len);
    str[padLen] = 0;
    return padLen;
}

```

```

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

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

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

    // verify percentage is valid
    if ((percent < 0) || (percent > 100))
    {
        printf("MakeOriginalAlphaString: Invalid percentage: %d\n",
percent);
        exit(-1);
    }

    // verify string is at least 8 chars in length
    if (x < 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 len;
}

//=====
//
// 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, "00001111");

    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;
}

//=====
```

tables.sql

```
-----
-- File: TABLES.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.68
-- Copyright Microsoft, 2006
--
-- Creates TPC-C tables
-----

SET ANSI_NULL_DFLT_OFF ON
GO

USE tpcc
GO

-----
-- Remove all existing TPC-C tables
-----
if exists ( select name from sysobjects where name = 'warehouse' )
    drop table warehouse
```

```

go
if exists ( select name from sysobjects where name = 'district' )
    drop table district
go
if exists ( select name from sysobjects where name = 'customer' )
    drop table customer
go
if exists ( select name from sysobjects where name = 'history' )
    drop table history
go
if exists ( select name from sysobjects where name = 'new_order' )
    drop table new_order
go
if exists ( select name from sysobjects where name = 'orders' )
    drop table orders
go
if exists ( select name from sysobjects where name = 'order_line' )
    drop table order_line
go
if exists ( select name from sysobjects where name = 'item' )
    drop table item
go
if exists ( select name from sysobjects where name = 'stock' )
    drop table stock
go

```

```

-----
-- Create new tables
-----

```

```

create table warehouse
(

```

```

        w_id          int,
        w_ytd         money,
        w_tax         smallmoney,
        w_name        char(10),
        w_street_1    char(20),
        w_street_2    char(20),
        w_city        char(20),
        w_state       char(2),
        w_zip         char(9)

```

```

) on MSSQL_misc_fg
go

```

```

create table district
(

```

```

        d_id          tinyint,
        d_w_id        int,
        d_ytd         money,
        d_next_o_id   int,
        d_tax         smallmoney,
        d_name        char(10),
        d_street_1    char(20),
        d_street_2    char(20),
        d_city        char(20),
        d_state       char(2),
        d_zip         char(9)

```

```

) on MSSQL_misc_fg
go

```

```

create table customer
(

```

```

        c_id          int,
        c_d_id        tinyint,

```

```

        c_w_id        int,
        c_discount    smallmoney,
        c_credit_lim  money,
        c_last        char(16),
        c_first       char(16),
        c_credit      char(2),
        c_balance     money,
        c_ytd_payment money,
        c_payment_cnt smallint,
        c_delivery_cnt smallint,
        c_street_1    char(20),
        c_street_2    char(20),
        c_city        char(20),
        c_state       char(2),
        c_zip         char(9),
        c_phone       char(16),
        c_since       datetime,
        c_middle      char(2),
        c_data        char(500)

```

```

) on MSSQL_cust_fg
go

```

```

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

```

```

create table history
(

```

```

        h_c_id        int,
        h_c_d_id      tinyint,
        h_c_w_id      int,
        h_d_id        tinyint,
        h_w_id        int,
        h_date        datetime,
        h_amount      smallmoney,
        h_data        char(24)

```

```

) on MSSQL_misc_fg
go

```

```

create table new_order
(

```

```

        no_o_id       int,
        no_d_id       tinyint,
        no_w_id       int

```

```

) on MSSQL_misc_fg
go

```

```

create table orders
(

```

```

        o_id          int,
        o_d_id        tinyint,
        o_w_id        int,
        o_c_id        int,
        o_carrier_id  tinyint,
        o_ol_cnt      tinyint,
        o_all_local   tinyint,
        o_entry_d     datetime

```

```

) on MSSQL_misc_fg
go

```

```

create table order_line
(

```

```

        ol_o_id       int,

```

```

        ol_d_id          tinyint,
        ol_w_id          int,
        ol_number        tinyint,
        ol_i_id          int,
        ol_delivery_d    datetime,
        ol_amount        smallmoney,
        ol_supply_w_id   int,
        ol_quantity      smallint,
        ol_dist_info     char(24)
) on MSSQL_ol_fg
go

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

create table stock
(
    s_i_id              int,
    s_w_id              int,
    s_quantity          smallint,
    s_ytd               int,
    s_order_cnt         smallint,
    s_remote_cnt        smallint,
    s_data              char(50),
    s_dist_01           char(24),
    s_dist_02           char(24),
    s_dist_03           char(24),
    s_dist_04           char(24),
    s_dist_05           char(24),
    s_dist_06           char(24),
    s_dist_07           char(24),
    s_dist_08           char(24),
    s_dist_09           char(24),
    s_dist_10           char(24)
) on MSSQL_stk_fg
go

```

time.c

```

//      File:                TIME.C
//
//      Microsoft TPC-C Kit Ver. 4.62
//      Copyright Microsoft, 1996, 1997, 1998, 1999,
//      2000, 2001, 2002, 2005
//      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 e_l_time;

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

    _ftime(&e_l_time);

    time_now = ((e_l_time.time - start_sec) * 1000) + e_l_time.millitm;

    return time_now;
}

```

tpcc.h

```

//      File:                TPCC.H
//
//      Microsoft TPC-C Kit Ver. 4.51
//      Copyright Microsoft, 1996, 1997, 1998, 1999,
//      2000, 2001, 2002, 2003, 2005
//      Purpose:  Header file for TPC-C database loader

// Build number of TPC Benchmark Kit
#define TPCKIT_VER "4.51"

// 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>
#include <math.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 DEFLOADPACKSIZE        32768
#define LOADER_RES_FILE         "C:\\MSTPCC.450\\SETUP\\LOGS\\load.out"
#define LOADER_LOG_PATH         "C:\\MSTPCC.450\\SETUP\\LOGS\\"
#define LOADER_NURAND_C         123
#define DEF_STARTING_WAREHOUSE  1
#define BUILD_INDEX             1 // build both
data and indexes
#define INDEX_ORDER             1 // build
indexes before load
#define SCALE_DOWN              0 // build a normal
scale database
#define INDEX_SCRIPT_PATH       "scripts"

typedef struct
{
    char *server;
    char *database;
    char *user;
    char *password;
    BOOL tables_all;
    BOOL table_item;
    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;
    long *loader_res_file;
    long *log_path;
    long *synch_servername;
    long case_sensitivity;
    long starting_warehouse;
    long build_index;
    long index_order;
    long scale_down;
    long *index_script_path;
} TPCCCLR_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 MakeAlphaStringPadded();
int MakeOriginalAlphaString();
int MakeNumberString();
int MakeZipNumberString();
void InitString();
void InitAddress();
void PaddString();

```

tpccldr.c

```

//=====
//      File:                TPCCCLR.C
//      Microsoft TPC-C Kit Ver. 4.51

```

```

//                                     Copyright Microsoft, 1996, 1997, 1998, 1999,
//                                     2000, 2001, 2002, 2003
//                                     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
#define MAX_SQL_ERRORS          10

// Functions declarations
void HandleErrorDBC (SQLHDBC hdbc1);
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 CheckForCommit_Big();
void OpenConnections();
void BuildIndex();
void FormatDate ();

// Shared memory structures
typedef struct
{
    double                ol;
    long                  ol_i_id;
    long                  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;

```

```

    long                  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;
    long                  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;
    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;

// for SQL
HDBC                    v_hdbc;
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;

int          total_db_errors;

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

    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);
    if (aptr->scale_down == 1)
    {
        sprintf(buffer, "SCALED DOWN DATABASE.\n");
    }

    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()
{
    int                i;
    long               i_id;
    long               i_im_id;
    char               i_name[I_NAME_LEN+1];
    double             i_price;
    char               i_data[I_DATA_LEN+1];
    char               name[20];
    long               time_start;
    RETCODE            rc;
    DBINT              rcint;

```

```

char          bcphint[128];
char          err_log_path[256];

// Seed with unique number
seed(11);

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");

strcpy(err_log_path, aptr->log_path);
strcat(err_log_path, "item.err");
rc = bcp_init(i_hdbc1, name, NULL, err_log_path, DB_IN);
if (rc != SUCCEED)
    HandleErrorDBC(i_hdbc1);

if ((aptr->build_index == 1) && (aptr->index_order == 1))
{
    sprintf(bcphint, "tablock, order (i_id), ROWS_PER_BATCH =
100000");
    rc = bcp_control(i_hdbc1, BCPHINTS, (void*) bcphint);
    if (rc != SUCCEED)
        HandleErrorDBC(i_hdbc1);
}

i = 0;
rc = bcp_bind(i_hdbc1, (BYTE *) &i_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(i_hdbc1);
rc = bcp_bind(i_hdbc1, (BYTE *) i_name, 0, I_NAME_LEN, NULL, 0, 0, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(i_hdbc1);
rc = bcp_bind(i_hdbc1, (BYTE *) &i_price, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(i_hdbc1);
rc = bcp_bind(i_hdbc1, (BYTE *) i_data, 0, SQL_VARLEN_DATA, "", 1, 0,
++i);
if (rc != SUCCEED)
    HandleErrorDBC(i_hdbc1);
rc = bcp_bind(i_hdbc1, (BYTE *) &i_im_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, ++i);
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);

    MakeAlphaStringPadded(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()
{
    int          i;
    long         w_id;
    char         w_name[W_NAME_LEN+1];
    char         w_street_1[ADDRESS_LEN+1];
    char         w_street_2[ADDRESS_LEN+1];
    char         w_city[ADDRESS_LEN+1];
    char         w_state[STATE_LEN+1];
    char         w_zip[ZIP_LEN+1];
    double       w_tax;
    double       w_ytd;
    char         name[20];
    long         time_start;
    RETCODE      rc;
    DBINT        rcint;
    char         bcphint[128];
    char         err_log_path[256];

    // Seed with unique number
    seed(2);

    printf("Loading warehouse table...\n");

    // if build index before load...
    if ((aptr->build_index == 1) && (aptr->index_order == 1))
        BuildIndex("idxwarcl");

```



```

InitString(w_name, W_NAME_LEN+1);
InitAddress(w_street_1, w_street_2, w_city, w_state, w_zip);

sprintf(name, "%s..%s", aptr->database, "warehouse");

strcpy(err_log_path, aptr->log_path);
strcat(err_log_path, "whouse.err");
rc = bcp_init(w_hdbc1, name, NULL, err_log_path, DB_IN);

if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);

if ((aptr->build_index == 1) && (aptr->index_order == 1))
{
    sprintf(bcphint, "tablock, order (w_id), ROWS_PER_BATCH = %d",
aptr->num_warehouses);
    rc = bcp_control(w_hdbc1, BCPHINTS, (void*) bcphint);
    if (rc != SUCCEED)
        HandleErrorDBC(w_hdbc1);
}

i = 0;
rc = bcp_bind(w_hdbc1, (BYTE *) &w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) &w_ytd, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) &w_tax, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) w_name, 0, W_NAME_LEN, NULL, 0, 0, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) w_street_1, 0, ADDRESS_LEN, NULL, 0, 0,
++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) w_street_2, 0, ADDRESS_LEN, NULL, 0, 0,
++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) w_city, 0, ADDRESS_LEN, NULL, 0, 0, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) w_state, 0, STATE_LEN, NULL, 0, 0, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) w_zip, 0, ZIP_LEN, NULL, 0, 0, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);

time_start = (TimeNow() / MILLI);

warehouse_rows_loaded = 0;

for (w_id = (long)aptr->starting_warehouse; w_id <= aptr->num_warehouses;
w_id++)
{

```

```

        MakeAlphaStringPadded(6,10, W_NAME_LEN, w_name);

        MakeAddress(w_street_1, w_street_2, w_city, w_state, w_zip);

        w_tax = ((float) RandomNumber(0L,2000L))/10000.00;

        w_ytd = 300000.00;

        rc = bcp_sendrow(w_hdbc1);
        if (rc != SUCCEED)
            HandleErrorDBC(w_hdbc1);

        warehouse_rows_loaded++;
        CheckForCommit(w_hdbc1, i_hstmt1, warehouse_rows_loaded,
"warehouse", &time_start);
    }

    rcint = bcp_done(w_hdbc1);
    if (rcint < 0)
        HandleErrorDBC(w_hdbc1);

    printf("Finished loading warehouse table.\n");

    // if build index after load...
    if ((aptr->build_index == 1) && (aptr->index_order == 0))
        BuildIndex("idxwarc1");

    stock_rows_loaded = 0;
    district_rows_loaded = 0;

    District();
    Stock();
}

//=====================================================
//
// Function   : District
//
//=====================================================
void District()
{
    int          i;
    short        d_id;
    long         d_w_id;
    char         d_name[W_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;
    long         w_id;
    RETCODE      rc;
    DBINT        rcint;
    char         bcphint[128];
    char         err_log_path[256];

    // Seed with unique number
    seed(4);

```

```

printf("Loading district table...\n");

// build index before load
if ((aptr->build_index == 1) && (aptr->index_order == 1))
    BuildIndex("idxdiscl");

InitString(d_name, D_NAME_LEN+1);
InitAddress(d_street_1, d_street_2, d_city, d_state, d_zip);
sprintf(name, "%s..%s", aptr->database, "district");

strcpy(err_log_path, aptr->log_path);
strcat(err_log_path, "district.err");
rc = bcp_init(w_hdbc1, name, NULL, err_log_path, DB_IN);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);

if ((aptr->build_index == 1) && (aptr->index_order == 1))
{
    sprintf(bcphint, "tablock, order (d_w_id, d_id), ROWS_PER_BATCH
= %u", (aptr->num_warehouses * 10));
    rc = bcp_control(w_hdbc1, BCPHINTS, (void*) bcphint);
    if (rc != SUCCEED)
        HandleErrorDBC(w_hdbc1);
}

i = 0;
rc = bcp_bind(w_hdbc1, (BYTE *) &d_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) &d_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) &d_ytd, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) &d_next_o_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) &d_tax, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) d_name, 0, D_NAME_LEN, NULL, 0, 0, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) d_street_1, 0, ADDRESS_LEN, NULL, 0, 0,
++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) d_street_2, 0, ADDRESS_LEN, NULL, 0, 0,
++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) d_city, 0, ADDRESS_LEN, NULL, 0, 0, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) d_state, 0, STATE_LEN, NULL, 0, 0, ++i);
if (rc != SUCCEED)

```

```

        HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) d_zip, 0, ZIP_LEN, NULL, 0, 0, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);

d_ytd = 30000.00;

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++)
    {
        MakeAlphaStringPadded(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()
{
    int i;
    long s_i_id;
    long s_w_id;
    short s_quantity;
    char s_dist_01[S_DIST_LEN+1];
    char s_dist_02[S_DIST_LEN+1];
    char s_dist_03[S_DIST_LEN+1];
    char s_dist_04[S_DIST_LEN+1];

```

```

char s_dist_05[S_DIST_LEN+1];
char s_dist_06[S_DIST_LEN+1];
char s_dist_07[S_DIST_LEN+1];
char s_dist_08[S_DIST_LEN+1];
char s_dist_09[S_DIST_LEN+1];
char s_dist_10[S_DIST_LEN+1];
long s_ytd;
short s_order_cnt;
short s_remote_cnt;
char s_data[S_DATA_LEN+1];
short len;
char name[20];
long time_start;
RETCODE rc;
DBINT rcint;
char bcphint[128];
char err_log_path[256];

// Seed with unique number
seed(3);

// if build index before load...
if ((aptr->build_index == 1) && (aptr->index_order == 1))
    BuildIndex("idxstkcl");

sprintf(name, "%s..%s", aptr->database, "stock");

strcpy(err_log_path, aptr->log_path);
strcat(err_log_path, "stock.err");
rc = bcp_init(w_hdbc1, name, NULL, err_log_path, DB_IN);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);

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

i = 0;
rc = bcp_bind(w_hdbc1, (BYTE *) &s_i_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) &s_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) &s_quantity, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) &s_ytd, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) &s_order_cnt, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);

```

```

rc = bcp_bind(w_hdbc1, (BYTE *) &s_remote_cnt, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT2, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) s_data, 0, SQL_VARLEN_DATA, "", 1, 0,
++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_01, 0, S_DIST_LEN, NULL, 0, 0,
++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_02, 0, S_DIST_LEN, NULL, 0, 0,
++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_03, 0, S_DIST_LEN, NULL, 0, 0,
++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_04, 0, S_DIST_LEN, NULL, 0, 0,
++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_05, 0, S_DIST_LEN, NULL, 0, 0,
++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_06, 0, S_DIST_LEN, NULL, 0, 0,
++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_07, 0, S_DIST_LEN, NULL, 0, 0,
++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_08, 0, S_DIST_LEN, NULL, 0, 0,
++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_09, 0, S_DIST_LEN, NULL, 0, 0,
++i);
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_10, 0, S_DIST_LEN, NULL, 0, 0,
++i);
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 = (long)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_Big(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;
    long                  w_id;

    short                  d_id;

    DWORD                  dwThreadID[MAX_CUSTOMER_THREADS];
    HANDLE                  hThread[MAX_CUSTOMER_THREADS];
    char                    name[20];
    RETCODE                 rc;
    DBINT                   rcint;
    char                    bcphint[128];
    char                    cmd[256];
    int                      num_procs;
    char                    err_log_path_cust[256];
    char                    err_log_path_hist[256];

```

```

// Seed with unique number
seed(5);

printf("Loading customer and history tables...\n");

// if build index before load...
if ((aptr->build_index == 1) && (aptr->index_order == 1))
{
    BuildIndex("idxcuscl");
    // check the number of processors on this system
    // if 8 or more processors, then build index on History.
    // if less than 8 processors, do not build the index
    num_procs = atoi(getenv( "NUMBER_OF_PROCESSORS" ));
    if ( num_procs >= 8 )
        BuildIndex("idxhiscl");
}

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

strcpy(err_log_path_cust,aptr->log_path);
strcat(err_log_path_cust,"customer.err");
rc = bcp_init(c_hdbc1, name, NULL, err_log_path_cust, DB_IN);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);

if ((aptr->build_index == 1) && (aptr->index_order == 1))
{
    sprintf(bcphint, "tablock, order (c_w_id, c_d_id, c_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 30000));
    rc = bcp_control(c_hdbc1, BCPHINTS, (void*) bcphint);
    if (rc != SUCCEED)
        HandleErrorDBC(c_hdbc1);
}

sprintf(name, "%s..%s", aptr->database, "history");

rc = bcp_init(c_hdbc2, name, NULL, "logs\\history.err", DB_IN);
strcpy(err_log_path_hist,aptr->log_path);
strcat(err_log_path_hist,"history.err");
rc = bcp_init(c_hdbc2, name, NULL, err_log_path_hist, DB_IN);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc2);

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

customer_rows_loaded    = 0;
history_rows_loaded     = 0;

CustomerBufInit();

customer_time_start.time_start = (TimeNow() / MILLI);
history_time_start.time_start = (TimeNow() / MILLI);

for (w_id = (long)aptr->starting_warehouse; w_id <= aptr->num_warehouses;
w_id++)
{
    for (d_id = 1; d_id <= DISTRICT_PER_WAREHOUSE; d_id++)
    {

```

```

        CustomerBufLoad(d_id, w_id);

        // Start parallel loading threads here...
        // Start customer table thread
        printf("...Loading customer table for: d_id = %d, w_id
= %d\n", d_id, w_id);

        hThread[0] = CreateThread(NULL,

        0,

        (LPTHREAD_START_ROUTINE) LoadCustomerTable,

        &customer_time_start,

        0,

        &dwThreadID[0]);

        if (hThread[0] == NULL)
        {
            printf("Error, failed in creating creating
thread = 0.\n");
            exit(-1);
        }

        // Start History table thread
        printf("...Loading history table for: d_id = %d, w_id
= %d\n", d_id, w_id);

        hThread[1] = CreateThread(NULL,

        0,

        (LPTHREAD_START_ROUTINE) LoadHistoryTable,

        &history_time_start,

        0,

        &dwThreadID[1]);

        if (hThread[1] == NULL)
        {
            printf("Error, failed in creating creating
thread = 1.\n");
            exit(-1);
        }

        WaitForSingleObject( hThread[0], INFINITE );
        WaitForSingleObject( hThread[1], INFINITE );

        if (CloseHandle(hThread[0]) == FALSE)
        {
            printf("Error, failed in closing customer
thread handle with errno: %d\n", GetLastError());
        }

        if (CloseHandle(hThread[1]) == FALSE)
        {
            printf("Error, failed in closing history
thread handle with errno: %d\n", GetLastError());
        }

```

```

    }

    // flush the bulk connection
    rcint = bcp_done(c_hdbc1);
    if (rcint < 0)
        HandleErrorDBC(c_hdbc1);

    rcint = bcp_done(c_hdbc2);
    if (rcint < 0)
        HandleErrorDBC(c_hdbc2);

    printf("Finished loading customer table.\n");

    // if build index after load...
    if ((aptr->build_index == 1) && (aptr->index_order == 0))
    {
        BuildIndex("idxcuscl");
        // check the number of processors on this system
        // if 8 or more processors, then build index on History.
        // if less than 8 processors, do not build the index
        num_procs = atoi(getenv( "NUMBER_OF_PROCESSORS" ));
        if (num_procs >= 8)
            BuildIndex("idxhiscl");
    }

    // build non-clustered index
    if (aptr->build_index == 1)
        BuildIndex("idxcusnc");

    // Output the NURAND used for the loader into C_FIRST for C_ID = 1,
    // C_W_ID = 1, and C_D_ID = 1
    sprintf(cmd, "osql -S%s -U%s -P%s -d%s -e -Q\"update customer set c_first
= 'C_LOAD = %d' where c_id = 1 and c_w_id = 1 and c_d_id = 1\" > %snurand_load.log",
        aptr->server,
        aptr->user,
        aptr->password,
        aptr->database,
        LOADER_NURAND_C,
        aptr->log_path);

    system(cmd);

    SQLFreeStmt(c_hstmt1, SQL_DROP);
    SQLDisconnect(c_hdbc1);
    SQLFreeConnect(c_hdbc1);

    SQLFreeStmt(c_hstmt2, SQL_DROP);
    SQLDisconnect(c_hdbc2);
    SQLFreeConnect(c_hdbc2);

    return;
}

//=====
//
// Function : CustomerBufInit
//
//=====
void CustomerBufInit()
{
    long 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;

    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, long 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);

        MakeAlphaStringPadded(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;
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] = '0';
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;

strcpy(customer_buf[i].c_balance,"-10.0");
MakeAlphaStringPadded(300, 500, C_DATA_LEN,
customer_buf[i].c_data);

// Generate HISTORY data
MakeAlphaStringPadded(12, 24, H_DATA_LEN,
customer_buf[i].h_data);
}

//=====
//
// Function   : LoadCustomerTable
//
//=====
void LoadCustomerTable(LOADER_TIME_STRUCT *customer_time_start)
{
    long i;

    long c_id;
    short c_d_id;
    long 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;
    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;

i = 0;
rc = bcp_bind(c_hdbc1, (BYTE *) &c_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) &c_d_id, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT2,
++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) &c_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) &c_discount, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) &c_credit_lim, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) c_last, 0, LAST_NAME_LEN, NULL, 0, 0, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) c_first, 0, FIRST_NAME_LEN, NULL, 0, 0,
++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) c_credit, 0, CREDIT_LEN, NULL, 0, 0, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) c_balance, 0, 5, NULL, 0, SQLCHARACTER, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) &c_ytd_payment, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) &c_payment_cnt, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) &c_delivery_cnt, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) c_street_1, 0, ADDRESS_LEN, NULL, 0, 0, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) c_street_2, 0, ADDRESS_LEN, NULL, 0, 0, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) c_city, 0, ADDRESS_LEN, NULL, 0, 0, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) c_state, 0, STATE_LEN, NULL, 0, 0, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) c_zip, 0, ZIP_LEN, NULL, 0, 0, ++i);

```

```

if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) c_phone, 0, PHONE_LEN, NULL, 0, 0, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) &c_since, 0, C_SINCE_LEN, NULL, 0,
SQLCHARACTER, ++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) c_middle, 0, MIDDLE_NAME_LEN, NULL, 0, 0,
++i);
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = bcp_bind(c_hdbc1, (BYTE *) c_data, 0, C_DATA_LEN, NULL, 0, 0, ++i);
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;
    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)
{

```

```

        long          i;
    long      c_id;
    short     c_d_id;
        long          c_w_id;
        double         h_amount;
    char      h_data[H_DATA_LEN+1];
        char          h_date[H_DATE_LEN+1];
        RETCODE       rc;

        i = 0;
    rc = bcp_bind(c_hdbc2, (BYTE *) &c_id, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT4,
    ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc2);
    rc = bcp_bind(c_hdbc2, (BYTE *) &c_d_id, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT2,
    ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc2);
    rc = bcp_bind(c_hdbc2, (BYTE *) &c_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc2);
    rc = bcp_bind(c_hdbc2, (BYTE *) &c_d_id, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT2,
    ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc2);
    rc = bcp_bind(c_hdbc2, (BYTE *) &c_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc2);
    rc = bcp_bind(c_hdbc2, (BYTE *) &h_date, 0, H_DATE_LEN, NULL, 0,
SQLCHARACTER, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc2);
    rc = bcp_bind(c_hdbc2, (BYTE *) &h_amount, 0, SQL_VARLEN_DATA, NULL, 0, SQLFLT8,
    ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc2);
    rc = bcp_bind(c_hdbc2, (BYTE *) h_data, 0, H_DATA_LEN, NULL, 0, 0, ++i);
        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;
    long                  w_id;

    short                 d_id;
    DWORD                 dwThreadId[MAX_ORDER_THREADS];
    HANDLE                hThread[MAX_ORDER_THREADS];
    char                  name[20];
    RETCODE               rc;
    char                  bcphint[128];
    char                  err_log_path_ord[256];
    char                  err_log_path_nord[256];
    char                  err_log_path_ordl[256];

    // seed with unique number
    seed(6);

    printf("Loading orders...\n");

    // if build index before load...
    if ((aptr->build_index == 1) && (aptr->index_order == 1))
    {
        BuildIndex("idxordcl");
        BuildIndex("idxnodcl");
        BuildIndex("idxodlcl");
    }

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

    rc = bcp_init(o_hdbc1, name, NULL, "logs\\orders.err", DB_IN);
    strcpy(err_log_path_ord, aptr->log_path);
    strcat(err_log_path_ord, "orders.err");
    rc = bcp_init(o_hdbc1, name, NULL, err_log_path_ord, DB_IN);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc1);

    if ((aptr->build_index == 1) && (aptr->index_order == 1))
    {
        sprintf(bcphint, "tablock, order (o_w_id, o_d_id, o_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 30000));
        rc = bcp_control(o_hdbc1, BCPHINTS, (void*) bcphint);
        if (rc != SUCCEED)
            HandleErrorDBC(o_hdbc1);
    }

    sprintf(name, "%s..%s", aptr->database, "new_order");

    rc = bcp_init(o_hdbc2, name, NULL, "logs\\neword.err", DB_IN);
    strcpy(err_log_path_nord, aptr->log_path);
    strcat(err_log_path_nord, "neword.err");
    rc = bcp_init(o_hdbc2, name, NULL, err_log_path_nord, DB_IN);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc2);

    if ((aptr->build_index == 1) && (aptr->index_order == 1))

```



```

    {
        sprintf(bcphint, "tablock, order (no_w_id, no_d_id, no_o_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 9000));
        rc = bcp_control(o_hdbc2, BCPHINTS, (void*) bcphint);
        if (rc != SUCCEED)
            HandleErrorDBC(o_hdbc2);
    }

    sprintf(name, "%s..%s", aptr->database, "order_line");

    rc = bcp_init(o_hdbc3, name, NULL, "logs\\ordline.err", DB_IN);
    strcpy(err_log_path_ordl, aptr->log_path);
    strcat(err_log_path_ordl, "ordline.err");
    rc = bcp_init(o_hdbc3, name, NULL, err_log_path_ordl, DB_IN);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc3);

    if ((aptr->build_index == 1) && (aptr->index_order == 1))
    {
        sprintf(bcphint, "tablock, order (ol_w_id, ol_d_id, ol_o_id,
ol_number), ROWS_PER_BATCH = %u", (aptr->num_warehouses * 300000));
        rc = bcp_control(o_hdbc3, BCPHINTS, (void*) bcphint);
        if (rc != SUCCEED)
            HandleErrorDBC(o_hdbc3);
    }

    orders_rows_loaded      = 0;
    new_order_rows_loaded  = 0;
    order_line_rows_loaded  = 0;

    OrdersBufInit();

    orders_time_start.time_start = (TimeNow() / MILLI);
    new_order_time_start.time_start = (TimeNow() / MILLI);
    order_line_time_start.time_start = (TimeNow() / MILLI);

    for (w_id = (long)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(short d_id, long w_id)
{
    int cust[ORDERS_PER_DISTRICT+1];
    long o_id;

```

```

    long 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;
    long         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
    i = 0;
    rc = bcp_bind(o_hdbc1, (BYTE *) &o_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, ++i);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc1);
    rc = bcp_bind(o_hdbc1, (BYTE *) &o_d_id, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT2,
++i);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc1);
    rc = bcp_bind(o_hdbc1, (BYTE *) &o_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, ++i);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc1);
    rc = bcp_bind(o_hdbc1, (BYTE *) &o_c_id, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT4,
++i);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc1);
    rc = bcp_bind(o_hdbc1, (BYTE *) &o_carrier_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, ++i);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc1);
    rc = bcp_bind(o_hdbc1, (BYTE *) &o_ol_cnt, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT2,
++i);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc1);
    rc = bcp_bind(o_hdbc1, (BYTE *) &o_all_local, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, ++i);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc1);
    rc = bcp_bind(o_hdbc1, (BYTE *) &o_entry_d, 0, O_ENTRY_D_LEN, NULL, 0,
SQLCHARACTER, ++i);
    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);
    }

    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("idxordc1");

        // build non-clustered index
        if (aptr->build_index == 1)
            BuildIndex("idxordnc");
    }
}

//=====
//
// Function   : LoadNewOrderTable
//
//=====
void LoadNewOrderTable(LOADER_TIME_STRUCT *new_order_time_start)
{
    long         o_id;
    short        o_d_id;
    long         o_w_id;
    RETCODE      rc;
    DBINT        rcint;

    // Bind NEW-ORDER data
    i = 0;
    rc = bcp_bind(o_hdbc2, (BYTE *) &o_id, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT4,
++i);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc2);
    rc = bcp_bind(o_hdbc2, (BYTE *) &o_d_id, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT2,
++i);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc2);
    rc = bcp_bind(o_hdbc2, (BYTE *) &o_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, ++i);
    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_Big(o_hdbc2, o_hstmt2, new_order_rows_loaded,
"new_order", &new_order_time_start->time_start);
}

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)
{
    long          i;
    long          j;
    long          o_id;
    short         o_d_id;
    long          o_w_id;
    double        ol;
    long          ol_i_id;
    long          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];
    char          RETCODE;
    DBINT         rc;
    DBINT         rcint;

    // bind ORDER-LINE data
    i = 0;
    rc = bcp_bind(o_hdbc3, (BYTE *) &o_id, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT4,
++i);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc3);
    rc = bcp_bind(o_hdbc3, (BYTE *) &o_d_id, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT2,
++i);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc3);

```

```

    rc = bcp_bind(o_hdbc3, (BYTE *) &o_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, ++i);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc3);
    rc = bcp_bind(o_hdbc3, (BYTE *) &ol, 0, SQL_VARLEN_DATA, NULL, 0, SQLFLT8,
++i);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc3);
    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_i_id, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT4,
++i);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc3);
    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_delivery_d, 0, OL_DELIVERY_D_LEN,
NULL, 0, SQLCHARACTER, ++i);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc3);
    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_amount, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, ++i);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc3);
    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_supply_w_id, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT4, ++i);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc3);
    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_quantity, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, ++i);
    if (rc != SUCCEED)
        HandleErrorDBC(o_hdbc3);
    rc = bcp_bind(o_hdbc3, (BYTE *) ol_dist_info, 0, DIST_INFO_LEN, NULL, 0, 0,
++i);
    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_Big(o_hdbc3, o_hstmt3,
order_line_rows_loaded, "order_line", &order_line_time_start->time_start);
        }
    }
}

```

```

    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,
                   long rows_loaded,
                   char *table_name,
                   long *time_start)
{
    long time_end, time_diff;

    if ( !(rows_loaded % aptr->batch) )
    {
        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);

```

```

        (float) aptr->batch / (time_diff ? time_diff
: 1L));

        *time_start = time_end;
    }

    return;
}

//=====
//
// Function   : CheckForCommit_Big
//
//=====
void CheckForCommit_Big(HDBC hdbc,
                       HSTMT hstmt,
                       double rows_loaded,
                       char *table_name,
                       long *time_start)
{
    long time_end, time_diff;

    if ( !(fmod(rows_loaded,aptr->batch) ) )
    {
        time_end = (TimeNow() / MILLI);
        time_diff = time_end - *time_start;

        printf("-> Loaded %ld rows into %s in %ld sec - Total = %.0f
(%.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) &&
(rc != SQL_SUCCESS_WITH_INFO) )
{
    HandleErrorDBC(i_hdbc1);
    printf("TPC-C Loader aborted!\n");
    exit(9);
}

// 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) &&
(rc != SQL_SUCCESS_WITH_INFO) )
{
    HandleErrorDBC(w_hdbc1);
    printf("TPC-C Loader aborted!\n");
    exit(9);
}

// 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) &&
(rc != SQL_SUCCESS_WITH_INFO) )
{
    HandleErrorDBC(c_hdbc1);
    printf("TPC-C Loader aborted!\n");
    exit(9);
}

// 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) &&
      (rc != SQL_SUCCESS_WITH_INFO) )
{
    HandleErrorDBC(c_hdbc2);
    printf("TPC-C Loader aborted!\n");
    exit(9);
}

// 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) &&
      (rc != SQL_SUCCESS_WITH_INFO) )
{
    HandleErrorDBC(o_hdbc1);
    printf("TPC-C Loader aborted!\n");
    exit(9);
}

// 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) &&
      (rc != SQL_SUCCESS_WITH_INFO) )
{
    HandleErrorDBC(o_hdbc2);
    printf("TPC-C Loader aborted!\n");
    exit(9);
}

// 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) &&
      (rc != SQL_SUCCESS_WITH_INFO) )
{
    HandleErrorDBC(o_hdbc3);
    printf("TPC-C Loader aborted!\n");
    exit(9);
}

```

```

    }
}

//=====
//
// Function name: BuildIndex
//
//=====
void BuildIndex(char          *index_script)
{
    char    cmd[256];

    printf("Starting index creation:  %s\n",index_script);

    sprintf(cmd, "osql -S%s -U%s -P%s -e -i%s\\%s.sql > %s%s.log",
        aptr->server,
        aptr->user,
        aptr->password,
        aptr->index_script_path,
        index_script,
        aptr->log_path,
        index_script);

    system(cmd);

    printf("Finished index creation:  %s\n",index_script);
}

//=====
//
// Function name: HandleErrorDBC
//
//=====
void HandleErrorDBC (SQLHDBC  hdbc1)
{
    SQLCHAR          SqlState[6], Msg[SQL_MAX_MESSAGE_LENGTH];
    SQLLEN           NativeError;
    SQLSMALLINT i, MsgLen;
    SQLRETURN  rc2;
    char             timebuf[128];
    char             datebuf[128];
    char             err_log_path[256];
    FILE             *fp1;

    i = 1;
    while (( rc2 = SQLGetDiagRec(SQL_HANDLE_DBC , hdbc1, i, SqlState ,
    &NativeError,
        Msg, sizeof(Msg) , &MsgLen )) !=
    SQL_NO_DATA )
    {
        sprintf( szLastError , "%s" ,  Msg );

        _strtime(timebuf);
        _strdate(datebuf);

        printf( "[%s : %s] %s\n==>SQLState: %s\n" , datebuf, timebuf,
szLastError, SqlState);

        strcpy(err_log_path,aptr->log_path);
        strcat(err_log_path,"tpccldr.err");
        fp1 = fopen(err_log_path,"a+");
        if (fp1 == NULL)

```

```

        printf("ERROR:  Unable to open errorlog file.\n");
    }
    else
    {
        fprintf(fp1, "[%s : %s] %s\nSQLState: %s\n" , datebuf,
timebuf, szLastError, SqlState);
        fclose(fp1);
    }
    i++;
}

//=====
//
// Function : HandleErrorSTMT
//
//=====
void HandleErrorSTMT (HSTMT  hstmt1)
{
    SQLCHAR          SqlState[6], Msg[SQL_MAX_MESSAGE_LENGTH];
    SQLLEN           NativeError;
    SQLSMALLINT i, MsgLen;
    SQLRETURN  rc2;
    char             timebuf[128];
    char             datebuf[128];
    char             err_log_path[256];
    FILE             *fp1;

    i = 1;
    while (( rc2 = SQLGetDiagRec(SQL_HANDLE_STMT , hstmt1, i, SqlState ,
    &NativeError,
        Msg, sizeof(Msg) , &MsgLen )) !=
    SQL_NO_DATA )
    {
        if (total_db_errors >= MAX_SQL_ERRORS)
        {
            printf(">>>> Maximum SQL errors of %d exceeded.
Terminating TPCCLDR.<<<<\n",total_db_errors);
            exit(9);
        }
        total_db_errors++;

        sprintf( szLastError , "%s" ,  Msg );

        _strtime(timebuf);
        _strdate(datebuf);

        printf( "[%s : %s] %s\nSQLState: %s\n" , datebuf, timebuf,
szLastError, SqlState);

        strcpy(err_log_path,aptr->log_path);
        strcat(err_log_path,"tpccldr.err");
        fp1 = fopen(err_log_path,"a+");
        if (fp1 == NULL)
            printf("ERROR:  Unable to open errorlog file.\n");
        else
        {
            fprintf(fp1, "[%s : %s] %s\nSQLState: %s\n" , datebuf,
timebuf, szLastError, SqlState);
            fclose(fp1);
        }
        i++;
    }
}

```



```

    }
}

//=====
// Function : FormatDate
//
//=====
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;
}

```

tpcc_neworder_new.sql

```

-----
-- File:      TPCC_NEWORDER_NEW.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.68
-- Copyright Microsoft, 2006
--
-- This acid stored procedure implements the neworder
-- transaction. It outputs timestamps at the
-- beginning of the transaction, before the commit
-- delay, and after the commit.
--
-----
SET QUOTED_IDENTIFIER OFF
GO
SET ANSI_NULLS OFF
GO

USE tpcc
GO

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

-- neworder_new v2.5 6/23/05 PeterCa
-- 1q stock/order_line/client. upd district & ins neworder.
-- cust/warehouse select together, ins order separate
-- uses rownumber to distinct w any transform
-- uses in-memory sort for distinct on iid,wid
-- uses charindex
-- will rollback if (@i_idX,@s_w_idX pairs not unique) OR (@i_idX not unique).

CREATE PROCEDURE tpcc_neworder_new
    @w_id int,

```

```

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

```

```

AS
BEGIN
DECLARE @o_id int,
        @d_tax smallmoney,
        @o_entry_d datetime,
        @commit_flag tinyint

BEGIN TRANSACTION n
-- get district tax and next available order id and update
-- insert corresponding row into new-order table
-- plus initialize local variables

UPDATE district
SET @d_tax = d_tax,
    @o_id = d_next_o_id,
    d_next_o_id = d_next_o_id + 1,
    @o_entry_d = GETDATE(),
    @commit_flag = 1

OUTPUT deleted.d_next_o_id,
        @d_id,
        @w_id

INTO new_order
WHERE d_w_id = @w_id AND
      d_id = @d_id

-- update stock from stock join (item join (params))
-- output to orderline, output to client
-- NOTE: @@rowcount != @ol_o_cnt
-- if (@i_idX,@s_w_idX pairs not unique) OR (@i_idX not unique).

UPDATE stock
SET s_ytd = s_ytd + info.ol_qty,
    s_quantity = s_quantity - info.ol_qty +
        CASE WHEN (s_quantity - info.ol_qty < 10) THEN 91 ELSE

0 END,
    s_order_cnt = s_order_cnt + 1,
    s_remote_cnt = s_remote_cnt +

ELSE 1 END

OUTPUT @o_id,
        @d_id,

```

```

        @w_id,
        info.lino,
        info.i_id,
        "dec 31, 1899",
        info.i_price * info.ol_qty,
        info.w_id,
        info.ol_qty,
        CASE @d_id WHEN 1 THEN inserted.s_dist_01
                   WHEN 2 THEN inserted.s_dist_02
                   WHEN 3 THEN inserted.s_dist_03
                   WHEN 4 THEN inserted.s_dist_04
                   WHEN 5 THEN inserted.s_dist_05
                   WHEN 6 THEN inserted.s_dist_06
                   WHEN 7 THEN inserted.s_dist_07
                   WHEN 8 THEN inserted.s_dist_08
                   WHEN 9 THEN inserted.s_dist_09
                   WHEN 10 THEN inserted.s_dist_10
        END
    INTO order_line

    OUTPUT info.i_name,inserted.s_quantity,
    CASE WHEN ((charindex("ORIGINAL",info.i_data) > 0) AND
              (charindex("ORIGINAL",inserted.s_data) > 0) )
           THEN "B" ELSE "G" END,
    info.i_price,
    info.i_price*info.ol_qty
    FROM stock INNER JOIN
        (SELECT iid,
                wid,
                lino,
                ol_qty,
                i_price,
                i_name,
                i_data
        FROM (SELECT iid,
                wid,
                lino,
                qty,
                row_number() OVER (PARTITION BY iid,wid
                                ORDER BY iid,wid)
        FROM (SELECT @i_id1,@s_w_id1,1,@ol_qty1 UNION ALL
              SELECT @i_id2,@s_w_id2,2,@ol_qty2 UNION ALL
              SELECT @i_id3,@s_w_id3,3,@ol_qty3 UNION ALL
              SELECT @i_id4,@s_w_id4,4,@ol_qty4 UNION ALL
              SELECT @i_id5,@s_w_id5,5,@ol_qty5 UNION ALL
              SELECT @i_id6,@s_w_id6,6,@ol_qty6 UNION ALL
              SELECT @i_id7,@s_w_id7,7,@ol_qty7 UNION ALL
              SELECT @i_id8,@s_w_id8,8,@ol_qty8 UNION ALL
              SELECT @i_id9,@s_w_id9,9,@ol_qty9 UNION ALL
              SELECT @i_id10,@s_w_id10,10,@ol_qty10 UNION ALL
              SELECT @i_id11,@s_w_id11,11,@ol_qty11 UNION ALL
              SELECT @i_id12,@s_w_id12,12,@ol_qty12 UNION ALL
              SELECT @i_id13,@s_w_id13,13,@ol_qty13 UNION ALL
              SELECT @i_id14,@s_w_id14,14,@ol_qty14 UNION ALL
              SELECT @i_id15,@s_w_id15,15,@ol_qty15) AS
        ) AS o1(iid,wid,lino,ol_qty,rownum)
    INNER JOIN
        item (repeatableread) ON i_id = iid AND -- filters
        out invalid items
        ) AS info(i_id,w_id,lino,ol_qty,i_price,i_name,i_data)
    ON s_i_id = info.i_id AND

```

```

        s_w_id = info.w_id

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

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

    -- get customer last name, discount, and credit rating
    -- get warehouse tax
    -- return order_data to client
    SELECT w_tax,
           @d_tax,
           @o_id,
           c_last,
           c_discount,
           c_credit,
           @o_entry_d,
           @commit_flag
    FROM warehouse(repeatableread),
         customer(repeatableread)
    WHERE w_id = @w_id AND
           c_id = @c_id AND
           c_w_id = @w_id AND
           c_d_id = @d_id

    -- @@rowcount checks that previous select found a valid customer
    IF (@@rowcount = 0)
    BEGIN
        RAISERROR( 'Invalid Customer ID', 11, 1 )
        ROLLBACK TRANSACTION n
    END
    ELSE IF (@commit_flag = 1)
        COMMIT TRANSACTION n
    ELSE -- all that work for nothing.
        ROLLBACK TRANSACTION n

END
GO

```

VerifyTPCCLoad.sql

```

-----
-- File:      VerifyTPCCLoad.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.68
-- Copyright Microsoft, 2006
--
-----
SET NOCOUNT ON
PRINT '
SELECT CONVERT(CHAR(30), GETDATE(), 21)

```

```

PRINT ' '

USE tpcc
GO

IF EXISTS (SELECT name
           FROM sysobjects
           WHERE name = 'TPCC_INFO' AND
                 type = 'U')
    DROP TABLE TPCC_INFO
GO
PRINT 'WAREHOUSE TABLE'
SELECT count_big(*)
FROM warehouse
GO

PRINT 'DISTRICT TABLE = (10 * No of warehouses)'
SELECT count_big(*)
FROM district
GO

PRINT 'ITEM TABLE = 100,000'
SELECT count_big(*)
FROM item
GO

PRINT 'CUSTOMER TABLE = (30,000 * No of warehouses)'
SELECT count_big(*)
FROM customer
GO

PRINT 'ORDERS TABLE = (30,000 * No of warehouses)'
SELECT count_big(*)
FROM orders
GO

PRINT 'HISTORY TABLE = (30,000 * No of warehouses)'
SELECT count_big(*)
FROM history
GO

PRINT 'STOCK TABLE = (100,000 * No of warehouses)'
SELECT count_big(*)
FROM stock
GO

PRINT 'ORDER_LINE TABLE = (300,000 * No of warehouses + some change)'
SELECT count_big(*)
FROM order_line
GO

PRINT 'NEW_ORDER TABLE = (9000 * No of warehouses)'
SELECT count_big(*)
FROM new_order
GO

CREATE TABLE TPCC_INFO
(
    INFO_DATE          datetime,
    NUM_WAREHOUSE      bigint,
    WAREHOUSE_TARGET   bigint,
    NUM_DISTRICT       bigint,
    DISTRICT_TARGET    bigint,
    NUM_ITEM            bigint,

```

```

ITEM_TARGET          bigint,
NUM_CUSTOMER         bigint,
CUSTOMER_TARGET      bigint,
NUM_ORDERS            bigint,
ORDERS_TARGET        bigint,
ORDERS_TARGET_LOW    bigint,
ORDERS_TARGET_HIGH   bigint,
NUM_ORDER_LINE       bigint,
ORDER_LINE_TARGET     bigint,
ORDER_LINE_TARGET_LOW bigint,
ORDER_LINE_TARGET_HIGH bigint,
NUM_NEW_ORDER        bigint,
NEW_ORDER_TARGET     bigint,
NEW_ORDER_TARGET_LOW  bigint,
NEW_ORDER_TARGET_HIGH bigint,
NUM_HISTORY           bigint,
HISTORY_TARGET       bigint,
NUM_STOCK            bigint,
STOCK_TARGET         bigint)
GO

DECLARE @NUM_WAREHOUSE      bigint,
        @WAREHOUSE_TARGET  bigint,
        @NUM_DISTRICT      bigint,
        @DISTRICT_TARGET   bigint,
        @NUM_ITEM          bigint,
        @ITEM_TARGET       bigint,
        @NUM_CUSTOMER      bigint,
        @CUSTOMER_TARGET   bigint,
        @NUM_ORDERS        bigint,
        @ORDERS_TARGET     bigint,
        @ORDERS_TARGET_LOW  bigint,
        @ORDERS_TARGET_HIGH  bigint,
        @NUM_ORDER_LINE    bigint,
        @ORDER_LINE_TARGET  bigint,
        @ORDER_LINE_TARGET_LOW  bigint,
        @ORDER_LINE_TARGET_HIGH  bigint,
        @NUM_NEW_ORDER     bigint,
        @NEW_ORDER_TARGET  bigint,
        @NEW_ORDER_TARGET_LOW  bigint,
        @NEW_ORDER_TARGET_HIGH  bigint,
        @NUM_HISTORY       bigint,
        @HISTORY_TARGET    bigint,
        @NUM_STOCK         bigint,
        @STOCK_TARGET      bigint

-- set the local variables prior to inserting them into the TPCC_INFO table
SELECT @NUM_WAREHOUSE      = COUNT_BIG(*)
FROM warehouse

SELECT @NUM_DISTRICT      = COUNT_BIG(*)
FROM district

SELECT @NUM_ITEM          = COUNT_BIG(*)
FROM item

SELECT @NUM_CUSTOMER      = COUNT_BIG(*)
FROM customer

SELECT @NUM_ORDERS        = COUNT_BIG(*)
FROM orders

SELECT @NUM_ORDER_LINE    = COUNT_BIG(*)

```

```

FROM    order_line

SELECT  @NUM_NEW_ORDER      = COUNT_BIG(*)
FROM    new_order

SELECT  @NUM_HISTORY        = COUNT_BIG(*)
FROM    history

SELECT  @NUM_STOCK          = COUNT_BIG(*)
FROM    stock

--- now calculate and set the target values
SELECT  @WAREHOUSE_TARGET   = @NUM_WAREHOUSE,
        @DISTRICT_TARGET    = @NUM_WAREHOUSE * 10,
        @ITEM_TARGET        = 100000,
        @CUSTOMER_TARGET    = @NUM_WAREHOUSE * 30000,
        @ORDERS_TARGET      = @NUM_WAREHOUSE * 30000,
        @ORDERS_TARGET_LOW  = @ORDERS_TARGET - FLOOR(@ORDERS_TARGET * .01),
        @ORDERS_TARGET_HIGH = @ORDERS_TARGET + FLOOR(@ORDERS_TARGET * .01),
        @ORDER_LINE_TARGET  = @NUM_WAREHOUSE * 300000,
        @ORDER_LINE_TARGET_LOW = @ORDER_LINE_TARGET - FLOOR(@ORDER_LINE_TARGET *
.01),
        @ORDER_LINE_TARGET_HIGH = @ORDER_LINE_TARGET + FLOOR(@ORDER_LINE_TARGET *
.01),
        @NEW_ORDER_TARGET   = @NUM_WAREHOUSE * 9000,
        @NEW_ORDER_TARGET_LOW = @NEW_ORDER_TARGET - FLOOR(@NEW_ORDER_TARGET *
.01),
        @NEW_ORDER_TARGET_HIGH = @NEW_ORDER_TARGET + FLOOR(@NEW_ORDER_TARGET *
.01),
        @HISTORY_TARGET     = @NUM_WAREHOUSE * 30000,
        @STOCK_TARGET       = @NUM_WAREHOUSE * 100000

--- insert the values into TPCC_INFO
INSERT INTO TPCC_INFO VALUES (GETDATE(),
                              @NUM_WAREHOUSE,
                              @WAREHOUSE_TARGET,
                              @NUM_DISTRICT,
                              @DISTRICT_TARGET,
                              @NUM_ITEM,
                              @ITEM_TARGET,
                              @NUM_CUSTOMER,
                              @CUSTOMER_TARGET,
                              @NUM_ORDERS,
                              @ORDERS_TARGET,
                              @ORDERS_TARGET_LOW,
                              @ORDERS_TARGET_HIGH,
                              @NUM_ORDER_LINE,
                              @ORDER_LINE_TARGET,
                              @ORDER_LINE_TARGET_LOW,
                              @ORDER_LINE_TARGET_HIGH,
                              @NUM_NEW_ORDER,
                              @NEW_ORDER_TARGET,
                              @NEW_ORDER_TARGET_LOW,
                              @NEW_ORDER_TARGET_HIGH,
                              @NUM_HISTORY,
                              @HISTORY_TARGET,
                              @NUM_STOCK,
                              @STOCK_TARGET)

GO

--- output the row counts from the build
PRINT ''
PRINT ''

```

```

PRINT '-----'
PRINT '|    WAREHOUSE TABLE    |'
PRINT '-----'
SELECT TOP 1
  CONVERT(CHAR(30),INFO_DATE,21) AS 'Date',
  NUM_WAREHOUSE AS 'Warehouse Rows',
  WAREHOUSE_TARGET AS 'Warehouse Target',
  CASE WHEN (NUM_WAREHOUSE = WAREHOUSE_TARGET)
    THEN 'OK!'
    ELSE 'ERROR!!!'
  END AS 'Warehouse Message'
FROM TPCC_INFO
GO

PRINT ''
PRINT ''
PRINT '-----'
PRINT '|    DISTRICT TABLE    |'
PRINT '-----'
SELECT TOP 1
  CONVERT(CHAR(30),INFO_DATE,21) AS 'Date',
  NUM_DISTRICT AS 'District Rows',
  DISTRICT_TARGET AS 'District Target',
  CASE WHEN (NUM_DISTRICT = DISTRICT_TARGET)
    THEN 'OK!'
    ELSE 'ERROR!!!'
  END AS 'District Message'
FROM TPCC_INFO
GO

PRINT ''
PRINT ''
PRINT '-----'
PRINT '|    ITEM TABLE    |'
PRINT '-----'
SELECT TOP 1
  CONVERT(CHAR(30),INFO_DATE,21) AS 'Date',
  NUM_ITEM AS 'Item Rows',
  ITEM_TARGET AS 'Item Target',
  CASE WHEN (NUM_ITEM = ITEM_TARGET)
    THEN 'OK!'
    ELSE 'ERROR!!!'
  END AS 'Item Message'
FROM TPCC_INFO
GO

PRINT ''
PRINT ''
PRINT '-----'
PRINT '|    CUSTOMER TABLE    |'
PRINT '-----'
SELECT TOP 1
  CONVERT(CHAR(30),INFO_DATE,21) AS 'Date',
  NUM_CUSTOMER AS 'Customer Rows',
  CUSTOMER_TARGET AS 'Customer Target',
  CASE WHEN (NUM_CUSTOMER = CUSTOMER_TARGET)
    THEN 'OK!'
    ELSE 'ERROR!!!'
  END AS 'Customer Message'
FROM TPCC_INFO
GO

PRINT ''

```

```

PRINT ''
PRINT '-----'
PRINT '| ORDERS TABLE |'
PRINT '-----'
SELECT TOP 1
  CONVERT(CHAR(30),INFO_DATE,21) AS 'Date',
  NUM_ORDERS AS 'Orders Rows',
  ORDERS_TARGET AS 'Orders Target',
  CASE WHEN (NUM_ORDERS = ORDERS_TARGET)
    THEN 'OK!'
    WHEN (NUM_ORDERS BETWEEN ORDERS_TARGET_LOW AND ORDERS_TARGET_HIGH)
    THEN 'OK! (within 1%)'
    ELSE 'ERROR!!!'
  END AS 'Orders Message'
FROM TPCC_INFO
GO

PRINT ''
PRINT ''
PRINT '-----'
PRINT '| ORDER LINE TABLE |'
PRINT '-----'
SELECT TOP 1
  CONVERT(CHAR(30),INFO_DATE,21) AS 'Date',
  NUM_ORDER_LINE AS 'Order Line Rows',
  ORDER_LINE_TARGET AS 'Order Line Target',
  CASE WHEN (NUM_ORDER_LINE = ORDER_LINE_TARGET)
    THEN 'OK!'
    WHEN (NUM_ORDER_LINE BETWEEN ORDER_LINE_TARGET_LOW AND
ORDER_LINE_TARGET_HIGH)
    THEN 'OK! (within 1%)'
    ELSE 'ERROR!!!'
  END AS 'Order Line Message'
FROM TPCC_INFO
GO

PRINT ''
PRINT ''
PRINT '-----'
PRINT '| NEW ORDER TABLE |'
PRINT '-----'
SELECT TOP 1
  CONVERT(CHAR(30),INFO_DATE,21) AS 'Date',
  NUM_NEW_ORDER AS 'New Order Rows',
  NEW_ORDER_TARGET AS 'New Order Target',
  CASE WHEN (NUM_NEW_ORDER = NEW_ORDER_TARGET)
    THEN 'OK!'
    WHEN (NUM_NEW_ORDER BETWEEN NEW_ORDER_TARGET_LOW AND
NEW_ORDER_TARGET_HIGH)
    THEN 'OK! (within 1%)'
    ELSE 'ERROR!!!'
  END AS 'New Order Message'
FROM TPCC_INFO
GO

PRINT ''
PRINT ''
PRINT '-----'
PRINT '| HISTORY TABLE |'
PRINT '-----'
SELECT TOP 1
  CONVERT(CHAR(30),INFO_DATE,21) AS 'Date',
  NUM_HISTORY AS 'History Rows',

```

```

  HISTORY_TARGET AS 'History Target',
  CASE WHEN (NUM_HISTORY = HISTORY_TARGET)
    THEN 'OK!'
    ELSE 'ERROR!!!'
  END AS 'History Message'
FROM TPCC_INFO
GO

PRINT ''
PRINT ''
PRINT '-----'
PRINT '| STOCK TABLE |'
PRINT '-----'
SELECT TOP 1
  CONVERT(CHAR(30),INFO_DATE,21) AS 'Date',
  NUM_STOCK AS 'Stock Rows',
  STOCK_TARGET AS 'Stock Target',
  CASE WHEN (NUM_STOCK = STOCK_TARGET)
    THEN 'OK!'
    ELSE 'ERROR!!!'
  END AS 'Stock Message'
FROM TPCC_INFO
GO

-----
-- Check Indexes
-----
USE tpcc
GO

PRINT ''
PRINT ''
PRINT '-----'
PRINT '| TPC-C INDEXES |'
PRINT '-----'
EXEC sp_helpindex warehouse
EXEC sp_helpindex district
EXEC sp_helpindex item
EXEC sp_helpindex customer
EXEC sp_helpindex orders
EXEC sp_helpindex order_line
EXEC sp_helpindex new_order
EXEC sp_helpindex history
EXEC sp_helpindex stock
GO

```

version.sql

```

-----
-- File:  VERSION.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.68
-- Copyright Microsoft, 2006
--
-- Extracts current version of SQL Server
--
-----
USE master
GO

```

```
SELECT  CONVERT(char(20), SERVERPROPERTY('ProductVersion')),  
        CONVERT(char(20), SERVERPROPERTY('ProductLevel')),  
        CONVERT(char(29), SERVERPROPERTY('Edition'))  
GO  
  
SELECT  CONVERT(char(30), GETDATE(), 21)  
GO
```

Appendix C: Tunable Parameters

Microsoft SQL Server 2003 Installation Procedures

Microsoft SQL Server 2005 Enterprise x64 Edition
Installation Procedures
Type of installation: custom
During the custom installation, use the default
settings for all except the following two areas:
Services accounts:
SQL Server - local system account
SQL Server Agent - local system account
Set the sort order/collation as Latin1_General / BIN

Microsoft SQL Server Configuration Parameters

```
1> 2> 3> 4> 5> 6> 7> 8> 9> 10> 11> 12> -----
--
-- File:  VERSION.SQL
--
--      Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--      Copyright Microsoft, 2006
--
--
--      - Extracts current version of SQL Server
--
-----
USE master
1> 2> 3> 4> 5>
SELECT  CONVERT(char(20),
SERVERPROPERTY('ProductVersion')),
```

```
CONVERT(char(20),
SERVERPROPERTY('ProductLevel')),
CONVERT(char(29), SERVERPROPERTY('Edition'))
-----
9.00.3042.00      SP2      Enterprise
Edition (64-bit)

(1 row affected)
1> 2> 3>
SELECT  CONVERT(char(30), GETDATE(), 21)
-----
2008-06-26 16:32:59.450

(1 row affected)
1>
1> 2> 3> 4> 5> 6> 7> 8> 9> 10> 11> 12> 13> 14>
-----
--
-- File:  CONFIG.SQL
--
--      Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--      Copyright Microsoft, 2006
--
--      - Collects SQL Server configuration
parameters      --
--
-----
PRINT  ' '
SELECT  CONVERT(char(30), GETDATE(), 21)
PRINT  ' '
-----
2008-06-26 16:32:59.543

(1 row affected)

1> 2> 3> Configuration option 'show advanced options'
changed from 1 to 1. Run the RECONFIGURE statement to
install.

sp_configure 'show advanced',1
1> 2> 3>
RECONFIGURE WITH OVERRIDE
1> 2> 3>
sp_configure
name      minimum
maximum  config_value run_value
-----
Ad Hoc Distributed Queries      0
1      0      0
```

```
affinity I/O mask      -2147483648
2147483647      0      0
affinity mask      -2147483648
2147483647      65535      65535
affinity64 I/O mask      -2147483648
2147483647      0      0
affinity64 mask      -2147483648
2147483647      0      0
Agent XPs      0
1      0      0
allow updates      0
1      0      0
awe enabled      0
1      0      0
blocked process threshold      0
86400      0      0
c2 audit mode      0
1      0      0
clr enabled      0
1      0      0
common criteria compliance enabled      0
1      0      0
cost threshold for parallelism      0
32767      5      5
cross db ownership chaining      0
1      0      0
cursor threshold      -1
2147483647      -1      -1
Database Mail XPs      0
1      0      0
default full-text language      0
2147483647      1033      1033
default language      0
9999      0      0
default trace enabled      0
1      1      1
disallow results from triggers      0
1      0      0
fill factor (%)      0
100      0      0
ft crawl bandwidth (max)      0
32767      100      100
ft crawl bandwidth (min)      0
32767      0      0
ft notify bandwidth (max)      0
32767      100      100
ft notify bandwidth (min)      0
32767      0      0
in-doubt xact resolution      0
2      0      0
index create memory (KB)      704
2147483647      704      704
lightweight pooling      0
1      1      1
locks      5000
2147483647      0      0
max degree of parallelism      0
64      1      1
max full-text crawl range      0
256      4      4
max server memory (MB)      16
2147483647      253200      253200
```

```

max text repl size (B)
2147483647 65536 65536
max worker threads
32767 1350 1350
media retention
365 0 0
min memory per query (KB)
2147483647 512 512
min server memory (MB)
2147483647 0 0
nested triggers
1 1 1
network packet size (B)
32767 2048 2048
Ole Automation Procedures
1 0 0
open objects
2147483647 0 0
PH timeout (s)
3600 60 60
precompute rank
1 0 0
priority boost
1 1 1
query governor cost limit
2147483647 0 0
query wait (s)
2147483647 -1 -1
recovery interval (min)
32767 32767 32767
remote access
1 1 1
remote admin connections
1 0 0
remote login timeout (s)
2147483647 20 20
remote proc trans
1 0 0
remote query timeout (s)
2147483647 600 600
Replication XPs
1 0 0
scan for startup procs
1 0 0
server trigger recursion
1 1 1
set working set size
1 0 0
show advanced options
1 1 1
SMO and DMO XPs
1 1 1
SQL Mail XPs
1 0 0
transform noise words
1 0 0
two digit year cutoff
9999 2049 2049
user connections
32767 0 0
user options
32767 0 0

```

```

Web Assistant Procedures
1 0 0
xp_cmdshell
1 0 0
1>

Microsoft SQL
Server Node
Configuration
Parameters

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\90\NodeConfiguration
Class Name: <NO CLASS>
Last Write Time: 9/18/2007 - 7:33 AM

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\90\NodeConfiguration\Node0
Class Name: <NO CLASS>
Last Write Time: 2/19/2008 - 4:34 PM
Value 0
Name: CPUMask
Type: REG_DWORD
Data: 0xf0

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\90\NodeConfiguration\Node1
Class Name: <NO CLASS>
Last Write Time: 2/19/2008 - 4:34 PM
Value 0
Name: CPUMask
Type: REG_DWORD
Data: 0xf

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\90\NodeConfiguration\Node2
Class Name: <NO CLASS>
Last Write Time: 2/19/2008 - 4:34 PM
Value 0
Name: CPUMask
Type: REG_DWORD
Data: 0xf00

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\90\NodeConfiguration\Node3
Class Name: <NO CLASS>
Last Write Time: 2/19/2008 - 4:34 PM
Value 0

```

```

Name: CPUMask
Type: REG_DWORD
Data: 0xf000

Microsoft SQL
Server Super
Socket
Configuration
Parameters

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Tcp
Class Name: <NO CLASS>
Last Write Time: 9/18/2007 - 7:39 AM
Value 0
Name: Enabled
Type: REG_DWORD
Data: 0x1

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

Value 2
Name: NoDelay
Type: REG_DWORD
Data: 0

Value 3
Name: KeepAlive
Type: REG_DWORD
Data: 0x7530

Value 4
Name: DisplayName
Type: REG_SZ
Data: TCP/IP

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Tcp\IP1
Class Name: <NO CLASS>
Last Write Time: 9/18/2007 - 7:44 AM
Value 0
Name: Enabled
Type: REG_DWORD
Data: 0x1

Value 1
Name: Active

```



```

Type:      REG_DWORD
Data:      0x1

Value 2
Name:      TcpPort
Type:      REG_SZ
Data:      2002

Value 3
Name:      TcpDynamicPorts
Type:      REG_SZ
Data:

Value 4
Name:      DisplayName
Type:      REG_SZ
Data:      Specific IP Address

Value 5
Name:      IPAddress
Type:      REG_SZ
Data:      130.120.208.10

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Tcp\IP2
Class Name: <NO CLASS>
Last Write Time: 9/18/2007 - 7:44 AM
Value 0
Name:      Enabled
Type:      REG_DWORD
Data:      0x1

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

Value 2
Name:      TcpPort
Type:      REG_SZ
Data:      2004

Value 3
Name:      TcpDynamicPorts
Type:      REG_SZ
Data:

Value 4
Name:      DisplayName
Type:      REG_SZ
Data:      Specific IP Address

Value 5
Name:      IPAddress
Type:      REG_SZ
Data:      130.168.208.10

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Tcp\IP3

```

```

Class Name: <NO CLASS>
Last Write Time: 9/18/2007 - 7:41 AM
Value 0
Name:      Enabled
Type:      REG_DWORD
Data:      0x1

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

Value 2
Name:      TcpPort
Type:      REG_SZ
Data:      2001

Value 3
Name:      TcpDynamicPorts
Type:      REG_SZ
Data:

Value 4
Name:      DisplayName
Type:      REG_SZ
Data:      Specific IP Address

Value 5
Name:      IPAddress
Type:      REG_SZ
Data:      130.121.208.10

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Tcp\IP4
Class Name: <NO CLASS>
Last Write Time: 9/18/2007 - 7:41 AM
Value 0
Name:      Enabled
Type:      REG_DWORD
Data:      0x1

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

Value 2
Name:      TcpPort
Type:      REG_SZ
Data:      2003

Value 3
Name:      TcpDynamicPorts
Type:      REG_SZ
Data:

Value 4
Name:      DisplayName
Type:      REG_SZ
Data:      Specific IP Address

```

```

Value 5
Name:      IPAddress
Type:      REG_SZ
Data:      130.122.208.10

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Tcp\IP4
Class Name: <NO CLASS>
Last Write Time: 9/18/2007 - 7:33 AM
Value 0
Name:      TcpPort
Type:      REG_SZ
Data:      2001[0x1],2002[0x2],2003[0x4],2004[0x8]

Value 1
Name:      TcpDynamicPorts
Type:      REG_SZ
Data:

Value 2
Name:      DisplayName
Type:      REG_SZ
Data:      Any IP Address

```

Database Server System Configuration

System Information report written at: 06/26/08
16:38:04
System Name: B2
[System Summary]

Item	Value
OS Name	Microsoft(R) Windows(R) Server 2003
Enterprise	x64 Edition
Version	5.2.3790 Service Pack 1 Build 3790
Other OS Description	R2
OS Manufacturer	Microsoft Corporation
System Name	B2
System Manufacturer	HP
System Model	Proliant DL585 G5
System Type	x64-based PC
Processor	AMD64 Family 16 Model 2 Stepping 3
AuthenticAMD	~2512 Mhz
Processor	AMD64 Family 16 Model 2 Stepping 3
AuthenticAMD	~2512 Mhz
Processor	AMD64 Family 16 Model 2 Stepping 3
AuthenticAMD	~2512 Mhz
Processor	AMD64 Family 16 Model 2 Stepping 3
AuthenticAMD	~2512 Mhz

```

Processor AMD64 Family 16 Model 2 Stepping 3
AuthenticAMD ~2512 Mhz
Processor AMD64 Family 16 Model 2 Stepping 3
AuthenticAMD ~2512 Mhz
Processor AMD64 Family 16 Model 2 Stepping 3
AuthenticAMD ~2512 Mhz
Processor AMD64 Family 16 Model 2 Stepping 3
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Processor AMD64 Family 16 Model 2 Stepping 3
AuthenticAMD ~2512 Mhz
Processor AMD64 Family 16 Model 2 Stepping 3
AuthenticAMD ~2512 Mhz
Processor AMD64 Family 16 Model 2 Stepping 3
AuthenticAMD ~2512 Mhz
Processor AMD64 Family 16 Model 2 Stepping 3
AuthenticAMD ~2512 Mhz
Processor AMD64 Family 16 Model 2 Stepping 3
AuthenticAMD ~2512 Mhz
BIOS Version/Date HP A07, 3/28/2008
SMBIOS Version 2.4
Windows Directory C:\WINDOWS
System Directory C:\WINDOWS\system32
Boot Device \Device\HarddiskVolume36
Locale United States
Hardware Abstraction Layer Version =
"5.2.3790.1830 (srv03_sp1_rtm.050324-1447)"
User Name Not Available
Time Zone Central Daylight Time
Total Physical Memory 262,141.62 MB
Available Physical Memory 1.49 GB
Total Virtual Memory 252.51 GB
Available Virtual Memory 2.63 GB
Page File Space 2.00 GB
Page File C:\pagefile.sys

[Hardware Resources]

[Conflicts/Sharing]

Resource Device
I/O Port 0x0000A000-0x0000AFFF PCI standard
PCI-to-PCI bridge
I/O Port 0x0000A000-0x0000AFFF Smart Array
P800 Controller (Non-Miniport)

I/O Port 0x00000000-0x000003AF PCI bus
I/O Port 0x00000000-0x000003AF Direct memory
access controller

I/O Port 0x000003C0-0x000003DF PCI bus
I/O Port 0x000003C0-0x000003DF ATI ES1000

IRQ 10 Base System Device
IRQ 10 PCI Device

```

```

Memory Address 0xDA000000-0xDDFFFFFF PCI standard
PCI-to-PCI bridge
Memory Address 0xDA000000-0xDDFFFFFF HP NC371i
Virtual Bus Device

I/O Port 0x00009000-0x00009FFF PCI standard
PCI-to-PCI bridge
I/O Port 0x00009000-0x00009FFF Smart Array
P800 Controller (Non-Miniport)

I/O Port 0x00006000-0x0000FFFF PCI bus
I/O Port 0x00006000-0x0000FFFF PCI standard
PCI-to-PCI bridge
I/O Port 0x00006000-0x0000FFFF LSI Adapter,
SAS 3000 series, 8-port with 1068 -StorPort

I/O Port 0x00003000-0x00003FFF PCI standard
PCI-to-PCI bridge
I/O Port 0x00003000-0x00003FFF Smart Array
P800 Controller (Non-Miniport)

I/O Port 0x00005000-0x00005FFF PCI standard
PCI-to-PCI bridge
I/O Port 0x00005000-0x00005FFF Smart Array
E500 Controller (Non-Miniport)

Memory Address 0xD0000000-0xD9FFFFFF PCI bus
Memory Address 0xD0000000-0xD9FFFFFF ATI ES1000

IRQ 18 ATI ES1000
IRQ 18 Smart Array P800 Controller (Non-Miniport)

Memory Address 0xA0000-0xBFFFF PCI bus
Memory Address 0xA0000-0xBFFFF ATI ES1000

I/O Port 0x00007000-0x00007FFF PCI standard
PCI-to-PCI bridge
I/O Port 0x00007000-0x00007FFF Smart Array
P800 Controller (Non-Miniport)

I/O Port 0x00001000-0x00005FFF PCI bus
I/O Port 0x00001000-0x00005FFF ATI ES1000

I/O Port 0x000003B0-0x000003BB PCI bus
I/O Port 0x000003B0-0x000003BB ATI ES1000

I/O Port 0x00004000-0x00004FFF PCI standard
PCI-to-PCI bridge
I/O Port 0x00004000-0x00004FFF Smart Array
P800 Controller (Non-Miniport)

I/O Port 0x00008000-0x00008FFF PCI standard
PCI-to-PCI bridge
I/O Port 0x00008000-0x00008FFF Smart Array
P800 Controller (Non-Miniport)

```

```

[DMA]

Resource Device Status
Channel 7 Direct memory access controller OK

[Forced Hardware]

Device PNP Device ID

[I/O]

Resource Device Status
0x00000000-0x000003AF PCI bus OK
0x00000000-0x000003AF Direct memory access
controller OK
0x000003B0-0x000003BB PCI bus OK
0x000003B0-0x000003BB ATI ES1000 OK
0x000003C0-0x000003DF PCI bus OK
0x000003C0-0x000003DF ATI ES1000 OK
0x000003E0-0x00000CF7 PCI bus OK
0x00001000-0x00005FFF PCI bus OK
0x00001000-0x00005FFF ATI ES1000 OK
0x00000070-0x00000079 Motherboard resources
OK
0x00000408-0x0000040F Motherboard resources
OK
0x000004D0-0x000004D1 Motherboard resources
OK
0x00000020-0x0000003F Motherboard resources
OK
0x000000A0-0x000000BF Motherboard resources
OK
0x00000090-0x0000009F Motherboard resources
OK
0x00000050-0x00000053 Motherboard resources
OK
0x00000700-0x0000073F Motherboard resources
OK
0x00000800-0x000008FE Motherboard resources
OK
0x00000900-0x000009FE Motherboard resources
OK
0x000009FF-0x000009FF Motherboard resources
OK
0x00000A00-0x00000AFE Motherboard resources
OK
0x00000AFF-0x00000AFF Motherboard resources
OK
0x00000B00-0x00000BFE Motherboard resources
OK
0x00000BFF-0x00000BFF Motherboard resources
OK
0x00000010-0x0000001F Motherboard resources
OK
0x00000C80-0x00000C83 Motherboard resources
OK
0x00000CD4-0x00000CD7 Motherboard resources
OK

```

0x00000CF9-0x00000CF9	Motherboard resources
OK	
0x00000F50-0x00000F58	Motherboard resources
OK	
0x00000F00-0x00000F00	Motherboard resources
OK	
0x00000CA0-0x00000CA1	Motherboard resources
OK	
0x00000CA4-0x00000CA5	Motherboard resources
OK	
0x00000C00-0x00000C03	Motherboard resources
OK	
0x00000CA2-0x00000CA3	OK
0x00000040-0x00000043	System timer OK
0x00000080-0x0000008F	Direct memory access
controller OK	
0x000000C0-0x000000DF	Direct memory access
controller OK	
0x00000061-0x00000061	System speaker OK
0x00000060-0x00000060	Standard 101/102-Key or
Microsoft Natural PS/2 Keyboard	OK
0x00000064-0x00000064	Standard 101/102-Key or
Microsoft Natural PS/2 Keyboard	OK
0x0000002E-0x0000002F	Extended IO Bus OK
0x0000004E-0x0000004F	Extended IO Bus OK
0x000000620-0x00000065F	Extended IO Bus OK
0x000000680-0x00000069F	Extended IO Bus OK
0x000000600-0x00000061F	Extended IO Bus OK
0x000000660-0x00000067F	Extended IO Bus OK
0x000000300-0x00000030F	Extended IO Bus OK
0x00000500-0x0000050F	Standard Dual Channel
PCI IDE Controller OK	
0x000001F0-0x000001F7	Primary IDE Channel OK
0x000003F6-0x000003F6	Primary IDE Channel OK
0x00000170-0x00000177	Secondary IDE Channel
OK	
0x00000376-0x00000376	Secondary IDE Channel
OK	
0x00002800-0x000028FF	Base System Device OK
0x00001400-0x000014FF	Base System Device OK
0x00001800-0x0000181F	Standard Universal PCI
to USB Host Controller	OK
0x00005000-0x00005FFF	PCI standard PCI-to-PCI
bridge OK	
0x00005000-0x00005FFF	Smart Array E500
Controller (Non-Miniport)	OK
0x00004000-0x00004FFF	PCI standard PCI-to-PCI
bridge OK	
0x00004000-0x00004FFF	Smart Array P800
Controller (Non-Miniport)	OK

0x00003000-0x00003FFF	PCI standard PCI-to-PCI
bridge OK	
0x00003000-0x00003FFF	Smart Array P800
Controller (Non-Miniport)	OK
0x00006000-0x0000FFFF	PCI bus OK
0x00006000-0x0000FFFF	PCI standard PCI-to-PCI
bridge OK	
0x00006000-0x0000FFFF	LSI Adapter, SAS 3000
series, 8-port with 1068 -StorPort	OK
0x0000A000-0x0000AFFF	PCI standard PCI-to-PCI
bridge OK	
0x0000A000-0x0000AFFF	Smart Array P800
Controller (Non-Miniport)	OK
0x00009000-0x00009FFF	PCI standard PCI-to-PCI
bridge OK	
0x00009000-0x00009FFF	Smart Array P800
Controller (Non-Miniport)	OK
0x00008000-0x00008FFF	PCI standard PCI-to-PCI
bridge OK	
0x00008000-0x00008FFF	Smart Array P800
Controller (Non-Miniport)	OK
0x00007000-0x00007FFF	PCI standard PCI-to-PCI
bridge OK	
0x00007000-0x00007FFF	Smart Array P800
Controller (Non-Miniport)	OK
0x00006400-0x000064FF	Smart Array P600
Controller (Non-Miniport)	OK

[IRQs]

Resource	Device	Status
IRQ 9	Microsoft ACPI-Compliant System	OK
IRQ 0	System timer	OK
IRQ 1	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard	OK
IRQ 12	PS/2 Compatible Mouse	OK
IRQ 22	Standard OpenHCD USB Host Controller	OK
IRQ 23	Standard Enhanced PCI to USB Host Controller	OK
IRQ 14	Primary IDE Channel	OK
IRQ 18	ATI ES1000	OK
IRQ 18	Smart Array P800 Controller (Non-Miniport)	OK
IRQ 10	Base System Device	OK
IRQ 10	PCI Device	OK
IRQ 11	Base System Device	OK
IRQ 17	Standard Universal PCI to USB Host Controller	OK
IRQ 16	Smart Array E500 Controller (Non-Miniport)	OK
IRQ 19	Smart Array P800 Controller (Non-Miniport)	OK
IRQ 55	Smart Array P800 Controller (Non-Miniport)	OK
IRQ 54	Smart Array P800 Controller (Non-Miniport)	OK
IRQ 57	Smart Array P800 Controller (Non-Miniport)	OK
IRQ 56	Smart Array P800 Controller (Non-Miniport)	OK
IRQ 31	HP NC371i Virtual Bus Device	OK

IRQ 32	HP NC371i Virtual Bus Device	OK
IRQ 24	LSI Adapter, SAS 3000 series, 8-port with 1068 -StorPort	OK
IRQ 26	Smart Array P600 Controller (Non-Miniport)	OK

[Memory]

Resource	Device	Status
0xA0000-0xBFFFF	PCI bus	OK
0xA0000-0xBFFFF	ATI ES1000	OK
0xD0000000-0xD9FFFFFF	PCI bus	OK
0xD0000000-0xD9FFFFFF	ATI ES1000	OK
0xE0000000-0xE3FFFFFF	PCI bus	OK
0xFED00000-0xFED003FF	High precision event timer	OK
0xD96E0000-0xD96E0FFF	Standard OpenHCD USB Host Controller	OK
0xD96D0000-0xD96D0FFF	Standard Enhanced PCI to USB Host Controller	OK
0xD98F0000-0xD98F0FFF	ATI ES1000	OK
0xD98E0000-0xD98E01FF	Base System Device	OK
0xD98D0000-0xD98D07FF	Base System Device	OK
0xD98C0000-0xD98C1FFF	Base System Device	OK
0xD9800000-0xD987FFFF	Base System Device	OK
0xD97F0000-0xD97F00FF	PCI Device	OK
0xD9D00000-0xD9FFFFFF	PCI standard PCI-to-PCI	
bridge OK		
0xD9E00000-0xD9FFFFFF	Smart Array E500	
Controller (Non-Miniport)	OK	
0xD9DF0000-0xD9DF0FFF	Smart Array E500	
Controller (Non-Miniport)	OK	
0xD9B00000-0xD9CFFFFF	PCI standard PCI-to-PCI	
bridge OK		
0xD9C00000-0xD9CFFFFF	Smart Array P800	
Controller (Non-Miniport)	OK	
0xD9BF0000-0xD9BF0FFF	Smart Array P800	
Controller (Non-Miniport)	OK	
0xD9900000-0xD9AFFFFF	PCI standard PCI-to-PCI	
bridge OK		
0xD9A00000-0xD9AFFFFF	Smart Array P800	
Controller (Non-Miniport)	OK	
0xD99F0000-0xD99F0FFF	Smart Array P800	
Controller (Non-Miniport)	OK	
0xD96F0000-0xD96F0FFF	Advanced programmable interrupt controller	OK
0xD9F00000-0xD9FFFFFF	PCI bus	OK
0xE4000000-0xE7FFFFFF	PCI bus	OK
0xDF000000-0xDFEFFFFF	PCI standard PCI-to-PCI	
bridge OK		
0xDFE00000-0xDFEFFFFF	Smart Array P800	
Controller (Non-Miniport)	OK	
0xDFDF0000-0xDFDF0FFF	Smart Array P800	
Controller (Non-Miniport)	OK	
0xDFB00000-0xDFCFFFFF	PCI standard PCI-to-PCI	
bridge OK		

```

0xDFC00000-0xDFCFFFFF Smart Array P800
Controller (Non-Miniport) OK
0xDFBF0000-0xDFBF0FFF Smart Array P800
Controller (Non-Miniport) OK
0xDF900000-0xDFAFFFFF PCI standard PCI-to-PCI
bridge OK
0xDFA00000-0xDFAFFFFF Smart Array P800
Controller (Non-Miniport) OK
0xDF9F0000-0xDF9FFFFF Smart Array P800
Controller (Non-Miniport) OK
0xDF700000-0xDF8FFFFF PCI standard PCI-to-PCI
bridge OK
0xDF800000-0xDF8FFFFF Smart Array P800
Controller (Non-Miniport) OK
0xDF7F0000-0xDF7FFFFF Smart Array P800
Controller (Non-Miniport) OK
0xDA000000-0xDDFFFFF PCI standard PCI-to-PCI
bridge OK
0xDA000000-0xDDFFFFF HP NC371i Virtual Bus
Device OK
0xDC000000-0xDDFFFFF HP NC371i Virtual Bus
Device OK
0xDF600000-0xDF6FFFFF PCI standard PCI-to-PCI
bridge OK
0xDF6F0000-0xDF6F3FFF LSI Adapter, SAS 3000
series, 8-port with 1068 -StorPort OK
0xDF6E0000-0xDF6EFFFF LSI Adapter, SAS 3000
series, 8-port with 1068 -StorPort OK
0xDF6D0000-0xDF6D1FFF Smart Array P600
Controller (Non-Miniport) OK
0xDF680000-0xDF6BFFFF Smart Array P600
Controller (Non-Miniport) OK
0xD9FD0000-0xD9FD0FFF Advanced programmable
interrupt controller OK
0xD9FE0000-0xD9FE0FFF Advanced programmable
interrupt controller OK
0xD9FF0000-0xD9FF0FFF Advanced programmable
interrupt controller OK

```

[Components]

[Multimedia]

[Audio Codecs]

CODEC	Manufacturer	Description
Status	File	Version
Creation Date		Size
c:\windows\system32\imaadp32.acm	Microsoft Corporation	OK
	C:\WINDOWS\system32\IMAADP32.ACM	
	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	
	24.00 KB (24,576 bytes)	11/30/2005
6:00 AM		
c:\windows\system32\tssoft32.acm	DSP GROUP, INC.	OK
	C:\WINDOWS\system32\TSSOFT32.ACM	
	1.01 13.50 KB (13,824 bytes)	
	11/30/2005 6:00 AM	

```

c:\windows\system32\msgsm32.acm Microsoft Corporation
OK
C:\WINDOWS\system32\MSGSM32.ACM
5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
34.50 KB (35,328 bytes) 11/30/2005

```

```

6:00 AM
c:\windows\system32\msg711.acm Microsoft Corporation
OK
C:\WINDOWS\system32\MSG711.ACM
5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
13.50 KB (13,824 bytes) 11/30/2005

```

```

6:00 AM
c:\windows\system32\msadp32.acm Microsoft Corporation
OK
C:\WINDOWS\system32\MSADP32.ACM
5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
23.50 KB (24,064 bytes) 11/30/2005

```

[Video Codecs]

CODEC	Manufacturer	Description
Status	File	Version
Creation Date		Size

```

c:\windows\system32\iyuv_32.dll Microsoft Corporation
OK
C:\WINDOWS\system32\IYUV_32.DLL
5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
52.50 KB (53,760 bytes) 3/24/2005

```

```

11:19 AM
c:\windows\system32\msvidc32.dll Microsoft Corporation
OK
C:\WINDOWS\system32\MSVIDC32.DLL
5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
43.00 KB (44,032 bytes) 11/30/2005

```

```

6:00 AM
c:\windows\system32\msyuv.dll Microsoft Corporation
OK
C:\WINDOWS\system32\MSYUV.DLL 5.2.3790.1830
(srv03_sp1_rtm.050324-1447) 21.00 KB (21,504 bytes)
3/24/2005 11:21 AM

```

```

c:\windows\system32\msrle32.dll Microsoft Corporation
OK
C:\WINDOWS\system32\MSRLE32.DLL
5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
15.50 KB (15,872 bytes) 11/30/2005

```

```

6:00 AM
c:\windows\system32\tsbyuv.dll Microsoft Corporation
OK
C:\WINDOWS\system32\TSBYUV.DLL
5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
12.50 KB (12,800 bytes) 3/24/2005

```

[CD-ROM]

Item	Value
Drive D:	
Description	CD-ROM Drive
Media Loaded	No
Media Type	CD-ROM
Name	TEAC DW-224E-V
Manufacturer	(Standard CD-ROM drives)

```

Status OK
Transfer Rate Not Available
SCSI Target ID 0
PNP Device ID IDE\CDROMTEAC_DW-224E-V
V_____C.CA____5&2270D2F8&0.0.0
Driver c:\windows\system32\drivers\cdrom.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 75.50 KB
(77,312 bytes), 11/30/2005 6:00 AM)

```

[Sound Device]

Item	Value
------	-------

[Display]

Item	Value
Name	ATI ES1000
PNP Device ID	PCI\VEN_1002&DEV_515E&SUBSYS_31FB103C&REV_02\4&21887AE&0&1848
Adapter Type	ATI ES1000 (0x515E), ATI Technologies Inc. compatible
Adapter Description	ATI ES1000
Adapter RAM	32.00 MB (33,554,432 bytes)
Installed Drivers	ati2dvag.dll
Driver Version	6.14.10.6606
INF File	oem15.inf (ati2mtag_RN50 section)
Color Planes	1
Color Table Entries	4294967296
Resolution	1024 x 768 x 60 hertz
Bits/Pixel	32
Memory Address	0xD0000000-0xD9FFFFFF
I/O Port	0x00001000-0x00005FFF
Memory Address	0xD98F0000-0xD98FFFFF
IRQ Channel	IRQ 18
I/O Port	0x00003B00-0x00003BBB
I/O Port	0x00003C00-0x00003DFD
Memory Address	0xA0000-0xBFFFF
Driver	c:\windows\system32\drivers\ati2mtag.sys (6.14.10.6606, 2.11 MB (2,210,304 bytes), 9/11/2007 10:53 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&142B453B&0
Number of Function Keys	12
I/O Port	0x00000060-0x00000060
I/O Port	0x00000064-0x00000064
IRQ Channel	IRQ 1

```

Driver      c:\windows\system32\drivers\i8042prt.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 91.00 KB
(93,184 bytes), 11/30/2005 6:00 AM)

Description  USB Human Interface Device
Name         Enhanced (101- or 102-key)
Layout       00000409
PNP Device ID  USB\VID_03F0&PID_1027&MI_00\7&3B124F76&0&00
00
Number of Function Keys  12
Driver      c:\windows\system32\drivers\hidusb.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 18.50 KB
(18,944 bytes), 11/30/2005 6:00 AM)

[Pointing Device]

Item      Value
Hardware Type  PS/2 Compatible Mouse
Number of Buttons  5
Status      OK
PNP Device ID  ACPI\PNP0F13\4&142B453B&0
Power Management Supported  No
Double Click Threshold  6
Handedness   Right Handed Operation
IRQ Channel  IRQ 12
Driver      c:\windows\system32\drivers\i8042prt.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 91.00 KB
(93,184 bytes), 11/30/2005 6:00 AM)

Hardware Type  USB Human Interface Device
Number of Buttons  5
Status      OK
PNP Device ID  USB\VID_03F0&PID_1027&MI_01\7&3B124F76&0&00
01
Power Management Supported  No
Double Click Threshold  6
Handedness   Right Handed Operation
Driver      c:\windows\system32\drivers\hidusb.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 18.50 KB
(18,944 bytes), 11/30/2005 6:00 AM)

[Modem]

Item      Value

[Network]

[Adapter]

Item      Value
Name      [00000001] RAS Async Adapter
Adapter Type  Not Available
Product Type  RAS Async Adapter
Installed Yes
PNP Device ID  Not Available
Last Reset    6/26/2008 12:23 PM
Index        1
Service Name  AsyncMac
IP Address    Not Available

```

```

IP Subnet Not Available
Default IP Gateway  Not Available
DHCP Enabled        No
DHCP Server         Not Available
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
MAC Address         Not Available

Name      [00000002] WAN Miniport (L2TP)
Adapter Type  Not Available
Product Type  WAN Miniport (L2TP)
Installed Yes
PNP Device ID  ROOT\MS_L2TPMINIPORT\0000
Last Reset    6/26/2008 12:23 PM
Index        2
Service Name  Rasl2tp
IP Address    Not Available
IP Subnet Not Available
Default IP Gateway  Not Available
DHCP Enabled        No
DHCP Server         Not Available
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
MAC Address         Not Available
Driver      c:\windows\system32\drivers\rasl2tp.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 132.00 KB
(135,168 bytes), 11/30/2005 6:00 AM)

Name      [00000003] WAN Miniport (PPTP)
Adapter Type  Wide Area Network (WAN)
Product Type  WAN Miniport (PPTP)
Installed Yes
PNP Device ID  ROOT\MS_PPTPMINIPORT\0000
Last Reset    6/26/2008 12:23 PM
Index        3
Service Name  PptpMiniport
IP Address    Not Available
IP Subnet Not Available
Default IP Gateway  Not Available
DHCP Enabled        No
DHCP Server         Not Available
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
MAC Address         50:50:54:50:30:30
Driver      c:\windows\system32\drivers\raspptp.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 117.50 KB
(120,320 bytes), 11/30/2005 6:00 AM)

Name      [00000004] WAN Miniport (PPPOE)
Adapter Type  Wide Area Network (WAN)
Product Type  WAN Miniport (PPPOE)
Installed Yes
PNP Device ID  ROOT\MS_PPPOEMINIPORT\0000
Last Reset    6/26/2008 12:23 PM
Index        4
Service Name  Rasppoe
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

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MAC Address      33:50:6F:45:30:30
Driver          c:\windows\system32\drivers\rasppoe.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 67.50 KB
(69,120 bytes), 11/30/2005 6:00 AM)

Name      [00000005] Direct Parallel
Adapter Type  Not Available
Product Type  Direct Parallel
Installed Yes
PNP Device ID  ROOT\MS_PTMINIPORT\0000
Last Reset    6/26/2008 12:23 PM
Index        5
Service Name  Raspti
IP Address    Not Available
IP Subnet Not Available
Default IP Gateway  Not Available
DHCP Enabled        No
DHCP Server         Not Available
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
MAC Address         Not Available
Driver          c:\windows\system32\drivers\raspti.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 30.50 KB
(31,232 bytes), 11/30/2005 6:00 AM)

Name      [00000006] WAN Miniport (IP)
Adapter Type  Not Available
Product Type  WAN Miniport (IP)
Installed Yes
PNP Device ID  ROOT\MS_NDISWANIP\0000
Last Reset    6/26/2008 12:23 PM
Index        6
Service Name  Ndiswan
IP Address    Not Available
IP Subnet Not Available
Default IP Gateway  Not Available
DHCP Enabled        No
DHCP Server         Not Available
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
MAC Address         Not Available
Driver          c:\windows\system32\drivers\ndiswan.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 157.50 KB
(161,280 bytes), 11/30/2005 6:00 AM)

Name      [00000007] HP NC371i Multifunction Gigabit
Server Adapter
Adapter Type  Ethernet 802.3
Product Type  HP NC371i Multifunction Gigabit
Server Adapter
Installed Yes
PNP Device ID  B06BDRV\L2ND&PCI_164A14E4&SUBSYS_1709103C&R
EV_02\5&B64F98D&0&20054101
Last Reset    6/26/2008 12:23 PM
Index        7
Service Name  l2nd
IP Address    130.168.208.10, 130.122.208.10

IP Subnet 255.255.0.0, 255.255.0.0
Default IP Gateway  Not Available
DHCP Enabled        No
DHCP Server         Not Available

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DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:1E:0B:BA:D6:D0
Driver c:\windows\system32\drivers\bxnd52a.sys
(3.4.10.0 built by: WinDDK, 62.50 KB (64,000 bytes),
9/10/2007 5:30 PM)

Name [00000008] HP NC371i Multifunction Gigabit
Server Adapter
Adapter Type Ethernet 802.3
Product Type HP NC371i Multifunction Gigabit
Server Adapter
Installed Yes
PNP Device ID
B06BDRV\L2ND&PCI_164A14E4&SUBSYS_1709103C&R
EV_02\5&2945E16&0&20054102
Last Reset 6/26/2008 12:23 PM
Index 8
Service Name l2nd
IP Address 130.120.208.10, 130.121.208.10

IP Subnet 255.255.0.0, 255.255.0.0
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:1E:0B:BA:D6:D2
Driver c:\windows\system32\drivers\bxnd52a.sys
(3.4.10.0 built by: WinDDK, 62.50 KB (64,000 bytes),
9/10/2007 5:30 PM)

[Protocol]

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

Name MSAFD Tcpip [UDP/IP]
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 16 bytes
Maximum Message Size 63.93 KB (65,467 bytes)

Message Oriented Yes
Minimum Address Size 16 bytes
Pseudo Stream Oriented No

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

Name RSVP UDP Service Provider
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 16 bytes
Maximum Message Size 63.93 KB (65,467 bytes)

Message Oriented Yes
Minimum Address Size 16 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption Yes
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting Yes

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

[WinSock]

Item	Value
File	c:\windows\system32\wsock32.dll
Size	24.50 KB (25,088 bytes)
Version	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)

[Ports]

[Serial]

Item	Value
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[Parallel]

Item	Value
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[Storage]

[Drives]

Item	Value
Drive C:	
Description	Local Fixed Disk
Compressed	No
File System	NTFS
Size	33.51 GB (35,985,563,648 bytes)
Free Space	22.53 GB (24,192,782,336 bytes)
Volume Name	
Volume Serial Number	683092C4
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 U:	
Description	Local Fixed Disk
Compressed	No
File System	NTFS
Size	1.40 TB (1,538,810,023,936 bytes)
Free Space	892.89 GB (958,731,382,784 bytes)
Volume Name	back1
Volume Serial Number	548A838C
Drive V:	
Description	Local Fixed Disk
Compressed	No
File System	NTFS
Size	1.40 TB (1,538,810,023,936 bytes)
Free Space	957.46 GB (1,028,059,889,664 bytes)
Volume Name	back2
Volume Serial Number	48B941B7
Drive W:	
Description	Local Fixed Disk
Compressed	No
File System	NTFS
Size	1.40 TB (1,538,810,023,936 bytes)
Free Space	957.46 GB (1,028,059,889,664 bytes)
Volume Name	back3
Volume Serial Number	081916FD
Drive X:	

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Description      Local Fixed Disk
Compressed       No
File System      NTFS
Size             1.40 TB (1,538,810,023,936 bytes)
Free Space       957.46 GB (1,028,059,889,664 bytes)
Volume Name      back4
Volume Serial Number D03D0537

Drive Y:
Description      Local Fixed Disk
Compressed       No
File System      NTFS
Size             1.40 TB (1,538,810,023,936 bytes)
Free Space       957.46 GB (1,028,059,889,664 bytes)
Volume Name      back5
Volume Serial Number 607B0730

Drive Z:
Description      Local Fixed Disk
Compressed       No
File System      NTFS
Size             1.40 TB (1,538,810,023,936 bytes)
Free Space       957.46 GB (1,028,059,889,664 bytes)
Volume Name      back6
Volume Serial Number 7888812F

[Disks]

Item      Value
Description      \\.\PHYSICALDRIVE29
Manufacturer     Not Available
Model            Not Available
Bytes/Sector     512
Media Loaded     Yes
Media Type       Fixed hard disk
Partitions       1
SCSI Bus         Not Available
SCSI Logical Unit Not Available
SCSI Port        Not Available
SCSI Target ID   Not Available
Sectors/Track    63
Size             205.08 GB (220,198,970,880 bytes)
Total Cylinders  26,771
Total Sectors    430,076,115
Total Tracks     6,826,605
Tracks/Cylinder  255
Partition Disk #29, Partition #0
Partition Size    205.08 GB (220,197,814,272 bytes)

Partition Starting Offset 131,072 bytes

Description      \\.\PHYSICALDRIVE30
Manufacturer     Not Available
Model            Not Available
Bytes/Sector     512
Media Loaded     Yes
Media Type       Fixed hard disk
Partitions       1
SCSI Bus         Not Available
SCSI Logical Unit Not Available

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SCSI Port        Not Available
SCSI Target ID   Not Available
Sectors/Track    63
Size             136.71 GB (146,796,572,160 bytes)
Total Cylinders  17,847
Total Sectors    286,712,055
Total Tracks     4,550,985
Tracks/Cylinder  255
Partition Disk #30, Partition #0
Partition Size    136.71 GB (146,795,397,120 bytes)

Partition Starting Offset 131,072 bytes

Description      \\.\PHYSICALDRIVE31
Manufacturer     Not Available
Model            Not Available
Bytes/Sector     512
Media Loaded     Yes
Media Type       Fixed hard disk
Partitions       1
SCSI Bus         Not Available
SCSI Logical Unit Not Available
SCSI Port        Not Available
SCSI Target ID   Not Available
Sectors/Track    63
Size             150.39 GB (161,478,696,960 bytes)
Total Cylinders  19,632
Total Sectors    315,388,080
Total Tracks     5,006,160
Tracks/Cylinder  255
Partition Disk #31, Partition #0
Partition Size    150.39 GB (161,477,558,272 bytes)

Partition Starting Offset 131,072 bytes

Description      \\.\PHYSICALDRIVE32
Manufacturer     Not Available
Model            Not Available
Bytes/Sector     512
Media Loaded     Yes
Media Type       Fixed hard disk
Partitions       1
SCSI Bus         Not Available
SCSI Logical Unit Not Available
SCSI Port        Not Available
SCSI Target ID   Not Available
Sectors/Track    63
Size             30.27 GB (32,498,081,280 bytes)
Total Cylinders  3,951
Total Sectors    63,472,815
Total Tracks     1,007,505
Tracks/Cylinder  255
Partition Disk #32, Partition #0
Partition Size    30.27 GB (32,497,467,392 bytes)

Partition Starting Offset 131,072 bytes

Description      \\.\PHYSICALDRIVE33
Manufacturer     Not Available
Model            Not Available
Bytes/Sector     512
Media Loaded     Yes
Media Type       Fixed hard disk

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Partitions       1
SCSI Bus         Not Available
SCSI Logical Unit Not Available
SCSI Port        Not Available
SCSI Target ID   Not Available
Sectors/Track    63
Size             1.40 TB (1,538,810,058,240 bytes)
Total Cylinders  187,083
Total Sectors    3,005,488,395
Total Tracks     47,706,165
Tracks/Cylinder  255
Partition Disk #33, Partition #0
Partition Size    1.40 TB (1,538,810,025,984 bytes)

Partition Starting Offset 32,256 bytes

Description      \\.\PHYSICALDRIVE14
Manufacturer     Not Available
Model            Not Available
Bytes/Sector     512
Media Loaded     Yes
Media Type       Fixed hard disk
Partitions       1
SCSI Bus         Not Available
SCSI Logical Unit Not Available
SCSI Port        Not Available
SCSI Target ID   Not Available
Sectors/Track    63
Size             205.08 GB (220,198,970,880 bytes)
Total Cylinders  26,771
Total Sectors    430,076,115
Total Tracks     6,826,605
Tracks/Cylinder  255
Partition Disk #14, Partition #0
Partition Size    205.08 GB (220,197,814,272 bytes)

Partition Starting Offset 131,072 bytes

Description      \\.\PHYSICALDRIVE15
Manufacturer     Not Available
Model            Not Available
Bytes/Sector     512
Media Loaded     Yes
Media Type       Fixed hard disk
Partitions       1
SCSI Bus         Not Available
SCSI Logical Unit Not Available
SCSI Port        Not Available
SCSI Target ID   Not Available
Sectors/Track    63
Size             136.71 GB (146,796,572,160 bytes)
Total Cylinders  17,847
Total Sectors    286,712,055
Total Tracks     4,550,985
Tracks/Cylinder  255
Partition Disk #15, Partition #0
Partition Size    136.71 GB (146,795,397,120 bytes)

Partition Starting Offset 131,072 bytes

Description      \\.\PHYSICALDRIVE16
Manufacturer     Not Available
Model            Not Available

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Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 150.39 GB (161,478,696,960 bytes)
 Total Cylinders 19,632
 Total Sectors 315,388,080
 Total Tracks 5,006,160
 Tracks/Cylinder 255
 Partition Disk #16, Partition #0
 Partition Size 150.39 GB (161,477,558,272 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE17
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 30.27 GB (32,498,081,280 bytes)
 Total Cylinders 3,951
 Total Sectors 63,472,815
 Total Tracks 1,007,505
 Tracks/Cylinder 255
 Partition Disk #17, Partition #0
 Partition Size 30.27 GB (32,497,467,392 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE18
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 1.40 TB (1,538,810,058,240 bytes)
 Total Cylinders 187,083
 Total Sectors 3,005,488,395
 Total Tracks 47,706,165
 Tracks/Cylinder 255
 Partition Disk #18, Partition #0
 Partition Size 1.40 TB (1,538,810,025,984 bytes)

Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE0
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 205.08 GB (220,198,970,880 bytes)
 Total Cylinders 26,771
 Total Sectors 430,076,115
 Total Tracks 6,826,605
 Tracks/Cylinder 255
 Partition Disk #0, Partition #0
 Partition Size 205.08 GB (220,197,814,272 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE1
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 136.71 GB (146,796,572,160 bytes)
 Total Cylinders 17,847
 Total Sectors 286,712,055
 Total Tracks 4,550,985
 Tracks/Cylinder 255
 Partition Disk #1, Partition #0
 Partition Size 136.71 GB (146,795,397,120 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE2
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 150.39 GB (161,478,696,960 bytes)
 Total Cylinders 19,632
 Total Sectors 315,388,080
 Total Tracks 5,006,160
 Tracks/Cylinder 255
 Partition Disk #2, Partition #0

Partition Size 150.39 GB (161,477,558,272 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE3
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 30.27 GB (32,498,081,280 bytes)
 Total Cylinders 3,951
 Total Sectors 63,472,815
 Total Tracks 1,007,505
 Tracks/Cylinder 255
 Partition Disk #3, Partition #0
 Partition Size 30.27 GB (32,497,467,392 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE4
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 205.08 GB (220,198,970,880 bytes)
 Total Cylinders 26,771
 Total Sectors 430,076,115
 Total Tracks 6,826,605
 Tracks/Cylinder 255
 Partition Disk #4, Partition #0
 Partition Size 205.08 GB (220,197,814,272 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE5
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 136.71 GB (146,796,572,160 bytes)
 Total Cylinders 17,847
 Total Sectors 286,712,055

Total Tracks 4,550,985
Tracks/Cylinder 255
Partition Disk #5, Partition #0
Partition Size 136.71 GB (146,795,397,120 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE6
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 150.39 GB (161,478,696,960 bytes)
Total Cylinders 19,632
Total Sectors 315,388,080
Total Tracks 5,006,160
Tracks/Cylinder 255
Partition Disk #6, Partition #0
Partition Size 150.39 GB (161,477,558,272 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE7
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 30.27 GB (32,498,081,280 bytes)
Total Cylinders 3,951
Total Sectors 63,472,815
Total Tracks 1,007,505
Tracks/Cylinder 255
Partition Disk #7, Partition #0
Partition Size 30.27 GB (32,497,467,392 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE8
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63

Size 1.40 TB (1,538,810,058,240 bytes)
Total Cylinders 187,083
Total Sectors 3,005,488,395
Total Tracks 47,706,165
Tracks/Cylinder 255
Partition Disk #8, Partition #0
Partition Size 1.40 TB (1,538,810,025,984 bytes)

Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE19
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 205.08 GB (220,198,970,880 bytes)
Total Cylinders 26,771
Total Sectors 430,076,115
Total Tracks 6,826,605
Tracks/Cylinder 255
Partition Disk #19, Partition #0
Partition Size 205.08 GB (220,197,814,272 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE20
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 136.71 GB (146,796,572,160 bytes)
Total Cylinders 17,847
Total Sectors 286,712,055
Total Tracks 4,550,985
Tracks/Cylinder 255
Partition Disk #20, Partition #0
Partition Size 136.71 GB (146,795,397,120 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE21
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available

SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 150.39 GB (161,478,696,960 bytes)
Total Cylinders 19,632
Total Sectors 315,388,080
Total Tracks 5,006,160
Tracks/Cylinder 255
Partition Disk #21, Partition #0
Partition Size 150.39 GB (161,477,558,272 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE22
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 30.27 GB (32,498,081,280 bytes)
Total Cylinders 3,951
Total Sectors 63,472,815
Total Tracks 1,007,505
Tracks/Cylinder 255
Partition Disk #22, Partition #0
Partition Size 30.27 GB (32,497,467,392 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE23
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 1.40 TB (1,538,810,058,240 bytes)
Total Cylinders 187,083
Total Sectors 3,005,488,395
Total Tracks 47,706,165
Tracks/Cylinder 255
Partition Disk #23, Partition #0
Partition Size 1.40 TB (1,538,810,025,984 bytes)

Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE24
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk

Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 205.08 GB (220,198,970,880 bytes)
 Total Cylinders 26,771
 Total Sectors 430,076,115
 Total Tracks 6,826,605
 Tracks/Cylinder 255
 Partition Disk #24, Partition #0
 Partition Size 205.08 GB (220,197,814,272 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE25
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 136.71 GB (146,796,572,160 bytes)
 Total Cylinders 17,847
 Total Sectors 286,712,055
 Total Tracks 4,550,985
 Tracks/Cylinder 255
 Partition Disk #25, Partition #0
 Partition Size 136.71 GB (146,795,397,120 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE26
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 150.39 GB (161,478,696,960 bytes)
 Total Cylinders 19,632
 Total Sectors 315,388,080
 Total Tracks 5,006,160
 Tracks/Cylinder 255
 Partition Disk #26, Partition #0
 Partition Size 150.39 GB (161,477,558,272 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE27
 Manufacturer Not Available
 Model Not Available

Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 30.27 GB (32,498,081,280 bytes)
 Total Cylinders 3,951
 Total Sectors 63,472,815
 Total Tracks 1,007,505
 Tracks/Cylinder 255
 Partition Disk #27, Partition #0
 Partition Size 30.27 GB (32,497,467,392 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE28
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 1.40 TB (1,538,810,058,240 bytes)
 Total Cylinders 187,083
 Total Sectors 3,005,488,395
 Total Tracks 47,706,165
 Tracks/Cylinder 255
 Partition Disk #28, Partition #0
 Partition Size 1.40 TB (1,538,810,025,984 bytes)

Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE34
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 1.60 TB (1,761,377,909,760 bytes)
 Total Cylinders 214,142
 Total Sectors 3,440,191,230
 Total Tracks 54,606,210
 Tracks/Cylinder 255
 Partition Disk #34, Partition #0
 Partition Size 1.60 TB (1,761,376,993,280 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE9
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 205.08 GB (220,198,970,880 bytes)
 Total Cylinders 26,771
 Total Sectors 430,076,115
 Total Tracks 6,826,605
 Tracks/Cylinder 255
 Partition Disk #9, Partition #0
 Partition Size 205.08 GB (220,197,814,272 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE10
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 136.71 GB (146,796,572,160 bytes)
 Total Cylinders 17,847
 Total Sectors 286,712,055
 Total Tracks 4,550,985
 Tracks/Cylinder 255
 Partition Disk #10, Partition #0
 Partition Size 136.71 GB (146,795,397,120 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE11
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 150.39 GB (161,478,696,960 bytes)
 Total Cylinders 19,632
 Total Sectors 315,388,080
 Total Tracks 5,006,160
 Tracks/Cylinder 255
 Partition Disk #11, Partition #0

Partition Size 150.39 GB (161,477,558,272 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE12
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 30.27 GB (32,498,081,280 bytes)
Total Cylinders 3,951
Total Sectors 63,472,815
Total Tracks 1,007,505
Tracks/Cylinder 255
Partition Disk #12, Partition #0
Partition Size 30.27 GB (32,497,467,392 bytes)

Partition Starting Offset 131,072 bytes

Description \\.\PHYSICALDRIVE13
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 1.40 TB (1,538,810,058,240 bytes)
Total Cylinders 187,083
Total Sectors 3,005,488,395
Total Tracks 47,706,165
Tracks/Cylinder 255
Partition Disk #13, Partition #0
Partition Size 1.40 TB (1,538,810,025,984 bytes)

Partition Starting Offset 32,256 bytes

Description Disk drive
Manufacturer (Standard disk drives)
Model HP DG036A8B5B SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 2
SCSI Target ID 1
Sectors/Track 63
Size 33.91 GB (36,413,314,560 bytes)
Total Cylinders 4,427
Total Sectors 71,119,755

Total Tracks 1,128,885
Tracks/Cylinder 255
Partition Disk #35, Partition #0
Partition Size 33.51 GB (35,985,567,744 bytes)

Partition Starting Offset 32,256 bytes

[SCSI]

Item Value
Name Smart Array E500 Controller (Non-Miniport)

Manufacturer Hewlett-Packard
Status OK
PNP Device ID
PCI\VEN_103C&DEV_3230&SUBSYS_3237103C&REV_0
3\4&22FEBB0D&0&0060
Memory Address 0xD9E00000-0xD9FFFFFF
I/O Port 0x00005000-0x00005FFF
Memory Address 0xD9DF0000-0xD9DF0FFF
IRQ Channel IRQ 16
Driver c:\windows\system32\drivers\hpcqissb.sys
(6.21.64.64 Build x2 (AMD64) built by: phiwong, 60.26
KB (61,704 bytes), 9/11/2007 10:25 AM)

Name Smart Array P800 Controller (Non-Miniport)

Manufacturer Hewlett-Packard
Status OK
PNP Device ID
PCI\VEN_103C&DEV_3230&SUBSYS_3223103C&REV_0
3\4&B98F5C4&0&0068
Memory Address 0xD9C00000-0xD9CFFFFF
I/O Port 0x00004000-0x00004FFF
Memory Address 0xD9BF0000-0xD9BFFFFF
IRQ Channel IRQ 19
Driver c:\windows\system32\drivers\hpcqissb.sys
(6.21.64.64 Build x2 (AMD64) built by: phiwong, 60.26
KB (61,704 bytes), 9/11/2007 10:25 AM)

Name Smart Array P800 Controller (Non-Miniport)

Manufacturer Hewlett-Packard
Status OK
PNP Device ID
PCI\VEN_103C&DEV_3230&SUBSYS_3223103C&REV_0
3\4&13700CED&0&0070
Memory Address 0xD9A00000-0xD9AFFFFF
I/O Port 0x00003000-0x00003FFF
Memory Address 0xD99F0000-0xD99F0FFF
IRQ Channel IRQ 18
Driver c:\windows\system32\drivers\hpcqissb.sys
(6.21.64.64 Build x2 (AMD64) built by: phiwong, 60.26
KB (61,704 bytes), 9/11/2007 10:25 AM)

Name Smart Array P800 Controller (Non-Miniport)

Manufacturer Hewlett-Packard
Status OK
PNP Device ID
PCI\VEN_103C&DEV_3230&SUBSYS_3223103C&REV_0
3\4&300C8240&0&0058
Memory Address 0xD9E00000-0xD9FFFFFF

I/O Port 0x0000A000-0x0000AFFF
Memory Address 0xDFDF0000-0xDFDF0FFF
IRQ Channel IRQ 55
Driver c:\windows\system32\drivers\hpcqissb.sys
(6.21.64.64 Build x2 (AMD64) built by: phiwong, 60.26
KB (61,704 bytes), 9/11/2007 10:25 AM)

Name Smart Array P800 Controller (Non-Miniport)

Manufacturer Hewlett-Packard
Status OK
PNP Device ID
PCI\VEN_103C&DEV_3230&SUBSYS_3223103C&REV_0
3\4&137ABAE&0&0060
Memory Address 0xDFC00000-0xDFCFFFFF
I/O Port 0x00009000-0x00009FFF
Memory Address 0xDFBF0000-0xDFBF0FFF
IRQ Channel IRQ 54
Driver c:\windows\system32\drivers\hpcqissb.sys
(6.21.64.64 Build x2 (AMD64) built by: phiwong, 60.26
KB (61,704 bytes), 9/11/2007 10:25 AM)

Name Smart Array P800 Controller (Non-Miniport)

Manufacturer Hewlett-Packard
Status OK
PNP Device ID
PCI\VEN_103C&DEV_3230&SUBSYS_3223103C&REV_0
3\4&1B1CF5E7&0&0068
Memory Address 0xDFA00000-0xDFAFFFFF
I/O Port 0x00008000-0x00008FFF
Memory Address 0xDF9F0000-0xDF9F0FFF
IRQ Channel IRQ 57
Driver c:\windows\system32\drivers\hpcqissb.sys
(6.21.64.64 Build x2 (AMD64) built by: phiwong, 60.26
KB (61,704 bytes), 9/11/2007 10:25 AM)

Name Smart Array P800 Controller (Non-Miniport)

Manufacturer Hewlett-Packard
Status OK
PNP Device ID
PCI\VEN_103C&DEV_3230&SUBSYS_3223103C&REV_0
3\4&3EC0CCA&0&0070
Memory Address 0xDF800000-0xDF8FFFFF
I/O Port 0x00007000-0x00007FFF
Memory Address 0xDF7F0000-0xDF7F0FFF
IRQ Channel IRQ 56
Driver c:\windows\system32\drivers\hpcqissb.sys
(6.21.64.64 Build x2 (AMD64) built by: phiwong, 60.26
KB (61,704 bytes), 9/11/2007 10:25 AM)

Name LSI Adapter, SAS 3000 series, 8-port with
1068 -StorPort
Manufacturer LSI Logic
Status OK
PNP Device ID
PCI\VEN_1000&DEV_0054&SUBSYS_3228103C&REV_0
0\4&24CF26E8&0&0888
I/O Port 0x00006000-0x0000FFFF
Memory Address 0xDF6F0000-0xDF6F3FFF
Memory Address 0xDF6E0000-0xDF6EFFFF
IRQ Channel IRQ 24

```

Driver      c:\windows\system32\drivers\lsi_sas.sys
(1.24.04.00 built by: WinDDK, 125.00 KB (128,000
bytes), 9/10/2007 10:42 AM)

Name        Smart Array P600 Controller (Non-Miniport)

Manufacturer      Hewlett-Packard
Status            OK
PNP Device ID     PCI\VEN_103C&DEV_3220&SUBSYS_3225103C&REV_0
0\4&24CF26E8&0&1088
Memory Address    0xDF6D0000-0xDF6D1FFF
I/O Port         0x00006400-0x000064FF
Memory Address    0xDF680000-0xDF6BFFFF
IRQ Channel      IRQ 26
Driver           c:\windows\system32\drivers\hpcqissb.sys
(6.21.64.64 Build x2 (AMD64) built by: phiwong, 60.26
KB (61,704 bytes), 9/11/2007 10:25 AM)

[IDE]

Item      Value
Name      Standard Dual Channel PCI IDE Controller

Manufacturer      (Standard IDE ATA/ATAPI
controllers)
Status            OK
PNP Device ID     PCI\VEN_10DE&DEV_0053&SUBSYS_31F8103C&REV_A
3\3&20FEA912&0&30
I/O Port         0x00000500-0x0000050F
Driver           c:\windows\system32\drivers\pciide.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 6.00 KB
(6,144 bytes), 11/30/2005 6:00 AM)

Name      Primary IDE Channel
Manufacturer      (Standard IDE ATA/ATAPI
controllers)
Status            OK
PNP Device ID     PCIIDE\IDECHANNEL\4&23A0739C&0&0

I/O Port         0x000001F0-0x000001F7
I/O Port         0x000003F6-0x000003F6
IRQ Channel      IRQ 14
Driver           c:\windows\system32\drivers\atapi.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 145.00 KB
(148,480 bytes), 11/30/2005 6:00 AM)

Name      Secondary IDE Channel
Manufacturer      (Standard IDE ATA/ATAPI
controllers)
Status            OK
PNP Device ID     PCIIDE\IDECHANNEL\4&23A0739C&0&1

I/O Port         0x00000170-0x00000177
I/O Port         0x00000376-0x00000376
Driver           c:\windows\system32\drivers\atapi.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 145.00 KB
(148,480 bytes), 11/30/2005 6:00 AM)

[Printing]

Name      Driver      Port Name Server Name

```

[Problem Devices]

```

Device      PNP Device ID      Error Code
Not Available      ACPI\IPI0001\0      The drivers
for this device are not installed.
Base System Device
PCI\VEN_0E11&DEV_B203&SUBSYS_3305103C&REV_0
3\4&21887AE&0&2048      The drivers for this device are
not installed.
Base System Device
PCI\VEN_0E11&DEV_B204&SUBSYS_3305103C&REV_0
3\4&21887AE&0&2248      The drivers for this device are
not installed.
PCI Device
PCI\VEN_103C&DEV_3302&SUBSYS_3305103C&REV_0
0\4&21887AE&0&2648      The drivers for this device are
not installed.
System Interrupt Controller
PCI\VEN_1022&DEV_7459&SUBSYS_74591022&REV_1
2\3&33B859B7&0&81      The drivers for this device are
not installed.
System Interrupt Controller
PCI\VEN_1022&DEV_7459&SUBSYS_74591022&REV_1
2\3&33B859B7&0&89      The drivers for this device are
not installed.

```

[USB]

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Device      PNP Device ID
Standard OpenHCD USB Host Controller
PCI\VEN_10DE&DEV_005A&SUBSYS_31F8103C&REV_A
2\3&20FEA912&0&10
Standard Enhanced PCI to USB Host Controller
PCI\VEN_10DE&DEV_005B&SUBSYS_31F8103C&REV_A
4\3&20FEA912&0&11
Standard Universal PCI to USB Host Controller
PCI\VEN_103C&DEV_3300&SUBSYS_3305103C&REV_0
0\4&21887AE&0&2448

```

[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
	Ignore	No	No
acpi	Microsoft ACPI Driver		
	c:\windows\system32\drivers\acpi.sys		
	Kernel Driver	Yes	Boot
	Running	OK	Normal
			No
			Yes
acpiec	ACPIEC		
	c:\windows\system32\drivers\acpiec.sys		
	Kernel Driver	No	Disabled
	Stopped	OK	Normal
			No
			No

adpu160m	adpu160m	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
adpu320	adpu320	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
afd	AFD		
	c:\windows\system32\drivers\afd.sys		
	Kernel Driver	Yes	System
	Running	OK	Normal
			No
			Yes
aic78u2	aic78u2	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
aic78xx	aic78xx	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
aliide	AliIde	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
amdide	AmdIde	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
arc	arc	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
asynccmac	RAS Asynchronous Media Driver		
	c:\windows\system32\drivers\asynccmac.sys		
	Kernel Driver	No	Manual
	Stopped	OK	Normal
			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
	Ignore	No	OK
ati2mtag	ati2mtag		
	c:\windows\system32\drivers\ati2mtag.sys		
	Kernel Driver	Yes	Manual
	Running	OK	Ignore
			No
			Yes
atmarpc	ATM ARP Client Protocol		
	c:\windows\system32\drivers\atmarpc.sys		
	Kernel Driver	No	Manual
	Stopped	OK	Normal
			No
audstub	Audio Stub Driver		
	c:\windows\system32\drivers\audstub.sys		
	Kernel Driver	Yes	Manual
	Running	OK	Normal
			No
			Yes
b06bdrv	HP Virtual Bus Device		
	c:\windows\system32\drivers\bxbvda.sys		
	Kernel Driver	Yes	Boot
	Running	OK	Normal
			No
			Yes
beep	Beep		
	c:\windows\system32\drivers\beep.sys		
	Kernel Driver	Yes	System

	Running	OK	Normal	No	Yes
cdac15ba	CdaC15BA c:\windows\system32\drivers\cdac15ba.sys Kernel Driver Running	OK	Yes Normal	Auto No	Yes
cdad10ba	CdaD10BA c:\windows\system32\drivers\cdad10ba.sys Kernel Driver Running	OK	Yes Normal	Auto No	Yes
cdfs	Cdfs c:\windows\system32\drivers\cdfs.sys File System Driver Running	OK	Yes Normal	Disabled No	Yes
cdrom	CD-ROM Driver c:\windows\system32\drivers\cdrom.sys Kernel Driver Running	OK	Yes Normal	System No	Yes
changer	Changer Not Available No Ignore	Not Available System No	Stopped OK	Kernel Driver	
clusdisk	Cluster Disk Driver c:\windows\system32\drivers\clusdisk.sys Kernel Driver Stopped	OK	No Normal	Disabled No	No
cmdide	CmdIde Not Available No Normal	Not Available Disabled No	Stopped OK	Kernel Driver	
cpqccissm	cpqccissm Not Available No Normal	Not Available Disabled No	Stopped OK	Kernel Driver	
cpqteam	HP Network Configuration Utility c:\windows\system32\drivers\cpqteam.sys Kernel Driver Stopped	OK	No Normal	Manual No	No
cpuspy3	CpuSpy3 Driver \\??c:\windows\system32\drivers\cpuspy3.sys Kernel Driver Stopped	OK	No Normal	Manual No	No
crcdisk	CRC Disk Filter Driver c:\windows\system32\drivers\crcdisk.sys Kernel Driver Running	OK	Yes Normal	Boot No	Yes
debugexec	DebugExec Driver \\??c:\windows\system32\drivers\debugexec.s Kernel Driver Stopped	OK	No Normal	Manual No	No
dfsdriver	DfsDriver c:\windows\system32\drivers\dfs.sys File System Driver Running	OK	Yes Normal	Boot No	Yes
disk	Disk Driver c:\windows\system32\drivers\disk.sys				

	Kernel Running	Driver OK	Yes Normal	Boot No	Yes
dmboot	dmboot c:\windows\system32\drivers\dmboot.sys Kernel Driver Stopped	OK	No Normal	Disabled No	No
dmio	Logical Disk Manager Driver c:\windows\system32\drivers\dmio.sys Kernel Driver Running	OK	Yes Normal	Boot No	Yes
dmload	dmload c:\windows\system32\drivers\dmload.sys Kernel Driver Running	OK	Yes Normal	Boot No	Yes
dpti2o	dpti2o No Normal	Not Available Disabled No	Stopped No	Kernel Driver OK	
elxstor	elxstor No Normal	Not Available Disabled No	Stopped No	Kernel Driver OK	
fastfat	Fastfat c:\windows\system32\drivers\fastfat.sys File System Driver Stopped	OK	No Normal	Disabled No	No
fdc	Fdc c:\windows\system32\drivers\fdc.sys Kernel Driver Stopped	OK	No Ignore	System No	No
fips	Fips c:\windows\system32\drivers\fips.sys Kernel Driver Running	OK	Yes Normal	System No	Yes
flpydisk	Flpydisk c:\windows\system32\drivers\flpydisk.sys Kernel Driver Stopped	OK	No Ignore	System No	No
fltmgr	FltMgr c:\windows\system32\drivers\fltmgr.sys File System Driver Running	OK	Yes Normal	Boot No	Yes
ftdisk	Volume Manager Driver c:\windows\system32\drivers\ftdisk.sys Kernel Driver Running	OK	Yes Normal	Boot No	Yes
gpc	Generic Packet Classifier c:\windows\system32\drivers\msgpc.sys Kernel Driver Running	OK	Yes Normal	Manual No	Yes
hidusb	Microsoft HID Class Driver c:\windows\system32\drivers\hidusb.sys Kernel Driver		Yes Manual		

	Running	OK	Ignore	No	Yes
hpcisss	hpcisss c:\windows\system32\drivers\hpcisss.sys Kernel Driver Running	OK	Yes Normal	Boot No	Yes
hpcisss2	HpCISSs2 c:\windows\system32\drivers\hpcisss2.sys Kernel Driver Running	OK	Yes Normal	Boot No	Yes
hpqcissb Driver	Smart Array Controllers Non-Miniport Bus c:\windows\system32\drivers\hpqcissb.sys Kernel Driver Running	OK	Yes Normal	Boot No	Yes
hpqcissd Driver	Smart Array Controllers Non-Miniport Disk c:\windows\system32\drivers\hpqcissd.sys Kernel Driver Running	OK	Yes Normal	Boot No	Yes
http	HTTP c:\windows\system32\drivers\http.sys Kernel Driver Stopped	OK	No Normal	Manual No	No
i2omgmt	i2omgmt Not Available No Normal	Not Available System No	Stopped OK	Kernel Driver	
i8042prt	i8042 Keyboard and PS/2 Mouse Port Driver c:\windows\system32\drivers\i8042prt.sys Kernel Driver Running	OK	Yes Normal	System No	Yes
iirsp	iirsp Not Available No Normal	Not Available Disabled No	Stopped OK	Kernel Driver	
imapi	CD-Burning Filter Driver c:\windows\system32\drivers\imapi.sys Kernel Driver Running	OK	Yes Normal	System No	Yes
intelide	IntelIde Not Available No Normal	Not Available Disabled No	Stopped OK	Kernel Driver	
ip6fw	IPv6 Windows Firewall Driver c:\windows\system32\drivers\ip6fw.sys Kernel Driver Stopped	OK	No Normal	Manual No	No
ipfilterdriver	IP Traffic Filter Driver c:\windows\system32\drivers\ipfltdrv.sys Kernel Driver Stopped	OK	No Normal	Manual No	No
ipinip	IP in IP Tunnel Driver c:\windows\system32\drivers\ipinip.sys Kernel Driver Stopped	OK	No Normal	Manual No	No
ipnat	IP Network Address Translator c:\windows\system32\drivers\ipnat.sys				

	Kernel Driver	No	Manual				Kernel Driver	Yes	Manual			Kernel Driver	Yes	Manual				
	Stopped	OK	Normal	No	No		Running	OK	Ignore	No	Yes	Running	OK	Normal	No	Yes		
ipsec	IPSEC driver						mountmgr	Mount Point Manager				netbios	NetBIOS Interface					
	c:\windows\system32\drivers\ipsec.sys							c:\windows\system32\drivers\mountmgr.sys					c:\windows\system32\drivers\netbios.sys					
	Kernel Driver	Yes	System					Kernel Driver	Yes	Boot			File System Driver	Yes	System			
	Running	OK	Normal	No	Yes			Running	OK	Normal	No	Yes	Running	OK	Normal	No	Yes	
isapnp	PnP ISA/EISA Bus Driver						mraid35x	mraid35x	Not Available		Kernel Driver		netbt	NetBios over Tcpip				
	c:\windows\system32\drivers\isapnp.sys							No	Disabled	Stopped	OK			c:\windows\system32\drivers\netbt.sys				
	Kernel Driver	Yes	Boot					Normal	No	No				Kernel Driver	Yes	System		
	Running	OK	Critical	No	Yes		mrxdav	WebDav Client Redirector						Running	OK	Normal	No	Yes
								c:\windows\system32\drivers\mrxdav.sys										
kbdclass	Keyboard Class Driver							File System Driver	No	Manual			nfrd960	nfrd960	Not Available		Kernel Driver	
	c:\windows\system32\drivers\kbdclass.sys							Stopped	OK	Normal	No	No		No	Disabled	Stopped	OK	
	Kernel Driver	Yes	System				mrxsmb	MRXSMB						Normal	No	No		
	Running	OK	Normal	No	Yes			c:\windows\system32\drivers\mrxsmb.sys					npfs	Npfs				
kbdhid	Keyboard HID Driver							File System Driver	Yes	System				c:\windows\system32\drivers\npfs.sys				
	c:\windows\system32\drivers\kbdhid.sys							Running	OK	Normal	No	Yes		File System Driver	Yes	System		
	Kernel Driver	Yes	System				msfs	Msfs						Running	OK	Normal	No	Yes
	Running	OK	Ignore	No	Yes			c:\windows\system32\drivers\msfs.sys					ntfs	Ntfs				
ksecdd	KSecDD							File System Driver	Yes	System				c:\windows\system32\drivers\ntfs.sys				
	c:\windows\system32\drivers\ksecdd.sys							Running	OK	Normal	No	Yes		File System Driver	Yes	Disabled		
	Kernel Driver	Yes	Boot				mssmbios	Microsoft System Management BIOS Driver						Running	OK	Normal	No	Yes
	Running	OK	Normal	No	Yes			c:\windows\system32\drivers\mssmbios.sys					null	Null				
ksthunk	Kernel Streaming WOW64 Thunk Service							Kernel Driver	Yes	Manual				c:\windows\system32\drivers\null.sys				
	c:\windows\system32\drivers\ksthunk.sys							Running	OK	Normal	No	Yes		Kernel Driver	Yes	System		
	Kernel Driver	Yes	Manual				multevent	MultiEvent Driver						Running	OK	Normal	No	Yes
	Running	OK	Normal	No	Yes			\??c:\windows\system32\drivers\multeventdr					parport	Parport				
l2nd Adapter	HP NC370 Multifunction Gigabit Server						iver.sys	Kernel Driver	No	Manual				c:\windows\system32\drivers\parport.sys				
	c:\windows\system32\drivers\bxnd52a.sys							Stopped	OK	Normal	No	No		Kernel Driver	No	Manual		
	Kernel Driver	Yes	Manual				mup	Mup						Stopped	OK	Ignore	No	No
	Running	OK	Normal	No	Yes			c:\windows\system32\drivers\mup.sys					partmgr	Partition Manager				
lp6nds35	lp6nds35	Not Available						File System Driver	Yes	Boot				c:\windows\system32\drivers\partmgr.sys				
	No	Disabled	Stopped	OK				Running	OK	Normal	No	Yes		Kernel Driver	Yes	Boot		
	Normal	No	No				ndis	NDIS System Driver						Running	OK	Normal	No	Yes
	lsi_sas							c:\windows\system32\drivers\ndis.sys					pci	PCI Bus Driver				
	c:\windows\system32\drivers\lsi_sas.sys							Kernel Driver	Yes	Boot				c:\windows\system32\drivers\pci.sys				
	Kernel Driver	Yes	Boot					Running	OK	Normal	No	Yes		Kernel Driver	Yes	Boot		
	Running	OK	Normal	No	Yes		ndistapi	Remote Access NDIS TAPI Driver						Running	OK	Critical	No	Yes
mnmdd	mnmdd							c:\windows\system32\drivers\ndistapi.sys					pciide	PCIIde				
	c:\windows\system32\drivers\mnmdd.sys							Kernel Driver	Yes	Manual				c:\windows\system32\drivers\pciide.sys				
	Kernel Driver	Yes	System					Running	OK	Normal	No	Yes		Kernel Driver	Yes	Boot		
	Running	OK	Ignore	No	Yes		ndisuio	NDIS Usermode I/O Protocol						Running	OK	Normal	No	Yes
modem	Modem							c:\windows\system32\drivers\ndisuio.sys					pcmcia	Pcmcia				
	c:\windows\system32\drivers\modem.sys							Kernel Driver	No	Manual				c:\windows\system32\drivers\pcmcia.sys				
	Kernel Driver	No	Manual					Stopped	OK	Normal	No	No		Kernel Driver	No	Disabled		
	Stopped	OK	Ignore	No	No		ndiswan	Remote Access NDIS WAN Driver						Stopped	OK	Normal	No	No
mouclass	Mouse Class Driver							c:\windows\system32\drivers\ndiswan.sys					pdcomp	PDCOMP	Not Available		Kernel Driver	
	c:\windows\system32\drivers\mouclass.sys							Kernel Driver	Yes	Manual				No	Manual	Stopped	OK	
	Kernel Driver	Yes	System					Running	OK	Normal	No	Yes		Ignore	No	No		
	Running	OK	Normal	No	Yes		ndproxy	NDIS Proxy						PDFRAME	Not Available		Kernel Driver	
mouhid	Mouse HID Driver							c:\windows\system32\drivers\ndproxy.sys						No	Manual	Stopped	OK	
	c:\windows\system32\drivers\mouhid.sys													Ignore	No	No		

pdreli	PDRELI	Not Available	Kernel Driver
	No	Manual	Stopped
	Ignore	No	OK
pdrframe	PDRFRAME	Not Available	Kernel Driver
	No	Manual	Stopped
	Ignore	No	OK
pptpminiport	WAN Miniport (PPTP)		
	c:\windows\system32\drivers\rasppptp.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
ql2300 (wx64 IP)	QLogic Fibre Channel STOR Miniport Driver		
	c:\windows\system32\drivers\ql2300.sys		
	Kernel Driver	Yes	Boot
	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
rasppoe	Remote Access PPPoE Driver		
	c:\windows\system32\drivers\rasppoe.sys		
	Kernel Driver	Yes	Manual
	Running	OK	Normal
		No	Yes
raspti	Direct Parallel		
	c:\windows\system32\drivers\raspti.sys		
	Kernel Driver	Yes	Manual
	Running	OK	Normal
		No	Yes
rdbss	Rdbss		
	c:\windows\system32\drivers\rdbss.sys		
	File System Driver	Yes	System
	Running	OK	Normal
		No	Yes
rdpcdd	RDPCDD		
	c:\windows\system32\drivers\rdpcdd.sys		
	Kernel Driver	Yes	System
	Running	OK	Ignore
		No	Yes
rdpdr	Terminal Server Device Redirector Driver		
	c:\windows\system32\drivers\rdpdr.sys		
	Kernel Driver	Yes	Manual
	Running	OK	Normal
		No	Yes
rdpwd	RDPWD		
	c:\windows\system32\drivers\rdpwd.sys		

	Kernel Driver	Yes	Manual
	Running	OK	Ignore
		No	Yes
redbook	Digital CD Audio Playback Filter Driver		
	c:\windows\system32\drivers\redbook.sys		
	Kernel Driver	Yes	System
	Running	OK	Normal
		No	Yes
secdrv	Security Driver		
	c:\windows\system32\drivers\secdrv.sys		
	Kernel Driver	Yes	Auto
	Running	OK	Normal
		No	Yes
serenum	Serenum Filter Driver		
	c:\windows\system32\drivers\serenum.sys		
	Kernel Driver	No	Manual
	Stopped	OK	Normal
		No	No
serial	Serial port driver		
	c:\windows\system32\drivers\serial.sys		
	Kernel Driver	No	System
	Stopped	OK	Ignore
		No	No
sfloppy	High-Capacity Floppy Disk Drive		
	c:\windows\system32\drivers\sfloppy.sys		
	Kernel Driver	No	Manual
	Stopped	OK	Normal
		No	No
simbad	Simbad	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
smartrtrigger	SmartTrigger Driver		
	\\?\c:\windows\system32\drivers\smartrtrigge		
r.sys	Kernel Driver	No	Manual
	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
symc8xx	symc8xx	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
symmpi	symmpi	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
sym_hi	sym_hi	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
sym_u3	sym_u3	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
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	Yes	Manual
	Running	OK	Ignore
		No	Yes
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
	Normal	No	OK
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
	Normal	No	OK
update	Microcode Update Driver		
	c:\windows\system32\drivers\update.sys		
	Kernel Driver	Yes	Manual
	Running	OK	Normal
		No	Yes
usbccgp	Microsoft USB Generic Parent Driver		
	c:\windows\system32\drivers\usbccgp.sys		
	Kernel Driver	Yes	Manual
	Running	OK	Normal
		No	Yes
usbehci	Microsoft USB 2.0 Enhanced Host Controller		
Miniport	Driver		
	c:\windows\system32\drivers\usbehci.sys		
	Kernel Driver	Yes	Manual
	Running	OK	Normal
		No	Yes
usbhub	Microsoft USB Standard Hub Driver		
	c:\windows\system32\drivers\usbhub.sys		
	Kernel Driver	Yes	Manual
	Running	OK	Normal
		No	Yes
usbohci	Microsoft USB Open Host Controller Miniport		
Driver	Driver		
	c:\windows\system32\drivers\usbohci.sys		
	Kernel Driver	Yes	Manual
	Running	OK	Normal
		No	Yes
usbstor	USB Mass Storage Driver		
	c:\windows\system32\drivers\usbstor.sys		
	Kernel Driver	No	Manual
	Stopped	OK	Normal
		No	No
usbuhci	Microsoft USB Universal Host Controller		
Miniport	Driver		
	c:\windows\system32\drivers\usbuhci.sys		
	Kernel Driver	Yes	Manual
	Running	OK	Normal
		No	Yes

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vga      vga
c:\windows\system32\drivers\vgapnp.sys
Kernel Driver      No      Manual
Stopped      OK      Ignore      No      No

vgasave   VGA Display Controller.
c:\windows\system32\drivers\vga.sys
Kernel Driver      Yes      System
Running      OK      Ignore      No      Yes

viaide    ViaIde      Not Available      Kernel Driver
No      Disabled      Stopped      OK
Normal      No      No

volsnap   Storage volumes
c:\windows\system32\drivers\volsnap.sys
Kernel Driver      Yes      Boot
Running      OK      Normal      No      Yes

wanarp    Remote Access IP ARP Driver
c:\windows\system32\drivers\wanarp.sys
Kernel Driver      Yes      Manual
Running      OK      Normal      No      Yes

wdf01000 Wdf01000
c:\windows\system32\drivers\wdf01000.sys
Kernel Driver      Yes      Manual
Running      OK      Normal      No      Yes

wdica     WDICA      Not Available      Kernel Driver
No      Manual      Stopped      OK
Ignore      No      No

wlbs      Network Load Balancing
c:\windows\system32\drivers\wlbs.sys
Kernel Driver      No      Manual
Stopped      OK      Normal      No      No

```

[Signed Drivers]

Device Name	Signed	Device Class
Driver Version	Driver Date	
Manufacturer	INF Name	Driver Name
Device ID		
Microsoft System Management BIOS Driver	Yes	
SYSTEM 5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	
Not Available	ROOT\SYSTEM\0002	
Microcode Update Device	Yes	SYSTEM
5.2.3790.1830	10/1/2002	(Standard system devices)
machine.inf		Not Available
ROOT\SYSTEM\0001		
Plug and Play Software Device Enumerator	Yes	
SYSTEM 5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	
Not Available	ROOT\SYSTEM\0000	
Terminal Server Mouse Driver	Yes	SYSTEM
5.2.3790.1830	10/1/2002	(Standard system devices)
machine.inf		Not Available
ROOT\RDP_MOUSE\0000		
Terminal Server Keyboard Driver	Yes	
SYSTEM 5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	
Not Available	ROOT\RDP_KBD\0000	

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Terminal Server Device Redirector      Yes
SYSTEM 5.2.3790.1830      10/1/2002
(Standard system devices)      machine.inf
Not Available      ROOT\RDPDR\0000

Direct Parallel      Yes      NET      5.2.3790.1830
10/1/2002 Microsoft netrasa.inf      Not
Available ROOT\MS_PTMINIPORT\0000
WAN Miniport (PPTP)      Yes      NET      5.2.3790.1830
10/1/2002 Microsoft netrasa.inf      Not
Available ROOT\MS_PPTPMINIPORT\0000
WAN Miniport (PPPOE)      Yes      NET
5.2.3790.1830      10/1/2002 Microsoft
netrasa.inf      Not Available
ROOT\MS_PPPOEMINIPORT\0000
WAN Miniport (IP)      Yes      NET      5.2.3790.1830
10/1/2002 Microsoft netrasa.inf      Not
Available ROOT\MS_NDISWANIP\0000
WAN Miniport (L2TP)      Yes      NET      5.2.3790.1830
10/1/2002 Microsoft netrasa.inf      Not
Available ROOT\MS_L2TPMINIPORT\0000
Video Codecs      Yes      MEDIA      5.2.3790.1830
10/1/2002 (Standard system devices)
wave.inf      Not Available
ROOT\MEDIA\MS_MMVID
Legacy Video Capture Devices      Yes      MEDIA
5.2.3790.1830      10/1/2002 (Standard
system devices)      wave.inf      Not Available
ROOT\MEDIA\MS_MMVCD
Media Control Devices      Yes      MEDIA
5.2.3790.1830      10/1/2002 (Standard
system devices)      wave.inf      Not Available
ROOT\MEDIA\MS_MMMCI
Legacy Audio Drivers      Yes      MEDIA
5.2.3790.1830      10/1/2002 (Standard
system devices)      wave.inf      Not Available
ROOT\MEDIA\MS_MMDRV
Audio Codecs      Yes      MEDIA      5.2.3790.1830
10/1/2002 (Standard system devices)
wave.inf      Not Available
ROOT\MEDIA\MS_MMCM
Remote Access IP ARP Driver      Not Available
LEGACYDRIVER      Not Available      Not
Available Not Available      Not Available      Not
Available ROOT\LEGACY_WANARP\0000
volsnap      Not Available      LEGACYDRIVER      Not
Available Not Available      Not Available      Not
Available Not Available      ROOT\LEGACY_VOLSNA\0000
VGA Display Controller.      Not Available      Not
LEGACYDRIVER      Not Available      Not
Available Not Available      Not Available      Not
Available ROOT\LEGACY_VGASAVE\0000
TDTCP      Not Available      LEGACYDRIVER      Not
Available Not Available      Not Available      Not
Available Not Available      ROOT\LEGACY_TDTCP\0000

TCP/IP Protocol Driver      Not Available
LEGACYDRIVER      Not Available      Not
Available Not Available      Not Available      Not
Available ROOT\LEGACY_TCPIP\0000
Security Driver      Not Available      LEGACYDRIVER
Not Available      Not Available      Not

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Available Not Available      Not Available
ROOT\LEGACY_SECDRV\0000
RDPWD      Not Available      LEGACYDRIVER      Not
Available Not Available      Not Available      Not
Available Not Available      ROOT\LEGACY_RDPWD\0000

RDPCCD      Not Available      LEGACYDRIVER      Not
Available Not Available      Not Available      Not
Available Not Available      ROOT\LEGACY_RDPCCD\0000

Remote Access Auto Connection Driver      Not Available
LEGACYDRIVER      Not Available      Not
Available Not Available      Not Available      Not
Available ROOT\LEGACY_RASACD\0000
QLogic Fibre Channel STOR Miniport Driver (wx64 IP)
Not Available      LEGACYDRIVER      Not
Available Not Available      Not Available      Not
Available Not Available      ROOT\LEGACY_QL2300\0000

Partition Manager      Not Available      LEGACYDRIVER
Not Available      Not Available      Not
Available Not Available      Not Available      Not
ROOT\LEGACY_PARTMGR\0000
Null      Not Available      LEGACYDRIVER      Not
Available Not Available      Not Available      Not
Available Not Available      ROOT\LEGACY_NULL\0000

NetBios over Tcpip      Not Available      LEGACYDRIVER
Not Available      Not Available      Not
Available Not Available      Not Available      Not
ROOT\LEGACY_NETBT\0000
NDProxy      Not Available      LEGACYDRIVER      Not
Available Not Available      Not Available      Not
Available Not Available      ROOT\LEGACY_NDPROXY\0000
NDIS Usermode I/O Protocol      Not Available
LEGACYDRIVER      Not Available      Not
Available Not Available      Not Available      Not
Available ROOT\LEGACY_NDISUIO\0000
Remote Access NDIS TAPI Driver      Not Available
LEGACYDRIVER      Not Available      Not
Available Not Available      Not Available      Not
Available ROOT\LEGACY_NDISTAPI\0000
NDIS System Driver      Not Available      LEGACYDRIVER
Not Available      Not Available      Not
Available Not Available      Not Available      Not
ROOT\LEGACY_NDIS\0000
MultEvent Driver      Not Available      LEGACYDRIVER
Not Available      Not Available      Not
Available Not Available      Not Available      Not
ROOT\LEGACY_MULTIEVENT\0000
mountmgr      Not Available      LEGACYDRIVER      Not
Available Not Available      Not Available      Not
Available Not Available      Not Available      Not
ROOT\LEGACY_MOUNTMGR\0000
mnmdm      Not Available      LEGACYDRIVER      Not
Available Not Available      Not Available      Not
Available Not Available      ROOT\LEGACY_MNMDD\0000

ksecdd      Not Available      LEGACYDRIVER      Not
Available Not Available      Not Available      Not
Available Not Available      ROOT\LEGACY_KSECDD\0000

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IPSEC driver	Not Available	LEGACYDRIVER	
	Not Available	Not Available	Not
Available	Not Available	Not Available	Not
	ROOT\LEGACY_IPSEC\0000		
IP Network Address Translator	Not Available		
	LEGACYDRIVER	Not Available	Not
Available	Not Available	Not Available	Not
	ROOT\LEGACY_IPNAT\0000		
HpCISSs2	Not Available	LEGACYDRIVER	Not
Available	Not Available	Not Available	Not
	ROOT\LEGACY_HPCISSS2\0000		
hpcisss	Not Available	LEGACYDRIVER	Not
Available	Not Available	Not Available	Not
	ROOT\LEGACY_HPCISSS\0000		
Generic Packet Classifier	Not Available		
	LEGACYDRIVER	Not Available	Not
Available	Not Available	Not Available	Not
	ROOT\LEGACY_GPC\0000		
Fips	Not Available	LEGACYDRIVER	Not
Available	Not Available	Not Available	Not
	ROOT\LEGACY_FIPS\0000		
dmload	Not Available	LEGACYDRIVER	Not
Available	Not Available	Not Available	Not
	ROOT\LEGACY_DMLOAD\0000		
dmboot	Not Available	LEGACYDRIVER	Not
Available	Not Available	Not Available	Not
	ROOT\LEGACY_DMBOOT\0000		
CRC Disk Filter Driver	Not Available		
	LEGACYDRIVER	Not Available	Not
Available	Not Available	Not Available	Not
	ROOT\LEGACY_CRCDISK\0000		
CpuSpy3 Driver	Not Available	LEGACYDRIVER	
	Not Available	Not Available	Not
Available	Not Available	Not Available	Not
	ROOT\LEGACY_CPUSPY3\0000		
CdaD10BA	Not Available	LEGACYDRIVER	Not
Available	Not Available	Not Available	Not
	ROOT\LEGACY_CDAD10BA\0000		
CdaC15BA	Not Available	LEGACYDRIVER	Not
Available	Not Available	Not Available	Not
	ROOT\LEGACY_CDAC15BA\0000		
Beep	Not Available	LEGACYDRIVER	Not
Available	Not Available	Not Available	Not
	ROOT\LEGACY_BEEP\0000		
AFD	Not Available	LEGACYDRIVER	Not
Available	Not Available	Not Available	Not
	ROOT\LEGACY_AFD\0000		
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATUREC3C3C3		
C30FFSET7E00LENGTH860E83000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not

Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE6D576C		
D10FFSET20000LENGTH19A14400000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA		
7C0FFSET7E00LENGTH16648399800			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA		
7E0FFSET20000LENGTH791000000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA		
710FFSET20000LENGTH2598D00000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE6D576C		
D50FFSET20000LENGTH222DB00000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE6D576C		
DA0FFSET20000LENGTH3344D00000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA		
700FFSET7E00LENGTH16648399800			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA		
720FFSET20000LENGTH791000000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA		
750FFSET20000LENGTH2598D00000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE6D576C		
DFOFFSET20000LENGTH222DB00000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE6D576C		
DC0FFSET20000LENGTH3344D00000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA		
740FFSET7E00LENGTH16648399800			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA		
760FFSET20000LENGTH791000000			

Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA		
690FFSET20000LENGTH2598D00000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE6D576C		
C00FFSET20000LENGTH222DB00000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE6D576C		
C10FFSET20000LENGTH3344D00000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA		
680FFSET7E00LENGTH16648399800			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA		
6B0FFSET20000LENGTH791000000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA		
6A0FFSET20000LENGTH2598D00000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE6D576C		
C50FFSET20000LENGTH222DB00000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE6D576C		
CA0FFSET20000LENGTH3344D00000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA		
6D0FFSET7E00LENGTH16648399800			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA		
6C0FFSET20000LENGTH791000000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA		
6F0FFSET20000LENGTH2598D00000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			
	STORAGE\VOLUME\1&30A96598&0&SIGNATURE6D576C		
CF0FFSET20000LENGTH222DB00000			
Generic volume	Yes	VOLUME	5.2.3790.1830
	10/1/2002 Microsoft	volume.inf	Not
Available			

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STORAGE\VOLUME\1&30A96598&0&SIGNATURE6D576C
CCOFFSET20000LENGTH3344D00000
Generic volume Yes VOLUME 5.2.3790.1830
10/1/2002 Microsoft volume.inf Not
Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA
6E0FFSET7E000LENGTH16648399800
Generic volume Yes VOLUME 5.2.3790.1830
10/1/2002 Microsoft volume.inf Not
Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA
610FFSET20000LENGTH791000000
Generic volume Yes VOLUME 5.2.3790.1830
10/1/2002 Microsoft volume.inf Not
Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA
600FFSET20000LENGTH222DB00000
Generic volume Yes VOLUME 5.2.3790.1830
10/1/2002 Microsoft volume.inf Not
Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE6D576C
B10FFSET20000LENGTH222DB00000
Generic volume Yes VOLUME 5.2.3790.1830
10/1/2002 Microsoft volume.inf Not
Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE6D576C
B60FFSET20000LENGTH3344D00000
Generic volume Yes VOLUME 5.2.3790.1830
10/1/2002 Microsoft volume.inf Not
Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA
630FFSET20000LENGTH791000000
Generic volume Yes VOLUME 5.2.3790.1830
10/1/2002 Microsoft volume.inf Not
Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE953FAA
620FFSET20000LENGTH2598D00000
Generic volume Yes VOLUME 5.2.3790.1830
10/1/2002 Microsoft volume.inf Not
Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE6D576C
B50FFSET20000LENGTH222DB00000
Generic volume Yes VOLUME 5.2.3790.1830
10/1/2002 Microsoft volume.inf Not
Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE6D576C
BB0FFSET20000LENGTH3344D00000
Volume Manager Yes SYSTEM 5.2.3790.1830
10/1/2002 (Standard system devices)
machine.inf Not Available
ROOT\FTDISK\0000
Logical Disk Manager Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
ROOT\DMIO\0000
ACPI Fixed Feature Button Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
ACPI\FIXEDBUTTON\2&DABA3FF&0
Advanced programmable interrupt controller Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available ACPI\PNP0003\4

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Advanced programmable interrupt controller Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available ACPI\PNP0003\3
Advanced programmable interrupt controller Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available ACPI\PNP0003\2
System Interrupt Controller Not Available
UNKNOWN Not Available Not Available
Not Available Not Available Not
Available
PCI\VEN_1022&DEV_7459&SUBSYS_74591022&REV_1
2\3&33B859B7&0&89
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&6
8D3C3A&0&000004000000000
Smart Array P600 Controller (Non-Miniport) No
SCSIADAPTER 6.21.64.64
1/18/2008 Hewlett-Packard oem29.inf Not
Available
PCI\VEN_103C&DEV_3220&SUBSYS_3225103C&REV_0
0\4&24CF26E8&0&1088
Disk drive Yes DISKDRIVE 5.2.3790.1830
10/1/2002 (Standard disk drives)
disk.inf Not Available
SCSI\DISK&VEN_HP&PROD_DG036A8B5B&REV_HP4\5
&1AC6146F&0&0010
LSI Adapter, SAS 3000 series, 8-port with 1068 -
StorPort Yes SCSIADAPTER 1.24.4.0
2/9/2007 LSI Logic oem0.inf Not Available
PCI\VEN_1000&DEV_0054&SUBSYS_3228103C&REV_0
0\4&24CF26E8&0&0888
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_1022&DEV_7458&SUBSYS_00000000&REV_1
2\3&33B859B7&0&88
System Interrupt Controller Not Available
UNKNOWN Not Available Not Available
Not Available Not Available Not
Available
PCI\VEN_1022&DEV_7459&SUBSYS_74591022&REV_1
2\3&33B859B7&0&81
HP NC371i Multifunction Gigabit Server Adapter Yes
NET 3.4.10.0 5/25/2007 Hewlett-
Packard Company oem16.inf Not Available
B06BDRV\L2ND&PCI_164A14E4&SUBSYS_1709103C&R
EV_02\5&2945E16&0&20054102
HP NC371i Virtual Bus Device Yes SYSTEM
3.4.10.0 5/22/2007 Hewlett-Packard Company
oem19.inf Not Available
PCI\VEN_14E4&DEV_164A&SUBSYS_1709103C&REV_0
2\4&9C889E9&0&1080
HP NC371i Multifunction Gigabit Server Adapter Yes
NET 3.4.10.0 5/25/2007 Hewlett-
Packard Company oem16.inf Not Available
B06BDRV\L2ND&PCI_164A14E4&SUBSYS_1709103C&R
EV_02\5&B64F98D&0&20054101

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HP NC371i Virtual Bus Device Yes SYSTEM
3.4.10.0 5/22/2007 Hewlett-Packard Company
oem19.inf Not Available
PCI\VEN_14E4&DEV_164A&SUBSYS_1709103C&REV_0
2\4&9C889E9&0&0880
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_1022&DEV_7458&SUBSYS_00000000&REV_1
2\3&33B859B7&0&80
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
0FC6F5E&0&0400004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
0FC6F5E&0&0300004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
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Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
0FC6F5E&0&0100004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
0FC6F5E&0&0000004000000000
Smart Array P800 Controller (Non-Miniport) No
SCSIADAPTER 6.21.64.64
1/18/2008 Hewlett-Packard oem29.inf Not
Available
PCI\VEN_103C&DEV_3230&SUBSYS_3223103C&REV_0
3\4&3EC0CCA&0&0070
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_10DE&DEV_005D&SUBSYS_00000000&REV_A
3\3&33B859B7&0&70
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&6
352F4D&0&0400004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&6
352F4D&0&0300004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&6
352F4D&0&0200004000000000

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Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
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352F4D&0&0100004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&6
352F4D&0&0000004000000000
Smart Array P800 Controller (Non-Miniport) No
SCSIADAPTER 6.21.64.64
1/18/2008 Hewlett-Packard oem29.inf Not
Available PCI\VEN_103C&DEV_3230&SUBSYS_3223103C&REV_0
3\4&1B1CF5E7&0&0068
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_10DE&DEV_005D&SUBSYS_00000000&REV_A
3\3&33B859B7&0&68
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
CC70BE&0&0400004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
CC70BE&0&0300004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
CC70BE&0&0200004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
CC70BE&0&0100004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
CC70BE&0&0000004000000000
Smart Array P800 Controller (Non-Miniport) No
SCSIADAPTER 6.21.64.64
1/18/2008 Hewlett-Packard oem29.inf Not
Available PCI\VEN_103C&DEV_3230&SUBSYS_3223103C&REV_0
3\4&137ABAE&0&0060
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_10DE&DEV_005D&SUBSYS_00000000&REV_A
3\3&33B859B7&0&60
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available

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HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
167F8B&0&0400004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
167F8B&0&0300004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
167F8B&0&0200004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
167F8B&0&0100004000000000
Smart Array P800 Controller (Non-Miniport) No
SCSIADAPTER 6.21.64.64
1/18/2008 Hewlett-Packard oem29.inf Not
Available PCI\VEN_103C&DEV_3230&SUBSYS_3223103C&REV_0
3\4&300C8240&0&0058
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_10DE&DEV_005D&SUBSYS_00000000&REV_A
3\3&33B859B7&0&68
NVIDIA nForce4 Low Pin Count Controller Yes
SYSTEM 5.2.3790.1830 10/1/2002
NVIDIA machine.inf Not Available
PCI\VEN_10DE&DEV_00D3&SUBSYS_CB8410DE&REV_B
1\3&33B859B7&0&08
NVIDIA nForce4 HyperTransport Bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
NVIDIA machine.inf Not Available
PCI\VEN_10DE&DEV_005E&SUBSYS_00000000&REV_A
4\3&33B859B7&0&00
PCI bus Yes SYSTEM 5.2.3790.1830
10/1/2002 (Standard system devices)
machine.inf Not Available
ACPI\PNP0A03\8
Advanced programmable interrupt controller Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available ACPI\PNP0003\1
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_1022&DEV_1204&SUBSYS_00000000&REV_0
0\3&20FEA912&0&DC
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_1022&DEV_1203&SUBSYS_00000000&REV_0
0\3&20FEA912&0&DB

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PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_1022&DEV_1202&SUBSYS_00000000&REV_0
0\3&20FEA912&0&DA
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_1022&DEV_1201&SUBSYS_00000000&REV_0
0\3&20FEA912&0&D9
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_1022&DEV_1200&SUBSYS_00000000&REV_0
0\3&20FEA912&0&D8
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_1022&DEV_1204&SUBSYS_00000000&REV_0
0\3&20FEA912&0&D4
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_1022&DEV_1203&SUBSYS_00000000&REV_0
0\3&20FEA912&0&D3
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_1022&DEV_1201&SUBSYS_00000000&REV_0
0\3&20FEA912&0&D1
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_1022&DEV_1200&SUBSYS_00000000&REV_0
0\3&20FEA912&0&D0
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_1022&DEV_1204&SUBSYS_00000000&REV_0
0\3&20FEA912&0&CC
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_1022&DEV_1202&SUBSYS_00000000&REV_0
0\3&20FEA912&0&CA
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_1022&DEV_1201&SUBSYS_00000000&REV_0
0\3&20FEA912&0&C9
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available

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PCI\VEN_1022&DEV_1200&SUBSYS_00000000&REV_0
0\3&20FEA912&0&C8
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_1022&DEV_1204&SUBSYS_00000000&REV_0
0\3&20FEA912&0&C4
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_1022&DEV_1203&SUBSYS_00000000&REV_0
0\3&20FEA912&0&C3
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_1022&DEV_1202&SUBSYS_00000000&REV_0
0\3&20FEA912&0&C2
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_1022&DEV_1201&SUBSYS_00000000&REV_0
0\3&20FEA912&0&C1
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_1022&DEV_1200&SUBSYS_00000000&REV_0
0\3&20FEA912&0&C0
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&8
B705FB&0&0400004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&8
B705FB&0&0300004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&8
B705FB&0&0200004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&8
B705FB&0&0100004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&8
B705FB&0&0000004000000000
Smart Array P800 Controller (Non-Miniport) No
SCSIADAPTER 6.21.64.64
1/18/2008 Hewlett-Packard oem29.inf Not
Available
PCI\VEN_103C&DEV_3230&SUBSYS_3223103C&REV_0
3\4&1370&CED&0&0070
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available

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PCI\VEN_10DE&DEV_005D&SUBSYS_00000000&REV_A
3\3&20FEA912&0&70
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6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
9F386C&0&0400004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
9F386C&0&0300004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
9F386C&0&0200004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
9F386C&0&0100004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
9F386C&0&0000004000000000
Smart Array P800 Controller (Non-Miniport) No
SCSIADAPTER 6.21.64.64
1/18/2008 Hewlett-Packard oem29.inf Not
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PCI\VEN_103C&DEV_3230&SUBSYS_3223103C&REV_0
3\4&B98F5C4&0&0068
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_10DE&DEV_005D&SUBSYS_00000000&REV_A
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Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
7A88D94&0&0300004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
7A88D94&0&0200004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
7A88D94&0&0100004000000000
Smart Array Logical Volume No DISKDRIVE
6.9.58.64 1/18/2008 Hewlett-Packard
oem30.inf Not Available
HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\5&1
7A88D94&0&0000004000000000
Smart Array E500 Controller (Non-Miniport) No
SCSIADAPTER 6.21.64.64
1/18/2008 Hewlett-Packard oem29.inf Not
Available

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PCI\VEN_103C&DEV_3230&SUBSYS_3237103C&REV_0
3\4&22FEBB0D&0&0060
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_10DE&DEV_005D&SUBSYS_00000000&REV_A
3\3&20FEA912&0&60
PCI Device Not Available UNKNOWN Not
Available Not Available Not Available Not
Available Not Available
PCI\VEN_103C&DEV_3302&SUBSYS_3305103C&REV_0
0\4&21887AE&0&2648
Generic USB Hub Yes USB 5.2.3790.1830
10/1/2002 (Generic USB Hub) usb.inf Not
Available USB\VID_03F0&PID_1327\6&5F1B1E&0&2
HID-compliant mouse Yes MOUSE 5.2.3790.1830
10/1/2002 Microsoft msmouse.inf Not
Available
HID\VID_03F0&PID_1027&MI_01\8&AACF5F7&0&000
0
USB Human Interface Device Yes HIDCLASS
5.2.3790.1830 10/1/2002 (Standard
system devices) input.inf Not Available
USB\VID_03F0&PID_1027&MI_01\7&3B124F76&0&00
01
HID Keyboard Device Yes KEYBOARD 5.2.3790.1830
10/1/2002 (Standard keyboards)
keyboard.inf Not Available
HID\VID_03F0&PID_1027&MI_00\8&2270823C&0&00
00
USB Human Interface Device Yes HIDCLASS
5.2.3790.1830 10/1/2002 (Standard
system devices) input.inf Not Available
USB\VID_03F0&PID_1027&MI_00\7&3B124F76&0&00
00
USB Composite Device Yes USB
5.2.3790.1830 10/1/2002 (Standard USB
Host Controller) usb.inf Not Available
USB\VID_03F0&PID_1027\6&5F1B1E&0&1
USB Root Hub Yes USB 5.2.3790.1830
10/1/2002 (Standard USB Host Controller)
usbport.inf Not Available
USB\ROOT_HUB\5&246EAE08&0
Standard Universal PCI to USB Host Controller Yes
USB 5.2.3790.1830 10/1/2002
(Standard USB Host Controller)
usbport.inf Not Available
PCI\VEN_103C&DEV_3300&SUBSYS_3305103C&REV_0
0\4&21887AE&0&2448
Base System Device Not Available UNKNOWN Not
Available Not Available Not Available Not
Available Not Available
PCI\VEN_0E11&DEV_B204&SUBSYS_3305103C&REV_0
3\4&21887AE&0&2248
Base System Device Not Available UNKNOWN Not
Available Not Available Not Available Not
Available Not Available
PCI\VEN_0E11&DEV_B203&SUBSYS_3305103C&REV_0
3\4&21887AE&0&2048
Plug and Play Monitor Yes MONITOR
5.2.3790.1830 10/1/2002 (Standard
monitor types) monitor.inf Not Available

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DISPLAY\AV00000\5&292E0C71&0&10000080&01&03
Default Monitor Yes MONITOR 5.2.3790.1830
10/1/2002 (Standard monitor types)
monitor.inf Not Available
DISPLAY\DEFAULT_MONITOR\5&292E0C71&0&100000
01&01&03
ATI ES1000 Yes DISPLAY 8.24.3.0
4/5/2006 ATI Technologies Inc.
oem15.inf Not Available
PCI\VEN_1002&DEV_515E&SUBSYS_31FB103C&REV_0
2\4&21887AE&0&1848
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_10DE&DEV_005C&SUBSYS_00000000&REV_A
2\3&20FEA912&0&48
Secondary IDE Channel Yes HDC
5.2.3790.1830 10/1/2002 (Standard IDE
ATA/ATAPI controllers) mshdc.inf Not Available
PCI\IDE\IDECHANNEL\4&23A0739C&0&1
CD-ROM Drive Yes CDROM 5.2.3790.1830
10/1/2002 (Standard CD-ROM drives)
cdrom.inf Not Available
IDE\CDROMTEAC_DW-224E-
V_____C.A_____5&2270D2F8&0&0.0.
0
Primary IDE Channel Yes HDC 5.2.3790.1830
10/1/2002 (Standard IDE ATA/ATAPI
controllers) mshdc.inf Not Available
PCI\IDE\IDECHANNEL\4&23A0739C&0&0
Standard Dual Channel PCI IDE Controller Yes
HDC 5.2.3790.1830 10/1/2002
(Standard IDE ATA/ATAPI controllers)
mshdc.inf Not Available
PCI\VEN_10DE&DEV_0053&SUBSYS_31F8103C&REV_A
3\3&20FEA912&0&30
Generic USB Hub Yes USB 5.2.3790.1830
10/1/2002 (Generic USB Hub) usb.inf Not
Available USB\VID_04B4&PID_6560\5&2941608A&0&6
USB Root Hub Yes USB 5.2.3790.1830
10/1/2002 (Standard USB Host Controller)
usbport.inf Not Available
USB\ROOT_HUB20\4&26DB321C&0
Standard Enhanced PCI to USB Host Controller Yes
USB 5.2.3790.1830 10/1/2002
(Standard USB Host Controller)
usbport.inf Not Available
PCI\VEN_10DE&DEV_005B&SUBSYS_31F8103C&REV_A
4\3&20FEA912&0&11
USB Root Hub Yes USB 5.2.3790.1830
10/1/2002 (Standard USB Host Controller)
usbport.inf Not Available
USB\ROOT_HUB\4&1EFC638D&0
Standard OpenHCD USB Host Controller Yes USB
5.2.3790.1830 10/1/2002 (Standard USB
Host Controller) usbport.inf Not Available
PCI\VEN_10DE&DEV_005A&SUBSYS_31F8103C&REV_A
2\3&20FEA912&0&10
Extended IO Bus Yes SYSTEM 5.2.3790.1830
10/1/2002 (Standard system devices)

```

```

machine.inf Not Available
ACPI\PNP0A06\4&142B453B&0
PS/2 Compatible Mouse Yes MOUSE
5.2.3790.1830 10/1/2002 Microsoft
msmouse.inf Not Available
ACPI\PNP0F13\4&142B453B&0
Standard 101/102-Key or Microsoft Natural PS/2
Keyboard Yes KEYBOARD 5.2.3790.1830
10/1/2002 (Standard keyboards)
keyboard.inf Not Available
ACPI\PNP0303\4&142B453B&0
System speaker Yes SYSTEM 5.2.3790.1830
10/1/2002 (Standard system devices)
machine.inf Not Available
ACPI\PNP0800\4&142B453B&0
Direct memory access controller Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
ACPI\PNP0200\4&142B453B&0
High precision event timer Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
ACPI\PNP0103\0
System timer Yes SYSTEM 5.2.3790.1830
10/1/2002 (Standard system devices)
machine.inf Not Available
ACPI\PNP0100\4&142B453B&0
Not Available Not Available Not Available Not
Available Not Available Not Available
ACPI\IPI0001\0
Motherboard resources Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
ACPI\PNP0C02\0
PCI standard ISA bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_10DE&DEV_0051&SUBSYS_00000000&REV_B
1\3&20FEA912&0&08
NVIDIA nForce4 HyperTransport Bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
NVIDIA machine.inf Not Available
PCI\VEN_10DE&DEV_005E&SUBSYS_00000000&REV_A
4\3&20FEA912&0&00
PCI bus Yes SYSTEM 5.2.3790.1830
10/1/2002 (Standard system devices)
machine.inf Not Available
ACPI\PNP0A03\7
Processor Yes PROCESSOR 5.2.3790.1830
10/1/2002 (Standard processor types)
cpu.inf Not Available
ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_16_MODEL_2\15
Processor Yes PROCESSOR 5.2.3790.1830
10/1/2002 (Standard processor types)
cpu.inf Not Available
ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_16_MODEL_2\14
Processor Yes PROCESSOR 5.2.3790.1830
10/1/2002 (Standard processor types)
cpu.inf Not Available

```

```

ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_16_MODEL_2\13
Processor Yes PROCESSOR 5.2.3790.1830
10/1/2002 (Standard processor types)
cpu.inf Not Available
ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_16_MODEL_2\12
Processor Yes PROCESSOR 5.2.3790.1830
10/1/2002 (Standard processor types)
cpu.inf Not Available
ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_16_MODEL_2\11
Processor Yes PROCESSOR 5.2.3790.1830
10/1/2002 (Standard processor types)
cpu.inf Not Available
ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_16_MODEL_2\10
Processor Yes PROCESSOR 5.2.3790.1830
10/1/2002 (Standard processor types)
cpu.inf Not Available
ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_16_MODEL_2\9
Processor Yes PROCESSOR 5.2.3790.1830
10/1/2002 (Standard processor types)
cpu.inf Not Available
ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_16_MODEL_2\8
Processor Yes PROCESSOR 5.2.3790.1830
10/1/2002 (Standard processor types)
cpu.inf Not Available
ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_16_MODEL_2\7
Processor Yes PROCESSOR 5.2.3790.1830
10/1/2002 (Standard processor types)
cpu.inf Not Available
ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_16_MODEL_2\6
Processor Yes PROCESSOR 5.2.3790.1830
10/1/2002 (Standard processor types)
cpu.inf Not Available
ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_16_MODEL_2\5
Processor Yes PROCESSOR 5.2.3790.1830
10/1/2002 (Standard processor types)
cpu.inf Not Available
ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_16_MODEL_2\4
Processor Yes PROCESSOR 5.2.3790.1830
10/1/2002 (Standard processor types)
cpu.inf Not Available
ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_16_MODEL_2\3
Processor Yes PROCESSOR 5.2.3790.1830
10/1/2002 (Standard processor types)
cpu.inf Not Available
ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_16_MODEL_2\2
Processor Yes PROCESSOR 5.2.3790.1830
10/1/2002 (Standard processor types)
cpu.inf Not Available
ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_16_MODEL_2\1

```

```

Processor Yes      PROCESSOR 5.2.3790.1830
10/1/2002 (Standard processor types)
cpu.inf Not Available
ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_16_MODEL_2_0
Microsoft ACPI-Compliant System Yes
SYSTEM 5.2.3790.1830 10/1/2002
Microsoft acpi.inf Not Available
ACPI_HAL\PNP0C08\0
ACPI Multiprocessor x64-based PC Yes
COMPUTER 5.2.3790.1830 10/1/2002
(Standard computers) hal.inf Not
Available ROOT\ACPI_HAL\0000
Not Available Not Available Not Available
Not Available Not Available Not Available
Available Not Available Not Available
HTREE\ROOT\0

```

[Environment Variables]

```

Variable Value User Name
ComSpec %SystemRoot%\system32\cmd.exe <SYSTEM>
Path C:\Program
Files\HP\NCU;%SystemRoot%\system32;%SystemRoot%\Syst
emRoot%\System32\Wbem;C:\Program Files
(x86)\Microsoft SQL Server\80\Tools\Binn\;C:\Program
Files\Microsoft SQL Server\90\Tools\Binn\;C:\Program
Files (x86)\Microsoft SQL
Server\90\Tools\Binn\;C:\Program Files
(x86)\Microsoft SQL Server\90\Binn\;C:\Program
Files (x86)\Microsoft SQL
Server\90\Tools\Binn\VSShell\Common7\IDE\;C:\Program
Files (x86)\Microsoft Visual Studio
8\Common7\IDE\PrivateAssemblies\;C:\Program
Files\Microsoft SQL Server\90\Binn\ <SYSTEM>
windir %SystemRoot% <SYSTEM>
FP_NO_HOST_CHECK NO <SYSTEM>
OS Windows_NT <SYSTEM>
PROCESSOR_ARCHITECTURE AMD64 <SYSTEM>
PROCESSOR_LEVEL 16 <SYSTEM>
PROCESSOR_IDENTIFIER AMD64 Family 16 Model 2
Stepping 3, AuthenticAMD <SYSTEM>
PROCESSOR_REVISION 0203 <SYSTEM>
NUMBER_OF_PROCESSORS 16 <SYSTEM>
ClusterLog C:\WINDOWS\Cluster\cluster.log
<SYSTEM>
PATHEXT .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF
;.WSH <SYSTEM>
TEMP %SystemRoot%\TEMP <SYSTEM>
TMP %SystemRoot%\TEMP <SYSTEM>
lib C:\Program Files\SQLXML 4.0\bin\
<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
B2\Administrator
TMP %USERPROFILE%\Local Settings\Temp
B2\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	
Available	Not Available	Not Available	Not	Not
Available	Not Available	Not Available	Not	Not
system	Not Available	4	8	0
	1413120	Not Available	Not Available	
	Not Available	Not Available	Not Available	
smss.exe	Not Available	696	11	
	204800	1413120	6/26/2008 12:28 PM	Not
Available	Not Available	Not Available	Not Available	
csrss.exe	Not Available	868	13	Not
Available	Not Available	6/26/2008 12:28 PM	12:28 PM	Not
Available	Not Available	Not Available	Not Available	
winlogon.exe	c:\windows\system32\winlogon.exe	896	13	204800
	6/26/2008 12:28 PM	5.2.3790.1830	5.2.3790.1830	
(srv03_sp1_rtm.050324-1447)	901.00 KB (922,624 bytes)	11/30/2005 6:00 AM		
services.exe	c:\windows\system32\services.exe	972	9	204800
	6/26/2008 12:28 PM	5.2.3790.1830	5.2.3790.1830	
(srv03_sp1_rtm.050324-1447)	216.50 KB (221,696 bytes)	11/30/2005 6:00 AM		
lsass.exe	c:\windows\system32\lsass.exe	1000	9	204800
	6/26/2008 12:28 PM	5.2.3790.1830	5.2.3790.1830	
(srv03_sp1_rtm.050324-1447)	14.00 KB (14,336 bytes)	11/30/2005		
6:00 AM				
svchost.exe	c:\windows\system32\svchost.exe	468	8	204800
	6/26/2008 12:28 PM	5.2.3790.1830	5.2.3790.1830	
(srv03_sp1_rtm.050324-1447)	24.50 KB (25,088 bytes)	11/30/2005 6:00 AM		
svchost.exe	Not Available	580	8	
	Not Available	Not Available	Not Available	
6/26/2008 12:28 PM	Not Available	Not		
Available	Not Available			

```

svchost.exe c:\windows\system32\svchost.exe
636 8 204800 1413120
6/26/2008 12:28 PM 5.2.3790.1830
(srv03_sp1_rtm.050324-1447) 24.50 KB (25,088 bytes)
11/30/2005 6:00 AM
msdtc.exe Not Available 1136 8 Not
Available Not Available 6/26/2008 12:29 PM Not
Available Not Available Not Available
svchost.exe c:\windows\system32\svchost.exe
1292 8 204800 1413120
6/26/2008 12:29 PM 5.2.3790.1830
(srv03_sp1_rtm.050324-1447) 24.50 KB (25,088 bytes)
11/30/2005 6:00 AM
sqlwriter.exe c:\program files\microsoft sql
server\90\shared\sqlwriter.exe 1320 8
204800 1413120 6/26/2008 12:29 PM
2005.090.3042.00 152.36 KB (156,016
bytes) 2/10/2007 9:03 AM
svchost.exe Not Available 1708 8
Not Available Not Available
6/26/2008 12:29 PM Not Available Not
Available Not Available
svchost.exe c:\windows\system32\svchost.exe
1880 8 204800 1413120
6/26/2008 12:29 PM 5.2.3790.1830
(srv03_sp1_rtm.050324-1447) 24.50 KB (25,088 bytes)
11/30/2005 6:00 AM
wmiprvse.exe Not Available 784 8
Not Available Not Available
6/26/2008 12:30 PM Not Available Not
Available Not Available
csrss.exe Not Available 1804 13 Not
Available Not Available 6/26/2008 12:30 PM Not
Available Not Available Not Available
winlogon.exe c:\windows\system32\winlogon.exe
1832 13 204800 1413120
6/26/2008 12:30 PM 5.2.3790.1830
(srv03_sp1_rtm.050324-1447) 901.00 KB (922,624
bytes) 11/30/2005 6:00 AM
rdpclip.exe c:\windows\system32\rdpclip.exe
792 8 204800 1413120
6/26/2008 12:30 PM 5.2.3790.1830
(srv03_sp1_rtm.050324-1447) 99.00 KB (101,376
bytes) 9/10/2007 4:58 PM
explorer.exe c:\windows\explorer.exe
1044 8 204800 1413120
6/26/2008 12:30 PM 6.00.3790.1830
(srv03_sp1_rtm.050324-1447) 1.30 MB (1,364,480
bytes) 11/30/2005 6:00 AM
cpqteam.exe c:\program
files\hp\ncu\cpqteam.exe 1164 8
204800 1413120 6/26/2008 12:30 PM
8.70.0.15 81.50 KB (83,456 bytes)
6/28/2007 1:10 PM
cmd.exe c:\windows\system32\cmd.exe 440 8
204800 1413120 6/26/2008 12:30 PM
5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
538.50 KB (551,424 bytes) 11/30/2005
6:00 AM
sqlservr.exe c:\program files\microsoft sql
server\mssql.1\mssql\sqlservr.exe 308 13
204800 1413120 6/26/2008 12:30 PM

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2005.090.3042.00 36.72 MB (38,507,376
bytes) 2/10/2007 9:03 AM
taskmgr.exe c:\windows\system32\taskmgr.exe
2632 13 204800 1413120
6/26/2008 12:31 PM 5.2.3790.1830
(srv03_spi_rtm.050324-1447) 231.00 KB (236,544
bytes) 11/30/2005 6:00 AM
logon.scr Not Available 2676 4 Not
Available Not Available 6/26/2008 12:39 PM Not
Available Not Available Not Available
cmd.exe c:\windows\system32\cmd.exe 832 8
204800 1413120 6/26/2008 4:29 PM
5.2.3790.1830 (srv03_spi_rtm.050324-1447)
538.50 KB (551,424 bytes) 11/30/2005

6:00 AM
cscript.exe c:\windows\system32\cscript.exe
2792 8 204800 1413120
6/26/2008 4:29 PM 5.6.0.8827
127.50 KB (130,560 bytes) 11/30/2005

6:00 AM
osql.exe c:\program files\microsoft sql
server\90\tools\bin\osql.exe 2548 8
204800 1413120 6/26/2008 4:29 PM
2005.090.3042.00 83.86 KB (85,872 bytes)
2/10/2007 9:02 AM
helpctr.exe c:\windows\pchealth\helpctr\binaries\helpctr
.exe 2904 8 204800 1413120
6/26/2008 4:36 PM 5.2.3790.1830
(srv03_spi_rtm.050324-1447) 1.30 MB (1,363,456
bytes) 9/10/2007 5:00 PM
helpsvc.exe c:\windows\pchealth\helpctr\binaries\helpsv
c.exe 2356 8 204800 1413120
6/26/2008 4:36 PM 5.2.3790.1830
(srv03_spi_rtm.050324-1447) 1.52 MB (1,591,296
bytes) 9/10/2007 5:00 PM
wmiprvse.exe Not Available 108 8
Not Available Not Available
6/26/2008 4:36 PM Not Available Not
Available Not Available

[Loaded Modules]

Name Version Size File Date Manufacturer
winlogon 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
901.00 KB (922,624 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\winlogon.exe
ntdll 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
1.20 MB (1,257,472 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\ntdll.dll
kernel32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
1.43 MB (1,500,160 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\kernel32.dll
advapi32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
1.00 MB (1,051,136 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\advapi32.dll

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rpcrt4 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
1.63 MB (1,714,176 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\rpcrt4.dll
crypt32 5.131.3790.1830 (srv03_spi_rtm.050324-1447)
1.36 MB (1,428,992 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\crypt32.dll
msasn1 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
152.50 KB (156,160 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\msasn1.dll
msvcrt 7.0.3790.1830 (srv03_spi_rtm.050324-1447)
508.00 KB (520,192 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\msvcrt.dll
user32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
1.04 MB (1,085,952 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\user32.dll
gdi32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
592.00 KB (606,208 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\gdi32.dll
nddeapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
25.00 KB (25,600 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\nddeapi.dll
profmap 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
36.00 KB (36,864 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\profmap.dll
netapi32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
589.00 KB (603,136 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\netapi32.dll
userenv 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
1.02 MB (1,069,056 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\userenv.dll
psapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
29.00 KB (29,696 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\psapi.dll
regapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
108.50 KB (111,104 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\regapi.dll
secur32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
120.00 KB (122,880 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\secur32.dll
setupapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
1.45 MB (1,523,200 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\setupapi.dll
version 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
28.00 KB (28,672 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\version.dll
winsta 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
89.00 KB (91,136 bytes) 11/30/2005

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6:00 AM Microsoft Corporation
c:\windows\system32\winsta.dll
ws2_32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
176.50 KB (180,736 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\ws2_32.dll
ws2help 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
30.50 KB (31,232 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\ws2help.dll
msgina 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
1.14 MB (1,193,472 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\msgina.dll
shsvcs 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
193.50 KB (198,144 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\shsvcs.dll
shlwapi 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
606.50 KB (621,056 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\shlwapi.dll
sfc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
6.00 KB (6,144 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\sfc.dll
sfc_os 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
183.50 KB (187,904 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\sfc_os.dll
wintrust 5.131.3790.1830 (srv03_spi_rtm.050324-1447)
297.50 KB (304,640 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\wintrust.dll
imagehlp 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
57.50 KB (58,880 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\imagehlp.dll
ole32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
2.43 MB (2,543,616 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\ole32.dll
comctl32 6.0 (srv03_spi_rtm.050324-1447)
1.51 MB (1,584,128 bytes) 9/10/2007
10:48 AM Microsoft Corporation
c:\windows\winsxs\amd64_microsoft.windows.c
ommon-controls_6595b64144ccfd9f_6.0.3790.1830_x-
ww_aced72af\comctl32.dll
winscard 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
230.00 KB (235,520 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\winscard.dll
wtsapi32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
29.00 KB (29,696 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\wtsapi32.dll
winmm 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
303.50 KB (310,784 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\winmm.dll
shell32 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
10.01 MB (10,492,416 bytes) 11/30/2005

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6:00 AM Microsoft Corporation
c:\windows\system32\shell32.dll
sxs 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
1.91 MB (2,003,968 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\sxs.dll
rsaenh 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
241.96 KB (247,768 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\rsaenh.dll
wldap32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
390.00 KB (399,360 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\wldap32.dll
csddl 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
151.50 KB (155,136 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\csddl.dll
dimsntfy 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
28.00 KB (28,672 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\dimsntfy.dll
wlnotify 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
148.00 KB (151,552 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\wlnotify.dll
mpr 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
115.00 KB (117,760 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\mpr.dll
oleaut32 5.2.3790.1830 1.06 MB (1,116,160
bytes) 11/30/2005 6:00 AM Microsoft Corporation
c:\windows\system32\oleaut32.dll
winspool 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
247.00 KB (252,928 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\winspool.drv
comctl32 5.82 (srv03_spi_rtm.050324-1447)
934.50 KB (956,928 bytes) 9/10/2007
10:48 AM Microsoft Corporation
c:\windows\winsxs\amd64_microsoft.windows.c
ommon-controls_6595b64144ccf1df_5.82.3790.1830_x-
ww_4d792d2a\comctl32.dll
uxtheme 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
494.50 KB (506,368 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\uxtheme.dll
clbcatq 2001.12.4720.1830 (srv03_spi_rtm.050324-
1447) 865.00 KB (885,760 bytes) 9/10/2007
4:58 PM Microsoft Corporation
c:\windows\system32\clbcatq.dll
comres 2001.12.4720.1830 (srv03_spi_rtm.050324-
1447) 779.50 KB (798,208 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\comres.dll
wbemprox 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
38.00 KB (38,912 bytes) 9/10/2007
4:57 PM Microsoft Corporation
c:\windows\system32\wbem\wbemprox.dll
wbemcomn 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
524.00 KB (536,576 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\wbem\wbemcomn.dll

xpsp2res 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
2.77 MB (2,899,456 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\xpsp2res.dll
wbemsvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
58.00 KB (59,392 bytes) 9/10/2007
4:57 PM Microsoft Corporation
c:\windows\system32\wbem\wbemsvc.dll
fastprox 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
866.50 KB (887,296 bytes) 9/10/2007
4:57 PM Microsoft Corporation
c:\windows\system32\wbem\fastprox.dll
msvcp60 7.0.3790.1830 (srv03_spi_rtm.050324-1447)
919.50 KB (941,568 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\msvcp60.dll
ntdsapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
127.50 KB (130,560 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\ntdsapi.dll
dnsapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
297.50 KB (304,640 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\dnsapi.dll
services 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
216.50 KB (221,696 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\services.exe
ncobjapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
80.00 KB (81,920 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\ncobjapi.dll
scsersv 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
594.50 KB (608,768 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\scsersv.dll
authz 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
167.00 KB (171,008 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\authz.dll
umppnmg 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
205.00 KB (209,920 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\umppnmg.dll
eventlog 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
127.00 KB (130,048 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\eventlog.dll
lsass 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
14.00 KB (14,336 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\lsass.exe
lsasrv 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
1.50 MB (1,568,256 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\lsasrv.dll
samlib 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
69.00 KB (70,656 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\samlib.dll
samsrv 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
1.01 MB (1,059,328 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\samsrv.dll
cryptdll 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
47.00 KB (48,128 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\cryptdll.dll
msprivs 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
47.50 KB (48,640 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\msprivs.dll
kerberos 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
698.00 KB (714,752 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\kerberos.dll
msv1_0 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
253.00 KB (259,072 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\msv1_0.dll
iphlpapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
177.00 KB (181,248 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\iphlpapi.dll
netlogon 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
666.00 KB (681,984 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\netlogon.dll
w32time 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
400.50 KB (410,112 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\w32time.dll
schannel 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
248.00 KB (253,952 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\schannel.dll
wdigest 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
130.50 KB (133,632 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\wdigest.dll
rassfm 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
36.00 KB (36,864 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\rassfm.dll
kdcsvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
409.00 KB (418,816 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\kdcsvc.dll
ntdsa 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
2.81 MB (2,948,096 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\ntdsa.dll
esent 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
2.26 MB (2,366,976 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\esent.dll
ntdsatq 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
51.00 KB (52,224 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\ntdsatq.dll
mswsock 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
478.00 KB (489,472 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\mswsock.dll


```
scecli 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
308.00 KB (315,392 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\scecli.dll
ws03res 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
794.00 KB (813,056 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\ws03res.dll
hnetcfg 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
561.00 KB (574,464 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\hnetcfg.dll
wshtcpip 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
29.00 KB (29,696 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\wshtcpip.dll
pstorsvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
36.00 KB (36,864 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\pstorsvc.dll
psbase 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
124.00 KB (126,976 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\psbase.dll
dssenh 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
226.96 KB (232,408 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\dssenh.dll
svchost 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
24.50 KB (25,088 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\svchost.exe
rpcss 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
672.00 KB (688,128 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\rpcss.dll
ntmarta 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
222.50 KB (227,840 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\ntmarta.dll
wkssvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
221.00 KB (226,304 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\wkssvc.dll
wiarpc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
57.00 KB (58,368 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\wiarpc.dll
aelupsvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
31.50 KB (32,256 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\aelupsvc.dll
apphelp 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
241.00 KB (246,784 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\apphelp.dll
cryptsvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
114.00 KB (116,736 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\cryptsvc.dll
certcli 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
372.00 KB (380,928 bytes) 11/30/2005
```

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6:00 AM Microsoft Corporation
c:\windows\system32\certcli.dll
atl 3.05.2284 96.50 KB (98,816 bytes)
11/30/2005 6:00 AM Microsoft Corporation
c:\windows\system32\atl.dll
vssapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
1.26 MB (1,320,960 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\vssapi.dll
dmserver 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
36.50 KB (37,376 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\dmserver.dll
es 2001.12.4720.1830 (srv03_spi_rtm.050324-1447)
357.00 KB (365,568 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\es.dll
pchsvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
76.00 KB (77,824 bytes) 9/10/2007
Microsoft Corporation
c:\windows\pchealth\helpctr\binaries\pchsvc.dll
srvsvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
156.50 KB (160,256 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\srvsvc.dll
comsvcs 2001.12.4720.1830 (srv03_spi_rtm.050324-1447)
2.06 MB (2,156,544 bytes) 9/10/2007
Microsoft Corporation
c:\windows\system32\comsvcs.dll
wmisvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
227.00 KB (232,448 bytes) 9/10/2007
Microsoft Corporation
c:\windows\system32\wbem\wmisvc.dll
sens 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
63.50 KB (65,024 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\sens.dll
browser 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
125.50 KB (128,512 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\browser.dll
netrap 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
26.00 KB (26,624 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\netrap.dll
wbemcore 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
1.24 MB (1,299,968 bytes) 9/10/2007
Microsoft Corporation
c:\windows\system32\wbem\wbemcore.dll
esscli 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
626.50 KB (641,536 bytes) 9/10/2007
Microsoft Corporation
c:\windows\system32\wbem\esscli.dll
wmiutils 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
171.00 KB (175,104 bytes) 9/10/2007
Microsoft Corporation
c:\windows\system32\wbem\wmiutils.dll
repdrvfs 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
353.50 KB (361,984 bytes) 9/10/2007
Microsoft Corporation
c:\windows\system32\wbem\repdrvfs.dll
```

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wmiprvsd 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
743.00 KB (760,832 bytes) 9/10/2007
Microsoft Corporation
c:\windows\system32\wbem\wmiprvsd.dll
wbemess 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
532.50 KB (545,280 bytes) 9/10/2007
Microsoft Corporation
c:\windows\system32\wbem\wbemess.dll
ncprov 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
73.00 KB (74,752 bytes) 9/10/2007
Microsoft Corporation
c:\windows\system32\wbem\ncprov.dll
netman 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
457.00 KB (467,968 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\netman.dll
mprapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
154.50 KB (158,208 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\mprapi.dll
activeds 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
348.50 KB (356,864 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\activeds.dll
adslrpc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
240.50 KB (246,272 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\adslrpc.dll
credui 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
202.00 KB (206,848 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\credui.dll
rtutils 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
66.00 KB (67,584 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\rtutils.dll
netshell 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
2.32 MB (2,437,120 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\netshell.dll
clusapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
127.00 KB (130,048 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\clusapi.dll
rasapi32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
410.00 KB (419,840 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\rasapi32.dll
rasman 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
95.50 KB (97,792 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\rasman.dll
tapi32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
332.50 KB (340,480 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\tapi32.dll
wininet 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
1.13 MB (1,186,304 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\wininet.dll
wzcsapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
49.00 KB (50,176 bytes) 3/24/2005
```

11:35 AM Microsoft Corporation
c:\windows\system32\wzcsapi.dll
wzcsvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
492.00 KB (503,808 bytes) 3/24/2005

11:35 AM Microsoft Corporation
c:\windows\system32\wzcsvc.dll
wmi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
5.50 KB (5,632 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\wmi.dll
dhcpcsvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
219.00 KB (224,256 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\dhcpcsvc.dll
rasdlg 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
859.50 KB (880,128 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\rasdlg.dll
ntlsapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
11.00 KB (11,264 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\ntlsapi.dll
ersvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
31.00 KB (31,744 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\ersvc.dll
sqlwriter 2005.090.3042.00 152.36 KB (156,016 bytes)
2/10/2007 9:03 AM Microsoft Corporation
c:\program files\microsoft sql
server\90\shared\sqlwriter.exe
msvcr80 8.00.50727.42 803.50 KB (822,784 bytes)
9/22/2005 11:26 PM Microsoft Corporation
c:\windows\winsxs\amd64_microsoft.vc80.crt_
1fc8b3b9a1e18e3b_8.0.50727.42_x-
ww_3fea50ad\msvcr80.dll
sqlwss 2005.090.3042.00 365.86 KB (374,640 bytes)
2/10/2007 9:03 AM Microsoft Corporation
c:\program files\microsoft sql
server\90\shared\sqlwss.dll
msvcp80 8.00.50727.42 1.05 MB (1,097,728 bytes)
9/22/2005 11:28 PM Microsoft Corporation
c:\windows\winsxs\amd64_microsoft.vc80.crt_
1fc8b3b9a1e18e3b_8.0.50727.42_x-
ww_3fea50ad\msvcp80.dll
termsrv 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
354.50 KB (363,008 bytes) 9/10/2007

4:58 PM Microsoft Corporation
c:\windows\system32\termsrv.dll
icaapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
27.50 KB (28,160 bytes) 9/10/2007

4:58 PM Microsoft Corporation
c:\windows\system32\icaapi.dll
mstlsapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
187.00 KB (191,488 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\mstlsapi.dll
rdpwsx 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
170.13 KB (174,216 bytes) 9/10/2007

4:58 PM Microsoft Corporation
c:\windows\system32\rdpwsx.dll
rdpsnd 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
25.00 KB (25,600 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\rdpsnd.dll
scredir 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
38.50 KB (39,424 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\scredir.dll
cscui 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
441.00 KB (451,584 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\cscui.dll
msacm32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
31.00 KB (31,744 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\msacm32.drv
msacm32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
112.00 KB (114,688 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\msacm32.dll
imaadp32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
24.00 KB (24,576 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\imaadp32.acm
msadp32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
23.50 KB (24,064 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\msadp32.acm
msg711 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
13.50 KB (13,824 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\msg711.acm
msgsm32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
34.50 KB (35,328 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\msgsm32.acm
tssoft32 1.01 13.50 KB (13,824 bytes)
11/30/2005 6:00 AM DSP GROUP, INC.
c:\windows\system32\tssoft32.acm
tsd32 1.03 24.50 KB (25,088 bytes)
11/30/2005 6:00 AM DSP GROUP, INC.
c:\windows\system32\tsd32.dll
rdpclip 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
99.00 KB (101,376 bytes) 9/10/2007

4:58 PM Microsoft Corporation
c:\windows\system32\rdpclip.exe
wsock32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
24.50 KB (25,088 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\wsock32.dll
urlmon 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
1.02 MB (1,074,176 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\urlmon.dll
explorer 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
1.30 MB (1,364,480 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\explorer.exe
browseui 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
1.53 MB (1,601,536 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\browseui.dll
shdocvw 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
2.30 MB (2,416,128 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\shdocvw.dll
cryptui 5.131.3790.1830 (srv03_spi_rtm.050324-1447)
795.50 KB (722,432 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\cryptui.dll
themeui 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
530.50 KB (543,232 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\themeui.dll
msimg32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
6.50 KB (6,656 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\msimg32.dll
linkinfo 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
30.00 KB (30,720 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\linkinfo.dll
ntshrui 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
184.00 KB (188,416 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\ntshrui.dll
webcheck 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
439.00 KB (449,536 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\webcheck.dll
stobject 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
142.50 KB (145,920 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\stobject.dll
batmeter 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
41.50 KB (42,496 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\batmeter.dll
powrprof 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
32.50 KB (33,280 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\powrprof.dll
drprov 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
24.00 KB (24,576 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\drprov.dll
ntlanman 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
71.50 KB (73,216 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\ntlanman.dll
netui0 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
130.00 KB (133,120 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\netui0.dll
netui1 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
338.50 KB (346,624 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\netui1.dll
davclnt 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
38.00 KB (38,912 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\davclnt.dll
browseui 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
63.00 KB (64,512 bytes) 11/30/2005

6:00 AM Microsoft Corporation
c:\windows\system32\browseui.dll

```

shdoclc 6.00.3790.1830 (srv03_sp1_rtm.050324-1447)
589.50 KB (603,648 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\shdoclc.dll
mydocs 6.00.3790.1830 (srv03_sp1_rtm.050324-1447)
101.00 KB (103,424 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\mydocs.dll
zipfldr 6.00.3790.1830 (srv03_sp1_rtm.050324-1447)
449.50 KB (460,288 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\zipfldr.dll
actxprxy 6.00.3790.1830 (srv03_sp1_rtm.050324-1447)
220.50 KB (225,792 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\actxprxy.dll
cpqteam 8.70.0.15 81.50 KB (83,456 bytes)
6/28/2007 1:10 PM Hewlett-Packard Company
c:\program files\hp\ncu\cpqteam.exe
cmd 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
538.50 KB (551,424 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\cmd.exe
sqlservr 2005.090.3042.00 36.72 MB (38,507,376
bytes) 2/10/2007 9:03 AM Microsoft Corporation
c:\program files\microsoft sql
server\mssql.1\mssql\bin\sqlservr.exe
opends60 2005.090.1399.00 22.21 KB (22,744 bytes)
10/14/2005 2:31 PM Microsoft Corporation
c:\program files\microsoft sql
server\mssql.1\mssql\bin\opends60.dll
instapi 2005.090.1399.00 40.71 KB (41,688 bytes)
10/14/2005 2:23 PM Microsoft Corporation
c:\program files\microsoft sql
server\90\shared\instapi.dll
sqlevn70 2005.090.3042.00 1.66 MB (1,740,656
bytes) 2/10/2007 9:02 AM Microsoft Corporation
c:\program files\microsoft sql
server\mssql.1\mssql\bin\resources\1033\sqlevn70.rll
sqlos 2005.090.3042.00 17.86 KB (18,288 bytes)
2/10/2007 9:03 AM Microsoft Corporation
c:\program files\microsoft sql
server\mssql.1\mssql\bin\sqlos.dll
mscoree 2.0.50727.42 (RTM.050727-4200)
441.00 KB (451,584 bytes) 9/22/2005
11:37 PM Microsoft Corporation
c:\windows\system32\mscoree.dll
xolehlp 2001.12.4720.1830 (srv03_sp1_rtm.050324-
1447) 10.50 KB (10,752 bytes) 9/10/2007
4:58 PM Microsoft Corporation
c:\windows\system32\xolehlp.dll
msdtcprx 2001.12.4720.1830 (srv03_sp1_rtm.050324-
1447) 805.50 KB (824,832 bytes) 9/10/2007
4:58 PM Microsoft Corporation
c:\windows\system32\msdtcprx.dll
mtxclu 2001.12.4720.1830 (srv03_sp1_rtm.050324-
1447) 141.50 KB (144,896 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\mtxclu.dll
resutils 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
98.50 KB (100,864 bytes) 11/30/2005

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6:00 AM Microsoft Corporation
c:\windows\system32\resutils.dll
winrnr 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
30.00 KB (30,720 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\winrnr.dll
rasadhlp 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
12.00 KB (12,288 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\rasadhlp.dll
security 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
6.00 KB (6,144 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\security.dll
msfte 12.0.6828.0 3.63 MB (3,804,952
bytes) 8/28/2006 4:17 AM Microsoft Corporation
c:\program files\microsoft sql
server\mssql.1\mssql\bin\msfte.dll
dbghelp 6.6.0007.5 (debuggers dbg).051022-1733)
1.27 MB (1,329,520 bytes) 2/10/2007
8:56 AM Microsoft Corporation
c:\program
files\microsoft sql server\90\shared\dbghelp.dll
sqlncli 2005.090.3042.00 2.74 MB (2,868,592
bytes) 2/10/2007 9:03 AM Microsoft Corporation
c:\windows\system32\sqlncli.dll
comdlg32 6.00.3790.1830 (srv03_sp1_rtm.050324-1447)
446.50 KB (457,216 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\comdlg32.dll
sqlnclir 2005.090.1399.00 201.21 KB (206,040
bytes) 10/14/2005 2:31 PM Microsoft Corporation
c:\windows\system32\sqlnclir.rll
taskmgr 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
231.00 KB (236,544 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\taskmgr.exe
utildll 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
37.00 KB (37,888 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\utildll.dll
cscript 5.6.0.8827 127.50 KB (130,560
bytes) 11/30/2005 6:00 AM Microsoft Corporation
c:\windows\system32\cscript.exe
imm32 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
208.00 KB (212,992 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\imm32.dll
vbscript 5.6.0.8827 646.50 KB (662,016
bytes) 11/30/2005 6:00 AM Microsoft Corporation
c:\windows\system32\vbscript.dll
scrobj 5.6.0.8827 272.50 KB (279,040
bytes) 11/30/2005 6:00 AM Microsoft Corporation
c:\windows\system32\scrobj.dll
wshom 5.6.0.8827 121.50 KB (124,416
bytes) 11/30/2005 6:00 AM Microsoft Corporation
c:\windows\system32\wshom.ocx
scrrun 5.6.0.8827 262.00 KB (268,288
bytes) 11/30/2005 6:00 AM Microsoft Corporation
c:\windows\system32\scrrun.dll
mfc42 6.50.9146.0 1.40 MB (1,470,464
bytes) 11/30/2005 6:00 AM Microsoft Corporation
c:\windows\system32\mfc42.dll

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osql 2005.090.3042.00 83.86 KB (85,872 bytes)
2/10/2007 9:02 AM Microsoft Corporation
c:\program files\microsoft sql
server\90\tools\bin\osql.exe
odbc32 3.526.1830.0 (srv03_sp1_rtm.050324-1447)
408.00 KB (417,792 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\odbc32.dll
odbcint 3.526.1830.0 (srv03_sp1_rtm.050324-1447)
96.00 KB (98,304 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\odbcint.dll
osql 2005.090.1399.00 15.21 KB (15,576 bytes)
10/14/2005 2:31 PM Microsoft Corporation
c:\program files\microsoft sql
server\90\tools\bin\resources\1033\osql.rll
helpctr 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
1.30 MB (1,363,456 bytes) 9/10/2007
5:00 PM Microsoft Corporation
c:\windows\pchealth\helpctr\binaries\helpctr
r.exe
hcappres 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
7.50 KB (7,680 bytes) 9/10/2007
5:00 PM Microsoft Corporation
c:\windows\pchealth\helpctr\binaries\hcappr
es.dll
itss 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
208.00 KB (212,992 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\itss.dll
msxml3 8.70.1104.0 2.04 MB (2,141,184
bytes) 11/30/2005 6:00 AM Microsoft Corporation
c:\windows\system32\msxml3.dll
pchshell 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
155.00 KB (158,720 bytes) 9/10/2007
5:00 PM Microsoft Corporation
c:\windows\pchealth\helpctr\binaries\pchshe
ll.dll
mlang 6.00.3790.1830 (srv03_sp1_rtm.050324-1447)
686.00 KB (702,464 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\mlang.dll
mshtml 6.00.3790.1830 (srv03_sp1_rtm.050324-1447)
5.65 MB (5,928,448 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\mshtml.dll
msls31 3.10.349.0 357.00 KB (365,568
bytes) 11/30/2005 6:00 AM Microsoft Corporation
c:\windows\system32\msls31.dll
msimtf 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
380.50 KB (389,632 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\msimtf.dll
msctf 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
617.50 KB (632,320 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\msctf.dll
jscript 5.6.0.8827 974.50 KB (997,888
bytes) 11/30/2005 6:00 AM Microsoft Corporation
c:\windows\system32\jscript.dll
mshtml 6.00.3790.1830 (srv03_sp1_rtm.050324-1447)
905.50 KB (927,232 bytes) 11/30/2005

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6:00 AM Microsoft Corporation
c:\windows\system32\mshtml.dll
msinfo 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
636.00 KB (651,264 bytes) 9/10/2007
5:00 PM Microsoft Corporation
c:\windows\pchealth\helpctr\binaries\msinfo
.dll
mfc42u 6.50.9146.0 1.39 MB (1,462,272
bytes) 11/30/2005 6:00 AM Microsoft Corporation
c:\windows\system32\mfc42u.dll
riched32 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
7.00 KB (7,168 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\riched32.dll
riched20 5.31.23.1224 1.10 MB (1,157,120
bytes) 11/30/2005 6:00 AM Microsoft Corporation
c:\windows\system32\riched20.dll
helpsvc 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
1.52 MB (1,591,296 bytes) 9/10/2007
5:00 PM Microsoft Corporation
c:\windows\pchealth\helpctr\binaries\helpsv
c.exe

```

[Services]

Display Name	Name	State	Start Mode
Service Type	Path	Error Control	
Start Name	Tag ID		
Application Experience Lookup Service	AeLookupSvc		
Running	Auto	Share Process	
c:\windows\system32\svchost.exe -k netsvcs			
Normal	LocalSystem	0	
Alerter	Stopped	Disabled	Share Process
c:\windows\system32\svchost.exe -k			
localservice	Normal	NT	
AUTHORITY\LocalService	0		
Application Layer Gateway Service	ALG		
Stopped	Manual	Own Process	
c:\windows\system32\alg.exe	Normal	NT	
AUTHORITY\LocalService	0		
Application Management	AppMgmt	Stopped	
Manual	Share Process		
c:\windows\system32\svchost.exe -k netsvcs			
Normal	LocalSystem	0	
ASP.NET State Service	aspnet_state		
Stopped	Manual	Own Process	
c:\windows\microsoft.net\framework64\v2.0.5			
0727\aspnet_state.exe	Normal	NT	
AUTHORITY\NetworkService	0		
Windows Audio	AudioSrv	Stopped	Disabled
Share Process			
c:\windows\system32\svchost.exe -k netsvcs			
Normal	LocalSystem	0	
Background Intelligent Transfer Service	BITS		
Stopped	Manual	Share Process	
c:\windows\system32\svchost.exe -k netsvcs			
Normal	LocalSystem	0	
Computer Browser	Browser	Running	Auto
Share Process			
c:\windows\system32\svchost.exe -k netsvcs			
Normal	LocalSystem	0	
Indexing Service	CiSvc	Stopped	Disabled
Share Process			

```

c:\windows\system32\cisvc.exe Normal
LocalSystem 0
ClipBook ClipSrv Stopped Disabled Own Process
c:\windows\system32\clipsrv.exe
Normal LocalSystem 0
.NET Runtime Optimization Service v2.0.50727_X86
clr_optimization_v2.0.50727_32
Stopped Manual Own Process
c:\windows\microsoft.net\framework\v2.0.507
27\mscorsvw.exe Ignore LocalSystem 0
.NET Runtime Optimization Service v2.0.50727_x64
clr_optimization_v2.0.50727_64
Stopped Manual Own Process
c:\windows\microsoft.net\framework64\v2.0.5
0727\mscorsvw.exe Ignore LocalSystem 0
COM+ System Application COMSysApp Stopped
Manual Own Process
c:\windows\system32\dlhhost.exe
/processid:{02d4b3f1-fd88-11d1-960d-00805fc79235}
Normal LocalSystem 0
Cryptographic Services CryptSvc Running
Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
DCOM Server Process Launcher DcomLaunch
Running Auto Share Process
c:\windows\system32\svchost.exe -k
dcomlaunch Normal LocalSystem 0
Distributed File System Dfs Stopped
Manual Own Process
c:\windows\system32\dfssvc.exe
Normal LocalSystem 0
DHCP Client Dhcp Stopped Disabled
Share Process
c:\windows\system32\svchost.exe -k
networkservice Normal NT
AUTHORITY\NetworkService 0
Logical Disk Manager Administrative Service
dmadmin Stopped Manual Share Process
c:\windows\system32\dmadmin.exe /com
Normal LocalSystem 0
Logical Disk Manager dmserver Running
Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
DNS Client Dnscache Stopped Disabled
Share Process
c:\windows\system32\svchost.exe -k
networkservice Normal NT
AUTHORITY\NetworkService 0
Error Reporting Service ERSvc Running
Auto Share Process
c:\windows\system32\svchost.exe -k winerr
Ignore LocalSystem 0
Event Log Eventlog Running Auto Share Process
c:\windows\system32\services.exe
Normal LocalSystem 0
COM+ Event System EventSystem Running
Auto Share Process

```

```

c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Help and Support helpsvc Running Auto
Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Human Interface Device Access HidServ Stopped
Disabled Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
HTTP SSL HTTPFilter Stopped Manual
Share Process
c:\windows\system32\lsass.exe Normal
LocalSystem 0
IAS Jet Database Access IASJet Stopped
Manual Share Process
c:\windows\syswow64\svchost.exe -k iasjet
Normal LocalSystem 0
IMAPI CD-Burning COM Service ImapiService
Stopped Disabled Own Process
c:\windows\system32\imapi.exe Normal
LocalSystem 0
Intersite Messaging IsmServ Stopped Disabled Own
Process c:\windows\system32\ismserv.exe
Normal LocalSystem 0
Kerberos Key Distribution Center kdc
Stopped Disabled Share Process
c:\windows\system32\lsass.exe Normal
LocalSystem 0
Server lanmanserver Running Auto
Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Workstation lanmanworkstation Running
Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
License Logging LicenseService Stopped
Disabled Own Process
c:\windows\system32\llssrv.exe
Normal NT AUTHORITY\NetworkService 0
TCP/IP NetBIOS Helper LmHosts Stopped
Disabled 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
SQL Server FullText Search (MSSQLSERVER)
msftesql Stopped Disabled Own Process
"c:\program files\microsoft sql
server\mssql.1\mssql\bin\msftesql.exe" -s:mssql.1 -

```

```

f:\mssqlserver      Normal    LocalSystem      0
Windows Installer  MSIIServer Stopped  Manual
Share Process
c:\windows\system32\msiexec.exe /v
Normal LocalSystem 0
SQL Server (MSSQLSERVER) MSSQLSERVER
Stopped Manual Own Process
"c:\program files\microsoft sql
server\mssql.1\mssql\bin\sqlservr.exe" -smssqlserver
Normal LocalSystem 0
SQL Server Active Directory Helper
MSSQLServerADHelper Stopped Disabled Own
Process "c:\program files\microsoft sql
server\90\shared\sqladhlp90.exe" Normal NT
AUTHORITY\NetworkService 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
Stopped Disabled 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
Office Source Engine ose Stopped
Manual Own Process "c:\program
files (x86)\common files\microsoft shared\source
engine\ose.exe" Normal LocalSystem 0
Plug and Play PlugPlay Running Auto
Share Process
c:\windows\system32\services.exe
Normal LocalSystem 0
IPSEC Services PolicyAgent Stopped
Disabled 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
Disabled Share Process
c:\windows\system32\svchost.exe -k regsvc
Normal NT AUTHORITY\LocalService 0
Remote Procedure Call (RPC) Locator RpcLocator
Stopped Manual Own Process
c:\windows\system32\locator.exe
Normal NT AUTHORITY\NetworkService 0
Remote Procedure Call (RPC) RpcSs Running
Auto Share Process
c:\windows\system32\svchost.exe -k rpcss
Normal NT AUTHORITY\NetworkService 0
Resultant Set of Policy Provider RSOPProv
Stopped Manual Share Process
c:\windows\system32\rsopprov.exe
Normal LocalSystem 0
Special Administration Console Helper sacsrv
Stopped Manual Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Security Accounts Manager SamSs Running
Auto Share Process
c:\windows\system32\lsass.exe Normal
LocalSystem 0
Smart Card SCardSvr Stopped Manual
Share Process
c:\windows\system32\scardsvr.exe
Ignore NT AUTHORITY\LocalService 0
Task Scheduler Schedule Stopped Disabled
Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Secondary Logon seclogon Stopped Disabled
Share Process
c:\windows\system32\svchost.exe -k netsvcs
Ignore LocalSystem 0
System Event Notification SENS Running
Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Windows Firewall/Internet Connection Sharing (ICS)
SharedAccess Stopped Disabled
Share Process

```

```

c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Shell Hardware Detection ShellHWDetection
Running Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs
Ignore LocalSystem 0
Print Spooler Spooler Stopped Disabled Own
Process c:\windows\system32\spoolsv.exe
Normal LocalSystem 0
SQL Server Browser SQLBrowser Stopped
Disabled Own Process "c:\program
files (x86)\microsoft sql
server\90\shared\sqlbrowser.exe" Normal
LocalSystem 0
SQL Server Agent (MSSQLSERVER)
SQLSERVERAGENT Stopped Manual Own
Process "c:\program files\microsoft sql
server\mssql.1\mssql\bin\sqlagent90.exe" -i
mssqlserver Normal LocalSystem 0
SQL Server VSS Writer SQLWriter Running
Auto Own Process "c:\program
files\microsoft sql server\90\shared\sqlwriter.exe"
Normal LocalSystem 0
Windows Image Acquisition (WIA) stisvc
Stopped Disabled Share Process
c:\windows\system32\svchost.exe -k imgsvc
Normal NT AUTHORITY\LocalService 0
Microsoft Software Shadow Copy Provider swprv
Stopped Manual Own Process
c:\windows\system32\svchost.exe -k swprv
Normal LocalSystem 0
Performance Logs and Alerts SysmonLog Stopped
Auto Own Process
c:\windows\system32\smlogsvc.exe
Normal NT Authority\NetworkService 0
Telephony Tapisrv Stopped Manual Share Process
c:\windows\system32\svchost.exe -k tapisrv
Normal LocalSystem 0
Terminal Services TermService Running
Manual Share Process
c:\windows\system32\svchost.exe -k termsvcs
Normal LocalSystem 0
Themes Themes Stopped Disabled Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Telnet TlntSvr Stopped Disabled Own Process
c:\windows\system32\tlntsvr.exe
Normal NT AUTHORITY\LocalService 0
Distributed Link Tracking Server TrkSvr
Stopped Disabled Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Distributed Link Tracking Client TrkWks
Stopped Disabled Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Terminal Services Session Directory Tssdis
Stopped Disabled Own Process

```

```

c:\windows\system32\tssdis.exe
Normal LocalSystem 0
Windows User Mode Driver Framework UMWdf
Stopped Manual Own Process
c:\windows\system32\wdmfmgr.exe
Normal NT AUTHORITY\LocalService 0

Uninterruptible Power Supply UPS Stopped
Manual Own Process
c:\windows\system32\ups.exe Normal NT
AUTHORITY\LocalService 0
Virtual Disk Service vds Stopped
Manual Own Process
c:\windows\system32\vds.exe Normal
LocalSystem 0
Volume Shadow Copy VSS Stopped Manual Own
Process c:\windows\system32\vssvc.exe Normal
LocalSystem 0
Windows Time W32Time Running Auto
Share Process
c:\windows\system32\svchost.exe -k
localservice Normal NT
AUTHORITY\LocalService 0
WebClient WebClient Stopped Disabled Share Process
c:\windows\system32\svchost.exe -k
localservice Normal NT
AUTHORITY\LocalService 0
WinHTTP Web Proxy Auto-Discovery Service
WinHttpAutoProxySvc Stopped Manual
Share Process
c:\windows\system32\svchost.exe -k
localservice Normal NT
AUTHORITY\LocalService 0
Windows Management Instrumentation winmgmt
Running Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs
Ignore LocalSystem 0
Portable Media Serial Number Service WmdmPmsN
Stopped Manual Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Windows Management Instrumentation Driver Extensions
Wmi Stopped Manual Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
WMI Performance Adapter WmiApSrv Stopped
Manual Own Process
c:\windows\system32\wbem\wmiapsrv.exe
Normal LocalSystem 0
Automatic Updates wuauerv Stopped Disabled
Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Wireless Configuration WZCSVC Stopped
Disabled Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Network Provisioning Service xmlprov Stopped
Manual Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0

```

[Program Groups]

```

Group Name Name User Name
Accessories Default User:Accessories
Default User
Accessories\Accessibility Default
User:Accessories\Accessibility Default User

Accessories\Entertainment Default
User:Accessories\Entertainment Default User

Startup Default User:Startup Default User

Accessories All Users:Accessories All
Users
Accessories\Accessibility All
Users:Accessories\Accessibility All Users
Accessories\Communications All
Users:Accessories\Communications All Users
Accessories\Entertainment All
Users:Accessories\Entertainment All Users
Accessories\System Tools All
Users:Accessories\System Tools All Users
Administrative Tools All
Users:Administrative Tools All Users
HP System Tools All Users:HP System Tools All
Users
HP System Tools\HP Array Configuration Utility All
Users:HP System Tools\HP Array Configuration Utility All Users
HP System Tools\HP Array Configuration Utility CLI All Users:HP System Tools\HP Array Configuration Utility CLI All Users
HP System Tools\HP Array Diagnostic Utility All
Users:HP System Tools\HP Array Diagnostic Utility All Users
Microsoft SQL Server 2005 All Users:Microsoft SQL
Server 2005 All Users
Microsoft SQL Server 2005\Analysis Services All
Users:Microsoft SQL Server 2005\Analysis Services All Users
Microsoft SQL Server 2005\Configuration Tools All
Users:Microsoft SQL Server 2005\Configuration Tools All Users
Microsoft SQL Server 2005\Documentation and Tutorials All Users:Microsoft SQL Server
2005\Documentation and Tutorials All Users
Microsoft SQL Server 2005\Documentation and
Tutorials\Tutorials All Users:Microsoft SQL Server
2005\Documentation and Tutorials\Tutorials All Users
Microsoft SQL Server 2005\Performance Tools All
Users:Microsoft SQL Server 2005\Performance Tools All Users
Microsoft Visual Studio 2005 All Users:Microsoft
Visual Studio 2005 All Users
Microsoft Visual Studio 2005\Visual Studio Tools All
Users:Microsoft Visual Studio 2005\Visual Studio
Tools 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 B2\Administrator:Accessories
B2\Administrator
Accessories\Accessibility
B2\Administrator:Accessories\Accessibility
B2\Administrator
Accessories\Entertainment
B2\Administrator:Accessories\Entertainment
B2\Administrator
Administrative Tools
B2\Administrator:Administrative Tools
B2\Administrator
AMD System Analysis Tools B2\Administrator:AMD
System Analysis Tools B2\Administrator
AMD System Analysis Tools\CpuSpy
B2\Administrator:AMD System Analysis
Tools\CpuSpy B2\Administrator
AMD System Analysis Tools\DebugExec
B2\Administrator:AMD System Analysis
Tools\DebugExec B2\Administrator
AMD System Analysis Tools\HotkeyEvent
B2\Administrator:AMD System Analysis
Tools\HotkeyEvent B2\Administrator
AMD System Analysis Tools\MultiEvent
B2\Administrator:AMD System Analysis
Tools\MultiEvent B2\Administrator
AMD System Analysis Tools\MultiProbe
B2\Administrator:AMD System Analysis
Tools\MultiProbe B2\Administrator
AMD System Analysis Tools\SmartTrigger
B2\Administrator:AMD System Analysis
Tools\SmartTrigger B2\Administrator
Iometer 2006.07.27 B2\Administrator:Iometer
2006.07.27 B2\Administrator
Startup B2\Administrator:Startup
B2\Administrator

[Startup Programs]

Program Command User Name Location
desktop desktop.ini NT AUTHORITY\SYSTEM
Startup
desktop desktop.ini B2\Administrator
Startup
desktop desktop.ini .DEFAULT Startup
desktop desktop.ini All Users Common
Startup
CPQTEAM "c:\program files\hp\ncu\cpqteam.exe" All
Users
HKLM\SOFTWARE\Microsoft\Windows\CurrentVers
ion\Run

[OLE Registration]

Object Local Server
Sound (OLE2) sndrec32.exe

```

Media Clip mplay32.exe
 Video Clip mplay32.exe /avi
 MIDI Sequence mplay32.exe /mid
 Sound Not Available
 Media Clip Not Available
 WordPad Document "%programfiles%\windows
 nt\accessories\wordpad.exe"
 Bitmap Image mspaint.exe

[Windows Error Reporting]

Time	Type	Details
------	------	---------

[Internet Settings]

[Internet Explorer]

[Following are sub-categories of this main category
]
 [Summary]

Item	Value
Version	6.0.3790.1830
Build	63790.1830
Application Path	C:\Program Files\Internet Explorer
Language	English (United States)
Active Printer	Not Available

Cipher Strength	128-bit
Content Advisor	Disabled
IEAK Install	No

[File Versions]

File	Version	Size	Date	Path
actxprxy.dll	6.0.3790.1830	221 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
advpack.dll	6.0.3790.1830	146 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
asctrls.ocx	6.0.3790.1830	147 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
browseic.dll	6.0.3790.1830	63 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
browseui.dll	6.0.3790.1830	1,564 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
cdfview.dll	6.0.3790.1830	216 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation

comctl32.dll	5.82.3790.1830	935 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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dxttrans.dll	6.3.3790.1830	320 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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dxtmsft.dll	6.3.3790.1830	549 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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iecont.dll	<File Missing>	Not Available	Not Available	Not Available
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iecontlc.dll	<File Missing>	Not Available	Not Available	Not Available
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iedkcs32.dll	16.0.3790.1830	417 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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iepeers.dll	6.0.3790.1830	361 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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iesetup.dll	6.0.3790.1830	71 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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ieuinit.inf	Not Available	24 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Not Available
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ieexplore.exe	6.0.3790.1830	94 KB	11/30/2005 7:00:00 AM	C:\Program Files\Internet Explorer Microsoft Corporation
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imgutil.dll	6.0.3790.1830	61 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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inetcppl.cpl	6.0.3790.1830	428 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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inetcppl.dll	6.0.3790.1830	110 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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inseng.dll	6.0.3790.1830	147 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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mlang.dll	6.0.3790.1830	686 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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msencode.dll	<File Missing>	Not Available	Not Available	Not Available
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mshta.exe	6.0.3790.1830	38 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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mshtml.dll	6.0.3790.1830	5,790 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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mshtml.tlb	6.0.3790.1830	1,320 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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mshtml.dll	6.0.3790.1830	906 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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mshtml.dll	6.0.3790.1830	56 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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msident.dll	6.0.3790.1830	69 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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msidntld.dll	6.0.3790.1830	16 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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msieftp.dll	6.0.3790.1830	369 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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msrating.dll	6.0.3790.1830	240 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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mstime.dll	6.0.3790.1830	878 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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occache.dll	6.0.3790.1830	126 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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proctexe.ocx	<File Missing>	Not Available	Not Available	Not Available
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sendmail.dll	6.0.3790.1830	64 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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shdoclc.dll	6.0.3790.1830	590 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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shdocvw.dll	6.0.3790.1830	2,360 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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shfolder.dll	6.0.3790.1830	34 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
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shlwapi.dll	6.0.3790.1830	607 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
-------------	---------------	--------	-----------------------	---

tdc.ocx 1.3.0.3130 91 KB 11/30/2005 7:00:00 AM C:\WINDOWS\system32 Microsoft Corporation
url.dll 6.0.3790.1830 40 KB 11/30/2005 7:00:00 AM C:\WINDOWS\system32 Microsoft Corporation
urlmon.dll 6.0.3790.1830 1,049 KB 11/30/2005 7:00:00 AM C:\WINDOWS\system32 Microsoft Corporation
webcheck.dll 6.0.3790.1830 439 KB 11/30/2005 7:00:00 AM C:\WINDOWS\system32 Microsoft Corporation
wininet.dll 6.0.3790.1830 1,159 KB 11/30/2005 7:00:00 AM C:\WINDOWS\system32 Microsoft Corporation

[Connectivity]

Item	Value
Connection Preference	Never dial

LAN Settings

AutoConfigProxy wininet.dll
AutoProxyDetectMode Disabled
AutoConfigURL
Proxy Disabled
ProxyServer
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	Not Available
Available Disk Space	Not Available
Maximum Cache Size	Not Available
Available Cache Size	Not Available

[List of Objects]

Program File	Status	CodeBase
No cached object information available		

[Content]

[Following are sub-categories of this main category]
[Summary]

Item	Value
Content Advisor	Disabled

[Personal Certificates]

Issued To Issued By Validity Signature Algorithm
No personal certificate information available

[Other People Certificates]

Issued To Issued By Validity Signature Algorithm
No other people certificate information available

[Publishers]

Name
No publisher information available

[Security]

Zone	Security Level
My Computer	Custom
Local intranet	Custom
Trusted sites	Custom
Internet High	
Restricted sites	Custom

Server Bus Performance Driver Registry Parameters

Key Name: HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\hpqcissb
Class Name: <NO CLASS>
Last Write Time: 7/2/2008 - 8:16 AM

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

Value 1
Name: Start
Type: REG_DWORD
Data: 0

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

Value 3
Name: Tag
Type: REG_DWORD
Data: 0x102

Value 4
Name: ImagePath
Type: REG_EXPAND_SZ
Data: system32\DRIVERS\hpqcissb.sys

Value 5
Name: DisplayName
Type: REG_SZ
Data: Smart Array Controllers Non-Miniport Bus Driver

Value 6
Name: Group
Type: REG_SZ
Data: port

Key Name: HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\hpqcissb\Parameters
Class Name: <NO CLASS>
Last Write Time: 6/30/2008 - 9:59 AM

Value 0
Name: CompletionMode
Type: REG_DWORD
Data: 0x2

Value 1
Name: CostTimerRate
Type: REG_DWORD
Data: 0x2

Key Name: HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\hpqcissb\Parameters\Controller7
Class Name: <NO CLASS>
Last Write Time: 2/25/2008 - 10:44 AM

Value 0
Name: CompletionMode
Type: REG_DWORD
Data: 0x1

Key Name: HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\hpqcissb\Security
Class Name: <NO CLASS>
Last Write Time: 9/13/2007 - 10:30 AM

Value 0
Name: Security
Type: REG_BINARY
Data: 00000000 01 00 14 80 b8 00 00 00 - c4 00 00 00 14 00 00 00A.....
00000010 30 00 00 00 02 00 1c 00 - 01 00 00 00 02 80 14 00 0.....
00000020 ff 01 0f 00 01 01 00 00 - 00 00 00 01 00 00 00 00 y.....
00000030 02 00 88 00 06 00 00 00 - 00 00 14 00 fd 01 02 00Y...
00000040 01 01 00 00 00 00 00 05 - 12 00 00 00 00 00 18 00
00 18 00


```

00000050 ff 01 0f 00 01 02 00 00 - 00 00 00 05 20
00 00 00 y.....
00000060 20 02 00 00 00 00 14 00 - 8d 01 02 00 01
01 00 00 .....
00000070 00 00 00 05 04 00 00 00 - 00 00 14 00 8d
01 02 00 .....
00000080 01 01 00 00 00 00 00 05 - 06 00 00 00 00
00 14 00 .....
00000090 00 01 00 00 01 01 00 00 - 00 00 00 05 0b
00 00 00 .....
000000a0 00 00 18 00 fd 01 02 00 - 01 02 00 00 00
00 00 05 ....y.....
000000b0 20 00 00 00 23 02 00 00 - 01 01 00 00 00
00 00 05 ...#.....
000000c0 12 00 00 00 01 01 00 00 - 00 00 00 05 12
00 00 00 .....

```

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\hpqcissb\Enum
Class Name: <NO CLASS>
Last Write Time: 7/2/2008 - 8:16 AM
Value 0
Name: 0
Type: REG_SZ
Data: PCI\VEN_103C&DEV_3230&SUBSYS_3237103C&REV_03\4&22febb0d&0&0060

Value 1
Name: Count
Type: REG_DWORD
Data: 0x8

Value 2
Name: NextInstance
Type: REG_DWORD
Data: 0x8

Value 3
Name: 1
Type: REG_SZ
Data: PCI\VEN_103C&DEV_3230&SUBSYS_3223103C&REV_03\4&b98f5c4&0&0068

Value 4
Name: 2
Type: REG_SZ
Data: PCI\VEN_103C&DEV_3230&SUBSYS_3223103C&REV_03\4&13700ced&0&0070

Value 5
Name: 3
Type: REG_SZ
Data: PCI\VEN_103C&DEV_3230&SUBSYS_3223103C&REV_03\4&300c8240&0&0058

Value 6

Name: 4
Type: REG_SZ
Data: PCI\VEN_103C&DEV_3230&SUBSYS_3223103C&REV_03\4&137aba ea&0&0060

Value 7
Name: 5
Type: REG_SZ
Data: PCI\VEN_103C&DEV_3230&SUBSYS_3223103C&REV_03\4&1b1cf5e7&0&0068

Value 8
Name: 6
Type: REG_SZ
Data: PCI\VEN_103C&DEV_3230&SUBSYS_3223103C&REV_03\4&3ec0cca&0&0070

Value 9
Name: 7
Type: REG_SZ
Data: PCI\VEN_103C&DEV_3220&SUBSYS_3225103C&REV_00\4&24cf26e8&0&1088

Server Disk Device Performance Driver Registry Parameters

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\hpqcissd
Class Name: <NO CLASS>
Last Write Time: 7/2/2008 - 8:16 AM

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

Value 1
Name: Start
Type: REG_DWORD
Data: 0

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

Value 3
Name: Tag
Type: REG_DWORD
Data: 0x102

Value 4
Name: ImagePath
Type: REG_EXPAND_SZ
Data: system32\DRIVERS\hpqcissd.sys

Value 5
Name: DisplayName
Type: REG_SZ
Data: Smart Array Controllers Non-Miniport Disk Driver

Value 6
Name: Group
Type: REG_SZ
Data: Primary Disk

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\hpqcissd\Security
Class Name: <NO CLASS>
Last Write Time: 9/13/2007 - 10:31 AM

Value 0
Name: Security
Type: REG_BINARY
Data:
00000000 01 00 14 80 b8 00 00 00 - c4 00 00 00 14
00 00 00Ä.....
00000010 30 00 00 00 02 00 1c 00 - 01 00 00 00 02
80 14 00 0.....
00000020 ff 01 0f 00 01 01 00 00 - 00 00 00 01 00
00 00 00 y.....
00000030 02 00 88 00 06 00 00 00 - 00 00 14 00 fd
01 02 00y...
00000040 01 01 00 00 00 00 00 05 - 12 00 00 00 00
00 18 00
00000050 ff 01 0f 00 01 02 00 00 - 00 00 00 05 20
00 00 00 y.....
00000060 20 02 00 00 00 00 14 00 - 8d 01 02 00 01
01 00 00
00000070 00 00 00 05 04 00 00 00 - 00 00 14 00 8d
01 02 00
00000080 01 01 00 00 00 00 00 05 - 06 00 00 00 00
00 14 00
00000090 00 01 00 00 01 01 00 00 - 00 00 00 05 0b
00 00 00
000000a0 00 00 18 00 fd 01 02 00 - 01 02 00 00 00
00 00 05y.....
000000b0 20 00 00 00 23 02 00 00 - 01 01 00 00 00
00 00 05 ...#.....
000000c0 12 00 00 00 01 01 00 00 - 00 00 00 05 12
00 00 00

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\hpqcissd\Enum

Class Name: <NO CLASS>
 Last Write Time: 7/2/2008 - 8:17 AM
 Value 0
 Name: 0
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&17a88d94&0&0000040000000000

Value 1
 Name: Count
 Type: REG_DWORD
 Data: 0x23

Value 2
 Name: NextInstance
 Type: REG_DWORD
 Data: 0x23

Value 3
 Name: 1
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&17a88d94&0&0100004000000000

Value 4
 Name: 2
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&17a88d94&0&0200004000000000

Value 5
 Name: 3
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&17a88d94&0&0300004000000000

Value 6
 Name: 4
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&19f386c&0&0000040000000000

Value 7
 Name: 5
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&19f386c&0&0100004000000000

Value 8
 Name: 6
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&19f386c&0&0200004000000000

Value 9
 Name: 7

Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&19f386c&0&0300004000000000

Value 10
 Name: 8
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&19f386c&0&0400004000000000

Value 11
 Name: 9
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&8b705fb&0&0000040000000000

Value 12
 Name: 10
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&8b705fb&0&0100004000000000

Value 13
 Name: 11
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&8b705fb&0&0200004000000000

Value 14
 Name: 12
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&8b705fb&0&0300004000000000

Value 15
 Name: 13
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&8b705fb&0&0400004000000000

Value 16
 Name: 14
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&1167f8b&0&0000040000000000

Value 17
 Name: 15
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&1167f8b&0&0100004000000000

Value 18
 Name: 16

Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&1167f8b&0&0200004000000000

Value 19
 Name: 17
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&1167f8b&0&0300004000000000

Value 20
 Name: 18
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&1167f8b&0&0400004000000000

Value 21
 Name: 19
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&1cc70be&0&0000040000000000

Value 22
 Name: 20
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&1cc70be&0&0100004000000000

Value 23
 Name: 21
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&1cc70be&0&0200004000000000

Value 24
 Name: 22
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&1cc70be&0&0300004000000000

Value 25
 Name: 23
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&1cc70be&0&0400004000000000

Value 26
 Name: 24
 Type: REG_SZ
 Data: HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&6352f4d&0&0000040000000000

Value 27
 Name: 25

```

Type:          REG_SZ
Data:
HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&6352f4d&0&0
1000040000000000

Value 28
Name:          26
Type:          REG_SZ
Data:
HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&6352f4d&0&0
2000040000000000

Value 29
Name:          27
Type:          REG_SZ
Data:
HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&6352f4d&0&0
3000040000000000

Value 30
Name:          28
Type:          REG_SZ
Data:
HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&6352f4d&0&0
4000040000000000

Value 31
Name:          29
Type:          REG_SZ
Data:
HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&10fc6f5e&0&
0000040000000000

Value 32
Name:          30
Type:          REG_SZ
Data:
HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&10fc6f5e&0&
0100040000000000

Value 33
Name:          31
Type:          REG_SZ
Data:
HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&10fc6f5e&0&
0200040000000000

Value 34
Name:          32
Type:          REG_SZ
Data:
HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&10fc6f5e&0&
0300040000000000

Value 35
Name:          33
Type:          REG_SZ
Data:
HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&10fc6f5e&0&
0400040000000000

Value 36
Name:          34

```

```

Type:          REG_SZ
Data:
HPQCISS\Disk&VEN_HP&PROD_LOGICAL_VOLUME\5&68d3c3a&0&0
0000040000000000

```

Server Network Driver Registry Parameters (NIC 1)

```

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Class
\{4D36E97D-E325-11CE-BFC1-08002BE10318}\0056
Class Name:      <NO CLASS>
Last Write Time: 7/2/2008 - 8:08 AM
Value 0
Name:            create_pdo_flag
Type:            REG_SZ
Data:            4
Value 1
Name:            mtu
Type:            REG_SZ
Data:            1500
Value 2
Name:            InfPath
Type:            REG_SZ
Data:            oem19.inf
Value 3
Name:            InfSection
Type:            REG_SZ
Data:            NC371i_inst_amd64
Value 4
Name:            ProviderName
Type:            REG_SZ
Data:            Hewlett-Packard Company
Value 5
Name:            DriverDateData
Type:            REG_BINARY
Data:            00 c0 ee 23 04 9c c7 01 -
                .Ai#..Ç.
Value 6
Name:            DriverDate
Type:            REG_SZ
Data:            5-22-2007
Value 7
Name:            DriverVersion
Type:            REG_SZ

```

```

Data:          3.4.10.0
Value 8
Name:          MatchingDeviceId
Type:          REG_SZ
Data:          pci\ven_14e4&dev_164a&subsys_1709103c
Value 9
Name:          DriverDesc
Type:          REG_SZ
Data:          HP NC371i Virtual Bus Device
Value 10
Name:          target_ips
Type:          REG_SZ
Data:          1500
Value 11
Name:          optimize_ips
Type:          REG_SZ
Data:          0
Value 12
Name:          enable_fir
Type:          REG_SZ
Data:          0
Value 13
Name:          wol_cap
Type:          REG_SZ
Data:          3
Value 14
Name:          *SpeedDuplex
Type:          REG_SZ
Data:          0
Value 15
Name:          CoInstallers32
Type:          REG_MULTI_SZ
Data:          wdfcoinstaller01005.dll,
WdfCoInstaller
Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Class
\{4D36E97D-E325-11CE-BFC1-08002BE10318}\0056\ndi
Class Name:      <NO CLASS>
Last Write Time: 9/10/2007 - 5:30 PM
Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Class
\{4D36E97D-E325-11CE-BFC1-
08002BE10318}\0056\ndi\params
Class Name:      <NO CLASS>
Last Write Time: 9/11/2007 - 10:57 AM
Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Class
\{4D36E97D-E325-11CE-BFC1-
08002BE10318}\0056\ndi\params\*SpeedDuplex
Class Name:      <NO CLASS>

```

Last Write Time: 9/11/2007 - 10:57 AM

Value 0

Name: paramDesc
Type: REG_SZ
Data: Speed & Duplex

Value 1

Name: default
Type: REG_SZ
Data: 0

Value 2

Name: type
Type: REG_SZ
Data: enum

Key Name:

HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Class
\{4D36E97D-E325-11CE-BFC1-
08002BE10318}\0056\ndi\params*SpeedDuplex\enum

Class Name: <NO CLASS>

Last Write Time: 9/11/2007 - 10:57 AM

Value 0

Name: 0
Type: REG_SZ
Data: Auto

Value 1

Name: 1
Type: REG_SZ
Data: 10 Mb Half

Value 2

Name: 2
Type: REG_SZ
Data: 10 Mb Full

Value 3

Name: 3
Type: REG_SZ
Data: 100 Mb Half

Value 4

Name: 4
Type: REG_SZ
Data: 100 Mb Full

Key Name:

HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Class
\{4D36E97D-E325-11CE-BFC1-
08002BE10318}\0056\ndi\params\mtu

Class Name: <NO CLASS>

Last Write Time: 9/11/2007 - 10:57 AM

Value 0

Name: paramdesc
Type: REG_SZ
Data: Jumbo Mtu

Value 1

Name: default
Type: REG_SZ

Data: 1500

Value 2

Name: type
Type: REG_SZ
Data: dword

Value 3

Name: min
Type: REG_SZ
Data: 1500

Value 4

Name: max
Type: REG_SZ
Data: 9000

Value 5

Name: step
Type: REG_SZ
Data: 500

Value 6

Name: base
Type: REG_SZ
Data: 10

Key Name:

HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Class
\{4D36E97D-E325-11CE-BFC1-
08002BE10318}\0056\ndi\params\wol_cap

Class Name: <NO CLASS>

Last Write Time: 9/11/2007 - 10:57 AM

Value 0

Name: paramDesc
Type: REG_SZ
Data: Wake Up Capabilities

Value 1

Name: default
Type: REG_SZ
Data: 3

Value 2

Name: type
Type: REG_SZ
Data: enum

Value 3

Name: control
Type: REG_SZ
Data: 1

Key Name:

HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Class
\{4D36E97D-E325-11CE-BFC1-
08002BE10318}\0056\ndi\params\wol_cap\enum

Class Name: <NO CLASS>

Last Write Time: 9/11/2007 - 10:57 AM

Value 0

Name: 0

Type: REG_SZ

Data: None

Value 1

Name: 1
Type: REG_SZ
Data: Magic Packet

Value 2

Name: 2
Type: REG_SZ
Data: Wake Up Frame

Value 3

Name: 3
Type: REG_SZ
Data: Both

Server Network Driver Registry Parameters (NIC 2)

Key Name:

HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Class
\{4D36E97D-E325-11CE-BFC1-08002BE10318}\0056

Class Name: <NO CLASS>

Last Write Time: 7/2/2008 - 8:08 AM

Value 0

Name: create_pdo_flag
Type: REG_SZ
Data: 4

Value 1

Name: mtu
Type: REG_SZ
Data: 1500

Value 2

Name: InfPath
Type: REG_SZ
Data: oem19.inf

Value 3

Name: InfSection
Type: REG_SZ
Data: NC371i_inst_amd64

Value 4

Name: ProviderName
Type: REG_SZ
Data: Hewlett-Packard Company

Value 5

Name: DriverDateData

Type: REG_BINARY
 Data: 00 c0 ee 23 04 9c c7 01 - .Ai#..Ç.

Value 6
 Name: DriverDate
 Type: REG_SZ
 Data: 5-22-2007

Value 7
 Name: DriverVersion
 Type: REG_SZ
 Data: 3.4.10.0

Value 8
 Name: MatchingDeviceId
 Type: REG_SZ
 Data: pci\ven_14e4&dev_164a&subsys_1709103c

Value 9
 Name: DriverDesc
 Type: REG_SZ
 Data: HP NC371i Virtual Bus Device

Value 10
 Name: target_ips
 Type: REG_SZ
 Data: 1500

Value 11
 Name: optimize_ips
 Type: REG_SZ
 Data: 0

Value 12
 Name: enable_fir
 Type: REG_SZ
 Data: 0

Value 13
 Name: wol_cap
 Type: REG_SZ
 Data: 3

Value 14
 Name: *SpeedDuplex
 Type: REG_SZ
 Data: 0

Value 15
 Name: CoInstallers32
 Type: REG_MULTI_SZ
 Data: wdfcoinstaller01005.dll, WdfCoInstaller

Key Name:
 HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Class
 \{4D36E97D-E325-11CE-BFC1-08002BE10318}\0056\ndi
 Class Name: <NO CLASS>
 Last Write Time: 9/10/2007 - 5:30 PM

Key Name:
 HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Class
 \{4D36E97D-E325-11CE-BFC1-08002BE10318}\0056\ndi\params
 Class Name: <NO CLASS>
 Last Write Time: 9/11/2007 - 10:57 AM

Key Name:
 HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Class
 \{4D36E97D-E325-11CE-BFC1-08002BE10318}\0056\ndi\params*SpeedDuplex
 Class Name: <NO CLASS>
 Last Write Time: 9/11/2007 - 10:57 AM

Value 0
 Name: paramDesc
 Type: REG_SZ
 Data: Speed & Duplex

Value 1
 Name: default
 Type: REG_SZ
 Data: 0

Value 2
 Name: type
 Type: REG_SZ
 Data: enum

Key Name:
 HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Class
 \{4D36E97D-E325-11CE-BFC1-08002BE10318}\0056\ndi\params*SpeedDuplex\enum
 Class Name: <NO CLASS>
 Last Write Time: 9/11/2007 - 10:57 AM

Value 0
 Name: 0
 Type: REG_SZ
 Data: Auto

Value 1
 Name: 1
 Type: REG_SZ
 Data: 10 Mb Half

Value 2
 Name: 2
 Type: REG_SZ
 Data: 10 Mb Full

Value 3
 Name: 3
 Type: REG_SZ
 Data: 100 Mb Half

Value 4
 Name: 4
 Type: REG_SZ
 Data: 100 Mb Full

Key Name:
 HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Class
 \{4D36E97D-E325-11CE-BFC1-08002BE10318}\0056\ndi\params\mtu
 Class Name: <NO CLASS>
 Last Write Time: 9/11/2007 - 10:57 AM

Value 0
 Name: paramdesc
 Type: REG_SZ
 Data: Jumbo MtU

Value 1
 Name: default
 Type: REG_SZ
 Data: 1500

Value 2
 Name: type
 Type: REG_SZ
 Data: dword

Value 3
 Name: min
 Type: REG_SZ
 Data: 1500

Value 4
 Name: max
 Type: REG_SZ
 Data: 9000

Value 5
 Name: step
 Type: REG_SZ
 Data: 500

Value 6
 Name: base
 Type: REG_SZ
 Data: 10

Key Name:
 HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Class
 \{4D36E97D-E325-11CE-BFC1-08002BE10318}\0056\ndi\params\wol_cap
 Class Name: <NO CLASS>
 Last Write Time: 9/11/2007 - 10:57 AM

Value 0
 Name: paramDesc
 Type: REG_SZ
 Data: Wake Up Capabilities

Value 1
 Name: default
 Type: REG_SZ
 Data: 3

Value 2
 Name: type
 Type: REG_SZ
 Data: enum

Value 3
Name: control
Type: REG_SZ
Data: 1

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Class
\{4D36E97D-E325-11CE-BFC1-
08002BE10318}\0056\ndi\params\wol_cap\enum
Class Name: <NO CLASS>
Last Write Time: 9/11/2007 - 10:57 AM

Value 0
Name: 0
Type: REG_SZ
Data: None

Value 1
Name: 1
Type: REG_SZ
Data: Magic Packet

Value 2
Name: 2
Type: REG_SZ
Data: Wake Up Frame

Value 3
Name: 3
Type: REG_SZ
Data: Both

Web Client Hardware Configuration

System Information report written at: 06/23/08
15:05:18
System Name: CL138
[System Summary]

Item	Value
OS Name	Microsoft(R) Windows(R) Server 2003, Standard Edition
Version	5.2.3790 Service Pack 1 Build 3790
Other OS Description	R2
OS Manufacturer	Microsoft Corporation
System Name	CL138
System Manufacturer	HP
System Model	ProLiant DL360 G5
System Type	X86-based PC
Processor	x86 Family 6 Model 15 Stepping 6
GenuineIntel	~2000 Mhz
Processor	x86 Family 6 Model 15 Stepping 6
GenuineIntel	~2000 Mhz
BIOS Version/Date	HP P58, 5/1/2007

SMBIOS Version 2.3
Windows Directory C:\WINDOWS
System Directory C:\WINDOWS\system32
Boot Device \Device\HarddiskVolume1
Locale United States
Hardware Abstraction Layer Version =
"5.2.3790.1830 (srv03_sp1_rtm.050324-1447)"
User Name Not Available
Time Zone Central Daylight Time
Total Physical Memory 1,021.87 MB
Available Physical Memory 656.73 MB
Total Virtual Memory 2.91 GB
Available Virtual Memory 2.66 GB
Page File Space 2.00 GB
Page File C:\pagefile.sys

[Hardware Resources]

[Conflicts/Sharing]

Resource	Device	
I/O Port 0x00000000-0x00000CF7	PCI bus	
I/O Port 0x00000000-0x00000CF7	Direct memory	
access controller		
Memory Address 0xFDE00000-0xFDEFFFFF	PCI standard	
PCI-to-PCI bridge		
Memory Address 0xFDE00000-0xFDEFFFFF	PCI standard	
PCI-to-PCI bridge		
I/O Port 0x000002F8-0x000002FF	Motherboard	
resources		
I/O Port 0x000002F8-0x000002FF	Communications Port (COM2)	

IRQ 22 HP iLO Management Channel Interface Driver

IRQ 22 Standard Universal PCI to USB Host
Controller

IRQ 16 PCI standard PCI-to-PCI bridge
IRQ 16 Smart Array E200i Controller
IRQ 16 Standard Universal PCI to USB Host
Controller

IRQ 16 Standard Enhanced PCI to USB Host
Controller

IRQ 17 PCI standard PCI-to-PCI bridge
IRQ 17 Standard Universal PCI to USB Host
Controller

IRQ 18 PCI standard PCI-to-PCI bridge
IRQ 18 HP NC373i Virtual Bus Device
IRQ 18 Standard Universal PCI to USB Host
Controller

IRQ 19 HP NC373i Virtual Bus Device
IRQ 19 Standard Universal PCI to USB Host
Controller

Memory Address 0xA0000-0xBFFFF PCI bus

Memory Address 0xA0000-0xBFFFF	ATI ES1000
Memory Address 0xFA000000-0xFBFFFFFF	PCI standard
PCI-to-PCI bridge	
Memory Address 0xFA000000-0xFBFFFFFF	PCI standard
PCI-to-PCI bridge	
Memory Address 0xFA000000-0xFBFFFFFF	HP NC373i
Virtual Bus Device	
Memory Address 0xF8000000-0xF9FFFFFF	PCI standard
PCI-to-PCI bridge	
Memory Address 0xF8000000-0xF9FFFFFF	PCI standard
PCI-to-PCI bridge	
Memory Address 0xF8000000-0xF9FFFFFF	HP NC373i
Virtual Bus Device	
I/O Port 0x00004000-0x00004FFF	PCI standard
PCI-to-PCI bridge	
I/O Port 0x00004000-0x00004FFF	PCI standard
PCI-to-PCI bridge	
I/O Port 0x00004000-0x00004FFF	Smart Array
E200i Controller	
[DMA]	
Resource Device Status	
Channel 7 Direct memory access controller	OK
[Forced Hardware]	
Device PNP Device ID	
[I/O]	
Resource Device Status	
0x00000000-0x00000CF7	PCI bus OK
0x00000000-0x00000CF7	Direct memory access
controller OK	
0x00000000-0x0000FFFF	PCI bus OK
0x00004000-0x00004FFF	PCI standard PCI-to-PCI
bridge OK	
0x00004000-0x00004FFF	PCI standard PCI-to-PCI
bridge OK	
0x00004000-0x00004FFF	Smart Array E200i
Controller OK	
0x00001000-0x0000101F	Standard Universal PCI
to USB Host Controller	OK
0x00001020-0x0000103F	Standard Universal PCI
to USB Host Controller	OK
0x00001040-0x0000105F	Standard Universal PCI
to USB Host Controller	OK
0x00001060-0x0000107F	Standard Universal PCI
to USB Host Controller	OK
0x00003000-0x000030FF	ATI ES1000 OK
0x000003B0-0x000003BB	ATI ES1000 OK
0x000003C0-0x000003DF	ATI ES1000 OK

0x00002800-0x000028FF HP ProLiant iLO 2
 Legacy Support Function OK
 0x00003400-0x000034FF HP iLO Management OK
 Channel Interface Driver OK
 0x00003800-0x0000381F Standard Universal PCI
 to USB Host Controller OK
 0x00000A79-0x00000A79 ISAPNP Read Data Port
 OK
 0x00000279-0x00000279 ISAPNP Read Data Port
 OK
 0x00000274-0x00000277 ISAPNP Read Data Port
 OK
 0x00000070-0x00000077 Motherboard resources
 OK
 0x00000408-0x0000040F Motherboard resources
 OK
 0x000004D0-0x000004D1 Motherboard resources
 OK
 0x00000020-0x0000003F Motherboard resources
 OK
 0x000000A0-0x000000BF Motherboard resources
 OK
 0x00000090-0x0000009F Motherboard resources
 OK
 0x00000050-0x00000053 Motherboard resources
 OK
 0x00000700-0x0000071F Motherboard resources
 OK
 0x00000800-0x0000083F Motherboard resources
 OK
 0x00000900-0x0000097F Motherboard resources
 OK
 0x00000010-0x0000001F Motherboard resources
 OK
 0x00000C80-0x00000C83 Motherboard resources
 OK
 0x00000CD4-0x00000CD7 Motherboard resources
 OK
 0x00000F50-0x00000F58 Motherboard resources
 OK
 0x000000F0-0x000000F0 Motherboard resources
 OK
 0x00000CA0-0x00000CA1 Motherboard resources
 OK
 0x00000CA4-0x00000CA5 Motherboard resources
 OK
 0x000002F8-0x000002FF Motherboard resources
 OK
 0x000002F8-0x000002FF Communications Port
 (COM2) OK
 0x00000CA2-0x00000CA3 HP NULL IPMI Controller
 OK
 0x00000040-0x00000043 System timer OK
 0x00000080-0x0000008F Direct memory access
 controller OK
 0x000000C0-0x000000DF Direct memory access
 controller OK
 0x00000061-0x00000061 System speaker OK
 0x00000060-0x00000060 Standard 101/102-Key or
 Microsoft Natural PS/2 Keyboard OK

0x00000064-0x00000064 Standard 101/102-Key or
 Microsoft Natural PS/2 Keyboard OK
 0x0000002E-0x0000002F Extended IO Bus OK
 0x0000004E-0x0000004F Extended IO Bus OK
 0x000000620-0x00000065F Extended IO Bus OK
 0x000000680-0x00000069F Extended IO Bus OK
 0x000000600-0x00000061F Extended IO Bus OK
 0x000000660-0x00000067F Extended IO Bus OK
 0x000000300-0x00000030F Extended IO Bus OK
 0x0000003F8-0x0000003FF Communications Port
 (COM1) OK
 0x00000500-0x0000050F Standard Dual Channel
 PCI IDE Controller OK
 0x0000001F0-0x0000001F7 Primary IDE Channel OK
 0x0000003F6-0x0000003F6 Primary IDE Channel OK
 0x000000170-0x000000177 Secondary IDE Channel
 OK
 0x000000376-0x000000376 Secondary IDE Channel
 OK
 [IRQs]
 Resource Device Status
 IRQ 9 Microsoft ACPI-Compliant System OK
 IRQ 16 PCI standard PCI-to-PCI bridge OK
 IRQ 16 Smart Array E200I Controller OK
 IRQ 16 Standard Universal PCI to USB Host
 Controller OK
 IRQ 16 Standard Enhanced PCI to USB Host
 Controller OK
 IRQ 17 PCI standard PCI-to-PCI bridge OK
 IRQ 17 Standard Universal PCI to USB Host
 Controller OK
 IRQ 18 PCI standard PCI-to-PCI bridge OK
 IRQ 18 HP NC373i Virtual Bus Device OK
 IRQ 18 Standard Universal PCI to USB Host
 Controller OK
 IRQ 19 HP NC373i Virtual Bus Device OK
 IRQ 19 Standard Universal PCI to USB Host
 Controller OK
 IRQ 23 ATI ES1000 OK
 IRQ 5 HP ProLiant iLO 2 Legacy Support Function
 OK
 IRQ 22 HP iLO Management Channel Interface Driver
 OK
 IRQ 22 Standard Universal PCI to USB Host
 Controller OK
 IRQ 21 HP ProLiant iLO 2 Management Controller
 Driver OK
 IRQ 0 System timer OK

IRQ 1 Standard 101/102-Key or Microsoft Natural
 PS/2 Keyboard OK
 IRQ 12 PS/2 Compatible Mouse OK
 IRQ 4 Communications Port (COM1) OK
 IRQ 3 Communications Port (COM2) OK
 [Memory]
 Resource Device Status
 0xA0000-0xBFFFF PCI bus OK
 0xA0000-0xBFFFF ATI ES1000 OK
 0x40000000-0xDFFFFFFF PCI bus OK
 0xF0000000-0xFEBFFFFFFF PCI bus OK
 0xFDF00000-0xFDFFFFFFFF PCI standard PCI-to-PCI
 bridge OK
 0xFDE00000-0xFDEFFFFFFF PCI standard PCI-to-PCI
 bridge OK
 0xFDE00000-0xFDEFFFFFFF PCI standard PCI-to-PCI
 bridge OK
 0xFDE80000-0xFDEFFFFFFF Smart Array E200I
 Controller OK
 0xFDE70000-0xFDE77FFF Smart Array E200I
 Controller OK
 0xF8000000-0xF9FFFFFFF PCI standard PCI-to-PCI
 bridge OK
 0xF8000000-0xF9FFFFFFF PCI standard PCI-to-PCI
 bridge OK
 0xF8000000-0xF9FFFFFFF HP NC373i Virtual Bus
 Device OK
 0xFA000000-0xFBFFFFFFF PCI standard PCI-to-PCI
 bridge OK
 0xFA000000-0xFBFFFFFFF PCI standard PCI-to-PCI
 bridge OK
 0xFA000000-0xFBFFFFFFF HP NC373i Virtual Bus
 Device OK
 0xF7DF0000-0xF7DF03FF Standard Enhanced PCI
 to USB Host Controller OK
 0xD8000000-0xDFFFFFFF ATI ES1000 OK
 0xF7FF0000-0xF7FFFFFFF ATI ES1000 OK
 0xF7FE0000-0xF7FE01FF HP ProLiant iLO 2
 Legacy Support Function OK
 0xF7FD0000-0xF7FD07FF HP iLO Management
 Channel Interface Driver OK
 0xF7FC0000-0xF7FC1FFF HP iLO Management
 Channel Interface Driver OK
 0xF7F00000-0xF7F7FFFF HP iLO Management
 Channel Interface Driver OK
 0xF7EF0000-0xF7EF00FF HP ProLiant iLO 2
 Management Controller Driver OK
 0xE0000000-0xEFFFFFFF Motherboard resources
 OK
 0xFE000000-0xFEBFFFFFFF Motherboard resources
 OK
 0xFED00000-0xFED003FF High precision event
 timer OK
 [Components]
 [Multimedia]

[Audio Codecs]

CODEC	Manufacturer	Description
Status	File	Version
Creation Date		Size
c:\windows\system32\msg711.acm	Microsoft Corporation	OK
	C:\WINDOWS\system32\MSG711.ACM	
	5.2.3790.0 (srv03_rtm.030324-2048)	
	10.00 KB (10,240 bytes)	11/30/2005
6:00 AM		
c:\windows\system32\msadp32.acm	Microsoft Corporation	OK
	C:\WINDOWS\system32\MSADP32.ACM	
	5.2.3790.0 (srv03_rtm.030324-2048)	
	14.50 KB (14,848 bytes)	11/30/2005
6:00 AM		
c:\windows\system32\imaadp32.acm	Microsoft Corporation	OK
	C:\WINDOWS\system32\IMAADP32.ACM	
	5.2.3790.0 (srv03_rtm.030324-2048)	
	15.50 KB (15,872 bytes)	11/30/2005
6:00 AM		
c:\windows\system32\sl_anet.acm	Sipro Lab Telecom Inc.	OK
	C:\WINDOWS\system32\SL_ANET.ACM	
	3.02 84.00 KB (86,016 bytes)	
	11/30/2005 6:00 AM	
c:\windows\system32\l3codeca.acm	Fraunhofer Institut Integrierte Schaltungen IIS	OK
	C:\WINDOWS\system32\L3CODECA.ACM	
	9, 0, 0305 284.00 KB (290,816 bytes)	1, 11/30/2005 6:00 AM
c:\windows\system32\tssoft32.acm	DSP GROUP, INC.	OK
	C:\WINDOWS\system32\TSSOFT32.ACM	
	1.01 9.50 KB (9,728 bytes)	
	11/30/2005 6:00 AM	
c:\windows\system32\msgsm32.acm	Microsoft Corporation	OK
	C:\WINDOWS\system32\MSGSM32.ACM	
	5.2.3790.0 (srv03_rtm.030324-2048)	
	20.50 KB (20,992 bytes)	11/30/2005
6:00 AM		
c:\windows\system32\msg723.acm	Microsoft Corporation	OK
	C:\WINDOWS\system32\MSG723.ACM	
	5.2.3790.1830 120.00 KB (122,880 bytes)	8/7/2007 2:52 PM
c:\windows\system32\msaud32.acm	Microsoft Corporation	OK
	C:\WINDOWS\system32\MSAUD32.ACM	
	8.00.00.4487 288.00 KB (294,912 bytes)	11/30/2005 6:00 AM

[Video Codecs]

CODEC	Manufacturer	Description
Status	File	Version
Creation Date		Size
c:\windows\system32\msvidc32.dll	Microsoft Corporation	OK
	C:\WINDOWS\system32\MSVIDC32.DLL	
	5.2.3790.0 (srv03_rtm.030324-2048)	
	26.50 KB (27,136 bytes)	11/30/2005
6:00 AM		
c:\windows\system32\mrle32.dll	Microsoft Corporation	OK
	C:\WINDOWS\system32\MSRLE32.DLL	
	5.2.3790.0 (srv03_rtm.030324-2048)	
	10.50 KB (10,752 bytes)	11/30/2005
6:00 AM		
c:\windows\system32\iyuv_32.dll	Microsoft Corporation	OK
	C:\WINDOWS\system32\IYUV_32.DLL	
	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	
	46.50 KB (47,616 bytes)	3/24/2005
1:05 PM		
c:\windows\system32\msh263.drv	Microsoft Corporation	OK
	C:\WINDOWS\system32\MSH263.DRV	
	5.2.3790.1830 288.00 KB (294,912 bytes)	3/24/2005 1:07 PM
c:\windows\system32\msh261.drv	Microsoft Corporation	OK
	C:\WINDOWS\system32\MSH261.DRV	
	5.2.3790.1830 184.00 KB (188,416 bytes)	8/7/2007 2:52 PM
c:\windows\system32\msyuv.dll	Microsoft Corporation	OK
	C:\WINDOWS\system32\MSYUV.DLL	
	5.2.3790.0 (srv03_rtm.030324-2048)	
	16.50 KB (16,896 bytes)	3/24/2003 8:49 PM
c:\windows\system32\tsbyuv.dll	Microsoft Corporation	OK
	C:\WINDOWS\system32\TSBYUV.DLL	
	5.2.3790.0 (srv03_rtm.030324-2048)	
	8.00 KB (8,192 bytes)	3/24/2003
8:50 PM		
[CD-ROM]		
Item	Value	
[Sound Device]		
Item	Value	
[Display]		
Item	Value	
Name	ATI ES1000	
PNP Device ID	PCI\VEN_1002&DEV_515E&SUBSYS_31FB103C&REV_02\4&2014205D&0&18F0	
Adapter Type	ATI ES1000 (0x515E), ATI Technologies Inc. compatible	
Adapter Description	ATI ES1000	
Adapter RAM	32.00 MB (33,554,432 bytes)	
Installed Drivers	ati2dvag.dll	

Driver Version	6.14.10.6606
INF File	oem11.inf (ati2mtag_RN50 section)
Color Planes	1
Color Table Entries	4294967296
Resolution	1024 x 768 x 60 hertz
Bits/Pixel	32
Memory Address	0xD8000000-0xDFFFFFFF
I/O Port	0x00003000-0x000030FF
Memory Address	0xF7FF0000-0xF7FFFFFF
IRQ Channel	IRQ 23
I/O Port	0x000003B0-0x000003BB
I/O Port	0x000003C0-0x000003DF
Memory Address	0xA0000-0xBFFFFF
Driver	c:\windows\system32\drivers\ati2mtag.sys (6.14.10.6606, 1.36 MB (1,431,040 bytes), 8/13/2007 1:53 PM)
[Infrared]	
Item	Value
[Input]	
[Keyboard]	
Item	Value
Description	USB Human Interface Device
Name	Enhanced (101- or 102-key)
Layout	00000409
PNP Device ID	USB\VID_03F0&PID_1027&MI_00\7&2CD6FDA9&0&00
00	
Number of Function Keys	12
Driver	c:\windows\system32\drivers\hidusb.sys (5.2.3790.0 (srv03_rtm.030324-2048), 11.50 KB (11,776 bytes), 11/30/2005 6:00 AM)
Description	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
Name	Enhanced (101- or 102-key)
Layout	00000409
PNP Device ID	ACPI\PNP0303\4&2AA4AD3D&0
Number of Function Keys	12
I/O Port	0x00000060-0x00000060
I/O Port	0x00000064-0x00000064
IRQ Channel	IRQ 1
Driver	c:\windows\system32\drivers\i8042prt.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 54.50 KB (55,808 bytes), 11/30/2005 6:00 AM)
[Pointing Device]	
Item	Value
Hardware Type	USB Human Interface Device
Number of Buttons	3
Status	OK
PNP Device ID	USB\VID_03F0&PID_1027&MI_01\7&2CD6FDA9&0&00
01	
Power Management Supported	No
Double Click Threshold	6

Handedness Right Handed Operation
Driver c:\windows\system32\drivers\hidusb.sys
(5.2.3790.0 (srv03_rtm.050324-2048), 11.50 KB (11,776 bytes), 11/30/2005 6:00 AM)

Hardware Type PS/2 Compatible Mouse
Number of Buttons 3
Status Error
PNP Device ID ACPI\PNP0F13\4&2AA4AD3D&0
Power Management Supported No
Double Click Threshold 6
Handedness Right Handed Operation
IRQ Channel IRQ 12
Driver c:\windows\system32\drivers\i8042prt.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 54.50 KB (55,808 bytes), 11/30/2005 6:00 AM)

[Modem]

Item Value

[Network]

[Adapter]

Item Value
Name [00000001] RAS Async Adapter
Adapter Type Not Available
Product Type RAS Async Adapter
Installed Yes
PNP Device ID Not Available
Last Reset 6/23/2008 2:44 PM
Index 1
Service Name AsyncMac
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available

Name [00000002] WAN Miniport (L2TP)
Adapter Type Not Available
Product Type WAN Miniport (L2TP)
Installed Yes
PNP Device ID ROOT\MS_L2TPMINIPORT\0000
Last Reset 6/23/2008 2:44 PM
Index 2
Service Name Rasl2tp
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available

Driver c:\windows\system32\drivers\rasl2tp.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 66.00 KB (67,584 bytes), 11/30/2005 6:00 AM)

Name [00000003] WAN Miniport (PPTP)
Adapter Type Wide Area Network (WAN)
Product Type WAN Miniport (PPTP)
Installed Yes
PNP Device ID ROOT\MS_PPTPMINIPORT\0000
Last Reset 6/23/2008 2:44 PM
Index 3
Service Name PptpMiniport
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 50:50:54:50:30:30
Driver c:\windows\system32\drivers\raspptp.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 61.00 KB (62,464 bytes), 11/30/2005 6:00 AM)

Name [00000004] WAN Miniport (PPPOE)
Adapter Type Wide Area Network (WAN)
Product Type WAN Miniport (PPPOE)
Installed Yes
PNP Device ID ROOT\MS_PPPOEMINIPORT\0000
Last Reset 6/23/2008 2:44 PM
Index 4
Service Name Rasppoe
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 33:50:6F:45:30:30
Driver c:\windows\system32\drivers\rasppoe.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 40.00 KB (40,960 bytes), 11/30/2005 6:00 AM)

Name [00000005] Direct Parallel
Adapter Type Not Available
Product Type Direct Parallel
Installed Yes
PNP Device ID ROOT\MS_PTMINIPORT\0000
Last Reset 6/23/2008 2:44 PM
Index 5
Service Name Raspti
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available
Driver c:\windows\system32\drivers\raspti.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 19.50 KB (19,968 bytes), 11/30/2005 6:00 AM)

Name [00000006] WAN Miniport (IP)
Adapter Type Not Available
Product Type WAN Miniport (IP)
Installed Yes
PNP Device ID ROOT\MS_NDISWANIP\0000
Last Reset 6/23/2008 2:44 PM
Index 6
Service Name Ndiswan
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available
Driver c:\windows\system32\drivers\ndiswan.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 91.00 KB (93,184 bytes), 11/30/2005 6:00 AM)

Name [00000007] HP NC373i Multifunction Gigabit
Server Adapter
Adapter Type Ethernet 802.3
Product Type HP NC373i Multifunction Gigabit
Server Adapter
Installed Yes
PNP Device ID B06BDRV\L2ND&PCI_164C14E4&SUBSYS_7038103C&R
EV_12\6&30C55FC0&0&20050300
Last Reset 6/23/2008 2:44 PM
Index 7
Service Name l2nd
IP Address 130.172.11.138
IP Subnet 255.255.0.0
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:1B:78:CE:80:4E
Driver c:\windows\system32\drivers\bxnd52x.sys
(3.4.10.0 built by: WinDDK, 49.00 KB (50,176 bytes), 8/10/2007 9:49 AM)

Name [00000008] HP NC373i Multifunction Gigabit
Server Adapter
Adapter Type Ethernet 802.3
Product Type HP NC373i Multifunction Gigabit
Server Adapter
Installed Yes
PNP Device ID B06BDRV\L2ND&PCI_164C14E4&SUBSYS_7038103C&R
EV_12\6&29511DBC&0&20050500
Last Reset 6/23/2008 2:44 PM
Index 8
Service Name l2nd
IP Address 130.168.40.138, 130.120.40.138, 130.132.40.138
IP Subnet 255.255.0.0, 255.255.0.0, 255.255.0.0
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available

DHCP Lease Expires Not Available
 DHCP Lease Obtained Not Available
 MAC Address 00:1B:78:CE:80:52
 Driver c:\windows\system32\drivers\bxnd52x.sys
 (3.4.10.0 built by: WinDDK, 49.00 KB (50,176 bytes),
 8/10/2007 9:49 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_{337E4A0F-1A8B-4B0D-8AB9-98DB7B9EC7AB}] SEQUENCE 3	
Connectionless Service	No
Guarantees Delivery	Yes
Guarantees Sequencing	Yes
Maximum Address Size	20 bytes
Maximum Message Size	62.50 KB (64,000 bytes)

Message Oriented	Yes
Minimum Address Size	20 bytes
Pseudo Stream Oriented	No
Supports Broadcasting	No
Supports Connect Data	No
Supports Disconnect Data	No
Supports Encryption	No
Supports Expedited Data	No
Supports Graceful Closing	No
Supports Guaranteed Bandwidth	No
Supports Multicasting	No

Name	MSAFD NetBIOS
[\Device\NetBT_Tcpip_{337E4A0F-1A8B-4B0D-8AB9-98DB7B9EC7AB}] DATAGRAM 3	
Connectionless Service	Yes
Guarantees Delivery	No
Guarantees Sequencing	No
Maximum Address Size	20 bytes
Maximum Message Size	62.50 KB (64,000 bytes)

Message Oriented	Yes
Minimum Address Size	20 bytes
Pseudo Stream Oriented	No
Supports Broadcasting	Yes
Supports Connect Data	No
Supports Disconnect Data	No
Supports Encryption	No
Supports Expedited Data	No
Supports Graceful Closing	No
Supports Guaranteed Bandwidth	No
Supports Multicasting	No

Name	MSAFD NetBIOS
[\Device\NetBT_Tcpip_{8DB86463-9958-424F-A4C2-FB3B07FD6B39}] SEQUENCE 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_{8DB86463-9958-424F-A4C2-FB3B07FD6B39}] 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_{9F95CA4D-45AE-4E2B-8D26-D0A991E9DD9}] SEQUENCE 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_{9F95CA4D-45AE-4E2B-8D26-D0A991E9DD9}] 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_{D746FA27-DFC0-4D82-B5DF-26123541D6A3}] SEQUENTIAL 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_{D746FA27-DFC0-4D82-B5DF-26123541D6A3}] DATAGRAM 2
 Connectionless Service Yes
 Guarantees Delivery No
 Guarantees Sequencing No
 Maximum Address Size 20 bytes
 Maximum Message Size 62.50 KB (64,000 bytes)

Message Oriented Yes
 Minimum Address Size 20 bytes
 Pseudo Stream Oriented No
 Supports Broadcasting Yes
 Supports Connect Data No
 Supports Disconnect Data No
 Supports Encryption No
 Supports Expedited Data No
 Supports Graceful Closing No
 Supports Guaranteed Bandwidth No
 Supports Multicasting No

[WinSock]

Item Value
 File c:\windows\system32\winsock.dll
 Size 2.80 KB (2,864 bytes)
 Version 3.10

File c:\windows\system32\wsock32.dll
 Size 22.00 KB (22,528 bytes)
 Version 5.2.3790.0 (srv03_rtm.030324-2048)

[Ports]

[Serial]

Item Value
 Name Communications Port (COM2)
 Status OK
 PNP Device ID ROOT*PNP0501\1_0_17_1_0_0
 Maximum Input Buffer Size 0
 Maximum Output Buffer Size No
 Settable Baud Rate Yes
 Settable Data Bits Yes
 Settable Flow Control Yes
 Settable Parity Yes
 Settable Parity Check Yes
 Settable Stop Bits Yes
 Settable RLSD Yes
 Supports RLSD Yes
 Supports 16 Bit Mode No
 Supports Special Characters No
 Baud Rate 9600
 Bits/Byte 8
 Stop Bits 1
 Parity None
 Busy No
 Abort Read/Write on Error No
 Binary Mode Enabled Yes
 Continue Xmit on Xoff No
 CTS Outflow Control No
 Discard NULL Bytes No
 DSR Outflow Control 0
 DSR Sensitivity 0
 DTR Flow Control Type Enable
 EOF Character 0
 Error Replace Character 0
 Error Replacement Enabled No
 Event Character 0
 Parity Check Enabled No
 RTS Flow Control Type Enable
 Xoff Character 19
 XoffXmit Threshold 512
 XOn Character 17
 XOnXmit Threshold 2048
 XOnXoff InFlow Control 0
 XOnXoff OutFlow Control 0
 I/O Port 0x000002F8-0x000002FF
 IRQ Channel IRQ 3
 Driver c:\windows\system32\drivers\serial.sys
 (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 64.00 KB
 (65,536 bytes), 11/30/2005 6:00 AM)

Name Communications Port (COM1)
 Status OK
 PNP Device ID ACPI\PNP0501\0
 Maximum Input Buffer Size 0
 Maximum Output Buffer Size No
 Settable Baud Rate Yes
 Settable Data Bits Yes
 Settable Flow Control Yes
 Settable Parity Yes
 Settable Parity Check Yes
 Settable Stop Bits Yes
 Settable RLSD Yes
 Supports RLSD Yes
 Supports 16 Bit Mode No
 Supports Special Characters No
 Baud Rate 9600
 Bits/Byte 8
 Stop Bits 1
 Parity None
 Busy No
 Abort Read/Write on Error No
 Binary Mode Enabled Yes
 Continue Xmit on Xoff No
 CTS Outflow Control No
 Discard NULL Bytes No
 DSR Outflow Control 0
 DSR Sensitivity 0
 DTR Flow Control Type Enable
 EOF Character 0
 Error Replace Character 0
 Error Replacement Enabled No
 Event Character 0
 Parity Check Enabled No
 RTS Flow Control Type Enable
 Xoff Character 19
 XoffXmit Threshold 512
 XOn Character 17
 XOnXmit Threshold 2048
 XOnXoff InFlow Control 0
 XOnXoff OutFlow Control 0
 IRQ Channel IRQ 4
 I/O Port 0x000003F8-0x000003FF
 Driver c:\windows\system32\drivers\serial.sys
 (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 64.00 KB
 (65,536 bytes), 11/30/2005 6:00 AM)

[Parallel]

Item Value

[Storage]

[Drives]

Item Value
 Drive C:
 Description Local Fixed Disk
 Compressed No
 File System NTFS
 Size 33.88 GB (36,381,306,880 bytes)

Free Space 26.04 GB (27,958,038,528 bytes)

Volume Name
Volume Serial Number 8C06AC55

[Disks]

Item Value
Description Disk drive
Manufacturer (Standard disk drives)
Model HP LOGICAL VOLUME SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 2
SCSI Target ID 4
Sectors/Track 32
Size 33.89 GB (36,385,505,280 bytes)
Total Cylinders 8,709
Total Sectors 71,065,440
Total Tracks 2,220,795
Tracks/Cylinder 255
Partition Disk #0, Partition #0
Partition Size 33.88 GB (36,381,310,976 bytes)

Partition Starting Offset 16,384 bytes

[SCSI]

Item Value
Name Smart Array E200I Controller
Manufacturer Hewlett-Packard Company
Status OK
PNP Device ID
PCI\VEN_103C&DEV_3238&SUBSYS_3211103C&REV_0
0\5\34D510D8&0&400018
Memory Address 0xFDE80000-0xFDEFFFFF
I/O Port 0x00004000-0x00004FFF
Memory Address 0xFDE70000-0xFDE77FFF
IRQ Channel IRQ 16
Driver c:\windows\system32\drivers\hpciss2.sys
(6.6.0.32 Build 5 (x86) built by: buildsrv, 53.30 KB
(54,584 bytes), 12/31/1979 6:00 PM)

[IDE]

Item Value
Name Standard Dual Channel PCI IDE Controller
Manufacturer (Standard IDE ATA/ATAPI
controllers)
Status OK
PNP Device ID
PCI\VEN_8086&DEV_269E&SUBSYS_31FE103C&REV_0
9\3&61AAA01&0&F9
I/O Port 0x00000500-0x0000050F
Driver c:\windows\system32\drivers\pciide.sys
(5.2.3790.0 (srv03_rtm.030324-2048), 5.50 KB (5,632
bytes), 11/30/2005 6:00 AM)

Name Primary IDE Channel
Manufacturer (Standard IDE ATA/ATAPI
controllers)
Status OK
PNP Device ID PCIIDE\IDECHANNEL\4&56E2F28&0&0

I/O Port 0x000001F0-0x000001F7
I/O Port 0x000003F6-0x000003F6
Driver c:\windows\system32\drivers\atapi.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 93.50 KB
(95,744 bytes), 11/30/2005 6:00 AM)

Name Secondary IDE Channel
Manufacturer (Standard IDE ATA/ATAPI
controllers)
Status OK
PNP Device ID PCIIDE\IDECHANNEL\4&56E2F28&0&1

I/O Port 0x00000170-0x00000177
I/O Port 0x00000376-0x00000376
Driver c:\windows\system32\drivers\atapi.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 93.50 KB
(95,744 bytes), 11/30/2005 6:00 AM)

[Printing]

Name Driver Port Name Server Name

[Problem Devices]

Device PNP Device ID Error Code
Standard 101/102-Key or Microsoft Natural PS/2
Keyboard ACPI\PNP0303\4&2AA4AD3D&0 This device
is not present, is not working properly, or does not
have all its drivers installed.
PS/2 Compatible Mouse
ACPI\PNP0F13\4&2AA4AD3D&0 This device
is not present, is not working properly, or does not
have all its drivers installed.

[USB]

Device PNP Device ID
Standard Universal PCI to USB Host Controller
PCI\VEN_8086&DEV_2688&SUBSYS_31FE103C&REV_0
9\3&61AAA01&0&E8
Standard Universal PCI to USB Host Controller
PCI\VEN_8086&DEV_2689&SUBSYS_31FE103C&REV_0
9\3&61AAA01&0&E9
Standard Universal PCI to USB Host Controller
PCI\VEN_8086&DEV_268A&SUBSYS_31FE103C&REV_0
9\3&61AAA01&0&EA
Standard Universal PCI to USB Host Controller
PCI\VEN_8086&DEV_268B&SUBSYS_31FE103C&REV_0
9\3&61AAA01&0&EB
Standard Enhanced PCI to USB Host Controller
PCI\VEN_8086&DEV_268C&SUBSYS_31FE103C&REV_0
9\3&61AAA01&0&EF
Standard Universal PCI to USB Host Controller
PCI\VEN_103C&DEV_3300&SUBSYS_3305103C&REV_0
0\4&2014205D&0&24F0

[Software Environment]

[System Drivers]

Name	Description	File	Type
Started	Start Mode	State	
Status	Error Control	Accept	Pause
abiosdsk	Abiosdsk	Not Available	Kernel Driver
	No	Disabled	Stopped
	Ignore	No	OK
acpi	Microsoft ACPI Driver		
	c:\windows\system32\drivers\acpi.sys		
	Kernel Driver	Yes	Boot
	Running	OK	Normal
			No
acpiec	ACPIEC		
	c:\windows\system32\drivers\acpiec.sys		
	Kernel Driver	No	Disabled
	Stopped	OK	Normal
			No
adpu160m	adpu160m	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
adpu320	adpu320	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
afcmt	afcmt	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
afd	AFD		
	c:\windows\system32\drivers\afd.sys		
	Kernel Driver	Yes	System
	Running	OK	Normal
			No
			Yes
aic78u2	aic78u2	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
aic78xx	aic78xx	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
aliide	AliIde	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
alkernel	Altiris Kernel Driver		
	c:\windows\system32\drivers\alkernel.sys		
	Kernel Driver	Yes	Manual
	Running	OK	Normal
			No
			Yes
amdide	AmdIde	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
arc	arc	Not Available	Kernel Driver
	No	Disabled	Stopped
	Normal	No	OK
asynmac	RAS Asynchronous Media Driver		
	c:\windows\system32\drivers\asynmac.sys		
	Kernel Driver	No	Manual
	Stopped	OK	Normal
			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	
ati2mtag	ati2mtag	No		
	c:\windows\system32\drivers\ati2mtag.sys			
	Kernel Driver	Yes	Manual	
	Running OK	Ignore	No	Yes
atmarpc	ATM ARP Client Protocol			
	c:\windows\system32\drivers\atmarpc.sys			
	Kernel Driver	No	Manual	
	Stopped OK	Normal	No	No
audstub	Audio Stub Driver			
	c:\windows\system32\drivers\audstub.sys			
	Kernel Driver	Yes	Manual	
	Running OK	Normal	No	Yes
b06bdrv	HP Virtual Bus Device			
	c:\windows\system32\drivers\bxvbdx.sys			
	Kernel Driver	Yes	Boot	
	Running OK	Normal	No	Yes
beep	Beep			
	c:\windows\system32\drivers\beep.sys			
	Kernel Driver	Yes	System	
	Running OK	Normal	No	Yes
cbidf2k	cbidf2k			
	c:\windows\system32\drivers\cbidf2k.sys			
	Kernel Driver	No	Disabled	
	Stopped OK	Normal	No	No
cd20xrnt	cd20xrnt	Not Available	Kernel Driver	
	No Disabled	Stopped	OK	
cdfs	Normal	No		
	Cdfs			
	c:\windows\system32\drivers\cdfs.sys			
	File System Driver	No	Disabled	
	Stopped OK	Normal	No	No
cdrom	CD-ROM Driver			
	c:\windows\system32\drivers\cdrom.sys			
	Kernel Driver	No	System	
	Stopped OK	Normal	No	No
changer	Changer	Not Available	Kernel Driver	
	No System	Stopped	OK	
	Ignore	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		
cpqarray	Cpqarray	Not Available	Kernel Driver	
	No Disabled	Stopped	OK	
	Normal	No		

cpqarry2	cpqarry2	Not Available	Kernel Driver	
	No Disabled	Stopped	OK	
	Normal	No		
cpqcidrv	HP iLO Management Channel Interface Driver			
	c:\windows\system32\drivers\cpqcidrv.sys			
	Kernel Driver	Yes	Manual	
	Running OK	Normal	No	Yes
cpqcissm	cpqcissm	Not Available	Kernel Driver	
	No Disabled	Stopped	OK	
	Normal	No		
cpqfcalm	cpqfcalm	Not Available	Kernel Driver	
	No Disabled	Stopped	OK	
	Normal	No		
crcdisk	CRC Disk Filter Driver			
	c:\windows\system32\drivers\crcdisk.sys			
	Kernel Driver	Yes	Boot	
	Running OK	Normal	No	Yes
dac960nt	dac960nt	Not Available	Kernel Driver	
	No Disabled	Stopped	OK	
	Normal	No		
dellcerc	dellcerc	Not Available	Kernel Driver	
	No Disabled	Stopped	OK	
	Normal	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
dmbboot	dmbboot			
	c:\windows\system32\drivers\dmbboot.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		
elxstor	elxstor	Not Available	Kernel Driver	
	No Disabled	Stopped	OK	
	Normal	No		
fastfat	Fastfat			
	c:\windows\system32\drivers\fastfat.sys			
	File System Driver	No	Disabled	
	Stopped OK	Normal	No	No
fdc	Fdc			
	c:\windows\system32\drivers\fdc.sys			

	Kernel Driver	No	System	
	Stopped OK	Ignore	No	No
fips	Fips			
	c:\windows\system32\drivers\fips.sys			
	Kernel Driver	Yes	System	
	Running OK	Normal	No	Yes
flpydisk	Flpydisk			
	c:\windows\system32\drivers\flpydisk.sys			
	Kernel Driver	No	System	
	Stopped OK	Ignore	No	No
fltmgr	FltMgr			
	c:\windows\system32\drivers\fltmgr.sys			
	File System Driver	Yes	Boot	
	Running OK	Normal	No	Yes
ftdisk	Volume Manager Driver			
	c:\windows\system32\drivers\ftdisk.sys			
	Kernel Driver	Yes	Boot	
	Running OK	Normal	No	Yes
gpc	Generic Packet Classifier			
	c:\windows\system32\drivers\msgpc.sys			
	Kernel Driver	Yes	Manual	
	Running OK	Normal	No	Yes
hidusb	Microsoft HID Class Driver			
	c:\windows\system32\drivers\hidusb.sys			
	Kernel Driver	Yes	Manual	
	Running OK	Ignore	No	Yes
hpciss	hpciss	Not Available	Kernel Driver	
	No Disabled	Stopped	OK	
	Normal	No		
hpciss2	HpCISSs2			
	c:\windows\system32\drivers\hpciss2.sys			
	Kernel Driver	Yes	Boot	
	Running OK	Normal	No	Yes
hpn	hpn	Not Available	Kernel Driver	
	No Disabled	Stopped	OK	
	Normal	No		
hpqilo2	hpqilo2			
	c:\windows\system32\drivers\hpqilo2.sys			
	Kernel Driver	Yes	Manual	
	Running OK	Normal	No	Yes
hpt3xx	hpt3xx	Not Available	Kernel Driver	
	No Disabled	Stopped	OK	
	Normal	No		
http	HTTP			
	c:\windows\system32\drivers\http.sys			
	Kernel Driver	Yes	Manual	
	Running OK	Normal	No	Yes
i2omgmt	i2omgmt	Not Available	Kernel Driver	
	No System	Stopped	OK	
	Normal	No		
i2omp	i2omp	Not Available	Kernel Driver	
	No Disabled	Stopped	OK	
	Normal	No		

i8042prt	i8042 Keyboard and PS/2 Mouse Port Driver c:\windows\system32\drivers\i8042prt.sys Kernel Driver Stopped OK Normal No No
iirsp	iirsp Not Available Kernel Driver No Disabled Stopped OK Normal No No
imapi	CD-Burning Filter Driver c:\windows\system32\drivers\imapi.sys Kernel Driver Stopped OK Normal No No
intelide	IntelIde Not Available Kernel Driver No Disabled Stopped OK Normal No No
intelppm	Intel Processor Driver c:\windows\system32\drivers\intelppm.sys Kernel Driver Yes Manual Running OK Normal No Yes
ip6fw	IPv6 Windows Firewall Driver c:\windows\system32\drivers\ip6fw.sys Kernel Driver Stopped OK Normal No No
ipfilterdriver	IP Traffic Filter Driver c:\windows\system32\drivers\ipfltdrv.sys Kernel Driver Stopped OK Normal No No
ipinip	IP in IP Tunnel Driver c:\windows\system32\drivers\ipinip.sys Kernel Driver Stopped OK Normal No No
ipnat	IP Network Address Translator c:\windows\system32\drivers\ipnat.sys Kernel Driver 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
irenum	IR Enumerator Service c:\windows\system32\drivers\irenum.sys Kernel Driver 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

kbdhid	Keyboard HID Driver c:\windows\system32\drivers\kbdhid.sys Kernel Driver Yes System Running OK Ignore No Yes
ksecdd	KSecDD c:\windows\system32\drivers\ksecdd.sys Kernel Driver Yes Boot Running OK Normal No Yes
l2nd Adapter	HP NC370 Multifunction Gigabit Server c:\windows\system32\drivers\bxnd52x.sys Kernel Driver Yes Manual Running OK Normal No Yes
lp6nds35	lp6nds35 Not Available Kernel Driver No Disabled Stopped OK Normal No No
mnmd	mnmd c:\windows\system32\drivers\mnmd.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
mouhid	Mouse HID Driver c:\windows\system32\drivers\mouhid.sys Kernel Driver Yes Manual Running OK Ignore No Yes
mountmgr	Mount Point Manager c:\windows\system32\drivers\mountmgr.sys Kernel Driver Yes Boot Running OK Normal No Yes
mrraid35x	mrraid35x Not Available Kernel Driver No Disabled Stopped OK Normal No No
mrxdav	WebDav Client Redirector c:\windows\system32\drivers\mrxdav.sys File System Driver No Manual Stopped OK Normal No No
mrxsmb	MRXSMB c:\windows\system32\drivers\mrxsmb.sys File System Driver Yes System Running OK Normal No Yes
msfs	Msfs c:\windows\system32\drivers\msfs.sys File System Driver Yes System Running OK Normal No Yes

mssmbios	Microsoft System Management BIOS Driver c:\windows\system32\drivers\mssmbios.sys Kernel Driver Yes Manual Running OK Normal No Yes
mup	Mup c:\windows\system32\drivers\mup.sys File System Driver Yes Boot Running OK Normal No Yes
ndis	NDIS System Driver c:\windows\system32\drivers\ndis.sys Kernel Driver Yes Boot Running OK Normal No Yes
ndistapi	Remote Access NDIS TAPI Driver c:\windows\system32\drivers\ndistapi.sys Kernel Driver Yes Manual Running OK Normal No Yes
ndisuio	NDIS Usermode I/O Protocol c:\windows\system32\drivers\ndisuio.sys Kernel Driver No Manual Stopped OK Normal No No
ndiswan	Remote Access NDIS WAN Driver c:\windows\system32\drivers\ndiswan.sys Kernel Driver Yes Manual Running OK Normal No Yes
ndproxy	NDIS Proxy c:\windows\system32\drivers\ndproxy.sys Kernel Driver Yes Manual Running OK Normal No Yes
netbios	NetBIOS Interface c:\windows\system32\drivers\netbios.sys File System Driver Yes System Running OK Normal No Yes
netbt	NetBios over Tcpip c:\windows\system32\drivers\netbt.sys Kernel Driver Yes System Running OK Normal No Yes
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	ql1240	ql1240 Not Available No Disabled Stopped Normal No No OK	serenum	Stopped OK Normal No No Serenum Filter Driver c:\windows\system32\drivers\serenum.sys Kernel Driver Yes Manual Running OK Normal No Yes
partmgr	Partition Manager c:\windows\system32\drivers\partmgr.sys Kernel Driver Yes Boot Running OK Normal No Yes	ql1280	ql1280 Not Available No Disabled Stopped Normal No No OK	serial	Serial port driver c:\windows\system32\drivers\serial.sys Kernel Driver Yes System Running OK Ignore No Yes
pci	PCI Bus Driver c:\windows\system32\drivers\pci.sys Kernel Driver Yes Boot Running OK Critical No Yes	ql2100	ql2100 Not Available No Disabled Stopped Normal No No OK	sfloppy	Sfloppy c:\windows\system32\drivers\sfloppy.sys Kernel Driver No System Stopped OK Ignore No No
pciide	PCIIde c:\windows\system32\drivers\pciide.sys Kernel Driver Yes Boot Running OK Normal No Yes	ql2200	ql2200 Not Available No Disabled Stopped Normal No No OK	simbad	Simbad Not Available No Disabled Stopped Normal No No OK
pcmcia	Pcmcia c:\windows\system32\drivers\pcmcia.sys Kernel Driver No Disabled Stopped OK Normal No No	ql2300	ql2300 Not Available No Disabled Stopped Normal No No OK	srv	Srv c:\windows\system32\drivers\srv.sys File System Driver Yes Manual Running OK Normal No Yes
pdcomp	PDCOMP Not Available No Manual Stopped Ignore No No OK	rasacd	Remote Access Auto Connection Driver c:\windows\system32\drivers\rasacd.sys Kernel Driver Yes System Running OK Normal No Yes	startdss	HP ProLiant Virtual Install Disk Support Driver c:\windows\system32\drivers\startdss.sys Kernel Driver No Disabled Stopped OK Normal No No
pdframe	PDFFRAME Not Available No Manual Stopped Ignore No No OK	rasl2tp	WAN Miniport (L2TP) c:\windows\system32\drivers\rasl2tp.sys Kernel 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
pdreli	PDRELI Not Available No Manual Stopped Ignore No No OK	rasppoe	Remote Access PPPOE Driver c:\windows\system32\drivers\rasppoe.sys Kernel Driver Yes Manual Running OK Normal No Yes	symc810	symc810 Not Available No Disabled Stopped Normal No No OK
pdrframe	PDRFRAME Not Available No Manual Stopped Ignore No No OK	raspti	Direct Parallel c:\windows\system32\drivers\raspti.sys Kernel Driver Yes Manual Running OK Normal No Yes	symc8xx	symc8xx Not Available No Disabled Stopped Normal No No OK
perc2	perc2 Not Available No Disabled Stopped Normal No No OK	rdbss	Rdbss c:\windows\system32\drivers\rdbss.sys File System Driver Yes System Running OK Normal No Yes	symmpi	symmpi Not Available No Disabled Stopped Normal No No OK
perc2hib	perc2hib Not Available No Disabled Stopped Normal No No OK	rdpcdd	RDPDCC c:\windows\system32\drivers\rdpcdd.sys Kernel Driver Yes System Running OK Ignore No Yes	sym_hi	sym_hi Not Available No Disabled Stopped Normal No No OK
pptpminiport	WAN Miniport (PPTP) c:\windows\system32\drivers\raspptp.sys Kernel Driver Yes Manual Running OK Normal No Yes	rdpdr	Terminal Server Device Redirector Driver c:\windows\system32\drivers\rdpdr.sys Kernel Driver Yes Manual Running OK Normal No Yes	sym_u3	sym_u3 Not Available No Disabled Stopped Normal No No OK
ptilink	Direct Parallel Link Driver c:\windows\system32\drivers\ptilink.sys Kernel Driver Yes Manual Running OK Normal No Yes	rdpwd	RDPWD c:\windows\system32\drivers\rdpwd.sys Kernel Driver Yes Manual Running OK Ignore No Yes	tcpip	TCP/IP Protocol Driver c:\windows\system32\drivers\tcpip.sys Kernel Driver Yes System Running OK Normal No Yes
ql1080	ql1080 Not Available No Disabled Stopped Normal No No OK	redbook	Digital CD Audio Playback Filter Driver c:\windows\system32\drivers\redbook.sys Kernel Driver No System Stopped OK Normal No No	tdpipe	TDPIPE c:\windows\system32\drivers\tdpipe.sys Kernel Driver No Manual Stopped OK Ignore No No
ql10wnt	ql10wnt Not Available No Disabled Stopped Normal No No OK	secdrv	Secdrv c:\windows\system32\drivers\secdrv.sys Kernel Driver No Manual	tdtcp	TDTCP c:\windows\system32\drivers\tdtcp.sys Kernel Driver Yes Manual
ql12160	ql12160 Not Available No Disabled Stopped Normal No No OK				

	Running	OK	Ignore	No	Yes
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				
usbccgp	Microsoft USB Generic Parent Driver c:\windows\system32\drivers\usbccgp.sys Kernel Driver Yes Manual Running OK Normal No Yes				
usbehci	Microsoft USB 2.0 Enhanced Host Controller Miniport Driver c:\windows\system32\drivers\usbehci.sys Kernel Driver Yes Manual Running OK Normal No Yes				
usbhub	Microsoft USB Standard Hub Driver c:\windows\system32\drivers\usbhub.sys Kernel Driver Yes Manual Running OK Normal No Yes				
usbstor	USB Mass Storage Driver c:\windows\system32\drivers\usbstor.sys Kernel Driver No Manual Stopped OK Normal No No				
usbuhci	Microsoft USB Universal Host Controller Miniport Driver c:\windows\system32\drivers\usbuhci.sys Kernel Driver Yes Manual Running OK Normal No Yes				
vga	vga c:\windows\system32\drivers\vgapnp.sys Kernel Driver No Manual Stopped OK Ignore No No				
vgasave	VGA Display Controller. c:\windows\system32\drivers\vga.sys Kernel Driver Yes System Running OK Ignore No Yes				
viaide	ViaIde Not Available Kernel Driver No Disabled Stopped OK Normal No No				

volsnap	Storage volumes				
	c:\windows\system32\drivers\volsnap.sys				
	Kernel Driver	Yes	Boot		
	Running	OK	Normal	No	Yes
wanarp	Remote Access IP ARP Driver				
	c:\windows\system32\drivers\wanarp.sys				
	Kernel Driver	Yes	Manual		
	Running	OK	Normal	No	Yes
wdf01000	Wdf01000				
	c:\windows\system32\drivers\wdf01000.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				
Communications	Port Yes	PORTS	5.2.3790.0		
	10/1/2002 (Standard	port types)			
	msports.inf	Not Available			
	ROOT*\PNP0501\1_0_17_1_0_0				
Microsoft	System Management	BIOS Driver	Yes		
	SYSTEM	5.2.3790.1830	10/1/2002		
	(Standard system devices)	machine.inf			
	Not Available	ROOT\SYSTEM\0002			
Microcode	Update Device	Yes	SYSTEM		
	5.2.3790.1830	10/1/2002 (Standard			
system devices)	machine.inf	Not Available			
	ROOT\SYSTEM\0001				
Plug and	Play Software	Device Enumerator	Yes		
	SYSTEM	5.2.3790.1830	10/1/2002		
	(Standard system devices)	machine.inf			
	Not Available	ROOT\SYSTEM\0000			
Terminal	Server Mouse	Driver	Yes	SYSTEM	
	5.2.3790.1830	10/1/2002 (Standard			
system devices)	machine.inf	Not Available			
	ROOT\RDP_MOU\0000				
Terminal	Server Keyboard	Driver	Yes		
	SYSTEM	5.2.3790.1830	10/1/2002		
	(Standard system devices)	machine.inf			
	Not Available	ROOT\RDP_KBD\0000			
Terminal	Server Device	Redirector	Yes		
	SYSTEM	5.2.3790.1830	10/1/2002		
	(Standard system devices)	machine.inf			
	Not Available	ROOT\RDPDR\0000			
Direct	Parallel	Yes	NET	5.2.3790.1830	
	10/1/2002 Microsoft	netrasa.inf			
Available	ROOT\MS_PTMINIPORT\0000				

WAN Miniport (PPTP) Yes NET 5.2.3790.1830 10/1/2002 Microsoft netrasa.inf Not Available ROOT\MS_PPTPMINIPORT\0000	WAN Miniport (PPPOE) Yes NET 5.2.3790.1830 10/1/2002 Microsoft netrasa.inf Not Available ROOT\MS_PPPOEMINIPORT\0000
WAN Miniport (IP) Yes NET 5.2.3790.1830 10/1/2002 Microsoft netrasa.inf Not Available ROOT\MS_NDISWANIP\0000	
WAN Miniport (L2TP) Yes NET 5.2.3790.1830 10/1/2002 Microsoft netrasa.inf Not Available ROOT\MS_L2TPMINIPORT\0000	Video Codecs Yes MEDIA 5.2.3790.0 10/1/2002 (Standard system devices) wave.inf Not Available ROOT\MEDIA\MS_MMVID
Legacy Video Capture Devices Yes MEDIA 5.2.3790.0 10/1/2002 (Standard system devices) wave.inf Not Available ROOT\MEDIA\MS_MMVCD	
Media Control Devices Yes MEDIA 5.2.3790.0 10/1/2002 (Standard system devices) wave.inf Not Available ROOT\MEDIA\MS_MMMCI	Legacy Audio Drivers Yes MEDIA 5.2.3790.0 10/1/2002 (Standard system devices) wave.inf Not Available ROOT\MEDIA\MS_MMDRV
Audio Codecs Yes MEDIA 5.2.3790.0 10/1/2002 (Standard system devices) wave.inf Not Available ROOT\MEDIA\MS_MMACH	
Remote Access IP ARP Driver Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not	volsnap Not Available LEGACYDRIVER Not Available Not Available Not Available Not
Available Not Available Not Available Not	
Available Not Available Not Available Not	VGA Display Controller. Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not
Available Not Available Not Available Not	
Available Not Available Not Available Not	HP ProLiant Virtual Install Disk Support Driver Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not
Available Not Available Not Available Not	
Available Not Available Not Available Not	RDPWD Not Available LEGACYDRIVER Not Available Not Available Not Available Not Available Not Available Not Available Not
Available Not Available Not Available Not	
RDPDCC Not Available LEGACYDRIVER Not Available Not Available Not Available Not	


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HID\VID_03F0&PID_1027&MI_01\8&25B103E6&0&00
00
USB Human Interface Device Yes HIDCLASS
5.2.3790.0 10/1/2002 (Standard
system devices) input.inf Not Available
USB\VID_03F0&PID_1027&MI_01\7&2CD6FDA9&0&00
01
HID Keyboard Device Yes KEYBOARD 5.2.3790.0
10/1/2002 (Standard keyboards)
keyboard.inf Not Available
HID\VID_03F0&PID_1027&MI_00\8&DED77A1&0&000
0
USB Human Interface Device Yes HIDCLASS
5.2.3790.0 10/1/2002 (Standard
system devices) input.inf Not Available
USB\VID_03F0&PID_1027&MI_00\7&2CD6FDA9&0&00
00
USB Composite Device Yes USB
5.2.3790.1830 10/1/2002 (Standard USB
Host Controller) usb.inf Not Available
USB\VID_03F0&PID_1027\6&18FFBC52&0&1
USB Root Hub Yes USB 5.2.3790.1830
10/1/2002 (Standard USB Host Controller)
usbport.inf Not Available
USB\ROOT_HUB\5&26BC3420&0
Standard Universal PCI to USB Host Controller Yes
USB 5.2.3790.1830 10/1/2002
(Standard USB Host Controller)
usbport.inf Not Available
PCI\VEN_103C&DEV_3300&SUBSYS_3305103C&REV_0
0\4&2014205D&0&24F0
HP iLO Management Channel Interface Driver Yes
MULTIFUNCTION 1.12.0.0 6/22/2007
Hewlett-Packard Company oem4.inf Not
Available
PCI\VEN_0E11&DEV_B204&SUBSYS_3305103C&REV_0
3\4&2014205D&0&22F0
HP ProLiant iLO 2 Legacy Support Function Yes
SYSTEM 1.3.0.0 3/30/2007 Hewlett-
Packard Company oem9.inf Not Available
PCI\VEN_0E11&DEV_B203&SUBSYS_3305103C&REV_0
3\4&2014205D&0&20F0
Default Monitor Yes MONITOR 5.1.2001.0
6/6/2001 (Standard monitor types)
monitor.inf Not Available
DISPLAY\DEFAULT_MONITOR\5&E64F3B&0&10000000
&01&03
Default Monitor Yes MONITOR 5.1.2001.0
6/6/2001 (Standard monitor types)
monitor.inf Not Available
DISPLAY\DEFAULT_MONITOR\5&E64F3B&0&10000001
&01&03
ATI ES1000 Yes DISPLAY 8.24.3.0
4/5/2006 ATI Technologies Inc.
oem11.inf Not Available
PCI\VEN_1002&DEV_515E&SUBSYS_31FB103C&REV_0
2\4&2014205D&0&18F0
Intel(R) 82801 PCI Bridge - 244E Yes
SYSTEM 5.2.3790.1830 10/1/2002
Intel machine.inf Not Available
PCI\VEN_8086&DEV_244E&SUBSYS_00000000&REV_D
9\3&61AAA01&0&F0

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USB Root Hub Yes USB 5.2.3790.1830
10/1/2002 (Standard USB Host Controller)
usbport.inf Not Available
USB\ROOT_HUB2\4&392538C3&0
Standard Enhanced PCI to USB Host Controller Yes
USB 5.2.3790.1830 10/1/2002
(Standard USB Host Controller)
usbport.inf Not Available
PCI\VEN_8086&DEV_268C&SUBSYS_31FE103C&REV_0
9\3&61AAA01&0&EF
USB Root Hub Yes USB 5.2.3790.1830
10/1/2002 (Standard USB Host Controller)
usbport.inf Not Available
USB\ROOT_HUB\4&41C0314&0
Standard Universal PCI to USB Host Controller Yes
USB 5.2.3790.1830 10/1/2002
(Standard USB Host Controller)
usbport.inf Not Available
PCI\VEN_8086&DEV_268B&SUBSYS_31FE103C&REV_0
9\3&61AAA01&0&EB
USB Root Hub Yes USB 5.2.3790.1830
10/1/2002 (Standard USB Host Controller)
usbport.inf Not Available
USB\ROOT_HUB\4&A54F890&0
Standard Universal PCI to USB Host Controller Yes
USB 5.2.3790.1830 10/1/2002
(Standard USB Host Controller)
usbport.inf Not Available
PCI\VEN_8086&DEV_268A&SUBSYS_31FE103C&REV_0
9\3&61AAA01&0&EA
USB Root Hub Yes USB 5.2.3790.1830
10/1/2002 (Standard USB Host Controller)
usbport.inf Not Available
USB\ROOT_HUB\4&37897620&0
Standard Universal PCI to USB Host Controller Yes
USB 5.2.3790.1830 10/1/2002
(Standard USB Host Controller)
usbport.inf Not Available
PCI\VEN_8086&DEV_2689&SUBSYS_31FE103C&REV_0
9\3&61AAA01&0&E9
USB Root Hub Yes USB 5.2.3790.1830
10/1/2002 (Standard USB Host Controller)
usbport.inf Not Available
USB\ROOT_HUB\4&7353027&0
Standard Universal PCI to USB Host Controller Yes
USB 5.2.3790.1830 10/1/2002
(Standard USB Host Controller)
usbport.inf Not Available
PCI\VEN_8086&DEV_2688&SUBSYS_31FE103C&REV_0
9\3&61AAA01&0&E8
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_8086&DEV_25F6&SUBSYS_00000000&REV_B
1\3&61AAA01&0&B0
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_8086&DEV_25F5&SUBSYS_00000000&REV_B
1\3&61AAA01&0&A8
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available

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PCI\VEN_8086&DEV_25F3&SUBSYS_00000000&REV_B
1\3&61AAA01&0&98
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_8086&DEV_25F1&SUBSYS_00000000&REV_B
1\3&61AAA01&0&88
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_8086&DEV_25F0&SUBSYS_00000000&REV_B
1\3&61AAA01&0&82
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_8086&DEV_25F0&SUBSYS_00000000&REV_B
1\3&61AAA01&0&81
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_8086&DEV_25F0&SUBSYS_00000000&REV_B
1\3&61AAA01&0&80
HP NC373i Multifunction Gigabit Server Adapter Yes
NET 3.4.10.0 5/25/2007 Hewlett-
Packard Company oem5.inf Not Available
B06BDRV\L2ND&PCI_164C14E4&SUBSYS_7038103C&R
EV_12\6&29511DBC&0&20050500
HP NC373i Virtual Bus Device Yes SYSTEM
3.4.10.0 5/22/2007 Hewlett-Packard Company
oem8.inf Not Available
PCI\VEN_14E4&DEV_164C&SUBSYS_7038103C&REV_1
2\5&3687280D&0&000038
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_1166&DEV_0103&SUBSYS_00000000&REV_C
3\4&8C20058&0&0038
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_8086&DEV_25E7&SUBSYS_00000000&REV_B
1\3&61AAA01&0&38
HP NC373i Multifunction Gigabit Server Adapter Yes
NET 3.4.10.0 5/25/2007 Hewlett-
Packard Company oem5.inf Not Available
B06BDRV\L2ND&PCI_164C14E4&SUBSYS_7038103C&R
EV_12\6&30C55FC0&0&20050300
HP NC373i Virtual Bus Device Yes SYSTEM
3.4.10.0 5/22/2007 Hewlett-Packard Company
oem8.inf Not Available
PCI\VEN_14E4&DEV_164C&SUBSYS_7038103C&REV_1
2\5&20B00FFE&0&000030
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_1166&DEV_0103&SUBSYS_00000000&REV_C
3\4&79C23&0&0030
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf

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```

Not Available
PCI\VEN_8086&DEV_25E6&SUBSYS_00000000&REV_B
1\3&61AAA01&0&30
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_8086&DEV_25E5&SUBSYS_00000000&REV_B
1\3&61AAA01&0&28
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_8086&DEV_25F8&SUBSYS_00000000&REV_B
1\3&61AAA01&0&20
Disk drive Yes DISKDRIVE 5.2.3790.0
10/1/2002 (Standard disk drives)
disk.inf Not Available
SCSI\DISK&VEN_HP&PROD_LOGICAL_VOLUME&REV_1.
66\6&540FB03&0&040
HP Virtual LUN Yes SYSTEM 5.2.3790.1830
10/1/2002 Compaq scsdev.inf Not
Available
SCSI\OTHER&VEN_COMPAQ&PROD_SCSI_COMMUNICATE
&REV_CIS2\6&540FB03&0&000
Smart Array E200I Controller Yes SCSIADAPTER
6.6.0.32 3/20/2007 Hewlett-Packard Company
oem10.inf Not Available
PCI\VEN_103C&DEV_3238&SUBSYS_3211103C&REV_0
0\5&34D510D8&0&400018
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_1166&DEV_0104&SUBSYS_00000000&REV_B
2\5&34D510D8&0&200018
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_1166&DEV_0103&SUBSYS_00000000&REV_B
4\4&EFC3E79&0&0018
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_8086&DEV_25E3&SUBSYS_00000000&REV_B
1\3&61AAA01&0&18
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_8086&DEV_350C&SUBSYS_00000000&REV_0
1\4&641DA4&0&0310
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_8086&DEV_3518&SUBSYS_00000000&REV_0
1\5&38BD847A&0&100010
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf

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```

Not Available
PCI\VEN_8086&DEV_3514&SUBSYS_00000000&REV_0
1\5&38BD847A&0&000010
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_8086&DEV_3510&SUBSYS_00000000&REV_0
1\5&38BD847A&0&000010
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_8086&DEV_3500&SUBSYS_00000000&REV_0
1\4&641DA4&0&0010
PCI standard PCI-to-PCI bridge Yes
SYSTEM 5.2.3790.1830 10/1/2002
(Standard system devices) machine.inf
Not Available
PCI\VEN_8086&DEV_25E2&SUBSYS_00000000&REV_B
1\3&61AAA01&0&10
PCI standard host CPU bridge Yes SYSTEM
5.2.3790.1830 10/1/2002 (Standard
system devices) machine.inf Not Available
PCI\VEN_8086&DEV_25D8&SUBSYS_00000000&REV_B
1\3&61AAA01&0&00
PCI bus Yes SYSTEM 5.2.3790.1830
10/1/2002 (Standard system devices)
machine.inf Not Available
ACPI\PNP0A03\2&DABA3FF&0
Intel Processor Yes PROCESSOR 5.2.3790.1830
10/1/2002 Intel cpu.inf Not Available
ACPI\GENUINEINTEL_-
_X86_FAMILY_6_MODEL_15\_1
Intel Processor Yes PROCESSOR 5.2.3790.1830
10/1/2002 Intel cpu.inf Not Available
ACPI\GENUINEINTEL_-
_X86_FAMILY_6_MODEL_15\_0
Microsoft ACPI-Compliant System Yes
SYSTEM 5.2.3790.0 10/1/2002
Microsoft acpi.inf Not Available
ACPI_HAL\PNP0C08\0
ACPI Multiprocessor PC Yes COMPUTER
5.2.3790.1830 10/1/2002 (Standard
computers) hal.inf Not Available
ROOT\ACPI_HAL\0000
Not Available Not Available Not Available
Not Available Not Available Not
Available Not Available Not Available
HTREE\ROOT\0

[Environment Variables]
Variable Value User Name
ComSpec %SystemRoot%\system32\cmd.exe <SYSTEM>
Path %SystemRoot%\system32;%SystemRoot%;%SystemR
oot%\System32\Wbem;C:\Program Files\Microsoft SQL
Server\80\Tools\Binn\;C:\Program Files\Microsoft SQL
Server\90\Tools\Binn\;C:\Program Files\Microsoft SQL
Server\90\Tools\Binn\;C:\Program Files\Microsoft SQL
Server\90\Tools\Binn\VSShell\Common7\IDE\;C:\Program

```

```

Files\Microsoft Visual Studio
8\Common7\IDE\PrivateAssemblies\ <SYSTEM>
windir %SystemRoot% <SYSTEM>
FP_NO_HOST_CHECK NO <SYSTEM>
OS Windows_NT <SYSTEM>
PROCESSOR_ARCHITECTURE x86 <SYSTEM>
PROCESSOR_LEVEL 6 <SYSTEM>
PROCESSOR_IDENTIFIER x86 Family 6 Model 15
Stepping 6, GenuineIntel <SYSTEM>
PROCESSOR_REVISION 0f06 <SYSTEM>
NUMBER_OF_PROCESSORS 2 <SYSTEM>
ClusterLog C:\WINDOWS\Cluster\cluster.log
<SYSTEM>
PATHEXT .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF
;.WSH <SYSTEM>
TEMP %SystemRoot%\TEMP <SYSTEM>
TMP %SystemRoot%\TEMP <SYSTEM>
lib C:\Program Files\SQLXML 4.0\bin\
<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

[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
system Not Available 4 8 0
1413120 Not Available Not Available
Not Available Not Available
smss.exe Not Available 552 11
204800 1413120 6/23/2008 2:44 PM Not
Available Not Available Not Available

```

```

csrss.exe Not Available 648 13 Not
Available Not Available 6/23/2008 2:44 PM Not
Available Not Available Not Available
winlogon.exe c:\windows\system32\winlogon.exe
692 13 204800 1413120
6/23/2008 2:44 PM 5.2.3790.1830
(srv03_sp1_rtm.050324-1447) 497.00 KB (508,928
bytes) 11/30/2005 6:00 AM
services.exe c:\windows\system32\services.exe
752 9 204800 1413120
6/23/2008 2:44 PM 5.2.3790.1830
(srv03_sp1_rtm.050324-1447) 107.50 KB (110,080
bytes) 11/30/2005 6:00 AM
lsass.exe c:\windows\system32\lsass.exe 764 9
204800 1413120 6/23/2008 2:44 PM
5.2.3790.0 (srv03_rtm.030324-2048)
13.00 KB (13,312 bytes) 11/30/2005
6:00 AM
svchost.exe c:\windows\system32\svchost.exe
936 8 204800 1413120
6/23/2008 2:44 PM 5.2.3790.1830
(srv03_sp1_rtm.050324-1447) 14.00 KB (14,336 bytes)
11/30/2005 6:00 AM
svchost.exe Not Available 1020 8
Not Available Not Available
6/23/2008 2:44 PM Not Available Not
Available Not Available
svchost.exe Not Available 1076 8
Not Available Not Available
6/23/2008 2:44 PM Not Available Not
Available Not Available
svchost.exe c:\windows\system32\svchost.exe
1108 8 204800 1413120
6/23/2008 2:44 PM 5.2.3790.1830
(srv03_sp1_rtm.050324-1447) 14.00 KB (14,336 bytes)
11/30/2005 6:00 AM
msdtc.exe Not Available 1500 8 Not
Available Not Available 6/23/2008 2:44 PM Not
Available Not Available Not Available
aclient.exe c:\program
files\altiris\aclient\aclient.exe 1640 8
204800 1413120 6/23/2008 2:44 PM
6.9.164 5.10 MB (5,349,452 bytes)
8/13/2007 3:16 PM
svchost.exe c:\windows\system32\svchost.exe
1680 8 204800 1413120
6/23/2008 2:44 PM 5.2.3790.1830
(srv03_sp1_rtm.050324-1447) 14.00 KB (14,336 bytes)
11/30/2005 6:00 AM
inetinfo.exe
c:\windows\system32\inetrv\inetinfo.exe
1740 8 204800 1413120
6/23/2008 2:44 PM 6.0.3790.1830
(srv03_sp1_rtm.050324-1447) 14.00 KB (14,336 bytes)
10/18/2007 3:39 PM
svchost.exe Not Available 1788 8
Not Available Not Available
6/23/2008 2:44 PM Not Available Not
Available Not Available
sysdown.exe c:\windows\system32\sysdown.exe
1808 8 204800 1413120
6/23/2008 2:44 PM 1.1.0.0 built by:

```

```

buildsrv 6.50 KB (6,656 bytes) 8/13/2007
1:52 PM
svchost.exe Not Available 1848 8
Not Available Not Available
6/23/2008 2:44 PM Not Available Not
Available Not Available
svchost.exe c:\windows\system32\svchost.exe
2024 8 204800 1413120
6/23/2008 2:44 PM 5.2.3790.1830
(srv03_sp1_rtm.050324-1447) 14.00 KB (14,336 bytes)
11/30/2005 6:00 AM
svchost.exe c:\windows\system32\svchost.exe
656 8 204800 1413120
6/23/2008 2:44 PM 5.2.3790.1830
(srv03_sp1_rtm.050324-1447) 14.00 KB (14,336 bytes)
11/30/2005 6:00 AM
wmiprvse.exe Not Available 584 8
Not Available Not Available
6/23/2008 2:46 PM Not Available Not
Available Not Available
logon.scr Not Available 904 4 Not
Available Not Available 6/23/2008 2:54 PM Not
Available Not Available Not Available
w3wp.exe c:\windows\system32\inetrv\w3wp.exe
1832 8 204800 1413120
6/23/2008 2:57 PM 6.0.3790.1830
(srv03_sp1_rtm.050324-1447) 7.00 KB (7,168 bytes)
10/18/2007 3:39 PM
dllhost.exe c:\windows\system32\dllhost.exe
472 8 204800 1413120
6/23/2008 2:57 PM 5.2.3790.0
(srv03_rtm.030324-2048) 5.50 KB (5,632 bytes)
11/30/2005 6:00 AM
msinfo32.exe c:\program files\common
files\microsoft shared\msinfo\msinfo32.exe
3072 8 204800 1413120
6/23/2008 3:03 PM 5.2.3790.1830
(srv03_sp1_rtm.050324-1447) 42.00 KB (43,008 bytes)
8/7/2007 2:52 PM
wmiprvse.exe Not Available 3136 8
Not Available Not Available
6/23/2008 3:03 PM Not Available Not
Available Not Available
[Loaded Modules]
Name Version Size File Date Manufacturer
Path
winlogon 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
497.00 KB (508,928 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\winlogon.exe
ntdll 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
748.50 KB (766,464 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\ntdll.dll
kernel32 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
1,014.00 KB (1,038,336 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\kernel32.dll
advapi32 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
605.50 KB (620,032 bytes) 11/30/2005

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6:00 AM Microsoft Corporation
c:\windows\system32\advapi32.dll
rpcrt4 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
627.00 KB (642,048 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\rpcrt4.dll
crypt32 5.131.3790.1830 (srv03_sp1_rtm.050324-1447)
582.00 KB (595,968 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\crypt32.dll
msasn1 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
56.50 KB (57,856 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\msasn1.dll
msvcrt 7.0.3790.1830 (srv03_sp1_rtm.050324-1447)
340.50 KB (348,672 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\msvcrt.dll
user32 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
574.50 KB (588,288 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\user32.dll
gdi32 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
273.00 KB (279,552 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\gdi32.dll
nddeapi 5.2.3790.0 (srv03_rtm.030324-2048)
16.00 KB (16,384 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\nddeapi.dll
profmap 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
22.50 KB (23,040 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\profmap.dll
netapi32 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
341.50 KB (349,696 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\netapi32.dll
userenv 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
771.00 KB (789,504 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\userenv.dll
psapi 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
20.00 KB (20,480 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\psapi.dll
regapi 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
55.00 KB (56,320 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\regapi.dll
secur32 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
64.00 KB (65,536 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\secur32.dll
setupapi 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
1.03 MB (1,079,808 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\setupapi.dll
version 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
18.00 KB (18,432 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\version.dll

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winsta 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 54.50 KB (55,808 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\winsta.dll
 ws2_32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 82.00 KB (83,968 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\ws2_32.dll
 ws2help 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 19.50 KB (19,968 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\ws2help.dll
 msgina 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 1.16 MB (1,211,904 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\msgina.dll
 shsvcs 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
 131.50 KB (134,656 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\shsvcs.dll
 shlwapi 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
 313.50 KB (321,024 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\shlwapi.dll
 sfc 5.2.3790.0 (srv03_rtm.030324-2048)
 4.50 KB (4,608 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\sfc.dll
 sfc_os 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 138.00 KB (141,312 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\sfc_os.dll
 wintrust 5.131.3790.1830 (srv03_spi_rtm.050324-1447)
 162.00 KB (165,888 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\wintrust.dll
 imagehlp 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 145.50 KB (148,992 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\imagehlp.dll
 ole32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 1.19 MB (1,245,184 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\ole32.dll
 comctl32 6.0 (srv03_spi_rtm.050324-1447)
 1.00 MB (1,051,136 bytes) 8/7/2007 9:24
 AM Microsoft Corporation
 c:\windows\winsxs\x86_microsoft.windows.com
 mon-controls_6595b64144ccf1df_5.2.3790.1830_x-
 ww_7ae38ccf\comctl32.dll
 winscard 5.2.3790.0 (srv03_rtm.030324-2048)
 98.50 KB (100,864 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\winscard.dll
 wtsapi32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 19.00 KB (19,456 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\wtsapi32.dll
 sxs 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 743.50 KB (761,344 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\sxs.dll

winmm 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 172.50 KB (176,640 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\winmm.dll
 shell32 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
 7.99 MB (8,379,392 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\shell32.dll
 rsaenh 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 183.98 KB (188,392 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\rsaenh.dll
 wldap32 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 174.50 KB (178,688 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\wldap32.dll
 csccdll 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 100.00 KB (102,400 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\csccdll.dll
 dimsntfy 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 19.00 KB (19,456 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\dimsntfy.dll
 wlnotify 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 94.50 KB (96,768 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\wlnotify.dll
 mpr 5.2.3790.0 (srv03_rtm.030324-2048)
 56.00 KB (57,344 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\mpr.dll
 oleaut32 5.2.3790.1830 543.00 KB (556,032
 bytes) 11/30/2005 6:00 AM Microsoft Corporation
 c:\windows\system32\oleaut32.dll
 winspool 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 147.00 KB (150,528 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\winspool.drv
 comctl32 5.82 (srv03_spi_rtm.050324-1447)
 585.00 KB (599,040 bytes) 8/7/2007 9:24
 AM Microsoft Corporation
 c:\windows\winsxs\x86_microsoft.windows.com
 mon-controls_6595b64144ccf1df_5.2.3790.1830_x-
 ww_1b6f474a\comctl32.dll
 uxtheme 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
 202.00 KB (206,848 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\uxtheme.dll
 services 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 107.50 KB (110,080 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\services.exe
 ncobjapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 36.00 KB (36,864 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\ncobjapi.dll
 msvcpc60 6.05.2144.0 388.00 KB (397,312
 bytes) 11/30/2005 6:00 AM Microsoft Corporation
 c:\windows\system32\msvcpc60.dll
 scesrv 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 327.00 KB (334,848 bytes) 11/30/2005

6:00 AM Microsoft Corporation
 c:\windows\system32\scesrv.dll
 authz 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 66.50 KB (68,096 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\authz.dll
 umpnpgmr 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 126.50 KB (129,536 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\umpnpgmr.dll
 eventlog 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 67.50 KB (69,120 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\eventlog.dll
 netevent 5.2.3790.0 (srv03_rtm.030324-2048)
 224.00 KB (229,376 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\netevent.dll
 lsass 5.2.3790.0 (srv03_rtm.030324-2048)
 13.00 KB (13,312 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\lsass.exe
 lsasrv 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 803.00 KB (822,272 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\lsasrv.dll
 ntdsapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 71.00 KB (72,704 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\ntdsapi.dll
 dnsapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 153.50 KB (157,184 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\dnsapi.dll
 samlib 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 46.50 KB (47,616 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\samlib.dll
 samsrv 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 450.50 KB (461,312 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\samsrv.dll
 cryptdll 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 32.00 KB (32,768 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\cryptdll.dll
 msprivs 5.2.3790.0 (srv03_rtm.030324-2048)
 46.50 KB (47,616 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\msprivs.dll
 kerberos 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 340.50 KB (348,672 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\kerberos.dll
 msv1_0 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 141.00 KB (144,384 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\msv1_0.dll
 iphlapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
 92.50 KB (94,720 bytes) 11/30/2005
 6:00 AM Microsoft Corporation
 c:\windows\system32\iphlpapi.dll

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netlogon 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
409.50 KB (419,328 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\netlogon.dll
w32time 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
222.00 KB (227,328 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\w32time.dll
schannel 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
141.00 KB (144,384 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\schannel.dll
wdigest 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
74.00 KB (75,776 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\wdigest.dll
rassfm 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
23.00 KB (23,552 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\rassfm.dll
kdcsvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
213.50 KB (218,624 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\kdcsvc.dll
ntdsa 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
1.45 MB (1,516,032 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\ntdsa.dll
esent 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
1,022.50 KB (1,047,040 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\esent.dll
ntdsatq 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
29.50 KB (30,208 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\ntdsatq.dll
mswsock 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
250.50 KB (256,512 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\mswsock.dll
scecli 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
186.50 KB (190,976 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\scecli.dll
ws03res 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
793.50 KB (812,544 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\ws03res.dll
pstorsvc 5.2.3790.0 (srv03_rtm.030324-2048)
24.00 KB (24,576 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\pstorsvc.dll
psbase 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
84.00 KB (86,016 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\psbase.dll
hnetcfg 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
343.50 KB (351,744 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\hnetcfg.dll
wshtcpip 5.2.3790.0 (srv03_rtm.030324-2048)
18.00 KB (18,432 bytes) 11/30/2005

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6:00 AM Microsoft Corporation
c:\windows\system32\wshtcpip.dll
w3ssl 6.0.3790.0 (srv03_rtm.030324-2048)
15.00 KB (15,360 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\w3ssl.dll
strmfilt 6.0.3790.1830 (srv03_spi_rtm.050324-1447)
84.00 KB (86,016 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\strmfilt.dll
httpapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
24.00 KB (24,576 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\httpapi.dll
dssenh 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
139.98 KB (143,336 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\dssenh.dll
svchost 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
14.00 KB (14,336 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\svchost.exe
rpcss 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
406.00 KB (415,744 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\rpcss.dll
xpsp2res 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
2.76 MB (2,897,920 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\xpsp2res.dll
clbcatq 2001.12.4720.1830 (srv03_spi_rtm.050324-1447)
502.50 KB (514,560 bytes) 8/7/2007 2:49 PM
Microsoft Corporation
c:\windows\system32\clbcatq.dll
comres 2001.12.4720.0 (srv03_rtm.030324-2048)
778.00 KB (796,672 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\comres.dll
ntmarta 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
120.50 KB (123,392 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\ntmarta.dll
schedsvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
197.50 KB (202,240 bytes) 8/7/2007 2:52 PM
Microsoft Corporation
c:\windows\system32\schedsvc.dll
wiarpc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
32.50 KB (33,280 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\wiarpc.dll
msidle 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
6.50 KB (6,656 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\msidle.dll
audiosrv 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
40.50 KB (41,472 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\audiosrv.dll
wkssvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
130.00 KB (133,120 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\wkssvc.dll

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cryptsvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
55.50 KB (56,832 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\cryptsvc.dll
certcli 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
227.00 KB (232,448 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\certcli.dll
atl 3.05.2283 83.00 KB (84,992 bytes)
11/30/2005 6:00 AM Microsoft Corporation
c:\windows\system32\atl.dll
vssapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
548.00 KB (561,152 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\vssapi.dll
dmserver 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
25.50 KB (26,112 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\dmserver.dll
aelupsvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
26.00 KB (26,624 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\aelupsvc.dll
apphelp 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
146.50 KB (150,016 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\apphelp.dll
pchsvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
39.00 KB (39,936 bytes) 8/7/2007 2:52 PM
Microsoft Corporation
c:\windows\pchealth\helpctr\binaries\pchsvc
.dll
es 2001.12.4720.1830 (srv03_spi_rtm.050324-1447)
233.00 KB (238,592 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\es.dll
seclogon 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
18.50 KB (18,944 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\seclogon.dll
trkwks 5.2.3790.0 (srv03_rtm.030324-2048)
85.00 KB (87,040 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\trkwks.dll
wmisvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
140.00 KB (143,360 bytes) 8/7/2007 2:49 PM
Microsoft Corporation
c:\windows\system32\wbem\wmisvc.dll
srvsvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
93.50 KB (95,744 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\srvsvc.dll
sens 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
36.50 KB (37,376 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\sens.dll
comsvcs 2001.12.4720.1830 (srv03_spi_rtm.050324-1447)
1.19 MB (1,248,256 bytes) 8/7/2007 2:49 PM
Microsoft Corporation
c:\windows\system32\comsvcs.dll
browser 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
76.50 KB (78,336 bytes) 11/30/2005

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6:00 AM Microsoft Corporation
c:\windows\system32\browser.dll
wbemcore 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
497.50 KB (509,440 bytes) 8/7/2007 2:49 PM
Microsoft Corporation
c:\windows\system32\wbem\wbemcore.dll
esscli 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
250.00 KB (256,000 bytes) 8/7/2007 2:49 PM
Microsoft Corporation
c:\windows\system32\wbem\esscli.dll
wbemcomn 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
221.00 KB (226,304 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\wbem\wbemcomn.dll
fastprox 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
471.00 KB (482,304 bytes) 8/7/2007 2:49 PM
Microsoft Corporation
c:\windows\system32\wbem\fastprox.dll
wbemsvc 5.2.3790.0 (srv03_rtm.030324-2048)
42.50 KB (43,520 bytes) 8/7/2007 2:50 PM
Microsoft Corporation
c:\windows\system32\wbem\wbemsvc.dll
wmiutils 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
93.50 KB (95,744 bytes) 8/7/2007 2:49 PM
Microsoft Corporation
c:\windows\system32\wbem\wmiutils.dll
repdrvfs 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
172.50 KB (176,640 bytes) 8/7/2007 2:49 PM
Microsoft Corporation
c:\windows\system32\wbem\repdrvfs.dll
wmiprvsd 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
404.00 KB (413,696 bytes) 8/7/2007 2:49 PM
Microsoft Corporation
c:\windows\system32\wbem\wmiprvsd.dll
wbemess 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
271.50 KB (278,016 bytes) 8/7/2007 2:49 PM
Microsoft Corporation
c:\windows\system32\wbem\wbemess.dll
netrap 5.2.3790.0 (srv03_rtm.030324-2048)
11.50 KB (11,776 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\netrap.dll
ncprov 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
46.50 KB (47,616 bytes) 8/7/2007 2:49 PM
Microsoft Corporation
c:\windows\system32\wbem\ncprov.dll
wbemcons 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
45.50 KB (46,592 bytes) 8/7/2007 2:49 PM
Microsoft Corporation
c:\windows\system32\wbem\wbemcons.dll
ntlsapi 5.2.3790.0 (srv03_rtm.030324-2048)
8.00 KB (8,192 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\ntlsapi.dll
aclient 6.9.164 5.10 MB (5,349,452 bytes)
8/13/2007 3:16 PM Altiris, Inc.
c:\program
files\altiris\aclient\aclient.exe
comdlg32 6.00.3790.1830 (srv03_spi_rtm.050324-1447)
274.50 KB (281,088 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\comdlg32.dll

wsock32 5.2.3790.0 (srv03_rtm.030324-2048)
22.00 KB (22,528 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\wsock32.dll
riched32 5.2.3790.0 (srv03_rtm.030324-2048)
3.50 KB (3,584 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\riched32.dll
riched20 5.31.23.1224 439.00 KB (449,536
bytes) 11/30/2005 6:00 AM Microsoft Corporation
c:\windows\system32\riched20.dll
activeds 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
194.00 KB (198,656 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\activeds.dll
adslsdp 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
146.00 KB (149,504 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\adslsdp.dll
credui 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
162.00 KB (165,888 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\credui.dll
mprapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
89.00 KB (91,136 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\mprapi.dll
rtutils 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
34.50 KB (35,328 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\rtutils.dll
ersvc 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
24.00 KB (24,576 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\ersvc.dll
inetinfo 6.0.3790.1830 (srv03_spi_rtm.050324-1447)
14.00 KB (14,336 bytes) 10/18/2007
3:39 PM Microsoft Corporation
c:\windows\system32\inetinfo.exe
iisutil 6.0.3790.1830 (srv03_spi_rtm.050324-1447)
164.00 KB (167,936 bytes) 10/18/2007
3:39 PM Microsoft Corporation
c:\windows\system32\inetinfo\iisutil.dll
rpcref 6.0.3790.1830 (srv03_spi_rtm.050324-1447)
4.00 KB (4,096 bytes) 10/18/2007
3:39 PM Microsoft Corporation
c:\windows\system32\inetinfo\rpcref.dll
iisrtl 6.0.3790.1830 (srv03_spi_rtm.050324-1447)
138.50 KB (141,824 bytes) 10/18/2007
3:39 PM Microsoft Corporation
c:\windows\system32\iisrtl.dll
iisadmin 6.0.3790.1830 (srv03_spi_rtm.050324-1447)
21.00 KB (21,504 bytes) 10/18/2007
3:39 PM Microsoft Corporation
c:\windows\system32\inetinfo\iisadmin.dll
coadmin 6.0.3790.1830 (srv03_spi_rtm.050324-1447)
62.50 KB (64,000 bytes) 10/18/2007
3:39 PM Microsoft Corporation
c:\windows\system32\inetinfo\coadmin.dll
admwprox 6.0.3790.1830 (srv03_spi_rtm.050324-1447)
47.00 KB (48,128 bytes) 10/18/2007

3:39 PM Microsoft Corporation
c:\windows\system32\admwprox.dll
iiscfg 6.0.3790.1830 (srv03_spi_rtm.050324-1447)
1.00 MB (1,133,056 bytes) 10/18/2007
3:39 PM Microsoft Corporation
c:\windows\system32\inetinfo\iiscfg.dll
metadata 6.0.3790.1830 (srv03_spi_rtm.050324-1447)
229.00 KB (234,496 bytes) 10/18/2007
3:39 PM Microsoft Corporation
c:\windows\system32\inetinfo\metadata.dll
msxml3 8.70.1104.0 1.06 MB (1,107,456
bytes) 11/30/2005 6:00 AM Microsoft Corporation
c:\windows\system32\msxml3.dll
svcxext 6.0.3790.1830 (srv03_spi_rtm.050324-1447)
43.50 KB (44,544 bytes) 10/18/2007
3:39 PM Microsoft Corporation
c:\windows\system32\inetinfo\svcxext.dll
security 5.2.3790.0 (srv03_rtm.030324-2048)
5.50 KB (5,632 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\security.dll
iismap 6.0.3790.1830 (srv03_spi_rtm.050324-1447)
58.50 KB (59,904 bytes) 10/18/2007
3:39 PM Microsoft Corporation
c:\windows\system32\iismap.dll
wamreg 6.0.3790.1830 (srv03_spi_rtm.050324-1447)
54.50 KB (55,808 bytes) 10/18/2007
3:39 PM Microsoft Corporation
c:\windows\system32\inetinfo\wamreg.dll
sysdown 1.1.0.0 built by: buildsrv 6.50 KB
(6,656 bytes) 8/13/2007 1:52 PM Hewlett-
Packard Company c:\windows\system32\sysdown.exe
iisw3adm 6.0.3790.1830 (srv03_spi_rtm.050324-1447)
211.00 KB (216,064 bytes) 10/18/2007
3:39 PM Microsoft Corporation
c:\windows\system32\inetinfo\iisw3adm.dll
w3cache 6.0.3790.1830 (srv03_spi_rtm.050324-1447)
19.00 KB (19,456 bytes) 10/18/2007
3:39 PM Microsoft Corporation
c:\windows\system32\inetinfo\w3cache.dll
w3tp 6.0.3790.1830 (srv03_spi_rtm.050324-1447)
13.00 KB (13,312 bytes) 10/18/2007
3:39 PM Microsoft Corporation
c:\windows\system32\inetinfo\w3tp.dll
lonsint 6.0.3790.1830 (srv03_spi_rtm.050324-1447)
13.00 KB (13,312 bytes) 10/18/2007
3:39 PM Microsoft Corporation
c:\windows\system32\inetinfo\lonsint.dll
termsrv 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
239.00 KB (244,736 bytes) 8/7/2007 2:49 PM
Microsoft Corporation
c:\windows\system32\termsrv.dll
icaapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
12.50 KB (12,800 bytes) 8/7/2007 2:49 PM
Microsoft Corporation
c:\windows\system32\icaapi.dll
mstlsapi 5.2.3790.1830 (srv03_spi_rtm.050324-1447)
116.00 KB (118,784 bytes) 11/30/2005
6:00 AM Microsoft Corporation
c:\windows\system32\mstlsapi.dll

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rdpwsx 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
101.63 KB (104,072 bytes) 8/7/2007 2:49
Microsoft Corporation
c:\windows\system32\rdpwsx.dll
w3wp 6.0.3790.1830 (srv03_sp1_rtm.050324-1447)
7.00 KB (7,168 bytes) 10/18/2007
Microsoft Corporation
c:\windows\system32\inetrv\w3wp.exe
w3core 6.0.3790.1830 (srv03_sp1_rtm.050324-1447)
340.50 KB (348,672 bytes) 10/18/2007
Microsoft Corporation
c:\windows\system32\inetrv\w3core.dll
w3comlog 6.0.3790.1830 (srv03_sp1_rtm.050324-1447)
10.50 KB (10,752 bytes) 10/18/2007
Microsoft Corporation
c:\windows\system32\inetrv\w3comlog.dll

w3dt 6.0.3790.1830 (srv03_sp1_rtm.050324-1447)
38.50 KB (39,424 bytes) 10/18/2007
Microsoft Corporation
c:\windows\system32\inetrv\w3dt.dll
iisres 6.0.3790.1830 (srv03_sp1_rtm.050324-1447)
120.00 KB (122,880 bytes) 10/18/2007
Microsoft Corporation
c:\windows\system32\inetrv\iisres.dll
w3isapi 6.0.3790.1830 (srv03_sp1_rtm.050324-1447)
61.00 KB (62,464 bytes) 10/18/2007
Microsoft Corporation
c:\windows\system32\inetrv\w3isapi.dll
winrrr 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
17.00 KB (17,408 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\winrrr.dll
rasadhlp 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
7.50 KB (7,680 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\rasadhlp.dll
gzip 6.0.3790.1830 (srv03_sp1_rtm.050324-1447)
25.00 KB (25,600 bytes) 10/18/2007
Microsoft Corporation
c:\windows\system32\inetrv\gzip.dll
"\\?\c:\inetpub\wwwroot\tpcc.dll"

msvcr71 7.10.3052.4 340.00 KB (348,160
bytes) 10/18/2007 3:53 PM Microsoft Corporation
c:\windows\system32\msvcr71.dll
tpcc_com Not Available 11.50 KB (11,776 bytes)
10/18/2007 3:53 PM Not Available
c:\inetpub\wwwroot\tpcc_com.dll
tpcc_odbc Not Available 21.00 KB (21,504 bytes)
10/18/2007 3:53 PM Not Available
c:\inetpub\wwwroot\tpcc_odbc.dll
odbc32 3.526.1830.0 (srv03_sp1_rtm.050324-1447)
240.00 KB (245,760 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\odbc32.dll
odbcint 3.526.1830.0 (srv03_sp1_rtm.050324-1447)
92.00 KB (94,208 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\odbcint.dll
sqlsrv32 2000.086.1830.00 (srv03_sp1_rtm.050324-
1447) 436.00 KB (446,464 bytes) 11/30/2005

```

```

6:00 AM Microsoft Corporation
c:\windows\system32\sqlsrv32.dll
2000.086.1830.00 176.56 KB (180,800
bytes) 11/30/2005 6:00 AM Microsoft Corporation
c:\windows\system32\sqlunirl.dll
sqlsrv32 2000.086.1830.00 (srv03_sp1_rtm.050324-
1447) 88.00 KB (90,112 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\sqlsrv32.rll
6:00 AM Microsoft Corporation
c:\windows\system32\odbc32.dll
odbc32 2000.086.1830.00 (srv03_sp1_rtm.050324-1447)
100.00 KB (102,400 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\odbc32.dll
dbnetlib 2000.086.1830 (srv03_sp1_rtm.050324-1447)
112.00 KB (114,688 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\dbnetlib.dll
tpcc_com_all 1, 0, 0, 1 104.00 KB
(106,496 bytes) 10/18/2007 3:53 PM
c:\inetpub\wwwroot\tpcc_com_all.dll
dllhost 5.2.3790.0 (srv03_rtm.030324-2048)
5.50 KB (5,632 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\dllhost.exe
txflog 2001.12.4720.1830 (srv03_sp1_rtm.050324-
1447) 96.50 KB (98,816 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\txflog.dll
xolehlp 2001.12.4720.1830 (srv03_sp1_rtm.050324-
1447) 10.50 KB (10,752 bytes) 8/7/2007 2:49
PM Microsoft Corporation
c:\windows\system32\xolehlp.dll
msdtcprx 2001.12.4720.1830 (srv03_sp1_rtm.050324-
1447) 455.50 KB (466,432 bytes) 8/7/2007 2:49
PM Microsoft Corporation
c:\windows\system32\msdtcprx.dll
mtxclu 2001.12.4720.1830 (srv03_sp1_rtm.050324-
1447) 77.00 KB (78,848 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\mtxclu.dll
clusapi 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
60.00 KB (61,440 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\clusapi.dll
resutils 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
63.50 KB (65,024 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\resutils.dll
catsrv 2001.12.4720.1830 (srv03_sp1_rtm.050324-
1447) 273.00 KB (279,552 bytes) 8/7/2007 2:49
PM Microsoft Corporation
c:\windows\system32\catsrv.dll
clbcatex 2001.12.4720.1830 (srv03_sp1_rtm.050324-
1447) 102.50 KB (104,960 bytes) 8/7/2007 2:49
PM Microsoft Corporation
c:\windows\system32\clbcatex.dll
msinfo32 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
42.00 KB (43,008 bytes) 8/7/2007 2:52
PM Microsoft Corporation c:\program
files\common files\microsoft
shared\msinfo\msinfo32.exe

```

```

mfc42u 6.06.8063.0 1.11 MB (1,163,776
bytes) 11/30/2005 6:00 AM Microsoft Corporation
c:\windows\system32\mfc42u.dll
wininet 6.00.3790.1830 (srv03_sp1_rtm.050324-1447)
646.00 KB (661,504 bytes) 11/30/2005
Microsoft Corporation
c:\windows\system32\wininet.dll
msinfo 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
376.00 KB (385,024 bytes) 8/7/2007 2:52
PM Microsoft Corporation
c:\windows\pchealth\helpctr\binaries\msinfo
.dll
wbemprox 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
20.50 KB (20,992 bytes) 8/7/2007 2:49
PM Microsoft Corporation
c:\windows\system32\wbem\wbemprox.dll

```

[Services]

Display Name	Name	State	Start Mode	Path	Error Control
Altiris Client Service	Altiris Client Service	Running	Auto	c:\program	
Application Experience Lookup Service	AeLookupSvc	Running	Auto	c:\windows\system32\svchost.exe -k netsvcs	
Alarmer	Alarmer	Stopped	Disabled	c:\windows\system32\svchost.exe -k	
localservice	LocalService	NT			
Application Layer Gateway Service	ALG	Stopped	Manual	c:\windows\system32\alg.exe	Normal NT
Application Management	AppMgmt	Stopped	Manual	c:\windows\system32\svchost.exe -k netsvcs	
ASP.NET State Service	aspnet_state	Stopped	Manual	c:\windows\microsoft.net\framework\v2.0.507	
Background Intelligent Transfer Service	BITS	Stopped	Manual	c:\windows\system32\svchost.exe -k netsvcs	
Computer Browser	Browser	Running	Auto	c:\windows\system32\svchost.exe -k netsvcs	
Indexing Service	CISvc	Stopped	Disabled	c:\windows\system32\cisvc.exe	Normal


```

ClipBook ClipSrv Stopped Disabled Own Process
c:\windows\system32\clipsrv.exe
Normal LocalSystem 0
.NET Runtime Optimization Service v2.0.50727_X86
clr_optimization_v2.0.50727_32
Stopped Manual Own Process
c:\windows\microsoft.net\framework\v2.0.507
27\mscorsvw.exe Ignore LocalSystem 0

COM+ System Application COMSysApp Running
Manual Own Process
c:\windows\system32\dlhhost.exe
/processid:{02d4b3f1-fd88-11d1-960d-00805fc79235}
Normal LocalSystem 0
Cryptographic Services CryptSvc Running
Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
DCOM Server Process Launcher DcomLaunch
Running Auto Share Process
c:\windows\system32\svchost.exe -k
dcomlaunch Normal LocalSystem 0

Distributed File System Dfs Stopped
Manual Own Process
c:\windows\system32\dfsrv.exe
Normal LocalSystem 0
DHCP Client Dhcp Stopped Disabled
Share Process
c:\windows\system32\svchost.exe -k
networkservice Normal NT
AUTHORITY\NetworkService 0
Logical Disk Manager Administrative Service
dmadmin Stopped Manual Share Process
c:\windows\system32\dmadmin.exe /com
Normal LocalSystem 0
Logical Disk Manager dmserver Running
Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
DNS Client Dnscache Running Auto
Share Process
c:\windows\system32\svchost.exe -k
networkservice Normal NT
AUTHORITY\NetworkService 0
Error Reporting Service ERSvc Running
Auto Share Process
c:\windows\system32\svchost.exe -k winerr
Ignore LocalSystem 0
Event Log Eventlog Running Auto Share Process
c:\windows\system32\services.exe
Normal LocalSystem 0
COM+ Event System EventSystem Running
Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Help and Support helpsvc Running Auto
Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Human Interface Device Access HidServ
Disabled Share Process

```

```

c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
HTTP SSL HTTPFilter Running Manual
Share Process
c:\windows\system32\lsass.exe Normal
LocalSystem 0
IIS Admin Service IISADMIN Running Auto
Share Process
c:\windows\system32\inetrv\inetinfo.exe
Normal LocalSystem 0
IMAPI CD-Burning COM Service ImapiService
Stopped Disabled Own Process
c:\windows\system32\imapi.exe Normal
LocalSystem 0
Intersite Messaging IsmServ Stopped Disabled Own
Process c:\windows\system32\ismserv.exe
Normal LocalSystem 0
Kerberos Key Distribution Center kdc
Stopped Disabled Share Process
c:\windows\system32\lsass.exe Normal
LocalSystem 0
Server lanmanserver Running Auto
Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Workstation lanmanworkstation Running
Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
License Logging LicenseService Stopped
Disabled Own Process
c:\windows\system32\llssrv.exe
Normal NT AUTHORITY\NetworkService 0

TCP/IP NetBIOS Helper LmHosts Stopped
Disabled 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
Visual Studio 2005 Remote Debugger msvsmon80
Stopped Disabled Own Process
"c:\program files\microsoft visual studio
8\common7\ide\remote debugger\x86\msvsmon.exe"
/service msvsmon80 Ignore 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 Stopped Manual
Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Network Location Awareness (NLA) Nla
Stopped 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
Office Source Engine ose Stopped
Manual Own Process "c:\program
files\common files\microsoft shared\source
engine\ose.exe" Normal LocalSystem 0

Plug and Play PlugPlay Running Auto
Share Process
c:\windows\system32\services.exe
Normal LocalSystem 0
IPSEC Services PolicyAgent Stopped
Disabled Share Process
c:\windows\system32\lsass.exe Normal
LocalSystem 0
Protected Storage ProtectedStorage Running
Auto Share Process
c:\windows\system32\lsass.exe Normal
LocalSystem 0
Remote Access Auto Connection Manager RasAuto
Stopped Manual Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Remote Access Connection Manager RasMan
Stopped Manual Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Remote Desktop Help Session Manager RDSessMgr
Stopped Manual Own Process
c:\windows\system32\sessmgr.exe
Normal LocalSystem 0
Routing and Remote Access RemoteAccess
Stopped Disabled Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Remote Registry RemoteRegistry Running
Auto Share Process

```

```

c:\windows\system32\svchost.exe -k regsvc
Normal NT AUTHORITY\LocalService 0

Remote Procedure Call (RPC) Locator RpcLocator
Stopped Manual Own Process
c:\windows\system32\locator.exe
Normal NT AUTHORITY\NetworkService 0

Remote Procedure Call (RPC) RpcSs Running
Auto Share Process
c:\windows\system32\svchost.exe -k rpcss
Normal NT AUTHORITY\NetworkService 0

Resultant Set of Policy Provider RSOPProv
Stopped Manual Share Process
c:\windows\system32\rsopprov.exe
Normal LocalSystem 0

Special Administration Console Helper sacsvr
Stopped Manual Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0

Security Accounts Manager SamSs Running
Auto Share Process
c:\windows\system32\lsass.exe Normal
LocalSystem 0

Smart Card SCardSvr Stopped Manual
Share Process
c:\windows\system32\scardsvr.exe
Ignore NT AUTHORITY\LocalService 0

Task Scheduler Schedule Running Auto
Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0

Secondary Logon seclogon Running Auto
Share Process
c:\windows\system32\svchost.exe -k netsvcs
Ignore LocalSystem 0

System Event Notification SENS Running
Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0

Windows Firewall/Internet Connection Sharing (ICS)
SharedAccess Stopped Disabled
Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0

Shell Hardware Detection ShellHWDetection
Running Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs
Ignore LocalSystem 0

Print Spooler Spooler Stopped Disabled Own
Process c:\windows\system32\spoolsv.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

```

```

HP ProLiant System Shutdown Service sysdown
Running Auto Own Process
c:\windows\system32\sysdown.exe
Normal LocalSystem 0

Performance Logs and Alerts SysmonLog Stopped
Auto Own Process
c:\windows\system32\smlogsvc.exe
Normal NT AUTHORITY\NetworkService 0

Telephony Tapisrv Stopped Disabled Share Process
c:\windows\system32\svchost.exe -k tapisrv
Normal LocalSystem 0

Terminal Services TermService Running
Manual Share Process
c:\windows\system32\svchost.exe -k termsvcs
Normal LocalSystem 0

Themes Themes Stopped Disabled Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0

Telnet TlntSvr Stopped Disabled Own Process
c:\windows\system32\tlntsvr.exe
Normal NT AUTHORITY\LocalService 0

Distributed Link Tracking Server TrkSvr
Stopped Disabled Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0

Distributed Link Tracking Client TrkWks
Running Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0

Terminal Services Session Directory Tssdis
Stopped Disabled Own Process
c:\windows\system32\tssdis.exe
Normal LocalSystem 0

Windows User Mode Driver Framework UMWdf
Stopped Manual Own Process
c:\windows\system32\wdfmgr.exe
Normal NT AUTHORITY\LocalService 0

Uninterruptible Power Supply UPS Stopped
Manual Own Process
c:\windows\system32\ups.exe Normal NT
AUTHORITY\LocalService 0

Virtual Disk Service vds Stopped
Manual Own Process
c:\windows\system32\vds.exe Normal
LocalSystem 0

Volume Shadow Copy VSS Stopped Manual Own
Process c:\windows\system32\vssvc.exe Normal
LocalSystem 0

Windows Time W32Time Running Auto
Share Process
c:\windows\system32\svchost.exe -k
localservice Normal NT
AUTHORITY\LocalService 0

World Wide Web Publishing Service W3SVC
Running Auto Share Process
c:\windows\system32\svchost.exe -k iissvcs
Normal LocalSystem 0

WebClient WebClient Stopped Disabled Share Process
c:\windows\system32\svchost.exe -k

```

```

localservice Normal NT
AUTHORITY\LocalService 0
WinHTTP Web Proxy Auto-Discovery Service
WinHttpAutoProxySvc Stopped Manual
Share Process
c:\windows\system32\svchost.exe -k
localservice Normal NT
AUTHORITY\LocalService 0
Windows Management Instrumentation winmgmt
Running Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs
Ignore LocalSystem 0
Portable Media Serial Number Service WmdmPmSN
Stopped Manual Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Windows Management Instrumentation Driver Extensions
Wmi Stopped Manual Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
WMI Performance Adapter WmiApSrv Stopped
Manual Own Process
c:\windows\system32\wbem\wmiaprv.exe
Normal LocalSystem 0
Automatic Updates wuauerv Stopped Disabled
Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Wireless Configuration WZCSVC Stopped
Disabled Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0
Network Provisioning Service xmlprov Stopped
Manual Share Process
c:\windows\system32\svchost.exe -k netsvcs
Normal LocalSystem 0

[Program Groups]

Group Name Name User Name
Accessories Default User:Accessories
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

```

HP System Tools All Users:HP System Tools All Users
 HP System Tools\HP Array Diagnostic Utility All Users:HP System Tools\HP Array Diagnostic Utility All Users
 Microsoft SQL Server 2005 All Users:Microsoft SQL Server 2005 All Users
 Microsoft SQL Server 2005\Analysis Services All Users:Microsoft SQL Server 2005\Analysis Services All Users
 Microsoft SQL Server 2005\Configuration Tools All Users:Microsoft SQL Server 2005\Configuration Tools All Users
 Microsoft SQL Server 2005\Documentation and Tutorials All Users:Microsoft SQL Server 2005\Documentation and Tutorials All Users
 Microsoft SQL Server 2005\Performance Tools All Users:Microsoft SQL Server 2005\Performance Tools All Users
 Microsoft Visual Studio 2005 All Users:Microsoft Visual Studio 2005 All Users
 Microsoft Visual Studio 2005\Visual Studio Tools All Users:Microsoft Visual Studio 2005\Visual Studio Tools 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

[Startup Programs]

Program	Command	User Name	Location
desktop	desktop.ini		NT AUTHORITY\SYSTEM
desktop	desktop.ini		.DEFAULT Startup
desktop	desktop.ini		All Users Common
Startup			
ACIntUsr	c:\program files\altiris\aclient\acIntusr.exe	All Users	
ion\Run	HKLM\SOFTWARE\Microsoft\Windows\CurrentVers		

[OLE Registration]

Object	Local Server
Sound (OLE2)	sndrec32.exe
Media Clip	mplay32.exe
Video Clip	mplay32.exe /avi
MIDI Sequence	mplay32.exe /mid
Sound	Not Available
Media Clip	Not Available

WordPad Document "%programfiles%\windows nt\accessories\wordpad.exe"
 Windows Media Services DRM Storage object Not Available
 Bitmap Image mspaint.exe

[Windows Error Reporting]

Time Type Details

[Internet Settings]

[Internet Explorer]

[Following are sub-categories of this main category]

[Summary]

Item	Value
Version	6.0.3790.1830
Build	63790.1830
Application Path	C:\Program Files\Internet Explorer
Language	English (United States)
Active Printer	Not Available
Cipher Strength	128-bit
Content Advisor	Disabled
IEAK Install	No

[File Versions]

File	Version	Size	Date	Path
actxprxy.dll	6.0.3790.1830	97 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
advpack.dll	6.0.3790.1830	98 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
asctrls.ocx	6.0.3790.0	90 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
browsecl.dll	6.0.3790.0	62 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
browseui.dll	6.0.3790.1830	1,009 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
cdfview.dll	6.0.3790.1830	149 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
comctl32.dll	5.82.3790.1830	585 KB	11/30/2005 7:00:00 AM	

C:\WINDOWS\system32 Microsoft Corporation

File	Version	Size	Date	Path
dxtrans.dll	6.3.3790.1830	205 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
dxtmsft.dll	6.3.3790.1830	355 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
iecont.dll	<File Missing>	Not Available	Not Available	Not Available
iecontlc.dll	<File Missing>	Not Available	Not Available	Not Available
iedkcs32.dll	16.0.3790.1830	324 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
iepeers.dll	6.0.3790.1830	248 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
iesetup.dll	6.0.3790.1830	61 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
ieuinit.inf	Not Available	24 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Not Available
ieexplore.exe	6.0.3790.1830	92 KB	11/30/2005 7:00:00 AM	C:\Program Files\Internet Explorer Microsoft Corporation
imgutil.dll	6.0.3790.1830	38 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
inetcpl.cpl	6.0.3790.1830	358 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
inetcplc.dll	6.0.3790.0	109 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
inseng.dll	6.0.3790.1830	94 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
mlang.dll	6.0.3790.1830	578 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
msencode.dll	2002.10.4.0	112 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 ???u?w??
mshta.exe	6.0.3790.1830	30 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
mshtml.dll	6.0.3790.1830	3,036 KB	11/30/2005 7:00:00 AM	

C:\WINDOWS\system32 Microsoft Corporation		
mshtml.tlb	6.0.3790.1830	1,320 KB
11/30/2005 7:00:00 AM		
C:\WINDOWS\system32 Microsoft Corporation		
mshtml.dll	6.0.3790.1830	455 KB
11/30/2005 7:00:00 AM		
C:\WINDOWS\system32 Microsoft Corporation		
mshtml.dll	6.0.3790.1830	56 KB
11/30/2005 7:00:00 AM		
C:\WINDOWS\system32 Microsoft Corporation		
msident.dll	6.0.3790.1830	48 KB
11/30/2005 7:00:00 AM		
C:\WINDOWS\system32 Microsoft Corporation		
msidntld.dll	6.0.3790.0	15 KB
11/30/2005 7:00:00 AM		
C:\WINDOWS\system32 Microsoft Corporation		
msieftp.dll	6.0.3790.1830	244 KB
11/30/2005 7:00:00 AM		
C:\WINDOWS\system32 Microsoft Corporation		
msrating.dll	6.0.3790.1830	144 KB
11/30/2005 7:00:00 AM		
C:\WINDOWS\system32 Microsoft Corporation		
mstime.dll	6.0.3790.1830	523 KB
11/30/2005 7:00:00 AM		
C:\WINDOWS\system32 Microsoft Corporation		
occache.dll	6.0.3790.1830	94 KB
11/30/2005 7:00:00 AM		
C:\WINDOWS\system32 Microsoft Corporation		
proctexe.ocx	6.3.3790.1830	83 KB
11/30/2005 7:00:00 AM		
C:\WINDOWS\system32 Intel Corporation		
sendmail.dll	6.0.3790.1830	56 KB
11/30/2005 7:00:00 AM		
C:\WINDOWS\system32 Microsoft Corporation		
shdoclc.dll	6.0.3790.0	589 KB
11/30/2005 7:00:00 AM		
C:\WINDOWS\system32 Microsoft Corporation		
shdocvw.dll	6.0.3790.1830	1,468 KB
11/30/2005 7:00:00 AM		
C:\WINDOWS\system32 Microsoft Corporation		
shfolder.dll	6.0.3790.1830	25 KB
11/30/2005 7:00:00 AM		
C:\WINDOWS\system32 Microsoft Corporation		
shlwapi.dll	6.0.3790.1830	314 KB
11/30/2005 7:00:00 AM		
C:\WINDOWS\system32 Microsoft Corporation		

tdc.ocx	1.3.0.3130	58 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
url.dll	6.0.3790.1830	37 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
urlmon.dll	6.0.3790.1830	673 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
webcheck.dll	6.0.3790.1830	273 KB	11/30/2005 7:00:00 AM	C:\WINDOWS\system32 Microsoft Corporation
wininet.dll	6.0.3790.1830	646 KB	11/30/2005 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\Default User\Local Settings\Temporary Internet Files
Total Disk Space	Not Available
Available Disk Space	Not Available
Maximum Cache Size	Not Available
Available Cache Size	Not Available

[List of Objects]

Program File	Status	CodeBase
No cached object information available		

[Content]

[Following are sub-categories of this main category]

[Summary]

Item	Value
Content Advisor	Disabled

[Personal Certificates]

Issued To	Issued By	Validity	Signature Algorithm
No personal certificate information available			

[Other People Certificates]

Issued To	Issued By	Validity	Signature Algorithm
No other people certificate information available			

[Publishers]

Name
No publisher information available

[Security]

Zone	Security Level
My Computer	Custom
Local intranet	Medium-low
Trusted sites	Medium
Internet	High
Restricted sites	High

Microsoft COM Component Configuration Parameters

The component services tool in Windows 2003 was used to change the queue settings for the TPCC COM+ queue components. All tpcc queue components were set to enable object pooling, object construction, just in time activation, and component supports events and statistics. The construction string was Server = myserver; UID= sa; pwd=; DATABASE= tpcc; The single queue TpccAllTxn object was used, with the Min and Max both being set to 62 queues. Delivery threads were set under the TPCC key in the registry.

Internet Information Server Registry Parameters

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\
InetInfo
Class Name: <NO CLASS>
Last Write Time: 10/18/2007 - 3:02 PM

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\
InetInfo\Parameters

Class Name: <NO CLASS>
Last Write Time: 10/18/2007 - 3:23 PM

Value 0
Name: ListenBackLog
Type: REG_DWORD
Data: 0x19

Value 1
Name: PoolThreadLimit
Type: REG_DWORD
Data: 0xff4

Value 2
Name: MaxPoolThreads
Type: REG_DWORD
Data: 0x7fa

Value 3
Name: ThreadTimeout
Type: REG_DWORD
Data: 0x15180

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\
InetInfo\Performance

Class Name: <NO CLASS>
Last Write Time: 10/18/2007 - 3:02 PM

Value 0
Name: Library
Type: REG_SZ
Data: infoctrs.dll

Value 1
Name: Open
Type: REG_SZ
Data: OpenINFOPerformanceData

Value 2
Name: Close
Type: REG_SZ
Data: CloseINFOPerformanceData

Value 3
Name: Collect
Type: REG_SZ
Data: CollectINFOPerformanceData

Value 4
Name: PerfIniFile
Type: REG_SZ
Data: infoctrs.ini

Value 5

Name: Last Counter
Type: REG_DWORD
Data: 0xc30

Value 6
Name: Last Help
Type: REG_DWORD
Data: 0xc31

Value 7
Name: First Counter
Type: REG_DWORD
Data: 0xbf0

Value 8
Name: First Help
Type: REG_DWORD
Data: 0xbf1

Value 9
Name: Object List
Type: REG_SZ
Data: 3056

Value 10
Name: Library Validation Code
Type: REG_BINARY
Data: 00 00 00 00 00 59 8b bf c1 11 c8 01 - 00 20 00 00 00 00
00 00 00 .Y.¿Á.È..

World Wide Web Service Registry Parameters

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\
W3SVC

Class Name: <NO CLASS>
Last Write Time: 7/2/2008 - 1:29 PM

Value 0
Name: Type
Type: REG_DWORD
Data: 0x20

Value 1
Name: Start
Type: REG_DWORD
Data: 0x2

Value 2
Name: ErrorControl
Type: REG_DWORD

Data: 0x1

Value 3
Name: ImagePath
Type: REG_EXPAND_SZ
Data: %SystemRoot%\System32\svchost.exe
-k iissvcs

Value 4
Name: DisplayName
Type: REG_SZ
Data: World Wide Web Publishing Service

Value 5
Name: DependOnService
Type: REG_MULTI_SZ
Data: RPCSS
HTTPFilter
IISADMIN

Value 6
Name: DependOnGroup
Type: REG_MULTI_SZ
Data:

Value 7
Name: ObjectName
Type: REG_SZ
Data: LocalSystem

Value 8
Name: Description
Type: REG_SZ
Data: Provides Web connectivity and
administration through the Internet Information
Services Manager

Value 9
Name: FailureActions
Type: REG_BINARY
Data: 00 00 00 00 80 51 01 00 01 00 00 00 - 00 00 00 00 03
00 00 00 .Q.....
00 00 00 43 00 4c 00 01 00 00 00 - 01 00 00 00 01
00 00 00 C.L.....
01 00 00 00 01 00 00 00 - 01 00 00 00
.....

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\
W3SVC\Parameters

Class Name: <NO CLASS>
Last Write Time: 10/18/2007 - 3:23 PM

Value 0
Name: MajorVersion
Type: REG_DWORD
Data: 0x6

Value 1
Name: MinorVersion
Type: REG_DWORD
Data: 0

Value 2
Name: InstallPath
Type: REG_SZ
Data: C:\WINDOWS\system32\inetsrv

Value 3
Name: AccessDeniedMessage
Type: REG_SZ
Data: Error: Access is Denied.

Value 4
Name: ServiceDll
Type: REG_EXPAND_SZ
Data: C:\WINDOWS\system32\inetsrv\iisw3adm.dll

Value 5
Name: AcceptExOutstanding
Type: REG_DWORD
Data: 0x28

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch
Class Name: <NO CLASS>
Last Write Time: 10/18/2007 - 3:02 PM

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch\AdvancedDataFactory
Class Name: <NO CLASS>
Last Write Time: 10/18/2007 - 3:02 PM

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADCLaunch\RDSServer.DataFactory
Class Name: <NO CLASS>
Last Write Time: 10/18/2007 - 3:02 PM

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Performance
Class Name: <NO CLASS>
Last Write Time: 10/18/2007 - 3:02 PM

Value 0
Name: Library
Type: REG_SZ
Data: C:\WINDOWS\system32\inetsrv\w3ctr.dll

Value 1
Name: Open
Type: REG_SZ
Data: OpenW3PerformanceData

Value 2
Name: Close
Type: REG_SZ
Data: CloseW3PerformanceData

Value 3

Name: Collect
Type: REG_SZ
Data: CollectW3PerformanceData

Value 4
Name: PerfIniFile
Type: REG_SZ
Data: w3ctr.ini

Value 5
Name: Last Counter
Type: REG_DWORD
Data: 0xd28

Value 6
Name: Last Help
Type: REG_DWORD
Data: 0xd29

Value 7
Name: First Counter
Type: REG_DWORD
Data: 0xc32

Value 8
Name: First Help
Type: REG_DWORD
Data: 0xc33

Value 9
Name: Object List
Type: REG_SZ
Data: 3122 3296

Value 10
Name: Library Validation Code
Type: REG_BINARY
Data: 00000000 00 86 bc c0 c1 11 c8 01 - 00 5e 00 00 00
00 00 00 ..%AA.Ê..^.....

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Security
Class Name: <NO CLASS>
Last Write Time: 10/18/2007 - 3:02 PM

Value 0
Name: Security
Type: REG_BINARY
Data: 00000000 01 00 14 80 b8 00 00 00 - c4 00 00 00 14
00 00 00A.....
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 88 00 06 00 00 00 - 00 00 14 00 fd
01 02 00Ÿ...
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 04 00 00 00 - 00 00 14 00 8d
01 02 00
00000080 01 01 00 00 00 00 00 05 - 06 00 00 00 00
00 14 00
00000090 00 01 00 00 01 01 00 00 - 00 00 00 05 0b
00 00 00
000000a0 00 00 18 00 fd 01 02 00 - 01 02 00 00 00
00 00 05Ÿ.....
000000b0 20 00 00 00 23 02 00 00 - 01 01 00 00 00
00 00 05 ...#.....
000000c0 12 00 00 00 01 01 00 00 - 00 00 00 05 12
00 00 00

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Enum
Class Name: <NO CLASS>
Last Write Time: 7/2/2008 - 1:29 PM

Value 0
Name: 0
Type: REG_SZ
Data: Root\LEGACY_W3SVC\0000

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

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

TPCC Application Registry Parameters

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\TPCC
Class Name: <NO CLASS>
Last Write Time: 6/23/2008 - 2:30 PM

Value 0
Name: Path
Type: REG_SZ
Data: C:\Inetpub\wwwroot\

Value 1
Name: NumberOfDeliveryThreads

Type:	REG_DWORD
Data:	0x18
Value 2	
Name:	MaxConnections
Type:	REG_DWORD
Data:	0xc350
Value 3	
Name:	MaxPendingDeliveries
Type:	REG_DWORD
Data:	0x7d0
Value 4	
Name:	DB_Protocol
Type:	REG_SZ
Data:	ODBC
Value 5	
Name:	TxnMonitor
Type:	REG_SZ
Data:	COM
Value 6	
Name:	DbServer
Type:	REG_SZ
Data:	b2
Value 7	
Name:	DbName
Type:	REG_SZ
Data:	tpcc
Value 8	
Name:	DbUser
Type:	REG_SZ
Data:	sa
Value 9	
Name:	DbPassword
Type:	REG_SZ
Data:	
Value 10	
Name:	COM_SinglePool
Type:	REG_SZ
Data:	YES
Value 11	
Name:	CallNoDuplicatesNewOrder
Type:	REG_DWORD
Data:	0x1
Value 12	
Name:	ConnectDelay
Type:	REG_DWORD
Data:	0x1

Benchcraft Profile

Profile: b2_37800_3
File Path: C:\Program
Files\BenchCraft\b2_37800_3.xml
Version: 5

Number of Engines: 36

Name: d2
Description:
Directory: c:\blog\рте2.log
Machine: n1
Parameter Set: 2.2
Index: 1600000000
Seed: 4678
Configured Users: 10500
Pipe Name: DRIVER53164609
Connect Rate: 10
Start Rate: 0
Max. Concurrency: 0
Concurrency Rate: 0
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d1
Description:
Directory: c:\blog\рте1.log
Machine: n1
Parameter Set: 2.2
Index: 750000000
Seed: 4678
Configured Users: 10500
Pipe Name: DRIVER44265281
Connect Rate: 10
Start Rate: 0
Max. Concurrency: 0
Concurrency Rate: 0
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d3
Description:
Directory: c:\blog\рте3.log
Machine: n1
Parameter Set: 2.2
Index: 250000000
Seed: 4678
Configured Users: 10500
Pipe Name: DRIVER3439676359
Connect Rate: 10
Start Rate: 0
Max. Concurrency: 0
Concurrency Rate: 0
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d4
Description:
Directory: c:\blog\рте4.log
Machine: n2
Parameter Set: 2.2
Index: 300000000
Seed: 4678
Configured Users: 10500
Pipe Name: DRIVER4439706187
Connect Rate: 10
Start Rate: 0
Max. Concurrency: 0
Concurrency Rate: 0
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d5
Description:
Directory: c:\blog\рте5.log
Machine: n2
Parameter Set: 2.2
Index: 400000000
Seed: 4678
Configured Users: 10500
Pipe Name: DRIVER5346413218
Connect Rate: 10
Start Rate: 0
Max. Concurrency: 0
Concurrency Rate: 0
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d6
Description:
Directory: c:\blog\рте6.log
Machine: n2
Parameter Set: 2.2
Index: 500000000
Seed: 4678
Configured Users: 10500
Pipe Name: DRIVER62226046
Connect Rate: 10
Start Rate: 0
Max. Concurrency: 0
Concurrency Rate: 0
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d7
Description:
Directory: c:\blog\рте7.log
Machine: n3
Parameter Set: 2.2
Index: 600000000
Seed: 4678
Configured Users: 10500
Pipe Name: DRIVER72289718
Connect Rate: 10
Start Rate: 0

Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 0
 Additional Options:

Name: d8
 Description:
 Directory: c:\blog\rte8.log
 Machine: n3
 Parameter Set: 2.2
 Index: 220000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER82325578
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 1
 Additional Options:

Name: d9
 Description:
 Directory: c:\blog\rte9.log
 Machine: n3
 Parameter Set: 2.2
 Index: 800000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER92360187
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 2
 Additional Options:

Name: d10
 Description:
 Directory: c:\blog\rte10.log
 Machine: n4
 Parameter Set: 2.2
 Index: 900000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER102399796
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 0
 Additional Options:

Name: d11
 Description:
 Directory: c:\blog\rte11.log
 Machine: n4
 Parameter Set: 2.2
 Index: 1000000000

Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER1122682203
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 1
 Additional Options:

Name: d12
 Description:
 Directory: c:\blog\rte12.log
 Machine: n4
 Parameter Set: 2.2
 Index: 1100000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER1222731546
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 2
 Additional Options:

Name: d13
 Description:
 Directory: c:\blog\rte13.log
 Machine: n5
 Parameter Set: 2.2
 Index: 1200000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER13-1439076421
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 0
 Additional Options:

Name: d14
 Description:
 Directory: c:\blog\rte14.log
 Machine: n5
 Parameter Set: 2.2
 Index: 1300000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER14-1438943656
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 1
 Additional Options:

Name: d15

Description:
 Directory: c:\blog\rte15.log
 Machine: n5
 Parameter Set: 2.2
 Index: 1400000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER15-1438852265
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 2
 Additional Options:

Name: d16
 Description:
 Directory: c:\blog\rte16.log
 Machine: n6
 Parameter Set: 2.2
 Index: 1500000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER16-1438790906
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 0
 Additional Options:

Name: d17
 Description:
 Directory: c:\blog\rte17.log
 Machine: n6
 Parameter Set: 2.2
 Index: 215000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER17-57150250
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 1
 Additional Options:

Name: d18
 Description:
 Directory: c:\blog\rte18.log
 Machine: n6
 Parameter Set: 2.2
 Index: 1700000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER18-57076468
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0

CLIENT_NURAND: 25
 CPU: 2
 Additional Options:

 Name: d19
 Description:
 Directory: c:\blog\rte19.log
 Machine: n8
 Parameter Set: 2.2
 Index: 1800000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER19-57030562
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 0
 Additional Options:

 Name: d20
 Description:
 Directory: c:\blog\rte20.log
 Machine: n8
 Parameter Set: 2.2
 Index: 1900000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER20-56992625
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 1
 Additional Options:

 Name: d21
 Description:
 Directory: c:\blog\rte21.log
 Machine: n8
 Parameter Set: 2.2
 Index: 27000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER2191781
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 2
 Additional Options:

 Name: d22
 Description:
 Directory: c:\blog\rte22.log
 Machine: n9
 Parameter Set: 2.2
 Index: 2100000000
 Seed: 4678
 Configured Users: 10500

Pipe Name: DRIVER221814250
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 0
 Additional Options:

 Name: d23
 Description:
 Directory: c:\blog\rte23.log
 Machine: n9
 Parameter Set: 2.2
 Index: 30000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER23187968
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 1
 Additional Options:

 Name: d24
 Description:
 Directory: c:\blog\rte24.log
 Machine: n9
 Parameter Set: 2.2
 Index: 40000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER242206343
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 2
 Additional Options:

 Name: d25
 Description:
 Directory: c:\blog\rte25.log
 Machine: n10
 Parameter Set: 2.2
 Index: 50000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER252251500
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 0
 Additional Options:

 Name: d26
 Description:
 Directory: c:\blog\rte26.log

Machine: n10
 Parameter Set: 2.2
 Index: 60000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER262289250
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 1
 Additional Options:

 Name: d27
 Description:
 Directory: c:\blog\rte27.log
 Machine: n10
 Parameter Set: 2.2
 Index: 70000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER272340437
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 2
 Additional Options:

 Name: d28
 Description:
 Directory: c:\blog\rte28.log
 Machine: n11
 Parameter Set: 2.2
 Index: 80000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER282382234
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 0
 Additional Options:

 Name: d29
 Description:
 Directory: c:\blog\rte29.log
 Machine: n11
 Parameter Set: 2.2
 Index: 90000000
 Seed: 4678
 Configured Users: 10500
 Pipe Name: DRIVER292416328
 Connect Rate: 10
 Start Rate: 0
 Max. Concurrency: 0
 Concurrency Rate: 0
 CLIENT_NURAND: 25
 CPU: 1

Additional Options:

Name: d30
Description:
Directory: c:\blog\rte30.log
Machine: n11
Parameter Set: 2.2
Index: 100000000
Seed: 4678
Configured Users: 10500
Pipe Name: DRIVER302463687
Connect Rate: 10
Start Rate: 0
Max. Concurrency: 0
Concurrency Rate: 0
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d31
Description:
Directory: c:\blog\rte31.log
Machine: n7
Parameter Set: 2.2
Index: 25500000
Seed: 4678
Configured Users: 10500
Pipe Name: DRIVER3155814328
Connect Rate: 10
Start Rate: 0
Max. Concurrency: 0
Concurrency Rate: 0
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d32
Description:
Directory: c:\blog\rte32.log
Machine: n7
Parameter Set: 2.2
Index: 35500000
Seed: 4678
Configured Users: 10500
Pipe Name: DRIVER3255892765
Connect Rate: 10
Start Rate: 0
Max. Concurrency: 0
Concurrency Rate: 0
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d33
Description:
Directory: c:\blog\rte33.log
Machine: n7
Parameter Set: 2.2
Index: 45500000
Seed: 4678
Configured Users: 10500
Pipe Name: DRIVER3355948500
Connect Rate: 10

Start Rate: 0
Max. Concurrency: 0
Concurrency Rate: 0
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d34
Description:
Directory: c:\blog\rte34.log
Machine: n25
Parameter Set: 2.2
Index: 55500000
Seed: 4678
Configured Users: 10500
Pipe Name: DRIVER3455990593
Connect Rate: 10
Start Rate: 0
Max. Concurrency: 0
Concurrency Rate: 0
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d35
Description:
Directory: c:\blog\rte35.log
Machine: n25
Parameter Set: 2.2
Index: 65500000
Seed: 4678
Configured Users: 10500
Pipe Name: DRIVER3556027390
Connect Rate: 10
Start Rate: 0
Max. Concurrency: 0
Concurrency Rate: 0
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d36
Description:
Directory: c:\blog\rte36.log
Machine: n25
Parameter Set: 2.2
Index: 75500000
Seed: 4678
Configured Users: 10500
Pipe Name: DRIVER3656077062
Connect Rate: 10
Start Rate: 0
Max. Concurrency: 0
Concurrency Rate: 0
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Number of User groups: 36

Driver Engine: d1
IIS Server: cr133
SQL Server: b2

Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1 - 1050
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal
User Count: 10500
District id: 1
Scale Down: No

Driver Engine: d2
IIS Server: cr133
SQL Server: b2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1051 - 2100
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal
User Count: 10500
District id: 1
Scale Down: No

Driver Engine: d3
IIS Server: cr133
SQL Server: b2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2101 - 3150
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal
User Count: 10500
District id: 1
Scale Down: No

Driver Engine: d4
IIS Server: cr134
SQL Server: b2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3151 - 4200
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal
User Count: 10500
District id: 1
Scale Down: No

Driver Engine: d5
IIS Server: cr134
SQL Server: b2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4201 - 5250
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal

User Count: 10500
 District id: 1
 Scale Down: No

Driver Engine: d6
 IIS Server: cr134
 SQL Server: b2
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 5251 - 6300
 w_id Min Warehouse: 1
 w_id Max Warehouse: 37800
 Scale: Normal
 User Count: 10500
 District id: 1
 Scale Down: No

Driver Engine: d7
 IIS Server: cr135
 SQL Server: b2
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 6301 - 7350
 w_id Min Warehouse: 1
 w_id Max Warehouse: 37800
 Scale: Normal
 User Count: 10500
 District id: 1
 Scale Down: No

Driver Engine: d8
 IIS Server: cr135
 SQL Server: b2
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 7351 - 8400
 w_id Min Warehouse: 1
 w_id Max Warehouse: 37800
 Scale: Normal
 User Count: 10500
 District id: 1
 Scale Down: No

Driver Engine: d9
 IIS Server: cr135
 SQL Server: b2
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 8401 - 9450
 w_id Min Warehouse: 1
 w_id Max Warehouse: 37800
 Scale: Normal
 User Count: 10500
 District id: 1
 Scale Down: No

Driver Engine: d10
 IIS Server: cr136
 SQL Server: b2

Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 9451 - 10500
 w_id Min Warehouse: 1
 w_id Max Warehouse: 37800
 Scale: Normal
 User Count: 10500
 District id: 1
 Scale Down: No

Driver Engine: d11
 IIS Server: cr136
 SQL Server: b2
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 10501 - 11550
 w_id Min Warehouse: 1
 w_id Max Warehouse: 37800
 Scale: Normal
 User Count: 10500
 District id: 1
 Scale Down: No

Driver Engine: d12
 IIS Server: cr136
 SQL Server: b2
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 11551 - 12600
 w_id Min Warehouse: 1
 w_id Max Warehouse: 37800
 Scale: Normal
 User Count: 10500
 District id: 1
 Scale Down: No

Driver Engine: d13
 IIS Server: cr137
 SQL Server: b2
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 12601 - 13650
 w_id Min Warehouse: 1
 w_id Max Warehouse: 37800
 Scale: Normal
 User Count: 10500
 District id: 1
 Scale Down: No

Driver Engine: d14
 IIS Server: cr137
 SQL Server: b2
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 13651 - 14700
 w_id Min Warehouse: 1
 w_id Max Warehouse: 37800
 Scale: Normal

User Count: 10500
 District id: 1
 Scale Down: No

Driver Engine: d15
 IIS Server: cr137
 SQL Server: b2
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 14701 - 15750
 w_id Min Warehouse: 1
 w_id Max Warehouse: 37800
 Scale: Normal
 User Count: 10500
 District id: 1
 Scale Down: No

Driver Engine: d16
 IIS Server: cr138
 SQL Server: b2
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 15751 - 16800
 w_id Min Warehouse: 1
 w_id Max Warehouse: 37800
 Scale: Normal
 User Count: 10500
 District id: 1
 Scale Down: No

Driver Engine: d17
 IIS Server: cr138
 SQL Server: b2
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 16801 - 17850
 w_id Min Warehouse: 1
 w_id Max Warehouse: 37800
 Scale: Normal
 User Count: 10500
 District id: 1
 Scale Down: No

Driver Engine: d18
 IIS Server: cr138
 SQL Server: b2
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 17851 - 18900
 w_id Min Warehouse: 1
 w_id Max Warehouse: 37800
 Scale: Normal
 User Count: 10500
 District id: 1
 Scale Down: No

Driver Engine: d19
 IIS Server: cr139
 SQL Server: b2

Database: tpcc
User: sa
Protocol: HTML
w_id Range: 18901 - 19950
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal
User Count: 10500
District id: 1
Scale Down: No

Driver Engine: d20
IIS Server: cr139
SQL Server: b2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 19951 - 21000
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal
User Count: 10500
District id: 1
Scale Down: No

Driver Engine: d21
IIS Server: cr139
SQL Server: b2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 21001 - 22050
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal
User Count: 10500
District id: 1
Scale Down: No

Driver Engine: d22
IIS Server: cr140
SQL Server: b2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 22051 - 23100
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal
User Count: 10500
District id: 1
Scale Down: No

Driver Engine: d23
IIS Server: cr140
SQL Server: b2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 23101 - 24150
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal

User Count: 10500
District id: 1
Scale Down: No

Driver Engine: d24
IIS Server: cr140
SQL Server: b2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 24151 - 25200
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal
User Count: 10500
District id: 1
Scale Down: No

Driver Engine: d25
IIS Server: cr141
SQL Server: b2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 25201 - 26250
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal
User Count: 10500
District id: 1
Scale Down: No

Driver Engine: d26
IIS Server: cr141
SQL Server: b2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 26251 - 27300
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal
User Count: 10500
District id: 1
Scale Down: No

Driver Engine: d27
IIS Server: cr141
SQL Server: b2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 27301 - 28350
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal
User Count: 10500
District id: 1
Scale Down: No

Driver Engine: d28
IIS Server: cr142
SQL Server: b2

Database: tpcc
User: sa
Protocol: HTML
w_id Range: 28351 - 29400
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal
User Count: 10500
District id: 1
Scale Down: No

Driver Engine: d29
IIS Server: cr142
SQL Server: b2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 29401 - 30450
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal
User Count: 10500
District id: 1
Scale Down: No

Driver Engine: d30
IIS Server: cr142
SQL Server: b2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 30451 - 31500
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal
User Count: 10500
District id: 1
Scale Down: No

Driver Engine: d31
IIS Server: cr143
SQL Server: b2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 31501 - 32550
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal
User Count: 10500
District id: 1
Scale Down: No

Driver Engine: d32
IIS Server: cr143
SQL Server: b2
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 32551 - 33600
w_id Min Warehouse: 1
w_id Max Warehouse: 37800
Scale: Normal

User Count: 10500
 District id: 1
 Scale Down: No

Driver Engine: d33
 IIS Server: cr143
 SQL Server: b2
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 33601 - 34650
 w_id Min Warehouse: 1
 w_id Max Warehouse: 37800
 Scale: Normal
 User Count: 10500
 District id: 1
 Scale Down: No

Driver Engine: d34
 IIS Server: cr144
 SQL Server: b2
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 34651 - 35700
 w_id Min Warehouse: 1
 w_id Max Warehouse: 37800
 Scale: Normal
 User Count: 10500
 District id: 1
 Scale Down: No

Driver Engine: d35
 IIS Server: cr144
 SQL Server: b2
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 35701 - 36750
 w_id Min Warehouse: 1
 w_id Max Warehouse: 37800
 Scale: Normal
 User Count: 10500
 District id: 1
 Scale Down: No

Driver Engine: d36
 IIS Server: cr144
 SQL Server: b2
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 36751 - 37800
 w_id Min Warehouse: 1
 w_id Max Warehouse: 37800
 Scale: Normal
 User Count: 10500
 District id: 1
 Scale Down: No

Number of Parameter Sets: 68

-Default Default Parameter Set						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
12.05	18.01		New Order 0.10	5.00	10.00	0.10
12.05	3.01		Payment 0.10	10.00		0.10
5.05	2.01		Delivery 0.10	5.00	1.00	0.10
5.05	2.01		Stock Level 0.10	20.00	1.00	0.10
10.05	2.01		Order Status 0.10	5.00	1.00	0.10
Tuned Distribution						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
12.05	18.01		New Order 0.10	5.00	44.75	0.10
12.05	3.01		Payment 0.10	5.00	43.10	0.10
5.05	2.01		Delivery 0.10	5.00	4.05	0.10
5.05	2.01		Stock Level 0.10	20.00	4.05	0.10
10.05	2.01		Order Status 0.10	5.00	4.05	0.10
No Think						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
0.00	0.00		New Order 0.00	5.00	10.00	0.00
0.00	0.00		Payment 0.00	5.00	10.00	0.00
0.00	0.00		Delivery 0.00	5.00	1.00	0.00
0.00	0.00		Stock Level 0.00	20.00	1.00	0.00
0.00	0.00		Order Status 0.00	5.00	1.00	0.00
95%						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
13.00	18.01		New Order 0.10	5.00	44.75	0.10
13.00	3.01		Payment 0.10	5.00	43.10	0.10
6.00	2.01		Delivery 0.10	5.00	4.05	0.10

6.00	2.01		Stock Level 0.10	20.00	4.05	0.10
11.00	2.01		Order Status 0.10	5.00	4.05	0.10
90%						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
16.00	18.01		New Order 0.10	5.00	44.83	0.10
16.00	3.01		Payment 0.10	5.00	43.05	0.10
9.00	2.01		Delivery 0.10	5.00	4.04	0.10
9.00	2.01		Stock Level 0.10	20.00	4.04	0.10
14.00	2.01		Order Status 0.10	5.00	4.04	0.10
3.0						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
36.15	0.00		New Order 0.10	5.00	44.75	0.10
36.15	0.00		Payment 0.10	5.00	43.10	0.10
15.15	0.00		Delivery 0.10	5.00	4.05	0.10
15.15	0.00		Stock Level 0.10	20.00	4.05	0.10
30.15	0.00		Order Status 0.10	5.00	4.05	0.10
4.0 4.0 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
48.20	18.01		New Order 0.10	5.00	44.75	0.10
48.20	3.01		Payment 0.10	5.00	43.10	0.10
20.20	2.01		Delivery 0.10	5.00	4.05	0.10
20.20	2.01		Stock Level 0.10	20.00	4.05	0.10
40.20	2.01		Order Status 0.10	5.00	4.05	0.10
3.8 3.8 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	

45.70	18.01	New Order	0.10	5.00	44.75	0.10
45.70	3.01	Payment	0.10	5.00	43.10	0.10
19.10	2.01	Delivery	0.10	5.00	4.05	0.10
19.10	2.01	Stock Level	0.10	20.00	4.05	0.10
38.10	2.01	Order Status	0.10	5.00	4.05	0.10

3.6						
3.6 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
43.30	18.01	New Order	0.10	5.00	44.75	0.10
43.30	3.01	Payment	0.10	5.00	43.10	0.10
18.10	2.01	Delivery	0.10	5.00	4.05	0.10
18.10	2.01	Stock Level	0.10	20.00	4.05	0.10
36.18	2.01	Order Status	0.10	5.00	4.05	0.10

3.4						
3.4 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
40.90	18.01	New Order	0.10	5.00	44.75	0.10
40.90	3.01	Payment	0.10	5.00	43.10	0.10
17.10	2.01	Delivery	0.10	5.00	4.05	0.10
17.10	2.01	Stock Level	0.10	20.00	4.05	0.10
17.10	2.01	Order Status	0.10	5.00	4.05	0.10

3.2						
3.2 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
38.50	18.01	New Order	0.10	5.00	44.75	0.10
38.50	3.01	Payment	0.10	5.00	43.10	0.10
16.10	2.01	Delivery	0.10	5.00	4.05	0.10
16.10	2.01	Stock Level	0.10	20.00	4.05	0.10
32.10	2.01	Order Status	0.10	5.00	4.05	0.10

2.8

2.8 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
33.74	18.01	New Order	0.10	5.00	44.75	0.10
33.74	3.01	Payment	0.10	5.00	43.10	0.10
14.14	2.01	Delivery	0.10	5.00	4.05	0.10
14.14	2.01	Stock Level	0.10	20.00	4.05	0.10
28.14	2.01	Order Status	0.10	5.00	4.05	0.10

2.6						
2.6 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
31.30	18.01	New Order	0.10	5.00	44.75	0.10
31.30	3.01	Payment	0.10	5.00	43.10	0.10
13.10	2.01	Delivery	0.10	5.00	4.05	0.10
13.10	2.01	Stock Level	0.10	20.00	4.05	0.10
26.10	2.01	Order Status	0.10	5.00	4.05	0.10

2.4						
2.4 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
28.90	18.01	New Order	0.10	5.00	44.75	0.10
28.90	3.01	Payment	0.10	5.00	43.10	0.10
12.10	2.01	Delivery	0.10	5.00	4.05	0.10
12.10	2.01	Stock Level	0.10	20.00	4.05	0.10
24.10	2.01	Order Status	0.10	5.00	4.05	0.10

2.2						
2.2 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
28.90	18.01	New Order	0.10	5.00	44.75	0.10
28.90	3.01	Payment	0.10	5.00	43.10	0.10
12.10	2.01	Delivery	0.10	5.00	4.05	0.10

12.10	2.01	Stock Level	0.10	20.00	4.05	0.10
24.12	2.01	Order Status	0.10	5.00	4.05	0.10

2.0						
2.0 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
24.10	18.01	New Order	0.10	5.00	44.75	0.10
24.10	3.01	Payment	0.10	5.00	43.10	0.10
10.10	2.01	Delivery	0.10	5.00	4.05	0.10
10.10	2.01	Stock Level	0.10	20.00	4.05	0.10
20.10	2.01	Order Status	0.10	5.00	4.05	0.10

5.0						
5.0 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
60.25	18.01	New Order	0.10	5.00	44.75	0.10
60.25	3.01	Payment	0.10	5.00	43.10	0.10
25.25	2.01	Delivery	0.10	5.00	4.05	0.10
25.25	2.01	Stock Level	0.10	20.00	4.05	0.10
50.25	2.01	Order Status	0.10	5.00	4.05	0.10

4.5						
4.5 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
54.20	18.01	New Order	0.10	5.00	44.75	0.10
54.20	3.01	Payment	0.10	5.00	43.10	0.10
22.70	2.01	Delivery	0.10	5.00	4.05	0.10
22.70	2.01	Stock Level	0.10	20.00	4.05	0.10
45.20	2.01	Order Status	0.10	5.00	4.05	0.10

3.5						
3.5 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	

42.10	18.01	New Order	0.10	5.00	44.75	0.10
42.10	3.01	Payment	0.10	5.00	43.10	0.10
17.60	2.01	Delivery	0.10	5.00	4.05	0.10
17.60	2.01	Stock Level	0.10	20.00	4.05	0.10
35.10	2.01	Order Status	0.10	5.00	4.05	0.10

1.8						
1.8 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
21.60	18.01	New Order	0.10	5.00	44.75	0.10
21.60	3.01	Payment	0.10	5.00	43.10	0.10
9.09	2.01	Delivery	0.10	5.00	4.05	0.10
9.09	2.01	Stock Level	0.10	20.00	4.05	0.10
18.09	2.01	Order Status	0.10	5.00	4.05	0.10

4.2						
4.2 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
54.20	18.01	New Order	0.10	5.00	44.75	0.10
54.20	3.01	Payment	0.10	5.00	43.10	0.10
22.70	2.01	Delivery	0.10	5.00	4.05	0.10
22.70	2.01	Stock Level	0.10	20.00	4.05	0.10
45.20	2.01	Order Status	0.10	5.00	4.05	0.10

1.6						
1.6 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
19.20	18.01	New Order	0.10	5.00	44.75	0.10
19.20	3.01	Payment	0.10	5.00	43.10	0.10
8.08	2.01	Delivery	0.10	5.00	4.05	0.10
8.08	2.01	Stock Level	0.10	20.00	4.05	0.10
16.08	2.01	Order Status	0.10	5.00	4.05	0.10

1.4

1.4 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
16.87	18.01	New Order	0.10	5.00	44.75	0.10
16.87	3.01	Payment	0.10	5.00	43.10	0.10
7.07	2.01	Delivery	0.10	5.00	4.05	0.10
7.07	2.01	Stock Level	0.10	20.00	4.05	0.10
14.07	2.01	Order Status	0.10	5.00	4.05	0.10

1.2						
1.2 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
14.46	18.01	New Order	0.10	5.00	44.83	0.10
14.46	3.01	Payment	0.10	5.00	43.05	0.10
6.06	2.01	Delivery	0.10	5.00	4.04	0.10
6.06	2.01	Stock Level	0.10	20.00	4.04	0.10
12.06	2.01	Order Status	0.10	5.00	4.04	0.10

3.5						
3.5 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
42.10	18.01	New Order	0.10	5.00	44.75	0.10
42.10	3.01	Payment	0.10	5.00	43.10	0.10
17.60	2.01	Delivery	0.10	5.00	4.05	0.10
17.60	2.01	Stock Level	0.10	20.00	4.05	0.10
35.10	2.01	Order Status	0.10	5.00	4.05	0.10

1.9						
1.9 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
22.89	18.01	New Order	0.10	5.00	44.75	0.10
22.89	3.01	Payment	0.10	5.00	43.10	0.10
9.59	2.01	Delivery	0.10	5.00	4.05	0.10

9.59	2.01	Stock Level	0.10	20.00	4.05	0.10
19.09	2.01	Order Status	0.10	5.00	4.05	0.10

1.1						
1.1 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
13.25	18.01	New Order	0.10	5.00	44.83	0.10
13.25	3.01	Payment	0.10	5.00	43.05	0.10
5.55	2.01	Delivery	0.10	5.00	4.04	0.10
5.55	2.01	Stock Level	0.10	20.00	4.04	0.10
11.05	2.01	Order Status	0.10	5.00	4.04	0.10

1.05 better						
1.05 tt better						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
12.65	18.01	New Order	0.10	5.00	44.92	0.10
12.65	3.01	Payment	0.10	5.00	43.01	0.10
5.30	2.01	Delivery	0.10	5.00	4.02	0.10
5.30	2.01	Stock Level	0.10	20.00	4.03	0.10
10.55	2.01	Order Status	0.10	5.00	4.02	0.10

1.09						
1.09 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
13.13	18.01	New Order	0.10	5.00	44.83	0.10
13.13	3.01	Payment	0.10	5.00	43.05	0.10
5.50	2.01	Delivery	0.10	5.00	4.04	0.10
5.50	2.01	Stock Level	0.10	20.00	4.04	0.10
10.95	2.01	Order Status	0.10	5.00	4.04	0.10

1.08						
1.08 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	

13.01	18.01	New Order	0.10	5.00	44.83	0.10
13.01	3.01	Payment	0.10	5.00	43.05	0.10
5.45	2.01	Delivery	0.10	5.00	4.04	0.10
5.45	2.01	Stock Level	0.10	20.00	4.04	0.10
10.85	2.01	Order Status	0.10	5.00	4.04	0.10
1.07						
1.07 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
12.89	18.01	New Order	0.10	5.00	44.83	0.10
12.89	3.01	Payment	0.10	5.00	43.05	0.10
5.40	2.01	Delivery	0.10	5.00	4.04	0.10
5.40	2.01	Stock Level	0.10	20.00	4.04	0.10
10.75	2.01	Order Status	0.10	5.00	4.04	0.10
1.06						
1.06 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
12.77	18.01	New Order	0.10	5.00	44.83	0.10
12.77	3.01	Payment	0.10	5.00	43.05	0.10
5.35	2.01	Delivery	0.10	5.00	4.04	0.10
5.35	2.01	Stock Level	0.10	20.00	4.04	0.10
10.65	2.01	Order Status	0.10	5.00	4.04	0.10
1.15						
1.15 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
13.85	18.01	New Order	0.10	5.00	44.75	0.10
13.85	3.01	Payment	0.10	5.00	43.10	0.10
5.80	2.01	Delivery	0.10	5.00	4.05	0.10
5.80	2.01	Stock Level	0.10	20.00	4.05	0.10
11.55	2.01	Order Status	0.10	5.00	4.05	0.10
1.25						

1.25 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
15.06	18.01	New Order	0.10	5.00	44.83	0.10
15.06	3.01	Payment	0.10	5.00	43.05	0.10
6.31	2.01	Delivery	0.10	5.00	4.04	0.10
6.31	2.01	Stock Level	0.10	20.00	4.04	0.10
12.56	2.01	Order Status	0.10	5.00	4.04	0.10
1.3						
1.3 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
15.66	18.01	New Order	0.10	5.00	44.83	0.10
15.66	3.01	Payment	0.10	5.00	43.05	0.10
6.56	2.01	Delivery	0.10	5.00	4.04	0.10
6.56	2.01	Stock Level	0.10	20.00	4.04	0.10
13.06	2.01	Order Status	0.10	5.00	4.04	0.10
1.12						
1.12 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
13.49	18.01	New Order	0.10	5.00	44.75	0.10
13.49	3.01	Payment	0.10	5.00	43.10	0.10
5.65	2.01	Delivery	0.10	5.00	4.05	0.10
5.65	2.01	Stock Level	0.10	20.00	4.05	0.10
11.25	2.01	Order Status	0.10	5.00	4.05	0.10
1.18						
1.18 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
14.21	18.01	New Order	0.10	5.00	44.75	0.10
14.21	3.01	Payment	0.10	5.00	43.10	0.10
5.95	2.01	Delivery	0.10	5.00	4.05	0.10

5.95	2.01	Stock Level	0.10	20.00	4.05	0.10
11.85	2.01	Order Status	0.10	5.00	4.05	0.10
1.22						
1.22 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
14.70	18.01	New Order	0.10	5.00	44.75	0.10
14.70	3.01	Payment	0.10	5.00	43.10	0.10
6.16	2.01	Delivery	0.10	5.00	4.05	0.10
6.16	2.01	Stock Level	0.10	20.00	4.05	0.10
12.26	2.01	Order Status	0.10	5.00	4.05	0.10
1.28						
1.28 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
15.42	18.01	New Order	0.10	5.00	44.75	0.10
15.42	3.01	Payment	0.10	5.00	43.10	0.10
6.46	2.01	Delivery	0.10	5.00	4.05	0.10
6.46	2.01	Stock Level	0.10	20.00	4.05	0.10
12.86	2.01	Order Status	0.10	5.00	4.05	0.10
1.04						
1.04 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	
12.53	18.01	New Order	0.10	5.00	44.83	0.10
12.53	3.01	Payment	0.10	5.00	43.05	0.10
5.25	2.01	Delivery	0.10	5.00	4.04	0.10
5.25	2.01	Stock Level	0.10	20.00	4.04	0.10
10.45	2.01	Order Status	0.10	5.00	4.04	0.10
1.03						
1.03 tt						
Key	RT	RT	Menu	Txn	Think	
Time	Delay	Fence	Delay	Weight	Time	

12.41	18.01	New Order	0.10	5.00	44.83	0.10
12.41	3.01	Payment	0.10	5.00	43.05	0.10
5.20	2.01	Delivery	0.10	5.00	4.04	0.10
5.20	2.01	Stock Level	0.10	20.00	4.04	0.10
10.35	2.01	Order Status	0.10	5.00	4.04	0.10
1.02						
1.02 tt						
Key	RT	RT	Menu		Txn	Think
Time	Delay	Fence	Delay		Weight	Time
12.29	18.01	New Order	0.10	5.00	44.83	0.10
12.29	3.01	Payment	0.10	5.00	43.05	0.10
5.15	2.01	Delivery	0.10	5.00	4.04	0.10
5.15	2.01	Stock Level	0.10	20.00	4.04	0.10
10.25	2.01	Order Status	0.10	5.00	4.04	0.10
1.01						
1.01 tt						
Key	RT	RT	Menu		Txn	Think
Time	Delay	Fence	Delay		Weight	Time
12.17	18.01	New Order	0.10	5.00	44.83	0.10
12.17	3.01	Payment	0.10	5.00	43.05	0.10
5.10	2.01	Delivery	0.10	5.00	4.04	0.10
5.10	2.01	Stock Level	0.10	20.00	4.04	0.10
10.15	2.01	Order Status	0.10	5.00	4.04	0.10
1.005_best						
1.005 tt best						
Key	RT	RT	Menu		Txn	Think
Time	Delay	Fence	Delay		Weight	Time
12.11	18.01	New Order	0.10	5.00	44.88	0.10
12.11	3.01	Payment	0.10	5.00	43.02	0.10
5.07	2.01	Delivery	0.10	5.00	4.03	0.10
5.07	2.01	Stock Level	0.10	20.00	4.03	0.10
10.10	2.01	Order Status	0.10	5.00	4.03	0.10
1.001_best						

1.001 tt best						
Key	RT	RT	Menu		Txn	Think
Time	Delay	Fence	Delay		Weight	Time
12.06	18.01	New Order	0.10	5.00	44.91	0.10
12.06	3.01	Payment	0.10	5.00	43.04	0.10
5.06	2.01	Delivery	0.10	5.00	4.01	0.10
5.06	2.01	Stock Level	0.10	20.00	4.02	0.10
10.06	2.01	Order Status	0.10	5.00	4.02	0.10
1.03 better						
1.03 tt more aggressive						
Key	RT	RT	Menu		Txn	Think
Time	Delay	Fence	Delay		Weight	Time
12.41	18.01	New Order	0.10	5.00	44.92	0.10
12.41	3.01	Payment	0.10	5.00	43.01	0.10
5.20	2.01	Delivery	0.10	5.00	4.02	0.10
5.20	2.01	Stock Level	0.10	20.00	4.03	0.10
10.35	2.01	Order Status	0.10	5.00	4.02	0.10
1.005 better						
1.005 tt more aggressive						
Key	RT	RT	Menu		Txn	Think
Time	Delay	Fence	Delay		Weight	Time
12.11	18.01	New Order	0.10	5.00	44.90	0.10
12.11	3.01	Payment	0.10	5.00	43.05	0.10
5.07	2.01	Delivery	0.10	5.00	4.01	0.10
5.07	2.01	Stock Level	0.10	20.00	4.03	0.10
10.10	2.01	Order Status	0.10	5.00	4.01	0.10
1.02 better						
1.02 tt more aggressive						
Key	RT	RT	Menu		Txn	Think
Time	Delay	Fence	Delay		Weight	Time
12.29	18.01	New Order	0.10	5.00	44.92	0.10
12.29	3.01	Payment	0.10	5.00	43.01	0.10
5.15	2.01	Delivery	0.10	5.00	4.02	0.10

5.15	2.01	Stock Level	0.10	20.00	4.03	0.10
10.25	2.01	Order Status	0.10	5.00	4.02	0.10
1.01 best						
1.01 tt best						
Key	RT	RT	Menu		Txn	Think
Time	Delay	Fence	Delay		Weight	Time
12.17	18.01	New Order	0.10	5.00	44.90	0.10
12.17	3.01	Payment	0.10	5.00	43.05	0.10
5.10	2.01	Delivery	0.10	5.00	4.01	0.10
5.10	2.01	Stock Level	0.10	20.00	4.03	0.10
10.15	2.01	Order Status	0.10	5.00	4.01	0.10
1.02 best						
1.02 tt best						
Key	RT	RT	Menu		Txn	Think
Time	Delay	Fence	Delay		Weight	Time
12.29	18.01	New Order	0.00	5.00	44.96	0.00
12.29	3.01	Payment	0.00	5.00	43.00	0.00
5.15	2.01	Delivery	0.00	5.00	4.00	0.00
5.15	2.01	Stock Level	0.00	20.00	4.03	0.00
10.25	2.01	Order Status	0.00	5.00	4.01	0.00
1.03 best						
1.03 tt best						
Key	RT	RT	Menu		Txn	Think
Time	Delay	Fence	Delay		Weight	Time
12.41	18.01	New Order	0.10	5.00	44.96	0.10
12.41	3.01	Payment	0.10	5.00	43.01	0.10
5.20	2.01	Delivery	0.10	5.00	4.01	0.10
5.20	2.01	Stock Level	0.10	20.00	4.01	0.10
10.35	2.01	Order Status	0.10	5.00	4.01	0.10
5.5						
5.5 tt						
Key	RT	RT	Menu		Txn	Think
Time	Delay	Fence	Delay		Weight	Time

66.28	18.01		New Order	44.83		
		0.10	5.00	0.10		
66.28	3.01		Payment	43.05		
		0.10	5.00	0.10		
27.77	2.01		Delivery	4.04		
		0.10	5.00	0.10		
27.77	2.01		Stock Level	4.04		
		0.10	20.00	0.10		
55.27	2.01		Order Status	4.04		
		0.10	5.00	0.10		
		6.0				
		6.0	tt			
Key	RT	RT	Menu	Txn	Think	
				Weight	Time	
Time	Delay	Fence	Delay			
72.30	18.01		New Order	44.83		
		0.10	5.00	0.10		
72.30	3.01		Payment	43.05		
		0.10	5.00	0.10		
30.30	2.01		Delivery	4.04		
		0.10	5.00	0.10		
30.30	2.01		Stock Level	4.04		
		0.10	20.00	0.10		
60.30	2.01		Order Status	4.04		
		0.10	5.00	0.10		
		6.5				
		6.5	tt			
Key	RT	RT	Menu	Txn	Think	
				Weight	Time	
Time	Delay	Fence	Delay			
79.53	18.01		New Order	44.83		
		0.10	5.00	0.10		
79.53	3.01		Payment	43.05		
		0.10	5.00	0.10		
33.33	2.01		Delivery	4.04		
		0.10	5.00	0.10		
33.33	2.01		Stock Level	4.04		
		0.10	20.00	0.10		
66.33	2.01		Order Status	4.04		
		0.10	5.00	0.10		
		7.0				
		7.0	tt			
Key	RT	RT	Menu	Txn	Think	
				Weight	Time	
Time	Delay	Fence	Delay			
84.35	18.01		New Order	44.83		
		0.10	5.00	0.10		
84.35	3.01		Payment	43.05		
		0.10	5.00	0.10		
35.35	2.01		Delivery	4.04		
		0.10	5.00	0.10		
35.35	2.01		Stock Level	4.04		
		0.10	20.00	0.10		
70.35	2.01		Order Status	4.04		
		0.10	5.00	0.10		
		7.5				

			7.5	tt		
Key	RT	RT	Menu	Txn	Think	
				Weight	Time	
Time	Delay	Fence	Delay			
90.38	18.01		New Order	44.83		
		0.10	5.00	0.10		
90.38	3.01		Payment	43.05		
		0.10	5.00	0.10		
37.88	2.01		Delivery	4.04		
		0.10	5.00	0.10		
37.88	2.01		Stock Level	4.04		
		0.10	20.00	0.10		
75.38	2.01		Order Status	4.04		
		0.10	5.00	0.10		
		8.0				
		8.0	tt			
Key	RT	RT	Menu	Txn	Think	
				Weight	Time	
Time	Delay	Fence	Delay			
96.40	18.01		New Order	44.83		
		0.10	5.00	0.10		
96.40	3.01		Payment	43.05		
		0.10	5.00	0.10		
40.40	2.01		Delivery	4.04		
		0.10	5.00	0.10		
40.40	2.01		Stock Level	4.04		
		0.10	20.00	0.10		
80.40	2.01		Order Status	4.04		
		0.10	5.00	0.10		
		8.5				
		8.5	tt			
Key	RT	RT	Menu	Txn	Think	
				Weight	Time	
Time	Delay	Fence	Delay			
102.43	18.01		New Order	44.83		
		0.10	5.00	0.10		
192.43	3.01		Payment	43.05		
		0.10	5.00	0.10		
42.92	2.01		Delivery	4.04		
		0.10	5.00	0.10		
42.92	2.01		Stock Level	4.04		
		0.10	20.00	0.10		
85.42	2.01		Order Status	4.04		
		0.10	5.00	0.10		
		9.0				
		9.0	tt			
Key	RT	RT	Menu	Txn	Think	
				Weight	Time	
Time	Delay	Fence	Delay			
108.45	18.01		New Order	44.83		
		0.10	5.00	0.10		
108.45	3.01		Payment	43.05		
		0.10	5.00	0.10		
45.45	2.01		Delivery	4.04		
		0.10	5.00	0.10		

45.45	2.01		Stock Level	4.04		
		0.10	20.00	0.10		
90.45	2.01		Order Status	4.04		
		0.10	5.00	0.10		
		9.5				
		9.5	tt			
Key	RT	RT	Menu	Txn	Think	
				Weight	Time	
Time	Delay	Fence	Delay			
114.47	18.01		New Order	44.83		
		0.10	5.00	0.10		
114.47	3.01		Payment	43.05		
		0.10	5.00	0.10		
47.98	2.01		Delivery	4.04		
		0.10	5.00	0.10		
47.98	2.01		Stock Level	4.04		
		0.10	20.00	0.10		
95.47	2.01		Order Status	4.04		
		0.10	5.00	0.10		
		10				
		10	tt			
Key	RT	RT	Menu	Txn	Think	
				Weight	Time	
Time	Delay	Fence	Delay			
120.50	18.01		New Order	44.83		
		0.10	5.00	0.10		
120.50	3.01		Payment	43.05		
		0.10	5.00	0.10		
50.50	2.01		Delivery	4.04		
		0.10	5.00	0.10		
50.50	2.01		Stock Level	4.04		
		0.10	20.00	0.10		
100.50	2.01		Order Status	4.04		
		0.10	5.00	0.10		
		1.02	better			
		1.02	more aggressive			
Key	RT	RT	Menu	Txn	Think	
				Weight	Time	
Time	Delay	Fence	Delay			
12.05	18.01		New Order	44.92		
		0.10	5.00	0.10		
12.05	3.01		Payment	43.01		
		0.10	5.00	0.10		
5.05	2.01		Delivery	4.02		
		0.10	5.00	0.10		
5.05	2.01		Stock Level	4.03		
		0.10	20.00	0.10		
10.05	2.01		Order Status	4.02		
		0.10	5.00	0.10		
		1.01	better			
		1.01	more aggressive			
Key	RT	RT	Menu	Txn	Think	
				Weight	Time	
Time	Delay	Fence	Delay			

			New Order	44.92	
12.17	18.01	0.10	5.00	0.10	
		Payment	43.01		
12.17	3.01	0.10	5.00	0.10	
		Delivery	4.02		
5.10	2.01	0.10	5.00	0.10	
		Stock Level	4.03		
5.10	2.01	0.10	20.00	0.10	
		Order Status	4.02		
10.15	2.01	0.10	5.00	0.10	

1.001 better
1.001 more aggressive

Key	RT	RT	Menu	Txn	Think
Time	Delay	Fence	Delay	Weight	Time
			New Order	44.92	
12.06	18.01	0.10	5.00	0.10	
		Payment	43.01		
12.06	3.01	0.10	5.00	0.10	
		Delivery	4.02		
5.06	2.01	0.10	5.00	0.10	
		Stock Level	4.03		
5.06	2.01	0.10	20.00	0.10	
		Order Status	4.02		
10.06	2.01	0.10	5.00	0.10	

FullSpeed
1.000 tt

Key	RT	RT	Menu	Txn	Think
Time	Delay	Fence	Delay	Weight	Time
			New Order	44.91	
12.05	18.01	0.10	5.00	0.10	
		Payment	43.03		
12.05	3.01	0.10	5.00	0.10	
		Delivery	4.02		
5.05	2.01	0.10	5.00	0.10	
		Stock Level	4.02		
5.05	2.01	0.10	20.00	0.10	
		Order Status	4.02		
10.05	2.01	0.10	5.00	0.10	

1.003 best
1.003 best

Key	RT	RT	Menu	Txn	Think
Time	Delay	Fence	Delay	Weight	Time
			New Order	44.90	
12.09	18.01	0.10	5.00	0.10	
		Payment	43.05		
12.09	3.01	0.10	5.00	0.10	
		Delivery	4.01		
5.07	2.01	0.10	5.00	0.10	
		Stock Level	4.03		
5.07	2.01	0.10	20.00	0.10	
		Order Status	4.01		
10.08	2.01	0.10	5.00	0.10	

ExtraKick

Key	RT	RT	Menu	Txn	Think
Time	Delay	Fence	Delay	Weight	Time
			New Order	44.92	
12.03	18.01	0.10	5.00	0.10	
		Payment	43.01		
12.03	3.01	0.10	5.00	0.10	
		Delivery	4.02		
5.03	2.01	0.10	5.00	0.10	
		Stock Level	4.02		
5.03	2.01	0.10	20.00	0.10	
		Order Status	4.03		
10.03	2.01	0.10	5.00	0.10	

overdrv

Key	RT	RT	Menu	Txn	Think
Time	Delay	Fence	Delay	Weight	Time
			New Order	44.92	
11.45	18.00	0.10	5.00	0.10	
		Payment	43.01		
11.45	3.00	0.10	5.00	0.10	
		Delivery	4.02		
4.80	2.00	0.10	5.00	0.10	
		Stock Level	4.03		
4.80	2.00	0.10	20.00	0.10	
		Order Status	4.02		
9.55	2.00	0.10	5.00	0.10	

HP Specific Drivers

The following Microsoft Windows 2003 Server x64 device drivers were replaced with HP-specific device drivers:
The Microsoft HP Smart Array SAS Controller Controller default device driver (hpciss.sys) was replaced with the HP Smart Array SAS Controller Non-miniport Performance Driver for Microsoft Windows 2003 Server x64 (hpqcissb.sys and hpqcissd.sys).

Appendix D: 60-Day Space

TPC-C 60 Day Space Requirements						
Warehouses	38,376				TpmC	471,883
Table	Rows	Data KB	Index KB	Extra 5% KB	8hr Space	Total Space KB
Warehouse	38,376	4,096	64	208		4,368
District	383,760	42,640	144	2,139		44,923
Customer	1,151,280,000	837,294,552	52,239,336	44,476,694		934,010,582
History	1,151,280,000	67,228,032	251,032		14,209,044	67,479,064
New_order	345,384,000	6,153,840	13,976	308,391		6,476,207
Orders	1,151,280,000	37,592,824	84,152		15,968,659	37,676,976
Order_line	11,512,769,038	754,935,680	1,777,848		263,459,095	756,713,528
Item	100,000	9,416	80	475		9,971
Stock	3,837,600,000	1,228,032,000	2,587,816	61,530,991		1,292,150,807
Total		2,931,293,080	56,954,448	106,318,898	293,636,799	3,094,566,426
	MB					
Dynamic Space	839,608	Sum of Data for Order, Orderline and History				
Static Space	2,182,432	Sum of Data+Index+5%-Dynamic Space				
Free Space	na	Total Allocated Spac - (Dynamic + Static Space)				
Daily Growth	165,185	(Dynamic Space/(W*62.5))*tpmc				
Daily Spread	-	(Free Space -1.5*Daily Growth) Zero Assumed				
60 Day Space MB	12,093,521					
60 Day Space GB	11,810.08	GB				
Log Size	1,530,663.00	MB				
KB Per New Order	6.48	KB				
8 hr log MB	1,432,787	MB				
8 hr log GB	1,399.21	GB				
Space Usage	GB Needed	Disks Measured	GB Priced	Disk Size	Formatted Size	
60 Day Space DB	11,810	700	23,660.00	36GB	33.80	
			0.00			
			0.00			
Total DB			23,660.00			
8-hr log + mirror	2,798	24	3,280.80	146GB	136.70	
OS, Swap	3	1	33.80			
Total Storage	14,611.49	GB	26,974.60	GB		

	MSSQL stk fg	MSSQL cust fg	MSSQL ol fg	MSSQL misc fg
		934,010,582		4,368
				44,923
				81,688,108
				6,476,207
				53,645,635
			1,020,172,623	9,971
	1,292,150,807			
	1,292,150,807	934,010,582	1,020,172,623	141,869,212
files=	7	7	7	7
size=	25,600,000	17,792,000	19,456,000	3,840,000
Total=	179,200,000	124,544,000	136,192,000	26,880,000
8K blocks	1,433,600,000	996,352,000	1,089,536,000	215,040,000
	OK	OK	OK	OK

tpmC	471,883									
	Data Before KB	Index Before KB	Data After KB	Index After KB	Data Grow KB	Index Grow KB	Total Grow KB	KB/New- Order	8-Hr Growth KB	8-Hr Growth MB
History	67,228,032	251,032	75,090,136	499,160	7,862,104	248,128	8,110,232	0.0627	14,209,044.44	13,876.02
Order	37,592,824	84,152	46,624,512	167,048	9,031,688	82,896	9,114,584	0.0705	15,968,658.99	15,594.39
Order-Line	754,935,680	1,777,848	903,558,688	3,531,904	148,623,008	1,754,056	150,377,064	1.1632	263,459,095.28	257,284.27
									286,754.69	
	sum(*) Before	sum(*) After		Num New-Order						
d_next_o_id	1,151,663,760	1,280,947,520		129,283,760						
	Before MB	After MB		Grow MB				KB/New- Order	8-Hr Growth MB	8-Hr Growth GB
Log	15,325.13	833,130.89		817,805.76				6.4775	1,432,787.42	1,399.21
								6,632.9405	bytes	
	1,530,663.00	1.0012083	54.429413							
Database tpcc log used (%)										

Appendix E:

Third Party Letters

10ft Blue Cat 6 Patch Cable, Molded
As low as 2.13 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

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Address http://www.deepsurplus.com/Network-Structured-Wiring/10-Foot-CAT-6-Patch-Cables/10ft-Blue-Cat-6-Patch-Cable-Moldedbrfont-colorblackAs-low-as-2-09-font Go Links

Register Log In

DeepSurplus
Surplus, Closeout & Overstocked Cabling Supplies

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HOME Network Cabling & Structured Wiring Home Theater (Audio/Video) Computer Cables & Accessories Shopping Cart My Account Checkout Company Info

Network Cabling & Structured Wiring > Network Patch Cables > Ethernet CAT6 Network Patch Cables > Ethernet CAT 6 Patch Cables, 10ft >

Returning Customers [click here to log in.](#)

Shopping Cart
Your Cart is Empty
[View Cart](#)

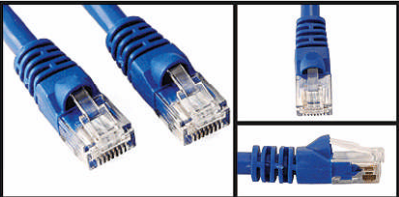
Search **Go**

Network Cabling & Structured Wiring
Bulk Cable for Network & Structured Wiring
Network Patch Cables
Ethernet CAT5e Network Patch Cables
Ethernet CAT5e Crossover Network Patch Cables
Ethernet CAT6 Network Patch Cables
Ethernet CAT 6 Patch Cables, 1ft
Ethernet CAT 6 Patch Cables, 2ft
Ethernet CAT 6 Patch Cables, 3ft
Ethernet CAT 6 Patch Cables, 5ft
Ethernet CAT 6 Patch Cables, 7ft
Ethernet CAT 6 Patch Cables, 10ft

10ft Blue Cat 6 Patch Cable, Molded
As low as 2.13

Meets or exceeds the ANSI/TIA/EIA-568-B 2-1 standard for CAT 6 CMR, communication riser cable, and certified by UL, Underwriters Laboratories.

Our CAT 6 patch cables come with a molded strain relief to protect the cable from tugs and pulls, special CAT 6 rated gold plated RJ45 connectors on each end and boots to protect the tab of the RJ45 connector from being snagged. Packaged individually in labeled bags.



Quantity	Price
1 - 9	\$2.90
10 - 29	\$2.87
30 - 49	\$2.82
50 - 79	\$2.72
80 - 119	\$2.61
120 - 249	\$2.52
250 - 499	\$2.42
500 - 749	\$2.32
750 - 999	\$2.25
1000 +	\$2.13

1 **Purchase**

[Tell a Friend](#)

P/N: CB242-10BL

Condition: New
Mfg: Abergetty
P/N: CB242-10BL

Other great items you might enjoy:

 14ft Blue Cat 6 Patch Cable, Molded As low as 3.20	 5ft Blue Cat 6 Patch Cable, Molded As low as 1.56	 3ft Blue Cat 6 Patch Cable, Molded As low as 1.16	 25ft Blue Cat 6 Patch Cable, Molded AS LOW AS 4.19	 10ft Red Cat 6 Patch Cable, Molded As low as 2.13
 10ft Yellow Cat 6 Patch Cable, Molded As low as 2.13	 7ft Yellow Cat 6 Patch Cable, Molded As low as 1.79	 3ft Yellow Cat 6 Patch Cable, Molded As low as 1.16	 50ft Blue Cat 6 Patch Cable, Molded As low as 7.27	

Discussions Discussions not available on http://www.deepsurplus.com/ Internet

June 30, 2008

Hewlett-Packard Company
David Adams
20555 SH 249
MS 150402
Houston, TX 77040

Here is the information you requested regarding pricing for several Microsoft products to be used in conjunction with your TPC-C benchmark testing.

All pricing shown is in US Dollars (\$).

Part Number	Description	Unit Price	Quantity	Price
810-03134	SQL Server 2005 Enterprise x64 Edition <i>Per Processor License</i> <i>Discount Schedule: Open Program – Level C</i> <i>Unit Price reflects a 6% discount from the retail unit price of \$24,999.</i>	\$23,432	4	\$93,728
P72-01684	Windows Server 2003 R2 Enterprise x64 Edition <i>Server License Only – No CALs</i> <i>Discount Schedule: Open Program – Level C</i> <i>Unit Price reflects a 41% discount from the retail unit price of \$3,999.</i>	\$2,334	1	\$2,334
P73-01972	Windows Server 2003 R2 Standard Edition <i>Server License Only – No CALs</i> <i>Discount Schedule: Open Program – No Level</i> <i>Unit Price reflects a 28% discount from the retail unit price of \$999</i>	\$719	12	\$8,628
127-00012	Visual Studio Standard 2005 <i>Full License</i> <i>No Discount Applied</i>	\$250	1	\$250
N/A	Microsoft Problem Resolution Services <i>Professional Support</i> <i>(1 Incident)</i>	\$245	1	\$245

SQL Server 2005 and Windows Server 2003 R2 are currently orderable through Microsoft's normal distribution channels. A list of Microsoft's resellers can be found at <http://www.microsoft.com/products/info/render.aspx?view=22&type=mn&content=22/licensing>

Defect support is included in the purchase price. Additional support is available from Microsoft PSS on an incident by incident basis at \$245 per call.

This quote is valid for the next 90 days.

If we can be of any further assistance, please contact Jamie Reding at (425) 703-0510 or jamiere@microsoft.com.

Reference ID: PCdaad0806300000001563.

Please include this Reference ID in any correspondence regarding this price quote.

Appendix F:

Price Verification

All components available at time of publication.

HP Direct: 800-203-6748

For price verification before order date: e-mail hp.pricing.desk@hp.com