Hewlett-Packard Company

TPC Benchmark™ C
Full Disclosure Report
for

HP ProLiant DL385 G7

using
Microsoft SQL Server 2005 Enterprise x64 Edition SP3
and
Windows Server 2008 R2 Enterprise Edition

First Edition
Submitted for Review
November 14, 2011

First Edition –November 2011

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

All performance data contained in this report were obtained in a rigorously controlled environment. Results obtained in other operating environments may vary significantly. HP does not warrant or represent that a user can or will achieve similar performance expressed in transactions per minute (tpmC) or normalized price/performance ($/tpmC). No warranty of system performance or price/performance is expressed or implied in this report.

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Table of Contents

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 5.11

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 DL385 G7. The operating system used for the benchmark was Windows Server 2008R2 Enterprise Edition. The DBMS used was Microsoft SQL Server 2005 Enterprise x64 Edition SP3.

TPC Benchmark C Primary Metrics

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

1,207,982 tpmC
USD $0.87 per tpmC
2.49 Watts per KtpmC

The availability date is May 14, 2012.

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.

HP ProLiant DL385 G7

AMD Opteron 6282SE 2.60 GHz

16 MB Cache

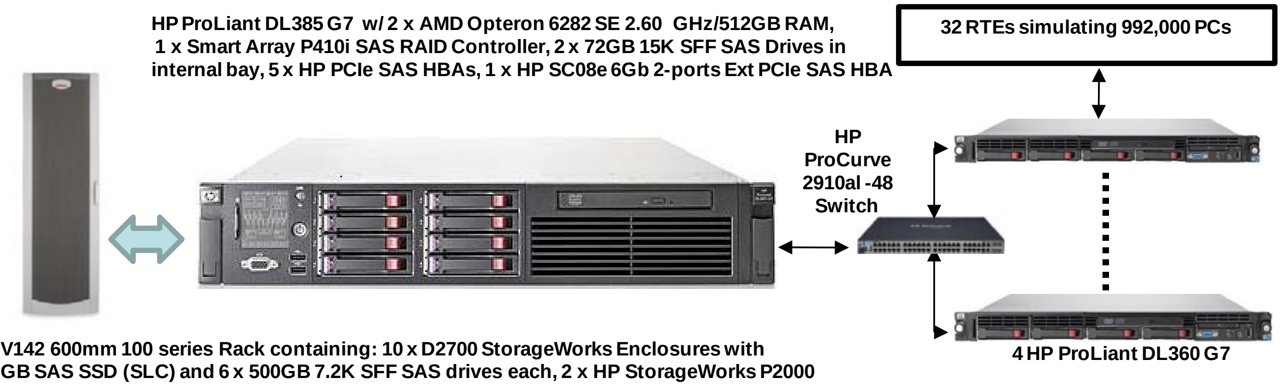
C/S with 4 HP ProLiant DL360 G7

TPC-C Rev. 5.11
TPC-Pricing 1.6.0
TPC-Energy 1.4.0

Report Date: Nov 14, 2011

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date	TPC-Energy Metric
USD $1,046,759	**1,207,982 tpmC**	**USD $0.87**	**May 14, 2012**	**2.49 watts/ KtpmC**

Database Server Processors /Cores/Threads	Database Manager	Operating System	Other Software	Number of Users
2/32/32 AMD Opteron **6282 SE 2.60 GHz** 16MB cache	Microsoft SQL Server 2005 Enterprise x64 Edition SP3	Windows Server 2008 R2 Enterprise Edition	Windows Server 2008 R2 Standard Edition	**992,000**



HP ProLiant DL385 G7 w/ 2 x AMD Opteron 6282 SE 2.60 GHz/512GB RAM, 1 x Smart Array P410i SAS RAID Controller, 2 x 72GB 15K SFF SAS Drives in internal bay, 5 x HP PCIe SAS HBAs, 1 x HP SC08e 6Gb 2-ports Ext PCIe SAS HBA

32 RTEs simulating 992,000 PCs

HP ProCurve 2910al -48 Switch

4 HP ProLiant DL360 G7

1 x HP V142 600mm 100 series Rack containing: 10 x D2700 StorageWorks Enclosures with 9 x 400GB SAS SSD (SLC) and 6 x 500GB 7.2K SFF SAS drives each, 2 x HP StorageWorks P2000 G3 SAS MSA Dual Controller SFF Array System containing 18 x 300GB 10K SFF SAS each

System Components	**Server**		**Each Client**	
	Quantity	Description	Quantity	Description
Processors/Cores/Threads	2	AMD Opteron 6282 SE 2.60GHz, 16MB cache, 16 cores /16 threads	2/6/12	X5670 2.93 GHz w/ 12MB cache
Memory	512 GB	16 x 16GB DDR3 8 x 32GB DDR3	24GB	12 x 2048 MB
Disk Controllers	1 5 1	Smart P410i Controller HP PCIe SAS HBA HP SC08e 6Gb Dual Ext PCIe SAS HBA	1	Integrated Smart Array P410i Controller
Disk Drives	90 60 36 2	400 GB SAS SSD (SLC) 500 GB 6G SAS 7.2K SFF 300 GB 10K SFF SAS 72 GB 15K SFF SAS	4	300GB 10K SFF SAS
Total Storage		76,944 GB		555.36 GB RAID 10

	HP ProLiant DL385 G7 AMD Opteron 6282SE 2.60 GHz 16 MB Cache C/S with 4 HP ProLiant DL360 G7	TPC-C Rev. 5.11 TPC-Pricing 1.6.0 TPC-Energy 1.4.0 Report Date: Nov 14, 2011

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date	TPC-Energy Metric
USD $1,046,759	**1,207,982 tpmC**	**USD $0.87**	**May 14, 2012**	**2.49 watts/ KtpmC**

Numerical Quantities For Reported Energy Configuration:

REC Idle Power: **2677 watts**

Average Power of REC: **3014 watts**

	Secondary Metrics	Additional Numerical Quanties				
	Watts / KtpmC	Full Load Avg Watts	Full Load % of REC	Full Load Watt Mins.	Idle Avg. Watts	Idle % of REC
Database Server	0.50	598.07	19.8%	71,769	415.76	15.5%
Storage	1.20	1,448.17	48.1%	173,780	1,406.40	52.5%
Application Server	0.78	939.60	31.2%	112,767	827.04	31%
Miscellaneous	0.02	28.00	0.9%	3,360	28.00	1.0%
Total REC	2.49	3014	100%	361676	2677	100.00%

Lowest ambient temperature at air inlet: **20.44°C**

Items in Priced Configuration not in the Reported Energy Configuration:

None

Items in Reported Energy Configuration not in the Measured Energy Configuration:

1 - HP 2011x 20" LED Monitor   Part Number XP597AA#ABA

Hewlett-Packard Company	HP ProLiant DL385 G7	TPC-C Rev. 5.11 Report Date: November 14, 2011

Description	Part Number	Brand	Unit Price	Qty	Extended Price	3 yr. Maint. Price
Server Hardware						
HP DL385G7 SFF CTO Chassis	573122-B21	1	1,261	1	1,261	
HP DL385G7 6282SE FIO Kit	654868-L21	1*	1,249	2	2,498	
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Reg CAS-9 LP Kit	627808-B21	1	899	16	14,384	
HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Reg CAS-7 LP Kit	627810-B21	1	2,999	8	23,992	
HP 72GB 6G SAS 15K SFF DP ENT HDD	512545-B21	1	279	2	558	
HP 2011x 20-inch LED Monitor	XP597AA#ABA	1	189	1	189	
HP PS/2 Keyboard And Mouse Bundle	RC464AA#ABA	1	39	1	39	
HP PCIe SAS HBA	631673-B21	1**	689	5	3,445	
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years , DL38x	U4545E	1	931	1		931
HP SC08e 6Gb 2-ports Ext PCIe SAS Host Bus Adapter	614988-B21	1	199	1	199	
			Subtotal		46,565	931
Server Storage						
HP 500GB 6G SAS 7.2K SFF DP ENT HDD	507610-B21	1	349	60	20,940	
HP 400GB SAS 2.5in SSD SLC Drive	632494-B21	1	12,499	90	1,124,910	
HP 300GB 6G SAS 10K rpm SFF Quick-release DP Ent 3yr Warranty Hard Drive	507127-B21	1	369	36	13,284	
HP StorageWorks D2700 Disk Enclosure	AJ941A	1	3,399	10	33,990	
HP StorageWorks P2000 G3 SAS MSA Dual Controller SFF Array System	AW594A	1	9,350	2	18,700	
HP 3y 4h 24x7 D2000 Encl HW Support,D2000 Enclosures	UQ540E	1	1,980	10		19,800
HP 3y 4h 24x7 MSA 2000 G3 HWSupp,MSA 2000 G3 Array	UV394E	1	3,223	2		6,446
HP V142 600mm Pallet 100 series Rack	AF046A	1	789	1	789	
			Subtotal		1,212,613	26,246
Server Software						
Microsoft SQL Server 2005 Enterprise X64 Edition(per processor)	810-03134	2	23,432	2	46,864	Incl Below
Microsoft Windows Server 2008 R2 Enterprise Edition	P72-04217	2	2,280	1	2,280	Incl Below
Microsoft Problem Resolution Services		2	259	1		259
			Subtotal		49,144	259
Client Hardware						
HP DL360G7 CTO Chassis	579237-B21	1	1,459	4	5,836	
HP X5670 DL360G6/G7 FIO Kit	588062-L21	1	1,999	8	15,992	
HP 460W CS HE Power Supply Kit	503296-B21	1	229	4	916	
HP NC365T 4-port Ethernet Server Adapter	593722-B21	1	439	8	3,512	
HP 2GB 2Rx8 PC3-10600R-9 Kit	500656-B21	1	110	48	5,280	
HP 300GB 6G SAS 10K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty	507127-B21	1	295	16	4,720	
HP CP 3Y 4H 24x7 HW Entry300 4-Hour 24 Hour x 7 Day Coverage 3 Years	U4497E	1	750	4		3,000
			Subtotal		36,256	3,000
Client Software						
Windows Server 2008 R2 Standard Edition	P73-04980	2	711	20	14,220	Incl. Above
			Subtotal		14,220	0
User Connectivity						
HP ProCurve 2910al-48G Switch	J9147A#ABA	1	4,109	1	4,109	
HP 3y4h24x7 Networks Stack48 HW Support, including HPholidays.	H2893E	1	1,307	1		1,307
CAT 6 7 Foot White Patch Cable	CB242-7W	3	2	36	56	
CAT 6 7 Foot White Patch Cable (spares)	CB242-7W	3	2	4		6
			Subtotal		4,165	1,313
Large Purchase and Net 30 discount (See Note 1)	16.0%	1			($27,941)	($5,037)
Large Purchase and Net 30 discount (See Note 2)	28.0%	1			($314,975)	
				Total	$1,020,047	$26,712

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	$1,046,759
tpmC Rating:	**1,207,982**
$ / tpmC: USD	**$0.87**

Pricing: 1=HP Direct 800-203-6748 2= Microsoft 3= deepsurplus.com

Note 1 = Discount based on HP Direct guidence applies to all lines where pricing = 1 *ROM features available February 20, 2012 **HP PCIe SAS HBA will be available May 14, 2012

Note 2 = Discount based on HP Direct guidence applies to SSD storage

Note 3 = The benchmark results were audited by Lorna Livingtree of Performance Metrics

Numerical Quantities Summary

MQTH, Computed Maximum Qualified Throughput **1,207,982 tpmC**

Response Times (in seconds)	Average	90%	Maximum
New-Order	0.33	0.49	38.10
Payment	0.25	0.48	35.95
Order-Status	0.25	0.48	26.15
Delivery (interactive portion)	0.18	0.21	24.31
Delivery (deferred portion)	0.03	0.07	30.92
Stock-Level	0.26	0.50	32.39
Menu	0.22	0.21	32.03

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	18.03/12.68	18.05/126.54
Payment	3.02/0.00	3.03/12.66	3.05/126.53
Order-Status	2.02 /0.00	2.03/10.52	2.05/105.53
Delivery (interactive)	2.02/0.00	2.03/5.31	2.05/53.03
Stock-Level	2.02/0.00	2.03/5.32	2.05/53.03

Test Duration	
Ramp-up time	40 minutes
Measurement interval	120 minutes
Transactions (all types) completed during measurement interval	645,433,472
Ramp down time	1 minutes

Checkpointing	
Number of checkpoints	9
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 Performance Labs, 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.

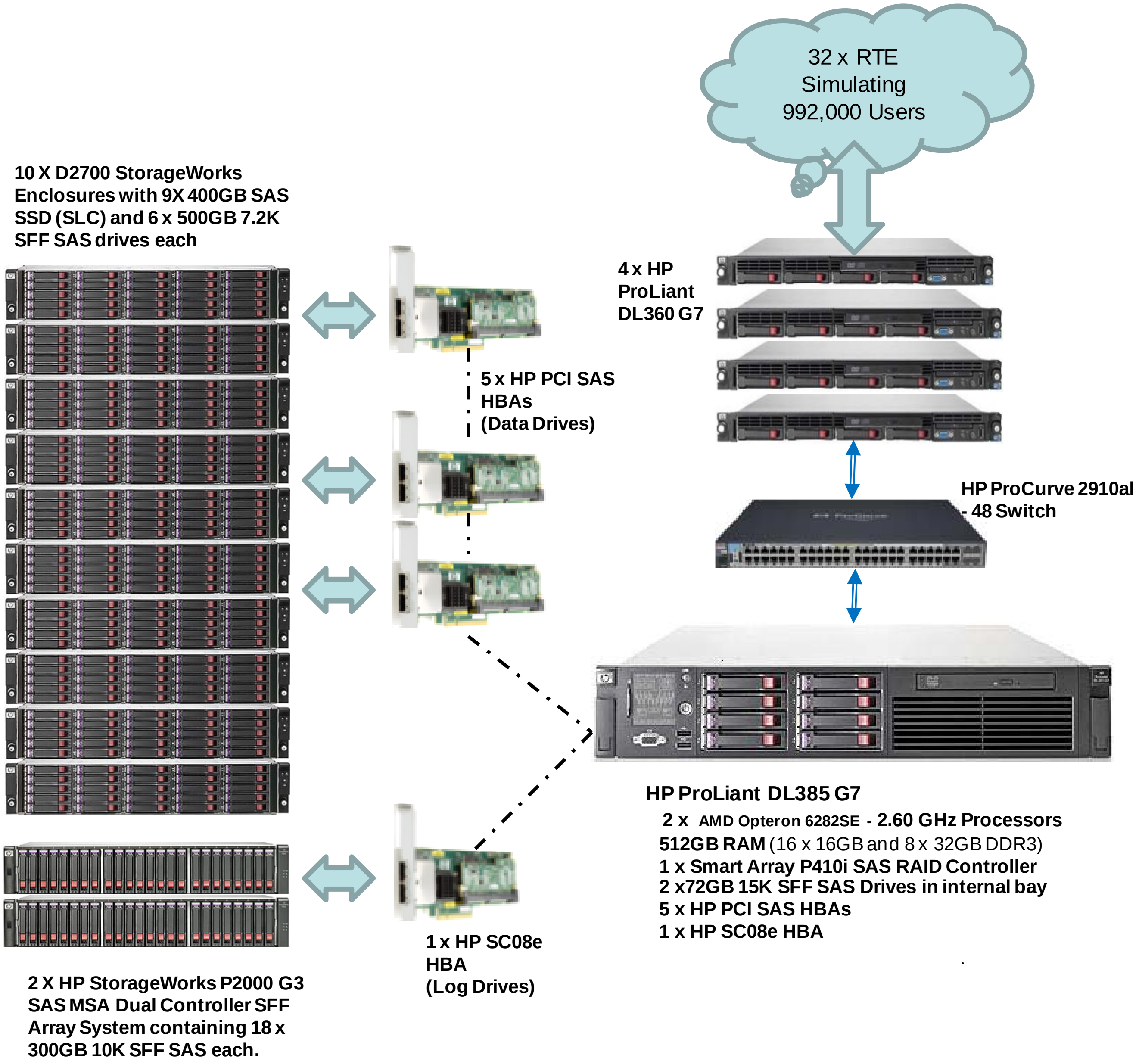
Appendix C contains the tunable parameters to for the database, the operating system, and the transaction monitor.

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 and Priced Configuration


32 x RTE
Simulating
992,000 Users
10 X D2700 StorageWorks Enclosures with 9X 400GB SAS SSD (SLC) and 6 x 500GB 7.2K SFF SAS drives each
4 x HP ProLiant DL360 G7
5 x HP PCI SAS HBAs (Data Drives)
HP ProCurve 2910al - 48 Switch
HP ProLiant DL385 G7
2 x AMD Opteron 6282SE - 2.60 GHz Processors
512GB RAM (16 x 16GB and 8 x 32GB DDR3)
1 x Smart Array P410i SAS RAID Controller
2 x72GB 15K SFF SAS Drives in internal bay
5 x HP PCI SAS HBAs
1 x HP SC08e HBA
1 x HP SC08e HBA (Log Drives)
2 X HP StorageWorks P2000 G3 SAS MSA Dual Controller SFF Array System containing 18 x 300GB 10K SFF SAS each.

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 90 6Gb SAS SSD drives at 400GB for database data, two 72GB drives for the operating system, , 36 drives at 300GB for database log and 60 drives at 500 GB for backup and 60 day space. There were 5 x HP PCIe SAS HBAs and 1 x HP SC08e 6Gb Dual Ext PCIe SAS HBA connected to 10 x D2700 storage boxes with 9 x 400GB SSD drives each for database data and 6 x 500GB drives each for backup, 18 x 300GB drives in each of two HP StorageWorks P2000 G3 SAS MSA Dual Controller SFF Array Systems for database log, and 2 x 72GB drives on the SMART P410i controller for the operating system.

Benchmarked Configuration:

SMART-P410i Controller, Slot 0, Array A, disk 0

LOGICAL DRIVE C:	Total Capacity = 68.23 GB	RAID 1

Microsoft Windows Server 2008 R2 Enterprise Edition

HP StorageWorks P2000 G3 SAS MSA Dual Controller SFF Array System, disk 1-3

Disk 1: LOGICAL DRIVE E:	Total Capacity = 600 GB	RAID 1+0
Disk 2: LOGICAL DRIVE F:	Total Capacity = 1024 GB	RAID 1+0
Disk 3: LOGICAL DRIVE G:	Total Capacity = 1024 GB	RAID 1+0

Logical drives E, F, G are software stripe volumes created over 2 physical RAID 1+0 volumes each.

HP PCI SAS HBA, Slot 1, disk numbers 4-7

LOGICAL DRIVES Mount: C:\dev\tpcc_1-4:	Total Capacity = 4 x 1.0 TB	RAID 0

HP PCI SAS HBA**, Slot 1, disk numbers 8-9**

LOGICAL DRIVES MOUNT: C:\backup\1-2:	Total Capacity = 2 x 1.4 TB	RAID 1+0

HP PCI SAS HBA**, Slot 2, disk numbers 10-13**

LOGICAL DRIVES MOUNT: C:\dev\tpcc_5-8:	Total Capacity = 4 x 1.0 TB	RAID 0

HP PCI SAS HBA**, Slot 2, disk numbers 14-15**

LOGICAL DRIVES MOUNT: C:\backup\3-4:	Total Capacity = 2 x 1.4 TB	RAID 1+0

HP PCI SAS HBA**, Slot 3, disk numbers 16-19**

LOGICAL DRIVES MOUNT: C:\dev\tpcc_9-12:	Total Capacity = 4 x 1.0 TB	RAID 0

HP PCI SAS HBA**, Slot 3, disk numbers 20-21**

LOGICAL DRIVES MOUNT: C:\backup\5-6:	Total Capacity = 2 x 1.4 TB	RAID 1+0

HP PCI SAS HBA**, Slot 4, disk numbers 22-25**

LOGICAL DRIVES MOUNT: C:\dev\tpcc_13-16:	Total Capacity = 4 x 1.0 TB	RAID 0

HP PCI SAS HBA**, Slot 4, disk numbers 26-27**
LOGICAL DRIVES MOUNT: C:\backup\7-8: Total Capacity = 2 x 1.4 TB RAID 1+0

HP PCI SAS HBA**, Slot 5, disk numbers 28-31**
LOGICAL DRIVES MOUNT: C:\dev\tpcc_17-20: Total Capacity = 4 x 1.0 TB RAID 0

HP PCI SAS HBA**, Slot 5, disk numbers 31-32**
LOGICAL DRIVES MOUNT: C:\backup\9-10: Total Capacity = 2 x 1.4 TB RAID 1+0

Priced Configuration vs. Measured Configuration:

Priced configuration was identical to the measured configuration

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	59.97%
Order Status	Accessed by last name	60.00%
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 103,168 warehouses of which 99,200 were used under a load of 992,000 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 992,000 users.
- The test was allowed to run for a minimum of 5 minutes.
- One disk was removed from the P2000 Storage 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 D2700 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 drive configuration was reset for data drive and RAID recovery for log drive 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 103,168 warehouses, of which 99,200 warehouses were used, under a full load of 992,000 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 992,000 users.
- The test was allowed to run for a minimum of 5 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	103,168
District	1,031,680
Customer	3,095,040,000
History	3,095,040,000
Orders	3,095,040,000
New Order	928,512,000
Order Line	30,950,303,715
Stock	10,316,800,000
Item	100,000
Unused Warehouses	3968

Database Layout

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

The database data was housed on 90 SSD drives at 400GB, two 72GB drives for the operating system, 36 drives at 300GB for database log and 60 drives at 500 GB for backup and 60 day space. There were 5 x HP PCI SAS HBAs and 1 x HP SC08e 6Gb Dual Ext PCIe SAS HBA connected to 10 x D2700 storage boxes with 9 x 400GB SSD drives each for database data and 6 x 500GB drives each for backup, 18 x 300GB drives in each of two HP StorageWorks P2000 G3 SAS MSA Dual Controller SFF Array Systems for database log, and 2 x 72GB drives on the SMART P410i controller 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 databases interface (e.g. embedded, call level) and access language (e.g. SQL, DL/1, and 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 1,207,982.18 tpmC
Price per tpmC USD $0.87

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	90th %	Maximum
New-Order	0.33	0.49	38.10
Payment	0.25	0.48	35.95
Order-Status	0.25	0.48	26.15
Interactive Delivery	0.18	0.21	24.31
Deferred Delivery	0.03	0.07	30.92
Stock-Level	0.26	0.50	32.39
Menu	0.22	0.21	32.03

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	18.05
Payment	3.02	3.03	3.05
Order-Status	2.02	2.03	2. 05
Interactive Delivery	2.02	2.03	2. 05
Stock-Level	2.02	2.03	2. 05

Table 5.4: Think Times

Type	Minimum	Average	Maximum
New-Order	0.00	12.68	126.54
Payment	0.00	12.66	126.53
Order-Status	0.00	10.52	105.53
Interactive Delivery	0.00	5.31	53.03
Stock-Level	0.00	5.32	53.03

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

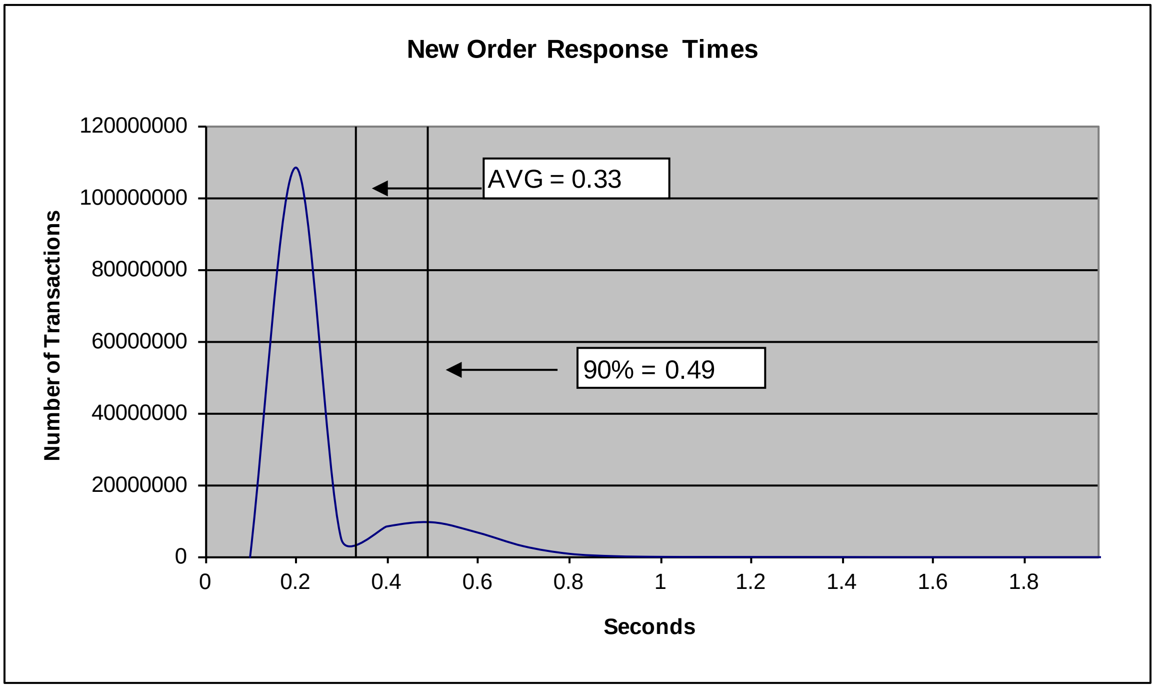


Figure 4. Payment Response Time Distribution

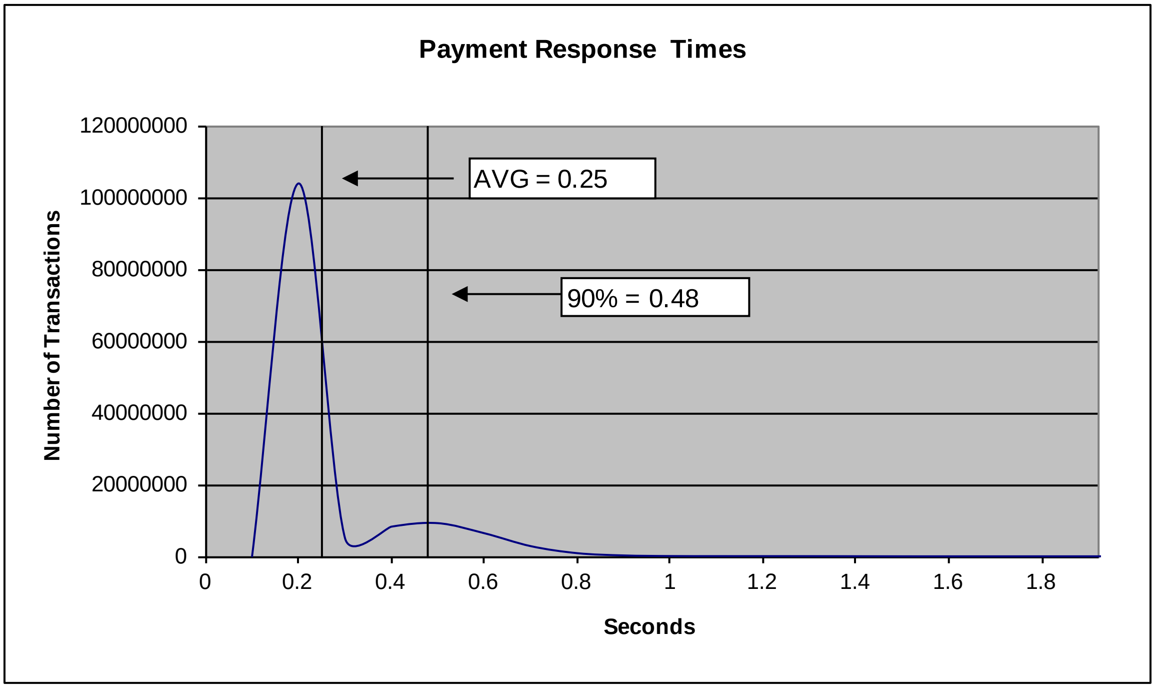


Figure 5. Order Status Response Time Distribution

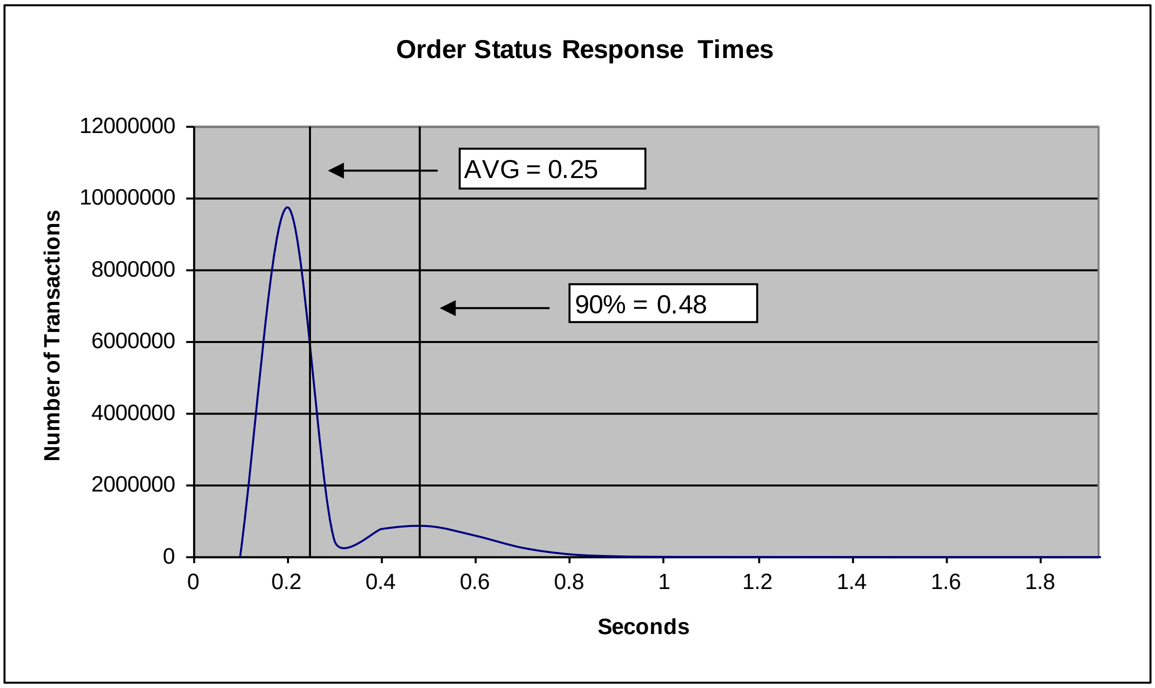


Figure 6. Delivery Response Time Distribution

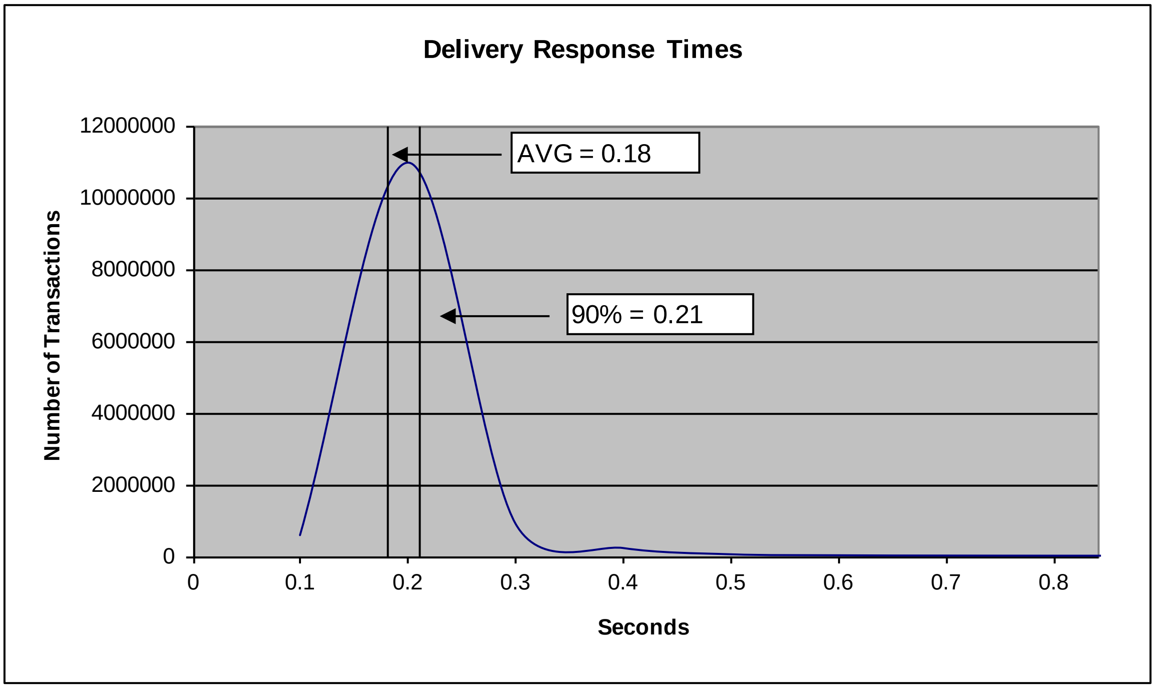


Figure 7. Stock Level Response Time Distribution

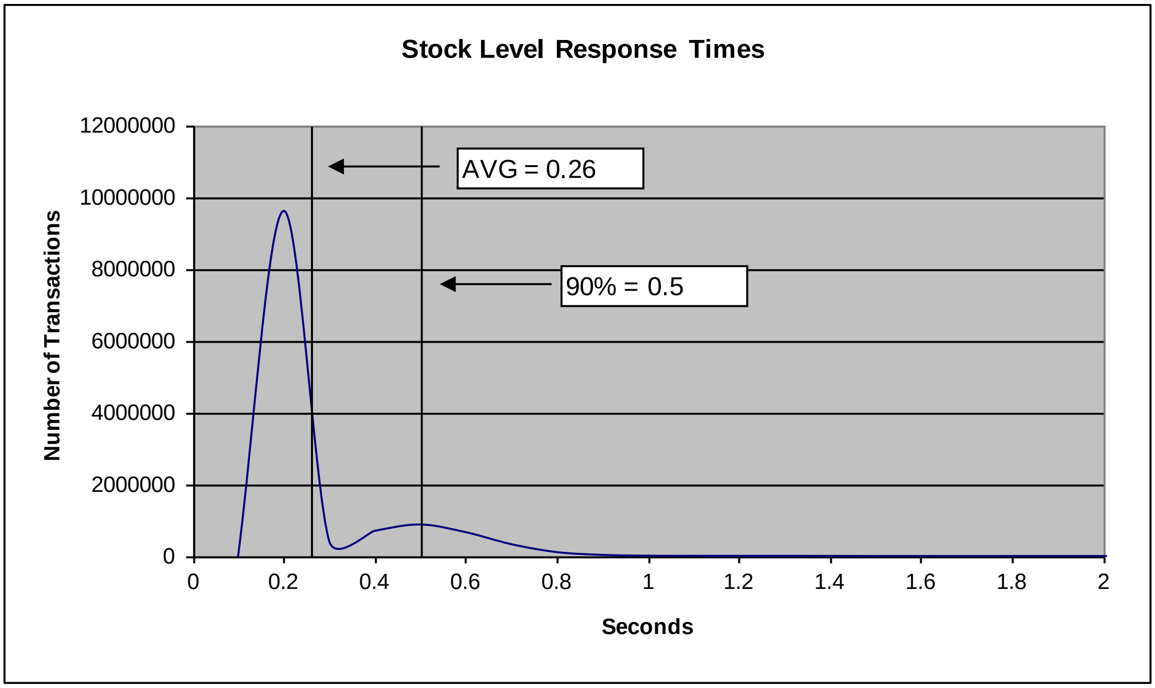


Figure 8. Response Time vs. Throughput

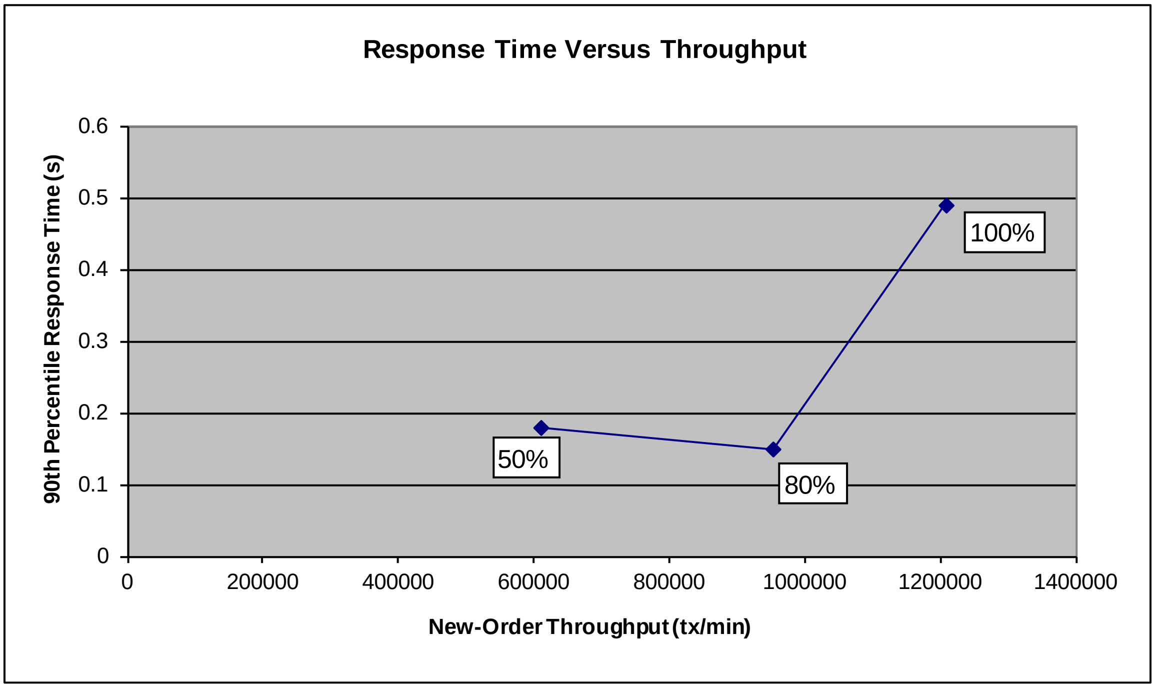


Figure 9. New Order Think Time Distribution

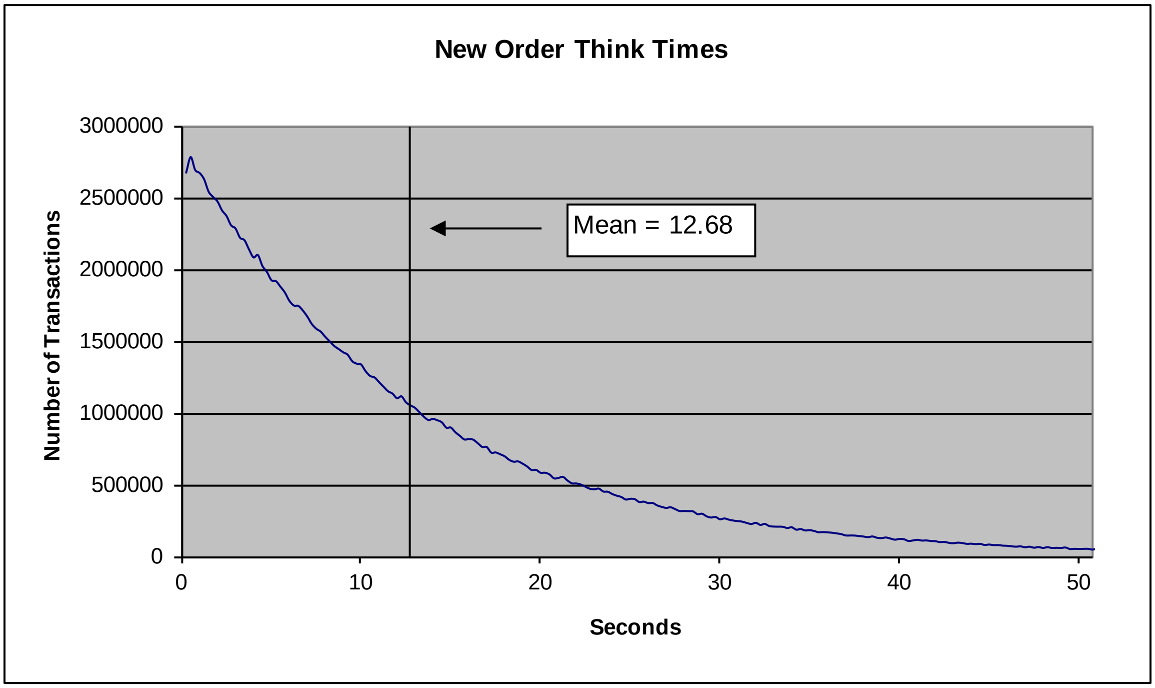
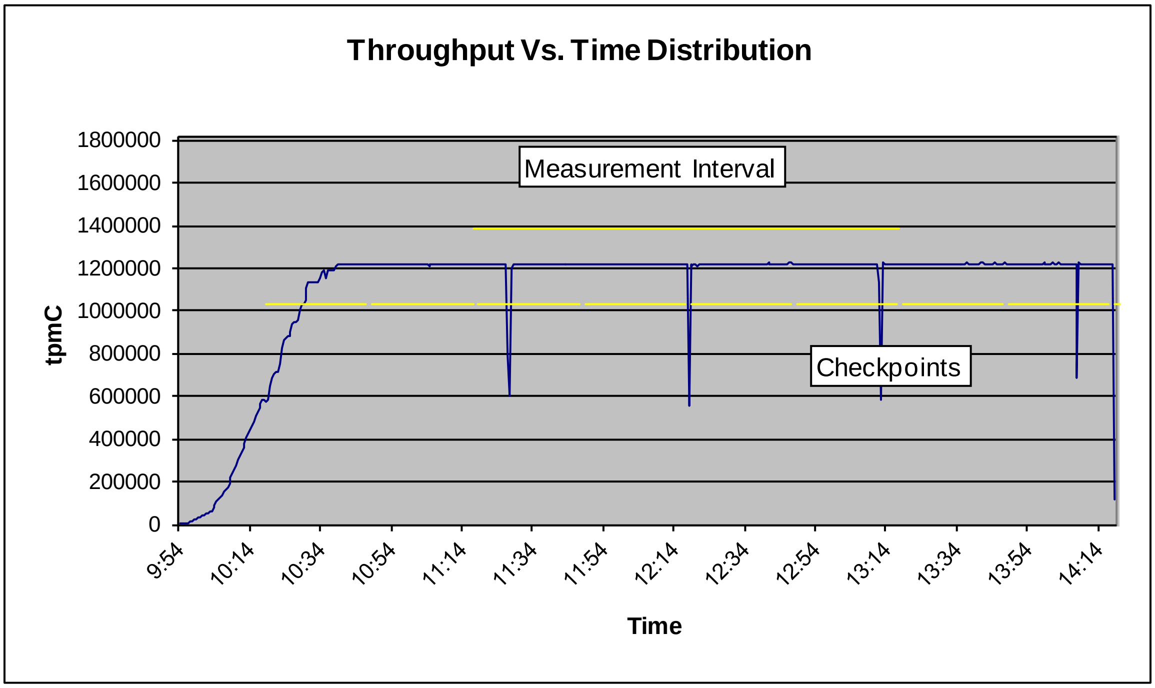


Figure 10. Throughput vs. Time Distribution



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 check pointing, 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 time stamped. The input screen for the requested transaction was returned and time stamped. 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 time stamped. The return of the screen with the required response data was time stamped. 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 1756 seconds. 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 10.

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	59.97%
Delivery	Skipped transactions (interactive)	0
	Skipped transactions (deferred)	0
Order Status	Accessed by last name	60.00%
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 40 minutes after the start of the ramp-up. Subsequent checkpoints occurred every 30 minutes. Each checkpoint in the measurement interval lasted 29 minutes and 57 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
10:19:24 AM	29 minutes, 57 seconds
10:49:21 AM	29 minutes, 57 seconds
11:19:18 AM	29 minutes, 57 seconds
11:49:15 AM	29 minutes, 57 seconds
12:19:14 PM	29 minutes, 57 seconds
12:49:09 PM	29 minutes, 57 seconds
1:19:06 PM	29 minutes, 57 seconds
1:49:03 PM	29 minutes, 57 seconds
2:19:00 PM	29 minutes, 57 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 4 HP ProLiant servers hosting 8 Hyper-V virtual machines per system for a total of 32 VM client systems. 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, 32 driver (RTE) machines were connected through a 10-gigabit Ethernet switch to the client machines at 10Gbps, 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, Price Performance, and Energy 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), energy/performance (watts/KtpmC), and the availability date must be included.

• **Maximum Qualified Throughput**	**1,207,982.18 tpmC**
• **Price per tpmC**	**USD $0.87per tpmC**
• **Watts per KtpmC**	**2.49 Watts per KtpmC**
• **Availability**	**May 14, 2012**

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:

- 4 Microsoft Windows Server 2008 R2 Standard Edition
- 8 Microsoft Windows Server 2008 R2 Enterprise Edition
- 1 Microsoft SQL Server 2005 Enterprise x64 Edition (per processor) SP3
- 1 Microsoft Visual Studio 2008 Standard
- 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
HP Performance Labs
11445 Compaq Center Dr W
Houston, Texas 77070

November 13, 2011

November 12, 2011

Mr. Paul Cao
Senior System Engineer
Hewlett-Packard Company
20555 SH 249
Houston, TX 77070

I have verified on-site the TPC Benchmark™ C for the following configuration:

Platform:	HP ProLiant DL385 G7
Database Manager:	Microsoft SQL Server 2005 R2 Enterprise Edition
Operating System:	Microsoft Windows Server 2008 R2 Enterprise Edition
Transaction Monitor:	Microsoft COM+

System Under Test:				
CPU's	Memory	Disks (total)	90% Response	TpmC
2 AMD 16 core HT @ 2.6 Ghz	Main: 512 GB	90 SSD @ 400GB 60 @ 500 GB 36 @ 300GB 2 @ 72 GB	0.21	**1,207,982**
Clients: 4 DL360G7				
2 Xeon 6 coreHT @ 2.93 Ghz	24 GB	4 @ 300 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 103,168 warehouses, 99,200 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

Lorna Livingtree
TPC Certified Auditor

TPC TRANSACTION PROCESSING PERFORMANCE COUNCIL
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. 4.69.000
 *                                     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
 *                  4.69.000 - updated rev number to
match kit
 */

#pragma once

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

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

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

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


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

```
#define ERR_TYPE_SOAP_HTTP
                              26
          //HTTP/SOAP dll generated error
#define ERR_TYPE_OLEDB
                                        27
          //OLE-DB generated error
#define ERR_TYPE_TPCC_OLEDB
                              28
          //error from tpcc ole-db txn module
// TPC-W error types
#define ERR_TYPE_TPCW_CONN
                              50
          //Benchcraft connection class
#define ERR_TYPE_TPCW_HTML
                              51
          //error from TpcwHtml dll
#define ERR_TYPE_TPCW_USER
                              52
          //error from TPC-W user class
#define ERR_TYPE_TPCW_ENG_BASE
                              53
#define ERR_TYPE_TPCW_ENG_OS
                    54
#define ERR_TYPE_HTML_RESP
                              55
#define ERR_TYPE_TPCW_ODBC
                              56
#define ERR_TYPE_SCHANNEL
                              57
#define ERR_TYPE_THINK_LIST
                              58
//------ end TPC-W ----------
#define ERR_TYPE_XML_PROFILE
                    59
// TPC-E error types
#define ERR_TYPE_TPCE_CONN
                              60
          //TPC-E pipe connection errors
#define ERR_TYPE_TPCE_RTE
                              61
          //TPC-E Rte errors
#define ERR_TYPE_TPCE_ENG_BASE
                              62
          //Tpce Driver engine errors
#define ERR_TYPE_TPCE_ENG_OS
                    63                  //Tpce Driver
engine system errors
//#define ERR_TYPE_TPCE_MEE_ENG_BASE
                    64                  //Tpce MEE
Driver engine errors
//#define ERR_TYPE_TPCE_MEE_ENG_OS
                    65                  //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
immediatelly 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,LPTSTR);

          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. 4.69.000
 *                                    Copyright
Microsoft, 2008, 2009
 *              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
 *                    4.69.000 - added IIS7 suppport
and Windows Server 2008 R2 support
 */

#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
          CheckWWWebService(void);
static    BOOL
          StartWWWebService(void);
static    BOOL                StopWWWebService(void);
static    void                UpdateDialog(HWND
hDlg);
static    void                ConfigureIIS6(HWND
hwnd, HWND hDlg);
static    void                ConfigureIIS7(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[MAX_PATH];
          static char
          szDllPath[MAX_PATH];
          static char
          szWindowsPath[MAX_PATH];
          static char
          szExePath[MAX_PATH];

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

                              SetDlgItemText(hwnd,
IDC_PATH, szDllPath);

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

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

                              // 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[MAX_PATH];
          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[MAX_PATH];

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


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

          // 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);
          }

          // while we have the web services shutdown,
check to see if this
          // is IIS7.  If it is, then call
ConfigureIIS6
          if ( iIISMajorVersion == 7)
          {
                    ConfigureIIS7(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\\InetStp", 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 thatn 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[MAX_PATH];
          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 proivided 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[MAX_PATH];

          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);

          hFile = CreateFile(szFullName,
GENERIC_WRITE, 0, NULL, CREATE_ALWAYS,
FILE_ATTRIBUTE_NORMAL, NULL);
          if (hFile == INVALID_HANDLE_VALUE)
          {
                    DWORD dwError = GetLastError();
                    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_MSVCR71, 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[MAX_PATH];
          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)
                    {
                              len =
ExpandEnvironmentStrings(szData, szDllPath,
MAX_PATH);
                              if (len < MAX_PATH)
                              {
                                        if (
szDllPath[len-2] != '\\' )
                                        {

          szDllPath[len-1] = '\\';

          szDllPath[len] = 0;
                                        }
                                        bRc = FALSE;
                              }
                    }

                    RegCloseKey(hKey);
          }

          return bRc;
}

static BOOL GetWindowsInstallPath(char
*szWindowsPath)
{
    HKEY  hKey;
          BYTE      szData[MAX_PATH];
          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
to SYSTEM32
                              strcat(szWindowsPath,
"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 CheckWWWebService(void)
{
          SC_HANDLE           schSCManager;
          SC_HANDLE           schService;
          SERVICE_STATUS      ssStatus;

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

```
                    return FALSE;

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

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

          CloseServiceHandle(schService);
          return TRUE;

ServiceNotRunning:

          CloseServiceHandle(schService);
          return FALSE;
}

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

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

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

                    dwOldCheckPoint =
ssStatus.dwCheckPoint;
          //Save the current checkpoint.
                    Sleep(ssStatus.dwWaitHint);

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

```
                              break;
          }

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

          CloseServiceHandle(schService);
          return TRUE;

StartWWWebErr:
          CloseServiceHandle(schService);
          return FALSE;
}

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

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

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

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

                    dwOldCheckPoint =
ssStatus.dwCheckPoint;
          //Save the current checkpoint.
                    Sleep(ssStatus.dwWaitHint);

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

```

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

          CloseServiceHandle(schService);
          return TRUE;

StopWWWebErr:
          CloseServiceHandle(schService);
          return FALSE;
}

static void UpdateDialog(HWND hDlg)
{
          MSG msg;

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

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;
          }
}
```

```
static void ConfigureIIS7(HWND hwnd, HWND hDlg)
{
          int                 irc;
          char      szErrTxt[128];
          FILE      *fErrorFile;

          SetDlgItemText(hDlg, IDC_STATUS,
"Installing VS Modules...");
          UpdateDialog(hDlg);

          if ( access( "%SystemRoot%\\System32", 0)
== 0 )
          {

          CopyFile("..\\VS_Modules\\ATL71.DLL",
"%SystemRoot%\\System32", 0);

          CopyFile("..\\VS_Modules\\MSVCR71D.DLL",
"%SystemRoot%\\System32", 0);

          CopyFile("..\\VS_Modules\\MSVCP71D.DLL",
"%SystemRoot%\\System32", 0);
          }

          if ( access( "%SystemRoot%\\SysWOW64", 0)
== 0 )
          {

          CopyFile("..\\VS_Modules\\ATL71.DLL",
"%SystemRoot%\\SysWOW64", 0);

          CopyFile("..\\VS_Modules\\MSVCR71D.DLL",
"%SystemRoot%\\SysWOW64", 0);

          CopyFile("..\\VS_Modules\\MSVCP71D.DLL",
"%SystemRoot%\\SysWOW64", 0);
          }

          SetDlgItemText(hDlg, IDC_STATUS,
"Configuring IIS7...");
          //SendDlgItemMessage(hDlg, IDC_PROGRESS1,
PBM_STEPIT, 0, 0);
          UpdateDialog(hDlg);

          irc = system("IIS7_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("IIS7_CONFIG.err","r");
          if ( fErrorFile != NULL )
          {
                    ShowWindow(hwnd, SW_SHOWNA);
                    DestroyWindow(hDlg);
                    strcpy( szErrTxt, "IIS7
configuration error." );
                    strcat( szErrTxt, "Check
iis7_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_THEAD_POOL_LIMIT
          1015
#define ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE
          1017
#define ED_IIS_THREAD_TIMEOUT
          1018
#define ED_IIS_LISTEN_BACKLOG
          1019
#define IDC_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_THEAD_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
        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
application icon
// 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 0,4,69,0
 PRODUCTVERSION 0,4,69,0
 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, 69, 0"
            VALUE "InternalName", "install"
            VALUE "LegalCopyright", "Copyright ¬
1999"
            VALUE "OriginalFilename", "install.exe"
            VALUE "ProductName", "Microsoft install"
            VALUE "ProductVersion", "0, 4, 69, 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"

/////////////////////////////////////////////////////
///////////////////////
//
// MSVCR71
//

IDR_MSVCR71             MSVCR71
"C:\\WINDOWS\\system32\\msvcr71.dll"
#endif    // English (U.S.) resources
/////////////////////////////////////////////////////
///////////////////////


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


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

install_com.cpp

```
/*        FILE:               INSTALL_COM.CPP
 *                                      Microsoft
TPC-C Kit Ver. 4.69.000
 *                                      Copyright
Microsoft, 2008, 2009
 *              All Rights Reserved
 *
 *                                      not audited
 *
 *        PURPOSE:  installation code for COM
application for TPC-C Web Kit
 *        Contact:  Charles Levine
(clevine@microsoft.com)
 *
 *  Change history:
 *                  4.20.000 - first version
 */

#define _WIN32_WINNT 0x0500

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

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

BOOL install_com(char *szDllPath)
{
          ICOMAdminCatalog*   pCOMAdminCat = NULL;
          ICatalogCollection* pCatalogCollectionApp
= NULL;
          ICatalogCollection* pCatalogCollectionCo
= NULL;
          ICatalogCollection* pCatalogCollectionItf
= NULL;
          ICatalogCollection*
          pCatalogCollectionMethod = NULL;
          ICatalogObject*
          pCatalogObjectApp    = NULL;
          ICatalogObject*
          pCatalogObjectCo     = NULL;
          ICatalogObject*
          pCatalogObjectItf    = NULL;
          ICatalogObject*
          pCatalogObjectMethod = NULL;

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


          CoInitializeEx(NULL, COINIT_MULTITHREADED);

          HRESULT hr =
CoCreateInstance(CLSID_COMAdminCatalog,
                                              NULL,


          CLSCTX_INPROC_SERVER,


          IID_ICOMAdminCatalog,
                                              (void**)
&pCOMAdminCat);

          if (!SUCCEEDED(hr)) goto Error;

          bstrTemp = "Applications";

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

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

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

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

          // iterate through applications to delete
existing "TPC-C" application (if any)
          while (lCount > 0)
          {
```

```
                    hr = pCatalogCollectionApp-
>get_Item(lCount - 1, (IDispatch**)
&pCatalogObjectApp);
                    if (!SUCCEEDED(hr)) goto Error;

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

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

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

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

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

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

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

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

```

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

          pCatalogObjectApp->Release();
          pCatalogObjectApp = NULL;

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

          hr = pCOMAdminCat-
>InstallComponent(bstrTemp,


          bstrTemp2,


          bstrTemp3,


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


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

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

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

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

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

                    bstrTemp = "ConstructionEnabled";
                    bTmp = TRUE;
```

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

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

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

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

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



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

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

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

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

                    // iterate through interfaces in
component
```

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

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

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

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

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

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

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


          pCatalogObjectMethod->Release();

          pCatalogObjectMethod = NULL;

                                        lCountMethod-
-;
                              }

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

                              pCatalogObjectItf-
>Release();
                              pCatalogObjectItf =
NULL;

                              lCountItf--;

                    }


                    pCatalogObjectCo->Release();
                    pCatalogObjectCo = NULL;

                    lCountCo--;
          }


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

          pCatalogCollectionApp->Release();
          pCatalogCollectionApp = NULL;

          pCatalogCollectionCo->Release();
          pCatalogCollectionCo = NULL;

          pCatalogCollectionItf->Release();
          pCatalogCollectionItf = NULL;

          pCatalogCollectionMethod->Release();
          pCatalogCollectionMethod = NULL;


Error:
          CoUninitialize();

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

                                        hr,


          MAKELANGID(LANG_NEUTRAL, SUBLANG_DEFAULT),

                                        (LPTSTR)
&lpBuf,

                                        0,

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

license.txt

```
END-USER LICENSE AGREEMENT FOR
MICROSOFT TPC-C BENCHMARK KIT

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management system software other than Microsoft SQL
```

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Way,
Redmond, Washington 98052 6399.

Methods.h

```
/*        FILE:               METHODS.H
 *                                      Microsoft
TPC-C Kit Ver. 4.69.000
 *                                      Copyright
Microsoft, 1999
 *              All Rights Reserved
 *
 *                                      not yet
audited
 *
 *        PURPOSE:  Header file for COM components.
 *
 *  Change history:
 *                  4.20.000 - first version
 *                  4.69.000 - updated rev number to
match kit
 */


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
          NewOrder;
                              PAYMENT_DATA
          Payment;
                              DELIVERY_DATA
          Delivery;
                              STOCK_LEVEL_DATA
          StockLevel;
                              ORDER_STATUS_DATA
          OrderStatus;
                    } u;
          };

};

/////////////////////////////////////////////////////
////////////////////////
// CTPCC
class CTPCC :
          public CTPCC_Common,
          public CComCoClass<CTPCC, &CLSID_TPCC>
```

```
{
public:
DECLARE_REGISTRY_RESOURCEID(IDR_TPCC)

BEGIN_COM_MAP(CTPCC)
          //COM_INTERFACE_ENTRY2(IUnknown,
CComObjectRootEx<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
 *                                      Microsoft
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 TPCC key.
 *
 * RETURNS          FALSE = no errors
 *                            TRUE  = error reading
registry
 */
BOOL ReadTPCCRegistrySettings( TPCCREGISTRYDATA *pReg
)
{
          HKEY      hKey;
          DWORD     size;
          DWORD     type;
          DWORD     dwTmp;
          char      szTmp[256];

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

          // determine database protocol to use;
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 ( !stricmp(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 ( !stricmp(szTmp,
szTxnMonNames[COM]) )
                              pReg->eTxnMon = COM;
          }

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

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

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

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

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

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

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

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

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

          size = sizeof( pReg->szSPPrefix );
          if ( RegQueryValueExW(hKey, L"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
 *                                      Microsoft
TPC-C Kit Ver. 4.69.000
 *                                      Copyright
Microsoft, 1999
 *             All Rights Reserved
 *
 *                                      not audited
 *
 *        PURPOSE:  Header for registry related code.
 *
 *  Change history:
 *                  4.20.000 - first version
 *                  4.69.000 - updated rev number to
match kit
 */

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 (2).h

```
//{{NO_DEPENDENCIES}}
```

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

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

resource (3).h

```
//{{NO_DEPENDENCIES}}
// Microsoft Developer Studio generated include file.
// Used by tpcc_com_all.rc
//
#define IDS_PROJNAME                    100
#define IDR_TPCC                        101
#define IDR_NEWORDER                    102
#define IDR_ORDERSTATUS                 103
#define IDR_PAYMENT                     104
#define IDR_STOCKLEVEL                  105

// Next default values for new objects
//
#ifdef APSTUDIO_INVOKED
#ifndef APSTUDIO_READONLY_SYMBOLS
#define _APS_NEXT_RESOURCE_VALUE        202
#define _APS_NEXT_COMMAND_VALUE         32768
#define _APS_NEXT_CONTROL_VALUE         201
#define _APS_NEXT_SYMED_VALUE           106
#endif
#endif
```

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_MSVCR71                     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_THEAD_POOL_LIMIT     1015
#define ED_MAXDELIVERIES                1016
#define ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE 1017
#define ED_IIS_THREAD_TIMEOUT           1018
#define ED_IIS_LISTEN_BACKLOG           1019
#define IDC_DBLIB                       1021
#define IDC_LICENSE                     1022
#define IDC_ODBC                        1022
#define IDC_CONNECT_POOL                1023
#define ED_DB_SERVER                    1023
#define ED_USER_CONNECT_DELAY_TIME      1024
#define ED_DB_USER_ID                   1024
#define IDC_MTS                         1025
#define IDC_TM_MTS                      1025
#define IDC_TM_TUXEDO                   1026
#define IDC_TM_NONE                     1027
#define ED_DB_PASSWORD                  1028
#define ED_DB_NAME                      1029
#define IDC_TM_ENCINA                   1030

// Next default values for new objects
//
#ifdef APSTUDIO_INVOKED
#ifndef APSTUDIO_READONLY_SYMBOLS
#define _APS_NEXT_RESOURCE_VALUE        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
 *                                      Microsoft
TPC-C Kit Ver. 4.69.000
 *                                      Copyright
Microsoft, 1999
 *              All Rights Reserved
 *
 *                                      Version
4.10.000 audited by Richard Gimarc, Performance
Metrics, 3/17/99
 *
 *        PURPOSE:  Main module for TPCC.DLL which is
an ISAPI service dll.
 *        Contact:  Charles Levine
(clevine@microsoft.com)
 *
 *  Change history:
 *                  4.20.000 - reworked error
handling; added options for COM and Encina txn
monitors
 *                  4.69.000 - updated rev number to
match kit
 */

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

#include <sqltypes.h>

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

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

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

// Database layer includes
#include "..\..\db_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 occured in
initialization
 *
          TRUE                                    DLL
successfully initialized
 */

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

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

          try
          {
                    switch( ul_reason_for_call )
                    {
                              case
DLL_PROCESS_ATTACH:
                                        {

          DWORD dwSize = MAX_COMPUTERNAME_LENGTH+1;

          GetComputerName(szMyComputerName, &dwSize);

          szMyComputerName[dwSize] = 0;
                                        }
```

```

          DisableThreadLibraryCalls((HMODULE)hModule)
;

          InitializeCriticalSection(&TermCriticalSect
ion);

                                        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 );

          dwDelBuffFreeCount = dwDelBuffSize;


          InitJulianTime(NULL);

                                                  //
create unique log file name based on delilog-yymmdd-
hhmm.log

          SYSTEMTIME Time;

          GetLocalTime( &Time );

          wsprintf( szLogFile, "%sdelivery-
%2.2d%2.2d%2.2d-%2.2d%2.2d-%2.2ds%2.2dms.log",

          Reg.szPath, Time.wYear % 100, Time.wMonth,
Time.wDay, Time.wHour, Time.wMinute, Time.wSecond,
Time.wMilliseconds );

          txnDelilog = new CTxnLog(szLogFile,
TXN_LOG_WRITE);


          //write event into txn log for START

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

                                                  //
allocate structures for delivery buffers and thread
mgmt

          pDeliHandles = new
HANDLE[dwNumDeliveryThreads];

          pDelBuff = new
DELIVERY_TRANSACTION[dwDelBuffSize];
                                                  //
launch DeliveryWorkerThread to perform actual
delivery txns

          for(i=0; i<dwNumDeliveryThreads; i++)
                                                  {

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

```
          if (pDeliHandles[i] ==
INVALID_HANDLE_VALUE)

                    throw new CWEBCLNT_ERR(
ERR_DELIVERY_THREAD_FAILED );
                                                  }
                                        }

                                        break;


                              case
DLL_PROCESS_DETACH:
                                        if
(dwNumDeliveryThreads)
                                        {
                                                  if
(txnDelilog != NULL)
                                                  {

          //write event into txn log for STOP

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


          // This will do a clean shutdown of the
delivery log file

          CTxnLog   *txnDelilogLocal = txnDelilog;

          txnDelilog= NULL;

          delete txnDelilogLocal;
                                                  }


          delete [] pDeliHandles;

          delete [] pDelBuff;


          CloseHandle( hWorkerSemaphore );

          CloseHandle( hDoneEvent );

          DeleteCriticalSection(&DelBuffCriticalSecti
on);

                                                  //
Delete delivery delay critical section
                                                  //

          DeleteCriticalSection(&hConnectCriticalSect
ion);
                                        }


          DeleteCriticalSection(&TermCriticalSection)
;
```

```
                                        if
(hLibInstanceTm != NULL)

          FreeLibrary( hLibInstanceTm );

          hLibInstanceTm = NULL;

                                        if
(hLibInstanceDb != NULL)

          FreeLibrary( hLibInstanceDb );

          hLibInstanceDb = NULL;

                                        Sleep(500);
                                        break;

                              default:
                                        /* nothing
*/;
                    }
          }
          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;
                    TerminateExtension(0);
                    return FALSE;
          }
          catch (...)
          {

          WriteMessageToEventLog(TEXT("Unhandled
exception.  DLL could not load."));
                    TerminateExtension(0);
                    return FALSE;
          }

          return TRUE;
}


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

BOOL WINAPI GetExtensionVersion(HSE_VERSION_INFO
*pVer)
```

```
{
          pVer->dwExtensionVersion =
MAKELONG(HSE_VERSION_MINOR, HSE_VERSION_MAJOR);
          lstrcpyn(pVer->lpszExtensionDesc, "TPC-C
Server.", HSE_MAX_EXT_DLL_NAME_LEN);

          return TRUE;
}

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

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

          TermDeleteAll();
          return TRUE;
}


/* FUNCTION: HttpExtensionProc
 *
 * PURPOSE:         This function is the main entry
point for the TPCC DLL. The internet service
 *                            calls this function
passing in the http string.
 *
 * ARGUMENTS:       EXTENSION_CONTROL_BLOCK
          *pECB     structure pointer to passed in
internet
 *

                    service information.
 *
 * RETURNS:                   DWORD
          HSE_STATUS_SUCCESS
                    connection can be dropped if
error
 *
          HSE_STATUS_SUCCESS_AND_KEEP_CONN
          keep connect valid comment sent
 *
 * COMMENTS:        None
 *
 */
```

```
DWORD WINAPI
HttpExtensionProc(EXTENSION_CONTROL_BLOCK *pECB)
{
          int                           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;
                              }
                              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(&hConnectCriticalSecti
on);


          Sleep(Reg.dwConnectDelay);
        LeaveCriticalSection(&hConnectCriticalSecti
on);
                        }

                        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(&DelBuffCriticalSectio
n);
                                delivery =
*(pDelBuff+dwDelBuffBusyIndex);

        dwDelBuffFreeCount++;

        dwDelBuffBusyIndex++;
                                if
(dwDelBuffBusyIndex == dwDelBuffSize)   // wrap-
around if at end of buffer

        dwDelBuffBusyIndex = 0;


        LeaveCriticalSection(&DelBuffCriticalSectio
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-
>Delivery();
                                GetLocalTime(
&trans_end );

                                //log txn

        txnDeliRec.TxnStatus = ERR_SUCCESS;
                                for (int i=0;
i<10; i++)

        txnDeliRec.o_id[i] = pDeliveryData-
>o_id[i];

        txnDeliRec.DeltaT4 =
(int)(Get64BitTime(&trans_end) -
txnDeliRec.TxnStartT0);
```

```
        txnDeliRec.DeltaTxnExec =
(int)(Get64BitTime(&trans_end) -
Get64BitTime(&trans_start));


                                if
(txnDelilog != NULL)

        txnDelilog->WriteToLog(&txnDeliRec);
                        }
                }
                catch (CBaseErr *e)
                {
                        char szTmp[1024];
                        wsprintf( szTmp, "%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(&DelBuffCriticalSectio
n);
          if (dwDelBuffFreeCount > 0)
          {
                    bError = FALSE;
                    (pDelBuff+dwDelBuffFreeIndex)-
>w_id                         = w_id;
                    (pDelBuff+dwDelBuffFreeIndex)-
>o_carrier_id       = o_carrier_id;

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

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

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

          return bError;
}

/* FUNCTION: ProcessQueryString
```

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

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

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

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

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

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

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

          // see which command it matches
          for(i=0; ; i++)
          {
                    if (szCmds[i][0] == 0)
                              // no more; no match;
return error
                              throw new CWEBCLNT_ERR(
ERR_COMMAND_UNDEFINED );
```

```
                    if ( !strcmp(szCmds[i], szBuffer)
)
                    {
                              *pCmd = i+1;
                              break;
                    }
          }
}

/* FUNCTION: void WelcomeForm
 *
 */

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

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

          "<B><BIG>Microsoft TPC-C Web Client (ver
4.69)</BIG></B> <BR> <BR>"

          "<font face=\"Courier New\"><PRE>"

          "Compiled: "__DATE__", "__TIME__" <BR>"

          "Source:   "__FILE__" ("__TIMESTAMP__")
<BR>"

          "</PRE></font>"

          "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"

          "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"0\">"

          "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"

          "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"1\">"

          "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"0\">"

          "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"0\">"

          "<INPUT TYPE=\"hidden\" NAME=\"VERSION\"
VALUE=\"" WEBCLIENT_VERSION "\">"
                              );

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

          "Txn Monitor           = <B>%s</B><BR>"
          "Database protocol      = <B>%s</B><BR>"

          "Max Connections        = <B>%d</B><BR>"
                                                  "#
of Delivery Threads  = <B>%d</B><BR>"

          "Max Pending Deliveries = <B>%d</B><BR>"
                              ,
szTxnMonNames[Reg.eTxnMon],
szDBNames[Reg.eDB_Protocol],
                              Reg.dwMaxConnections,
dwNumDeliveryThreads, dwDelBuffSize );
          strcat( szBuffer, szTmp);

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

          if (Reg.eTxnMon == None)
                    // connection options may be
specified when not using a txn monitor
                    sprintf( szTmp,     "Please enter
your database options for this connection:<BR>"

          "<font face=\"Courier New\"
color=\"blue\"><PRE>"

          "DB Server    = <INPUT NAME=\"db_server\"
SIZE=20 VALUE=\"%s\"><BR>"

          "DB User ID   = <INPUT NAME=\"db_user\"
SIZE=20 VALUE=\"%s\"><BR>"

          "DB Password  = <INPUT NAME=\"db_passwd\"
SIZE=20 VALUE=\"%s\"><BR>"

          "DB Name      = <INPUT NAME=\"db_name\"
SIZE=20 VALUE=\"%s\"><BR>"

          "</PRE></font>"
                                         ,
Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword,
Reg.szDbName );
          else
                    // if using a txn monitor,
connection options are determined from registry;
can't
                    // set per user.  show options
fyi
                    sprintf( szTmp,     "Database
options which will be used by the transaction
monitor:<BR>"

          "<font face=\"Courier New\"
color=\"blue\"><PRE>"
```

```
          "DB Server              = <B>%s</B><BR>"

          "DB User ID             = <B>%s</B><BR>"

          "DB Password            = <B>%s</B><BR>"

          "DB Name                = <B>%s</B><BR>"

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

          sprintf( szTmp,     "Please enter your
Warehouse and District for this session:<BR>"

          "<font face=\"Courier New\"
color=\"blue\"><PRE>" );
          strcat( szBuffer, szTmp);
          strcat( szBuffer,    "Warehouse ID = <INPUT
NAME=\"w_id\" SIZE=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]                    =
"sa";
          char      szPassword[32]      = { 0 };
          char      szDatabase[32]      = "tpcc";

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

```
                    throw new CWEBCLNT_ERR(
ERR_VERSION_MISMATCH );

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

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

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


          iNewTerm = TermAdd();

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

          try
          {
                    if (Reg.eTxnMon == 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 *CWEBCLNT_ERR::ErrorText()
{
          static SERRORMSG errorMsgs[] =
          {
                    {         ERR_COMMAND_UNDEFINED,

          "Command undefined."

                                                  },
                    {         ERR_D_ID_INVALID,

          "Invalid District ID Must be 1 to 10."

                    },
                    {
          ERR_DELIVERY_CARRIER_ID_RANGE,
                    "Delivery Carrier ID out of range
must be 1 - 10."
          },
```

```
                    {
          ERR_DELIVERY_CARRIER_INVALID,
          "Delivery Carrier ID invalid must be
numeric 1 - 10."                                  },
                    {
          ERR_DELIVERY_MISSING_OCD_KEY,
          "Delivery missing Carrier ID key \"OCD*\"."

                    },
                    {
          ERR_DELIVERY_THREAD_FAILED,
                    "Could not start delivery worker
thread."
                    },
                    {         ERR_GETPROCADDR_FAILED,

          "Could not map proc in DLL.  GetProcAddr
error.  DLL="                                     },
                    {         ERR_HTML_ILL_FORMED,

          "Required key field is missing from HTML
string."                                          },
                    {
          ERR_INVALID_SYNC_CONNECTION,
          "Invalid Terminal Sync ID."

                                        },
                    {         ERR_INVALID_TERMID,

          "Invalid Terminal ID."

                                                  },
                    {         ERR_LOADDLL_FAILED,

          "Load of DLL failed.  DLL="

                                        },
                    {
          ERR_MAX_CONNECTIONS_EXCEEDED,
          "No connections available.  Max Connections
is probably too low."   },
                    {
          ERR_MISSING_REGISTRY_ENTRIES,
          "Required registry entries are missing.
Rerun INSTALL to correct."    },
                    {
          ERR_NEWORDER_CUSTOMER_INVALID,
                    "New Order customer id invalid
data type, range = 1 to 3000."                    },
                    {
          ERR_NEWORDER_CUSTOMER_KEY,
                    "New Order missing Customer key
\"CID*\"."
                              },
                    {
          ERR_NEWORDER_DISTRICT_INVALID,
                    "New Order District ID Invalid
range 1 - 10."
                    },
                    {
          ERR_NEWORDER_FORM_MISSING_DID,
                    "New Order missing District key
```

```
\"DID*\"."
                              },
                    {
          ERR_NEWORDER_ITEMID_INVALID,
          "New Order Item Id is wrong data type, must
be numeric."                            },
                    {
          ERR_NEWORDER_ITEMID_RANGE,
                    "New Order Item Id is out of
range. Range = 1 to 999999."                      },
                    {
          ERR_NEWORDER_ITEMID_WITHOUT_SUPPW,
          "New Order Item_Id field entered without a
corresponding Supp_W."        },
                    {
          ERR_NEWORDER_MISSING_IID_KEY,
          "New Order missing Item Id key \"IID*\"."

                    },
                    {
          ERR_NEWORDER_MISSING_QTY_KEY,
          "New Order Missing Qty key \"Qty##*\"."

                    },
                    {
          ERR_NEWORDER_MISSING_SUPPW_KEY,
                    "New Order missing Supp_W key
\"SP##*\"."
                              },
                    {
          ERR_NEWORDER_NOITEMS_ENTERED,
          "New Order No order lines entered."

                              },
                    {
          ERR_NEWORDER_QTY_INVALID,
                    "New Order Qty invalid must be
numeric range 1 - 99."
          },
                    {         ERR_NEWORDER_QTY_RANGE,

          "New Order Qty is out of range. Range = 1
to 99."                                           },
                    {
          ERR_NEWORDER_QTY_WITHOUT_SUPPW,
                    "New Order Qty field entered
without a corresponding Supp_W."                  },
                    {
          ERR_NEWORDER_SUPPW_INVALID,
                    "New Order Supp_W invalid data
type must be numeric."
          },
                    {
          ERR_NO_SERVER_SPECIFIED,
                    "No Server name specified."

                                                  },
                    {
          ERR_ORDERSTATUS_CID_AND_CLT,
          "Order Status Only Customer ID or Last Name
may be entered, not both."    },
                    {
          ERR_ORDERSTATUS_CID_INVALID,
          "Order Status Customer ID invalid, range
must be numeric 1 - 3000."    },
                    {
          ERR_ORDERSTATUS_CLT_RANGE,
                    "Order Status Customer last name
longer than 16 characters."             },
                    {
          ERR_ORDERSTATUS_DID_INVALID,
          "Order Status District invalid, value must
be numeric 1 - 10."           },
                    {
          ERR_ORDERSTATUS_MISSING_CID_CLT,
          "Order Status Either Customer ID or Last
Name must be entered."                  },
                    {
          ERR_ORDERSTATUS_MISSING_CID_KEY,
          "Order Status missing Customer key
\"CID*\"."
                    },
                    {
          ERR_ORDERSTATUS_MISSING_CLT_KEY,
          "Order Status missing Customer Last Name
key \"CLT*\"."                                    },
                    {
          ERR_ORDERSTATUS_MISSING_DID_KEY,
          "Order Status missing District key
\"DID*\"."
                    },
                    {
          ERR_PAYMENT_CDI_INVALID,
                    "Payment Customer district
invalid must be numeric."
          },
                    {
          ERR_PAYMENT_CID_AND_CLT,
                    "Payment Only Customer ID or Last
Name may be entered, not both."         },
                    {
          ERR_PAYMENT_CUSTOMER_INVALID,
          "Payment Customer data type invalid, must
be numeric."                                      },
                    {
          ERR_PAYMENT_CWI_INVALID,
                    "Payment Customer Warehouse
invalid, must be numeric."
          },
                    {
          ERR_PAYMENT_DISTRICT_INVALID,
          "Payment District ID is invalid, must be 1
- 10."                                            },
                    {
          ERR_PAYMENT_HAM_INVALID,
                    "Payment Amount invalid data type
must be numeric."
          },
                    {         ERR_PAYMENT_HAM_RANGE,

          "Payment Amount out of range, 0 - 9999.99."

                    },
                    {
          ERR_PAYMENT_LAST_NAME_TO_LONG,
                    "Payment Customer last name
```

```
longer than 16 characters."
          },
                    {
          ERR_PAYMENT_MISSING_CDI_KEY,
          "Payment missing Customer district key
\"CDI*\"."
          },
                    {
          ERR_PAYMENT_MISSING_CID_CLT,
          "Payment Either Customer ID or Last Name
must be entered."                       },
                    {
          ERR_PAYMENT_MISSING_CID_KEY,
          "Payment missing Customer Key \"CID*\"."

                    },
                    {
          ERR_PAYMENT_MISSING_CLT_KEY,
          "Payment missing Customer Last Name key
\"CLT*\"."
          },
                    {
          ERR_PAYMENT_MISSING_CWI_KEY,
          "Payment missing Customer Warehouse key
\"CWI*\"."
          },
                    {
          ERR_PAYMENT_MISSING_DID_KEY,
          "Payment missing District Key \"DID*\"."

                    },
                    {
          ERR_PAYMENT_MISSING_HAM_KEY,
          "Payment missing Amount key \"HAM*\"."

                    },
                    {
          ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY,
          "Stock Level; missing Threshold key
\"TT*\"."
          },
                    {
          ERR_STOCKLEVEL_THRESHOLD_INVALID,
          "Stock Level; Threshold value must be in
the range = 1 - 99."                    },
                    {
          ERR_STOCKLEVEL_THRESHOLD_RANGE,
                    "Stock Level Threshold out of
range, range must be 1 - 99."                     },
                    {         ERR_VERSION_MISMATCH,

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

          "Invalid Warehouse ID."


                                                  },
                    {         0,

                              ""
```

```
                                                  }
          };

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

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

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

}

/* FUNCTION: GetKeyValue
 *
 * PURPOSE:         This function parses a http
formatted string for specific key values.
 *
 * ARGUMENTS:       char
          *pQueryString       http string from client
browser
 *                                      char
                    *pKey                         key
value to look for
 *                                      char
                    *pValue
          character array into which to place key's
value
 *                                      int
                              iMax
          maximum length of key value array.
 *                                      WEBERROR
          err
          error value to throw
 *
 * RETURNS:                   nothing.
 *
 * ERROR:           if (the pKey value is not found)
then
```

```
 *                                                if
(err == 0)
 *
          return (empty string)
 *
          else
 *
          throw CWEBCLNT_ERR(err)
 *
 * COMMENTS:        http keys are formatted either
KEY=value& or KEY=value\0. This DLL formats
 *                                        TPC-C input
fields in such a manner that the keys can be
extracted in the
 *                                        above manner.
 */

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

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

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

          *pQueryString = ptr;
          return;

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

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

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

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

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

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

          *pQueryString = ptr;
          return atoi(ptr0);

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

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

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

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

          Term.pClientData    = NULL;
          Term.pClientData    =
(PCLIENTDATA)malloc(Term.iNumEntries *
sizeof(CLIENTDATA));
          if (Term.pClientData == NULL)
          {

          LeaveCriticalSection(&TermCriticalSection);
                    throw new CWEBCLNT_ERR(
ERR_MEM_ALLOC_FAILED );
          }

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

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

          LeaveCriticalSection(&TermCriticalSection);
}

/* FUNCTION: TermDeleteAll
```

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

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

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

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

          LeaveCriticalSection(&TermCriticalSection);
}

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

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

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

          EnterCriticalSection(&TermCriticalSection);
          if (Term.iFreeList != 0)
          {         // position is available
                    iNewTerm = Term.iFreeList;
                    Term.iFreeList =
Term.pClientData[iNewTerm].iNextFree;

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

          LeaveCriticalSection(&TermCriticalSection);
                              throw new CWEBCLNT_ERR(
ERR_MAX_CONNECTIONS_EXCEEDED );
                    }
          }

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

          LeaveCriticalSection(&TermCriticalSection);
          return iNewTerm;
}

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

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

                    // put onto free list

          EnterCriticalSection(&TermCriticalSection);
                    Term.pClientData[id].iNextFree =
Term.iFreeList;
                    Term.iFreeList = id;


          LeaveCriticalSection(&TermCriticalSection);
          }
}


/* FUNCTION: MakeErrorForm
 */

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

/* FUNCTION: MakeMainMenuForm
 */

void MakeMainMenuForm(int iTermId, int iSyncId, char
*szForm)
{
          wsprintf(szForm,
                    "<HTML><HEAD><TITLE>TPC-C Main
Menu</TITLE></HEAD><BODY>"
```

```
                    "Select Desired
Transaction.<BR><HR>"
                    "<FORM ACTION=\"tpcc.dll\"
METHOD=\"GET\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"STATUSID\" VALUE=\"0\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"ERROR\" VALUE=\"0\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"FORMID\" VALUE=\"%d\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"TERMID\" VALUE=\"%d\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"SYNCID\" VALUE=\"%d\">"
                    "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..NewOrder..\">"
                    "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Payment..\">"
                    "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Delivery..\">"
                    "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Order-Status..\">"
                    "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Stock-Level..\">"
                    "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Exit..\">"
                    "</FORM></BODY></HTML>"
                    , MAIN_MENU_FORM, iTermId,
iSyncId);
}

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

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

          c = wsprintf(szForm,
                    "<HTML><HEAD><TITLE>TPC-C Stock
Level</TITLE></HEAD><FORM ACTION=\"tpcc.dll\"
METHOD=\"GET\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"STATUSID\" VALUE=\"0\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"ERROR\" VALUE=\"0\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"FORMID\" VALUE=\"%d\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"TERMID\" VALUE=\"%d\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"SYNCID\" VALUE=\"%d\">"
```

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

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

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

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

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

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

          if ( bInput )
          {
                    c += wsprintf(szForm+c,
"Warehouse: %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>                            <INPUT
NAME=\"Qty00*\" SIZE=1><BR>"
                              "  <INPUT
NAME=\"SP01*\" SIZE=4>  <INPUT NAME=\"IID01*\"
SIZE=6>                            <INPUT
NAME=\"Qty01*\" SIZE=1><BR>"
                             "  <INPUT
NAME=\"SP02*\" SIZE=4>  <INPUT NAME=\"IID02*\"
SIZE=6>                            <INPUT
NAME=\"Qty02*\" SIZE=1><BR>"
                             "  <INPUT
NAME=\"SP03*\" SIZE=4>  <INPUT NAME=\"IID03*\"
SIZE=6>                            <INPUT
NAME=\"Qty03*\" SIZE=1><BR>"
                             "  <INPUT
NAME=\"SP04*\" SIZE=4>  <INPUT NAME=\"IID04*\"
SIZE=6>                            <INPUT
NAME=\"Qty04*\" SIZE=1><BR>"
                             "  <INPUT
NAME=\"SP05*\" SIZE=4>  <INPUT NAME=\"IID05*\"
SIZE=6>                            <INPUT
NAME=\"Qty05*\" SIZE=1><BR>"
                             "  <INPUT
NAME=\"SP06*\" SIZE=4>  <INPUT NAME=\"IID06*\"
SIZE=6>                            <INPUT
NAME=\"Qty06*\" SIZE=1><BR>"
                             "  <INPUT
NAME=\"SP07*\" SIZE=4>  <INPUT NAME=\"IID07*\"
SIZE=6>                            <INPUT
NAME=\"Qty07*\" SIZE=1><BR>"
                             "  <INPUT
NAME=\"SP08*\" SIZE=4>  <INPUT NAME=\"IID08*\"
SIZE=6>                            <INPUT
NAME=\"Qty08*\" SIZE=1><BR>"
                             "  <INPUT
NAME=\"SP09*\" SIZE=4>  <INPUT NAME=\"IID09*\"
SIZE=6>                            <INPUT
NAME=\"Qty09*\" SIZE=1><BR>"
                             "  <INPUT
NAME=\"SP10*\" SIZE=4>  <INPUT NAME=\"IID10*\"
SIZE=6>                            <INPUT
NAME=\"Qty10*\" SIZE=1><BR>"
                             "  <INPUT
NAME=\"SP11*\" SIZE=4>  <INPUT NAME=\"IID11*\"
SIZE=6>                            <INPUT
NAME=\"Qty11*\" SIZE=1><BR>"
                             "  <INPUT
NAME=\"SP12*\" SIZE=4>  <INPUT NAME=\"IID12*\"
SIZE=6>                            <INPUT
NAME=\"Qty12*\" SIZE=1><BR>"
                             "  <INPUT
NAME=\"SP13*\" SIZE=4>  <INPUT NAME=\"IID13*\"
SIZE=6>                            <INPUT
NAME=\"Qty13*\" SIZE=1><BR>"
                             "  <INPUT
NAME=\"SP14*\" SIZE=4>  <INPUT NAME=\"IID14*\"
SIZE=6>                            <INPUT
NAME=\"Qty14*\" SIZE=1><BR>"
                             "Execution Status:
Total:<BR>"
                             "</font></PRE><HR>"
                             "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Process\">"
                             "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Menu\">"
                             "</FORM></HTML>"
                             );
```

```
          }
          else
          {
                    c += wsprintf(szForm+c,
"Warehouse: %6.6d   District: %2.2d
Date: ",
                              pNewOrderData->w_id,
                              pNewOrderData->d_id);

                    if ( bValid )
                    {
                              c += wsprintf(szForm+c,
"%2.2d-%2.2d-%4.4d %2.2d:%2.2d:%2.2d",

          pNewOrderData->o_entry_d.day,

          pNewOrderData->o_entry_d.month,

          pNewOrderData->o_entry_d.year,

          pNewOrderData->o_entry_d.hour,

          pNewOrderData->o_entry_d.minute,

          pNewOrderData->o_entry_d.second);
                    }

                    c += wsprintf(szForm+c,
"<BR>Customer:  %4.4d   Name: %-16s   Credit: %-2s
",
                              pNewOrderData->c_id,
pNewOrderData->c_last, pNewOrderData->c_credit);

                    if ( bValid )
                    {
                              c += sprintf(szForm+c,

          "%%Disc: %5.2f            <BR>"

          "Order Number: %8.8d  Number of Lines:
%2.2d        W_tax: %5.2f   D_tax: %5.2f  <BR> <BR>"

          " Supp_W  Item_Id  Item Name
Qty  Stock  B/G  Price    Amount<BR>",

          100.0*pNewOrderData->c_discount,

          pNewOrderData->o_id,

          pNewOrderData->o_ol_cnt,
                                        100.0 *
pNewOrderData->w_tax,
                                        100.0 *
pNewOrderData->d_tax);

                              for(i=0;
i<pNewOrderData->o_ol_cnt; i++)
                              {
                                        c +=
sprintf(szForm+c, "%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 += wsprintf(szForm+c,
                                        "%Disc:<BR>"
                                        "Order
Number: %8.8d  Number of Lines:              W_tax:
D_tax:<BR> <BR>"
                                        " Supp_W
Item_Id  Item Name                 Qty  Stock  B/G
Price    Amount<BR>"
                                        ,
pNewOrderData->o_id);

                              i = 0;
                    }

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

                    if ( bValid )
                              c += sprintf(szForm+c,
"Execution Status: Transaction commited.
Total:  $%8.2f  ",

          pNewOrderData->total_amount);
                    else
                              c += wsprintf(szForm+c,
"Execution Status: Item number is not valid.
Total:");

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

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

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

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

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

          if ( bInput )
          {
                    c += wsprintf(szForm+c,
                              "<BR> <BR>Warehouse:
%6.6d"
                              "
District: <INPUT NAME=\"DID*\" SIZE=1><BR> <BR> <BR>
<BR> <BR>"
                              "Customer: <INPUT
NAME=\"CID*\" SIZE=4>"
                              "Cust-Warehouse: <INPUT
NAME=\"CWI*\" SIZE=4>  "
                              "Cust-District: <INPUT
NAME=\"CDI*\" SIZE=1><BR>"
                              "Name:
<INPUT NAME=\"CLT*\" SIZE=16>
Since:<BR>"
                              "
Credit:<BR>"
                              "
Disc:<BR>"
                              "
Phone:<BR> <BR>"
                              "Amount Paid:
$<INPUT NAME=\"HAM*\" SIZE=7>      New Cust-
Balance:<BR>"
                              "Credit Limit:<BR>
<BR>Cust-Data: <BR> <BR> <BR> <BR>
<BR></font></PRE><HR>"
                              "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Process\"><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Menu\">"
                              "</BODY></FORM></HTML>"
                              ,
Term.pClientData[iTermId].w_id);
          }
          else
          {
                    c += wsprintf(szForm+c,
                              "<BR> <BR>Warehouse:
%6.6d                        District: %2.2d<BR>"
                              "%-20s
%-20s<BR>"
                              "%-20s
%-20s<BR>"
                              "%-20s %-2s %5.5s-%4.4s
%-20s %-2s %5.5s-%4.4s<BR> <BR>"
                              "Customer: %4.4d  Cust-
Warehouse: %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>",
                              pPaymentData-
>c_street_2, 100.0*pPaymentData->c_discount);

                    c += wsprintf(szForm+c,
                              "        %-20s %-2s
%5.5s-%4.4s       Phone:  %6.6s-%3.3s-%3.3s-%4.4s<BR>
<BR>",
                              pPaymentData->c_city,
pPaymentData->c_state, pPaymentData->c_zip,
pPaymentData->c_zip+5,
                              pPaymentData->c_phone,
pPaymentData->c_phone+6, pPaymentData->c_phone+9,
pPaymentData->c_phone+12 );

                    c += sprintf(szForm+c,
                              "Amount Paid:
$%7.2f      New Cust-Balance: $%14.2f<BR>"
                              "Credit Limit:
$%13.2f<BR> <BR>"
                              , pPaymentData-
>h_amount, pPaymentData->c_balance
                              , pPaymentData-
>c_credit_lim
                              );

                    if ( pPaymentData->c_credit[0] ==
'B' && pPaymentData->c_credit[1] == 'C' )
                              c += wsprintf(szForm+c,

          "Cust-Data: %-50.50s<BR>           %-
50.50s<BR>           %-50.50s<BR>           %-
50.50s<BR>",

          pPaymentData->c_data, pPaymentData-
>c_data+50, pPaymentData->c_data+100, pPaymentData-
>c_data+150 );
                    else
                              strcpy(szForm+c, "Cust-
Data: <BR> <BR> <BR> <BR>");

                    strcat(szForm,      "
<BR></font></PRE><HR>"

          "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..NewOrder..\">"

          "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"
```

```
          "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"

          "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"

          "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"

          "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"

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

}

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

void MakeOrderStatusForm(int iTermId,
ORDER_STATUS_DATA *pOrderStatusData, BOOL bInput,
char *szForm)
{
          int                 i, c;
          static char szBR[] = " <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR>
<BR>";

          c = wsprintf(szForm,
                    "<HTML><HEAD><TITLE>TPC-C Order-
Status</TITLE></HEAD><BODY>"
                    "<FORM ACTION=\"tpcc.dll\"
METHOD=\"GET\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"STATUSID\" VALUE=\"0\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"ERROR\" VALUE=\"0\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"FORMID\" VALUE=\"%d\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"TERMID\" VALUE=\"%d\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"SYNCID\" VALUE=\"%d\">"
                    "<PRE><font face=\"Courier\">
Order-Status<BR>"
                    "Warehouse: %6.6d   ",
                    ORDER_STATUS_FORM, iTermId,
Term.pClientData[iTermId].iSyncId,
Term.pClientData[iTermId].w_id);

          if ( bInput )
          {
                    strcpy(szForm+c,
                              "District: <INPUT
NAME=\"DID*\" SIZE=1><BR>"
                              "Customer: <INPUT
NAME=\"CID*\" SIZE=4>   Name:
<INPUT NAME=\"CLT*\" SIZE=23><BR>"
                              "Cust-Balance:<BR>
<BR>"
                              "Order-Number:
Entry-Date:                       Carrier-
Number:<BR>"
                              "Supply-W     Item-Id
Qty     Amount      Delivery-Date<BR> <BR> <BR> <BR>
<BR>"
                              " <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR> <BR></font></PRE>"
                              "<HR><INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Process\"><INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Menu\">"
                              "</BODY></FORM></HTML>"
);
          }
          else
          {
                    c += wsprintf(szForm+c,
                              "District: %2.2d<BR>"
                              "Customer: %4.4d
Name: %-16s %-2s %-16s<BR>",
                              pOrderStatusData->d_id,
pOrderStatusData->c_id,
                              pOrderStatusData-
>c_first, pOrderStatusData->c_middle,
pOrderStatusData->c_last);

                    c += sprintf(szForm+c, "Cust-
Balance: $%9.2f<BR> <BR>",
                              pOrderStatusData-
>c_balance);

                    c += wsprintf(szForm+c,
                              "Order-Number: %8.8d
Entry-Date: %2.2d-%2.2d-%4.4d %2.2d:%2.2d:%2.2d
Carrier-Number: %2.2d<BR>"
                              "Supply-W     Item-Id
Qty     Amount      Delivery-Date<BR>",
                              pOrderStatusData->o_id,
                              pOrderStatusData-
>o_entry_d.day,
                              pOrderStatusData-
>o_entry_d.month,
                              pOrderStatusData-
>o_entry_d.year,
                              pOrderStatusData-
>o_entry_d.hour,
                              pOrderStatusData-
>o_entry_d.minute,
                              pOrderStatusData-
>o_entry_d.second,
                              pOrderStatusData-
>o_carrier_id);

                    for(i=0; i< pOrderStatusData-
>o_ol_cnt; i++)
                    {
                              c += sprintf(szForm+c,
"  %6.6d     %6.6d     %2.2d     $%8.2f      %2.2d-
%2.2d-%4.4d<BR>",

          pOrderStatusData->OL[i].ol_supply_w_id,

          pOrderStatusData->OL[i].ol_i_id,

          pOrderStatusData->OL[i].ol_quantity,

          pOrderStatusData->OL[i].ol_amount,

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

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

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

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

                    strcpy(szForm+c,

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

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

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

          c = wsprintf(szForm,
                    "<HTML><HEAD><TITLE>TPC-C
Delivery</TITLE></HEAD><BODY>"
```

```
                    "<FORM ACTION=\"tpcc.dll\"
METHOD=\"GET\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"STATUSID\" VALUE=\"%d\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"ERROR\" VALUE=\"0\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"FORMID\" VALUE=\"%d\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"TERMID\" VALUE=\"%d\">"
                    "<INPUT TYPE=\"hidden\"
NAME=\"SYNCID\" VALUE=\"%d\">"
                    "<PRE><font face=\"Courier\">
Delivery<BR>"
                    "Warehouse: %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> <BR> </font></PRE><HR>"
                              "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Process\">"
                              "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Menu\">"
                              "</BODY></FORM></HTML>"
);
          }
          else
          {
                    wsprintf( szForm+c,
                              "Carrier Number:
%2.2d<BR> <BR>"
                              "Execution Status: %s
<BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR>"
                              " <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> </font></PRE>"
                              "<HR><INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..NewOrder..\">"
                              "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Payment..\">"
                              "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Delivery..\">"
                              "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Order-Status..\">"
                              "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Stock-Level..\">"
                              "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Exit..\">"
                              "</BODY></FORM></HTML>"

                              , pDeliveryData-
>o_carrier_id,
```

```
                              (pDeliveryData-
>exec_status_code == eOK) ? "Delivery has been
queued." : "Delivery Post Failed     "
                              );
          }
}

/* FUNCTION: ProcessNewOrderForm
 *
 * PURPOSE:         This function gets and validates
the input data from the new order form
 *                            filling in the required
input variables. it then calls the SQLNewOrder
 *                            transaction, constructs
the output form and writes it back to client
 *                            browser.
 */

void ProcessNewOrderForm(EXTENSION_CONTROL_BLOCK
          *pECB, int iTermId, char *szBuffer)
{
          PNEW_ORDER_DATA               pNewOrder;

          pNewOrder = Term.pClientData[iTermId].pTxn-
>BuffAddr_NewOrder();

          ZeroMemory(pNewOrder,
sizeof(NEW_ORDER_DATA));
          pNewOrder->w_id =
Term.pClientData[iTermId].w_id;
          GetNewOrderData(pECB->lpszQueryString,
pNewOrder);

          Term.pClientData[iTermId].pTxn->NewOrder();

          pNewOrder = Term.pClientData[iTermId].pTxn-
>BuffAddr_NewOrder();
          MakeNewOrderForm(iTermId, pNewOrder,
OUTPUT_FORM, szBuffer );
}

/* FUNCTION: void ProcessPaymentForm
 *
 * PURPOSE:         This function gets and validates
the input data from the payment form
 *                            filling in the required
input variables. It then calls the SQLPayment
 *                            transaction, constructs
the output form and writes it back to client
 *                            browser.
 *
 * ARGUMENTS:       EXTENSION_CONTROL_BLOCK
          *pECB     passed in structure pointer from
inetsrv.
 *                                      int

          iTermId   client browser terminal id
 *
 */

void ProcessPaymentForm(EXTENSION_CONTROL_BLOCK
*pECB, int iTermId, char *szBuffer)
{
```

```
          PPAYMENT_DATA       pPayment;

          pPayment = Term.pClientData[iTermId].pTxn-
>BuffAddr_Payment();
          ZeroMemory(pPayment, sizeof(PAYMENT_DATA));
          pPayment->w_id =
Term.pClientData[iTermId].w_id;
          GetPaymentData(pECB->lpszQueryString,
pPayment);

          Term.pClientData[iTermId].pTxn->Payment();

          pPayment = Term.pClientData[iTermId].pTxn-
>BuffAddr_Payment();
          MakePaymentForm(iTermId, pPayment,
OUTPUT_FORM, szBuffer);
}

/* FUNCTION: ProcessOrderStatusForm
 *
 * PURPOSE:         This function gets and validates
the input data from the Order Status
 *                            form filling in the
required input variables. It then calls the
 *                            SQLOrderStatus
transaction, constructs the output form and writes it
 *                            back to client browser.
 *
 * ARGUMENTS:       EXTENSION_CONTROL_BLOCK
          *pECB     passed in structure pointer from
inetsrv.
 *                                      int

          iTermId   client browser terminal id
 *
 */

void ProcessOrderStatusForm(EXTENSION_CONTROL_BLOCK
*pECB, int iTermId, char *szBuffer)
{
          PORDER_STATUS_DATA  pOrderStatus;

          pOrderStatus =
Term.pClientData[iTermId].pTxn-
>BuffAddr_OrderStatus();
          ZeroMemory(pOrderStatus,
sizeof(ORDER_STATUS_DATA));
          pOrderStatus->w_id =
Term.pClientData[iTermId].w_id;
          GetOrderStatusData(pECB->lpszQueryString,
pOrderStatus);

          Term.pClientData[iTermId].pTxn-
>OrderStatus();

          pOrderStatus =
Term.pClientData[iTermId].pTxn-
>BuffAddr_OrderStatus();
          MakeOrderStatusForm(iTermId, pOrderStatus,
OUTPUT_FORM, szBuffer);
}

/* FUNCTION: ProcessDeliveryForm
```

```
 *
 * PURPOSE:         This function gets and validates
the input data from the delivery form
 *                            filling in the required
input variables. It then calls the PostDeliveryInfo
 *                            Api, The client is then
informed that the transaction has been posted.
 *
 * ARGUMENTS:       EXTENSION_CONTROL_BLOCK
          *pECB     passed in structure pointer from
inetsrv.
 *                                        int

          iTermId   client browser terminal id
 *
 */

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

          PDELIVERY_DATA      pDelivery;

          pDelivery = Term.pClientData[iTermId].pTxn-
>BuffAddr_Delivery();
          ZeroMemory(pDelivery,
sizeof(DELIVERY_DATA));
          pDelivery->w_id =
Term.pClientData[iTermId].w_id;

          pDelivery->o_carrier_id       =
GetIntKeyValue(&ptr, "OCD*",
ERR_DELIVERY_MISSING_OCD_KEY,
ERR_DELIVERY_CARRIER_INVALID);
          if ( pDelivery->o_carrier_id > 10 ||
pDelivery->o_carrier_id < 1 )
                    throw new CWEBCLNT_ERR(
ERR_DELIVERY_CARRIER_ID_RANGE );

          if (dwNumDeliveryThreads)
          {
                    //post delivery info
                    if ( PostDeliveryInfo(pDelivery-
>w_id, pDelivery->o_carrier_id) )
                              pDelivery-
>exec_status_code = eDeliveryFailed;
                    else
                              pDelivery-
>exec_status_code = eOK;
          }
          else // delivery is done synchronously if
no delivery threads configured
                    Term.pClientData[iTermId].pTxn-
>Delivery();

          pDelivery = Term.pClientData[iTermId].pTxn-
>BuffAddr_Delivery();
          MakeDeliveryForm(iTermId, pDelivery,
OUTPUT_FORM, szBuffer);
}

/* FUNCTION: ProcessStockLevelForm
 *
 * PURPOSE:         This function gets and validates
the input data from the Stock Level
 *                            form filling in the
required input variables. It then calls the
 *                            SQLStockLevel
transaction, constructs the output form and writes it
 *                            back to client browser.
 *
 * ARGUMENTS:       EXTENSION_CONTROL_BLOCK
          *pECB     passed in structure pointer from
inetsrv.
 *                                        int

          iTermId   client browser terminal id
 *
 */

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

          PSTOCK_LEVEL_DATA   pStockLevel;

          pStockLevel =
Term.pClientData[iTermId].pTxn-
>BuffAddr_StockLevel();
          ZeroMemory( pStockLevel,
sizeof(STOCK_LEVEL_DATA) );

          pStockLevel->w_id =
Term.pClientData[iTermId].w_id;
          pStockLevel->d_id =
Term.pClientData[iTermId].d_id;

          pStockLevel->threshold =
GetIntKeyValue(&ptr, "TT*",
ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY,
ERR_STOCKLEVEL_THRESHOLD_INVALID);
          if ( pStockLevel->threshold >= 100 ||
pStockLevel->threshold < 0 )
                    throw new CWEBCLNT_ERR(
ERR_STOCKLEVEL_THRESHOLD_RANGE );

          Term.pClientData[iTermId].pTxn-
>StockLevel();

          pStockLevel =
Term.pClientData[iTermId].pTxn-
>BuffAddr_StockLevel();
          MakeStockLevelForm(iTermId, pStockLevel,
OUTPUT_FORM, szBuffer);
}

/* FUNCTION: GetNewOrderData
 *
 * PURPOSE:         This function extracts and
validates the new order form data from an http
command string.
 *
 * ARGUMENTS:       LPSTR
          lpszQueryString               client
browser http command string
 *
          NEW_ORDER_DATA      *pNewOrderData
          pointer to new order data structure
 *
 */

void GetNewOrderData(LPSTR lpszQueryString,
NEW_ORDER_DATA *pNewOrderData)
{
          char      szTmp[26];
          int                 i;
          short     items;
          int                 ol_i_id, ol_quantity;
          char      *ptr = lpszQueryString;

          static char szSP[MAX_OL_NEW_ORDER_ITEMS][6]
=
                    { "SP00*", "SP01*", "SP02*",
"SP03*", "SP04*",
                      "SP05*", "SP06*", "SP07*",
"SP08*", "SP09*",
                      "SP10*", "SP11*", "SP12*",
"SP13*", "SP14*" };
          static char
szIID[MAX_OL_NEW_ORDER_ITEMS][7] =
                    { "IID00*", "IID01*", "IID02*",
"IID03*", "IID04*",
                      "IID05*", "IID06*", "IID07*",
"IID08*", "IID09*",
                      "IID10*", "IID11*", "IID12*",
"IID13*", "IID14*" };
          static char
szQty[MAX_OL_NEW_ORDER_ITEMS][7] =
                    { "Qty00*", "Qty01*", "Qty02*",
"Qty03*", "Qty04*",
                      "Qty05*", "Qty06*", "Qty07*",
"Qty08*", "Qty09*",
                      "Qty10*", "Qty11*", "Qty12*",
"Qty13*", "Qty14*" };

          pNewOrderData->d_id = GetIntKeyValue(&ptr,
"DID*", ERR_NEWORDER_FORM_MISSING_DID,
ERR_NEWORDER_DISTRICT_INVALID);
          pNewOrderData->c_id = GetIntKeyValue(&ptr,
"CID*", ERR_NEWORDER_CUSTOMER_KEY,
ERR_NEWORDER_CUSTOMER_INVALID);

          for(i=0, items=0; i<MAX_OL_NEW_ORDER_ITEMS;
i++)
          {
                    GetKeyValue(&ptr, szSP[i], szTmp,
sizeof(szTmp), ERR_NEWORDER_MISSING_SUPPW_KEY);
                    if ( szTmp[0] )
                    {
                              if ( !IsNumeric(szTmp)
)
                                        throw new
CWEBCLNT_ERR( ERR_NEWORDER_SUPPW_INVALID );
                              pNewOrderData-
>OL[items].ol_supply_w_id = atoi(szTmp);
```

```
                              ol_i_id =
pNewOrderData->OL[items].ol_i_id =

          GetIntKeyValue(&ptr, szIID[i],
ERR_NEWORDER_MISSING_IID_KEY,
ERR_NEWORDER_ITEMID_INVALID);
                              if ( ol_i_id > 999999
|| ol_i_id < 1 )
                                        throw new
CWEBCLNT_ERR( ERR_NEWORDER_ITEMID_RANGE );

                              ol_quantity =
pNewOrderData->OL[items].ol_quantity =

          GetIntKeyValue(&ptr, szQty[i],
ERR_NEWORDER_MISSING_QTY_KEY,
ERR_NEWORDER_QTY_INVALID);
                              if ( ol_quantity > 99
|| ol_quantity < 1 )
                                        throw new
CWEBCLNT_ERR( ERR_NEWORDER_QTY_RANGE );

                              items++;
                    }
                    else
                    {         // nothing entered for
supply warehouse, so item id and qty must also be
blank
                              GetKeyValue(&ptr,
szIID[i], szTmp, sizeof(szTmp),
ERR_NEWORDER_MISSING_IID_KEY);
                              if ( szTmp[0] )
                                        throw new
CWEBCLNT_ERR( ERR_NEWORDER_ITEMID_WITHOUT_SUPPW );

                              GetKeyValue(&ptr,
szQty[i], szTmp, sizeof(szTmp),
ERR_NEWORDER_MISSING_QTY_KEY);
                              if ( szTmp[0] )
                                        throw new
CWEBCLNT_ERR( ERR_NEWORDER_QTY_WITHOUT_SUPPW );
                    }
          }
          if ( items == 0 )
                    throw new CWEBCLNT_ERR(
ERR_NEWORDER_NOITEMS_ENTERED );

          pNewOrderData->o_ol_cnt = items;
}

/* FUNCTION: GetPaymentData
 *
 * PURPOSE:         This function extracts and
validates the payment form data from an http command
string.
 *
 * ARGUMENTS:       LPSTR
          lpszQueryString               client
browser http command string
 *                                      PAYMENT_DATA
          *pPaymentData                 pointer to
payment data structure
```

```
 */

void GetPaymentData(LPSTR lpszQueryString,
PAYMENT_DATA *pPaymentData)
{
          char      szTmp[26];
          char      *ptr = lpszQueryString;
          BOOL      bCustIdBlank;
          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 CWEBCLNT_ERR(
ERR_PAYMENT_CUSTOMER_INVALID );
                    pPaymentData->c_id = atoi(szTmp);
          }

          pPaymentData->c_w_id = GetIntKeyValue(&ptr,
"CWI*", ERR_PAYMENT_MISSING_CWI_KEY,
ERR_PAYMENT_CWI_INVALID);
          pPaymentData->c_d_id = GetIntKeyValue(&ptr,
"CDI*", ERR_PAYMENT_MISSING_CDI_KEY,
ERR_PAYMENT_CDI_INVALID);

          if ( bCustIdBlank )
          {         // customer id is blank, so last
name must be entered
                    GetKeyValue(&ptr, "CLT*", szTmp,
sizeof(szTmp), ERR_PAYMENT_MISSING_CLT_KEY);
                    if ( szTmp[0] == 0 )
                              throw new CWEBCLNT_ERR(
ERR_PAYMENT_MISSING_CID_CLT );

                    _strupr( szTmp );
                    if ( strlen(szTmp) >
LAST_NAME_LEN )
                              throw new CWEBCLNT_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 CWEBCLNT_ERR(
ERR_PAYMENT_CID_AND_CLT );
          }

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

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

                    _strupr( szTmp );
                    if ( strlen(szTmp) >
LAST_NAME_LEN )
                              throw new CWEBCLNT_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 CWEBCLNT_ERR(
ERR_ORDERSTATUS_CID_INVALID );
                    pOrderStatusData->c_id =
atoi(szTmp);
                    GetKeyValue(&ptr, "CLT*", szTmp,
sizeof(szTmp), ERR_ORDERSTATUS_MISSING_CLT_KEY);
                    if ( szTmp[0] != 0 )
                              throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_CID_AND_CLT );
          }

}

/* FUNCTION: BOOL IsNumeric(char *ptr)
 *
 * PURPOSE:         This function determines if a
string is numeric. It fails if any characters other
 *                            than numeric and null
terminator are present.
 *
 * ARGUMENTS:       char
          *ptr      pointer to string to check.
 *
 * RETURNS:                   BOOL      FALSE     if
string is not all numeric
 *
          TRUE      if string contains only numeric
characters i.e. '0' - '9'
 */

BOOL IsNumeric(char *ptr)
{
          if ( *ptr == 0 )
                    return FALSE;

          while( *ptr && isdigit(*ptr) )
                    ptr++;
          return ( !*ptr );
}

/* FUNCTION: BOOL IsDecimal(char *ptr)
 *
 * PURPOSE:         This function determines if a
string is a non-negative decimal value.
 *          It fails if any characters other than a
series of numbers followed by
 *                             a decimal point,
another series of numbers, and a null terminator are
present.
 *
 * ARGUMENTS:       char
          *ptr      pointer to string to check.
 *
 * RETURNS:                   BOOL      FALSE     if
string is not a valid non-negative decimal value
 *
          TRUE      if string is OK
 */

BOOL IsDecimal(char *ptr)
{
          char *dotptr;
          BOOL  bValid;

          if ( *ptr == 0 )
                    return FALSE;

          // find decimal point
          dotptr = strchr( ptr, '.' );
          if (dotptr == NULL)
                    // no decimal point, so just
check for numeric
                    return IsNumeric(ptr);
          *dotptr = 0;  // temporarily replace
decimal with a terminator

          if ( *ptr != 0 )
                    bValid = IsNumeric(ptr);
          // string starts with decimal point
          else if (*(dotptr+1) == 0)
                    return FALSE;  // nothing but a
decimal point is bad
          else
                    bValid = TRUE;

          if (*(dotptr+1) != 0)
                    // check text after decimal point
                    bValid &= IsNumeric(dotptr+1);

          *dotptr = '.';  // replace decimal point
          return bValid;
}
```

tpcc.def

```
LIBRARY TPCC.DLL

EXPORTS

          GetExtensionVersion @1
          HttpExtensionProc   @2
          TerminateExtension  @3
```

tpcc.h

```
/*        FILE:               TPCC.H
 *                                      Microsoft
TPC-C Kit Ver. 4.69.000
 *                                      Copyright
Microsoft, 1999
 *              All Rights Reserved
 *
 *                                      Version
4.10.000 audited by Richard Gimarc, Performance
Metrics, 3/17/99
 *
 *        PURPOSE:  Header file for ISAPI TPCC.DLL,
defines structures and functions used in the isapi
tpcc.dll.
 *
 */

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

#define TP_MAX_RETRIES
                                        50


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

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


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

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

          CTPCC_BASE          *pTxn;

} CLIENTDATA, *PCLIENTDATA;


//This structure is used to define the operational
interface for terminal id support
typedef struct _TERM
{
          int                            iNumEntries;

          //total allocated terminal array entries
          int                            iFreeList;

          //next available terminal array element or
-1 if none
          int
          iMasterSyncId;
                    //syncronization id
          CLIENTDATA          *pClientData;
                                         //pointer to
allocated client data
} TERM;

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


          enum WEBERROR
          {
                    NO_ERR,
                    ERR_COMMAND_UNDEFINED,
                    ERR_D_ID_INVALID,
                    ERR_DELIVERY_CARRIER_ID_RANGE,
                    ERR_DELIVERY_CARRIER_INVALID,
                    ERR_DELIVERY_MISSING_OCD_KEY,
                    ERR_DELIVERY_THREAD_FAILED,
                    ERR_GETPROCADDR_FAILED,
                    ERR_HTML_ILL_FORMED,
                    ERR_INVALID_SYNC_CONNECTION,
                    ERR_INVALID_TERMID,
                    ERR_LOADDLL_FAILED,
                    ERR_MAX_CONNECTIONS_EXCEEDED,
                    ERR_MEM_ALLOC_FAILED,
                    ERR_MISSING_REGISTRY_ENTRIES,
                    ERR_NEWORDER_CUSTOMER_INVALID,
                    ERR_NEWORDER_CUSTOMER_KEY,
                    ERR_NEWORDER_DISTRICT_INVALID,
                    ERR_NEWORDER_FORM_MISSING_DID,
                    ERR_NEWORDER_ITEMID_INVALID,
                    ERR_NEWORDER_ITEMID_RANGE,

          ERR_NEWORDER_ITEMID_WITHOUT_SUPPW,
                    ERR_NEWORDER_MISSING_IID_KEY,
                    ERR_NEWORDER_MISSING_QTY_KEY,
                    ERR_NEWORDER_MISSING_SUPPW_KEY,
                    ERR_NEWORDER_NOITEMS_ENTERED,
                    ERR_NEWORDER_QTY_INVALID,
                    ERR_NEWORDER_QTY_RANGE,
                    ERR_NEWORDER_QTY_WITHOUT_SUPPW,
                    ERR_NEWORDER_SUPPW_INVALID,
                    ERR_NO_SERVER_SPECIFIED,
                    ERR_ORDERSTATUS_CID_AND_CLT,
                    ERR_ORDERSTATUS_CID_INVALID,
                    ERR_ORDERSTATUS_CLT_RANGE,
                    ERR_ORDERSTATUS_DID_INVALID,
                    ERR_ORDERSTATUS_MISSING_CID_CLT,
                    ERR_ORDERSTATUS_MISSING_CID_KEY,
                    ERR_ORDERSTATUS_MISSING_CLT_KEY,
                    ERR_ORDERSTATUS_MISSING_DID_KEY,
                    ERR_PAYMENT_CDI_INVALID,
                    ERR_PAYMENT_CID_AND_CLT,
                    ERR_PAYMENT_CUSTOMER_INVALID,
                    ERR_PAYMENT_CWI_INVALID,
                    ERR_PAYMENT_DISTRICT_INVALID,
                    ERR_PAYMENT_HAM_INVALID,
                    ERR_PAYMENT_HAM_RANGE,
                    ERR_PAYMENT_LAST_NAME_TO_LONG,
                    ERR_PAYMENT_MISSING_CDI_KEY,
                    ERR_PAYMENT_MISSING_CID_CLT,
                    ERR_PAYMENT_MISSING_CID_KEY,
                    ERR_PAYMENT_MISSING_CLT,
                    ERR_PAYMENT_MISSING_CLT_KEY,
                    ERR_PAYMENT_MISSING_CWI_KEY,
                    ERR_PAYMENT_MISSING_DID_KEY,
                    ERR_PAYMENT_MISSING_HAM_KEY,

          ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY,
                    ERR_STOCKLEVEL_THRESHOLD_INVALID,
                    ERR_STOCKLEVEL_THRESHOLD_RANGE,
                    ERR_VERSION_MISMATCH,
                    ERR_W_ID_INVALID
          };

class CWEBCLNT_ERR : public CBaseErr
{
          public:

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

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

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

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

                    int ErrorType() {return
ERR_TYPE_WEBDLL;};
                    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

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

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

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



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


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

tpcc_com.cpp

```
/*        FILE:               TPCC_COM.CPP
 *                                      Microsoft
TPC-C Kit Ver. 4.69.000
 *                                      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
 *                  4.69.000 - updated rev number to
match kit
 */

// needed for CoinitializeEx
#define _WIN32_WINNT 0x0400

#include <windows.h>

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

#include "..\..\common\src\trans.h"
          //tpckit transaction header contains
definations of structures specific to TPC-C
#include "..\..\common\src\error.h"
#include "..\..\common\src\txn_base.h"
#include "..\..\common\src\tpcc_com_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. 4.69.000
 *                                      Copyright
Microsoft, 1999
 *              All Rights Reserved
 *
 *                                      not yet
audited
 *
 *        PURPOSE:  Header file for TPC-C COM+ class
implementation.
 *
 *  Change history:
 *                  4.20.000 - first version
 *                  4.69.000 - updated rev number to
match kit
 */

#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;
```

```
                    VARIANT m_vTxn;
          public:
                    CTPCC_COM(BOOL bSinglePool);
                    ~CTPCC_COM(void);

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

                    void NewOrder                 ();
                    void Payment                  ();
                    void StockLevel               ();
                    void OrderStatus    ();
                    void Delivery                 ()
{ throw new CCOMERR(E_NOTIMPL); }  // not supported

};


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


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


typedef CTPCC_COM* (TYPE_CTPCC_COM)(BOOL);
```

tpcc_com_all.aps

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20-11D3-BA71-00C04FBFE08B}'
          }
          TPCC.AllTxns = s 'TPCC Class'
          {
                    CurVer = s 'TPCC.AllTxns.1'
          }
          NoRemove CLSID
          {
                    ForceRemove {122A3128-2520-11D3-
BA71-00C04FBFE08B} = s 'TPCC Class'
                    {
                              ProgID = s
'TPCC.AllTxns.1'

          VersionIndependentProgID = s 'TPCC.AllTxns'
                              InprocServer32 = s
'%MODULE%'
                              {
                                        val
ThreadingModel = s 'Both'
                              }
                    }
          }
}
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          }
          TPCC.NewOrder = s 'NewOrder Class'
          {
                    CurVer = s 'TPCC.NewOrder.1'
          }
          NoRemove CLSID
          {
                    ForceRemove {975BAABF-84A7-11D2-
BA47-00C04FBFE08B} = s 'NewOrder Class'
                    {
                              ProgID = s
'TPCC.NewOrder.1'

          VersionIndependentProgID = s
'TPCC.NewOrder'
                              InprocServer32 = s
'%MODULE%'
                              {
                                        val
ThreadingModel = s 'Both'
                              }
```

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			}
		}
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00C04FBFE08B}'
		}
		TPCC.OrderStatus = s 'OrderStatus Class'
		{
			CurVer = s 'TPCC.OrderStatus.1'
		}
		NoRemove CLSID
		{
			ForceRemove {266836AD-A50D-11D2-
BA4E-00C04FBFE08B} = s 'OrderStatus Class'
			{
				ProgID = s
'TPCC.OrderStatus.1'

		VersionIndependentProgID = s
'TPCC.OrderStatus'
				InprocServer32 = s
'%MODULE%'
				{
					val
ThreadingModel = s 'Both'
				}
			}
		}
}
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		CLSID = s '{CD02F7EF-A4FA-11D2-BA4E-
00C04FBFE08B}'
		}
		TPCC.Payment = s 'Payment Class'
		{
			CurVer = s 'TPCC.Payment.1'
		}
		NoRemove CLSID
		{
			ForceRemove {CD02F7EF-A4FA-11D2-
BA4E-00C04FBFE08B} = s 'Payment Class'
			{
				ProgID = s
'TPCC.Payment.1'

		VersionIndependentProgID = s 'TPCC.Payment'
				InprocServer32 = s
'%MODULE%'
				{
					val
ThreadingModel = s 'Both'
				}
			}
		}
}
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			CLSID = s '{2668369E-A50D-11D2-
BA4E-00C04FBFE08B}'
		}
		TPCC.StockLevel = s 'StockLevel Class'
		{
			CurVer = s 'TPCC.StockLevel.1'
		}
		NoRemove CLSID
		{
			ForceRemove {2668369E-A50D-11D2-
BA4E-00C04FBFE08B} = s 'StockLevel Class'
			{
				ProgID = s
'TPCC.StockLevel.1'

		VersionIndependentProgID = s
'TPCC.StockLevel'
				InprocServer32 = s
'%MODULE%'
				{
					val
ThreadingModel = s 'Both'
				}
			}
		}
}
```

tpcc_com_all.cpp

```
/*	FILE:		TPCC_COM_ALL.CPP
 *					Microsoft
TPC-C Kit Ver. 4.69.000
 *					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
 *			4.69.000 - 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"));

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

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

        (VOID) DeregisterEventSource(hEventSource);
    }
}

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

/* FUNCTION: CCOMPONENT_ERR::ErrorText
 *
 */
```

```
char* CCOMPONENT_ERR::ErrorText(void)
{
          static SERRORMSG errorMsgs[] =
          {
                    { ERR_MISSING_REGISTRY_ENTRIES,
          "Required entries missing from registry."
                                        },
                    { ERR_LOADDLL_FAILED,
                    "Load of DLL failed.  DLL="

                    },
                    { ERR_GETPROCADDR_FAILED,
          "Could not map proc in DLL.  GetProcAddr
error.  DLL="       },
                    { ERR_UNKNOWN_DB_PROTOCOL,
          "Unknown database protocol specified in
registry."                    },
                    { 0,
                                        ""



                              }
          };

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

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

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


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

CTPCC_Common::~CTPCC_Common()
```

```
{
          // 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);


          LeaveCriticalSection(&hConnectCriticalSecti
on);
                    }

                    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);
                    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
          {
                    // 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;
                    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
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;
                    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
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;
                    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 Tue Nov 10 10:51:22 2009
 */
/* 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*/
#ifndef __REQUIRED_RPCNDR_H_VERSION__
#define __REQUIRED_RPCNDR_H_VERSION__ 475
#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 __tpcc_com_all_h__
#define __tpcc_com_all_h__

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

/* Forward Declarations */

#ifndef __TPCC_FWD_DEFINED__
#define __TPCC_FWD_DEFINED__

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

#endif    /* __TPCC_FWD_DEFINED__ */


#ifndef __NewOrder_FWD_DEFINED__
#define __NewOrder_FWD_DEFINED__

#ifdef __cplusplus
typedef class NewOrder NewOrder;
#else
typedef struct NewOrder NewOrder;
```

```
#endif /* __cplusplus */

#endif    /* __NewOrder_FWD_DEFINED__ */


#ifndef __OrderStatus_FWD_DEFINED__
#define __OrderStatus_FWD_DEFINED__

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

#endif    /* __OrderStatus_FWD_DEFINED__ */


#ifndef __Payment_FWD_DEFINED__
#define __Payment_FWD_DEFINED__

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

#endif    /* __Payment_FWD_DEFINED__ */


#ifndef __StockLevel_FWD_DEFINED__
#define __StockLevel_FWD_DEFINED__

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

#endif    /* __StockLevel_FWD_DEFINED__ */


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

#ifdef __cplusplus
extern "C"{
#endif

void * __RPC_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;


#ifndef __TPCCLib_LIBRARY_DEFINED__
#define __TPCCLib_LIBRARY_DEFINED__

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


EXTERN_C const IID LIBID_TPCCLib;

EXTERN_C const CLSID CLSID_TPCC;

#ifdef __cplusplus

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

EXTERN_C const CLSID CLSID_NewOrder;

#ifdef __cplusplus

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

EXTERN_C const CLSID CLSID_OrderStatus;

#ifdef __cplusplus

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

EXTERN_C const CLSID CLSID_Payment;

#ifdef __cplusplus

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

EXTERN_C const CLSID CLSID_StockLevel;

#ifdef __cplusplus

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

/* Additional Prototypes for ALL interfaces */
```

```
/* end of Additional Prototypes */

#ifdef __cplusplus
}
#endif

#endif
```

tpcc_com_all.idl

```
/*        FILE:               TPCC.IDL
 *                                      Microsoft
TPC-C Kit Ver. 4.69.000
 *                                      Copyright
Microsoft, 1999
 *              All Rights Reserved
 *
 *                                      not yet
audited
 *
 *        PURPOSE:  IDL source for TPCC.dll.  This
file is processed by the MIDL tool to
 *                                      produce the
type library (TPCC.tlb) and marshalling code.
 *
 *  Change history:
 *                  4.20.000 - first version
 *                  4.69.000 - updated rev number to
match kit
 */

interface TPCC;
interface NewOrder;
interface OrderStatus;
interface Payment;
interface StockLevel;


import "oaidl.idl";
import "ocidl.idl";
import "..\tpcc_com_ps\src\tpcc_com_ps.idl";

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

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


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


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


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


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

};
```

tpcc_com_all.rc

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

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

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

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

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

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

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

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

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

#endif    // APSTUDIO_INVOKED


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

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

#endif    // !_MAC


/////////////////////////////////////////////////////
////////////////////////
//
// REGISTRY
//

IDR_TPCC                REGISTRY DISCARDABLE
"tpcc_com_all.rgs"
IDR_NEWORDER            REGISTRY DISCARDABLE
"tpcc_com_no.rgs"
IDR_ORDERSTATUS         REGISTRY DISCARDABLE
"tpcc_com_os.rgs"
IDR_PAYMENT             REGISTRY DISCARDABLE
"tpcc_com_pay.rgs"
IDR_STOCKLEVEL          REGISTRY DISCARDABLE
"tpcc_com_sl.rgs"

/////////////////////////////////////////////////////
////////////////////////
//
// String Table
//

STRINGTABLE DISCARDABLE
BEGIN
    IDS_PROJNAME            "tpcc_com_all"
END

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

```
#ifndef APSTUDIO_INVOKED
////////////////////////////////////////////////////
////////////////////////
//
// Generated from the TEXTINCLUDE 3 resource.
//
1 TYPELIB "tpcc_com_all.tlb"

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

tpcc_com_all.rgs

```
HKCR
{
          TPCC.AllTxns.1 = s 'All Txns Class'
          {
                    CLSID = s '{122A3128-2520-11D3-
BA71-00C04FBFE08B}'
          }
          TPCC.AllTxns = s 'TPCC Class'
          {
                    CurVer = s 'TPCC.AllTxns.1'
          }
          NoRemove CLSID
          {
                    ForceRemove {122A3128-2520-11D3-
BA71-00C04FBFE08B} = s 'TPCC Class'
                    {
                              ProgID = s
'TPCC.AllTxns.1'

          VersionIndependentProgID = s 'TPCC.AllTxns'
                              InprocServer32 = s
'%MODULE%'
                              {
                                        val
ThreadingModel = s 'Both'
                              }
                    }
          }
}
```

tpcc_com_all_i.c

```
/* 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 Tue Nov 10 10:51:22 2009
 */
/* 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,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)*/



/* 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 Tue Nov 10 10:51:22 2009
 */
/* 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) \

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,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_no.rgs

```
HKCR
{
          TPCC.NewOrder.1 = s 'NewOrder Class'
          {
                    CLSID = s '{975BAABF-84A7-11D2-
BA47-00C04FBFE08B}'
          }
          TPCC.NewOrder = s 'NewOrder Class'
          {
                    CurVer = s 'TPCC.NewOrder.1'
          }
          NoRemove CLSID
          {
                    ForceRemove {975BAABF-84A7-11D2-
BA47-00C04FBFE08B} = s 'NewOrder Class'
                    {
                              ProgID = s
'TPCC.NewOrder.1'

          VersionIndependentProgID = s
'TPCC.NewOrder'
                              InprocServer32 = s
'%MODULE%'
                              {
                                        val
ThreadingModel = s 'Both'
                              }
                    }
          }
}
```

tpcc_com_os.rgs

```
HKCR
{
          TPCC.OrderStatus.1 = s 'OrderStatus Class'
          {
                    CLSID = s '{266836AD-A50D-11D2-
BA4E-00C04FBFE08B}'
```

```
          }
          TPCC.OrderStatus = s 'OrderStatus Class'
          {
                    CurVer = s 'TPCC.OrderStatus.1'
          }
          NoRemove CLSID
          {
                    ForceRemove {266836AD-A50D-11D2-
BA4E-00C04FBFE08B} = s 'OrderStatus Class'
                    {
                              ProgID = s
'TPCC.OrderStatus.1'

          VersionIndependentProgID = s
'TPCC.OrderStatus'
                              InprocServer32 = s
'%MODULE%'
                              {
                                        val
ThreadingModel = s 'Both'
                              }
                    }
          }
}
```

tpcc_com_pay.rgs

```
HKCR
{
          TPCC.Payment.1 = s 'Payment Class'
          {
                    CLSID = s '{CD02F7EF-A4FA-11D2-
BA4E-00C04FBFE08B}'
          }
          TPCC.Payment = s 'Payment Class'
          {
                    CurVer = s 'TPCC.Payment.1'
          }
          NoRemove CLSID
          {
                    ForceRemove {CD02F7EF-A4FA-11D2-
BA4E-00C04FBFE08B} = s 'Payment Class'
                    {
                              ProgID = s
'TPCC.Payment.1'

          VersionIndependentProgID = s 'TPCC.Payment'
                              InprocServer32 = s
'%MODULE%'
                              {
                                        val
ThreadingModel = s 'Both'
                              }
                    }
          }
}
```

tpcc_com_ps.def

```
LIBRARY      "tpcc_com_ps"

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 Tue Nov 10 10:51:13 2009
 */
/* 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;

#ifndef __ITPCC_INTERFACE_DEFINED__
#define __ITPCC_INTERFACE_DEFINED__

/* interface ITPCC */
/* [unique][helpstring][uuid][oleautomation][object]
*/


EXTERN_C const IID IID_ITPCC;

#if defined(__cplusplus) && !defined(CINTERFACE)

    MIDL_INTERFACE("FEEE6AA2-84B1-11d2-BA47-
00C04FBFE08B")
    ITPCC : public IUnknown
    {
    public:
        virtual HRESULT __stdcall NewOrder(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT *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 ( __stdcall *NewOrder )(
            ITPCC * This,
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT *txn_out);

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

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

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

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

        HRESULT ( __stdcall *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 */


#endif    /* 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);
```

```
#endif    /* __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 "oaidl.idl";
import "ocidl.idl";

          [
                    object,
                    oleautomation,
                    uuid(FEEE6AA2-84B1-11d2-BA47-
00C04FBFE08B),
                    helpstring("ITPCC Interface"),
                    pointer_default(unique)
          ]
          interface ITPCC : IUnknown
      {

    HRESULT _stdcall NewOrder

      (

      [in] VARIANT  txn_in,

      [out] VARIANT *txn_out

      );

    HRESULT _stdcall Payment

      (

      [in] VARIANT txn_in,

      [out] VARIANT *txn_out

      );

    HRESULT _stdcall Delivery

      (

      [in] VARIANT txn_in,

      [out] VARIANT *txn_out

      );

    HRESULT _stdcall StockLevel

      (

      [in] VARIANT txn_in,

      [out] VARIANT *txn_out

      );

    HRESULT _stdcall OrderStatus

      (

      [in] VARIANT txn_in,

      [out] VARIANT *txn_out

      );

    HRESULT _stdcall CallSetComplete

      (

      );

};    // interface ITPCC
```

tpcc_com_ps_i.c

```
/* 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 Tue Nov 10 10:51:13 2009
 */
/* 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_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

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

#endif // __IID_DEFINED__

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

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

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
IID_ITPCC,0xFEEE6AA2,0x84B1,0x11d2,0xBA,0x47,0x00,0xC
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 Tue Nov 10 10:51:13 2009
 */
/* 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_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

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

#endif // __IID_DEFINED__

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

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

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
IID_ITPCC,0xFEEE6AA2,0x84B1,0x11d2,0xBA,0x47,0x00,0xC
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 Tue Nov 10 10:51:13 2009
 */
/* 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 */
#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   -Oif or -Oicf, [wire_marshal] or
[user_marshal] attribute.
#error However, your C/C++ compilation flags indicate
you intend to run this app on earlier systems.
#error This app will die there with the
RPC_X_WRONG_STUB_VERSION error.
#endif
```

```

static const MIDL_PROC_FORMAT_STRING
__MIDL_ProcFormatString =
    {
        0,
        {

          /* Procedure NewOrder */

                              0x33,               /*
FC_AUTO_HANDLE */
                              0x6c,               /*
Old Flags:  object, Oi2 */
/*  2 */  NdrFcLong( 0x0 ),   /* 0 */
/*  6 */  NdrFcShort( 0x3 ),  /* 3 */
/*  8 */  NdrFcShort( 0x1c ), /* x86 Stack
size/offset = 28 */
/* 10 */  NdrFcShort( 0x0 ),  /* 0 */
/* 12 */  NdrFcShort( 0x8 ),  /* 8 */
/* 14 */  0x7,                /* Oi2 Flags:  srv must
size, clt must size, has return, */
                              0x3,                /*
3 */

          /* Parameter txn_in */

/* 16 */  NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 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, Oi2 */
/* 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,                /* Oi2 Flags:  srv must
size, clt must size, has return, */
                              0x3,                /*
3 */

          /* Parameter txn_in */

/* 50 */  NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 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, Oi2 */
/* 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,                /* Oi2 Flags:  srv must
size, clt must size, has return, */
                              0x3,                /*
3 */

          /* Parameter txn_in */

/* 84 */  NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 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, Oi2 */
/* 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,                /* Oi2 Flags:  srv must
size, clt must size, has return, */
                              0x3,                /*
3 */

          /* Parameter txn_in */

/* 118 */ NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 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, Oi2 */
/* 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,                /* Oi2 Flags:  srv must
size, clt must size, has return, */
                              0x3,                /*
3 */

          /* Parameter txn_in */

/* 152 */ NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 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, Oi2 */
/* 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,                /* Oi2 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 */


                              0x0
        }
    };

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( 0xfff8 ),         /* -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( 0xfffc ),         /* -4 */
/* 320 */ 0x6,                /* FC_SHORT */
                              0x5b,               /*
FC_END */
/* 322 */
                              0x17,               /*
FC_CSTRUCT */
                              0x3,                /*
3 */
/* 324 */ NdrFcShort( 0x8 ),  /* 8 */
/* 326 */ NdrFcShort( 0xfff2 ),         /* Offset= -
14 (312) */
/* 328 */ 0x8,                /* FC_LONG */
                              0x8,                /*
FC_LONG */
/* 330 */ 0x5c,               /* FC_PAD */
                              0x5b,               /*
FC_END */
/* 332 */
                              0x2f,               /*
FC_IP */
                              0x5a,               /*
FC_CONSTANT_IID */
/* 334 */ NdrFcLong( 0x0 ),   /* 0 */
/* 338 */ NdrFcShort( 0x0 ),  /* 0 */
/* 340 */ NdrFcShort( 0x0 ),  /* 0 */
/* 342 */ 0xc0,               /* 192 */
                              0x0,                /*
0 */
/* 344 */ 0x0,                /* 0 */
                              0x0,                /*
0 */
/* 346 */ 0x0,                /* 0 */
                              0x0,                /*
0 */
/* 348 */ 0x0,                /* 0 */
                              0x46,               /*
70 */
/* 350 */
                              0x2f,               /*
FC_IP */
                              0x5a,               /*
FC_CONSTANT_IID */
/* 352 */ NdrFcLong( 0x20400 ),         /* 132096 */
/* 356 */ NdrFcShort( 0x0 ),  /* 0 */
/* 358 */ NdrFcShort( 0x0 ),  /* 0 */
/* 360 */ 0xc0,               /* 192 */
                              0x0,                /*
0 */
/* 362 */ 0x0,                /* 0 */
                              0x0,                /*
0 */
/* 364 */ 0x0,                /* 0 */
```

```
                              0x0,                /*
0 */
/* 366 */ 0x0,                /* 0 */
                              0x46,               /*
70 */
/* 368 */
                              0x12, 0x10,         /*
FC_UP [pointer_deref] */
/* 370 */ NdrFcShort( 0x2 ),  /* Offset= 2 (372) */
/* 372 */
                              0x12, 0x0,          /*
FC_UP */
/* 374 */ NdrFcShort( 0x1fc ),          /* Offset=
508 (882) */
/* 376 */
                              0x2a,               /*
FC_ENCAPSULATED_UNION */
                              0x49,               /*
73 */
/* 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( 0xffff ),         /* Offset= -1
(441) */
/* 444 */
                              0x1b,               /*
FC_CARRAY */
                              0x3,                /*
3 */
/* 446 */ NdrFcShort( 0x4 ),  /* 4 */
/* 448 */ 0x19,               /* Corr desc:  field
pointer, FC_ULONG */
                              0x0,                /*
*/
/* 450 */ NdrFcShort( 0x0 ),  /* 0 */
/* 452 */
                              0x4b,               /*
FC_PP */
```

```
                              0x5c,               /*
FC_PAD */
/* 454 */
                              0x48,               /*
FC_VARIABLE_REPEAT */
                              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 */


                              0x8,                /*
FC_LONG */
/* 472 */ 0x5c,               /* FC_PAD */
                              0x5b,               /*
FC_END */
/* 474 */
                              0x16,               /*
FC_PSTRUCT */
                              0x3,                /*
3 */
/* 476 */ NdrFcShort( 0x8 ),  /* 8 */
/* 478 */
                              0x4b,               /*
FC_PP */
                              0x5c,               /*
FC_PAD */
/* 480 */
                              0x46,               /*
FC_NO_REPEAT */
                              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 */


                              0x8,                /*
FC_LONG */
/* 492 */ 0x8,                /* FC_LONG */
                              0x5b,               /*
FC_END */
/* 494 */
                              0x21,               /*
FC_BOGUS_ARRAY */
                              0x3,                /*
3 */
/* 496 */ NdrFcShort( 0x0 ),  /* 0 */
/* 498 */ 0x19,               /* Corr desc:  field
pointer, FC_ULONG */
```

```
                              0x0,                /*
*/
/* 500 */ NdrFcShort( 0x0 ),  /* 0 */
/* 502 */ NdrFcLong( 0xffffffff ),      /* -1 */
/* 506 */ 0x4c,               /* FC_EMBEDDED_COMPLEX
*/
                              0x0,                /*
0 */
/* 508 */ NdrFcShort( 0xff50 ),         /* Offset= -
176 (332) */
/* 510 */ 0x5c,               /* FC_PAD */
                              0x5b,               /*
FC_END */
/* 512 */
                              0x1a,               /*
FC_BOGUS_STRUCT */
                              0x3,                /*
3 */
/* 514 */ NdrFcShort( 0x8 ),  /* 8 */
/* 516 */ NdrFcShort( 0x0 ),  /* 0 */
/* 518 */ NdrFcShort( 0x6 ),  /* Offset= 6 (524) */
/* 520 */ 0x8,                /* FC_LONG */
                              0x36,               /*
FC_POINTER */
/* 522 */ 0x5c,               /* FC_PAD */
                              0x5b,               /*
FC_END */
/* 524 */
                              0x11, 0x0,          /*
FC_RP */
/* 526 */ NdrFcShort( 0xffe0 ),         /* Offset= -
32 (494) */
/* 528 */
                              0x21,               /*
FC_BOGUS_ARRAY */
                              0x3,                /*
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 */
                              0x5b,               /*
FC_END */
/* 546 */
                              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 */
                              0x5b,               /*
FC_END */
/* 558 */
                              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 */
                              0x4b,               /*
FC_PP */
                              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 */
                              0x5b,               /*
FC_END */

                              0x8,                /*
FC_LONG */
/* 684 */ 0x5c,               /* FC_PAD */
                              0x5b,               /*
FC_END */
/* 686 */
                              0x1a,               /*
FC_BOGUS_STRUCT */
                              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( 0xfff1 ),
          /* Offset= -15 (702) */
                              0x5b,               /*
FC_END */
/* 720 */
                              0x1a,               /*
FC_BOGUS_STRUCT */
                              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 */
                              0x1b,               /*
FC_CARRAY */
                              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 */
                              0x16,               /*
FC_PSTRUCT */
                              0x3,                /*
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( 0xfdf8 ),         /* 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( 0xfdbe ),         /* 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( 0xfff4 ),         /* 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 [alloced_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( 0xfff4 ),         /*
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,{0x00,0x00,0x00,0x00,0
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,
    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,
    &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 */
    0x20000, /* 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 */
};
#if _MSC_VER >= 1200
#pragma warning(pop)
#endif


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



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


 /* File created by MIDL compiler version 6.00.0361
*/
/* at Tue Nov 10 10:51:13 2009
 */
/* 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 */
#if _MSC_VER >= 1200
#pragma warning(push)
#endif

#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__ 475
#endif


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


#include "tpcc_com_ps.h"

#define TYPE_FORMAT_STRING_SIZE   1003
#define PROC_FORMAT_STRING_SIZE   253
#define TRANSMIT_AS_TABLE_SIZE    0
#define WIRE_MARSHAL_TABLE_SIZE   1

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

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


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_WIN64__)
#error  Invalid build platform for this stub.
#endif

static const MIDL_PROC_FORMAT_STRING
__MIDL_ProcFormatString =
    {
        0,
        {

          /* Procedure NewOrder */

                                  0x33,               /*
FC_AUTO_HANDLE */
                                  0x6c,               /*
Old Flags:  object, Oi2 */
/*  2 */  NdrFcLong( 0x0 ),   /* 0 */
/*  6 */  NdrFcShort( 0x3 ),  /* 3 */
/*  8 */  NdrFcShort( 0x30 ), /* ia64 Stack
size/offset = 48 */
/* 10 */  NdrFcShort( 0x0 ),  /* 0 */
/* 12 */  NdrFcShort( 0x8 ),  /* 8 */
/* 14 */  0x47,               /* Oi2 Flags:  srv must
size, clt must size, has return, has ext, */
                                  0x3,                /*
3 */
/* 16 */  0xa,                /* 10 */
                                  0x7,                /*
Ext Flags:  new corr desc, clt corr check, srv corr
check, */
/* 18 */  NdrFcShort( 0x20 ), /* 32 */
/* 20 */  NdrFcShort( 0x20 ), /* 32 */
/* 22 */  NdrFcShort( 0x0 ),  /* 0 */
/* 24 */  NdrFcShort( 0x0 ),  /* 0 */

          /* Parameter txn_in */

/* 26 */  NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 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, Oi2 */
/* 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,               /* Oi2 Flags:  srv must
size, clt must size, has return, has ext, */
                              0x3,                /*
3 */
/* 60 */  0xa,                /* 10 */
                              0x7,                /*
Ext Flags:  new corr desc, clt corr check, srv corr
check, */
/* 62 */  NdrFcShort( 0x20 ), /* 32 */
/* 64 */  NdrFcShort( 0x20 ), /* 32 */
/* 66 */  NdrFcShort( 0x0 ),  /* 0 */
/* 68 */  NdrFcShort( 0x0 ),  /* 0 */

          /* Parameter txn_in */

/* 70 */  NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 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, Oi2 */
/* 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,               /* Oi2 Flags:  srv must
size, clt must size, has return, has ext, */
                              0x3,                /*
3 */
/* 104 */ 0xa,                /* 10 */
                              0x7,                /*
Ext Flags:  new corr desc, clt corr check, srv corr
check, */
/* 106 */ NdrFcShort( 0x20 ), /* 32 */
/* 108 */ NdrFcShort( 0x20 ), /* 32 */
/* 110 */ NdrFcShort( 0x0 ),  /* 0 */
/* 112 */ NdrFcShort( 0x0 ),  /* 0 */

          /* Parameter txn_in */

/* 114 */ NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 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, Oi2 */
/* 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,               /* Oi2 Flags:  srv must
size, clt must size, has return, has ext, */
                              0x3,                /*
3 */
/* 148 */ 0xa,                /* 10 */
                              0x7,                /*
Ext Flags:  new corr desc, clt corr check, srv corr
check, */
/* 150 */ NdrFcShort( 0x20 ), /* 32 */
/* 152 */ NdrFcShort( 0x20 ), /* 32 */
/* 154 */ NdrFcShort( 0x0 ),  /* 0 */
/* 156 */ NdrFcShort( 0x0 ),  /* 0 */

          /* Parameter txn_in */

/* 158 */ NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 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, Oi2 */
/* 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,               /* Oi2 Flags:  srv must
size, clt must size, has return, has ext, */
                              0x3,                /*
3 */
/* 192 */ 0xa,                /* 10 */
                              0x7,                /*
Ext Flags:  new corr desc, clt corr check, srv corr
check, */
/* 194 */ NdrFcShort( 0x20 ), /* 32 */
/* 196 */ NdrFcShort( 0x20 ), /* 32 */
/* 198 */ NdrFcShort( 0x0 ),  /* 0 */
/* 200 */ NdrFcShort( 0x0 ),  /* 0 */

          /* Parameter txn_in */

/* 202 */ NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 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, Oi2 */
/* 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,               /* Oi2 Flags:  has
return, has ext, */
                              0x1,                /*
1 */
/* 236 */ 0xa,                /* 10 */
                              0x1,                /*
Ext Flags:  new corr desc, */
/* 238 */ NdrFcShort( 0x0 ),  /* 0 */
/* 240 */ NdrFcShort( 0x0 ),  /* 0 */
```

```
/* 242 */ NdrFcShort( 0x0 ),  /* 0 */
/* 244 */ NdrFcShort( 0x0 ),  /* 0 */

          /* Return value */

/* 246 */ NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 248 */ NdrFcShort( 0x8 ),  /* ia64 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( 0xfff8 ),         /* -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 */
                              0x15,              /*
FC_STRUCT */
                              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 */
                              0x17,              /*
FC_CSTRUCT */
                              0x3,               /*
3 */
/* 328 */ NdrFcShort( 0x8 ),  /* 8 */
/* 330 */ NdrFcShort( 0xfff0 ),         /* 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 */
                              0x12, 0x0,         /*
FC_UP */
/* 378 */ NdrFcShort( 0x1e4 ),          /* Offset=
484 (862) */
/* 380 */
                              0x2a,              /*
FC_ENCAPSULATED_UNION */
                              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 */
                              0x21,              /*
FC_BOGUS_ARRAY */
                              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 */
                              0x1a,               /*
FC_BOGUS_STRUCT */
                              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,               /*
FC_BOGUS_ARRAY */
                              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,               /*
FC_BOGUS_STRUCT */
```

```
                              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 */
                              0x21,               /*
FC_BOGUS_ARRAY */
                              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 */
                              0x1a,               /*
FC_BOGUS_STRUCT */
                              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,               /*
FC_BOGUS_ARRAY */
```

```
                              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( 0xfff1 ),
          /* 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 */
                              0x1a,               /*
FC_BOGUS_STRUCT */
                              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 */
                              0x12, 0x8,          /*
FC_UP [simple_pointer] */
/* 886 */ 0x1,                /* FC_BYTE */
                              0x5c,               /*
FC_PAD */
/* 888 */
                              0x12, 0x8,          /*
FC_UP [simple_pointer] */
/* 890 */ 0x6,                /* FC_SHORT */
                              0x5c,               /*
FC_PAD */
/* 892 */
                              0x12, 0x8,          /*
FC_UP [simple_pointer] */
/* 894 */ 0x8,                /* FC_LONG */
                              0x5c,               /*
FC_PAD */
/* 896 */
                              0x12, 0x8,          /*
FC_UP [simple_pointer] */
/* 898 */ 0xb,                /* FC_HYPER */
                              0x5c,               /*
FC_PAD */
/* 900 */
                              0x12, 0x8,          /*
FC_UP [simple_pointer] */
/* 902 */ 0xa,                /* FC_FLOAT */
                              0x5c,               /*
FC_PAD */
/* 904 */
                              0x12, 0x8,          /*
FC_UP [simple_pointer] */
/* 906 */ 0xc,                /* FC_DOUBLE */
                              0x5c,               /*
FC_PAD */
/* 908 */
                              0x12, 0x0,          /*
FC_UP */
/* 910 */ NdrFcShort( 0xfda2 ),         /* Offset= -
606 (304) */
/* 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 */
                              0x12, 0x10,         /*
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 */
                              0x7,                /*
7 */
/* 938 */ NdrFcShort( 0x10 ), /* 16 */
/* 940 */ 0x6,                /* FC_SHORT */
                              0x1,                /*
FC_BYTE */
/* 942 */ 0x1,                /* FC_BYTE */
                              0x8,                /*
FC_LONG */
/* 944 */ 0xb,                /* FC_HYPER */
                              0x5b,               /*
FC_END */
/* 946 */
                              0x12, 0x0,          /*
FC_UP */
/* 948 */ NdrFcShort( 0xfff4 ),         /* Offset= -
12 (936) */
/* 950 */
                              0x12, 0x8,          /*
FC_UP [simple_pointer] */
/* 952 */ 0x2,                /* FC_CHAR */
                              0x5c,               /*
FC_PAD */
/* 954 */
                              0x1a,               /*
FC_BOGUS_STRUCT */
                              0x7,                /*
7 */
/* 956 */ NdrFcShort( 0x20 ), /* 32 */
/* 958 */ NdrFcShort( 0x0 ),  /* 0 */
/* 960 */ NdrFcShort( 0x0 ),  /* Offset= 0 (960) */
/* 962 */ 0x8,                /* FC_LONG */
                              0x8,                /*
FC_LONG */
/* 964 */ 0x6,                /* FC_SHORT */
                              0x6,                /*
FC_SHORT */
/* 966 */ 0x6,                /* FC_SHORT */
                              0x6,                /*
FC_SHORT */
/* 968 */ 0x4c,               /* FC_EMBEDDED_COMPLEX
*/
                              0x0,                /*
0 */
/* 970 */ NdrFcShort( 0xfc3c ),         /* Offset= -
964 (6) */
/* 972 */ 0x5c,               /* FC_PAD */
                              0x5b,               /*
FC_END */
/* 974 */ 0xb4,               /* FC_USER_MARSHAL */
                              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 [alloced_on_stack] */
/* 986 */ NdrFcShort( 0x6 ),  /* Offset= 6 (992) */
/* 988 */
                              0x13, 0x0,          /*
FC_OP */
/* 990 */ NdrFcShort( 0xffdc ),         /* Offset= -
36 (954) */
/* 992 */ 0xb4,               /* FC_USER_MARSHAL */
                              0x83,               /*
131 */
/* 994 */ NdrFcShort( 0x0 ),  /* 0 */
/* 996 */ NdrFcShort( 0x18 ), /* 24 */
/* 998 */ NdrFcShort( 0x0 ),  /* 0 */
/* 1000 */          NdrFcShort( 0xfff4 ),         /*
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_tpcc_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 */
};
#if _MSC_VER >= 1200
#pragma warning(pop)
#endif


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

tpcc_com_sl.rgs

```
HKCR
{
          TPCC.StockLevel.1 = s 'StockLevel Class'
          {
                    CLSID = s '{2668369E-A50D-11D2-
BA4E-00C04FBFE08B}'
          }
          TPCC.StockLevel = s 'StockLevel Class'
          {
                    CurVer = s 'TPCC.StockLevel.1'
          }
          NoRemove CLSID
          {
                    ForceRemove {2668369E-A50D-11D2-
BA4E-00C04FBFE08B} = s 'StockLevel Class'
                    {
                              ProgID = s
'TPCC.StockLevel.1'

          VersionIndependentProgID = s
'TPCC.StockLevel'
                              InprocServer32 = s
'%MODULE%'
                              {
                                        val
ThreadingModel = s 'Both'
                              }
                    }
          }
}
```

tpcc_odbc.cpp

```
/*        FILE:               TPCC_ODBC.CPP
 *                                      Microsoft
TPC-C Kit Ver. 4.69.000
 *                                      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
 *                  4.69.000 - updated rev number to
match kit
 */

#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

#ifndef 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;
#ifndef COMPILE_FOR_SNAC
                    sprintf( szConnectStr,
"DRIVER=SQL
Server;SERVER=%s;UID=%s;PWD=%s;DATABASE=%s",
                              szServer, szUser,
szPassword, szDatabase );
#else
                    // Compile for SNAC
                    sprintf( szConnectStr,
"DRIVER=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              lNativeError;
          char                szState[6];
          char
          szMsg[SQL_MAX_MESSAGE_LENGTH];
          char
          szTmp[6*SQL_MAX_MESSAGE_LENGTH];
          CODBCERR   *pODBCErr;
          // not allocated until needed (maybe never)

          pODBCErr = new CODBCERR();

          pODBCErr->m_NativeError = 0;
          //pODBCErr->m_eAction = eAction;
          pODBCErr->m_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 == iErrOleDbProvider &&
                              strstr(szMsg,
sErrTimeoutExpired) != NULL))
                              pODBCErr->m_bDeadLock =
TRUE;

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

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

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

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

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

          SQLFreeStmt(m_hstmt, SQL_CLOSE);
          throw pODBCErr;
}
```

```
void CTPCC_ODBC::InitStockLevelParams()
{
          if (   SQLAllocHandle(SQL_HANDLE_STMT,
m_hdbc, &m_hstmtStockLevel) != SQL_SUCCESS )

          ThrowError(CODBCERR::eAllocHandle);

          m_hstmt = m_hstmtStockLevel;

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

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

          //Compose Stock Level statement
          _snwprintf(m_szStockLevelCommand,
sizeof(m_szStockLevelCommand)/sizeof(m_szStockLevelCo
mmand[0]),
                    L"{call %stpcc_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)
|| (++iTryCount > iMaxRetries))
                                        throw;

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

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

void CTPCC_ODBC::InitNewOrderParams()
{
          if (   SQLAllocHandle(SQL_HANDLE_STMT,
m_hdbc, &m_hstmtNewOrder) != SQL_SUCCESS
                    ||
SQLAllocHandle(SQL_HANDLE_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
          _snwprintf(m_szNewOrderCommand,
sizeof(m_szNewOrderCommand)/sizeof(m_szNewOrderComman
d[0]),
                       // 0         1         2
                       //
012345678901234567890123456789
                              L"{call
%stpcc_neworder(?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?
,?,?,?,?,?,?,?,"

          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);
          }

          // set row-wise binding
          if (   SQLSetStmtAttrW(m_hstmt,
SQL_ATTR_ROW_BIND_TYPE,
(SQLPOINTER)sizeof(m_txn.NewOrder.OL[0]),
SQL_IS_UINTEGER) != 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_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_descNewOrderNoDuplicatesCols2, 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
          _snwprintf(m_szNewOrderNoDuplicatesCommand,
sizeof(m_szNewOrderNoDuplicatesCommand)/sizeof(m_szNe
wOrderNoDuplicatesCommand[0]),
                              L"{call
%stpcc_neworder_new(?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?
,?,?,?,?,?,?,?,?,"

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

          m_iBeginNewOrderNoDuplicatesVariablePart =
33 + wcslen(m_szSPPrefix);    // fixed part + prefix
part
}

//
//        Returns true if there are duplicate
(warehouse_id, item_id)
//        lineitem pairs in New Order input
parameters.
//
bool CTPCC_ODBC::DuplicatesInNewOrder()
{
          int i, j;

          for (i = 0; i < m_txn.NewOrder.o_ol_cnt;
++i)
          {
                    for (j = i+1; j<
m_txn.NewOrder.o_ol_cnt; ++j)
                    {
                              if
(m_txn.NewOrder.OL[i].ol_i_id ==
m_txn.NewOrder.OL[j].ol_i_id)
                              {
                                        return true;
                              }
                    }
          }

          return false;
}

void CTPCC_ODBC::NewOrder()
{
          if (m_bCallNoDuplicatesNewOrder)
          {
                    if (DuplicatesInNewOrder())
                    {
                              NewOrderDuplicates();
                    }
                    else
                    {
                              NewOrderNoDuplicates();
                    }
          }
          else
          {
                    NewOrderDuplicates();
          }
}

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


                                                   //
0         1         2

                                                   //
012345678901234567890123456789
          wchar_t
          szSqlTemplate[iMAX_SP_NAME_LEN];


                                          //= L"{call
tpcc_neworder(?,?,?,?,?,"

                                          //
L"?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,"

                                          //
L"?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,"

                                          //
L"?,?,?,?,?,?,?,?,?,?,?,?,?,?,?)}";

          m_hstmt = m_hstmtNewOrder;

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

          ThrowError(CODBCERR::eSetStmtAttr);

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

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

          m_txn.NewOrder.o_all_local = 0;  // at
least one remote warehouse
                              break;
                    }
          }

          while (TRUE)
          {
                    try
                    {
                              m_BindOffset = 0;
                              rc =
SQLExecDirectW(m_hstmt, szSqlTemplate, SQL_NTS);
                              if (rc != SQL_SUCCESS
&& rc != SQL_SUCCESS_WITH_INFO)

          ThrowError(CODBCERR::eExecDirect);

                              // Get order line
results

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

                                        if (
SQLFetch(m_hstmt) == SQL_ERROR)

          ThrowError(CODBCERR::eFetch);

                                        // move to
the next resultset
                                        if (
SQLMoreResults(m_hstmt) == SQL_ERROR )

          ThrowError(CODBCERR::eMoreResults);


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

                              // associate the column
bindings for the second result set
                              if ( SQLSetStmtAttrW(
m_hstmt, SQL_ATTR_APP_ROW_DESC, m_descNewOrderCols2,
SQL_IS_POINTER ) != SQL_SUCCESS )

          ThrowError(CODBCERR::eSetStmtAttr);

                              if ( SQLFetch(m_hstmt)
== SQL_ERROR)

          ThrowError(CODBCERR::eFetch);

                              SQLFreeStmt(m_hstmt,
SQL_CLOSE);

                              if (m_no_commit_flag ==
1)
                              {

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

          m_txn.NewOrder.exec_status_code = eOK;
```

```
                              }
                              else

          m_txn.NewOrder.exec_status_code =
eInvalidItem;

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

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

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

//
//        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];

                                          //= L"{call
tpcc_neworder_new(?,?,?,?,?,"

                                          //
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
          wcscpy(szSqlTemplate,
m_szNewOrderNoDuplicatesCommand);
          i =
m_iBeginNewOrderNoDuplicatesVariablePart +
m_txn.NewOrder.o_ol_cnt*6;
          wcscpy( &szSqlTemplate[i], L")}" );

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

          m_txn.NewOrder.o_all_local = 0;  // at
least one remote warehouse
                              break;
                    }
          }

          while (TRUE)
          {
                    try
                    {
                              // 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_OL_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_ol_cnt; i++)
                              {


          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_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 %stpcc_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;
backoff for increasingly longer period
                              delete e;
                              Sleep(10 * iTryCount);
                    }
          }

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

void CTPCC_ODBC::InitOrderStatusParams()
{
          if (   SQLAllocHandle(SQL_HANDLE_STMT,
m_hdbc, &m_hstmtOrderStatus) != SQL_SUCCESS
                    ||
SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descOrderStatusCols1) != SQL_SUCCESS
                    ||
SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descOrderStatusCols2) != SQL_SUCCESS
                    )

          ThrowError(CODBCERR::eAllocHandle);

          m_hstmt = m_hstmtOrderStatus;
```

```
          if (   SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_APP_ROW_DESC, m_descOrderStatusCols1,
SQL_IS_POINTER ) != SQL_SUCCESS )

          ThrowError(CODBCERR::eSetStmtAttr);

          int i = 0;
          if (   SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_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
          _snwprintf(m_szOrderStatusCommand,
sizeof(m_szOrderStatusCommand)/sizeof(m_szOrderStatus
Command[0]),
                    L"{call %stpcc_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
          _snwprintf(m_szDeliveryCommand,
sizeof(m_szDeliveryCommand)/sizeof(m_szDeliveryComman
d[0]),
                    L"{call %stpcc_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
 *                                        Microsoft
TPC-C Kit Ver. 4.69.000
 *                                        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
 *                  4.69.000 - updated rev number to
match kit
 */
#pragma once

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

#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_NAM
E_LEN];
                    int
          m_iBeginNewOrderVariablePart; // begining
of the variable part in NewOrder statement
                    int
          m_iBeginNewOrderNoDuplicatesVariablePart;
          // begining 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
                    SQLUINTEGER         m_BindOffset;
                    SQLUINTEGER
          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. 4.69.000
 *                                      Copyright
Microsoft, 2004
 *                                      Written by
Sergey Vasilevskiy
 *              All Rights Reserved
 *
 *
 *
 *        PURPOSE:  Implements OLEDB calls for TPC-C
txns.
 *        Contact:  Charles Levine
(clevine@microsoft.com)
 *
 *
 *                  4.69.000 - updated rev number to
match kit
 */

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

#define DBINITCONSTANTS
#include <oledb.h>
//#include <sqloledb.h> // Use MDAC
#include <C:\\Program Files\\Microsoft SQL
Server\\100\\SDK\\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"

#ifndef 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_szSPPrefix, szSPPrefix,
sizeof(m_szSPPrefix)/sizeof(m_szSPPrefix[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     =
DBPROPOPTIONS_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     =
DBPROPOPTIONS_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     =
DBPROPOPTIONS_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     =
DBPROPOPTIONS_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, (LPMALLOC
*)&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 = pCommandText-
>SetCommandText(DBGUID_SQL, L"{call tpcc_version}");
          if (FAILED(hr))
          {
                    ThrowError(pCommandText,
COLEDBERR::eSetCommandText, "CheckSPVersion()");
          }

          hr = pCommandText-
>QueryInterface(IID_IAccessor, (void **)&pIAccessor);
          if (FAILED(hr))
          {
                    ThrowError(pCommandText,
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 = pCommandText->Execute(NULL,
IID_IRowset, NULL, NULL, (IUnknown **)&pRowset);
          if (FAILED(hr))
          {
                    ThrowError(pCommandText,
COLEDBERR::eExecute, "CheckSPVersion()");
          }

          // Fetch the result row handle(s)
          hr = pRowset->GetNextRows(DB_NULL_HCHAPTER,
0, cRows, &cRowsObtained, &prghRow);
          if (FAILED(hr))
          {
                    ThrowError(pCommandText,
COLEDBERR::eGetNextRows, "CheckSPVersion()");
          }

          // Fetch the actual row data by handle
          hr = pRowset->GetData(rghRow,
hTpccVersionOutputAccessor, &db_sp_version);
          if (FAILED(hr))
          {
                    ThrowError(pCommandText,
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 pIErrorInfoAll. Simply
test the pointer.
          GetErrorInfo(0, &pIErrorInfoAll);

          if (pIErrorInfoAll != NULL)
          {
                    // Test to see if it's a valid
OLE DB IErrorInfo interface
                    // exposing a list of records.
                    if (SUCCEEDED(pIErrorInfoAll-
>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);


                                                  }
                                        }
                              }         // for()
                    }         // if
(SUCCEEDED(pIErrorInfoAll-
>QueryInterface(IID_IErrorRecords, (void**)
&pIErrorRecords)))
                    else
                    {         // 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 immediatelly.
*/
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
          const ULONG
          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 %stpcc_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,

                                                  5 +
3 * (j + 1),


          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

          /////////////////////////

          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)
|| (++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::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
%stpcc_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 );
                              else
```

```

          m_txn.Payment.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::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_ROWDATA |
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

          /////////////////////////////////
                              if
(m_txn.OrderStatus.o_ol_cnt > 0)
                              {
                                        hr =
pMultipleResults->GetResult(NULL, 0, IID_IRowset,
&lRowsAffected, (IUnknown **)&pRowset2);
                                        if
(FAILED(hr))
                                        {

          ThrowError(m_pIOrderStatusCommand,
COLEDBERR::eGetResult, "OrderStatus()");
                                        }

                                        // Fetch the
result row handle(s)
                                        hr =
pRowset2->GetNextRows(DB_NULL_HCHAPTER, 0, cRows2,
&cRowsObtained2, &prghRows2);
                                        if
(FAILED(hr))
                                        {

          ThrowError(m_pIOrderStatusCommand,
COLEDBERR::eGetNextRows, "OrderStatus()");
                                        }

                                        // Fetch the
actual row data by handle
                                        hr =
pRowset2->GetData(rghRows2,
m_hOrderStatusOutputAccessor2, &m_txn.OrderStatus);
                                        if
(FAILED(hr))
                                        {

          ThrowError(m_pIOrderStatusCommand,
COLEDBERR::eGetData, "OrderStatus()");
                                        }

                                        // Release
row(s)
                                        hr =
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)
|| (++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::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 %stpcc_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                          rghRow;
          //returned row handles
          HROW*                         prghRow =
&rghRow;

          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(rghRow, 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)
|| (++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);
}
```

tpcc_oledb.h

```
/*        FILE:               TPCC_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.
#ifndef 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 !=
NULL)
                                        delete []
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
                    // Used for both input parameter
and output column bindings
                    void SetBinding(DBBINDING*
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
 *                  4.69.000 - updated rev number to
match kit
 */
#pragma once

// String length constants
#define SERVER_NAME_LEN             20
#define DATABASE_NAME_LEN           20
#define USER_NAME_LEN               20
#define PASSWORD_LEN                20
#define TABLE_NAME_LEN              20
#define I_DATA_LEN                  50
#define I_NAME_LEN                  24
#define BRAND_LEN                    1
#define LAST_NAME_LEN               16
#define W_NAME_LEN                  10
#define ADDRESS_LEN                 20
#define STATE_LEN                    2
#define ZIP_LEN                      9
#define S_DIST_LEN                  24
#define S_DATA_LEN                  50
#define D_NAME_LEN                  10
#define FIRST_NAME_LEN              16
#define MIDDLE_NAME_LEN              2
#define PHONE_LEN                   16
#define DATETIME_LEN                30
#define CREDIT_LEN                   2
#define C_DATA_LEN                 250
#define H_DATA_LEN                  24
#define DIST_INFO_LEN               24
#define MAX_OL_NEW_ORDER_ITEMS      15
#define MAX_OL_ORDER_STATUS_ITEMS   15
#define STATUS_LEN                  25
#define OL_DIST_INFO_LEN                    24

// TIMESTAMP_STRUCT is provided by the ODBC header
file sqltypes.h, but is not available
// when compiling with dblib, so redefined here.
Note: we are using the symbol "__SQLTYPES"
// (declared in sqltypes.h) as a way to determine if
TIMESTAMP_STRUCT has been declared.
#ifndef __SQLTYPES
          typedef struct
          {
                              short
          /* SQLSMALLINT */   year;
                              unsigned short      /*
SQLUSMALLINT */     month;
                              unsigned short      /*
SQLUSMALLINT */     day;
                              unsigned short      /*
SQLUSMALLINT */     hour;
                              unsigned short      /*
SQLUSMALLINT */     minute;
                              unsigned short      /*
SQLUSMALLINT */     second;
                              unsigned long       /*
SQLUINTEGER */      fraction;
          } TIMESTAMP_STRUCT;
#endif

// possible values for exec_status_code after
transaction completes
enum EXEC_STATUS
{
          eOK,                          // 0
          "Transaction commited."
          eInvalidItem,       // 1      "Item number
is not valid."
          eDeliveryFailed     // 2      "Delivery
Post Failed."
};

// transaction structures
typedef struct
{
          // input params
          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. 4.69.000
 *                                        Copyright
Microsoft, 1999
 *              All Rights Reserved
 *
 *                                        Version
4.10.000 audited by Richard Gimarc, Performance
Metrics, 3/17/99
 *
 *        PURPOSE:  Header file for TPC-C txn class
implementation.
 *
 *  Change history:
 *                  4.20.000 - updated rev number to
match kit
 */

#pragma once

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

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

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

                    virtual void NewOrder
          () = 0;
```

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

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)
BACKUP DATABASE tpcc TO  tpccback1031681,
tpccback1031682, tpccback1031683, tpccback1031684,
tpccback1031685, tpccback1031686, tpccback1031687,
tpccback1031688, tpccback1031689, tpccback10316810,
tpccback10316811  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

```
USE master
GO
EXEC sp_addumpdevice
'disk','tpccback1031681','q:\tpccback1031681.dmp'
GO
EXEC sp_addumpdevice
'disk','tpccback1031682','r:\tpccback1031682.dmp'
GO
EXEC sp_addumpdevice
'disk','tpccback1031683','s:\tpccback1031683.dmp'
GO
EXEC sp_addumpdevice
'disk','tpccback1031684','t:\tpccback1031684.dmp'
GO
EXEC sp_addumpdevice
'disk','tpccback1031685','u:\tpccback1031685.dmp'
GO
EXEC sp_addumpdevice
'disk','tpccback1031686','v:\tpccback1031686.dmp'
GO
EXEC sp_addumpdevice
'disk','tpccback1031687','w:\tpccback1031687.dmp'
GO
EXEC sp_addumpdevice
'disk','tpccback1031688','x:\tpccback1031688.dmp'
GO
EXEC sp_addumpdevice
'disk','tpccback1031689','y:\tpccback1031689.dmp'
GO
EXEC sp_addumpdevice
'disk','tpccback10316810','z:\tpccback10316810.dmp'
GO
EXEC sp_addumpdevice
'disk','tpccback10316811','h:\tpccback10316811.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_fg
(         NAME                = MSSQL_1,
FILENAME  = 'c:\dev\tpcc_1\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_2,
FILENAME  = 'c:\dev\tpcc_2\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_3,
FILENAME  = 'c:\dev\tpcc_3\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_4,
FILENAME  = 'c:\dev\tpcc_4\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_5,
FILENAME  = 'c:\dev\tpcc_5\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_6,
FILENAME  = 'c:\dev\tpcc_6\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_7,
FILENAME  = 'c:\dev\tpcc_7\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_8,
FILENAME  = 'c:\dev\tpcc_8\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_9,
FILENAME  = 'c:\dev\tpcc_9\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_10,
FILENAME  = 'c:\dev\tpcc_10\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_11,
FILENAME  = 'c:\dev\tpcc_11\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_12,
FILENAME  = 'c:\dev\tpcc_12\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_13,
FILENAME  = 'c:\dev\tpcc_13\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_14,
FILENAME  = 'c:\dev\tpcc_14\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_15,
FILENAME  = 'c:\dev\tpcc_15\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_16,
FILENAME  = 'c:\dev\tpcc_16\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_17,
FILENAME  = 'c:\dev\tpcc_17\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_18,
FILENAME  = 'c:\dev\tpcc_18\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_19,
FILENAME  = 'c:\dev\tpcc_19\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0),
(         NAME                = MSSQL_20,
FILENAME  = 'c:\dev\tpcc_20\',
          SIZE                = 999999MB,
          FILEGROWTH          = 0)


LOG ON
(         NAME                = MSSQL_tpcc_log_1,
          FILENAME  = 'E:',
          SIZE                = 500000MB,
          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
updlock)
        WHERE   no_w_id = @w_id AND
                no_d_id = @d_id
        ORDER   BY no_o_id ASC

        IF (@@rowcount <> 0)
        BEGIN
            --  claim the order for this district
            DELETE  new_order
            WHERE   no_w_id = @w_id AND
                    no_d_id = @d_id AND
                    no_o_id = @o_id

            --  set carrier_id on this order (and get
customer id)
            UPDATE  orders
            SET     o_carrier_id    = @o_carrier_id,
                    @c_id           = o_c_id
            WHERE   o_w_id          = @w_id AND
                    o_d_id          = @d_id AND
                    o_id            = @o_id

            --  set date in all lineitems for this
order (and sum amounts)
            UPDATE  order_line
            SET     ol_delivery_d   = GETDATE(),
                    @total          = @total +
ol_amount
            WHERE   ol_w_id         = @w_id AND
                    ol_d_id         = @d_id AND
                    ol_o_id         = @o_id

            --  accummulate lineitem amounts for this
order into customer
            UPDATE  customer
            SET     c_balance       = c_balance +
@total,
                    c_delivery_cnt  = c_delivery_cnt
+ 1
            WHERE   c_w_id          = @w_id AND
                    c_d_id          = @d_id AND
                    c_id            = @c_id
        END

    SELECT  @oid1   = CASE @d_id WHEN   1   THEN
@o_id ELSE @oid1   END,
            @oid2   = CASE @d_id WHEN   2   THEN
@o_id ELSE @oid2   END,
            @oid3   = CASE @d_id WHEN   3   THEN
@o_id ELSE @oid3   END,
            @oid4   = CASE @d_id WHEN   4   THEN
@o_id ELSE @oid4   END,
            @oid5   = CASE @d_id WHEN   5   THEN
@o_id ELSE @oid5   END,
            @oid6   = CASE @d_id WHEN   6   THEN
@o_id ELSE @oid6   END,
            @oid7   = CASE @d_id WHEN   7   THEN
@o_id ELSE @oid7   END,
            @oid8   = CASE @d_id WHEN   8   THEN
@o_id ELSE @oid8   END,
            @oid9   = CASE @d_id WHEN   9   THEN
@o_id ELSE @oid9   END,
            @oid10  = CASE @d_id WHEN  10   THEN
@o_id ELSE @oid10  END
    END

COMMIT 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,
TPCCLDR_ARGS *pargs)
{
    int             i;
    char  *ptr;

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

    /* init args struct with some useful values */
    pargs->server                       =  SERVER;
    pargs->user                         =  USER;
    pargs->password                     =  PASSWORD;
    pargs->database                     =  DATABASE;
    pargs->batch                        =  BATCH;
    pargs->num_warehouses               =  UNDEF;
          pargs->tables_all                       =
TRUE;
          pargs->table_item                       =
FALSE;
          pargs->table_warehouse                  =
FALSE;
          pargs->table_customer                   =
FALSE;
          pargs->table_orders                     =
FALSE;
          pargs->loader_res_file                  =
LOADER_RES_FILE;
          pargs->log_path
          =  LOADER_LOG_PATH;
          pargs->pack_size                        =
DEFLDPACKSIZE;
          pargs->starting_warehouse     =
DEF_STARTING_WAREHOUSE;
          pargs->build_index                      =
BUILD_INDEX;
          pargs->index_order                      =
INDEX_ORDER;
          pargs->index_script_path      =
INDEX_SCRIPT_PATH;
          pargs->scale_down                       =
SCALE_DOWN;

    /* check for zero command line args */
    if ( argc == 1 )
                    GetArgsLoaderUsage();

    for (i = 1; i < argc; ++i)
    {
                    if (argv[i][0] != '-' &&
argv[i][0] != '/')
                    {
                    printf("\nUnrecognized command");
                    GetArgsLoaderUsage();
                    exit(1);
                    }

                    ptr = argv[i];

                    switch (ptr[1])
                    {
                    case '?':     /* Fall throught */

          GetArgsLoaderUsage();
                                        break;

                    case 'D':
                                        pargs-
>database = ptr+2;
                                        break;

                    case 'P':
                                        pargs-
>password = ptr+2;
                                        break;

                    case 'S':
                                        pargs->server
= ptr+2;
                                        break;

                    case 'U':
                                        pargs->user =
ptr+2;
                                        break;

                    case 'b':
                                        pargs->batch
= atol(ptr+2);
                                        break;

                    case 'W':
                                        pargs-
>num_warehouses = atol(ptr+2);
                                        break;

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

                    case 't':
                                        {

          pargs->tables_all = FALSE;
                                                  if
(strcmp(ptr+2,"item") == 0)

          pargs->table_item = TRUE;

          else if (strcmp(ptr+2,"warehouse") == 0)

          pargs->table_warehouse = TRUE;

          else if (strcmp(ptr+2,"customer") == 0)

          pargs->table_customer = TRUE;

          else if (strcmp(ptr+2,"orders") == 0)

          pargs->table_orders = TRUE;

          else
                                                  {

          printf("\nUnrecognized command");

          GetArgsLoaderUsage();

          exit(1);
                                                  }


          break;
                                        }
```

```
                              case 'f':
                                        pargs-
>loader_res_file = ptr+2;
                                        break;
                              case 'L':
                                        pargs-
>log_path = ptr+2;
                                        break;
                              case 'p':
                                        pargs-
>pack_size = atol(ptr+2);
                                        break;
                              case 'i':
                                        pargs-
>build_index = atol(ptr+2);
                                        break;
                              case 'o':
                                        pargs-
>index_order = atol(ptr+2);
                                        break;
                              case 'c':
                                        pargs-
>scale_down = atol(ptr+2);
                                        break;

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

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

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

    return;
}


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

```
void GetArgsLoaderUsage()
{

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


    printf("TPCCLDR:\n\n");
          printf("Parameter
Default\n");
          printf("-----------------------------------
--------------------------\n");
    printf("-W Number of Warehouses to Load
Required \n");
    printf("-S Server
%s\n", SERVER);
    printf("-U Username
%s\n", USER);
    printf("-P Password
%s\n", PASSWORD);
    printf("-D Database
%s\n", DATABASE);
          printf("-b Batch Size
%ld\n", (long) BATCH);
          printf("-p TDS packet size
%ld\n", (long) DEFLDPACKSIZE);
          printf("-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_fg

SELECT  @enddate = GETDATE()
SELECT  'End date:',
        CONVERT(VARCHAR(30),@enddate,21)
SELECT  'Elapsed time (in seconds): ',
        DATEDIFF(second, @startdate, @enddate)
GO
```

idxcusnc.sql

```
----------------------------------------------------
-------------
--
--
--  File:   IDXCUSNC.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          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_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_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_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_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_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_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_fg

SELECT  @enddate = GETDATE()
SELECT  'End date:',
        CONVERT(VARCHAR(30),@enddate,21)
SELECT  'Elapsed time (in seconds): ',
        DATEDIFF(second, @startdate, @enddate)
GO
```

idxordnc.sql

```
-----------------------------------------------------
-------------
--
--
--  File:   IDXORDNC.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--
--          Creates non-clustered index on orders
table          --
-----------------------------------------------------
-------------
USE tpcc
GO

DECLARE @startdate  DATETIME,
        @enddate    DATETIME

SELECT  @startdate = GETDATE()
SELECT  'Start date:',
        CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name =
'orders_nc1' )
    DROP INDEX orders.orders_nc1

CREATE INDEX orders_nc1 ON orders(o_w_id, o_d_id,
o_c_id, o_id)
    ON MSSQL_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_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_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 availible order id and
update
--  plus initialize local variables
-----------------------------------------------------
------
    UPDATE  district
    SET     @d_tax          = d_tax,
            @o_id           = d_next_o_id,
            d_next_o_id     = d_next_o_id + 1,
            @o_entry_d      = GETDATE(),
            @li_no          = 0,
            @commit_flag    = 1
    WHERE   d_w_id          = @w_id AND
            d_id            = @d_id

----------------------
--  process orderlines
----------------------
    WHILE (@li_no < @o_ol_cnt)
    BEGIN
        SELECT  @li_no  = @li_no + 1

-----------------------------------------------
--  set i_id, s_w_id, and qty for this lineitem
-----------------------------------------------
        SELECT  @li_id = CASE @li_no
                                WHEN 1 THEN @i_id1
                                WHEN 2 THEN @i_id2
                                WHEN 3 THEN @i_id3
                                WHEN 4 THEN @i_id4
                                WHEN 5 THEN @i_id5
                                WHEN 6 THEN @i_id6
                                WHEN 7 THEN @i_id7
                                WHEN 8 THEN @i_id8
                                WHEN 9 THEN @i_id9
                                WHEN 10 THEN @i_id10
                                WHEN 11 THEN @i_id11
                                WHEN 12 THEN @i_id12
                                WHEN 13 THEN @i_id13
                                WHEN 14 THEN @i_id14
                                WHEN 15 THEN @i_id15
                         END,

                @li_s_w_id = CASE @li_no
                                WHEN 1 THEN @s_w_id1
                                WHEN 2 THEN @s_w_id2
                                WHEN 3 THEN @s_w_id3
                                WHEN 4 THEN @s_w_id4
                                WHEN 5 THEN @s_w_id5
```

```
                                WHEN 6 THEN @s_w_id6
                                WHEN 7 THEN @s_w_id7
                                WHEN 8 THEN @s_w_id8
                                WHEN 9 THEN @s_w_id9
                                WHEN 10 THEN
@s_w_id10
                                WHEN 11 THEN
@s_w_id11
                                WHEN 12 THEN
@s_w_id12
                                WHEN 13 THEN
@s_w_id13
                                WHEN 14 THEN
@s_w_id14
                                WHEN 15 THEN
@s_w_id15
                             END,

                @li_qty = CASE  @li_no
                                WHEN 1 THEN @ol_qty1
                                WHEN 2 THEN @ol_qty2
                                WHEN 3 THEN @ol_qty3
                                WHEN 4 THEN @ol_qty4
                                WHEN 5 THEN @ol_qty5
                                WHEN 6 THEN @ol_qty6
                                WHEN 7 THEN @ol_qty7
                                WHEN 8 THEN @ol_qty8
                                WHEN 9 THEN @ol_qty9
                                WHEN 10 THEN
@ol_qty10
                                WHEN 11 THEN
@ol_qty11
                                WHEN 12 THEN
@ol_qty12
                                WHEN 13 THEN
@ol_qty13
                                WHEN 14 THEN
@ol_qty14
                                WHEN 15 THEN
@ol_qty15
                          END

---------------------------------------
--  get item data (no one updates item)
---------------------------------------
        SELECT  @i_price    = i_price,
                @i_name     = i_name,
                @i_data     = i_data
        FROM    item WITH (repeatableread)
        WHERE   i_id        = @li_id

-----------------------
--  update stock values
-----------------------
        UPDATE  stock
        SET     s_ytd           = s_ytd + @li_qty,
                @s_quantity     = s_quantity   =
s_quantity - @li_qty +
                                    CASE WHEN
(s_quantity - @li_qty < 10) THEN 91 ELSE 0 END,
                s_order_cnt     = s_order_cnt + 1,
                s_remote_cnt    = s_remote_cnt +
```

```
                                    CASE WHEN
(@li_s_w_id = @w_id) THEN 0 ELSE 1 END,
                @s_data         = s_data,
                @s_dist         = CASE @d_id
                                    WHEN 1  THEN
s_dist_01
                                    WHEN 2  THEN
s_dist_02
                                    WHEN 3  THEN
s_dist_03
                                    WHEN 4  THEN
s_dist_04
                                    WHEN 5  THEN
s_dist_05
                                    WHEN 6  THEN
s_dist_06
                                    WHEN 7  THEN
s_dist_07
                                    WHEN 8  THEN
s_dist_08
                                    WHEN 9  THEN
s_dist_09
                                    WHEN 10 THEN
s_dist_10
                                  END
        WHERE   s_i_id          = @li_id AND
                s_w_id          = @li_s_w_id

-----------------------------------------------------
-----------------
--  if there actually is a stock (and item) with
these ids, go to work
-----------------------------------------------------
-----------------
        IF (@@rowcount > 0)
        BEGIN
-----------------------------------------------------
------
--  insert order_line data (using data from item and
stock)
-----------------------------------------------------
------
            INSERT INTO order_line VALUES(  @o_id,
                                            @d_id,

                                            @w_id,
                                            @li_no,
                                            @li_id,
                                            '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
-------------------------------
--  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    = 'dzKoCObBqbC3yu',
        @c_city        = 'zAKZXdC037FQxq',
        @c_state       = 'QA',
        @c_zip         = '700311111',
        @c_phone       = '2967264064528555',
        @c_credit      = 'GC',
        @c_credit_lim  = 50000.00,
        @c_discount    = 0.3069,
        @c_since       = GETDATE(),
        @datetime      = GETDATE()

-------------------------
--  return data to client
-------------------------
SELECT  @c_id,
        @c_last,
        @datetime,
        @w_street_1,
        @w_street_2,
        @w_city,
        @w_state,
        @w_zip,
        @d_street_1,
        @d_street_2,
        @d_city,
        @d_state,
        @d_zip,
        @c_first,
        @c_middle,
```

```
        @c_street_1,
        @c_street_2,
        @c_city,
        @c_state,
        @c_zip,
        @c_phone,
        @c_since,
        @c_credit,
        @c_credit_lim,
        @c_discount,
        @c_balance,
        @screen_data
GO

CREATE PROCEDURE    tpcc_stocklevel
                        @w_id           int,
                        @d_id           tinyint,
                        @threshhold     smallint
AS
DECLARE @delaytime  varchar(30)

----------------------------------------------------
-- uniform random delay of 0 - 3.6 second; avg = 1.8
----------------------------------------------------
SELECT  @delaytime  = '00:00:0' +
CAST(CAST((RAND()*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 = 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

//Orginal code pgd 08/13/96

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

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

          upper++;

    if ((upper <= lower))
                    rand_num = upper;
    else
                    rand_num = lower + irand() %
((upper > lower) ? upper - lower : upper);


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


    return rand_num;
}
#endif

//===================================================
====================
// Function   : NURand
//
// Description:
//===================================================
====================
long NURand(int iConst,
              long x,
              long y,
              long C)
{
    long rand_num;

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

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

#ifdef DEBUG
    printf("[%ld]DBG: NURand: num = %d\n", (int)
GetCurrentThreadId(), rand_num);
#endif

    return rand_num;
}
```

removedb.sql

```
USE master
GO
EXEC sp_dropdevice 'tpccback1'
GO
EXEC sp_dropdevice 'tpccback3'
GO
EXEC sp_dropdevice 'tpccback5'
GO
EXEC sp_dropdevice 'tpccback7'
GO
EXEC sp_dropdevice 'tpccback9'
GO
EXEC sp_dropdevice 'tpccback11'
GO
EXEC sp_dropdevice 'tpccback13'
GO
EXEC sp_dropdevice 'tpccback15'
GO
EXEC sp_dropdevice 'tpccback17'
GO
EXEC sp_dropdevice 'tpccback19'
GO
EXEC sp_dropdevice 'tpccback21'
GO
EXEC sp_dropdevice 'tpccback23'
GO
EXEC sp_dropdevice 'tpccback25'
GO
EXEC sp_dropdevice 'tpccback27'
GO
EXEC sp_dropdevice 'tpccback29'
GO
EXEC sp_dropdevice 'tpccback31'
GO
EXEC sp_dropdevice 'tpccback33'
GO
EXEC sp_dropdevice 'tpccback35'
GO
EXEC sp_dropdevice 'tpccback37'
GO
EXEC sp_dropdevice 'tpccback39'
GO
EXEC sp_dropdevice 'tpccback41'
GO
EXEC sp_dropdevice 'tpccback43'
```

```
GO
EXEC sp_dropdevice 'tpccback45'
GO
EXEC sp_dropdevice 'tpccback47'
GO
EXEC sp_dropdevice 'tpccback49'
GO
EXEC sp_dropdevice 'tpccback51'
GO
EXEC sp_dropdevice 'tpccback53'
GO
```

restore.cmd

```
osql -E -i restore.sql
```

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, tpccback6,
tpccback7, tpccback8, tpccback9, tpccback10,
tpccback11, tpccback12, tpccback13, tpccback14,
tpccback15, tpccback16 WITH stats = 1, replace

SELECT  @enddate = GETDATE()
SELECT  'End date: ',
                    CONVERT(VARCHAR(30),@enddate, 21)
SELECT  'Elapsed time (in seconds): ',
                    DATEDIFF(second, @startdate,
@enddate)
GO
```

restore_datalog.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, tpccback6,
tpccback7, tpccback8, tpccback9, tpccback10,
tpccback11, tpccback12, tpccback13, tpccback14,
tpccback15, tpccback16 WITH stats = 1, replace,
norecovery

SELECT  @enddate = GETDATE()
SELECT  'End date: ',
        CONVERT(VARCHAR(30),@enddate, 21)
SELECT  'Elapsed time (in seconds): ',
        DATEDIFF(second, @startdate, @enddate)
GO
```

start-sql.cmd

```
cd C:\Program Files\Microsoft SQL
Server\MSSQL.1\MSSQL\Binn
sqlservr.exe -c -x -T3502 -T8011 -T8012 -T8018 -T8019
-T8710 -T661 -T834
```

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,
                        @threshhold     smallint

AS
DECLARE @o_id_low   int,
        @o_id_high  int

SELECT  @o_id_low   = (d_next_o_id - 20),
        @o_id_high  = (d_next_o_id - 1)
FROM    district
WHERE   d_w_id      = @w_id AND
        d_id        = @d_id

SELECT  COUNT(DISTINCT(s_i_id))
FROM    stock,
        order_line
WHERE   ol_w_id     = @w_id AND
        ol_d_id     = @d_id and
        ol_o_id     BETWEEN @o_id_low AND
                            @o_id_high AND
        s_w_id      = ol_w_id AND
        s_i_id      = ol_i_id AND
        s_quantity  < @threshhold
OPTION(ORDER GROUP)
GO

SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO
```

stop-sql.cmd

```
sqlcmd -A -E -Q "shutdown"
```

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[] =
"0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnop
qrstuvwxyz";
          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[] =
"0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnop
qrstuvwxyz";
          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 prercentage is valid
    if ((percent < 0) || (percent > 100))
    {
                    printf("MakeOrigianlAlphaString:
Invalid percentage: %d\n", percent);
                    exit(-1);
    }

    // verify string is at least 8 chars in length
    if (x < 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, "000011111");

          itoa(RandomNumber(0, 9999), tmp, 10);
          memcpy(str, tmp, strlen(tmp));

    return 9;
}


//=====================================================
====================
//
// Function name: InitString
//
//=====================================================
====================
void InitString(char *str, int len)
{
#ifdef DEBUG
    printf("[%ld]DBG: Entering InitString()\n", (int)
GetCurrentThreadId());
#endif

          memset(str, ' ', len);
    str[len] = 0;
}


//=====================================================
====================
// Function name: InitAddress
//
// Description:
//
//=====================================================
====================

void InitAddress(char *street_1, char *street_2, char
*city, char *state, char *zip)
{
          memset(street_1, ' ', ADDRESS_LEN+1);
          memset(street_2, ' ', ADDRESS_LEN+1);
          memset(city, ' ', ADDRESS_LEN+1);

    street_1[ADDRESS_LEN+1] = 0;
    street_2[ADDRESS_LEN+1] = 0;
    city[ADDRESS_LEN+1]     = 0;

          memset(state, ' ', STATE_LEN+1);
    state[STATE_LEN+1] = 0;

          memset(zip, ' ', ZIP_LEN+1);
    zip[ZIP_LEN+1] = 0;
}


//=====================================================
====================
//
// Function name: PaddString
//
//===================================================
====================

void PaddString(int max, char *name)
{
          int                 len;

          len = strlen(name);
          if ( len < max )
                    memset(name+len, ' ', max - len);
          name[max] = 0;

          return;
}
```

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_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_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_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_fg
go

create table new_order
(
          no_o_id             int,
          no_d_id             tinyint,
          no_w_id             int
) on MSSQL_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_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_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_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_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 el_time;

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

   _ftime(&el_time);

   time_now = ((el_time.time - start_sec) * 1000) +
el_time.millitm;

   return time_now;
}
```

tpcc.h

```
//        File:               TPCC.H
//                                      Microsoft
TPC-C Kit Ver. 4.51
//                                      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 DEFLDPACKSIZE
          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;                            //
set if loading all tables
          BOOL
          table_item;                            //
set if loading ITEM table specifically
          BOOL
          table_warehouse;    // set if loading
WAREHOUSE, DISTRICT, and STOCK
```

```
          BOOL
          table_customer;              // set if
loading CUSTOMER and HISTORY
          BOOL
          table_orders;                // set if
loading NEW-ORDER, ORDERS, ORDER-LINE
    long
          num_warehouses;
    long
          batch;
    long
          verbose;
          long
          pack_size;
          char
          *loader_res_file;
          char
          *log_path;
          char
          *synch_servername;
          long
          case_sensitivity;
          long
          starting_warehouse;
          long
          build_index;
          long
          index_order;
          long
          scale_down;
          char
          *index_script_path;
} TPCCLDR_ARGS;

// String length constants
          #define SERVER_NAME_LEN           20
          #define DATABASE_NAME_LEN         20
          #define USER_NAME_LEN             20
          #define PASSWORD_LEN              20
          #define TABLE_NAME_LEN            20
          #define I_DATA_LEN                50
          #define I_NAME_LEN                24
          #define BRAND_LEN                  1
          #define LAST_NAME_LEN             16
          #define W_NAME_LEN                10
          #define ADDRESS_LEN               20
          #define STATE_LEN                  2
          #define ZIP_LEN                    9
          #define S_DIST_LEN                24
          #define S_DATA_LEN                50
          #define D_NAME_LEN                10
          #define FIRST_NAME_LEN            16
          #define MIDDLE_NAME_LEN            2
          #define PHONE_LEN                 16
          #define CREDIT_LEN                 2
          #define C_DATA_LEN               500
          #define H_DATA_LEN                24
          #define DIST_INFO_LEN             24
          #define MAX_OL_NEW_ORDER_ITEMS    15
          #define MAX_OL_ORDER_STATUS_ITEMS 15
          #define STATUS_LEN                25
          #define OL_DIST_INFO_LEN
24
          #define C_SINCE_LEN
             23
          #define H_DATE_LEN
             23
          #define OL_DELIVERY_D_LEN
23
          #define O_ENTRY_D_LEN              23


// Functions in random.c
void      seed();
long      irand();
double    drand();
void      WUCreate();
short     WURand();
long      RandomNumber(long lower, long upper);

// Functions in getargs.c;
void      GetArgsLoader();
void      GetArgsLoaderUsage();

// Functions in time.c
long      TimeNow();

// Functions in strings.c
void      MakeAddress();
void      LastName();
int       MakeAlphaString();
int                 MakeAlphaStringPadded();
int       MakeOriginalAlphaString();
int       MakeNumberString();
int       MakeZipNumberString();
void      InitString();
void      InitAddress();
void      PaddString();
```

tpccldr.c

```
//==================================================
====================
//        File:              TPCCLDR.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;
```

```
HDBC      v_hdbc;
                    // for SQL Server version
verification
HDBC      i_hdbc1;
          // for ITEM table
HDBC      w_hdbc1;
          // for WAREHOUSE, DISTRICT, STOCK
HDBC      c_hdbc1;
          // for CUSTOMER
HDBC      c_hdbc2;
          // for HISTORY
HDBC      o_hdbc1;
          // for ORDERS
HDBC      o_hdbc2;
          // for NEW-ORDER

HDBC      o_hdbc3;
          // for ORDER-LINE

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

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("idxwarcl");

          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[D_NAME_LEN+1];
    char  d_street_1[ADDRESS_LEN+1];
    char  d_street_2[ADDRESS_LEN+1];
    char  d_city[ADDRESS_LEN+1];
    char  d_state[STATE_LEN+1];
    char  d_zip[ZIP_LEN+1];
    double          d_tax;
    double          d_ytd;
          char      name[20];
    long  d_next_o_id;
          long      time_start;
          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  = 30000.0;

          d_next_o_id = orders_per_district+1;

          time_start = (TimeNow() / MILLI);

          for (w_id = aptr->starting_warehouse; w_id
<= aptr->num_warehouses; w_id++)
          {
                    d_w_id = w_id;

                    for (d_id = 1; d_id <=
DISTRICT_PER_WAREHOUSE; d_id++)
                    {

          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] =
'O';
                    customer_buf[i].c_middle[1] =
'E';

          MakeAddress(customer_buf[i].c_street_1,

customer_buf[i].c_street_2,

customer_buf[i].c_city,

customer_buf[i].c_state,

customer_buf[i].c_zip);
                    MakeNumberString(16, 16,
PHONE_LEN, customer_buf[i].c_phone);

                    if (RandomNumber(1L, 100L) > 10)

          customer_buf[i].c_credit[0] = 'G';
                    else

          customer_buf[i].c_credit[0] = 'B';
                    customer_buf[i].c_credit[1] =
'C';
                    customer_buf[i].c_credit_lim =
50000.0;
                    customer_buf[i].c_discount =
((float) RandomNumber(0L, 5000L)) / 10000.0;


          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_de
livery_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_deliver
y_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("idxordcl");

                    // build non-clustered index
                    if (aptr->build_index == 1)
                              BuildIndex("idxordnc");
          }
}

//=====================================================
====================
//
// Function   : LoadNewOrderTable
//
//=====================================================
====================
void LoadNewOrderTable(LOADER_TIME_STRUCT
*new_order_time_start)
{
          long                i;
    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];
          RETCODE             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].o
l_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   : 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 availible order id
and update
    --  insert corresponding row into new-order table
    --  plus initialize local variables

    UPDATE  district
    SET     @d_tax          = d_tax,
            @o_id           = d_next_o_id,
            d_next_o_id     = d_next_o_id + 1,
            @o_entry_d      = GETDATE(),
            @commit_flag    = 1
    OUTPUT  deleted.d_next_o_id,
            @d_id,
            @w_id
    INTO    new_order
    WHERE   d_w_id          = @w_id AND
            d_id            = @d_id

    -- update stock from stock join (item join
(params))
    -- output to orderline, output to client
    -- NOTE: @@rowcount != @ol_o_cnt
    --    if (@i_idX,@s_w_idX pairs not unique) OR
(@i_idX not unique).

    UPDATE  stock
    SET     s_ytd           = s_ytd + info.ol_qty,
            s_quantity      = s_quantity -
info.ol_qty +
                              CASE WHEN (s_quantity -
info.ol_qty < 10) THEN 91 ELSE 0 END,
            s_order_cnt     = s_order_cnt + 1,
            s_remote_cnt    = s_remote_cnt +
                                                  CASE
WHEN (info.w_id = @w_id) THEN 0 ELSE 1 END

    OUTPUT  @o_id,
            @d_id,
            @w_id,
            info.lino,
            info.i_id,
            "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
uo1(iid,wid,lino,qty)
                                  ) AS
o1(iid,wid,lino,ol_qty,rownum)
                            INNER JOIN
                            item (repeatableread) ON
i_id   = iid  AND -- filters out invalid items

rownum = 1
                    ) AS
info(i_id,w_id,lino,ol_qty,i_price,i_name,i_data)
            ON  s_i_id  = info.i_id AND
                s_w_id  = info.w_id

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

    --  insert fresh row into orders table
    INSERT INTO orders VALUES   (   @o_id,
                                    @d_id,
                                    @w_id,
                                    @c_id,
                                    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
--
--
--
--          Returns version level of TPC-C stored
procs         --
--
--
--          Always update the return value of this
proc for     --
--          any interface changes or 'must have' bug
fixes.     --
--
--
--          The value returned by this SP defines the
--
--          'interface level', which must match
between the     --
--          stored procs and the client code.  The
--
--          interface level may be down rev from the
--
--          current kit.  This indicates that the
interface     --
--          hasn't changed since that version.
--
--
--
--          Interface Level:    4.20.000
--
--
--
-----------------------------------------------------
-------------
USE tpcc
GO

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

CREATE PROCEDURE    tpcc_version
AS
DECLARE @version    char(8)

BEGIN
    SELECT  @version    = '4.20.000'

    SELECT  @version    AS 'Version'
END
GO
```

Appendix C: Tunable Parameters

Microsoft SQL Server 2003 Installation Procedures

Microsoft SQL Server 2005 Enterprise x64 Edition SP3
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>

 ------------------------------
 Nov  4 2011  2:49:26:947PM

(1 row affected)

1> 2> 3> Configuration option 'show advanced options'
changed from 1 to 1. Run
the RECONFIGURE statement to install.
1> 2> 1> 2> 3>  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           -1
                   -1
 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       500000
               500000
 max text repl size (B)                        0
2147483647        65536
                65536
 max worker threads                          128
32767         4100
                 4100
 media retention                               0
365            0
                    0
 min memory per query (KB)                   512
2147483647          512
                  512
 min server memory (MB)                        0
2147483647            0
                    0
 nested triggers                               0
1            1
                    1
 network packet size (B)                     512
32767         2048
                 2048
 Ole Automation Procedures                     0
1            0
                    0
 open objects                                  0
2147483647            0
                    0
 PH timeout (s)                                1
3600           60
                   60
 precompute rank                               0
1            0
                    0
 priority boost                                0
1           1
                    1
 query governor cost limit                     0
2147483647          0
                    0
 query wait (s)                               -1
2147483647           -1
                   -1
 recovery interval (min)                       0
32767        32767
                32767
 remote access                                 0
1           1
                    1
 remote admin connections                      0
1           0
                    0
 remote login timeout (s)                      0
2147483647          20
                   20
 remote proc trans                             0
1           0
                    0
 remote query timeout (s)                      0
2147483647          600
                  600
 Replication XPs                               0
1           0
                    0
 scan for startup procs                        0
1           0
                    0
 server trigger recursion                      0
1           1
                    1
 set working set size                          0
1           0
                    0
 show advanced options                         0
1           1
                    1
 SMO and DMO XPs                               0
1           1
                    1
 SQL Mail XPs                                  0
1           0
                    0
 transform noise words                         0
1           0
                    0
 two digit year cutoff                      1753
9999         2049
                 2049
 user connections                              0
32767           0
                    0
 user options                                  0
32767           0
                    0
 Web Assistant Procedures                      0
1           0
```

```
                    0
 xp_cmdshell                                   0
1           0
                    0

1> 2> 3>
```

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:   3/23/2010 - 9:14 PM

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\90\NodeConfiguration\Node0
Class Name:        <NO CLASS>
Last Write Time:   3/23/2010 - 9:14 PM
Value 0
  Name:            CPUMask
  Type:            REG_DWORD
  Data:            0x3f


Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\90\NodeConfiguration\Node1
Class Name:        <NO CLASS>
Last Write Time:   3/23/2010 - 9:14 PM
Value 0
  Name:            CPUMask
  Type:            REG_DWORD
  Data:            0xfc0


Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\90\NodeConfiguration\Node2
Class Name:        <NO CLASS>
Last Write Time:   3/23/2010 - 9:14 PM
Value 0
  Name:            CPUMask
  Type:            REG_DWORD
  Data:            0x3f000


Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\90\NodeConfiguration\Node3
Class Name:        <NO CLASS>
Last Write Time:   3/23/2010 - 9:14 PM
```

```
Value 0
  Name:            CPUMask
  Type:            REG_DWORD
  Data:            0xfc0000



Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows
NT\CurrentVersion\Image File Execution
Options\sqlservr.exe]
"UseLargePages"=dword:00000001
"GlobalFlag"=dword:00000000
```

Microsoft SQL Server Super Socket Configuration Parameters

```
Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\90\NodeConfiguration]
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\90\NodeConfiguration\Node0]
"CPUMask"=dword:0000003F
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\90\NodeConfiguration\Node1]
"CPUMask"=dword:00000FC0
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\90\NodeConfiguration\Node2]
"CPUMask"=dword:0003F000
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\90\NodeConfiguration\Node3]
"CPUMask"=dword:007C0000
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Tcp\IPAl
l]
"TcpPort"="
1433,2001[0x1],2002[0x2],2003[0x4],2004[0x8]"
"TcpDynamicPorts"=""
"DisplayName"="Any IP Address"

Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows
NT\CurrentVersion\Image File Execution
Options\sqlservr.exe]
"UseLargePages"=dword:00000001
"GlobalFlag"=dword:00000000
```

Database Server System Configuration

```
System Information report written at: 11/10/11
16:58:32
System Name: WIN-FECQNPTFFHQ
[System Summary]

Item      Value
OS Name   Microsoft Windows Server 2008 R2 Enterprise

Version   6.1.7600 Build 7600
Other OS Description          Not Available
OS Manufacturer     Microsoft Corporation
System Name         WIN-FECQNPTFFHQ
System Manufacturer HP
System Model        ProLiant DL385 G7
System Type         x64-based PC
Processor AMD Opteron(tm) Processor 6282 SE, 2600
Mhz, 16 Core(s), 16 Logical Processor(s)
Processor AMD Opteron(tm) Processor 6282 SE, 2600
Mhz, 16 Core(s), 16 Logical Processor(s)
BIOS Version/Date   HP A18, 10/1/2011
SMBIOS Version      2.7
Windows Directory   C:\Windows
System Directory    C:\Windows\system32
Boot Device         \Device\HarddiskVolume38
Locale    United States
Hardware Abstraction Layer    Version =
"6.1.7600.16385"
User Name WIN-FECQNPTFFHQ\Administrator
Time Zone Central Standard Time
Installed Physical Memory (RAM)         512 GB
Total Physical Memory         512 GB
Available Physical Memory     490 GB
Total Virtual Memory          514 GB
Available Virtual Memory      492 GB
Page File Space     1.95 GB
Page File C:\pagefile.sys

[Hardware Resources]



[Conflicts/Sharing]

Resource  Device
IRQ 52    PCI standard PCI-to-PCI bridge
IRQ 52    PCI standard PCI-to-PCI bridge
IRQ 52    PCI standard PCI-to-PCI bridge

I/O Port 0x00000000-0x0000000F          Direct memory
access controller
I/O Port 0x00000000-0x0000000F          PCI bus

Memory Address 0xF4000000-0xF5FFFFFF    HP NC382i DP
Virtual Bus Device #46
Memory Address 0xF4000000-0xF5FFFFFF    PCI standard
PCI-to-PCI bridge

I/O Port 0x000003C0-0x000003DF          PCI bus
I/O Port 0x000003C0-0x000003DF          Standard VGA
Graphics Adapter

I/O Port 0x00000070-0x00000071          System
CMOS/real time clock
I/O Port 0x00000070-0x00000071          Motherboard
resources

IRQ 54    PCI standard PCI-to-PCI bridge
IRQ 54    PCI standard PCI-to-PCI bridge
IRQ 54    PCI standard PCI-to-PCI bridge

IRQ 32    PCI standard PCI-to-PCI bridge
IRQ 32    PCI standard PCI-to-PCI bridge

I/O Port 0x00002000-0x00002FFF          ATI I/O
Communications Processor PCI Bus Controller
I/O Port 0x00002000-0x00002FFF          Standard VGA
Graphics Adapter

IRQ 22    Standard Enhanced PCI to USB Host
Controller
IRQ 22    Standard OpenHCD USB Host Controller
IRQ 22    Standard OpenHCD USB Host Controller

IRQ 44    HP ProLiant iLO 3 Management Controller
(CHIF)
IRQ 44    Standard Universal PCI to USB Host
Controller

Memory Address 0xE8000000-0xEFFFFFFF    ATI I/O
Communications Processor PCI Bus Controller
Memory Address 0xE8000000-0xEFFFFFFF    Standard VGA
Graphics Adapter

I/O Port 0x00009000-0x0000AFFF          PCI standard
PCI-to-PCI bridge
I/O Port 0x00009000-0x0000AFFF          PCI standard
PCI-to-PCI bridge
I/O Port 0x00009000-0x0000AFFF          PCI standard
PCI-to-PCI bridge

IRQ 23    Standard OpenHCD USB Host Controller
IRQ 23    Standard Enhanced PCI to USB Host
Controller
IRQ 23    Standard OpenHCD USB Host Controller

I/O Port 0x00006000-0x00006FFF          PCI standard
PCI-to-PCI bridge
I/O Port 0x00006000-0x00006FFF          PCI standard
PCI-to-PCI bridge
I/O Port 0x00006000-0x00006FFF          PCI standard
PCI-to-PCI bridge

Memory Address 0xFD600000-0xFD7FFFFF    PCI standard
PCI-to-PCI bridge
Memory Address 0xFD600000-0xFD7FFFFF    PCI standard
PCI-to-PCI bridge

I/O Port 0x00003000-0x000030FF          HP ProLiant
iLO 3 Management Controller (CORE)
I/O Port 0x00003000-0x000030FF          PCI standard
PCI-to-PCI bridge

Memory Address 0xFED00000-0xFED003FF    High
precision event timer
Memory Address 0xFED00000-0xFED003FF    PCI bus

IRQ 28    PCI standard PCI-to-PCI bridge
IRQ 28    PCI standard PCI-to-PCI bridge

I/O Port 0x000000A0-0x000000A1          Programmable
interrupt controller
I/O Port 0x000000A0-0x000000A1          Motherboard
resources

Memory Address 0xA0000-0xBFFFF          PCI bus
Memory Address 0xA0000-0xBFFFF          Standard VGA
Graphics Adapter

I/O Port 0x000003B0-0x000003BB          PCI bus
I/O Port 0x000003B0-0x000003BB          Standard VGA
Graphics Adapter

I/O Port 0x00001000-0x00001007          Standard Dual
Channel PCI IDE Controller
I/O Port 0x00001000-0x00001007          PCI bus

Memory Address 0xF8000000-0xFBFFFFFF    PCI standard
PCI-to-PCI bridge
Memory Address 0xF8000000-0xFBFFFFFF    HP NC382i DP
Virtual Bus Device #49

Memory Address 0xFDD00000-0xFDFFFFFF    PCI standard
PCI-to-PCI bridge
Memory Address 0xFDD00000-0xFDFFFFFF    PCI standard
PCI-to-PCI bridge

I/O Port 0x00000600-0x0000061F          Extended IO
Bus
I/O Port 0x00000600-0x0000061F          Motherboard
resources

I/O Port 0x00000020-0x00000021          Programmable
interrupt controller
I/O Port 0x00000020-0x00000021          Motherboard
resources


[DMA]

Resource  Device    Status
Channel 7 Direct memory access controller         OK


[Forced Hardware]

Device    PNP Device ID

[I/O]
```

```
Resource  Device    Status
0x00002000-0x00002FFF         ATI I/O Communications
Processor PCI Bus Controller  OK
0x00002000-0x00002FFF         Standard VGA Graphics
Adapter   OK
0x00000020-0x00000021         Programmable interrupt
controller          OK
0x00000020-0x00000021         Motherboard resources
          OK
0x000000A0-0x000000A1         Programmable interrupt
controller          OK
0x000000A0-0x000000A1         Motherboard resources
          OK
0x00000C00-0x00000C01         Programmable interrupt
controller          OK
0x00003000-0x000030FF         HP ProLiant iLO 3
Management Controller (CORE)  OK
0x00003000-0x000030FF         PCI standard PCI-to-PCI
bridge    OK
0x00003400-0x000034FF         HP ProLiant iLO 3
Management Controller (CORE)  OK
0x00000040-0x00000043         System timer        OK

0x0000A000-0x0000AFFF         PCI standard PCI-to-PCI
bridge    OK
0x00000500-0x0000050F         Standard Dual Channel
PCI IDE Controller  OK
0x00000000-0x0000000F         Direct memory access
controller          OK
0x00000000-0x0000000F         PCI bus   OK
0x00000080-0x0000008F         Direct memory access
controller          OK
0x000000C0-0x000000DF         Direct memory access
controller          OK
0x00003800-0x000038FF         HP ProLiant iLO 3
Management Controller (CHIF)  OK
0x00000060-0x00000060         Standard PS/2 Keyboard
          OK
0x00000064-0x00000064         Standard PS/2 Keyboard
          OK
0x000003F8-0x000003FF         Communications Port
(COM1)    OK
0x00001000-0x00001007         Standard Dual Channel
PCI IDE Controller  OK
0x00001000-0x00001007         PCI bus   OK
0x00001008-0x0000100B         Standard Dual Channel
PCI IDE Controller  OK
0x00001010-0x00001017         Standard Dual Channel
PCI IDE Controller  OK
0x00001018-0x0000101B         Standard Dual Channel
PCI IDE Controller  OK
0x00001020-0x0000102F         Standard Dual Channel
PCI IDE Controller  OK
0x00004000-0x00004FFF         PCI standard PCI-to-PCI
bridge    OK
0x00000061-0x00000061         System speaker      OK

0x0000002E-0x0000002F         Extended IO Bus     OK

0x00000620-0x0000065F         Extended IO Bus     OK
```

```
0x00000680-0x0000069F         Extended IO Bus     OK

0x00000600-0x0000061F         Extended IO Bus     OK

0x00000600-0x0000061F         Motherboard resources
          OK
0x00000660-0x0000067F         Extended IO Bus     OK

0x00000300-0x0000031F         Extended IO Bus     OK

0x00006000-0x00006FFF         PCI standard PCI-to-PCI
bridge    OK
0x00006000-0x00006FFF         PCI standard PCI-to-PCI
bridge    OK
0x00006000-0x00006FFF         PCI standard PCI-to-PCI
bridge    OK
0x000003E0-0x00000CF7         PCI bus   OK
0x00000D00-0x00000FFF         PCI bus   OK
0x000003B0-0x000003BB         PCI bus   OK
0x000003B0-0x000003BB         Standard VGA Graphics
Adapter   OK
0x000003C0-0x000003DF         PCI bus   OK
0x000003C0-0x000003DF         Standard VGA Graphics
Adapter   OK
0x00000070-0x00000071         System CMOS/real time
clock     OK
0x00000070-0x00000071         Motherboard resources
          OK
0x000001F0-0x000001F7         ATA Channel 0       OK

0x000003F6-0x000003F6         ATA Channel 0       OK

0x00000010-0x0000001F         Motherboard resources
          OK
0x00000050-0x00000053         Motherboard resources
          OK
0x00000090-0x0000009F         Motherboard resources
          OK
0x000000F0-0x000000F0         Motherboard resources
          OK
0x00000379-0x0000037A         Motherboard resources
          OK
0x00000400-0x0000043F         Motherboard resources
          OK
0x000004D0-0x000004D1         Motherboard resources
          OK
0x000004D6-0x000004D6         Motherboard resources
          OK
0x00000520-0x00000520         Motherboard resources
          OK
0x00000580-0x0000059F         Motherboard resources
          OK
0x00000700-0x00000703         Motherboard resources
          OK
0x00000820-0x0000082F         Motherboard resources
          OK
0x00000900-0x000009FE         Motherboard resources
          OK
0x00000C06-0x00000C07         Motherboard resources
          OK
0x00000C14-0x00000C14         Motherboard resources
          OK
```

```
0x00000C4A-0x00000C4A         Motherboard resources
          OK
0x00000C50-0x00000C52         Motherboard resources
          OK
0x00000C6C-0x00000C6C         Motherboard resources
          OK
0x00000C6F-0x00000C6F         Motherboard resources
          OK
0x00000C80-0x00000C83         Motherboard resources
          OK
0x00000C90-0x00000C9F         Motherboard resources
          OK
0x00000CA0-0x00000CA5         Motherboard resources
          OK
0x00000CD0-0x00000CDF         Motherboard resources
          OK
0x00000F50-0x00000F58         Motherboard resources
          OK
0x00000B00-0x00000B3F         Motherboard resources
          OK
0x000002F8-0x000002FF         Motherboard resources
          OK
0x00007000-0x00007FFF         PCI standard PCI-to-PCI
bridge    OK
0x00005000-0x00005FFF         PCI standard PCI-to-PCI
bridge    OK
0x00000170-0x00000177         ATA Channel 1       OK

0x00000376-0x00000376         ATA Channel 1       OK

0x00009000-0x0000AFFF         PCI standard PCI-to-PCI
bridge    OK
0x00009000-0x0000AFFF         PCI standard PCI-to-PCI
bridge    OK
0x00009000-0x0000AFFF         PCI standard PCI-to-PCI
bridge    OK
0x00008000-0x00008FFF         PCI standard PCI-to-PCI
bridge    OK
0x00003C00-0x00003C1F         Standard Universal PCI
to USB Host Controller        OK
0x00000CA2-0x00000CA3         Microsoft Generic IPMI
Compliant Device    OK

[IRQs]

Resource  Device    Status
IRQ 23    Standard OpenHCD USB Host Controller    OK

IRQ 23    Standard Enhanced PCI to USB Host
Controller          OK
IRQ 23    Standard OpenHCD USB Host Controller    OK

IRQ 47    HP ProLiant iLO 3 Management Controller
(CORE)    OK
IRQ 53    PCI standard PCI-to-PCI bridge          OK

IRQ 4294967195      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967194      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967193      HP NC382i DP Virtual Bus Device
#49       OK
```

```
IRQ 4294967192      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967191      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967190      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967189      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967188      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967187      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967186      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967185      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967184      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967183      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967182      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967181      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967180      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967179      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967178      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967177      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967176      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967175      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967174      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967173      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967172      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967171      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967170      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967169      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967168      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967167      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967166      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967165      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967164      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 4294967163      HP NC382i DP Virtual Bus Device
#49       OK
IRQ 0     System timer        OK
```

```
IRQ 30    PCI standard PCI-to-PCI bridge          OK

IRQ 4294967130      Smart Array P421 Controller   OK

IRQ 4294967129      Smart Array P421 Controller   OK

IRQ 4294967128      Smart Array P421 Controller   OK

IRQ 4294967127      Smart Array P421 Controller   OK

IRQ 4294967126      Smart Array P421 Controller   OK

IRQ 4294967125      Smart Array P421 Controller   OK

IRQ 4294967124      Smart Array P421 Controller   OK

IRQ 4294967123      Smart Array P421 Controller   OK

IRQ 24    PCI standard PCI-to-PCI bridge          OK

IRQ 44    HP ProLiant iLO 3 Management Controller
(CHIF)    OK
IRQ 44    Standard Universal PCI to USB Host
Controller          OK
IRQ 1     Standard PS/2 Keyboard        OK
IRQ 32    PCI standard PCI-to-PCI bridge          OK

IRQ 32    PCI standard PCI-to-PCI bridge          OK

IRQ 4294967162      Smart Array P421 Controller   OK

IRQ 4294967161      Smart Array P421 Controller   OK

IRQ 4294967160      Smart Array P421 Controller   OK

IRQ 4294967159      Smart Array P421 Controller   OK

IRQ 4294967158      Smart Array P421 Controller   OK

IRQ 4294967157      Smart Array P421 Controller   OK

IRQ 4294967156      Smart Array P421 Controller   OK

IRQ 4294967155      Smart Array P421 Controller   OK

IRQ 4     Communications Port (COM1)    OK
IRQ 16    Standard Dual Channel PCI IDE Controller
          OK
IRQ 54    PCI standard PCI-to-PCI bridge          OK

IRQ 54    PCI standard PCI-to-PCI bridge          OK

IRQ 54    PCI standard PCI-to-PCI bridge          OK

IRQ 4294967122      Smart Array P410i Controller  OK

IRQ 4294967121      Smart Array P410i Controller  OK

IRQ 4294967120      Smart Array P410i Controller  OK

IRQ 4294967119      Smart Array P410i Controller  OK
```

```
IRQ 4294967118      Smart Array P410i Controller  OK

IRQ 4294967117      Smart Array P410i Controller  OK

IRQ 4294967116      Smart Array P410i Controller  OK

IRQ 4294967115      Smart Array P410i Controller  OK

IRQ 33    PCI standard PCI-to-PCI bridge          OK

IRQ 4294967138      Smart Array P421 Controller   OK

IRQ 4294967137      Smart Array P421 Controller   OK

IRQ 4294967136      Smart Array P421 Controller   OK

IRQ 4294967135      Smart Array P421 Controller   OK

IRQ 4294967134      Smart Array P421 Controller   OK

IRQ 4294967133      Smart Array P421 Controller   OK

IRQ 4294967132      Smart Array P421 Controller   OK

IRQ 4294967131      Smart Array P421 Controller   OK

IRQ 14    ATA Channel 0       OK
IRQ 34    PCI standard PCI-to-PCI bridge          OK

IRQ 12    PS/2 Compatible Mouse         OK
IRQ 22    Standard Enhanced PCI to USB Host
Controller          OK
IRQ 22    Standard OpenHCD USB Host Controller    OK

IRQ 22    Standard OpenHCD USB Host Controller    OK

IRQ 15    ATA Channel 1       OK
IRQ 28    PCI standard PCI-to-PCI bridge          OK

IRQ 28    PCI standard PCI-to-PCI bridge          OK

IRQ 81    Microsoft ACPI-Compliant System         OK

IRQ 82    Microsoft ACPI-Compliant System         OK

IRQ 83    Microsoft ACPI-Compliant System         OK

IRQ 84    Microsoft ACPI-Compliant System         OK

IRQ 85    Microsoft ACPI-Compliant System         OK

IRQ 86    Microsoft ACPI-Compliant System         OK

IRQ 87    Microsoft ACPI-Compliant System         OK

IRQ 88    Microsoft ACPI-Compliant System         OK

IRQ 89    Microsoft ACPI-Compliant System         OK

IRQ 90    Microsoft ACPI-Compliant System         OK
IRQ 91    Microsoft ACPI-Compliant System        OK
IRQ 92    Microsoft ACPI-Compliant System        OK
IRQ 93    Microsoft ACPI-Compliant System        OK
IRQ 94    Microsoft ACPI-Compliant System        OK
IRQ 95    Microsoft ACPI-Compliant System        OK
IRQ 96    Microsoft ACPI-Compliant System        OK
IRQ 97    Microsoft ACPI-Compliant System        OK
IRQ 98    Microsoft ACPI-Compliant System        OK
IRQ 99    Microsoft ACPI-Compliant System        OK
IRQ 100   Microsoft ACPI-Compliant System        OK
IRQ 101   Microsoft ACPI-Compliant System        OK
IRQ 102   Microsoft ACPI-Compliant System        OK
IRQ 103   Microsoft ACPI-Compliant System        OK
IRQ 104   Microsoft ACPI-Compliant System        OK
IRQ 105   Microsoft ACPI-Compliant System        OK
IRQ 106   Microsoft ACPI-Compliant System        OK
IRQ 107   Microsoft ACPI-Compliant System        OK
IRQ 108   Microsoft ACPI-Compliant System        OK
IRQ 109   Microsoft ACPI-Compliant System        OK
IRQ 110   Microsoft ACPI-Compliant System        OK
IRQ 111   Microsoft ACPI-Compliant System        OK
IRQ 112   Microsoft ACPI-Compliant System        OK
IRQ 113   Microsoft ACPI-Compliant System        OK
IRQ 114   Microsoft ACPI-Compliant System        OK
IRQ 115   Microsoft ACPI-Compliant System        OK
IRQ 116   Microsoft ACPI-Compliant System        OK
IRQ 117   Microsoft ACPI-Compliant System        OK
IRQ 118   Microsoft ACPI-Compliant System        OK
IRQ 119   Microsoft ACPI-Compliant System        OK
IRQ 120   Microsoft ACPI-Compliant System        OK
IRQ 121   Microsoft ACPI-Compliant System        OK
IRQ 122   Microsoft ACPI-Compliant System        OK
IRQ 123   Microsoft ACPI-Compliant System        OK
IRQ 124   Microsoft ACPI-Compliant System        OK
IRQ 125   Microsoft ACPI-Compliant System        OK
IRQ 126   Microsoft ACPI-Compliant System        OK
IRQ 127   Microsoft ACPI-Compliant System        OK
IRQ 128   Microsoft ACPI-Compliant System        OK
IRQ 129   Microsoft ACPI-Compliant System        OK
IRQ 130   Microsoft ACPI-Compliant System        OK
IRQ 131   Microsoft ACPI-Compliant System        OK
IRQ 132   Microsoft ACPI-Compliant System        OK
IRQ 133   Microsoft ACPI-Compliant System        OK
IRQ 134   Microsoft ACPI-Compliant System        OK
IRQ 135   Microsoft ACPI-Compliant System        OK
IRQ 136   Microsoft ACPI-Compliant System        OK
IRQ 137   Microsoft ACPI-Compliant System        OK
IRQ 138   Microsoft ACPI-Compliant System        OK
IRQ 139   Microsoft ACPI-Compliant System        OK
IRQ 140   Microsoft ACPI-Compliant System        OK
IRQ 141   Microsoft ACPI-Compliant System        OK
IRQ 142   Microsoft ACPI-Compliant System        OK
IRQ 143   Microsoft ACPI-Compliant System        OK
IRQ 144   Microsoft ACPI-Compliant System        OK
IRQ 145   Microsoft ACPI-Compliant System        OK
IRQ 146   Microsoft ACPI-Compliant System        OK
IRQ 147   Microsoft ACPI-Compliant System        OK
IRQ 148   Microsoft ACPI-Compliant System        OK
IRQ 149   Microsoft ACPI-Compliant System        OK
IRQ 150   Microsoft ACPI-Compliant System        OK
IRQ 151   Microsoft ACPI-Compliant System        OK
IRQ 152   Microsoft ACPI-Compliant System        OK
IRQ 153   Microsoft ACPI-Compliant System        OK
IRQ 154   Microsoft ACPI-Compliant System        OK
IRQ 155   Microsoft ACPI-Compliant System        OK
IRQ 156   Microsoft ACPI-Compliant System        OK
IRQ 157   Microsoft ACPI-Compliant System        OK
IRQ 158   Microsoft ACPI-Compliant System        OK
IRQ 159   Microsoft ACPI-Compliant System        OK
IRQ 160   Microsoft ACPI-Compliant System        OK
IRQ 161   Microsoft ACPI-Compliant System        OK
IRQ 162   Microsoft ACPI-Compliant System        OK
IRQ 163   Microsoft ACPI-Compliant System        OK
IRQ 164   Microsoft ACPI-Compliant System        OK
IRQ 165   Microsoft ACPI-Compliant System        OK
IRQ 166   Microsoft ACPI-Compliant System        OK
IRQ 167   Microsoft ACPI-Compliant System        OK
IRQ 168   Microsoft ACPI-Compliant System        OK
IRQ 169   Microsoft ACPI-Compliant System        OK
IRQ 170   Microsoft ACPI-Compliant System        OK
IRQ 171   Microsoft ACPI-Compliant System        OK
IRQ 172   Microsoft ACPI-Compliant System        OK
IRQ 173   Microsoft ACPI-Compliant System        OK
IRQ 174   Microsoft ACPI-Compliant System        OK
IRQ 175   Microsoft ACPI-Compliant System        OK
IRQ 176   Microsoft ACPI-Compliant System        OK
IRQ 177   Microsoft ACPI-Compliant System        OK
IRQ 178   Microsoft ACPI-Compliant System        OK
IRQ 179   Microsoft ACPI-Compliant System        OK
IRQ 180   Microsoft ACPI-Compliant System        OK
IRQ 181   Microsoft ACPI-Compliant System        OK
IRQ 182   Microsoft ACPI-Compliant System        OK
IRQ 183   Microsoft ACPI-Compliant System        OK
IRQ 184   Microsoft ACPI-Compliant System         OK

IRQ 185   Microsoft ACPI-Compliant System         OK

IRQ 186   Microsoft ACPI-Compliant System         OK

IRQ 187   Microsoft ACPI-Compliant System         OK

IRQ 188   Microsoft ACPI-Compliant System         OK

IRQ 189   Microsoft ACPI-Compliant System         OK

IRQ 190   Microsoft ACPI-Compliant System         OK

IRQ 4294967146      Smart Array P421 Controller   OK

IRQ 4294967145      Smart Array P421 Controller   OK

IRQ 4294967144      Smart Array P421 Controller   OK

IRQ 4294967143      Smart Array P421 Controller   OK

IRQ 4294967142      Smart Array P421 Controller   OK

IRQ 4294967141      Smart Array P421 Controller   OK

IRQ 4294967140      Smart Array P421 Controller   OK

IRQ 4294967139      Smart Array P421 Controller   OK

IRQ 52    PCI standard PCI-to-PCI bridge          OK

IRQ 52    PCI standard PCI-to-PCI bridge          OK

IRQ 52    PCI standard PCI-to-PCI bridge          OK

IRQ 4294967294      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967293      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967292      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967291      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967290      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967289      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967288      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967287      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967286      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967285      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967284      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967283      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967282      HP NC382i DP Virtual Bus Device
#45       OK
```

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IRQ 4294967281      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967280      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967279      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967278      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967277      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967276      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967275      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967274      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967273      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967272      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967271      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967270      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967269      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967268      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967267      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967266      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967265      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967264      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967263      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967262      HP NC382i DP Virtual Bus Device
#45       OK
IRQ 4294967154      Smart Array P421 Controller   OK

IRQ 4294967153      Smart Array P421 Controller   OK

IRQ 4294967152      Smart Array P421 Controller   OK

IRQ 4294967151      Smart Array P421 Controller   OK

IRQ 4294967150      Smart Array P421 Controller   OK

IRQ 4294967149      Smart Array P421 Controller   OK

IRQ 4294967148      Smart Array P421 Controller   OK

IRQ 4294967147      Smart Array P421 Controller   OK

IRQ 4294967261      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967260      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967259      HP NC382i DP Virtual Bus Device
#46       OK
```

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IRQ 4294967258      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967257      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967256      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967255      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967254      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967253      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967252      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967251      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967250      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967249      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967248      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967247      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967246      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967245      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967244      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967243      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967242      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967241      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967240      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967239      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967238      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967237      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967236      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967235      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967234      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967233      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967232      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967231      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967230      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967229      HP NC382i DP Virtual Bus Device
#46       OK
IRQ 4294967114      LSI Adapter, SAS2 2008 Falcon OK
IRQ 4294967113      LSI Adapter, SAS2 2008 Falcon OK

IRQ 4294967112      LSI Adapter, SAS2 2008 Falcon OK

IRQ 4294967111      LSI Adapter, SAS2 2008 Falcon OK

IRQ 4294967110      LSI Adapter, SAS2 2008 Falcon OK

IRQ 4294967109      LSI Adapter, SAS2 2008 Falcon OK

IRQ 4294967108      LSI Adapter, SAS2 2008 Falcon OK

IRQ 4294967107      LSI Adapter, SAS2 2008 Falcon OK

IRQ 4294967106      LSI Adapter, SAS2 2008 Falcon OK

IRQ 4294967105      LSI Adapter, SAS2 2008 Falcon OK

IRQ 4294967104      LSI Adapter, SAS2 2008 Falcon OK

IRQ 4294967103      LSI Adapter, SAS2 2008 Falcon OK

IRQ 4294967102      LSI Adapter, SAS2 2008 Falcon OK

IRQ 4294967101      LSI Adapter, SAS2 2008 Falcon OK

IRQ 4294967100      LSI Adapter, SAS2 2008 Falcon OK

IRQ 4294967228      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967227      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967226      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967225      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967224      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967223      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967222      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967221      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967220      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967219      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967218      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967217      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967216      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967215      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967214      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967213      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967212      HP NC382i DP Virtual Bus Device
#47       OK
```

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IRQ 4294967211      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967210      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967209      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967208      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967207      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967206      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967205      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967204      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967203      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967202      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967201      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967200      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967199      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967198      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967197      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 4294967196      HP NC382i DP Virtual Bus Device
#47       OK
IRQ 29    PCI standard PCI-to-PCI bridge          OK


[Memory]

Resource  Device    Status
0xF3900000-0xF39FFFFF         ATI I/O Communications
Processor PCI Bus Controller  OK
0xE8000000-0xEFFFFFFF         ATI I/O Communications
Processor PCI Bus Controller  OK
0xE8000000-0xEFFFFFFF         Standard VGA Graphics
Adapter   OK
0xF38A0000-0xF38A0FFF         Standard OpenHCD USB
Host Controller     OK
0xF3CF0000-0xF3CF01FF         HP ProLiant iLO 3
Management Controller (CORE)  OK
0xF8000000-0xFBFFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF8000000-0xFBFFFFFF         HP NC382i DP Virtual
Bus Device #49      OK
0xFDF00000-0xFDFFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xFD400000-0xFD4FFFFF         Smart Array P421
Controller          OK
0xFD3F0000-0xFD3F03FF         Smart Array P421
Controller          OK
0xFED00000-0xFED003FF         High precision event
timer     OK
0xFED00000-0xFED003FF         PCI bus   OK
```

```
0xF3A00000-0xF3CFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF3CE0000-0xF3CE00FF         HP ProLiant iLO 3
Management Controller (CHIF)  OK
0xF3B00000-0xF3BFFFFF         HP ProLiant iLO 3
Management Controller (CHIF)  OK
0xF3A80000-0xF3AFFFFF         HP ProLiant iLO 3
Management Controller (CHIF)  OK
0xF3A70000-0xF3A77FFF         HP ProLiant iLO 3
Management Controller (CHIF)  OK
0xF3A60000-0xF3A67FFF         HP ProLiant iLO 3
Management Controller (CHIF)  OK
0xFDB00000-0xFDBFFFFF         Smart Array P421
Controller          OK
0xFDAF0000-0xFDAF03FF         Smart Array P421
Controller          OK
0xF38F0000-0xF38F03FF         Standard Dual Channel
PCI IDE Controller  OK
0xF3D00000-0xF3FFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF3E00000-0xF3FFFFFF         Smart Array P410i
Controller          OK
0xF3DF0000-0xF3DF0FFF         Smart Array P410i
Controller          OK
0xFD600000-0xFD7FFFFF         PCI standard PCI-to-PCI
bridge    OK
0xFD600000-0xFD7FFFFF         PCI standard PCI-to-PCI
bridge    OK
0xFD900000-0xFD9FFFFF         Smart Array P421
Controller          OK
0xFD8F0000-0xFD8F03FF         Smart Array P421
Controller          OK
0xF38C0000-0xF38C00FF         Standard Enhanced PCI
to USB Host Controller        OK
0xE7F00000-0xFDFFFFFF         PCI bus   OK
0xFED40000-0xFED44FFF         PCI bus   OK
0xA0000-0xBFFFF     PCI bus   OK
0xA0000-0xBFFFF     Standard VGA Graphics Adapter OK

0xF39F0000-0xF39FFFFF         Standard VGA Graphics
Adapter   OK
0xFD500000-0xFD9FFFFF         PCI standard PCI-to-PCI
bridge    OK
0xC0000000-0xCFFFFFFF         Motherboard resources
          OK
0xFD800000-0xFD9FFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF3890000-0xF38900FF         Standard Enhanced PCI
to USB Host Controller        OK
0xFD300000-0xFD4FFFFF         PCI standard PCI-to-PCI
bridge    OK
0xFDCE0000-0xFDCFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xFDD00000-0xFDFFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xFDD00000-0xFDFFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xFD700000-0xFD7FFFFF         Smart Array P421
Controller          OK
0xFD6F0000-0xFD6F03FF         Smart Array P421
Controller          OK
```

```
0xF38E0000-0xF38E0FFF         Standard OpenHCD USB
Host Controller     OK
0xFDA00000-0xFDBFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF6000000-0xF7FFFFFF         HP NC382i DP Virtual
Bus Device #45      OK
0xFD5E0000-0xFD5FFFFF         PCI standard PCI-to-PCI
bridge    OK
0xFDE00000-0xFDEFFFFF         Smart Array P421
Controller          OK
0xFDDF0000-0xFDDF03FF         Smart Array P421
Controller          OK
0xF38B0000-0xF38B0FFF         Standard OpenHCD USB
Host Controller     OK
0xFDC00000-0xFDFFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF4000000-0xF5FFFFFF         HP NC382i DP Virtual
Bus Device #46      OK
0xF4000000-0xF5FFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xFDFF0000-0xFDFF3FFF         LSI Adapter, SAS2 2008
Falcon    OK
0xFDF80000-0xFDFBFFFF         LSI Adapter, SAS2 2008
Falcon    OK
0xF38D0000-0xF38D0FFF         Standard OpenHCD USB
Host Controller     OK
0xFA000000-0xFBFFFFFF         HP NC382i DP Virtual
Bus Device #47      OK

[Components]



[Multimedia]



[Audio Codecs]

CODEC     Manufacturer        Description
          Status    File      Version   Size
          Creation Date
c:\windows\system32\msg711.acm          Microsoft
Corporation                   OK
          C:\Windows\system32\MSG711.ACM
          6.1.7600.16385      14.50 KB (14,848 bytes)
          7/13/2009 7:18 PM
c:\windows\system32\msgsm32.acm         Microsoft
Corporation                   OK
          C:\Windows\system32\MSGSM32.ACM
          6.1.7600.16385      28.50 KB (29,184 bytes)
          7/13/2009 7:18 PM
c:\windows\system32\imaadp32.acm        Microsoft
Corporation                   OK
          C:\Windows\system32\IMAADP32.ACM
          6.1.7600.16385      21.50 KB (22,016 bytes)
          7/13/2009 7:18 PM
c:\windows\system32\msadp32.acm         Microsoft
Corporation                   OK
          C:\Windows\system32\MSADP32.ACM
          6.1.7600.16385      23.50 KB (24,064 bytes)
          7/13/2009 7:18 PM
```

```

[Video Codecs]

CODEC     Manufacturer        Description
          Status    File      Version   Size
          Creation Date
c:\windows\system32\iyuv_32.dll         Microsoft
Corporation                   OK
          C:\Windows\system32\IYUV_32.DLL
          6.1.7600.16385      52.50 KB (53,760 bytes)
          7/13/2009 7:06 PM
c:\windows\system32\tsbyuv.dll          Microsoft
Corporation                   OK
          C:\Windows\system32\TSBYUV.DLL
          6.1.7600.16385      14.00 KB (14,336 bytes)
          7/13/2009 7:06 PM
c:\windows\system32\msvidc32.dll        Microsoft
Corporation                   OK
          C:\Windows\system32\MSVIDC32.DLL
          6.1.7600.16385      37.50 KB (38,400 bytes)
          7/13/2009 7:18 PM
c:\windows\system32\msrle32.dll         Microsoft
Corporation                   OK
          C:\Windows\system32\MSRLE32.DLL
          6.1.7600.16385      15.50 KB (15,872 bytes)
          7/13/2009 7:18 PM
c:\windows\system32\msyuv.dll Microsoft Corporation
                    OK
          C:\Windows\system32\MSYUV.DLL
          6.1.7600.16385      24.00 KB (24,576 bytes)
          7/13/2009 7:06 PM

[CD-ROM]

Item      Value
Drive     I:
Description         CD-ROM Drive
Media Loaded        No
Media Type          DVD-ROM
Name      ELBY CLONEDRIVE SCSI CdRom Device
Manufacturer        (Standard CD-ROM drives)
Status    OK
Transfer Rate       -1.00 kbytes/sec
SCSI Target ID      0
PNP Device ID
          SCSI\CDROM&VEN_ELBY&PROD_CLONEDRIVE&REV_1.4
\1&2AFD7D61&0&000000
Driver    c:\windows\system32\drivers\cdrom.sys
(6.1.7600.16385, 144.00 KB (147,456 bytes), 7/13/2009
6:19 PM)

[Sound Device]

Item      Value

[Display]

Item      Value
Name      Standard VGA Graphics Adapter
PNP Device ID
          PCI\VEN_1002&DEV_515E&SUBSYS_31FB103C&REV_0
2\4&2A2AE743&0&18A4
```

```
Adapter Type        Not Available, (Standard display
types) compatible
Adapter Description Standard VGA Graphics Adapter
Adapter RAM         Not Available
Installed Drivers   Not Available
Driver Version      6.1.7600.16385
INF File  display.inf (vga section)
Color Planes        Not Available
Color Table Entries Not Available
Resolution          Not Available
Bits/Pixel          Not Available
Memory Address      0xE8000000-0xEFFFFFFF
I/O Port  0x00002000-0x00002FFF
Memory Address      0xF39F0000-0xF39FFFFF
I/O Port  0x000003B0-0x000003BB
I/O Port  0x000003C0-0x000003DF
Memory Address      0xA0000-0xBFFFF
Driver    c:\windows\system32\drivers\vgapnp.sys
(6.1.7600.16385, 28.50 KB (29,184 bytes), 7/13/2009
6:38 PM)

[Infrared]

Item      Value

[Input]



[Keyboard]

Item      Value
Description         Standard PS/2 Keyboard
Name      Enhanced (101- or 102-key)
Layout    00000409
PNP Device ID       ACPI\PNP0303\4&9333F3&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
(6.1.7600.16385, 103.00 KB (105,472 bytes), 7/13/2009
6:19 PM)

Description         USB Input Device
Name      Enhanced (101- or 102-key)
Layout    00000409
PNP Device ID
          USB\VID_03F0&PID_7029&MI_00\7&32D48B34&0&00
00
Number of Function Keys       12
Driver    c:\windows\system32\drivers\hidusb.sys
(6.1.7600.16385, 29.50 KB (30,208 bytes), 7/13/2009
7:06 PM)

[Pointing Device]

Item      Value
Hardware Type       USB Input Device
Number of Buttons   0
Status    OK
```

```
PNP Device ID
          USB\VID_03F0&PID_7029&MI_01\7&32D48B34&0&00
01
Power Management Supported    No
Double Click Threshold        Not Available
Handedness          Not Available
Driver    c:\windows\system32\drivers\hidusb.sys
(6.1.7600.16385, 29.50 KB (30,208 bytes), 7/13/2009
7:06 PM)

Hardware Type       PS/2 Compatible Mouse
Number of Buttons   0
Status    OK
PNP Device ID       ACPI\PNP0F13\4&9333F3&0
Power Management Supported    No
Double Click Threshold        Not Available
Handedness          Not Available
IRQ Channel         IRQ 12
Driver    c:\windows\system32\drivers\i8042prt.sys
(6.1.7600.16385, 103.00 KB (105,472 bytes), 7/13/2009
6:19 PM)

[Modem]

Item      Value

[Network]



[Adapter]

Item      Value
Name      [00000000] WAN Miniport (SSTP)
Adapter Type        Not Available
Product Type        WAN Miniport (SSTP)
Installed Yes
PNP Device ID       ROOT\MS_SSTPMINIPORT\0000
Last Reset          11/10/2011 4:52 PM
Index     0
Service Name        RasSstp
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\rassstp.sys
(6.1.7600.16385, 82.00 KB (83,968 bytes), 7/13/2009
7:10 PM)

Name      [00000001] WAN Miniport (IKEv2)
Adapter Type        Not Available
Product Type        WAN Miniport (IKEv2)
Installed Yes
PNP Device ID       ROOT\MS_AGILEVPNMINIPORT\0000
Last Reset          11/10/2011 4:52 PM
Index     1
Service Name        RasAgileVpn
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\agilevpn.sys
(6.1.7600.16385, 59.00 KB (60,416 bytes), 7/13/2009
7:10 PM)

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          11/10/2011 4:52 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
(6.1.7600.16385, 127.00 KB (130,048 bytes), 7/13/2009
7:10 PM)

Name      [00000003] WAN Miniport (PPTP)
Adapter Type        Not Available
Product Type        WAN Miniport (PPTP)
Installed Yes
PNP Device ID       ROOT\MS_PPTPMINIPORT\0000
Last Reset          11/10/2011 4:52 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         Not Available
Driver    c:\windows\system32\drivers\raspptp.sys
(6.1.7600.16385, 109.00 KB (111,616 bytes), 7/13/2009
7:10 PM)

Name      [00000004] WAN Miniport (PPPOE)
Adapter Type        Not Available
Product Type        WAN Miniport (PPPOE)
Installed Yes
PNP Device ID       ROOT\MS_PPPOEMINIPORT\0000
Last Reset          11/10/2011 4:52 PM
Index     4
Service Name        RasPppoe
IP Address          Not Available
IP Subnet Not Available
Default IP Gateway  Not Available
```

```
DHCP Enabled        No
DHCP Server         Not Available
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
MAC Address         Not Available
Driver    c:\windows\system32\drivers\raspppoe.sys
(6.1.7600.16385, 90.50 KB (92,672 bytes), 7/13/2009
7:10 PM)

Name      [00000005] WAN Miniport (IPv6)
Adapter Type        Not Available
Product Type        WAN Miniport (IPv6)
Installed Yes
PNP Device ID       ROOT\MS_NDISWANIPV6\0000
Last Reset          11/10/2011 4:52 PM
Index     5
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
(6.1.7600.16385, 160.50 KB (164,352 bytes), 7/13/2009
7:10 PM)

Name      [00000006] WAN Miniport (Network Monitor)

Adapter Type        Not Available
Product Type        WAN Miniport (Network Monitor)

Installed Yes
PNP Device ID       ROOT\MS_NDISWANBH\0000
Last Reset          11/10/2011 4:52 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
(6.1.7600.16385, 160.50 KB (164,352 bytes), 7/13/2009
7:10 PM)

Name      [00000007] HP NC382i DP Multifunction
Gigabit Server Adapter
Adapter Type        Ethernet 802.3
Product Type        HP NC382i DP Multifunction
Gigabit Server Adapter
Installed Yes
PNP Device ID
          B06BDRV\L2ND&PCI_163914E4&SUBSYS_7055103C&R
EV_20\5&3496B280&0&20050400
Last Reset          11/10/2011 4:52 PM
Index     7
```

```
Service Name        l2nd
IP Address          130.168.209.14, 10.168.209.16
IP Subnet 255.255.0.0, 255.0.0.0
Default IP Gateway  Not Available
DHCP Enabled        No
DHCP Server         Not Available
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
MAC Address         B4:99:BA:C1:0B:5C
Driver    c:\windows\system32\drivers\bxnd60a.sys
(6.2.9.0, 101.04 KB (103,464 bytes), 7/8/2011 7:36
PM)

Name      [00000008] Microsoft ISATAP Adapter
Adapter Type        Tunnel
Product Type        Microsoft ISATAP Adapter
Installed Yes
PNP Device ID       ROOT\*ISATAP\0000
Last Reset          11/10/2011 4:52 PM
Index     8
Service Name        tunnel
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\tunnel.sys
(6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
7:09 PM)

Name      [00000009] WAN Miniport (IP)
Adapter Type        Not Available
Product Type        WAN Miniport (IP)
Installed Yes
PNP Device ID       ROOT\MS_NDISWANIP\0000
Last Reset          11/10/2011 4:52 PM
Index     9
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
(6.1.7600.16385, 160.50 KB (164,352 bytes), 7/13/2009
7:10 PM)

Name      [00000010] HP NC382i DP Multifunction
Gigabit Server Adapter
Adapter Type        Ethernet 802.3
Product Type        HP NC382i DP Multifunction
Gigabit Server Adapter
Installed Yes
PNP Device ID
          B06BDRV\L2ND&PCI_163914E4&SUBSYS_7055103C&R
EV_20\5&31321715&0&20050400
```

```
Last Reset          11/10/2011 4:52 PM
Index     10
Service Name        l2nd
IP Address          130.168.209.15
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         B4:99:BA:C1:0B:5E
Driver    c:\windows\system32\drivers\bxnd60a.sys
(6.2.9.0, 101.04 KB (103,464 bytes), 7/8/2011 7:36
PM)

Name      [00000011] RAS Async Adapter
Adapter Type        Wide Area Network (WAN)
Product Type        RAS Async Adapter
Installed Yes
PNP Device ID       SW\{EEAB7790-C514-11D1-B42B-
00805FC1270E}\ASYNCMAC
Last Reset          11/10/2011 4:52 PM
Index     11
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         20:41:53:59:4E:FF
Driver    c:\windows\system32\drivers\asyncmac.sys
(6.1.7600.16385, 22.50 KB (23,040 bytes), 7/13/2009
7:10 PM)

Name      [00000012] Microsoft ISATAP Adapter
Adapter Type        Tunnel
Product Type        Microsoft ISATAP Adapter
Installed Yes
PNP Device ID       ROOT\*ISATAP\0001
Last Reset          11/10/2011 4:52 PM
Index     12
Service Name        tunnel
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\tunnel.sys
(6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
7:09 PM)

Name      [00000013] HP NC382i DP Multifunction
Gigabit Server Adapter
Adapter Type        Ethernet 802.3
Product Type        HP NC382i DP Multifunction
Gigabit Server Adapter
Installed Yes
```

```
PNP Device ID
          B06BDRV\L2ND&PCI_163914E4&SUBSYS_7055103C&R
EV_20\5&386853D3&0&20050500
Last Reset          11/10/2011 4:52 PM
Index     13
Service Name        l2nd
IP Address          130.168.209.16
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         B4:99:BA:C1:0B:60
Driver    c:\windows\system32\drivers\bxnd60a.sys
(6.2.9.0, 101.04 KB (103,464 bytes), 7/8/2011 7:36
PM)

Name      [00000014] HP NC382i DP Multifunction
Gigabit Server Adapter
Adapter Type        Ethernet 802.3
Product Type        HP NC382i DP Multifunction
Gigabit Server Adapter
Installed Yes
PNP Device ID
          B06BDRV\L2ND&PCI_163914E4&SUBSYS_7055103C&R
EV_20\5&1566B176&0&20050500
Last Reset          11/10/2011 4:52 PM
Index     14
Service Name        l2nd
IP Address          130.168.209.17
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         B4:99:BA:C1:0B:62
Driver    c:\windows\system32\drivers\bxnd60a.sys
(6.2.9.0, 101.04 KB (103,464 bytes), 7/8/2011 7:36
PM)

Name      [00000015] Microsoft ISATAP Adapter
Adapter Type        Tunnel
Product Type        Microsoft ISATAP Adapter
Installed Yes
PNP Device ID       ROOT\*ISATAP\0002
Last Reset          11/10/2011 4:52 PM
Index     15
Service Name        tunnel
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\tunnel.sys
(6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
7:09 PM)
```

```
Name      [00000016] Microsoft ISATAP Adapter
Adapter Type        Tunnel
Product Type        Microsoft ISATAP Adapter
Installed Yes
PNP Device ID       ROOT\*ISATAP\0003
Last Reset          11/10/2011 4:52 PM
Index     16
Service Name        tunnel
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\tunnel.sys
(6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
7:09 PM)

Name      [00000017] HP NC550SFP Dual Port 10GbE
Server Adapter
Adapter Type        Not Available
Product Type        HP NC550SFP Dual Port 10GbE
Server Adapter
Installed Yes
PNP Device ID       Not Available
Last Reset          11/10/2011 4:52 PM
Index     17
Service Name        be2net
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      [00000018] HP NC550SFP Dual Port 10GbE
Server Adapter
Adapter Type        Not Available
Product Type        HP NC550SFP Dual Port 10GbE
Server Adapter
Installed Yes
PNP Device ID       Not Available
Last Reset          11/10/2011 4:52 PM
Index     18
Service Name        be2net
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      [00000019] Microsoft 6to4 Adapter
Adapter Type        Tunnel
Product Type        Microsoft 6to4 Adapter
Installed Yes
PNP Device ID       ROOT\*6TO4MP\0000
Last Reset          11/10/2011 4:52 PM
Index     19
Service Name        tunnel
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\tunnel.sys
(6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
7:09 PM)

Name      [00000020] Microsoft Teredo Tunneling
Adapter
Adapter Type        Tunnel
Product Type        Microsoft Teredo Tunneling
Adapter
Installed Yes
PNP Device ID       ROOT\*TEREDO\0000
Last Reset          11/10/2011 4:52 PM
Index     20
Service Name        tunnel
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\tunnel.sys
(6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
7:09 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          63.99 KB (65,527 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      MSAFD Tcpip [TCP/IPv6]
Connectionless Service        No
Guarantees Delivery Yes
Guarantees Sequencing         Yes
Maximum Address Size          28 bytes
Maximum Message Size          0 bytes
Message Oriented    No
Minimum Address Size          28 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/IPv6]
Connectionless Service        Yes
Guarantees Delivery No
Guarantees Sequencing         No
Maximum Address Size          28 bytes
Maximum Message Size          63.99 KB (65,527 bytes)

Message Oriented    Yes
Minimum Address Size          28 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 TCPv6 Service Provider
Connectionless Service        No
Guarantees Delivery Yes
Guarantees Sequencing         Yes
Maximum Address Size          28 bytes
Maximum Message Size          0 bytes
Message Oriented    No
Minimum Address Size          28 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      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      RSVP UDPv6 Service Provider
Connectionless Service        Yes
Guarantees Delivery No
Guarantees Sequencing         No
Maximum Address Size          28 bytes
Maximum Message Size          63.99 KB (65,527 bytes)

Message Oriented    Yes
Minimum Address Size          28 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 UDP Service Provider
Connectionless Service        Yes
Guarantees Delivery No
Guarantees Sequencing         No
Maximum Address Size          16 bytes
Maximum Message Size          63.99 KB (65,527 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

[WinSock]

Item      Value
File      c:\windows\syswow64\wsock32.dll
Size      15.00 KB (15,360 bytes)
Version   6.1.7600.16385

File      c:\windows\system32\wsock32.dll
Size      18.00 KB (18,432 bytes)
Version   6.1.7600.16385

[Ports]



[Serial]

Item      Value
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
(6.1.7600.16385, 92.00 KB (94,208 bytes), 7/13/2009
7:00 PM)

[Parallel]

Item      Value

[Storage]



[Drives]

Item      Value
Drive     C:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      68.23 GB (73,265,049,600 bytes)
Free Space          19.86 GB (21,320,421,376 bytes)

Volume Name
Volume Serial Number          AAD81EB9

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     H:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      1.46 TB (1,600,217,149,440 bytes)
Free Space          80.21 GB (86,122,790,912 bytes)

Volume Name         bk11
Volume Serial Number          7CBC5A0A

Drive     I:
Description         CD-ROM Disc

Drive     K:
Description         Network Connection
Provider Name       \\depot\mnt

Drive     L:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      2.00 TB (2,199,021,154,304 bytes)
Free Space          420.13 GB (451,114,278,912 bytes)

Volume Name         perfrun5
Volume Serial Number          8A782FB8
```

```
Drive     M:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      2.00 TB (2,199,021,154,304 bytes)
Free Space          420.13 GB (451,114,344,448 bytes)

Volume Name         perfrun4
Volume Serial Number          6A6E4662

Drive     N:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      2.00 TB (2,199,021,154,304 bytes)
Free Space          420.13 GB (451,114,344,448 bytes)

Volume Name         perfrun3
Volume Serial Number          6E61E14E

Drive     O:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      2.00 TB (2,199,021,154,304 bytes)
Free Space          420.13 GB (451,114,344,448 bytes)

Volume Name         perfrun2
Volume Serial Number          1C56B66E

Drive     P:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      2.00 TB (2,199,021,154,304 bytes)
Free Space          420.13 GB (451,114,344,448 bytes)

Volume Name         perfrun1
Volume Serial Number          484A0062

Drive     Q:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      1.36 TB (1,497,202,946,048 bytes)
Free Space          32.45 GB (34,847,784,960 bytes)

Volume Name         bk10
Volume Serial Number          F23A75CE

Drive     R:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      1.37 TB (1,503,236,452,352 bytes)
Free Space          38.07 GB (40,881,246,208 bytes)

Volume Name         bk9
Volume Serial Number          46310A47

Drive     S:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      1.36 TB (1,497,203,994,624 bytes)
Free Space          32.46 GB (34,848,976,896 bytes)

Volume Name         bk8
Volume Serial Number          5AEB8DDB

Drive     T:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      1.37 TB (1,503,236,452,352 bytes)
Free Space          38.07 GB (40,881,250,304 bytes)

Volume Name         bk7
Volume Serial Number          8CE16664

Drive     U:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      1.36 TB (1,497,202,946,048 bytes)
Free Space          32.45 GB (34,847,928,320 bytes)

Volume Name         bk6
Volume Serial Number          80D76E9C

Drive     V:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      1.37 TB (1,503,236,452,352 bytes)
Free Space          38.07 GB (40,881,254,400 bytes)

Volume Name         bk5
Volume Serial Number          40CD82C6

Drive     W:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      1.36 TB (1,497,202,946,048 bytes)
Free Space          32.45 GB (34,847,928,320 bytes)

Volume Name         bk4
Volume Serial Number          14BD9543

Drive     X:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      1.37 TB (1,503,236,452,352 bytes)
Free Space          38.07 GB (40,881,250,304 bytes)

Volume Name         bk3
Volume Serial Number          E4B3CD21

Drive     Y:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      1.36 TB (1,496,794,001,408 bytes)
Free Space          32.07 GB (34,438,995,968 bytes)

Volume Name         bk2
Volume Serial Number          C4A82FF1

Drive     Z:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      1.37 TB (1,503,236,452,352 bytes)
Free Space          38.07 GB (40,881,254,400 bytes)

Volume Name         bk1
Volume Serial Number          829D051D

[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 4
SCSI Target ID      4
Sectors/Track       63
Size      1,023.99 GB (1,099,506,078,720 bytes)
Total Cylinders     133,674
Total Sectors       2,147,472,810
Total Tracks        34,086,870
Tracks/Cylinder     255
Partition Disk #0, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

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 4
SCSI Target ID      5
Sectors/Track       63
Size      1,023.99 GB (1,099,506,078,720 bytes)
Total Cylinders     133,674
Total Sectors       2,147,472,810
Total Tracks        34,086,870
Tracks/Cylinder     255
Partition Disk #1, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes
```

```
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 4
SCSI Target ID      6
Sectors/Track       63
Size      1,023.99 GB (1,099,506,078,720 bytes)
Total Cylinders     133,674
Total Sectors       2,147,472,810
Total Tracks        34,086,870
Tracks/Cylinder     255
Partition Disk #2, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

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 4
SCSI Target ID      7
Sectors/Track       63
Size      1,023.99 GB (1,099,506,078,720 bytes)
Total Cylinders     133,674
Total Sectors       2,147,472,810
Total Tracks        34,086,870
Tracks/Cylinder     255
Partition Disk #3, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

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 4
SCSI Target ID      8
Sectors/Track       63
Size      1.37 TB (1,503,235,722,240 bytes)
Total Cylinders     182,758
Total Sectors       2,936,007,270
Total Tracks        46,603,290
Tracks/Cylinder     255
```

```
Partition Disk #4, Partition #0
Partition Size      1.37 TB (1,503,236,456,448 bytes)

Partition Starting Offset     1,048,576 bytes

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 4
SCSI Target ID      9
Sectors/Track       63
Size      1.36 TB (1,496,795,328,000 bytes)
Total Cylinders     181,975
Total Sectors       2,923,428,375
Total Tracks        46,403,625
Tracks/Cylinder     255
Partition Disk #5, Partition #0
Partition Size      1.36 TB (1,496,794,005,504 bytes)

Partition Starting Offset     1,048,576 bytes

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 4
SCSI Target ID      10
Sectors/Track       63
Size      2.27 TB (2,491,478,438,400 bytes)
Total Cylinders     302,905
Total Sectors       4,866,168,825
Total Tracks        77,240,775
Tracks/Cylinder     255
Partition Disk #6, Partition #0
Partition Size      2.00 TB (2,199,021,158,400 bytes)

Partition Starting Offset     1,048,576 bytes

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          2
SCSI Bus  0
SCSI Logical Unit   0
SCSI Port 9
SCSI Target ID      4
Sectors/Track       32
Size      68.33 GB (73,372,631,040 bytes)
```

```
Total Cylinders     17,562
Total Sectors       143,305,920
Total Tracks        4,478,310
Tracks/Cylinder     255
Partition Disk #36, Partition #0
Partition Size      100.00 MB (104,857,600 bytes)
Partition Starting Offset     1,048,576 bytes
Partition Disk #36, Partition #1
Partition Size      68.23 GB (73,265,053,696 bytes)

Partition Starting Offset     105,906,176 bytes

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 8
SCSI Target ID      4
Sectors/Track       32
Size      1,024.00 GB (1,099,511,562,240 bytes)
Total Cylinders     263,172
Total Sectors       2,147,483,520
Total Tracks        67,108,860
Tracks/Cylinder     255
Partition Disk #28, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

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 8
SCSI Target ID      5
Sectors/Track       32
Size      1,024.00 GB (1,099,511,562,240 bytes)
Total Cylinders     263,172
Total Sectors       2,147,483,520
Total Tracks        67,108,860
Tracks/Cylinder     255
Partition Disk #29, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

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 8
SCSI Target ID      6
Sectors/Track       32
Size      1,024.00 GB (1,099,511,562,240 bytes)
Total Cylinders     263,172
Total Sectors       2,147,483,520
Total Tracks        67,108,860
Tracks/Cylinder     255
Partition Disk #30, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

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 8
SCSI Target ID      7
Sectors/Track       32
Size      1,024.00 GB (1,099,511,562,240 bytes)
Total Cylinders     263,172
Total Sectors       2,147,483,520
Total Tracks        67,108,860
Tracks/Cylinder     255
Partition Disk #31, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

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 8
SCSI Target ID      8
Sectors/Track       32
Size      1.37 TB (1,503,236,505,600 bytes)
Total Cylinders     359,805
Total Sectors       2,936,008,800
Total Tracks        91,750,275
Tracks/Cylinder     255
Partition Disk #32, Partition #0
Partition Size      1.37 TB (1,503,236,456,448 bytes)

Partition Starting Offset     1,048,576 bytes

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 8
SCSI Target ID      9
Sectors/Track       32
Size      1.36 TB (1,497,203,589,120 bytes)
Total Cylinders     358,361
Total Sectors       2,924,225,760
Total Tracks        91,382,055
Tracks/Cylinder     255
Partition Disk #33, Partition #0
Partition Size      1.36 TB (1,497,203,998,720 bytes)

Partition Starting Offset     1,048,576 bytes

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 8
SCSI Target ID      10
Sectors/Track       32
Size      1.46 TB (1,600,218,562,560 bytes)
Total Cylinders     383,018
Total Sectors       3,125,426,880
Total Tracks        97,669,590
Tracks/Cylinder     255
Partition Disk #34, Partition #0
Partition Size      1.46 TB (1,600,217,153,536 bytes)

Partition Starting Offset     1,048,576 bytes

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 8
SCSI Target ID      11
Sectors/Track       63
Size      2.27 TB (2,491,478,438,400 bytes)
Total Cylinders     302,905
Total Sectors       4,866,168,825
Total Tracks        77,240,775
Tracks/Cylinder     255
Partition Disk #35, Partition #0
Partition Size      2.00 TB (2,199,021,158,400 bytes)
```

```
Partition Starting Offset     1,048,576 bytes

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 5
SCSI Target ID      4
Sectors/Track       63
Size      1,023.99 GB (1,099,506,078,720 bytes)
Total Cylinders     133,674
Total Sectors       2,147,472,810
Total Tracks        34,086,870
Tracks/Cylinder     255
Partition Disk #7, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

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 5
SCSI Target ID      5
Sectors/Track       63
Size      1,023.99 GB (1,099,506,078,720 bytes)
Total Cylinders     133,674
Total Sectors       2,147,472,810
Total Tracks        34,086,870
Tracks/Cylinder     255
Partition Disk #8, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

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 5
SCSI Target ID      6
Sectors/Track       63
Size      1,023.99 GB (1,099,506,078,720 bytes)
Total Cylinders     133,674
Total Sectors       2,147,472,810
Total Tracks        34,086,870
```

```
Tracks/Cylinder     255
Partition Disk #9, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

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 5
SCSI Target ID      7
Sectors/Track       63
Size      1,023.99 GB (1,099,506,078,720 bytes)
Total Cylinders     133,674
Total Sectors       2,147,472,810
Total Tracks        34,086,870
Tracks/Cylinder     255
Partition Disk #10, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

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 5
SCSI Target ID      8
Sectors/Track       63
Size      1.37 TB (1,503,235,722,240 bytes)
Total Cylinders     182,758
Total Sectors       2,936,007,270
Total Tracks        46,603,290
Tracks/Cylinder     255
Partition Disk #11, Partition #0
Partition Size      1.37 TB (1,503,236,456,448 bytes)

Partition Starting Offset     1,048,576 bytes

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 5
SCSI Target ID      9
Sectors/Track       63
Size      1.36 TB (1,497,198,366,720 bytes)
Total Cylinders     182,024
Total Sectors       2,924,215,560
Total Tracks        46,416,120
Tracks/Cylinder     255
Partition Disk #12, Partition #0
Partition Size      1.36 TB (1,497,202,950,144 bytes)

Partition Starting Offset     1,048,576 bytes

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 5
SCSI Target ID      10
Sectors/Track       63
Size      2.27 TB (2,491,478,438,400 bytes)
Total Cylinders     302,905
Total Sectors       4,866,168,825
Total Tracks        77,240,775
Tracks/Cylinder     255
Partition Disk #13, Partition #0
Partition Size      2.00 TB (2,199,021,158,400 bytes)

Partition Starting Offset     1,048,576 bytes

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 7
SCSI Target ID      4
Sectors/Track       63
Size      1,023.99 GB (1,099,506,078,720 bytes)
Total Cylinders     133,674
Total Sectors       2,147,472,810
Total Tracks        34,086,870
Tracks/Cylinder     255
Partition Disk #21, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

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 7
SCSI Target ID      5
Sectors/Track       63
Size      1,023.99 GB (1,099,506,078,720 bytes)
Total Cylinders     133,674
Total Sectors       2,147,472,810
Total Tracks        34,086,870
Tracks/Cylinder     255
Partition Disk #22, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

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 7
SCSI Target ID      6
Sectors/Track       63
Size      1,023.99 GB (1,099,506,078,720 bytes)
Total Cylinders     133,674
Total Sectors       2,147,472,810
Total Tracks        34,086,870
Tracks/Cylinder     255
Partition Disk #23, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

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 7
SCSI Target ID      7
Sectors/Track       63
Size      1,023.99 GB (1,099,506,078,720 bytes)
Total Cylinders     133,674
Total Sectors       2,147,472,810
Total Tracks        34,086,870
Tracks/Cylinder     255
Partition Disk #24, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

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 7
SCSI Target ID      8
Sectors/Track       63
Size      1.37 TB (1,503,235,722,240 bytes)
Total Cylinders     182,758
Total Sectors       2,936,007,270
Total Tracks        46,603,290
Tracks/Cylinder     255
Partition Disk #25, Partition #0
Partition Size      1.37 TB (1,503,236,456,448 bytes)

Partition Starting Offset     1,048,576 bytes

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 7
SCSI Target ID      9
Sectors/Track       63
Size      1.36 TB (1,497,198,366,720 bytes)
Total Cylinders     182,024
Total Sectors       2,924,215,560
Total Tracks        46,416,120
Tracks/Cylinder     255
Partition Disk #26, Partition #0
Partition Size      1.36 TB (1,497,202,950,144 bytes)

Partition Starting Offset     1,048,576 bytes

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 7
SCSI Target ID      10
Sectors/Track       63
Size      2.27 TB (2,491,478,438,400 bytes)
Total Cylinders     302,905
Total Sectors       4,866,168,825
Total Tracks        77,240,775
Tracks/Cylinder     255
Partition Disk #27, Partition #0
Partition Size      2.00 TB (2,199,021,158,400 bytes)

Partition Starting Offset     1,048,576 bytes
```

```
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 6
SCSI Target ID      4
Sectors/Track       63
Size      1,023.99 GB (1,099,506,078,720 bytes)
Total Cylinders     133,674
Total Sectors       2,147,472,810
Total Tracks        34,086,870
Tracks/Cylinder     255
Partition Disk #14, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

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 6
SCSI Target ID      5
Sectors/Track       63
Size      1,023.99 GB (1,099,506,078,720 bytes)
Total Cylinders     133,674
Total Sectors       2,147,472,810
Total Tracks        34,086,870
Tracks/Cylinder     255
Partition Disk #15, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

Description         Disk drive
Manufacturer        (Standard disk drives)
Model     Smart Array Logical Volume
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  0
SCSI Logical Unit   0
SCSI Port 6
SCSI Target ID      6
Sectors/Track       63
Size      1,023.99 GB (1,099,506,078,720 bytes)
Total Cylinders     133,674
Total Sectors       2,147,472,810
Total Tracks        34,086,870
Tracks/Cylinder     255
Partition Disk #16, Partition #0
```

```
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

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 6
SCSI Target ID      7
Sectors/Track       63
Size      1,023.99 GB (1,099,506,078,720 bytes)
Total Cylinders     133,674
Total Sectors       2,147,472,810
Total Tracks        34,086,870
Tracks/Cylinder     255
Partition Disk #17, Partition #0
Partition Size      1,024.00 GB (1,099,509,530,624
bytes)
Partition Starting Offset     1,048,576 bytes

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 6
SCSI Target ID      8
Sectors/Track       63
Size      1.37 TB (1,503,235,722,240 bytes)
Total Cylinders     182,758
Total Sectors       2,936,007,270
Total Tracks        46,603,290
Tracks/Cylinder     255
Partition Disk #18, Partition #0
Partition Size      1.37 TB (1,503,236,456,448 bytes)

Partition Starting Offset     1,048,576 bytes

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 6
SCSI Target ID      9
Sectors/Track       63
Size      1.36 TB (1,497,198,366,720 bytes)
Total Cylinders     182,024
Total Sectors       2,924,215,560
Total Tracks        46,416,120
Tracks/Cylinder     255
Partition Disk #19, Partition #0
Partition Size      1.36 TB (1,497,202,950,144 bytes)

Partition Starting Offset     1,048,576 bytes

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 6
SCSI Target ID      10
Sectors/Track       63
Size      2.27 TB (2,491,478,438,400 bytes)
Total Cylinders     302,905
Total Sectors       4,866,168,825
Total Tracks        77,240,775
Tracks/Cylinder     255
Partition Disk #20, Partition #0
Partition Size      2.00 TB (2,199,021,158,400 bytes)

Partition Starting Offset     1,048,576 bytes

Description         Disk drive
Manufacturer        (Standard disk drives)
Model     HP P2000 G3 SAS SCSI Disk Device
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  0
SCSI Logical Unit   1
SCSI Port 10
SCSI Target ID      6
Sectors/Track       63
Size      650.99 GB (698,992,519,680 bytes)
Total Cylinders     84,981
Total Sectors       1,365,219,765
Total Tracks        21,670,155
Tracks/Cylinder     255
Partition Disk #37, Partition #0
Partition Size      650.99 GB (698,997,538,816 bytes)

Partition Starting Offset     1,048,576 bytes

[SCSI]

Item      Value
Name      Smart Array P421 Controller
Manufacturer        Hewlett-Packard Company
Status    OK
PNP Device ID
          PCI\VEN_103C&DEV_323B&SUBSYS_3352103C&REV_0
1\4&1AB23AD6&0&0060
Memory Address      0xFD400000-0xFD4FFFFF
Memory Address      0xFD3F0000-0xFD3F03FF
IRQ Channel         IRQ 4294967130
IRQ Channel         IRQ 4294967129
IRQ Channel         IRQ 4294967128
IRQ Channel         IRQ 4294967127
IRQ Channel         IRQ 4294967126
IRQ Channel         IRQ 4294967125
IRQ Channel         IRQ 4294967124
IRQ Channel         IRQ 4294967123
Driver    c:\windows\system32\drivers\hpcisss2.sys
(6.22.0.64, 165.34 KB (169,312 bytes), 7/8/2011 7:34
PM)

Name      Smart Array P421 Controller
Manufacturer        Hewlett-Packard Company
Status    OK
PNP Device ID
          PCI\VEN_103C&DEV_323B&SUBSYS_3352103C&REV_0
1\4&3636F4A7&0&0010
Memory Address      0xFDB00000-0xFDBFFFFF
Memory Address      0xFDAF0000-0xFDAF03FF
IRQ Channel         IRQ 4294967162
IRQ Channel         IRQ 4294967161
IRQ Channel         IRQ 4294967160
IRQ Channel         IRQ 4294967159
IRQ Channel         IRQ 4294967158
IRQ Channel         IRQ 4294967157
IRQ Channel         IRQ 4294967156
IRQ Channel         IRQ 4294967155
Driver    c:\windows\system32\drivers\hpcisss2.sys
(6.22.0.64, 165.34 KB (169,312 bytes), 7/8/2011 7:34
PM)

Name      Smart Array P410i Controller
Manufacturer        Hewlett-Packard Company
Status    OK
PNP Device ID
          PCI\VEN_103C&DEV_323A&SUBSYS_3245103C&REV_0
1\4&D0DB9B7&0&0068
Memory Address      0xF3E00000-0xF3FFFFFF
Memory Address      0xF3DF0000-0xF3DF0FFF
IRQ Channel         IRQ 4294967122
IRQ Channel         IRQ 4294967121
IRQ Channel         IRQ 4294967120
IRQ Channel         IRQ 4294967119
IRQ Channel         IRQ 4294967118
IRQ Channel         IRQ 4294967117
IRQ Channel         IRQ 4294967116
IRQ Channel         IRQ 4294967115
Driver    c:\windows\system32\drivers\hpcisss2.sys
(6.22.0.64, 165.34 KB (169,312 bytes), 7/8/2011 7:34
PM)

Name      Smart Array P421 Controller
Manufacturer        Hewlett-Packard Company
Status    OK
PNP Device ID
          PCI\VEN_103C&DEV_323B&SUBSYS_3352103C&REV_0
1\6&16C91855&0&00300058
Memory Address      0xFD900000-0xFD9FFFFF
Memory Address      0xFD8F0000-0xFD8F03FF
IRQ Channel         IRQ 4294967138
IRQ Channel         IRQ 4294967137
IRQ Channel         IRQ 4294967136
IRQ Channel         IRQ 4294967135
IRQ Channel         IRQ 4294967134
IRQ Channel         IRQ 4294967133
IRQ Channel         IRQ 4294967132
IRQ Channel         IRQ 4294967131
Driver    c:\windows\system32\drivers\hpcisss2.sys
(6.22.0.64, 165.34 KB (169,312 bytes), 7/8/2011 7:34
PM)

Name      Virtual CloneDrive
Manufacturer        Elaborate Bytes AG
Status    OK
PNP Device ID       ROOT\SCSIADAPTER\0000
Driver    c:\windows\system32\drivers\vclone.sys
(5.4.3.5, 35.50 KB (36,352 bytes), 8/9/2009 4:25 PM)


Name      Smart Array P421 Controller
Manufacturer        Hewlett-Packard Company
Status    OK
PNP Device ID
          PCI\VEN_103C&DEV_323B&SUBSYS_3352103C&REV_0
1\6&2ED482FD&0&00280058
Memory Address      0xFD700000-0xFD7FFFFF
Memory Address      0xFD6F0000-0xFD6F03FF
IRQ Channel         IRQ 4294967146
IRQ Channel         IRQ 4294967145
IRQ Channel         IRQ 4294967144
IRQ Channel         IRQ 4294967143
IRQ Channel         IRQ 4294967142
IRQ Channel         IRQ 4294967141
IRQ Channel         IRQ 4294967140
IRQ Channel         IRQ 4294967139
Driver    c:\windows\system32\drivers\hpcisss2.sys
(6.22.0.64, 165.34 KB (169,312 bytes), 7/8/2011 7:34
PM)

Name      Smart Array P421 Controller
Manufacturer        Hewlett-Packard Company
Status    OK
PNP Device ID
          PCI\VEN_103C&DEV_323B&SUBSYS_3352103C&REV_0
1\6&90FCDBC&0&00280018
Memory Address      0xFDE00000-0xFDEFFFFF
Memory Address      0xFDDF0000-0xFDDF03FF
IRQ Channel         IRQ 4294967154
IRQ Channel         IRQ 4294967153
IRQ Channel         IRQ 4294967152
IRQ Channel         IRQ 4294967151
IRQ Channel         IRQ 4294967150
IRQ Channel         IRQ 4294967149
IRQ Channel         IRQ 4294967148
IRQ Channel         IRQ 4294967147
Driver    c:\windows\system32\drivers\hpcisss2.sys
(6.22.0.64, 165.34 KB (169,312 bytes), 7/8/2011 7:34
PM)

Name      LSI Adapter, SAS2 2008 Falcon
Manufacturer        LSI
Status    OK
```

```
PNP Device ID
          PCI\VEN_1000&DEV_0072&SUBSYS_3371103C&REV_0
3\6&2C9F2D1B&0&00300018
Memory Address      0xFDFF0000-0xFDFF3FFF
Memory Address      0xFDF80000-0xFDFBFFFF
IRQ Channel         IRQ 4294967114
IRQ Channel         IRQ 4294967113
IRQ Channel         IRQ 4294967112
IRQ Channel         IRQ 4294967111
IRQ Channel         IRQ 4294967110
IRQ Channel         IRQ 4294967109
IRQ Channel         IRQ 4294967108
IRQ Channel         IRQ 4294967107
IRQ Channel         IRQ 4294967106
IRQ Channel         IRQ 4294967105
IRQ Channel         IRQ 4294967104
IRQ Channel         IRQ 4294967103
IRQ Channel         IRQ 4294967102
IRQ Channel         IRQ 4294967101
IRQ Channel         IRQ 4294967100
Driver    c:\windows\system32\drivers\lsi_sas2.sys
(2.0.2.71, 64.06 KB (65,600 bytes), 7/13/2009 4:59
PM)

[IDE]

Item      Value
Name      Standard Dual Channel PCI IDE Controller

Manufacturer        (Standard IDE ATA/ATAPI
controllers)
Status    OK
PNP Device ID
          PCI\VEN_1002&DEV_439C&SUBSYS_1773103C&REV_0
0\3&3097523A&0&A1
I/O Port  0x00000500-0x0000050F
Driver    c:\windows\system32\drivers\pciide.sys
(6.1.7600.16385, 12.06 KB (12,352 bytes), 7/13/2009
6:19 PM)

Name      Standard Dual Channel PCI IDE Controller

Manufacturer        (Standard IDE ATA/ATAPI
controllers)
Status    OK
PNP Device ID
          PCI\VEN_1002&DEV_4390&SUBSYS_176E103C&REV_0
0\3&3097523A&0&88
I/O Port  0x00001000-0x00001007
I/O Port  0x00001008-0x0000100B
I/O Port  0x00001010-0x00001017
I/O Port  0x00001018-0x0000101B
I/O Port  0x00001020-0x0000102F
Memory Address      0xF38F0000-0xF38F03FF
IRQ Channel         IRQ 16
Driver    c:\windows\system32\drivers\pciide.sys
(6.1.7600.16385, 12.06 KB (12,352 bytes), 7/13/2009
6:19 PM)

Name      ATA Channel 0
Manufacturer        (Standard IDE ATA/ATAPI
controllers)
```

```
Status    OK
PNP Device ID       PCIIDE\IDECHANNEL\4&8120232&0&0

I/O Port  0x000001F0-0x000001F7
I/O Port  0x000003F6-0x000003F6
IRQ Channel         IRQ 14
Driver    c:\windows\system32\drivers\atapi.sys
(6.1.7600.16385, 23.56 KB (24,128 bytes), 7/13/2009
6:19 PM)

Name      ATA Channel 1
Manufacturer        (Standard IDE ATA/ATAPI
controllers)
Status    OK
PNP Device ID       PCIIDE\IDECHANNEL\4&8120232&0&1

I/O Port  0x00000170-0x00000177
I/O Port  0x00000376-0x00000376
IRQ Channel         IRQ 15
Driver    c:\windows\system32\drivers\atapi.sys
(6.1.7600.16385, 23.56 KB (24,128 bytes), 7/13/2009
6:19 PM)

Name      ATA Channel 0
Manufacturer        (Standard IDE ATA/ATAPI
controllers)
Status    OK
PNP Device ID       PCIIDE\IDECHANNEL\4&C1BABAC&0&0

Driver    c:\windows\system32\drivers\atapi.sys
(6.1.7600.16385, 23.56 KB (24,128 bytes), 7/13/2009
6:19 PM)

Name      ATA Channel 1
Manufacturer        (Standard IDE ATA/ATAPI
controllers)
Status    OK
PNP Device ID       PCIIDE\IDECHANNEL\4&C1BABAC&0&1

Driver    c:\windows\system32\drivers\atapi.sys
(6.1.7600.16385, 23.56 KB (24,128 bytes), 7/13/2009
6:19 PM)

[Printing]

Name      Driver    Port Name Server Name
Microsoft XPS Document Writer Microsoft XPS Document
Writer    XPSPort:  Not Available

[Problem Devices]

Device    PNP Device ID       Error Code

[USB]

Device    PNP Device ID
Standard OpenHCD USB Host Controller
          PCI\VEN_1002&DEV_4398&SUBSYS_1770103C&REV_0
0\3&3097523A&0&99
Standard Enhanced PCI to USB Host Controller
          PCI\VEN_1002&DEV_4396&SUBSYS_1771103C&REV_0
0\3&3097523A&0&92
```

```
Standard Enhanced PCI to USB Host Controller
          PCI\VEN_1002&DEV_4396&SUBSYS_1771103C&REV_0
0\3&3097523A&0&9A
Standard OpenHCD USB Host Controller
          PCI\VEN_1002&DEV_4397&SUBSYS_176F103C&REV_0
0\3&3097523A&0&90
Standard OpenHCD USB Host Controller
          PCI\VEN_1002&DEV_4397&SUBSYS_176F103C&REV_0
0\3&3097523A&0&98
Standard OpenHCD USB Host Controller
          PCI\VEN_1002&DEV_4398&SUBSYS_1770103C&REV_0
0\3&3097523A&0&91
Standard Universal PCI to USB Host Controller
          PCI\VEN_103C&DEV_3300&SUBSYS_3309103C&REV_0
1\4&2F88CDA0&0&0450

[Software Environment]



[System Drivers]

Name      Description         File      Type
          Started   Start Mode          State
          Status    Error Control       Accept Pause
          Accept Stop
1394ohci  1394 OHCI Compliant Host Controller
          c:\windows\system32\drivers\1394ohci.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

acpi      Microsoft ACPI Driver
          c:\windows\system32\drivers\acpi.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

acpipmi   ACPI Power Meter Driver
          c:\windows\system32\drivers\acpipmi.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

adp94xx   adp94xx
          c:\windows\system32\drivers\adp94xx.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

adpahci   adpahci
          c:\windows\system32\drivers\adpahci.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

adpu320   adpu320
          c:\windows\system32\drivers\adpu320.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

afd       Ancillary Function Driver for Winsock
          c:\windows\system32\drivers\afd.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes
```

```
agp440    Intel AGP Bus Filter
          c:\windows\system32\drivers\agp440.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

aliide    aliide
          c:\windows\system32\drivers\aliide.sys
          Kernel Driver       No        Manual
          Stopped   OK        Critical  No        No

amdide    amdide
          c:\windows\system32\drivers\amdide.sys
          Kernel Driver       No        Manual
          Stopped   OK        Critical  No        No

amdk8     AMD K8 Processor Driver
          c:\windows\system32\drivers\amdk8.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

amdppm    AMD Processor Driver
          c:\windows\system32\drivers\amdppm.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

amdsata   amdsata
          c:\windows\system32\drivers\amdsata.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

amdsbs    amdsbs
          c:\windows\system32\drivers\amdsbs.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

amdtools64          AMD Special Tools Driver
          c:\windows\system32\drivers\amdtools64.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

amdxata   amdxata
          c:\windows\system32\drivers\amdxata.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

appid     AppID Driver
          c:\windows\system32\drivers\appid.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

arc       arc
          c:\windows\system32\drivers\arc.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

arcsas    arcsas
          c:\windows\system32\drivers\arcsas.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

asyncmac  RAS Asynchronous Media Driver
          c:\windows\system32\drivers\asyncmac.sys
```

```
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

atapi     IDE Channel
          c:\windows\system32\drivers\atapi.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

b06bdrv   HP Virtual Bus Device
          c:\windows\system32\drivers\bxvbda.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

b57nd60a  Broadcom NetXtreme Gigabit Ethernet - NDIS
6.0       c:\windows\system32\drivers\b57nd60a.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

be2net    ServerEngines BladeEngine2 10Gb NIC
          c:\windows\system32\drivers\be2nd62.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

beep      Beep
          c:\windows\system32\drivers\beep.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

blbdrive  blbdrive
          c:\windows\system32\drivers\blbdrive.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

bowser    Browser Support Driver
          c:\windows\system32\drivers\bowser.sys
          File System Driver  Yes       Manual
          Running   OK        Normal    No        Yes

brfiltlo  Brother USB Mass-Storage Lower Filter
Driver    c:\windows\system32\drivers\brfiltlo.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

brfiltup  Brother USB Mass-Storage Upper Filter
Driver    c:\windows\system32\drivers\brfiltup.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

brserid   Brother MFC Serial Port Interface Driver
(WDM)     c:\windows\system32\drivers\brserid.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

brserwdm  Brother WDM Serial driver
          c:\windows\system32\drivers\brserwdm.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

brusbmdm  Brother MFC USB Fax Only Modem
          c:\windows\system32\drivers\brusbmdm.sys
          Kernel Driver       No        Manual
```

```
          Stopped   OK        Normal    No        No

brusbser  Brother MFC USB Serial WDM Driver
          c:\windows\system32\drivers\brusbser.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

caprof    CAPROF
          \??\c:\windows\system32\drivers\caprof.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

cautility CAUTILITY
          \??\c:\windows\system32\drivers\cautility.s
ys        Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

cdfs      CD/DVD File System Reader
          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       Yes       System
          Running   OK        Normal    No        Yes

clfs      Common Log (CLFS)
          c:\windows\system32\clfs.sys  Kernel Driver
          Yes       Boot      Running   OK
          Critical  No        Yes
cmbatt    Microsoft ACPI Control Method Battery
Driver    c:\windows\system32\drivers\cmbatt.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

cmdide    cmdide
          c:\windows\system32\drivers\cmdide.sys
          Kernel Driver       No        Manual
          Stopped   OK        Critical  No        No

cng       CNG
          c:\windows\system32\drivers\cng.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

compbatt  Compbatt
          c:\windows\system32\drivers\compbatt.sys
          Kernel Driver       No        Manual
          Stopped   OK        Critical  No        No

compositebus        Composite Bus Enumerator Driver
          c:\windows\system32\drivers\compositebus.sy
s         Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

cpqteam   HP Network Configuration Utility
          c:\windows\system32\drivers\cpqteam.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No
```

```
cpuspy3   CpuSpy3 Driver
          \??\c:\windows\system32\drivers\cpuspy3.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

crcdisk   Crcdisk Filter Driver
          c:\windows\system32\drivers\crcdisk.sys
          Kernel Driver       No        Disabled
          Stopped   OK        Normal    No        No

dfsc      DFS Namespace Client Driver
          c:\windows\system32\drivers\dfsc.sys
          File System Driver  Yes       System
          Running   OK        Normal    No        Yes

discache  System Attribute Cache
          c:\windows\system32\drivers\discache.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

disk      Disk Driver
          c:\windows\system32\drivers\disk.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

dxgkrnl   LDDM Graphics Subsystem
          c:\windows\system32\drivers\dxgkrnl.sys
          Kernel Driver       No        Manual
          Stopped   OK        Ignore    No        No

ebdrv     Broadcom NetXtreme II 10 GigE VBD
          c:\windows\system32\drivers\evbda.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

elbycdio  ElbyCDIO Driver
          c:\windows\system32\drivers\elbycdio.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

elxstor   elxstor
          c:\windows\system32\drivers\elxstor.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

errdev    Microsoft Hardware Error Device Driver
          c:\windows\system32\drivers\errdev.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

exfat     exFAT File System Driver
          c:\windows\system32\drivers\exfat.sys
          File System Driver  No        Manual
          Stopped   OK        Normal    No        No

fastfat   FAT12/16/32 File System Driver
          c:\windows\system32\drivers\fastfat.sys
          File System Driver  No        Manual
          Stopped   OK        Normal    No        No

fdc       Floppy Disk Controller Driver
          c:\windows\system32\drivers\fdc.sys
```

```
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

fileinfo  File Information FS MiniFilter
          c:\windows\system32\drivers\fileinfo.sys
          File System Driver  No        Manual
          Stopped   OK        Normal    No        No

filetrace Filetrace
          c:\windows\system32\drivers\filetrace.sys
          File System Driver  No        Manual
          Stopped   OK        Normal    No        No

flpydisk  Floppy Disk Driver
          c:\windows\system32\drivers\flpydisk.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

fltmgr    FltMgr
          c:\windows\system32\drivers\fltmgr.sys
          File System Driver  Yes       Boot
          Running   OK        Critical  No        Yes

fsdepends File System Dependency Minifilter
          c:\windows\system32\drivers\fsdepends.sys
          File System Driver  No        Manual
          Stopped   OK        Critical  No        No

gagp30kx  Microsoft Generic AGPv3.0 Filter for K8
Processor Platforms
          c:\windows\system32\drivers\gagp30kx.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

hdaudbus  Microsoft UAA Bus Driver for High
Definition Audio
          c:\windows\system32\drivers\hdaudbus.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

hidbatt   HID UPS Battery Driver
          c:\windows\system32\drivers\hidbatt.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

hidusb    Microsoft HID Class Driver
          c:\windows\system32\drivers\hidusb.sys
          Kernel Driver       Yes       Manual
          Running   OK        Ignore    No        Yes

hpcisss2  HpCISSs2
          c:\windows\system32\drivers\hpcisss2.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

hpqcissb  Smart Array Controllers Non-Miniport Bus
Driver    c:\windows\system32\drivers\hpqcissb.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

hpqcissd  Smart Array Controllers Non-Miniport Disk
Driver    c:\windows\system32\drivers\hpqcissd.sys
```

```
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

hpqilo3chif         HP ProLiant Management Controller
Driver (CHIF)
          c:\windows\system32\drivers\hpqilo3chif.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

hpqilo3core         HP ProLiant Management Controller
Driver (CORE)
          c:\windows\system32\drivers\hpqilo3core.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

hpqilo3whea         HP ProLiant Management Controller
Driver (WHEA)
          c:\windows\system32\drivers\hpqilo3whea.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

hpsamd    HpSAMD
          c:\windows\system32\drivers\hpsamd.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

hpsstkio  HP SmartStart Scripting Toolkit I/O Driver
          c:\windows\system32\drivers\hpsstkio.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

http      HTTP
          c:\windows\system32\drivers\http.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

hwpolicy  Hardware Policy Driver
          c:\windows\system32\drivers\hwpolicy.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

i8042prt  i8042 Keyboard and PS/2 Mouse Port Driver
          c:\windows\system32\drivers\i8042prt.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

iastorv   iaStorV
          c:\windows\system32\drivers\iastorv.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

iirsp     iirsp
          c:\windows\system32\drivers\iirsp.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

intelide  intelide
          c:\windows\system32\drivers\intelide.sys
          Kernel Driver       No        Manual
          Stopped   OK        Critical  No        No
```

```
intelppm  Intel Processor Driver
          c:\windows\system32\drivers\intelppm.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

ioatdma   Intel(R) QuickData Technology Device
          c:\windows\system32\drivers\qd260x64.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

ipfilterdriver      IP Traffic Filter Driver
          c:\windows\system32\drivers\ipfltdrv.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

ipmidrv   IPMIDRV
          c:\windows\system32\drivers\ipmidrv.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

ipnat     IP Network Address Translator
          c:\windows\system32\drivers\ipnat.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

isapnp    isapnp
          c:\windows\system32\drivers\isapnp.sys
          Kernel Driver       No        Manual
          Stopped   OK        Critical  No        No

iscsiprt  iScsiPort Driver
          c:\windows\system32\drivers\msiscsi.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

kbdclass  Keyboard Class Driver
          c:\windows\system32\drivers\kbdclass.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

kbdhid    Keyboard HID Driver
          c:\windows\system32\drivers\kbdhid.sys
          Kernel Driver       Yes       Manual
          Running   OK        Ignore    No        Yes

ksecdd    KSecDD
          c:\windows\system32\drivers\ksecdd.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

ksecpkg   KSecPkg
          c:\windows\system32\drivers\ksecpkg.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

ksthunk   Kernel Streaming Thunks
          c:\windows\system32\drivers\ksthunk.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

l2nd      HP NC370 Multifunction Gigabit Server
Adapter   c:\windows\system32\drivers\bxnd60a.sys
```

```
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

lltdio    Link-Layer Topology Discovery Mapper I/O
Driver    c:\windows\system32\drivers\lltdio.sys
          Kernel Driver       Yes       Auto
          Running   OK        Normal    No        Yes

lsi_fc    LSI_FC
          c:\windows\system32\drivers\lsi_fc.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

lsi_sas   LSI_SAS
          c:\windows\system32\drivers\lsi_sas.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

lsi_sas2  LSI_SAS2
          c:\windows\system32\drivers\lsi_sas2.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

lsi_scsi  LSI_SCSI
          c:\windows\system32\drivers\lsi_scsi.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

luafv     UAC File Virtualization
          c:\windows\system32\drivers\luafv.sys
          File System Driver  Yes       Auto
          Running   OK        Normal    No        Yes

megasas   megasas
          c:\windows\system32\drivers\megasas.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

megasr    MegaSR
          c:\windows\system32\drivers\megasr.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

modem     Modem
          c:\windows\system32\drivers\modem.sys
          Kernel Driver       No        Manual
          Stopped   OK        Ignore    No        No

monitor   Microsoft Monitor Class Function Driver
Service   c:\windows\system32\drivers\monitor.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

mouclass  Mouse Class Driver
          c:\windows\system32\drivers\mouclass.sys
          Kernel Driver       Yes       Manual
          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        Critical  No        Yes

mpio      mpio
          c:\windows\system32\drivers\mpio.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

mpsdrv    Windows Firewall Authorization Driver
          c:\windows\system32\drivers\mpsdrv.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

mrxsmb    SMB MiniRedirector Wrapper and Engine
          c:\windows\system32\drivers\mrxsmb.sys
          File System Driver  Yes       Manual
          Running   OK        Normal    No        Yes

mrxsmb10  SMB 1.x MiniRedirector
          c:\windows\system32\drivers\mrxsmb10.sys
          File System Driver  Yes       Manual
          Running   OK        Normal    No        Yes

mrxsmb20  SMB 2.0 MiniRedirector
          c:\windows\system32\drivers\mrxsmb20.sys
          File System Driver  Yes       Manual
          Running   OK        Normal    No        Yes

msahci    msahci
          c:\windows\system32\drivers\msahci.sys
          Kernel Driver       No        Manual
          Stopped   OK        Critical  No        No

msdsm     msdsm
          c:\windows\system32\drivers\msdsm.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

msfs      Msfs
          c:\windows\system32\drivers\msfs.sys
          File System Driver  Yes       System
          Running   OK        Normal    No        Yes

mshidkmdf Pass-through HID to KMDF Filter Driver
          c:\windows\system32\drivers\mshidkmdf.sys
          Kernel Driver       No        Manual
          Stopped   OK        Ignore    No        No

msisadrv  msisadrv
          c:\windows\system32\drivers\msisadrv.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

msrpc     MsRPC
          c:\windows\system32\drivers\msrpc.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No
```

```
mssmbios  Microsoft System Management BIOS Driver
          c:\windows\system32\drivers\mssmbios.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

mtconfig  Microsoft Input Configuration Driver
          c:\windows\system32\drivers\mtconfig.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

multevent MultEvent Driver
          \??\c:\windows\system32\drivers\multeventdr
iver.sys  Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

multevent-dsm       MultEvent-DSM Driver
          \??\c:\windows\system32\drivers\multevent-
dsmdriver.sys       Kernel Driver       No
          Manual    Stopped   OK        Normal    No
          No
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        Critical  No        Yes

ndiscap   NDIS Capture LightWeight Filter
          c:\windows\system32\drivers\ndiscap.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

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     NetBT
          c:\windows\system32\drivers\netbt.sys
```

```
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

nfrd960   nfrd960
          c:\windows\system32\drivers\nfrd960.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

npfs      Npfs
          c:\windows\system32\drivers\npfs.sys
          File System Driver  Yes       System
          Running   OK        Normal    No        Yes

nsiproxy  NSI proxy service driver.
          c:\windows\system32\drivers\nsiproxy.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

ntfs      Ntfs
          c:\windows\system32\drivers\ntfs.sys
          File System Driver  Yes       Manual
          Running   OK        Normal    No        Yes

null      Null
          c:\windows\system32\drivers\null.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

nvraid    nvraid
          c:\windows\system32\drivers\nvraid.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

nvstor    nvstor
          c:\windows\system32\drivers\nvstor.sys
          Kernel Driver       No        Manual
          Stopped   OK        Critical  No        No

nv_agp    NVIDIA nForce AGP Bus Filter
          c:\windows\system32\drivers\nv_agp.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

ohci1394  1394 OHCI Compliant Host Controller
(Legacy)  c:\windows\system32\drivers\ohci1394.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

parport   Parallel port driver
          c:\windows\system32\drivers\parport.sys
          Kernel Driver       No        Manual
          Stopped   OK        Ignore    No        No

partmgr   Partition Manager
          c:\windows\system32\drivers\partmgr.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

pci       PCI Bus Driver
          c:\windows\system32\drivers\pci.sys
          Kernel Driver       Yes       Boot
```

```
          Running   OK        Critical  No        Yes

pciide    pciide
          c:\windows\system32\drivers\pciide.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

pcmcia    pcmcia
          c:\windows\system32\drivers\pcmcia.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

pcore     PCORE
          \??\c:\windows\system32\drivers\pcore.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

pcw       Performance Counters for Windows Driver
          c:\windows\system32\drivers\pcw.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

peauth    PEAUTH
          c:\windows\system32\drivers\peauth.sys
          Kernel Driver       Yes       Auto
          Running   OK        Normal    No        Yes

pptpminiport        WAN Miniport (PPTP)
          c:\windows\system32\drivers\raspptp.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

processor Processor Driver
          c:\windows\system32\drivers\processr.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

psched    QoS Packet Scheduler
          c:\windows\system32\drivers\pacer.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

ql2300    QLogic Fibre Channel STOR Miniport Driver
(wx64 IP) c:\windows\system32\drivers\ql2300.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

ql40xx    ql40xx
          c:\windows\system32\drivers\ql40xx.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

rasacd    Remote Access Auto Connection Driver
          c:\windows\system32\drivers\rasacd.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

rasagilevpn         WAN Miniport (IKEv2)
          c:\windows\system32\drivers\agilevpn.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes
```

```
rasl2tp   WAN Miniport (L2TP)
          c:\windows\system32\drivers\rasl2tp.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

raspppoe  Remote Access PPPOE Driver
          c:\windows\system32\drivers\raspppoe.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

rassstp   WAN Miniport (SSTP)
          c:\windows\system32\drivers\rassstp.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

rdbss     Redirected Buffering Sub Sysytem
          c:\windows\system32\drivers\rdbss.sys
          File System Driver  Yes       System
          Running   OK        Normal    No        Yes

rdpbus    Remote Desktop Device Redirector Bus Driver
          c:\windows\system32\drivers\rdpbus.sys
          Kernel Driver       Yes       Manual
          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

rdpencdd  RDP Encoder Mirror Driver
          c:\windows\system32\drivers\rdpencdd.sys
          Kernel Driver       Yes       System
          Running   OK        Ignore    No        Yes

rdprefmp  Reflector Display Driver used to gain
access to graphics data
          c:\windows\system32\drivers\rdprefmp.sys
          Kernel Driver       Yes       System
          Running   OK        Ignore    No        Yes

rdpwd     RDP Winstation Driver
          c:\windows\system32\drivers\rdpwd.sys
          Kernel Driver       Yes       Manual
          Running   OK        Ignore    No        Yes

rspndr    Link-Layer Topology Discovery Responder
          c:\windows\system32\drivers\rspndr.sys
          Kernel Driver       Yes       Auto
          Running   OK        Normal    No        Yes

s3cap     s3cap
          c:\windows\system32\drivers\vms3cap.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

sacdrv    sacdrv
          c:\windows\system32\drivers\sacdrv.sys
          Kernel Driver       No        Boot
          Stopped   OK        Ignore    No        No

sbp2port  sbp2port
          c:\windows\system32\drivers\sbp2port.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

scfilter  Smart card PnP Class Filter Driver
          c:\windows\system32\drivers\scfilter.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

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       Yes       Manual
          Running   OK        Normal    No        Yes

serial    Serial port driver
          c:\windows\system32\drivers\serial.sys
          Kernel Driver       Yes       System
          Running   OK        Ignore    No        Yes

sermouse  Serial Mouse Driver
          c:\windows\system32\drivers\sermouse.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

sffdisk   SFF Storage Class Driver
          c:\windows\system32\drivers\sffdisk.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

sffp_mmc  SFF Storage Protocol Driver for MMC
          c:\windows\system32\drivers\sffp_mmc.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

sffp_sd   SFF Storage Protocol Driver for SDBus
          c:\windows\system32\drivers\sffp_sd.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

sfloppy   High-Capacity Floppy Disk Drive
          c:\windows\system32\drivers\sfloppy.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

sisraid2  SiSRaid2
          c:\windows\system32\drivers\sisraid2.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

sisraid4  SiSRaid4
          c:\windows\system32\drivers\sisraid4.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

smb       Message-oriented TCP/IP and TCP/IPv6
Protocol (SMB session)
          c:\windows\system32\drivers\smb.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

spldr     Security Processor Loader Driver
          c:\windows\system32\drivers\spldr.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

srv       Server SMB 1.xxx Driver
          c:\windows\system32\drivers\srv.sys
          File System Driver  Yes       Manual
          Running   OK        Normal    No        Yes

srv2      Server SMB 2.xxx Driver
          c:\windows\system32\drivers\srv2.sys
          File System Driver  Yes       Manual
          Running   OK        Normal    No        Yes

srvnet    srvnet
          c:\windows\system32\drivers\srvnet.sys
          File System Driver  Yes       Manual
          Running   OK        Normal    No        Yes

stexstor  stexstor
          c:\windows\system32\drivers\stexstor.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

storflt   Disk Virtual Machine Bus Acceleration
Filter Driver
          c:\windows\system32\drivers\vmstorfl.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

storvsc   storvsc
          c:\windows\system32\drivers\storvsc.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

storvsp   storvsp
          c:\windows\system32\drivers\storvsp.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

swenum    Software Bus Driver
          c:\windows\system32\drivers\swenum.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

tcpip     TCP/IP Protocol Driver
          c:\windows\system32\drivers\tcpip.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

tcpip6    Microsoft IPv6 Protocol Driver
          c:\windows\system32\drivers\tcpip.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

tcpipreg  TCP/IP Registry Compatibility
          c:\windows\system32\drivers\tcpipreg.sys
          Kernel Driver       Yes       Auto
          Running   OK        Normal    No        Yes

tdpipe    TDPIPE
          c:\windows\system32\drivers\tdpipe.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

tdtcp     TDTCP
          c:\windows\system32\drivers\tdtcp.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

tdx       NetIO Legacy TDI Support Driver
          c:\windows\system32\drivers\tdx.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

termdd    Terminal Device Driver
          c:\windows\system32\drivers\termdd.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

tssecsrv  Remote Desktop Services Security Filter
Driver    c:\windows\system32\drivers\tssecsrv.sys
          Kernel Driver       Yes       Manual
          Running   OK        Ignore    No        Yes

tunnel    Microsoft Tunnel Miniport Adapter Driver
          c:\windows\system32\drivers\tunnel.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

uagp35    Microsoft AGPv3.5 Filter
          c:\windows\system32\drivers\uagp35.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

udfs      udfs
          c:\windows\system32\drivers\udfs.sys
          File System Driver  No        Disabled
          Stopped   OK        Normal    No        No

uliagpkx  Uli AGP Bus Filter
          c:\windows\system32\drivers\uliagpkx.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

umbus     UMBus Enumerator Driver
          c:\windows\system32\drivers\umbus.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

umpass    Microsoft UMPass Driver
          c:\windows\system32\drivers\umpass.sys
          Kernel Driver       No        Manual
```

```
          Stopped   OK        Normal    No        No

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    c:\windows\system32\drivers\usbohci.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

usbprint  Microsoft USB PRINTER Class
          c:\windows\system32\drivers\usbprint.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

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

vclone    VClone
          c:\windows\system32\drivers\vclone.sys
          Kernel Driver       Yes       Manual
          Running   OK        Ignore    No        Yes

vdrvroot  Microsoft Virtual Drive Enumerator Driver
          c:\windows\system32\drivers\vdrvroot.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

vga       vga
          c:\windows\system32\drivers\vgapnp.sys
          Kernel Driver       Yes       Manual
          Running   OK        Ignore    No        Yes

vgasave   VgaSave
          c:\windows\system32\drivers\vga.sys
          Kernel Driver       Yes       System
          Running   OK        Ignore    No        Yes

vhdmp     vhdmp
          c:\windows\system32\drivers\vhdmp.sys
          Kernel Driver       No        Manual
```

```
          Stopped   OK        Normal    No        No

viaide    viaide
          c:\windows\system32\drivers\viaide.sys
          Kernel Driver       No        Manual
          Stopped   OK        Critical  No        No

vid       Vid
          c:\windows\system32\drivers\vid.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

vmbus     Virtual Machine Bus
          c:\windows\system32\drivers\vmbus.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

vmbushid  VMBusHID
          c:\windows\system32\drivers\vmbushid.sys
          Kernel Driver       No        Manual
          Stopped   OK        Ignore    No        No

volmgr    Volume Manager Driver
          c:\windows\system32\drivers\volmgr.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

volmgrx   Dynamic Volume Manager
          c:\windows\system32\drivers\volmgrx.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

volsnap   Storage volumes
          c:\windows\system32\drivers\volsnap.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

vsmraid   vsmraid
          c:\windows\system32\drivers\vsmraid.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

wacompen  Wacom Serial Pen HID Driver
          c:\windows\system32\drivers\wacompen.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

wanarp    Remote Access IP ARP Driver
          c:\windows\system32\drivers\wanarp.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

wanarpv6  Remote Access IPv6 ARP Driver
          c:\windows\system32\drivers\wanarp.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

wd        Wd
          c:\windows\system32\drivers\wd.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No
```

```
wdf01000  Kernel Mode Driver Frameworks service
          c:\windows\system32\drivers\wdf01000.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

wfplwf    WFP Lightweight Filter
          c:\windows\system32\drivers\wfplwf.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

wimmount  WIMMount
          c:\windows\system32\drivers\wimmount.sys
          File System Driver  No        Manual
          Stopped   OK        Normal    No        No

wmiacpi   Microsoft Windows Management Interface for
ACPI      c:\windows\system32\drivers\wmiacpi.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

ws2ifsl   Winsock IFS Driver
          c:\windows\system32\drivers\ws2ifsl.sys
          Kernel Driver       No        Disabled
          Stopped   OK        Normal    No        No

wudfpf    User Mode Driver Frameworks Platform Driver
          c:\windows\system32\drivers\wudfpf.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No


[Environment Variables]

Variable  Value     User Name
ComSpec   %SystemRoot%\system32\cmd.exe <SYSTEM>
FP_NO_HOST_CHECK    NO        <SYSTEM>
OS        Windows_NT          <SYSTEM>
Path      C:\Perl64\site\bin;C:\Perl64\bin;C:\Program
Files\HP\NCU;%SystemRoot%\system32;%SystemRoot%;%Syst
emRoot%\System32\Wbem;%SYSTEMROOT%\System32\WindowsPo
werShell\v1.0\;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\DTS\Binn\;C:\Program Files (x86)\Microsoft
SQL
Server\90\Tools\Binn\VSShell\Common7\IDE\;C:\Program
Files\Microsoft SQL Server\90\DTS\Binn\;C:\Program
Files (x86)\AMD\CodeAnalyst\bin         <SYSTEM>
PATHEXT
          .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF
;.WSH;.MSC          <SYSTEM>
PROCESSOR_ARCHITECTURE        AMD64     <SYSTEM>
TEMP      %SystemRoot%\TEMP   <SYSTEM>
TMP       %SystemRoot%\TEMP   <SYSTEM>
USERNAME  SYSTEM    <SYSTEM>
windir    %SystemRoot%        <SYSTEM>
PSModulePath
          %SystemRoot%\system32\WindowsPowerShell\v1.
0\Modules\          <SYSTEM>
NUMBER_OF_PROCESSORS          32        <SYSTEM>
```

```
PROCESSOR_LEVEL     21        <SYSTEM>
PROCESSOR_IDENTIFIER          AMD64 Family 21 Model 1
Stepping 2, AuthenticAMD      <SYSTEM>
PROCESSOR_REVISION  0102      <SYSTEM>
TEMP      %USERPROFILE%\AppData\Local\Temp        NT
AUTHORITY\SYSTEM
TMP       %USERPROFILE%\AppData\Local\Temp        NT
AUTHORITY\SYSTEM
TEMP      %USERPROFILE%\AppData\Local\Temp        NT
AUTHORITY\LOCAL SERVICE
TMP       %USERPROFILE%\AppData\Local\Temp        NT
AUTHORITY\LOCAL SERVICE
TEMP      %USERPROFILE%\AppData\Local\Temp        NT
AUTHORITY\NETWORK SERVICE
TMP       %USERPROFILE%\AppData\Local\Temp        NT
AUTHORITY\NETWORK SERVICE
TEMP      %USERPROFILE%\AppData\Local\Temp
          WIN-FECQNPTFFHQ\Administrator
TMP       %USERPROFILE%\AppData\Local\Temp
          WIN-FECQNPTFFHQ\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
K:        \\depot\mnt         Disk      Current
Connection          americas\pcao

[Running Tasks]

Name      Path      Process ID          Priority  Min
Working Set         Max Working Set     Start Time
          Version   Size      File Date
system idle process Not Available       0         0
          Not Available       Not Available       Not
Available Not Available       Not Available       Not
Available
system    Not Available       4         8         Not
Available Not Available       11/10/2011 4:52 PM  Not
Available Not Available       Not Available
smss.exe  Not Available       464       11        200
          1380      11/10/2011 4:52 PM  Not Available
          Not Available       Not Available
csrss.exe c:\windows\system32\csrss.exe 696       13
          200       1380      11/10/2011 4:53 PM
          6.1.7600.16385      7.50 KB (7,680 bytes)
          7/13/2009 6:19 PM
csrss.exe c:\windows\system32\csrss.exe 736       13
          200       1380      11/10/2011 4:53 PM
          6.1.7600.16385      7.50 KB (7,680 bytes)
          7/13/2009 6:19 PM
wininit.exe         c:\windows\system32\wininit.exe
          744       13        200       1380
```

```
          11/10/2011 4:53 PM  6.1.7600.16385
          126.00 KB (129,024 bytes)     7/13/2009
6:52 PM
winlogon.exe        c:\windows\system32\winlogon.exe
          784       13        200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          380.00 KB (389,120 bytes)     7/13/2009
6:52 PM
services.exe        c:\windows\system32\services.exe
          832       9         200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          321.00 KB (328,704 bytes)     7/13/2009
6:19 PM
lsass.exe c:\windows\system32\lsass.exe 840       9
          200       1380      11/10/2011 4:53 PM
          6.1.7600.16385      30.50 KB (31,232 bytes)
          7/13/2009 6:20 PM
lsm.exe   c:\windows\system32\lsm.exe   848       8
          200       1380      11/10/2011 4:53 PM
          6.1.7600.16385      325.50 KB (333,312
bytes)    7/13/2009 7:17 PM
svchost.exe         c:\windows\system32\svchost.exe
          944       8         200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
          1020      8         200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
          476       8         200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
          732       8         200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
          324       8         200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
          660       8         200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
          648       8         200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
          1068      8         200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
```

```
spoolsv.exe         c:\windows\system32\spoolsv.exe
          1216      8         200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          545.00 KB (558,080 bytes)     7/13/2009
7:39 PM
caloadservice.exe   c:\program files
(x86)\amd\codeanalyst\bin\caloadservice.exe
          1252      8         200       1380
          11/10/2011 4:53 PM  1.1.4.8   57.00 KB
(58,368 bytes)      7/7/2011 12:35 PM
proliantmonitor.exe c:\program files\hewlett-
packard\ilo 3\service\proliantmonitor.exe
          1376      8         200       1380
          11/10/2011 4:53 PM  3.3.0.0   267.60 KB
(274,024 bytes)     11/19/2010 5:38 PM
svchost.exe         c:\windows\system32\svchost.exe
          1404      8         200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
sqlwriter.exe       c:\program files\microsoft sql
server\90\shared\sqlwriter.exe          1488      8
          200       1380      11/10/2011 4:53 PM
          2005.90.4035.0      150.34 KB (153,952
bytes)    11/25/2008 12:45 PM
taskhost.exe        c:\windows\system32\taskhost.exe
          1496      8         200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          67.50 KB (69,120 bytes)       7/13/2009
6:31 PM
dwm.exe   c:\windows\system32\dwm.exe   1600      8
          200       1380      11/10/2011 4:53 PM
          6.1.7600.16385      117.50 KB (120,320
bytes)    7/13/2009 6:37 PM
explorer.exe        c:\windows\explorer.exe
          1648      8         200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          2.74 MB (2,868,224 bytes)     7/13/2009
6:56 PM
wmiprvse.exe
          c:\windows\system32\wbem\wmiprvse.exe
          1816      8         200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          360.00 KB (368,640 bytes)     7/13/2009
6:47 PM
cpqteam.exe         c:\program
files\hp\ncu\cpqteam.exe      2160      8         200
          1380      11/10/2011 4:53 PM  10.50.0.20
          185.00 KB (189,440 bytes)     2/2/2011 5:35
AM
vcddaemon.exe       c:\program files (x86)\elaborate
bytes\virtualclonedrive\vcddaemon.exe   2468      8
          200       1380      11/10/2011 4:53 PM
          5.4.3.3   83.16 KB (85,160 bytes)
          6/17/2009 6:44 AM
svchost.exe         c:\windows\system32\svchost.exe
          2660      8         200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
          2764      8         200       1380
```

```
          11/10/2011 4:53 PM  6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
sppsvc.exe          c:\windows\system32\sppsvc.exe
          1116      8         200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          3.36 MB (3,524,608 bytes)     7/13/2009
8:05 PM
trustedinstaller.exe
          c:\windows\servicing\trustedinstaller.exe
          1324      8         200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          189.50 KB (194,048 bytes)     7/13/2009
6:35 PM
mmc.exe   c:\windows\system32\mmc.exe   2876      8
          200       1380      11/10/2011 4:53 PM
          6.1.7600.16385      2.04 MB (2,144,256
bytes)    7/13/2009 6:49 PM
msinfo32.exe        c:\windows\system32\msinfo32.exe
          3068      8         200       1380
          11/10/2011 4:53 PM  6.1.7600.16385
          370.00 KB (378,880 bytes)     7/13/2009
6:31 PM
msdtc.exe c:\windows\system32\msdtc.exe 3420      8
          200       1380      11/10/2011 4:55 PM
          2001.12.8530.16385  138.50 KB (141,824
bytes)    7/13/2009 6:59 PM
wmiprvse.exe
          c:\windows\system32\wbem\wmiprvse.exe
          3572      8         200       1380
          11/10/2011 4:56 PM  6.1.7600.16385
          360.00 KB (368,640 bytes)     7/13/2009
6:47 PM

[Loaded Modules]

Name      Version   Size      File Date Manufacturer
          Path
csrss     6.1.7600.16385      7.50 KB (7,680 bytes)
          7/13/2009 6:19 PM   Microsoft Corporation
          c:\windows\system32\csrss.exe
ntdll     6.1.7600.16385      1.66 MB (1,736,792
bytes)    7/13/2009 6:22 PM   Microsoft Corporation
          c:\windows\system32\ntdll.dll
csrsrv    6.1.7600.16385      42.50 KB (43,520 bytes)
          7/13/2009 6:19 PM   Microsoft Corporation
          c:\windows\system32\csrsrv.dll
basesrv   6.1.7600.16385      51.50 KB (52,736 bytes)
          7/13/2009 6:18 PM   Microsoft Corporation
          c:\windows\system32\basesrv.dll
winsrv    6.1.7600.16385      209.00 KB (214,016
bytes)    7/13/2009 6:38 PM   Microsoft Corporation
          c:\windows\system32\winsrv.dll
user32    6.1.7600.16385      985.00 KB (1,008,640
bytes)    7/13/2009 6:38 PM   Microsoft Corporation
          c:\windows\system32\user32.dll
gdi32     6.1.7600.16385      395.00 KB (404,480
bytes)    7/13/2009 6:39 PM   Microsoft Corporation
          c:\windows\system32\gdi32.dll
kernel32  6.1.7600.16385      1.11 MB (1,162,240
bytes)    7/13/2009 6:28 PM   Microsoft Corporation
          c:\windows\system32\kernel32.dll
```

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kernelbase          6.1.7600.16385      411.50 KB
(421,376 bytes)     7/13/2009 6:20 PM   Microsoft
Corporation
          c:\windows\system32\kernelbase.dll
lpk       6.1.7600.16385      41.00 KB (41,984 bytes)
          7/13/2009 6:38 PM   Microsoft Corporation
          c:\windows\system32\lpk.dll
usp10     1.626.7600.16385    782.50 KB (801,280
bytes)    7/13/2009 6:38 PM   Microsoft Corporation
          c:\windows\system32\usp10.dll
msvcrt    7.0.7600.16385      620.00 KB (634,880
bytes)    7/13/2009 6:19 PM   Microsoft Corporation
          c:\windows\system32\msvcrt.dll
sxssrv    6.1.7600.16385      31.00 KB (31,744 bytes)
          7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\sxssrv.dll
sxs       6.1.7600.16385      569.50 KB (583,168
bytes)    7/13/2009 6:27 PM   Microsoft Corporation
          c:\windows\system32\sxs.dll
rpcrt4    6.1.7600.16385      1.17 MB (1,221,632
bytes)    7/13/2009 6:23 PM   Microsoft Corporation
          c:\windows\system32\rpcrt4.dll
cryptbase 6.1.7600.16385      43.00 KB (44,032 bytes)
          7/13/2009 6:20 PM   Microsoft Corporation
          c:\windows\system32\cryptbase.dll
wininit   6.1.7600.16385      126.00 KB (129,024
bytes)    7/13/2009 6:52 PM   Microsoft Corporation
          c:\windows\system32\wininit.exe
sechost   6.1.7600.16385      111.00 KB (113,664
bytes)    7/13/2009 6:20 PM   Microsoft Corporation
          c:\windows\system32\sechost.dll
profapi   6.1.7600.16385      43.00 KB (44,032 bytes)
          7/13/2009 6:20 PM   Microsoft Corporation
          c:\windows\system32\profapi.dll
imm32     6.1.7600.16385      163.50 KB (167,424
bytes)    7/13/2009 6:38 PM   Microsoft Corporation
          c:\windows\system32\imm32.dll
msctf     6.1.7600.16385      1.02 MB (1,067,008
bytes)    7/13/2009 6:40 PM   Microsoft Corporation
          c:\windows\system32\msctf.dll
rpcrtremote         6.1.7600.16385      63.50 KB
(65,024 bytes)      7/13/2009 6:59 PM   Microsoft
Corporation
          c:\windows\system32\rpcrtremote.dll
apphelp   6.1.7600.16385      330.50 KB (338,432
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\apphelp.dll
ws2_32    6.1.7600.16385      289.50 KB (296,448
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\ws2_32.dll
nsi       6.1.7600.16385      13.50 KB (13,824 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\nsi.dll
mswsock   6.1.7600.16385      312.50 KB (320,000
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\mswsock.dll
wshtcpip  6.1.7600.16385      13.00 KB (13,312 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\wshtcpip.dll
wship6    6.1.7600.16385      13.50 KB (13,824 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\wship6.dll
```

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secur32   6.1.7600.16385      27.50 KB (28,160 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\secur32.dll
sspicli   6.1.7600.16385      133.00 KB (136,192
bytes)    7/13/2009 6:20 PM   Microsoft Corporation
          c:\windows\system32\sspicli.dll
credssp   6.1.7600.16385      20.00 KB (20,480 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\credssp.dll
advapi32  6.1.7600.16385      856.50 KB (877,056
bytes)    7/13/2009 7:41 PM   Microsoft Corporation
          c:\windows\system32\advapi32.dll
winlogon  6.1.7600.16385      380.00 KB (389,120
bytes)    7/13/2009 6:52 PM   Microsoft Corporation
          c:\windows\system32\winlogon.exe
winsta    6.1.7600.16385      228.00 KB (233,472
bytes)    7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\winsta.dll
uxinit    6.1.7600.16385      24.50 KB (25,088 bytes)
          7/13/2009 6:54 PM   Microsoft Corporation
          c:\windows\system32\uxinit.dll
slc       6.1.7600.16385      30.00 KB (30,720 bytes)
          7/13/2009 6:51 PM   Microsoft Corporation
          c:\windows\system32\slc.dll
mpr       6.1.7600.16385      79.00 KB (80,896 bytes)
          7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\mpr.dll
services  6.1.7600.16385      321.00 KB (328,704
bytes)    7/13/2009 6:19 PM   Microsoft Corporation
          c:\windows\system32\services.exe
scext     6.1.7600.16385      87.00 KB (89,088 bytes)
          7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\scext.dll
scesrv    6.1.7600.16385      396.50 KB (406,016
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\scesrv.dll
srvcli    6.1.7600.16385      124.50 KB (127,488
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\srvcli.dll
authz     6.1.7600.16385      173.50 KB (177,664
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\authz.dll
ubpm      6.1.7600.16385      209.00 KB (214,016
bytes)    7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\ubpm.dll
wtsapi32  6.1.7600.16385      53.00 KB (54,272 bytes)
          7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\wtsapi32.dll
lsass     6.1.7600.16385      30.50 KB (31,232 bytes)
          7/13/2009 6:20 PM   Microsoft Corporation
          c:\windows\system32\lsass.exe
sspisrv   6.1.7600.16385      28.00 KB (28,672 bytes)
          7/13/2009 6:20 PM   Microsoft Corporation
          c:\windows\system32\sspisrv.dll
lsasrv    6.1.7600.16385      1.38 MB (1,446,912
bytes)    7/13/2009 6:51 PM   Microsoft Corporation
          c:\windows\system32\lsasrv.dll
samsrv    6.1.7600.16385      740.00 KB (757,760
bytes)    7/13/2009 6:54 PM   Microsoft Corporation
          c:\windows\system32\samsrv.dll
```

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cryptdll  6.1.7600.16385      64.50 KB (66,048 bytes)
          7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\cryptdll.dll
msasn1    6.1.7600.16385      43.00 KB (44,032 bytes)
          7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\msasn1.dll
wevtapi   6.1.7600.16385      418.00 KB (428,032
bytes)    7/13/2009 6:46 PM   Microsoft Corporation
          c:\windows\system32\wevtapi.dll
cngaudit  6.1.7600.16385      18.50 KB (18,944 bytes)
          7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\cngaudit.dll
ncrypt    6.1.7600.16385      300.00 KB (307,200
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\ncrypt.dll
bcrypt    6.1.7600.16385      121.00 KB (123,904
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\bcrypt.dll
msprivs   6.1.7600.16385      2.00 KB (2,048 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\msprivs.dll
netjoin   6.1.7600.16385      184.50 KB (188,928
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\netjoin.dll
negoexts  6.1.7600.16385      114.50 KB (117,248
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\negoexts.dll
kerberos  6.1.7600.16385      697.50 KB (714,240
bytes)    7/13/2009 6:51 PM   Microsoft Corporation
          c:\windows\system32\kerberos.dll
cryptsp   6.1.7600.16385      78.00 KB (79,872 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\cryptsp.dll
msv1_0    6.1.7600.16385      304.00 KB (311,296
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\msv1_0.dll
netlogon  6.1.7600.16385      676.50 KB (692,736
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\netlogon.dll
dnsapi    6.1.7600.16385      348.00 KB (356,352
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\dnsapi.dll
logoncli  6.1.7600.16385      182.00 KB (186,368
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\logoncli.dll
schannel  6.1.7600.16385      340.50 KB (348,672
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\schannel.dll
crypt32   6.1.7600.16385      1.39 MB (1,454,592
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\crypt32.dll
wdigest   6.1.7600.16385      205.50 KB (210,432
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\wdigest.dll
rsaenh    6.1.7600.16385      274.66 KB (281,256
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\rsaenh.dll
tspkg     6.1.7600.16385      84.00 KB (86,016 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\tspkg.dll
```

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pku2u     6.1.7600.16385      235.00 KB (240,640
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\pku2u.dll
bcryptprimitives    6.1.7600.16385      291.32 KB
(298,312 bytes)     7/13/2009 6:49 PM   Microsoft
Corporation
          c:\windows\system32\bcryptprimitives.dll

efslsaext 6.1.7600.16385      55.50 KB (56,832 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\efslsaext.dll
scecli    6.1.7600.16385      227.00 KB (232,448
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\scecli.dll
rassfm    6.1.7600.16385      28.50 KB (29,184 bytes)
          7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\rassfm.dll
iphlpapi  6.1.7600.16385      142.50 KB (145,920
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\iphlpapi.dll
winnsi    6.1.7600.16385      25.50 KB (26,112 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\winnsi.dll
netutils  6.1.7600.16385      28.00 KB (28,672 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\netutils.dll
userenv   6.1.7600.16385      104.50 KB (107,008
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\userenv.dll
efssvc    6.1.7600.16385      36.50 KB (37,376 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\efssvc.dll
efscore   6.1.7600.16385      297.00 KB (304,128
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\efscore.dll
efsutil   6.1.7600.16385      34.00 KB (34,816 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\efsutil.dll
gpapi     6.1.7600.16385      94.50 KB (96,768 bytes)
          7/13/2009 6:54 PM   Microsoft Corporation
          c:\windows\system32\gpapi.dll
samcli    6.1.7600.16385      65.50 KB (67,072 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\samcli.dll
samlib    6.1.7600.16385      104.50 KB (107,008
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\samlib.dll
dssenh    6.1.7600.16385      186.41 KB (190,880
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\dssenh.dll
certpoleng          6.1.7600.16385      70.00 KB
(71,680 bytes)      7/13/2009 6:52 PM   Microsoft
Corporation
          c:\windows\system32\certpoleng.dll
wldap32   6.1.7600.16385      304.50 KB (311,808
bytes)    7/13/2009 6:54 PM   Microsoft Corporation
          c:\windows\system32\wldap32.dll
lsm       6.1.7600.16385      325.50 KB (333,312
bytes)    7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\lsm.exe
```

```
sysntfy   6.1.7600.16385      22.50 KB (23,040 bytes)
          7/13/2009 6:52 PM   Microsoft Corporation
          c:\windows\system32\sysntfy.dll
wmsgapi   6.1.7600.16385      14.50 KB (14,848 bytes)
          7/13/2009 6:52 PM   Microsoft Corporation
          c:\windows\system32\wmsgapi.dll
pcwum     6.1.7600.16385      36.00 KB (36,864 bytes)
          7/13/2009 6:19 PM   Microsoft Corporation
          c:\windows\system32\pcwum.dll
ole32     6.1.7600.16385      1.99 MB (2,084,352
bytes)    7/13/2009 7:02 PM   Microsoft Corporation
          c:\windows\system32\ole32.dll
ntmarta   6.1.7600.16385      158.50 KB (162,304
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\ntmarta.dll
clbcatq   2001.12.8530.16385  593.50 KB (607,744
bytes)    7/13/2009 7:00 PM   Microsoft Corporation
          c:\windows\system32\clbcatq.dll
oleaut32  6.1.7600.16385      841.00 KB (861,184
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\oleaut32.dll
lsmproxy  6.1.7600.16385      47.50 KB (48,640 bytes)
          7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\lsmproxy.dll
svchost   6.1.7600.16385      26.50 KB (27,136 bytes)
          7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\svchost.exe
umpnpmgr  6.1.7600.16385      395.00 KB (404,480
bytes)    7/13/2009 6:27 PM   Microsoft Corporation
          c:\windows\system32\umpnpmgr.dll
spinf     6.1.7600.16385      103.00 KB (105,472
bytes)    7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\spinf.dll
devrtl    6.1.7600.16385      57.00 KB (58,368 bytes)
          7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\devrtl.dll
umpo      6.1.7600.16385      160.00 KB (163,840
bytes)    7/13/2009 6:27 PM   Microsoft Corporation
          c:\windows\system32\umpo.dll
setupapi  6.1.7600.16385      1.81 MB (1,899,520
bytes)    7/13/2009 6:27 PM   Microsoft Corporation
          c:\windows\system32\setupapi.dll
cfgmgr32  6.1.7600.16385      202.50 KB (207,360
bytes)    7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\cfgmgr32.dll
devobj    6.1.7600.16385      91.00 KB (93,184 bytes)
          7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\devobj.dll
rpcss     6.1.7600.16385      497.50 KB (509,440
bytes)    7/13/2009 7:00 PM   Microsoft Corporation
          c:\windows\system32\rpcss.dll
wmidcprv  6.1.7600.16385      187.00 KB (191,488
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\wmidcprv.dll
fastprox  6.1.7600.16385      888.00 KB (909,312
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\fastprox.dll
wbemcomn  6.1.7600.16385      517.50 KB (529,920
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbemcomn.dll
```

```
ntdsapi   6.1.7600.16385      148.50 KB (152,064
bytes)    7/13/2009 6:54 PM   Microsoft Corporation
          c:\windows\system32\ntdsapi.dll
wbemprox  6.1.7600.16385      42.50 KB (43,520 bytes)
          7/13/2009 6:46 PM   Microsoft Corporation
          c:\windows\system32\wbem\wbemprox.dll
wbemsvc   6.1.7600.16385      63.00 KB (64,512 bytes)
          7/13/2009 6:46 PM   Microsoft Corporation
          c:\windows\system32\wbem\wbemsvc.dll
wmiutils  6.1.7600.16385      134.00 KB (137,216
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\wmiutils.dll
wintrust  6.1.7600.16385      215.00 KB (220,160
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\wintrust.dll
rpcepmap  6.1.7600.16385      65.50 KB (67,072 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\rpcepmap.dll
firewallapi         6.1.7600.16385      730.50 KB
(748,032 bytes)     7/13/2009 7:08 PM   Microsoft
Corporation
          c:\windows\system32\firewallapi.dll
version   6.1.7600.16385      28.50 KB (29,184 bytes)
          7/13/2009 6:57 PM   Microsoft Corporation
          c:\windows\system32\version.dll
fwpuclnt  6.1.7600.16385      316.50 KB (324,096
bytes)    7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\fwpuclnt.dll
wevtsvc   6.1.7600.16385      1.57 MB (1,646,080
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\wevtsvc.dll
lmhsvc    6.1.7600.16385      23.00 KB (23,552 bytes)
          7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\lmhsvc.dll
nrpsrv    6.1.7600.16385      14.50 KB (14,848 bytes)
          7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\nrpsrv.dll
dhcpcore  6.1.7600.16385      307.00 KB (314,368
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\dhcpcore.dll
dhcpcore6 6.1.7600.16385      219.00 KB (224,256
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\dhcpcore6.dll
nlaapi    6.1.7600.16385      68.50 KB (70,144 bytes)
          7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\nlaapi.dll
rasadhlp  6.1.7600.16385      16.00 KB (16,384 bytes)
          7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\rasadhlp.dll
winrnr    6.1.7600.16385      28.00 KB (28,672 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\winrnr.dll
napinsp   6.1.7600.16385      66.50 KB (68,096 bytes)
          7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\napinsp.dll
gpsvc     6.1.7600.16385      758.00 KB (776,192
bytes)    7/13/2009 6:54 PM   Microsoft Corporation
          c:\windows\system32\gpsvc.dll
profsvc   6.1.7600.16385      203.50 KB (208,384
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\profsvc.dll
```

```
shlwapi   6.1.7600.16385      439.00 KB (449,536
bytes)    7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\shlwapi.dll
atl       3.5.2284.0          88.50 KB (90,624 bytes)
          7/13/2009 7:34 PM   Microsoft Corporation
          c:\windows\system32\atl.dll
dsrole    6.1.7600.16385      32.00 KB (32,768 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\dsrole.dll
sens      6.1.7600.16385      63.00 KB (64,512 bytes)
          7/13/2009 6:34 PM   Microsoft Corporation
          c:\windows\system32\sens.dll
shsvcs    6.1.7600.16385      361.00 KB (369,664
bytes)    7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\shsvcs.dll
schedsvc  6.1.7600.16385      1.05 MB (1,104,384
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\schedsvc.dll
shell32   6.1.7600.16385      13.51 MB (14,161,920
bytes)    7/13/2009 7:04 PM   Microsoft Corporation
          c:\windows\system32\shell32.dll
netapi32  6.1.7600.16385      71.00 KB (72,704 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\netapi32.dll
wkscli    6.1.7600.16385      70.00 KB (71,680 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\wkscli.dll
ktmw32    6.1.7600.16385      22.50 KB (23,040 bytes)
          7/13/2009 6:19 PM   Microsoft Corporation
          c:\windows\system32\ktmw32.dll
xmllite   1.3.1000.0          195.00 KB (199,680
bytes)    7/13/2009 7:41 PM   Microsoft Corporation
          c:\windows\system32\xmllite.dll
taskcomp  6.1.7600.16385      462.50 KB (473,600
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\taskcomp.dll
comctl32  6.10.7600.16385     1.94 MB (2,030,080
bytes)    7/13/2009 6:56 PM   Microsoft Corporation
          c:\windows\winsxs\amd64_microsoft.windows.c
ommon-
controls_6595b64144ccf1df_6.0.7600.16385_none_fa64530
3170382f6\comctl32.dll
propsys   7.0.7600.16385      1.16 MB (1,212,416
bytes)    7/13/2009 6:56 PM   Microsoft Corporation
          c:\windows\system32\propsys.dll
ikeext    6.1.7600.16385      826.00 KB (845,824
bytes)    7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\ikeext.dll
dhcpcsvc6 6.1.7600.16385      53.00 KB (54,272 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\dhcpcsvc6.dll
dhcpcsvc  6.1.7600.16385      85.00 KB (87,040 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\dhcpcsvc.dll
wmisvc    6.1.7600.16385      237.00 KB (242,688
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\wmisvc.dll
vssapi    6.1.7600.16385      1.66 MB (1,745,408
bytes)    7/13/2009 6:38 PM   Microsoft Corporation
          c:\windows\system32\vssapi.dll
```

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vsstrace  6.1.7600.16385      75.00 KB (76,800 bytes)
          7/13/2009 6:36 PM   Microsoft Corporation
          c:\windows\system32\vsstrace.dll
wbemcore  6.1.7600.16385      1.16 MB (1,220,096
bytes)    7/13/2009 6:48 PM   Microsoft Corporation
          c:\windows\system32\wbem\wbemcore.dll
esscli    6.1.7600.16385      430.00 KB (440,320
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\esscli.dll
iphlpsvc  6.1.7600.16385      552.50 KB (565,760
bytes)    7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\iphlpsvc.dll
rtutils   6.1.7600.16385      50.50 KB (51,712 bytes)
          7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\rtutils.dll
sqmapi    6.1.7600.16385      229.50 KB (235,008
bytes)    7/13/2009 6:40 PM   Microsoft Corporation
          c:\windows\system32\sqmapi.dll
wdscore   6.1.7600.16385      265.00 KB (271,360
bytes)    7/13/2009 6:28 PM   Microsoft Corporation
          c:\windows\system32\wdscore.dll
srvsvc    6.1.7600.16385      230.00 KB (235,520
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\srvsvc.dll
browser   6.1.7600.16385      133.00 KB (136,192
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\browser.dll
netprofm  6.1.7600.16385      449.00 KB (459,776
bytes)    7/13/2009 7:12 PM   Microsoft Corporation
          c:\windows\system32\netprofm.dll
sscore    6.1.7600.16385      13.00 KB (13,312 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\sscore.dll
clusapi   6.1.7600.16385      307.00 KB (314,368
bytes)    7/13/2009 6:34 PM   Microsoft Corporation
          c:\windows\system32\clusapi.dll
resutils  6.1.7600.16385      84.00 KB (86,016 bytes)
          7/13/2009 6:34 PM   Microsoft Corporation
          c:\windows\system32\resutils.dll
repdrvfs  6.1.7600.16385      441.00 KB (451,584
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\repdrvfs.dll
nci       6.1.7600.16385      87.50 KB (89,600 bytes)
          7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\nci.dll
wmiprvsd  6.1.7600.16385      732.50 KB (750,080
bytes)    7/13/2009 6:48 PM   Microsoft Corporation
          c:\windows\system32\wbem\wmiprvsd.dll
ncobjapi  6.1.7600.16385      67.50 KB (69,120 bytes)
          7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\ncobjapi.dll
wbemess   6.1.7600.16385      494.00 KB (505,856
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\wbemess.dll
npmproxy  6.1.7600.16385      31.00 KB (31,744 bytes)
          7/13/2009 7:12 PM   Microsoft Corporation
          c:\windows\system32\npmproxy.dll
certprop  6.1.7600.16385      78.50 KB (80,384 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\certprop.dll
```

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winscard  6.1.7600.16385      212.50 KB (217,600
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\winscard.dll
sessenv   6.1.7600.16385      102.50 KB (104,960
bytes)    7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\sessenv.dll
aelupsvc  6.1.7600.16385      70.50 KB (72,192 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\aelupsvc.dll
ncprov    6.1.7600.16385      76.50 KB (78,336 bytes)
          7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\ncprov.dll
wuaueng   7.3.7600.16385      2.31 MB (2,418,176
bytes)    7/13/2009 7:36 PM   Microsoft Corporation
          c:\windows\system32\wuaueng.dll
esent     6.1.7600.16385      2.45 MB (2,565,120
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\esent.dll
winspool  6.1.7600.16385      431.50 KB (441,856
bytes)    7/13/2009 7:39 PM   Microsoft Corporation
          c:\windows\system32\winspool.drv
winhttp   6.1.7600.16385      428.50 KB (438,784
bytes)    7/13/2009 7:11 PM   Microsoft Corporation
          c:\windows\system32\winhttp.dll
webio     6.1.7600.16385      385.50 KB (394,752
bytes)    7/13/2009 7:11 PM   Microsoft Corporation
          c:\windows\system32\webio.dll
cabinet   6.1.7600.16385      92.00 KB (94,208 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\cabinet.dll
mspatcha  6.1.7600.16385      45.50 KB (46,592 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\mspatcha.dll
psapi     6.1.7600.16385      9.00 KB (9,216 bytes)
          7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\psapi.dll
msxml3    8.110.7600.16385    1.79 MB (1,876,992
bytes)    7/13/2009 7:42 PM   Microsoft Corporation
          c:\windows\system32\msxml3.dll
wer       6.1.7600.16385      473.00 KB (484,352
bytes)    7/13/2009 6:41 PM   Microsoft Corporation
          c:\windows\system32\wer.dll
es        2001.12.8530.16385  393.50 KB (402,944
bytes)    7/13/2009 7:00 PM   Microsoft Corporation
          c:\windows\system32\es.dll
nsisvc    6.1.7600.16385      25.00 KB (25,600 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\nsisvc.dll
uxsms     6.1.7600.16385      38.00 KB (38,912 bytes)
          7/13/2009 6:37 PM   Microsoft Corporation
          c:\windows\system32\uxsms.dll
trkwks    6.1.7600.16385      117.00 KB (119,808
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\trkwks.dll
umrdp     6.1.7600.16385      190.50 KB (195,072
bytes)    7/13/2009 7:18 PM   Microsoft Corporation
          c:\windows\system32\umrdp.dll
umb       6.1.7600.16385      58.50 KB (59,904 bytes)
          7/13/2009 6:35 PM   Microsoft Corporation
          c:\windows\system32\umb.dll
```

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netman    6.1.7600.16385      352.00 KB (360,448
bytes)    7/13/2009 7:08 PM   Microsoft Corporation
          c:\windows\system32\netman.dll
netshell  6.1.7600.16385      2.53 MB (2,651,136
bytes)    7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\netshell.dll
rasdlg    6.1.7600.16385      840.50 KB (860,672
bytes)    7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\rasdlg.dll
mprapi    6.1.7600.16385      215.50 KB (220,672
bytes)    7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\mprapi.dll
rasapi32  6.1.7600.16385      375.50 KB (384,512
bytes)    7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\rasapi32.dll
rasman    6.1.7600.16385      98.00 KB (100,352
bytes)    7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\rasman.dll
netcfgx   6.1.7600.16385      505.00 KB (517,120
bytes)    7/13/2009 7:08 PM   Microsoft Corporation
          c:\windows\system32\netcfgx.dll
hnetcfg   6.1.7600.16385      414.50 KB (424,448
bytes)    7/13/2009 7:08 PM   Microsoft Corporation
          c:\windows\system32\hnetcfg.dll
wdi       6.1.7600.16385      88.50 KB (90,624 bytes)
          7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\wdi.dll
apphlpdm  6.1.7600.16385      33.00 KB (33,792 bytes)
          7/13/2009 6:32 PM   Microsoft Corporation
          c:\windows\system32\apphlpdm.dll
dnsrslvr  6.1.7600.16385      178.00 KB (182,272
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\dnsrslvr.dll
dnsext    6.1.7600.16385      8.00 KB (8,192 bytes)
          7/13/2009 7:12 PM   Microsoft Corporation
          c:\windows\system32\dnsext.dll
wkssvc    6.1.7600.16385      116.00 KB (118,784
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\wkssvc.dll
cryptsvc  6.1.7600.16385      171.00 KB (175,104
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\cryptsvc.dll
nlasvc    6.1.7600.16385      295.00 KB (302,080
bytes)    7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\nlasvc.dll
ncsi      6.1.7600.16385      204.50 KB (209,408
bytes)    7/13/2009 7:08 PM   Microsoft Corporation
          c:\windows\system32\ncsi.dll
ssdpapi   6.1.7600.16385      50.00 KB (51,200 bytes)
          7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\ssdpapi.dll
wsmsvc    6.1.7600.16385      1.93 MB (2,018,816
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\wsmsvc.dll
httpapi   6.1.7600.16385      44.00 KB (45,056 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\httpapi.dll
wevtfwd   6.1.7600.16385      114.00 KB (116,736
bytes)    7/13/2009 6:46 PM   Microsoft Corporation
          c:\windows\system32\wevtfwd.dll
```

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bfe       6.1.7600.16385      687.00 KB (703,488
bytes)    7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\bfe.dll
mpssvc    6.1.7600.16385      805.50 KB (824,832
bytes)    7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\mpssvc.dll
wfapigp   6.1.7600.16385      22.00 KB (22,528 bytes)
          7/13/2009 7:08 PM   Microsoft Corporation
          c:\windows\system32\wfapigp.dll
dps       6.1.7600.16385      159.00 KB (162,816
bytes)    7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\dps.dll
taskschd  6.1.7600.16385      1.11 MB (1,168,896
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\taskschd.dll
pnpts     6.1.7600.16385      12.00 KB (12,288 bytes)
          7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\pnpts.dll
wdiasqmmodule       6.1.7600.16385      35.00 KB
(35,840 bytes)      7/13/2009 6:40 PM   Microsoft
Corporation
          c:\windows\system32\wdiasqmmodule.dll
radardt   6.1.7600.16385      95.50 KB (97,792 bytes)
          7/13/2009 6:32 PM   Microsoft Corporation
          c:\windows\system32\radardt.dll
spoolsv   6.1.7600.16385      545.00 KB (558,080
bytes)    7/13/2009 7:39 PM   Microsoft Corporation
          c:\windows\system32\spoolsv.exe
powrprof  6.1.7600.16385      163.50 KB (167,424
bytes)    7/13/2009 6:27 PM   Microsoft Corporation
          c:\windows\system32\powrprof.dll
localspl  6.1.7600.16385      932.50 KB (954,880
bytes)    7/13/2009 7:40 PM   Microsoft Corporation
          c:\windows\system32\localspl.dll
spoolss   6.1.7600.16385      56.50 KB (57,856 bytes)
          7/13/2009 7:39 PM   Microsoft Corporation
          c:\windows\system32\spoolss.dll
printisolationproxy 6.1.7600.16385      47.00 KB
(48,128 bytes)      7/13/2009 7:39 PM   Microsoft
Corporation
          c:\windows\system32\printisolationproxy.dll

hpz3lw71  0.3.7071.0          45.00 KB (46,080 bytes)
          7/13/2009 8:20 PM   Hewlett-Packard
Corporation         c:\windows\system32\hpz3lw71.dll

tcpmon    6.1.7600.16385      190.50 KB (195,072
bytes)    7/13/2009 7:39 PM   Microsoft Corporation
          c:\windows\system32\tcpmon.dll
snmpapi   6.1.7600.16385      27.00 KB (27,648 bytes)
          7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\snmpapi.dll
wsnmp32   6.1.7600.16385      65.50 KB (67,072 bytes)
          7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\wsnmp32.dll
msxml6    6.30.7600.16385     1.91 MB (1,999,360
bytes)    7/13/2009 7:43 PM   Microsoft Corporation
          c:\windows\system32\msxml6.dll
usbmon    6.1.7600.16385      44.00 KB (45,056 bytes)
          7/13/2009 7:39 PM   Microsoft Corporation
          c:\windows\system32\usbmon.dll
```

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wls0wndh  6.1.7600.16385      10.50 KB (10,752 bytes)
          7/13/2009 6:52 PM   Microsoft Corporation
          c:\windows\system32\wls0wndh.dll
wsdmon    6.1.7600.16385      219.50 KB (224,768
bytes)    7/13/2009 7:39 PM   Microsoft Corporation
          c:\windows\system32\wsdmon.dll
wsdapi    6.1.7600.16385      571.50 KB (585,216
bytes)    7/13/2009 6:36 PM   Microsoft Corporation
          c:\windows\system32\wsdapi.dll
webservices         6.1.7600.16385      1.11 MB
(1,159,168 bytes)   7/13/2009 7:01 PM   Microsoft
Corporation
          c:\windows\system32\webservices.dll
fundisc   6.1.7600.16385      190.00 KB (194,560
bytes)    7/13/2009 6:35 PM   Microsoft Corporation
          c:\windows\system32\fundisc.dll
fdpnp     6.1.7600.16385      50.00 KB (51,200 bytes)
          7/13/2009 6:35 PM   Microsoft Corporation
          c:\windows\system32\fdpnp.dll
winprint  6.1.7600.16385      38.50 KB (39,424 bytes)
          7/13/2009 7:39 PM   Microsoft Corporation
          c:\windows\system32\spool\prtprocs\x64\winp
rint.dll
hpzppw71  0.3.7071.0          225.00 KB (230,400
bytes)    8/15/2011 6:46 PM   Hewlett-Packard
Corporation
          c:\windows\system32\spool\prtprocs\x64\hpzp
pw71.dll
win32spl  6.1.7600.16385      728.50 KB (745,984
bytes)    7/13/2009 7:40 PM   Microsoft Corporation
          c:\windows\system32\win32spl.dll
cscapi    6.1.7600.16385      45.00 KB (46,080 bytes)
          7/13/2009 6:24 PM   Microsoft Corporation
          c:\windows\system32\cscapi.dll
CALoadService       1.1.4.8   57.00 KB (58,368 bytes)
          7/7/2011 12:35 PM   Advanced Micro Devices
          c:\program files
(x86)\amd\codeanalyst\bin\caloadservice.exe
wow64     6.1.7600.16385      237.50 KB (243,200
bytes)    7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\wow64.dll
wow64win  6.1.7600.16385      353.50 KB (361,984
bytes)    7/13/2009 6:38 PM   Microsoft Corporation
          c:\windows\system32\wow64win.dll
wow64cpu  6.1.7600.16385      13.00 KB (13,312 bytes)
          7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\wow64cpu.dll
ProLiantMonitor     3.3.0.0   267.60 KB (274,024
bytes)    11/19/2010 5:38 PM  Hewlett-Packard Company
          c:\program files\hewlett-packard\ilo
3\service\proliantmonitor.exe
regsvc    6.1.7600.16385      155.50 KB (159,232
bytes)    7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\regsvc.dll
sqlwriter 2005.90.4035.0      150.34 KB (153,952
bytes)    11/25/2008 12:45 PM Microsoft Corporation
          c:\program files\microsoft sql
server\90\shared\sqlwriter.exe
msvcr80   8.0.50727.4927      783.81 KB (802,624
bytes)    7/13/2009 3:37 PM   Microsoft Corporation
          c:\windows\winsxs\amd64_microsoft.vc80.crt_
```

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1fc8b3b9a1e18e3b_8.0.50727.4927_none_88dce9872fb18caf
\msvcr80.dll
sqlwvss   2005.90.4035.0      363.84 KB (372,576
bytes)    11/25/2008 12:45 PM Microsoft Corporation
          c:\program files\microsoft sql
server\90\shared\sqlwvss.dll
msvcp80   8.0.50727.4927      1.02 MB (1,068,352
bytes)    7/13/2009 3:37 PM   Microsoft Corporation
          c:\windows\winsxs\amd64_microsoft.vc80.crt_
1fc8b3b9a1e18e3b_8.0.50727.4927_none_88dce9872fb18caf
\msvcp80.dll
taskhost  6.1.7600.16385      67.50 KB (69,120 bytes)
          7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\taskhost.exe
msctfmonitor        6.1.7600.16385      27.50 KB
(28,160 bytes)      7/13/2009 6:39 PM   Microsoft
Corporation
          c:\windows\system32\msctfmonitor.dll
msutb     6.1.7600.16385      230.00 KB (235,520
bytes)    7/13/2009 6:39 PM   Microsoft Corporation
          c:\windows\system32\msutb.dll
dimsjob   6.1.7600.16385      39.50 KB (40,448 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\dimsjob.dll
dwm       6.1.7600.16385      117.50 KB (120,320
bytes)    7/13/2009 6:37 PM   Microsoft Corporation
          c:\windows\system32\dwm.exe
uxtheme   6.1.7600.16385      324.50 KB (332,288
bytes)    7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\uxtheme.dll
dwmredir  6.1.7600.16385      125.50 KB (128,512
bytes)    7/13/2009 6:37 PM   Microsoft Corporation
          c:\windows\system32\dwmredir.dll
dwmcore   6.1.7600.16385      1.56 MB (1,634,304
bytes)    7/13/2009 6:39 PM   Microsoft Corporation
          c:\windows\system32\dwmcore.dll
windowscodecs       6.1.7600.16385      1.13 MB
(1,189,888 bytes)   7/13/2009 6:42 PM   Microsoft
Corporation
          c:\windows\system32\windowscodecs.dll
d3d10_1   6.1.7600.16385      192.50 KB (197,120
bytes)    7/13/2009 6:41 PM   Microsoft Corporation
          c:\windows\system32\d3d10_1.dll
d3d10_1core         6.1.7600.16385      311.50 KB
(318,976 bytes)     7/13/2009 6:41 PM   Microsoft
Corporation
          c:\windows\system32\d3d10_1core.dll
dxgi      6.1.7600.16385      643.00 KB (658,432
bytes)    7/13/2009 6:41 PM   Microsoft Corporation
          c:\windows\system32\dxgi.dll
dwmapi    6.1.7600.16385      80.50 KB (82,432 bytes)
          7/13/2009 6:37 PM   Microsoft Corporation
          c:\windows\system32\dwmapi.dll
explorer  6.1.7600.16385      2.74 MB (2,868,224
bytes)    7/13/2009 6:56 PM   Microsoft Corporation
          c:\windows\explorer.exe
explorerframe       6.1.7600.16385      1.78 MB
(1,863,680 bytes)   7/13/2009 6:57 PM   Microsoft
Corporation
          c:\windows\system32\explorerframe.dll
```

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duser     6.1.7600.16385      254.50 KB (260,608
bytes)    7/13/2009 6:39 PM   Microsoft Corporation
          c:\windows\system32\duser.dll
dui70     6.1.7600.16385      954.00 KB (976,896
bytes)    7/13/2009 6:41 PM   Microsoft Corporation
          c:\windows\system32\dui70.dll
gdiplus   6.1.7600.16385      2.06 MB (2,165,248
bytes)    7/13/2009 6:40 PM   Microsoft Corporation
          c:\windows\winsxs\amd64_microsoft.windows.g
diplus_6595b64144ccf1df_1.1.7600.16385_none_2b4f45e87
195fcc4\gdiplus.dll
ehstorshell         6.1.7600.16385      198.50 KB
(203,264 bytes)     7/13/2009 7:00 PM   Microsoft
Corporation
          c:\windows\system32\ehstorshell.dll
ntshrui   6.1.7600.16385      498.00 KB (509,952
bytes)    7/13/2009 6:57 PM   Microsoft Corporation
          c:\windows\system32\ntshrui.dll
iconcodecservice    6.1.7600.16385      14.00 KB
(14,336 bytes)      7/13/2009 6:37 PM   Microsoft
Corporation
          c:\windows\system32\iconcodecservice.dll

sndvolsso 6.1.7600.16385      220.00 KB (225,280
bytes)    7/13/2009 7:19 PM   Microsoft Corporation
          c:\windows\system32\sndvolsso.dll
hid       6.1.7600.16385      29.50 KB (30,208 bytes)
          7/13/2009 7:06 PM   Microsoft Corporation
          c:\windows\system32\hid.dll
mmdevapi  6.1.7600.16385      277.50 KB (284,160
bytes)    7/13/2009 7:18 PM   Microsoft Corporation
          c:\windows\system32\mmdevapi.dll
timedate  6.1.7600.16385      503.00 KB (515,072
bytes)    7/13/2009 6:56 PM   Microsoft Corporation
          c:\windows\system32\timedate.cpl
winbrand  6.1.7600.16385      16.00 KB (16,384 bytes)
          7/13/2009 6:30 PM   Microsoft Corporation
          c:\windows\system32\winbrand.dll
actxprxy  6.1.7600.16385      936.50 KB (958,976
bytes)    7/13/2009 7:41 PM   Microsoft Corporation
          c:\windows\system32\actxprxy.dll
shdocvw   6.1.7600.16385      191.50 KB (196,096
bytes)    7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\shdocvw.dll
shacct    6.1.7600.16385      132.00 KB (135,168
bytes)    7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\shacct.dll
linkinfo  6.1.7600.16385      29.00 KB (29,696 bytes)
          7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\linkinfo.dll
msls31    3.10.349.0          217.00 KB (222,208
bytes)    7/13/2009 6:39 PM   Microsoft Corporation
          c:\windows\system32\msls31.dll
authui    6.1.7600.16385      1.84 MB (1,926,144
bytes)    7/13/2009 6:58 PM   Microsoft Corporation
          c:\windows\system32\authui.dll
cryptui   6.1.7600.16385      1.02 MB (1,065,984
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\cryptui.dll
urlmon    8.0.7600.16385      1.42 MB (1,492,480
bytes)    7/13/2009 7:01 PM   Microsoft Corporation
          c:\windows\system32\urlmon.dll
iertutil  8.0.7600.16385      2.33 MB (2,440,704
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\iertutil.dll
winmm     6.1.7600.16385      212.50 KB (217,600
bytes)    7/13/2009 7:18 PM   Microsoft Corporation
          c:\windows\system32\winmm.dll
stobject  6.1.7600.16385      250.00 KB (256,000
bytes)    7/13/2009 6:56 PM   Microsoft Corporation
          c:\windows\system32\stobject.dll
batmeter  6.1.7600.16385      730.50 KB (748,032
bytes)    7/13/2009 6:56 PM   Microsoft Corporation
          c:\windows\system32\batmeter.dll
prnfldr   6.1.7600.16385      407.00 KB (416,768
bytes)    7/13/2009 7:40 PM   Microsoft Corporation
          c:\windows\system32\prnfldr.dll
dxp       6.1.7600.16385      449.00 KB (459,776
bytes)    7/13/2009 7:21 PM   Microsoft Corporation
          c:\windows\system32\dxp.dll
syncreg   2007.94.7600.16385  72.00 KB (73,728 bytes)
          7/13/2009 7:22 PM   Microsoft Corporation
          c:\windows\system32\syncreg.dll
pnidui    6.1.7600.16385      1.72 MB (1,807,872
bytes)    7/13/2009 7:08 PM   Microsoft Corporation
          c:\windows\system32\pnidui.dll
qutil     6.1.7600.16385      105.00 KB (107,520
bytes)    7/13/2009 7:07 PM   Microsoft Corporation
          c:\windows\system32\qutil.dll
actioncenter        6.1.7600.16385      762.50 KB
(780,800 bytes)     7/13/2009 6:56 PM   Microsoft
Corporation
          c:\windows\system32\actioncenter.dll
imapi2    6.1.7600.16385      493.50 KB (505,344
bytes)    7/13/2009 7:01 PM   Microsoft Corporation
          c:\windows\system32\imapi2.dll
hgcpl     6.1.7600.16385      324.50 KB (332,288
bytes)    7/13/2009 6:57 PM   Microsoft Corporation
          c:\windows\system32\hgcpl.dll
qagent    6.1.7600.16385      259.00 KB (265,216
bytes)    7/13/2009 7:07 PM   Microsoft Corporation
          c:\windows\system32\qagent.dll
msftedit  5.41.21.2509        781.00 KB (799,744
bytes)    7/13/2009 6:39 PM   Microsoft Corporation
          c:\windows\system32\msftedit.dll
ieframe   8.0.7600.16385      11.78 MB (12,352,000
bytes)    7/13/2009 7:16 PM   Microsoft Corporation
          c:\windows\system32\ieframe.dll
oleacc    7.0.0.0   324.00 KB (331,776 bytes)
          7/13/2009 6:39 PM   Microsoft Corporation
          c:\windows\system32\oleacc.dll
mlang     6.1.7600.16385      221.50 KB (226,816
bytes)    7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\mlang.dll
wininet   8.0.7600.16385      1.14 MB (1,193,472
bytes)    7/13/2009 7:00 PM   Microsoft Corporation
          c:\windows\system32\wininet.dll
normaliz  6.1.7600.16385      2.50 KB (2,560 bytes)
          7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\normaliz.dll
searchfolder        6.1.7600.16385      845.00 KB
(865,280 bytes)     7/13/2009 6:59 PM   Microsoft
Corporation
          c:\windows\system32\searchfolder.dll
networkexplorer     6.1.7600.16385      1.60 MB
(1,672,704 bytes)   7/13/2009 7:08 PM   Microsoft
Corporation
          c:\windows\system32\networkexplorer.dll
ieproxy   8.0.7600.16385      438.00 KB (448,512
bytes)    7/13/2009 6:58 PM   Microsoft Corporation
          c:\program files\internet
explorer\ieproxy.dll
thumbcache          6.1.7600.16385      110.50 KB
(113,152 bytes)     7/13/2009 6:55 PM   Microsoft
Corporation
          c:\windows\system32\thumbcache.dll
structuredquery     7.0.7600.16385      472.50 KB
(483,840 bytes)     7/13/2009 7:29 PM   Microsoft
Corporation
          c:\windows\system32\structuredquery.dll
ehstorapi 6.1.7600.16385      141.50 KB (144,896
bytes)    7/13/2009 7:00 PM   Microsoft Corporation
          c:\windows\system32\ehstorapi.dll
zipfldr   6.1.7600.16385      357.50 KB (366,080
bytes)    7/13/2009 6:56 PM   Microsoft Corporation
          c:\windows\system32\zipfldr.dll
netplwiz  6.1.7600.16385      188.50 KB (193,024
bytes)    7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\netplwiz.dll
credui    6.1.7600.16385      213.00 KB (218,112
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\credui.dll
werconcpl 6.1.7600.16385      1.22 MB (1,280,512
bytes)    7/13/2009 6:41 PM   Microsoft Corporation
          c:\windows\system32\werconcpl.dll
framedynos          6.1.7600.16385      288.50 KB
(295,424 bytes)     7/13/2009 6:47 PM   Microsoft
Corporation
          c:\windows\system32\framedynos.dll
wercplsupport       6.1.7600.16385      82.50 KB
(84,480 bytes)      7/13/2009 6:40 PM   Microsoft
Corporation
          c:\windows\system32\wercplsupport.dll
hcproviders         6.1.7600.16385      30.50 KB
(31,232 bytes)      7/13/2009 6:56 PM   Microsoft
Corporation
          c:\windows\system32\hcproviders.dll
drprov    6.1.7600.16385      24.00 KB (24,576 bytes)
          7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\drprov.dll
ntlanman  6.1.7600.16385      126.50 KB (129,536
bytes)    7/13/2009 6:48 PM   Microsoft Corporation
          c:\windows\system32\ntlanman.dll
wmiprvse  6.1.7600.16385      360.00 KB (368,640
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\wmiprvse.exe
wmiprov   6.1.7600.16385      223.50 KB (228,864
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\wmiprov.dll
mofd      6.1.7600.16385      272.00 KB (278,528
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\mofd.dll
wmiperfclass        6.1.7600.16385      133.00 KB
(136,192 bytes)     7/13/2009 6:31 PM   Microsoft
Corporation
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```
          c:\windows\system32\wbem\wmiperfclass.dll

pdh       6.1.7600.16385      293.00 KB (300,032
bytes)    7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\pdh.dll
cpqteam   10.50.0.20          185.00 KB (189,440
bytes)    2/2/2011 5:35 AM    Hewlett-Packard Company
          c:\program files\hp\ncu\cpqteam.exe
VCDDaemon 5.4.3.3   83.16 KB (85,160 bytes)
          6/17/2009 6:44 AM   Elaborate Bytes AG
          c:\program files (x86)\elaborate
bytes\virtualclonedrive\vcddaemon.exe
termsrv   6.1.7600.16385      690.00 KB (706,560
bytes)    7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\termsrv.dll
icaapi    6.1.7600.16385      22.00 KB (22,528 bytes)
          7/13/2009 7:16 PM   Microsoft Corporation
          c:\windows\system32\icaapi.dll
regapi    6.1.7600.16385      92.50 KB (94,720 bytes)
          7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\regapi.dll
tlscsp    6.1.7600.16385      72.00 KB (73,728 bytes)
          7/13/2009 7:16 PM   Microsoft Corporation
          c:\windows\system32\tlscsp.dll
rdpcorekmts         6.1.7600.16385      146.00 KB
(149,504 bytes)     7/13/2009 7:17 PM   Microsoft
Corporation
          c:\windows\system32\rdpcorekmts.dll
rdpwsx    6.1.7600.16385      74.50 KB (76,288 bytes)
          7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\rdpwsx.dll
ipsecsvc  6.1.7600.16385      488.50 KB (500,224
bytes)    7/13/2009 7:08 PM   Microsoft Corporation
          c:\windows\system32\ipsecsvc.dll
fwremotesvr         6.1.7600.16385      74.00 KB
(75,776 bytes)      7/13/2009 7:08 PM   Microsoft
Corporation
          c:\windows\system32\fwremotesvr.dll
sppsvc    6.1.7600.16385      3.36 MB (3,524,608
bytes)    7/13/2009 8:05 PM   Microsoft Corporation
          c:\windows\system32\sppsvc.exe
sppwinob  6.1.7600.16385      409.00 KB (418,816
bytes)    7/13/2009 6:51 PM   Microsoft Corporation
          c:\windows\system32\sppwinob.dll
sppobjs   6.1.7600.16385      1.03 MB (1,082,880
bytes)    7/13/2009 6:52 PM   Microsoft Corporation
          c:\windows\system32\sppobjs.dll
trustedinstaller    6.1.7600.16385      189.50 KB
(194,048 bytes)     7/13/2009 6:35 PM   Microsoft
Corporation
          c:\windows\servicing\trustedinstaller.exe

dbghelp   6.1.7600.16385      1.04 MB (1,087,488
bytes)    7/13/2009 7:13 PM   Microsoft Corporation
          c:\windows\system32\dbghelp.dll
cbscore   6.1.7600.16385      946.50 KB (969,216
bytes)    7/13/2009 9:55 PM   Microsoft Corporation
          c:\windows\winsxs\amd64_microsoft-windows-
servicingstack_31bf3856ad364e35_6.1.7600.16385_none_6
55452efe0fb810b\cbscore.dll
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dpx       6.1.7600.16385      390.00 KB (399,360
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\dpx.dll
wcp       6.1.7600.16385      2.63 MB (2,758,656
bytes)    7/13/2009 9:55 PM   Microsoft Corporation
          c:\windows\winsxs\amd64_microsoft-windows-
servicingstack_31bf3856ad364e35_6.1.7600.16385_none_6
55452efe0fb810b\wcp.dll
drupdate  6.1.7600.16385      199.00 KB (203,776
bytes)    7/13/2009 9:55 PM   Microsoft Corporation
          c:\windows\winsxs\amd64_microsoft-windows-
servicingstack_31bf3856ad364e35_6.1.7600.16385_none_6
55452efe0fb810b\drupdate.dll
wrpint    6.1.7600.16385      59.50 KB (60,928 bytes)
          7/13/2009 9:55 PM   Microsoft Corporation
          c:\windows\winsxs\amd64_microsoft-windows-
servicingstack_31bf3856ad364e35_6.1.7600.16385_none_6
55452efe0fb810b\wrpint.dll
sxsstore  6.1.7600.16385      26.50 KB (27,136 bytes)
          7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\sxsstore.dll
cbsapi    6.1.7600.16385      19.00 KB (19,456 bytes)
          7/13/2009 6:35 PM   Microsoft Corporation
          c:\windows\servicing\cbsapi.dll
mmc       6.1.7600.16385      2.04 MB (2,144,256
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\mmc.exe
mfc42u    6.6.8063.0          1.29 MB (1,357,312
bytes)    7/13/2009 7:35 PM   Microsoft Corporation
          c:\windows\system32\mfc42u.dll
odbc32    6.1.7600.16385      696.00 KB (712,704
bytes)    7/13/2009 7:29 PM   Microsoft Corporation
          c:\windows\system32\odbc32.dll
mmcbase   6.1.7600.16385      348.00 KB (356,352
bytes)    7/13/2009 6:46 PM   Microsoft Corporation
          c:\windows\system32\mmcbase.dll
odbcint   6.1.7600.16385      224.00 KB (229,376
bytes)    7/13/2009 7:28 PM   Microsoft Corporation
          c:\windows\system32\odbcint.dll
mmcndmgr  6.1.7600.16385      3.06 MB (3,205,120
bytes)    7/13/2009 6:48 PM   Microsoft Corporation
          c:\windows\system32\mmcndmgr.dll
tsuserex  6.1.7600.16385      144.00 KB (147,456
bytes)    7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\tsuserex.dll
activeds  6.1.7600.16385      261.50 KB (267,776
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\activeds.dll
adsldpc   6.1.7600.16385      231.00 KB (236,544
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\adsldpc.dll
mprsnap   6.1.7600.16385      1.33 MB (1,393,152
bytes)    7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\mprsnap.dll
rtrfiltr  6.1.7600.16385      89.50 KB (91,648 bytes)
          7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\rtrfiltr.dll
browcli   6.1.7600.16385      57.00 KB (58,368 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\browcli.dll
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els       6.1.7600.16385      236.00 KB (241,664
bytes)    7/13/2009 6:46 PM   Microsoft Corporation
          c:\windows\system32\els.dll
filemgmt  6.1.7600.16385      569.00 KB (582,656
bytes)    7/13/2009 6:46 PM   Microsoft Corporation
          c:\windows\system32\filemgmt.dll
wbemcntl  6.1.7600.16385      378.00 KB (387,072
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\wbemcntl.dll
mmfutil   6.1.7600.16385      20.00 KB (20,480 bytes)
          7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\mmfutil.dll
localsec  6.1.7600.16385      539.00 KB (551,936
bytes)    7/13/2009 6:46 PM   Microsoft Corporation
          c:\windows\system32\localsec.dll
devmgr    6.1.7600.16385      516.50 KB (528,896
bytes)    7/13/2009 6:27 PM   Microsoft Corporation
          c:\windows\system32\devmgr.dll
newdev    6.0.5054.0          306.50 KB (313,856
bytes)    7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\newdev.dll
wdc       6.1.7600.16385      1.30 MB (1,363,968
bytes)    7/13/2009 6:32 PM   Microsoft Corporation
          c:\windows\system32\wdc.dll
pdhui     6.1.7600.16385      57.00 KB (58,368 bytes)
          7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\pdhui.dll
comdlg32  6.1.7600.16385      581.50 KB (595,456
bytes)    7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\comdlg32.dll
pla       6.1.7600.16385      1.33 MB (1,390,080
bytes)    7/13/2009 6:32 PM   Microsoft Corporation
          c:\windows\system32\pla.dll
tdh       6.1.7600.16385      825.00 KB (844,800
bytes)    7/13/2009 6:32 PM   Microsoft Corporation
          c:\windows\system32\tdh.dll
utildll   6.1.7600.16385      34.00 KB (34,816 bytes)
          7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\utildll.dll
dmdskmgr  6.1.7600.16385      275.50 KB (282,112
bytes)    7/13/2009 6:36 PM   Microsoft Corporation
          c:\windows\system32\dmdskmgr.dll
dmutil    6.1.7600.16385      23.50 KB (24,064 bytes)
          7/13/2009 6:36 PM   Microsoft Corporation
          c:\windows\system32\dmutil.dll
dmdskres  6.1.7600.16385      363.50 KB (372,224
bytes)    7/13/2009 6:36 PM   Microsoft Corporation
          c:\windows\system32\dmdskres.dll
dmdskres2 6.1.7600.16385      2.00 KB (2,048 bytes)
          7/13/2009 6:36 PM   Microsoft Corporation
          c:\windows\system32\dmdskres2.dll
rasuser   6.1.7600.16385      264.50 KB (270,848
bytes)    7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\rasuser.dll
comctl32  5.82.7600.16385     619.00 KB (633,856
bytes)    7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\winsxs\amd64_microsoft.windows.c
ommon-
controls_6595b64144ccf1df_5.82.7600.16385_none_a44af8
ec57f961cf\comctl32.dll
```

```
dsprop    6.1.7600.16385      186.50 KB (190,976
bytes)    7/13/2009 6:46 PM   Microsoft Corporation
          c:\windows\system32\dsprop.dll
dsuiext   6.1.7600.16385      685.00 KB (701,440
bytes)    7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\dsuiext.dll
servdeps  6.1.7600.16385      134.00 KB (137,216
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\servdeps.dll
comsnap   2001.12.8530.16385  296.50 KB (303,616
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\comsnap.dll
mfc42     6.6.8063.0          1.33 MB (1,393,152
bytes)    7/13/2009 7:35 PM   Microsoft Corporation
          c:\windows\system32\mfc42.dll
mscoree   2.0.50727.4927      393.81 KB (403,264
bytes)    7/13/2009 3:37 PM   Microsoft Corporation
          c:\windows\system32\mscoree.dll
mscorwks  2.0.50727.4927      9.59 MB (10,059,072
bytes)    7/13/2009 3:37 PM   Microsoft Corporation
          c:\windows\microsoft.net\framework64\v2.0.5
0727\mscorwks.dll
mscorlib.ni         2.0.50727.4927      14.85 MB
(15,566,848 bytes)  7/14/2009 12:08 AM  Microsoft
Corporation
          c:\windows\assembly\nativeimages_v2.0.50727
_64\mscorlib\9a017aa8d51322f18a40f414fa35872d\mscorli
b.ni.dll
System.ni 2.0.50727.4927      10.11 MB (10,597,376
bytes)    7/14/2009 12:08 AM  Microsoft Corporation
          c:\windows\assembly\nativeimages_v2.0.50727
_64\system\247913fa7ae6fcf04ea33d28d24ab611\system.ni
.dll
MMCEx.ni  6.1.7600.16385      2.22 MB (2,327,040
bytes)    7/14/2009 12:11 AM  Not Available
          c:\windows\assembly\nativeimages_v2.0.50727
_64\mmcex\495a1d4acb8ce34924a0bc7ceffd429e\mmcex.ni.d
ll
MMCFxCommon.ni      6.1.7600.16385      408.00 KB
(417,792 bytes)     7/14/2009 12:10 AM  Not Available
          c:\windows\assembly\nativeimages_v2.0.50727
_64\mmcfxcommon\93374f3b7034e8f0af28cf29f414b4a3\mmcf
xcommon.ni.dll
System.Configuration.ni       2.0.50727.4927
          1.25 MB (1,308,160 bytes)     7/14/2009
12:08 AM  Microsoft Corporation
          c:\windows\assembly\nativeimages_v2.0.50727
_64\system.configuration\907b2b3dae591e0484acfc0ea63e
8caa\system.configuration.ni.dll
System.Xml.ni       2.0.50727.4927      6.63 MB
(6,948,864 bytes)   7/14/2009 12:09 AM  Microsoft
Corporation
          c:\windows\assembly\nativeimages_v2.0.50727
_64\system.xml\1fb1b14199d6aec70df1a0626a3ae5f2\syste
m.xml.ni.dll
System.Drawing.ni   2.0.50727.4927      2.20 MB
(2,311,168 bytes)   7/14/2009 12:09 AM  Microsoft
Corporation
          c:\windows\assembly\nativeimages_v2.0.50727
_64\system.drawing\10f1e1ffca16e550af8a8fd7685a48ef\s
ystem.drawing.ni.dll
```

```
System.Windows.Forms.ni       2.0.50727.4927
          16.57 MB (17,378,816 bytes)   7/14/2009
12:09 AM  Microsoft Corporation
          c:\windows\assembly\nativeimages_v2.0.50727
_64\system.windows.forms\2e0044fa7cabadce65fa8964fe2c
90dd\system.windows.forms.ni.dll
diasymreader        8.0.50727.4927      778.32 KB
(797,000 bytes)     7/13/2009 3:37 PM   Microsoft
Corporation
          c:\windows\microsoft.net\framework64\v2.0.5
0727\diasymreader.dll
Microsoft.ManagementConsole.ni
          6.1.7600.16385      779.00 KB (797,696
bytes)    7/14/2009 12:10 AM  Not Available
          c:\windows\assembly\nativeimages_v2.0.50727
_64\microsoft.managemen#\92af4acb9fb3d8c89c5c364a1ad6
b230\microsoft.managementconsole.ni.dll
microsoft.windows.servermanager
          6.1.7600.16385      6.16 MB (6,455,296
bytes)    7/13/2009 4:37 PM   Microsoft Corporation
          c:\windows\assembly\gac_64\microsoft.window
s.servermanager\6.1.0.0__31bf3856ad364e35\microsoft.w
indows.servermanager.dll
mscorjit  2.0.50727.4927      1.50 MB (1,576,768
bytes)    7/13/2009 3:37 PM   Microsoft Corporation
          c:\windows\microsoft.net\framework64\v2.0.5
0727\mscorjit.dll
Microsoft.BestPractices.ni    6.1.7600.16385
          3.63 MB (3,803,136 bytes)     7/14/2009
12:10 AM  Not Available
          c:\windows\assembly\nativeimages_v2.0.50727
_64\microsoft.bestpract#\010a66955f21b8ef9ea3acb3555e
9ff9\microsoft.bestpractices.ni.dll
shfolder  6.1.7600.16385      10.00 KB (10,240 bytes)
          7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\shfolder.dll
EventViewer.ni      6.1.7600.16385      644.00 KB
(659,456 bytes)     7/14/2009 12:10 AM  Not Available
          c:\windows\assembly\nativeimages_v2.0.50727
_64\eventviewer\d1083cb166af041842fc0f91e249a3c8\even
tviewer.ni.dll
MIGUIControls.ni    6.1.7600.16385      7.60 MB
(7,966,208 bytes)   7/14/2009 12:10 AM  Not Available
          c:\windows\assembly\nativeimages_v2.0.50727
_64\miguicontrols\73b796cc49c55b223858782918919496\mi
guicontrols.ni.dll
System.ServiceProcess.ni      2.0.50727.4927
          288.50 KB (295,424 bytes)     7/14/2009
12:10 AM  Microsoft Corporation
          c:\windows\assembly\nativeimages_v2.0.50727
_64\system.serviceproce#\cdbb9ec9236094dc4ee8550f1102
6618\system.serviceprocess.ni.dll
dmocx     6.1.7600.16385      48.50 KB (49,664 bytes)
          7/13/2009 6:27 PM   Microsoft Corporation
          c:\windows\system32\dmocx.dll
svrmgrnc  6.1.7600.16385      120.50 KB (123,392
bytes)    7/13/2009 6:48 PM   Microsoft Corporation
          c:\windows\system32\svrmgrnc.dll
osbaseln  6.1.7600.16385      24.50 KB (25,088 bytes)
          7/13/2009 6:35 PM   Microsoft Corporation
          c:\windows\system32\osbaseln.dll
```

```
wuapi     7.3.7600.16385      679.50 KB (695,808
bytes)    7/13/2009 7:35 PM   Microsoft Corporation
          c:\windows\system32\wuapi.dll
sppc      6.1.7600.16385      142.50 KB (145,920
bytes)    7/13/2009 8:04 PM   Microsoft Corporation
          c:\windows\system32\sppc.dll
msinfo32  6.1.7600.16385      370.00 KB (378,880
bytes)    7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\msinfo32.exe
msdtc     2001.12.8530.16385  138.50 KB (141,824
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\msdtc.exe
msdtctm   2001.12.8530.16385  1.44 MB (1,509,888
bytes)    7/13/2009 7:00 PM   Microsoft Corporation
          c:\windows\system32\msdtctm.dll
msdtcprx  2001.12.8530.16385  728.00 KB (745,472
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\msdtcprx.dll
mtxclu    2001.12.8530.16385  364.00 KB (372,736
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\mtxclu.dll
msdtclog  2001.12.8530.16385  122.00 KB (124,928
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\msdtclog.dll
xolehlp   2001.12.8530.16385  58.00 KB (59,392 bytes)
          7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\xolehlp.dll
comres    2001.12.8530.16385  1.24 MB (1,297,408
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\comres.dll
msdtcvsp1res        2001.12.8530.16385  21.00 KB
(21,504 bytes)      7/13/2009 6:59 PM   Microsoft
Corporation
          c:\windows\system32\msdtcvsp1res.dll
mtxoci    2001.12.8530.16385  153.00 KB (156,672
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\mtxoci.dll
cimwin32  6.1.7600.16385      1.96 MB (2,055,168
bytes)    7/13/2009 6:48 PM   Microsoft Corporation
          c:\windows\system32\wbem\cimwin32.dll
wmipcima  6.1.7600.16385      157.50 KB (161,280
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\wmipcima.dll
security  6.1.7600.16385      5.00 KB (5,120 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\security.dll
schedcli  6.1.7600.16385      23.50 KB (24,064 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\schedcli.dll
ntevt     6.1.7600.16385      260.00 KB (266,240
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\ntevt.dll
provthrd  6.1.7600.16385      300.00 KB (307,200
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\provthrd.dll
msvcirt   7.0.7600.16385      76.50 KB (78,336 bytes)
          7/13/2009 6:18 PM   Microsoft Corporation
          c:\windows\system32\msvcirt.dll
wsock32   6.1.7600.16385      18.00 KB (18,432 bytes)
          7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\wsock32.dll
```

```
tapi32    6.1.7600.16385      243.00 KB (248,832
bytes)    7/13/2009 7:41 PM   Microsoft Corporation
          c:\windows\system32\tapi32.dll
unidrvui  0.3.7600.16385      863.50 KB (884,224
bytes)    7/13/2009 8:18 PM   Microsoft Corporation
          c:\windows\system32\spool\drivers\x64\3\uni
drvui.dll
mxdwdui   0.3.7600.16385      215.50 KB (220,672
bytes)    7/13/2009 8:19 PM   Microsoft Corporation
          c:\windows\system32\spool\drivers\x64\3\mxd
wdui.dll

[Services]

Display Name        Name      State     Start Mode
          Service Type        Path      Error Control
          Start Name          Tag ID
Application Experience        AeLookupSvc
          Running   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    localSystem         0
Application Layer Gateway Service       ALG
          Stopped   Manual    Own Process
          c:\windows\system32\alg.exe   Normal    NT
AUTHORITY\LocalService        0
Application Identity          AppIDSvc  Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation          Normal    NT
Authority\LocalService        0
Application Information       Appinfo   Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Application Management        AppMgmt   Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Windows Audio Endpoint Builder
          AudioEndpointBuilder          Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal    LocalSystem
          0
Windows Audio       AudioSrv  Stopped   Manual
          Share Process
          c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal    NT
AUTHORITY\LocalService        0
Base Filtering Engine         BFE       Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k
localservicenonetwork         Normal    NT
AUTHORITY\LocalService        0
Background Intelligent Transfer Service BITS
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Computer Browser    Browser   Stopped   Disabled
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
```

```
CALoadService       CALoadService       Running
          Auto      Own Process         "c:\program
files (x86)\amd\codeanalyst\bin\caloadservice.exe"
          Ignore    LocalSystem         0
Certificate Propagation       CertPropSvc
          Running   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Microsoft .NET Framework NGEN 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

Microsoft .NET Framework NGEN 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\dllhost.exe
/processid:{02d4b3f1-fd88-11d1-960d-00805fc79235}
          Normal    LocalSystem         0
HP ProLiant Remote IML Service          CpqRcmc3
          Running   Auto      Share Process
          "c:\program files\hewlett-packard\ilo
3\service\proliantmonitor.exe"          Normal
          LocalSystem         0
Cryptographic Services        CryptSvc  Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k
networkservice      Normal    NT
Authority\NetworkService      0
DCOM Server Process Launcher  DcomLaunch
          Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k
dcomlaunch          Normal    LocalSystem         0

Disk Defragmenter   defragsvc Stopped   Manual    Own
Process   c:\windows\system32\svchost.exe -k
defragsvc Normal    localSystem         0
DHCP Client         Dhcp      Running   Auto
          Share Process
          c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal    NT
Authority\LocalService        0
DNS Client          Dnscache  Running   Auto
          Share Process
          c:\windows\system32\svchost.exe -k
networkservice      Normal    NT
AUTHORITY\NetworkService      0
Wired AutoConfig    dot3svc   Stopped   Manual
          Share Process
          c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal    localSystem
          0
Diagnostic Policy Service     DPS       Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k
```

```
localservicenonetwork         Normal    NT
AUTHORITY\LocalService        0
Extensible Authentication Protocol      EapHost
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    localSystem         0
Encrypting File System (EFS)  EFS       Running
          Auto      Share Process
          c:\windows\system32\lsass.exe Normal
          LocalSystem         0
Windows Event Log   eventlog  Running   Auto
          Share Process
          c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal    NT
AUTHORITY\LocalService        0
COM+ Event System   EventSystem         Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k
localservice        Normal    NT
AUTHORITY\LocalService        0
Microsoft Fibre Channel Platform Registration Service
          FCRegSvc  Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal    NT
AUTHORITY\LocalService        0
Function Discovery Provider Host        fdPHost
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localservice        Normal    NT
AUTHORITY\LocalService        0
Function Discovery Resource Publication FDResPub
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation          Normal    NT
AUTHORITY\LocalService        0
Windows Font Cache Service    FontCache Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation          Normal    NT
AUTHORITY\LocalService        0
Group Policy Client gpsvc     Running   Auto
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Human Interface Device Access hidserv   Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal    LocalSystem
          0
Health Key and Certificate Management   hkmsvc
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    localSystem         0
IKE and AuthIP IPsec Keying Modules     IKEEXT
          Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
PnP-X IP Bus Enumerator       IPBusEnum Stopped
          Disabled  Share Process
          c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal    LocalSystem
          0
```

```
IP Helper iphlpsvc  Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
CNG Key Isolation   KeyIso    Stopped   Manual
          Share Process
          c:\windows\system32\lsass.exe Normal
          LocalSystem         0
KtmRm for Distributed Transaction Coordinator
          KtmRm     Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
networkserviceandnoimpersonation        Normal    NT
AUTHORITY\NetworkService      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
networkservice      Normal    NT
AUTHORITY\NetworkService      0
Link-Layer Topology Discovery Mapper    lltdsvc
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localservice        Normal    NT
AUTHORITY\LocalService        0
TCP/IP NetBIOS Helper         lmhosts   Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal    NT
AUTHORITY\LocalService        0
Multimedia Class Scheduler    MMCSS     Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Windows Firewall    MpsSvc    Running   Auto
          Share Process
          c:\windows\system32\svchost.exe -k
localservicenonetwork         Normal    NT
Authority\LocalService        0
Distributed Transaction Coordinator     MSDTC
          Running   Auto      Own Process
          c:\windows\system32\msdtc.exe Normal    NT
AUTHORITY\NetworkService      0
Microsoft iSCSI Initiator Service       MSiSCSI
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Windows Installer   msiserver Stopped   Manual    Own
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\binn\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 Access Protection Agent         napagent
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
networkservice      Normal    NT
AUTHORITY\NetworkService      0
Netlogon  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
localsystemnetworkrestricted  Normal    LocalSystem
          0
Network List Service          netprofm  Running
          Manual    Share Process
          c:\windows\system32\svchost.exe -k
localservice        Normal    NT
AUTHORITY\LocalService        0
Network Location Awareness    NlaSvc    Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k
networkservice      Normal    NT
AUTHORITY\NetworkService      0
Network Store Interface Service         nsi
          Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k
localservice        Normal    NT
Authority\LocalService        0
Office Source Engine          ose       Stopped
          Manual    Own Process         "c:\program
files (x86)\common files\microsoft shared\source
engine\ose.exe"     Normal    LocalSystem         0

Performance Counter DLL Host  PerfHost  Stopped
          Manual    Own Process
          c:\windows\syswow64\perfhost.exe
          Normal    NT AUTHORITY\LocalService     0

Performance Logs & Alerts     pla       Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k
localservicenonetwork         Normal    NT
AUTHORITY\LocalService        0
Plug and Play       PlugPlay  Running   Auto
          Share Process
          c:\windows\system32\svchost.exe -k
dcomlaunch          Normal    LocalSystem         0

IPsec Policy Agent  PolicyAgent         Running
          Manual    Share Process
          c:\windows\system32\svchost.exe -k
networkservicenetworkrestricted         Normal    NT
Authority\NetworkService      0
Power     Power     Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k
dcomlaunch          Normal    LocalSystem         0

User Profile Service          ProfSvc   Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
HP ProLiant Health Monitor Service
          ProLiantMonitor     Running   Auto
          Share Process       "c:\program
files\hewlett-packard\ilo
3\service\proliantmonitor.exe"          Normal
          LocalSystem         0
Protected Storage   ProtectedStorage    Stopped
          Manual    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
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

RPC Endpoint Mapper RpcEptMapper        Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k rpcss
          Normal    NT AUTHORITY\NetworkService   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\svchost.exe -k
localserviceandnoimpersonation          Normal    NT
AUTHORITY\LocalService        0
Task Scheduler      Schedule  Running   Auto
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Smart Card Removal Policy     SCPolicySvc
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Secondary Logon     seclogon  Stopped   Manual
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
System Event Notification Service       SENS
          Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Remote Desktop Configuration  SessionEnv
          Running   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    localSystem         0
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
SNMP Trap SNMPTRAP  Stopped   Manual    Own Process
          c:\windows\system32\snmptrap.exe
          Normal    NT AUTHORITY\LocalService     0

Print Spooler       Spooler   Running   Auto      Own
Process   c:\windows\system32\spoolsv.exe
          Normal    LocalSystem         0
Software Protection sppsvc    Running   Auto      Own
Process   c:\windows\system32\sppsvc.exe
          Normal    NT AUTHORITY\NetworkService   0

SPP Notification Service      sppuinotify
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localservice        Normal    NT
AUTHORITY\LocalService        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\binn\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
SSDP Discovery      SSDPSRV   Stopped   Disabled
          Share Process
          c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation          Normal    NT
AUTHORITY\LocalService        0
```

```
Secure Socket Tunneling Protocol Service
          SstpSvc   Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localservice        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      Share Process
          "c:\program files\hewlett-packard\ilo
3\service\proliantmonitor.exe"          Normal
          LocalSystem         0
Telephony TapiSrv   Stopped   Manual    Own Process
          c:\windows\system32\svchost.exe -k tapisrv
          Normal    NT AUTHORITY\NetworkService   0

TPM Base Services   TBS       Stopped   Manual
          Share Process
          c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation          Normal    NT
AUTHORITY\LocalService        0
Remote Desktop Services       TermService
          Running   Manual    Share Process
          c:\windows\system32\svchost.exe -k termsvcs
          Normal    NT Authority\NetworkService   0

Thread Ordering Server        THREADORDER
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localservice        Normal    NT
AUTHORITY\LocalService        0
Distributed Link Tracking Client        TrkWks
          Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal    LocalSystem
          0
Windows Modules Installer     TrustedInstaller
          Running   Manual    Own Process
          c:\windows\servicing\trustedinstaller.exe
          Normal    localSystem         0
Interactive Services Detection          UI0Detect
          Stopped   Manual    Own Process
          c:\windows\system32\ui0detect.exe
          Normal    LocalSystem         0
Remote Desktop Services UserMode Port Redirector
          UmRdpService        Running   Manual
          Share Process
          c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal    localSystem
          0
UPnP Device Host    upnphost  Stopped   Disabled
          Share Process
          c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation          Normal    NT
AUTHORITY\LocalService        0
Desktop Window Manager Session Manager  UxSms
          Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal    localSystem
          0
```

```
Credential Manager  VaultSvc  Stopped   Manual
          Share Process
          c:\windows\system32\lsass.exe Normal
          LocalSystem         0
Virtual Disk        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   Stopped   Manual
          Share Process
          c:\windows\system32\svchost.exe -k
localservice        Normal    NT
AUTHORITY\LocalService        0
Windows Color System          WcsPlugInService
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k wcssvc
          Normal    NT AUTHORITY\LocalService     0

Diagnostic Service Host       WdiServiceHost
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localservice        Normal    NT
AUTHORITY\LocalService        0
Diagnostic System Host        WdiSystemHost
          Running   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal    LocalSystem
          0
Windows Event Collector       Wecsvc    Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k
networkservice      Normal    NT
AUTHORITY\NetworkService      0
Problem Reports and Solutions Control Panel Support
          wercplsupport       Stopped   Manual
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    localSystem         0
Windows Error Reporting Service         WerSvc
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
wersvcgroup         Ignore    localSystem         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
Windows Remote Management (WS-Management)
          WinRM     Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k
networkservice      Normal    NT
AUTHORITY\NetworkService      0
WMI Performance Adapter       wmiApSrv  Stopped
          Manual    Own Process
          c:\windows\system32\wbem\wmiapsrv.exe
          Normal    localSystem         0
Portable Device Enumerator Service      WPDBusEnum
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal    LocalSystem
          0
Windows Update      wuauserv  Running   Auto
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Windows Driver Foundation - User-mode Driver
Framework wudfsvc   Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal    LocalSystem
          0

[Program Groups]

Group Name          Name      User Name
Start Menu          Default:Start Menu  Default
Start Menu\Programs Default:Start Menu\Programs
          Default
Start Menu\Programs\Accessories         Default:Start
Menu\Programs\Accessories     Default
Start Menu\Programs\Accessories\Accessibility
          Default:Start
Menu\Programs\Accessories\Accessibility Default
Start Menu\Programs\Accessories\System Tools
          Default:Start
Menu\Programs\Accessories\System Tools  Default
Start Menu\Programs\Maintenance         Default:Start
Menu\Programs\Maintenance     Default
Start Menu          Public:Start Menu   Public
Start Menu\Programs Public:Start Menu\Programs
          Public
Start Menu\Programs\Accessories         Public:Start
Menu\Programs\Accessories     Public
Start Menu\Programs\Accessories\Accessibility
          Public:Start
Menu\Programs\Accessories\Accessibility Public
Start Menu\Programs\Accessories\System Tools
          Public:Start
Menu\Programs\Accessories\System Tools  Public
Start Menu\Programs\Accessories\Windows PowerShell
          Public:Start
Menu\Programs\Accessories\Windows PowerShell
          Public
Start Menu\Programs\ActivePerl 5.12.2 Build 1203 (64-
bit)      Public:Start Menu\Programs\ActivePerl
5.12.2 Build 1203 (64-bit)    Public
Start Menu\Programs\Administrative Tools
          Public:Start Menu\Programs\Administrative
Tools     Public
Start Menu\Programs\Administrative Tools\Terminal
Services  Public:Start Menu\Programs\Administrative
Tools\Terminal Services       Public
Start Menu\Programs\AMD       Public:Start
Menu\Programs\AMD   Public
Start Menu\Programs\AMD\CodeAnalyst     Public:Start
Menu\Programs\AMD\CodeAnalyst Public
```

```
Start Menu\Programs\AMD\PSCheck         Public:Start
Menu\Programs\AMD\PSCheck     Public
Start Menu\Programs\Elaborate Bytes     Public:Start
Menu\Programs\Elaborate Bytes Public
Start Menu\Programs\Elaborate Bytes\VirtualCloneDrive
          Public:Start Menu\Programs\Elaborate
Bytes\VirtualCloneDrive       Public
Start Menu\Programs\HP System Tools     Public:Start
Menu\Programs\HP System Tools Public
Start Menu\Programs\HP System Tools\HP Array
Configuration Utility (64-bit)          Public:Start
Menu\Programs\HP System Tools\HP Array Configuration
Utility (64-bit)    Public
Start Menu\Programs\Maintenance         Public:Start
Menu\Programs\Maintenance     Public
Start Menu\Programs\Microsoft SQL Server 2005
          Public:Start Menu\Programs\Microsoft SQL
Server 2005         Public
Start Menu\Programs\Microsoft SQL Server
2005\Analysis Services        Public:Start
Menu\Programs\Microsoft SQL Server 2005\Analysis
Services  Public
Start Menu\Programs\Microsoft SQL Server
2005\Configuration Tools      Public:Start
Menu\Programs\Microsoft SQL Server 2005\Configuration
Tools     Public
Start Menu\Programs\Microsoft SQL Server
2005\Documentation and Tutorials        Public:Start
Menu\Programs\Microsoft SQL Server 2005\Documentation
and Tutorials       Public
Start Menu\Programs\Microsoft SQL Server
2005\Documentation and Tutorials\Tutorials
          Public:Start Menu\Programs\Microsoft SQL
Server 2005\Documentation and Tutorials\Tutorials
          Public
Start Menu\Programs\Microsoft SQL Server
2005\Performance Tools        Public:Start
Menu\Programs\Microsoft SQL Server 2005\Performance
Tools     Public
Start Menu\Programs\Startup   Public:Start
Menu\Programs\Startup         Public
Start Menu\Programs\XML Copy Editor     Public:Start
Menu\Programs\XML Copy Editor Public
Start Menu          WIN-
FECQNPTFFHQ\Administrator:Start Menu    WIN-
FECQNPTFFHQ\Administrator
Start Menu\Programs WIN-
FECQNPTFFHQ\Administrator:Start Menu\Programs
          WIN-FECQNPTFFHQ\Administrator
Start Menu\Programs\Accessories         WIN-
FECQNPTFFHQ\Administrator:Start
Menu\Programs\Accessories     WIN-
FECQNPTFFHQ\Administrator
Start Menu\Programs\Accessories\Accessibility
          WIN-FECQNPTFFHQ\Administrator:Start
Menu\Programs\Accessories\Accessibility WIN-
FECQNPTFFHQ\Administrator
Start Menu\Programs\Accessories\System Tools
          WIN-FECQNPTFFHQ\Administrator:Start
Menu\Programs\Accessories\System Tools  WIN-
FECQNPTFFHQ\Administrator
```

```
Start Menu\Programs\Administrative Tools
          WIN-FECQNPTFFHQ\Administrator:Start
Menu\Programs\Administrative Tools      WIN-
FECQNPTFFHQ\Administrator
Start Menu\Programs\AMD       WIN-
FECQNPTFFHQ\Administrator:Start Menu\Programs\AMD
          WIN-FECQNPTFFHQ\Administrator
Start Menu\Programs\AMD\PowerNow Command Line
          WIN-FECQNPTFFHQ\Administrator:Start
Menu\Programs\AMD\PowerNow Command Line WIN-
FECQNPTFFHQ\Administrator
Start Menu\Programs\AMD System Analysis Tools
          WIN-FECQNPTFFHQ\Administrator:Start
Menu\Programs\AMD System Analysis Tools WIN-
FECQNPTFFHQ\Administrator
Start Menu\Programs\AMD System Analysis
Tools\cachectl      WIN-
FECQNPTFFHQ\Administrator:Start Menu\Programs\AMD
System Analysis Tools\cachectl          WIN-
FECQNPTFFHQ\Administrator
Start Menu\Programs\AMD System Analysis
Tools\clkconfig     WIN-
FECQNPTFFHQ\Administrator:Start Menu\Programs\AMD
System Analysis Tools\clkconfig         WIN-
FECQNPTFFHQ\Administrator
Start Menu\Programs\AMD System Analysis Tools\CpuSpy
          WIN-FECQNPTFFHQ\Administrator:Start
Menu\Programs\AMD System Analysis Tools\CpuSpy
          WIN-FECQNPTFFHQ\Administrator
Start Menu\Programs\AMD System Analysis
Tools\HotkeyEvent   WIN-
FECQNPTFFHQ\Administrator:Start Menu\Programs\AMD
System Analysis Tools\HotkeyEvent       WIN-
FECQNPTFFHQ\Administrator
Start Menu\Programs\AMD System Analysis Tools\mreport
          WIN-FECQNPTFFHQ\Administrator:Start
Menu\Programs\AMD System Analysis Tools\mreport
          WIN-FECQNPTFFHQ\Administrator
Start Menu\Programs\AMD System Analysis
Tools\MultEvent     WIN-
FECQNPTFFHQ\Administrator:Start Menu\Programs\AMD
System Analysis Tools\MultEvent         WIN-
FECQNPTFFHQ\Administrator
Start Menu\Programs\AMD System Analysis
Tools\MultEvent-DSM WIN-
FECQNPTFFHQ\Administrator:Start Menu\Programs\AMD
System Analysis Tools\MultEvent-DSM     WIN-
FECQNPTFFHQ\Administrator
Start Menu\Programs\AMD System Analysis
Tools\PowerNow      WIN-
FECQNPTFFHQ\Administrator:Start Menu\Programs\AMD
System Analysis Tools\PowerNow          WIN-
FECQNPTFFHQ\Administrator
Start Menu\Programs\AMD System Analysis Tools\sysexam
          WIN-FECQNPTFFHQ\Administrator:Start
Menu\Programs\AMD System Analysis Tools\sysexam
          WIN-FECQNPTFFHQ\Administrator
Start Menu\Programs\Maintenance         WIN-
FECQNPTFFHQ\Administrator:Start
Menu\Programs\Maintenance     WIN-
FECQNPTFFHQ\Administrator
```

```
Start Menu\Programs\Startup   WIN-
FECQNPTFFHQ\Administrator:Start Menu\Programs\Startup
          WIN-FECQNPTFFHQ\Administrator

[Startup Programs]

Program   Command   User Name Location
CPQTEAM   "c:\program files\hp\ncu\cpqteam.exe"
          Public
          HKLM\SOFTWARE\Microsoft\Windows\CurrentVers
ion\Run
QLogicSaveSystemInfo          rundll32.exe
qlco1006.dll,qlsavesysteminfo Public
          HKLM\SOFTWARE\Microsoft\Windows\CurrentVers
ion\Run

[OLE Registration]

Object    Local Server
WordPad Document    "%programfiles%\windows
nt\accessories\wordpad.exe"
Paintbrush Picture  %systemroot%\system32\mspaint.exe

Package   Not Available
Microsoft PenInputPanel Control         Not Available


[Windows Error Reporting]

Time      Type      Details
10/10/2011 4:14 PM  Application Error   Faulting
application name: wmiprvse.exe, version:
6.1.7600.16385, time stamp:
0x4a5bc794&#x000d;&#x000a;Faulting module name:
ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5be01a&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000000000039389&#x000d;&#x000a;Faulting process
id: 0xa7c&#x000d;&#x000a;Faulting application start
time: 0x01cc865b716f4fb1&#x000d;&#x000a;Faulting
application path:
C:\Windows\system32\wbem\wmiprvse.exe&#x000d;&#x000a;
Faulting module path:
C:\Windows\system32\ole32.dll&#x000d;&#x000a;Report
Id: f4af7744-f35a-11e0-850d-d485646929e0
10/9/2011 8:14 AM   Application Error   Faulting
application name: wmiprvse.exe, version:
6.1.7600.16385, time stamp:
0x4a5bc794&#x000d;&#x000a;Faulting module name:
ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5be01a&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000000000039389&#x000d;&#x000a;Faulting process
id: 0xc94&#x000d;&#x000a;Faulting application start
time: 0x01cc8559502c35ac&#x000d;&#x000a;Faulting
application path:
C:\Windows\system32\wbem\wmiprvse.exe&#x000d;&#x000a;
Faulting module path:
C:\Windows\system32\ole32.dll&#x000d;&#x000a;Report
Id: a87d545a-f24e-11e0-850d-d485646929e0
10/8/2011 1:37 AM   Application Error   Faulting
application name: sleep.exe, version: 0.0.0.0, time
stamp: 0x2fb0ba06&#x000d;&#x000a;Faulting module
name: sleep.exe, version: 0.0.0.0, time stamp:
0x2fb0ba06&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000566f&#x000d;&#x000a;Faulting process id:
0xca4&#x000d;&#x000a;Faulting application start time:
0x01cc855adfc51cc9&#x000d;&#x000a;Faulting
application path:
C:\mstpcc.468\tools\sleep\sleep.exe&#x000d;&#x000a;Fa
ulting module path:
C:\mstpcc.468\tools\sleep\sleep.exe&#x000d;&#x000a;Re
port Id: 1e5c8ff2-f14e-11e0-850d-d485646929e0
10/7/2011 11:43 PM  Application Error   Faulting
application name: mreport.exe, version: 0.0.0.0, time
stamp: 0x4e0e1066&#x000d;&#x000a;Faulting module
name: mreport.exe, version: 0.0.0.0, time stamp:
0x4e0e1066&#x000d;&#x000a;Exception code:
0xc000000d&#x000d;&#x000a;Fault offset:
0x000000000001e438&#x000d;&#x000a;Faulting process
id: 0x110&#x000d;&#x000a;Faulting application start
time: 0x01cc854afa99c5c8&#x000d;&#x000a;Faulting
application path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Faulting
module path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Report
Id: 384a1d83-f13e-11e0-8722-d485646929e0
10/7/2011 11:43 PM  Application Error   Faulting
application name: mreport.exe, version: 0.0.0.0, time
stamp: 0x4e0e1066&#x000d;&#x000a;Faulting module
name: mreport.exe, version: 0.0.0.0, time stamp:
0x4e0e1066&#x000d;&#x000a;Exception code:
0xc000000d&#x000d;&#x000a;Fault offset:
0x000000000001e438&#x000d;&#x000a;Faulting process
id: 0x89c&#x000d;&#x000a;Faulting application start
time: 0x01cc854af80ed387&#x000d;&#x000a;Faulting
application path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Faulting
module path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Report
Id: 36d4885e-f13e-11e0-8722-d485646929e0
10/7/2011 5:23 PM   Application Error   Faulting
application name: mreport.exe, version: 0.0.0.0, time
stamp: 0x4e0e1066&#x000d;&#x000a;Faulting module
name: mreport.exe, version: 0.0.0.0, time stamp:
0x4e0e1066&#x000d;&#x000a;Exception code:
0xc000000d&#x000d;&#x000a;Fault offset:
0x000000000001e438&#x000d;&#x000a;Faulting process
id: 0x44c&#x000d;&#x000a;Faulting application start
time: 0x01cc8515dc994e86&#x000d;&#x000a;Faulting
application path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Faulting
module path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Report
Id: 1a4721a4-f109-11e0-9e75-d485646929e0
10/7/2011 5:23 PM   Application Error   Faulting
application name: mreport.exe, version: 0.0.0.0, time
stamp: 0x4e0e1066&#x000d;&#x000a;Faulting module
name: mreport.exe, version: 0.0.0.0, time stamp:
0x4e0e1066&#x000d;&#x000a;Exception code:
0xc000000d&#x000d;&#x000a;Fault offset:
0x000000000001e438&#x000d;&#x000a;Faulting process
id: 0xfa0&#x000d;&#x000a;Faulting application start
time: 0x01cc8515d9163894&#x000d;&#x000a;Faulting
application path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Faulting
module path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Report
Id: 16c41f3b-f109-11e0-9e75-d485646929e0
10/7/2011 5:23 PM   Application Error   Faulting
application name: mreport.exe, version: 0.0.0.0, time
stamp: 0x4e0e1066&#x000d;&#x000a;Faulting module
name: mreport.exe, version: 0.0.0.0, time stamp:
0x4e0e1066&#x000d;&#x000a;Exception code:
0xc000000d&#x000d;&#x000a;Fault offset:
0x000000000001e438&#x000d;&#x000a;Faulting process
id: 0xe18&#x000d;&#x000a;Faulting application start
time: 0x01cc8515c4720aad&#x000d;&#x000a;Faulting
application path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Faulting
module path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Report
Id: 021f8fa9-f109-11e0-9e75-d485646929e0
10/7/2011 5:21 PM   Application Error   Faulting
application name: mreport.exe, version: 0.0.0.0, time
stamp: 0x4e0e1066&#x000d;&#x000a;Faulting module
name: mreport.exe, version: 0.0.0.0, time stamp:
0x4e0e1066&#x000d;&#x000a;Exception code:
0xc000000d&#x000d;&#x000a;Fault offset:
0x000000000001e438&#x000d;&#x000a;Faulting process
id: 0xf3c&#x000d;&#x000a;Faulting application start
time: 0x01cc85158ce31ed9&#x000d;&#x000a;Faulting
application path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Faulting
module path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Report
Id: ca90cae6-f108-11e0-9e75-d485646929e0
10/7/2011 5:20 PM   Application Error   Faulting
application name: mreport.exe, version: 0.0.0.0, time
stamp: 0x4e0e1066&#x000d;&#x000a;Faulting module
name: mreport.exe, version: 0.0.0.0, time stamp:
0x4e0e1066&#x000d;&#x000a;Exception code:
0xc000000d&#x000d;&#x000a;Fault offset:
0x000000000001e438&#x000d;&#x000a;Faulting process
id: 0xc48&#x000d;&#x000a;Faulting application start
time: 0x01cc85156e126497&#x000d;&#x000a;Faulting
application path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Faulting
module path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Report
Id: ac99aed7-f108-11e0-9e75-d485646929e0
10/7/2011 5:10 PM   Application Error   Faulting
application name: mreport.exe, version: 0.0.0.0, time
stamp: 0x4e0e1066&#x000d;&#x000a;Faulting module
name: mreport.exe, version: 0.0.0.0, time stamp:
0x4e0e1066&#x000d;&#x000a;Exception code:
0xc000000d&#x000d;&#x000a;Fault offset:
0x000000000001e438&#x000d;&#x000a;Faulting process
id: 0xd40&#x000d;&#x000a;Faulting application start
time: 0x01cc8514078418a7&#x000d;&#x000a;Faulting
application path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Faulting
module path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Report
Id: 45c7a0f3-f107-11e0-9e75-d485646929e0
```

```
10/7/2011 5:07 PM   Application Error   Faulting
application name: mreport.exe, version: 0.0.0.0, time
stamp: 0x4e0e1066&#x000d;&#x000a;Faulting module
name: mreport.exe, version: 0.0.0.0, time stamp:
0x4e0e1066&#x000d;&#x000a;Exception code:
0xc000000d&#x000d;&#x000a;Fault offset:
0x000000000001e438&#x000d;&#x000a;Faulting process
id: 0xb58&#x000d;&#x000a;Faulting application start
time: 0x01cc85139da580cb&#x000d;&#x000a;Faulting
application path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Faulting
module path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Report
Id: db5305c7-f106-11e0-9e75-d485646929e0
10/7/2011 5:07 PM   Application Error   Faulting
application name: mreport.exe, version: 0.0.0.0, time
stamp: 0x4e0e1066&#x000d;&#x000a;Faulting module
name: mreport.exe, version: 0.0.0.0, time stamp:
0x4e0e1066&#x000d;&#x000a;Exception code:
0xc000000d&#x000d;&#x000a;Fault offset:
0x000000000001e438&#x000d;&#x000a;Faulting process
id: 0xc84&#x000d;&#x000a;Faulting application start
time: 0x01cc851399835305&#x000d;&#x000a;Faulting
application path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Faulting
module path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Report
Id: d730b0ef-f106-11e0-9e75-d485646929e0
10/7/2011 5:06 PM   Application Error   Faulting
application name: mreport.exe, version: 0.0.0.0, time
stamp: 0x4e0e1066&#x000d;&#x000a;Faulting module
name: mreport.exe, version: 0.0.0.0, time stamp:
0x4e0e1066&#x000d;&#x000a;Exception code:
0xc000000d&#x000d;&#x000a;Fault offset:
0x000000000001e438&#x000d;&#x000a;Faulting process
id: 0xdb8&#x000d;&#x000a;Faulting application start
time: 0x01cc85137a10871e&#x000d;&#x000a;Faulting
application path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Faulting
module path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Report
Id: b7be0c1a-f106-11e0-9e75-d485646929e0
10/7/2011 5:06 PM   Application Error   Faulting
application name: mreport.exe, version: 0.0.0.0, time
stamp: 0x4e0e1066&#x000d;&#x000a;Faulting module
name: mreport.exe, version: 0.0.0.0, time stamp:
0x4e0e1066&#x000d;&#x000a;Exception code:
0xc000000d&#x000d;&#x000a;Fault offset:
0x000000000001e438&#x000d;&#x000a;Faulting process
id: 0xd38&#x000d;&#x000a;Faulting application start
time: 0x01cc85137532563b&#x000d;&#x000a;Faulting
application path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Faulting
module path: C:\Program
Files\AMD\mreport\mreport.exe&#x000d;&#x000a;Report
Id: b334a130-f106-11e0-9e75-d485646929e0
8/31/2011 11:23 PM  Application Error   Not Available

8/30/2011 2:25 PM   Application Error   Faulting
application name: wmiprvse.exe, version:
6.1.7600.16385, time stamp:
0x4a5bc794&#x000d;&#x000a;Faulting module name:
ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5be01a&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000000000039389&#x000d;&#x000a;Faulting process
id: 0xdac&#x000d;&#x000a;Faulting application start
time: 0x01cc6613094295e5&#x000d;&#x000a;Faulting
application path:
C:\Windows\system32\wbem\wmiprvse.exe&#x000d;&#x000a;
Faulting module path:
C:\Windows\system32\ole32.dll&#x000d;&#x000a;Report
Id: ec13fe79-d313-11e0-b978-d485646929e0
8/27/2011 11:15 PM  Application Error   Faulting
application name: wmiprvse.exe, version:
6.1.7600.16385, time stamp:
0x4a5bc794&#x000d;&#x000a;Faulting module name:
ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5be01a&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000000000039389&#x000d;&#x000a;Faulting process
id: 0xb98&#x000d;&#x000a;Faulting application start
time: 0x01cc64010221592e&#x000d;&#x000a;Faulting
application path:
C:\Windows\system32\wbem\wmiprvse.exe&#x000d;&#x000a;
Faulting module path:
C:\Windows\system32\ole32.dll&#x000d;&#x000a;Report
Id: 678fce9f-d102-11e0-b978-d485646929e0
8/26/2011 3:01 PM   Application Error   Faulting
application name: wmiprvse.exe, version:
6.1.7600.16385, time stamp:
0x4a5bc794&#x000d;&#x000a;Faulting module name:
ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5be01a&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000000000039389&#x000d;&#x000a;Faulting process
id: 0xc18&#x000d;&#x000a;Faulting application start
time: 0x01cc62f81cbd418d&#x000d;&#x000a;Faulting
application path:
C:\Windows\system32\wbem\wmiprvse.exe&#x000d;&#x000a;
Faulting module path:
C:\Windows\system32\ole32.dll&#x000d;&#x000a;Report
Id: 39bc84b8-cff4-11e0-b978-d485646929e0
8/25/2011 7:24 AM   Application Error   Faulting
application name: wmiprvse.exe, version:
6.1.7600.16385, time stamp:
0x4a5bc794&#x000d;&#x000a;Faulting module name:
ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5be01a&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000000000039389&#x000d;&#x000a;Faulting process
id: 0xf80&#x000d;&#x000a;Faulting application start
time: 0x01cc61f14a64cd19&#x000d;&#x000a;Faulting
application path:
C:\Windows\system32\wbem\wmiprvse.exe&#x000d;&#x000a;
Faulting module path:
C:\Windows\system32\ole32.dll&#x000d;&#x000a;Report
Id: 5455087b-ceeb-11e0-b978-d485646929e0
8/24/2011 12:03 AM  Application Error   Faulting
application name: wmiprvse.exe, version:
6.1.7600.16385, time stamp:
0x4a5bc794&#x000d;&#x000a;Faulting module name:
ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5be01a&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000000000039389&#x000d;&#x000a;Faulting process
id: 0x6f0&#x000d;&#x000a;Faulting application start
time: 0x01cc60e5a53c922d&#x000d;&#x000a;Faulting
application path:
C:\Windows\system32\wbem\wmiprvse.exe&#x000d;&#x000a;
Faulting module path:
C:\Windows\system32\ole32.dll&#x000d;&#x000a;Report
Id: 817ae830-cde4-11e0-b978-d485646929e0
8/19/2011 12:59 AM  Application Error   Faulting
application name: sleep.exe, version: 0.0.0.0, time
stamp: 0x2fb0ba06&#x000d;&#x000a;Faulting module
name: sleep.exe, version: 0.0.0.0, time stamp:
0x2fb0ba06&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000566f&#x000d;&#x000a;Faulting process id:
0x570&#x000d;&#x000a;Faulting application start time:
0x01cc5e0b3e7b9845&#x000d;&#x000a;Faulting
application path:
C:\mstpcc.468\tools\sleep\sleep.exe&#x000d;&#x000a;Fa
ulting module path:
C:\mstpcc.468\tools\sleep\sleep.exe&#x000d;&#x000a;Re
port Id: 7d307eed-c9fe-11e0-b978-d485646929e0
8/16/2011 7:52 PM   Application Error   Faulting
application name: sleep.exe, version: 0.0.0.0, time
stamp: 0x2fb0ba06&#x000d;&#x000a;Faulting module
name: sleep.exe, version: 0.0.0.0, time stamp:
0x2fb0ba06&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000566f&#x000d;&#x000a;Faulting process id:
0xb0c&#x000d;&#x000a;Faulting application start time:
0x01cc5c4e0ef32d2d&#x000d;&#x000a;Faulting
application path:
C:\mstpcc.468\tools\sleep\sleep.exe&#x000d;&#x000a;Fa
ulting module path:
C:\mstpcc.468\tools\sleep\sleep.exe&#x000d;&#x000a;Re
port Id: 4cf0a805-c841-11e0-b04a-d485646929e0
8/15/2011 4:39 PM   Application Error   Faulting
application name: sleep.exe, version: 0.0.0.0, time
stamp: 0x2fb0ba06&#x000d;&#x000a;Faulting module
name: sleep.exe, version: 0.0.0.0, time stamp:
0x2fb0ba06&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000566f&#x000d;&#x000a;Faulting process id:
0x1628&#x000d;&#x000a;Faulting application start
time: 0x01cc5b69dd11c404&#x000d;&#x000a;Faulting
application path:
C:\mstpcc.468\tools\sleep\sleep.exe&#x000d;&#x000a;Fa
ulting module path:
C:\mstpcc.468\tools\sleep\sleep.exe&#x000d;&#x000a;Re
port Id: 1b026d6c-c75d-11e0-8752-d485646929e0
8/12/2011 11:42 PM  Application Error   Faulting
application name: sleep.exe, version: 0.0.0.0, time
stamp: 0x2fb0ba06&#x000d;&#x000a;Faulting module
name: sleep.exe, version: 0.0.0.0, time stamp:
0x2fb0ba06&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000566f&#x000d;&#x000a;Faulting process id:
0x574&#x000d;&#x000a;Faulting application start time:
0x01cc594985872d9f&#x000d;&#x000a;Faulting
application path:
C:\mstpcc.468\tools\sleep\sleep.exe&#x000d;&#x000a;Fa
```

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ulting module path:
C:\mstpcc.468\tools\sleep\sleep.exe&#x000d;&#x000a;Re
port Id: c3898a8a-c53c-11e0-ae9f-d485646929e0
8/1/2011 4:20 PM    Application Error   Faulting
application name: wmiprvse.exe, version:
6.1.7600.16385, time stamp:
0x4a5bc794&#x000d;&#x000a;Faulting module name:
ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5be01a&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000000000039389&#x000d;&#x000a;Faulting process
id: 0xf08&#x000d;&#x000a;Faulting application start
time: 0x01cc4f4b07d47e64&#x000d;&#x000a;Faulting
application path:
C:\Windows\system32\wbem\wmiprvse.exe&#x000d;&#x000a;
Faulting module path:
C:\Windows\system32\ole32.dll&#x000d;&#x000a;Report
Id: 3be02014-bc5a-11e0-a3e3-d485646929e0
7/31/2011 6:28 AM   Application Error   Faulting
application name: wmiprvse.exe, version:
6.1.7600.16385, time stamp:
0x4a5bc794&#x000d;&#x000a;Faulting module name:
ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5be01a&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000000000039389&#x000d;&#x000a;Faulting process
id: 0x768&#x000d;&#x000a;Faulting application start
time: 0x01cc4e464d160bd8&#x000d;&#x000a;Faulting
application path:
C:\Windows\system32\wbem\wmiprvse.exe&#x000d;&#x000a;
Faulting module path:
C:\Windows\system32\ole32.dll&#x000d;&#x000a;Report
Id: 3ef484b1-bb3e-11e0-a3e3-d485646929e0
7/18/2011 10:36 PM  Application Error   Faulting
application name: wmiprvse.exe, version:
6.1.7600.16385, time stamp:
0x4a5bc794&#x000d;&#x000a;Faulting module name:
ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5be01a&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000000000039389&#x000d;&#x000a;Faulting process
id: 0x133c&#x000d;&#x000a;Faulting application start
time: 0x01cc4496dce36824&#x000d;&#x000a;Faulting
application path:
C:\Windows\system32\wbem\wmiprvse.exe&#x000d;&#x000a;
Faulting module path:
C:\Windows\system32\ole32.dll&#x000d;&#x000a;Report
Id: 6928b367-b18e-11e0-a7ab-d485646929da
7/15/2011 1:20 AM   Application Error   Faulting
application name: wmiprvse.exe, version:
6.1.7600.16385, time stamp:
0x4a5bc794&#x000d;&#x000a;Faulting module name:
ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5be01a&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000000000039389&#x000d;&#x000a;Faulting process
id: 0xd44&#x000d;&#x000a;Faulting application start
time: 0x01cc417d3c032c03&#x000d;&#x000a;Faulting
application path:
C:\Windows\system32\wbem\wmiprvse.exe&#x000d;&#x000a;
Faulting module path:
```

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C:\Windows\system32\ole32.dll&#x000d;&#x000a;Report
Id: adfb84fa-ae80-11e0-a7ab-d485646929da
7/13/2011 5:32 PM   Application Error   Faulting
application name: sleep.exe, version: 0.0.0.0, time
stamp: 0x2fb0ba06&#x000d;&#x000a;Faulting module
name: sleep.exe, version: 0.0.0.0, time stamp:
0x2fb0ba06&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000566f&#x000d;&#x000a;Faulting process id:
0x108&#x000d;&#x000a;Faulting application start time:
0x01cc4182d2c9aae3&#x000d;&#x000a;Faulting
application path:
C:\mstpcc.468\tools\sleep\sleep.exe&#x000d;&#x000a;Fa
ulting module path:
C:\mstpcc.468\tools\sleep\sleep.exe&#x000d;&#x000a;Re
port Id: 1147541c-ad76-11e0-a7ab-d485646929da
7/13/2011 1:13 AM   Application Error   Faulting
application name: sleep.exe, version: 0.0.0.0, time
stamp: 0x2fb0ba06&#x000d;&#x000a;Faulting module
name: sleep.exe, version: 0.0.0.0, time stamp:
0x2fb0ba06&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000566f&#x000d;&#x000a;Faulting process id:
0xcb0&#x000d;&#x000a;Faulting application start time:
0x01cc40fa1db031a0&#x000d;&#x000a;Faulting
application path:
C:\mstpcc.468\tools\sleep\sleep.exe&#x000d;&#x000a;Fa
ulting module path:
C:\mstpcc.468\tools\sleep\sleep.exe&#x000d;&#x000a;Re
port Id: 5be6979e-aced-11e0-a7ab-d485646929da
10/31/2011 8:34 PM  Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: AppHangB1&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
mmc.exe&#x000d;&#x000a;P2:
6.1.7600.16385&#x000d;&#x000a;P3:
4a5bc808&#x000d;&#x000a;P4: 4ce1&#x000d;&#x000a;P5:
257&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppHang_mmc.
exe_b894c3bbdd8c791fbb7064f7d7c74be1dea27b62_0e4ad329
&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: cae5bfdb-03ff-11e1-9688-
d485646929e0&#x000d;&#x000a;Report Status: 0
10/10/2011 4:14 PM  Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
wmiprvse.exe&#x000d;&#x000a;P2:
6.1.7600.16385&#x000d;&#x000a;P3:
4a5bc794&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
```

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6.1.7600.16385&#x000d;&#x000a;P6:
4a5be01a&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000000000039389&#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_wmiprvse.exe_d96fa3e73429e2
36c547c52b1863b14ed594c35_07ecd7fd&#x000d;&#x000a;&#x
000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: f4af7744-f35a-11e0-850d-
d485646929e0&#x000d;&#x000a;Report Status: 4
10/9/2011 8:14 AM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
wmiprvse.exe&#x000d;&#x000a;P2:
6.1.7600.16385&#x000d;&#x000a;P3:
4a5bc794&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5be01a&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000000000039389&#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_wmiprvse.exe_d96fa3e73429e2
36c547c52b1863b14ed594c35_04c28af3&#x000d;&#x000a;&#x
000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: a87d545a-f24e-11e0-850d-
d485646929e0&#x000d;&#x000a;Report Status: 4
10/8/2011 1:37 AM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
sleep.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
2fb0ba06&#x000d;&#x000a;P4:
sleep.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
2fb0ba06&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000566f&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_sle
ep.exe_e4d6edaec3483adca39abc17680c4ff8aae021_0e814ce
7&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
```

```
0&#x000d;&#x000a;Report Id: 1e5c8ff2-f14e-11e0-850d-
d485646929e0&#x000d;&#x000a;Report Status: 0
10/7/2011 11:43 PM  Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: BEX64&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
mreport.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
4e0e1066&#x000d;&#x000a;P4:
mreport.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
4e0e1066&#x000d;&#x000a;P7:
000000000001e438&#x000d;&#x000a;P8:
c000000d&#x000d;&#x000a;P9:
0000000000000000&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_mre
port.exe_1a279c25e1aa72e9f1ecbc3792a7a39499a69bd1_043
8276d&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 384a1d83-f13e-11e0-8722-
d485646929e0&#x000d;&#x000a;Report Status: 0
10/7/2011 11:43 PM  Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: BEX64&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
mreport.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
4e0e1066&#x000d;&#x000a;P4:
mreport.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
4e0e1066&#x000d;&#x000a;P7:
000000000001e438&#x000d;&#x000a;P8:
c000000d&#x000d;&#x000a;P9:
0000000000000000&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_mre
port.exe_1a279c25e1aa72e9f1ecbc3792a7a39499a69bd1_06c
423c5&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 36d4885e-f13e-11e0-8722-
d485646929e0&#x000d;&#x000a;Report Status: 0
10/7/2011 5:23 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: BEX64&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
mreport.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
4e0e1066&#x000d;&#x000a;P4:
mreport.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
4e0e1066&#x000d;&#x000a;P7:
000000000001e438&#x000d;&#x000a;P8:
c000000d&#x000d;&#x000a;P9:
0000000000000000&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_mre
port.exe_1a279c25e1aa72e9f1ecbc3792a7a39499a69bd1_0f9
01c58&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 1a4721a4-f109-11e0-9e75-
d485646929e0&#x000d;&#x000a;Report Status: 0
10/7/2011 5:23 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: BEX64&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
mreport.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
4e0e1066&#x000d;&#x000a;P4:
mreport.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
4e0e1066&#x000d;&#x000a;P7:
000000000001e438&#x000d;&#x000a;P8:
c000000d&#x000d;&#x000a;P9:
0000000000000000&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_mre
port.exe_1a279c25e1aa72e9f1ecbc3792a7a39499a69bd1_0ea
818df&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 16c41f3b-f109-11e0-9e75-
d485646929e0&#x000d;&#x000a;Report Status: 0
10/7/2011 5:23 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: BEX64&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
mreport.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
4e0e1066&#x000d;&#x000a;P4:
mreport.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
4e0e1066&#x000d;&#x000a;P7:
000000000001e438&#x000d;&#x000a;P8:
c000000d&#x000d;&#x000a;P9:
0000000000000000&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_mre
port.exe_1a279c25e1aa72e9f1ecbc3792a7a39499a69bd1_07c
bb858&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 021f8fa9-f109-11e0-9e75-
d485646929e0&#x000d;&#x000a;Report Status: 0
10/7/2011 5:21 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: BEX64&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
mreport.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
4e0e1066&#x000d;&#x000a;P4:
mreport.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
4e0e1066&#x000d;&#x000a;P7:
000000000001e438&#x000d;&#x000a;P8:
c000000d&#x000d;&#x000a;P9:
0000000000000000&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_mre
port.exe_1a279c25e1aa72e9f1ecbc3792a7a39499a69bd1_069
a1d32&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: ca90cae6-f108-11e0-9e75-
d485646929e0&#x000d;&#x000a;Report Status: 0
10/7/2011 5:21 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: BEX64&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
mreport.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
4e0e1066&#x000d;&#x000a;P4:
mreport.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
4e0e1066&#x000d;&#x000a;P7:
000000000001e438&#x000d;&#x000a;P8:
c000000d&#x000d;&#x000a;P9:
0000000000000000&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_mre
port.exe_1a279c25e1aa72e9f1ecbc3792a7a39499a69bd1_0e3
1e976&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: ac99aed7-f108-11e0-9e75-
d485646929e0&#x000d;&#x000a;Report Status: 0
10/7/2011 5:11 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: BEX64&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
mreport.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
4e0e1066&#x000d;&#x000a;P4:
```

```
mreport.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
4e0e1066&#x000d;&#x000a;P7:
000000000001e438&#x000d;&#x000a;P8:
c000000d&#x000d;&#x000a;P9:
0000000000000000&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_mre
port.exe_1a279c25e1aa72e9f1ecbc3792a7a39499a69bd1_0d5
09d59&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 45c7a0f3-f107-11e0-9e75-
d485646929e0&#x000d;&#x000a;Report Status: 0
10/7/2011 5:07 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: BEX64&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
mreport.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
4e0e1066&#x000d;&#x000a;P4:
mreport.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
4e0e1066&#x000d;&#x000a;P7:
000000000001e438&#x000d;&#x000a;P8:
c000000d&#x000d;&#x000a;P9:
0000000000000000&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_mre
port.exe_1a279c25e1aa72e9f1ecbc3792a7a39499a69bd1_0e6
964dc&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: db5305c7-f106-11e0-9e75-
d485646929e0&#x000d;&#x000a;Report Status: 0
10/7/2011 5:07 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: BEX64&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
mreport.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
4e0e1066&#x000d;&#x000a;P4:
mreport.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
4e0e1066&#x000d;&#x000a;P7:
000000000001e438&#x000d;&#x000a;P8:
c000000d&#x000d;&#x000a;P9:
0000000000000000&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_mre
port.exe_1a279c25e1aa72e9f1ecbc3792a7a39499a69bd1_020
d60d6&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: d730b0ef-f106-11e0-9e75-
d485646929e0&#x000d;&#x000a;Report Status: 0
10/7/2011 5:06 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: BEX64&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
mreport.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
4e0e1066&#x000d;&#x000a;P4:
mreport.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
4e0e1066&#x000d;&#x000a;P7:
000000000001e438&#x000d;&#x000a;P8:
c000000d&#x000d;&#x000a;P9:
0000000000000000&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_mre
port.exe_1a279c25e1aa72e9f1ecbc3792a7a39499a69bd1_0de
c818f&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: b7be0c1a-f106-11e0-9e75-
d485646929e0&#x000d;&#x000a;Report Status: 0
10/7/2011 5:06 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: BEX64&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
mreport.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
4e0e1066&#x000d;&#x000a;P4:
mreport.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
4e0e1066&#x000d;&#x000a;P7:
000000000001e438&#x000d;&#x000a;P8:
c000000d&#x000d;&#x000a;P9:
0000000000000000&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_mre
port.exe_1a279c25e1aa72e9f1ecbc3792a7a39499a69bd1_05d
c77b0&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: b334a130-f106-11e0-9e75-
d485646929e0&#x000d;&#x000a;Report Status: 0
9/29/2011 9:51 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: AppHangB1&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
PSCheck.exe&#x000d;&#x000a;P2:
3.4.6.323&#x000d;&#x000a;P3:
4e1610eb&#x000d;&#x000a;P4: 629f&#x000d;&#x000a;P5:
0&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppHang_PSCh
eck.exe_6a92b9d3c9fd4dc49acb20eddf3dfa4b2dbd1895_0272
bb82&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 2893af8b-eae5-11e0-b60a-
d485646929e0&#x000d;&#x000a;Report Status: 0
8/31/2011 11:24 PM  Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
HDTApplication.exe&#x000d;&#x000a;P2:
7.8.296.0&#x000d;&#x000a;P3:
4c7874fa&#x000d;&#x000a;P4:
KERNELBASE.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdbdf&#x000d;&#x000a;P7:
e0434f4d&#x000d;&#x000a;P8:
0000b727&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_HDT
Application.e_dfff8de740446f8bd1cc45a0905681429f36f8_
0e055849&#x000d;&#x000a;&#x000d;&#x000a;Analysis
symbol: &#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 4cb17a69-d428-11e0-8897-
d485646929e0&#x000d;&#x000a;Report Status: 0
8/30/2011 2:25 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
wmiprvse.exe&#x000d;&#x000a;P2:
6.1.7600.16385&#x000d;&#x000a;P3:
4a5bc794&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5be01a&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000000000039389&#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_wmiprvse.exe_d96fa3e73429e2
36c547c52b1863b14ed594c35_35ae481f&#x000d;&#x000a;&#x
000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
```

```
0&#x000d;&#x000a;Report Id: ec13fe79-d313-11e0-b978-
d485646929e0&#x000d;&#x000a;Report Status: 4
8/27/2011 11:15 PM  Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
wmiprvse.exe&#x000d;&#x000a;P2:
6.1.7600.16385&#x000d;&#x000a;P3:
4a5bc794&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5be01a&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000000000039389&#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_wmiprvse.exe_d96fa3e73429e2
36c547c52b1863b14ed594c35_266cf3b2&#x000d;&#x000a;&#x
000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 678fce9f-d102-11e0-b978-
d485646929e0&#x000d;&#x000a;Report Status: 4
8/26/2011 3:01 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
wmiprvse.exe&#x000d;&#x000a;P2:
6.1.7600.16385&#x000d;&#x000a;P3:
4a5bc794&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5be01a&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000000000039389&#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_wmiprvse.exe_d96fa3e73429e2
36c547c52b1863b14ed594c35_2d724e89&#x000d;&#x000a;&#x
000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 39bc84b8-cff4-11e0-b978-
d485646929e0&#x000d;&#x000a;Report Status: 4
8/25/2011 7:24 AM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
wmiprvse.exe&#x000d;&#x000a;P2:
6.1.7600.16385&#x000d;&#x000a;P3:
4a5bc794&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
```

```
6.1.7600.16385&#x000d;&#x000a;P6:
4a5be01a&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000000000039389&#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_wmiprvse.exe_d96fa3e73429e2
36c547c52b1863b14ed594c35_2d02489d&#x000d;&#x000a;&#x
000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 5455087b-ceeb-11e0-b978-
d485646929e0&#x000d;&#x000a;Report Status: 4
8/24/2011 12:03 AM  Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
wmiprvse.exe&#x000d;&#x000a;P2:
6.1.7600.16385&#x000d;&#x000a;P3:
4a5bc794&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5be01a&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000000000039389&#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_wmiprvse.exe_d96fa3e73429e2
36c547c52b1863b14ed594c35_130fdb18&#x000d;&#x000a;&#x
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&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 817ae830-cde4-11e0-b978-
d485646929e0&#x000d;&#x000a;Report Status: 4
8/19/2011 12:59 AM  Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
sleep.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
2fb0ba06&#x000d;&#x000a;P4:
sleep.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
2fb0ba06&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000566f&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_sle
ep.exe_e4d6edaec3483adca39abc17680c4ff8aae021_0c7343d
2&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
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0&#x000d;&#x000a;Report Id: 7d307eed-c9fe-11e0-b978-
d485646929e0&#x000d;&#x000a;Report Status: 2
8/16/2011 7:53 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
sleep.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
2fb0ba06&#x000d;&#x000a;P4:
sleep.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
2fb0ba06&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000566f&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_sle
ep.exe_e4d6edaec3483adca39abc17680c4ff8aae021_0a52756
e&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 4cf0a805-c841-11e0-b04a-
d485646929e0&#x000d;&#x000a;Report Status: 2
8/15/2011 4:39 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
sleep.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
2fb0ba06&#x000d;&#x000a;P4:
sleep.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
2fb0ba06&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000566f&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_sle
ep.exe_e4d6edaec3483adca39abc17680c4ff8aae021_1dc8bed
a&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 1b026d6c-c75d-11e0-8752-
d485646929e0&#x000d;&#x000a;Report Status: 0
8/12/2011 11:42 PM  Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
sleep.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
2fb0ba06&#x000d;&#x000a;P4:
sleep.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
2fb0ba06&#x000d;&#x000a;P7:
```

```
c0000005&#x000d;&#x000a;P8:
0000566f&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_sle
ep.exe_e4d6edaec3483adca39abc17680c4ff8aae021_0b2f853
5&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: c3898a8a-c53c-11e0-ae9f-
d485646929e0&#x000d;&#x000a;Report Status: 2
8/6/2011 12:47 AM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: PnPDriverNotFound&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
HPQCISS\DiskHP______LOGICAL_VOLUME__0.03&#x000d;&#x00
0a;P3: &#x000d;&#x000a;P4: &#x000d;&#x000a;P5:
&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_2919acb5dbca53205967fdd6715e968323d25f_058d273e&#x0
00d;&#x000a;&#x000d;&#x000a;Analysis symbol:
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0&#x000d;&#x000a;Report Id: a076bb46-bfc5-11e0-8a81-
d485646929e0&#x000d;&#x000a;Report Status: 6
8/6/2011 12:47 AM   Windows Error Reporting
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Name: PnPDriverNotFound&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
HPQCISS\DiskHP______LOGICAL_VOLUME__0.03&#x000d;&#x00
0a;P3: &#x000d;&#x000a;P4: &#x000d;&#x000a;P5:
&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
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be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_2919acb5dbca53205967fdd6715e968323d25f_058d26a2&#x0
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0&#x000d;&#x000a;Report Id: a076bb45-bfc5-11e0-8a81-
d485646929e0&#x000d;&#x000a;Report Status: 6
8/6/2011 12:47 AM   Windows Error Reporting
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Name: PnPDriverNotFound&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
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HPQCISS\DiskHP______LOGICAL_VOLUME__0.03&#x000d;&#x00
0a;P3: &#x000d;&#x000a;P4: &#x000d;&#x000a;P5:
&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
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be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_2919acb5dbca53205967fdd6715e968323d25f_058d25e7&#x0
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0&#x000d;&#x000a;Report Id: a076bb44-bfc5-11e0-8a81-
d485646929e0&#x000d;&#x000a;Report Status: 6
8/6/2011 12:47 AM   Windows Error Reporting
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Name: PnPDriverNotFound&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
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0a;P3: &#x000d;&#x000a;P4: &#x000d;&#x000a;P5:
&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_2919acb5dbca53205967fdd6715e968323d25f_058d255a&#x0
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0&#x000d;&#x000a;Report Id: a076bb43-bfc5-11e0-8a81-
d485646929e0&#x000d;&#x000a;Report Status: 6
8/6/2011 12:47 AM   Windows Error Reporting
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Name: PnPDriverNotFound&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
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&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
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be available
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4_2919acb5dbca53205967fdd6715e968323d25f_058d24be&#x0
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0&#x000d;&#x000a;Report Id: a076bb42-bfc5-11e0-8a81-
d485646929e0&#x000d;&#x000a;Report Status: 6
8/6/2011 12:47 AM   Windows Error Reporting
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Name: PnPDriverNotFound&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
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0a;P3: &#x000d;&#x000a;P4: &#x000d;&#x000a;P5:
&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
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be available
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ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
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0&#x000d;&#x000a;Report Id: a076bb41-bfc5-11e0-8a81-
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8/6/2011 12:47 AM   Windows Error Reporting
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Name: PnPDriverNotFound&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
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&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
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be available
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4_2919acb5dbca53205967fdd6715e968323d25f_058d2338&#x0
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d485646929e0&#x000d;&#x000a;Report Status: 6
8/6/2011 12:47 AM   Windows Error Reporting
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Name: PnPDriverNotFound&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
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HPQCISS\DiskHP______LOGICAL_VOLUME__0.03&#x000d;&#x00
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&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
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&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
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be available
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0&#x000d;&#x000a;Report Id: a076bb3f-bfc5-11e0-8a81-
d485646929e0&#x000d;&#x000a;Report Status: 6
8/6/2011 12:47 AM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: PnPDriverNotFound&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
```

```
HPQCISS\DiskHP______LOGICAL_VOLUME__0.03&#x000d;&#x00
0a;P3: &#x000d;&#x000a;P4: &#x000d;&#x000a;P5:
&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
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0&#x000d;&#x000a;Report Id: a076bb3e-bfc5-11e0-8a81-
d485646929e0&#x000d;&#x000a;Report Status: 6
8/6/2011 12:47 AM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: PnPDriverNotFound&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
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0a;P3: &#x000d;&#x000a;P4: &#x000d;&#x000a;P5:
&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_2919acb5dbca53205967fdd6715e968323d25f_058d2145&#x0
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0&#x000d;&#x000a;Report Id: a076bb3d-bfc5-11e0-8a81-
d485646929e0&#x000d;&#x000a;Report Status: 6
8/6/2011 12:47 AM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: PnPDriverNotFound&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
HPQCISS\DiskHP______LOGICAL_VOLUME__0.03&#x000d;&#x00
0a;P3: &#x000d;&#x000a;P4: &#x000d;&#x000a;P5:
&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
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&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: a076bb3c-bfc5-11e0-8a81-
d485646929e0&#x000d;&#x000a;Report Status: 6
8/6/2011 12:47 AM   Windows Error Reporting
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Name: PnPDriverNotFound&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
HPQCISS\DiskHP______LOGICAL_VOLUME__0.03&#x000d;&#x00
0a;P3: &#x000d;&#x000a;P4: &#x000d;&#x000a;P5:
&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
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8/6/2011 12:47 AM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: PnPDriverNotFound&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
HPQCISS\DiskHP______LOGICAL_VOLUME__0.03&#x000d;&#x00
0a;P3: &#x000d;&#x000a;P4: &#x000d;&#x000a;P5:
&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;C:\Users\Administrator\AppData\
Local\Temp\DMI1276.tmp.log.xml&#x000d;&#x000a;&#x000d
;&#x000a;These files may be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_2919acb5dbca53205967fdd6715e968323d25f_cab_058d138f
&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: a076bb29-bfc5-11e0-8a81-
d485646929e0&#x000d;&#x000a;Report Status: 6
8/5/2011 11:02 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: PnPDriverInstallError&#x000d;&#x000a;Response:
Not available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
000005B4&#x000d;&#x000a;P3:
hpqcissb.inf&#x000d;&#x000a;P4:
cef9b6062fbefdab68aa4aafb2251925d9c26c85&#x000d;&#x00
0a;P5: hpqcissb_Inst&#x000d;&#x000a;P6:
&#x000d;&#x000a;P7: &#x000d;&#x000a;P8:
&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_358861c67a2cce6b396ca68b659a89ac1417696_0717240e&#x
000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 0faa5b26-bfb7-11e0-a156-
d485646929e0&#x000d;&#x000a;Report Status: 4
8/5/2011 10:54 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: PnPDriverInstallError&#x000d;&#x000a;Response:
Not available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
000005B4&#x000d;&#x000a;P3:
hpqcissb.inf&#x000d;&#x000a;P4:
cef9b6062fbefdab68aa4aafb2251925d9c26c85&#x000d;&#x00
0a;P5: hpqcissb_Inst&#x000d;&#x000a;P6:
&#x000d;&#x000a;P7: &#x000d;&#x000a;P8:
&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_358861c67a2cce6b396ca68b659a89ac1417696_029b0fe2&#x
000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: d4146b96-bfb5-11e0-a156-
d485646929e0&#x000d;&#x000a;Report Status: 4
8/5/2011 10:46 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: PnPDriverInstallError&#x000d;&#x000a;Response:
Not available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
000005B4&#x000d;&#x000a;P3:
hpqcissb.inf&#x000d;&#x000a;P4:
cef9b6062fbefdab68aa4aafb2251925d9c26c85&#x000d;&#x00
0a;P5: hpqcissb_Inst&#x000d;&#x000a;P6:
&#x000d;&#x000a;P7: &#x000d;&#x000a;P8:
&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_358861c67a2cce6b396ca68b659a89ac1417696_051821bc&#x
000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: c55e2ce7-bfb4-11e0-a156-
d485646929e0&#x000d;&#x000a;Report Status: 4
8/5/2011 10:38 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: PnPDriverInstallError&#x000d;&#x000a;Response:
Not available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
000005B4&#x000d;&#x000a;P3:
hpqcissb.inf&#x000d;&#x000a;P4:
cef9b6062fbefdab68aa4aafb2251925d9c26c85&#x000d;&#x00
0a;P5: hpqcissb_Inst&#x000d;&#x000a;P6:
&#x000d;&#x000a;P7: &#x000d;&#x000a;P8:
&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_358861c67a2cce6b396ca68b659a89ac1417696_009861b8&#x
000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 96a1eb10-bfb3-11e0-a156-
d485646929e0&#x000d;&#x000a;Report Status: 4
8/5/2011 10:32 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: PnPDriverInstallError&#x000d;&#x000a;Response:
Not available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
000005B4&#x000d;&#x000a;P3:
hpqcissb.inf&#x000d;&#x000a;P4:
cef9b6062fbefdab68aa4aafb2251925d9c26c85&#x000d;&#x00
0a;P5: hpqcissb_Inst&#x000d;&#x000a;P6:
&#x000d;&#x000a;P7: &#x000d;&#x000a;P8:
```

```
&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;C:\Users\Administrator\AppData\
Local\Temp\DMIF99C.tmp.log.xml&#x000d;&#x000a;C:\Wind
ows\inf\oem11.inf&#x000d;&#x000a;&#x000d;&#x000a;Thes
e files may be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_358861c67a2cce6b396ca68b659a89ac1417696_cab_01dafa9
d&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: c3811e30-bfb2-11e0-a156-
d485646929e0&#x000d;&#x000a;Report Status: 4
8/1/2011 4:20 PM    Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
wmiprvse.exe&#x000d;&#x000a;P2:
6.1.7600.16385&#x000d;&#x000a;P3:
4a5bc794&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5be01a&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000000000039389&#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_wmiprvse.exe_d96fa3e73429e2
36c547c52b1863b14ed594c35_00e78be4&#x000d;&#x000a;&#x
000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 3be02014-bc5a-11e0-a3e3-
d485646929e0&#x000d;&#x000a;Report Status: 4
7/31/2011 6:28 AM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
wmiprvse.exe&#x000d;&#x000a;P2:
6.1.7600.16385&#x000d;&#x000a;P3:
4a5bc794&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5be01a&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000000000039389&#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_wmiprvse.exe_d96fa3e73429e2
36c547c52b1863b14ed594c35_0bd26a59&#x000d;&#x000a;&#x
000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 3ef484b1-bb3e-11e0-a3e3-
d485646929e0&#x000d;&#x000a;Report Status: 4
7/18/2011 10:36 PM  Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
wmiprvse.exe&#x000d;&#x000a;P2:
6.1.7600.16385&#x000d;&#x000a;P3:
4a5bc794&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5be01a&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000000000039389&#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_wmiprvse.exe_d96fa3e73429e2
36c547c52b1863b14ed594c35_0ed46ee8&#x000d;&#x000a;&#x
000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 6928b367-b18e-11e0-a7ab-
d485646929da&#x000d;&#x000a;Report Status: 4
7/15/2011 1:20 AM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
wmiprvse.exe&#x000d;&#x000a;P2:
6.1.7600.16385&#x000d;&#x000a;P3:
4a5bc794&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5be01a&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000000000039389&#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;C:\Windows\ServiceProfiles\Netw
orkService\AppData\Local\Temp\WER483D.tmp.appcompat.t
xt&#x000d;&#x000a;C:\Windows\ServiceProfiles\NetworkS
ervice\AppData\Local\Temp\WER4B0C.tmp.WERInternalMeta
data.xml&#x000d;&#x000a;C:\Windows\ServiceProfiles\Ne
tworkService\AppData\Local\Temp\WER55E7.tmp.WERDataCo
llectionFailure.txt&#x000d;&#x000a;&#x000d;&#x000a;Th
ese files may be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_wmiprvse.exe_d96fa3e73429e2
36c547c52b1863b14ed594c35_cab_1a3d55e3&#x000d;&#x000a
;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: adfb84fa-ae80-11e0-a7ab-
d485646929da&#x000d;&#x000a;Report Status: 4
7/13/2011 5:32 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
sleep.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
2fb0ba06&#x000d;&#x000a;P4:
sleep.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
2fb0ba06&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000566f&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_sle
ep.exe_e4d6edaec3483adca39abc17680c4ff8aae021_095a28b
8&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 1147541c-ad76-11e0-a7ab-
d485646929da&#x000d;&#x000a;Report Status: 0
7/13/2011 1:13 AM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
sleep.exe&#x000d;&#x000a;P2:
0.0.0.0&#x000d;&#x000a;P3:
2fb0ba06&#x000d;&#x000a;P4:
sleep.exe&#x000d;&#x000a;P5:
0.0.0.0&#x000d;&#x000a;P6:
2fb0ba06&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000566f&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_sle
ep.exe_e4d6edaec3483adca39abc17680c4ff8aae021_0cae1d5
0&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 5be6979e-aced-11e0-a7ab-
d485646929da&#x000d;&#x000a;Report Status: 0
7/9/2011 12:36 AM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: PnPDeviceProblemCode&#x000d;&#x000a;Response:
Not available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
B06BDRV\L2ND&PCI_163914E4&SUBSYS_7055103C&REV_20&#x00
0d;&#x000a;P3: {4d36e972-e325-11ce-bfc1-
08002be10318}&#x000d;&#x000a;P4:
0000000A&#x000d;&#x000a;P5:
bxnd60a.sys&#x000d;&#x000a;P6:
6.2.9.0&#x000d;&#x000a;P7: 02-23-
2011&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;C:\Users\Administrator\AppData\
Local\Temp\DMI975F.tmp.log.xml&#x000d;&#x000a;C:\Wind
ows\inf\oem5.inf&#x000d;&#x000a;&#x000d;&#x000a;These
```

```
files may be available
here:&#x000d;&#x000a;C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_a194715b9647e3d9914a4be16346cec25381b2e_cab_0f4097c
c&#x000d;&#x000a;&#x000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 89071d37-a9c3-11e0-96ca-
d485646929da&#x000d;&#x000a;Report Status: 4
6/8/2010 1:08 AM    Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name:
PnPRequestAdditionalSoftware&#x000d;&#x000a;Response:
Not available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
USB\VID_03F0&PID_7029&REV_0002&MI_01&#x000d;&#x000a;P
3: 6.1.0.0&#x000d;&#x000a;P4: 0409&#x000d;&#x000a;P5:
input.inf&#x000d;&#x000a;P6: *&#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\NonCritical_x64_885b928beb14477d25e2
8b48e3f8b6e01477ca_cab_087e4a48&#x000d;&#x000a;&#x000
d;&#x000a;Analysis symbol: &#x000d;&#x000a;Rechecking
for solution: 0&#x000d;&#x000a;Report Id: 53b14c19-
729a-11df-8573-c26d5c6b3682&#x000d;&#x000a;Report
Status: 6
6/8/2010 1:08 AM    Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name:
PnPRequestAdditionalSoftware&#x000d;&#x000a;Response:
Not available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
USB\VID_03F0&PID_7029&REV_0002&MI_00&#x000d;&#x000a;P
3: 6.1.0.0&#x000d;&#x000a;P4: 0409&#x000d;&#x000a;P5:
input.inf&#x000d;&#x000a;P6: *&#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\NonCritical_x64_b4a1263d9c6c8451f572
570e99e2ec7b09e1f27_cab_0aa645e5&#x000d;&#x000a;&#x00
0d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 530387a5-729a-11df-8573-
c26d5c6b3682&#x000d;&#x000a;Report Status: 6
6/8/2010 1:08 AM    Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: PnPDriverNotFound&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
PCI\VEN_19A2&DEV_0700&SUBSYS_1747103C&REV_02&#x000d;&
#x000a;P3: &#x000d;&#x000a;P4: &#x000d;&#x000a;P5:
&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\NonCritical_x64_43e69692ad82923d491f
fd97d2a4636b1cdbc8_09b635ce&#x000d;&#x000a;&#x000d;&#
x000a;Analysis symbol: &#x000d;&#x000a;Rechecking for
solution: 0&#x000d;&#x000a;Report Id: 508f1c5d-729a-
11df-8573-c26d5c6b3682&#x000d;&#x000a;Report Status:
6
6/8/2010 1:08 AM    Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: PnPDriverNotFound&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
PCI\VEN_19A2&DEV_0700&SUBSYS_1747103C&REV_02&#x000d;&
#x000a;P3: &#x000d;&#x000a;P4: &#x000d;&#x000a;P5:
&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;C:\Windows\Temp\DMI31C9.tmp.log
.xml&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\NonCritical_x64_43e69692ad82923d491f
fd97d2a4636b1cdbc8_cab_0a2231e8&#x000d;&#x000a;&#x000
d;&#x000a;Analysis symbol: &#x000d;&#x000a;Rechecking
for solution: 0&#x000d;&#x000a;Report Id: 4ff6c44c-
729a-11df-8573-c26d5c6b3682&#x000d;&#x000a;Report
Status: 6
6/8/2010 1:07 AM    Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: PnPDriverNotFound&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
PCI\VEN_103C&DEV_3307&SUBSYS_3309103C&REV_04&#x000d;&
#x000a;P3: &#x000d;&#x000a;P4: &#x000d;&#x000a;P5:
&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;C:\Windows\Temp\DMID0F4.tmp.log
.xml&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\NonCritical_x64_87486cf7b1074d7ca641
4194e5447eda145380_cab_0921d113&#x000d;&#x000a;&#x000
d;&#x000a;Analysis symbol: &#x000d;&#x000a;Rechecking
for solution: 0&#x000d;&#x000a;Report Id: 413059bb-
729a-11df-8573-c26d5c6b3682&#x000d;&#x000a;Report
Status: 6
6/8/2010 1:07 AM    Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: PnPGenericDriverFound&#x000d;&#x000a;Response:
Not available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
PCI\VEN_1002&DEV_515E&SUBSYS_31FB103C&REV_02&#x000d;&
#x000a;P3: &#x000d;&#x000a;P4: &#x000d;&#x000a;P5:
&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\NonCritical_x64_c5ce18a1b32ff35336f0
e43b5d80ab481dbb3d3_cab_0a71c37d&#x000d;&#x000a;&#x00
0d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: 3f1fe83f-729a-11df-8573-
c26d5c6b3682&#x000d;&#x000a;Report Status: 6
6/8/2010 1:07 AM    Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: PnPDriverNotFound&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1: x64&#x000d;&#x000a;P2:
PCI\VEN_103C&DEV_3306&SUBSYS_3309103C&REV_04&#x000d;&
#x000a;P3: &#x000d;&#x000a;P4: &#x000d;&#x000a;P5:
&#x000d;&#x000a;P6: &#x000d;&#x000a;P7:
&#x000d;&#x000a;P8: &#x000d;&#x000a;P9:
&#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;C:\Windows\Temp\DMIA7D2.tmp.log
.xml&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\NonCritical_x64_489f5b92c7689fed4eb9
eb63f32fade4a97676_cab_0bdda820&#x000d;&#x000a;&#x000
d;&#x000a;Analysis symbol: &#x000d;&#x000a;Rechecking
for solution: 0&#x000d;&#x000a;Report Id: 3aebfa44-
729a-11df-8573-c26d5c6b3682&#x000d;&#x000a;Report
Status: 6
10/31/2011 8:34 PM  Application Hang    The program
mmc.exe version 6.1.7600.16385 stopped interacting
with Windows and was closed. To see if more
information about the problem is available, check the
problem history in the Action Center control
panel.&#x000d;&#x000a; Process ID:
ec8&#x000d;&#x000a; Start Time:
01cc980c486f7146&#x000d;&#x000a; Termination Time:
9&#x000d;&#x000a; Application Path:
C:\Windows\system32\mmc.exe&#x000d;&#x000a; Report
Id: cae5bfdb-03ff-11e1-9688-
d485646929e0&#x000d;&#x000a;
9/29/2011 9:51 PM   Application Hang    The program
PSCheck.exe version 3.4.6.323 stopped interacting
with Windows and was closed. To see if more
information about the problem is available, check the
problem history in the Action Center control
panel.&#x000d;&#x000a; Process ID:
e4c&#x000d;&#x000a; Start Time:
01cc7eead637958b&#x000d;&#x000a; Termination Time:
6906&#x000d;&#x000a; Application Path: C:\Program
Files (x86)\AMD\PSCheck\PSCheck.exe&#x000d;&#x000a;
Report Id: 2893af8b-eae5-11e0-b60a-
d485646929e0&#x000d;&#x000a;
```

Server Disk Device Performance Driver Registry Parameters

```
Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\services
\hpqcissb\Parameters]
"CompletionMode"=dword:00000002
"InterruptCoalesceDelay"=dword:00000001
"InterruptCoalesceCount"=dword:00000001
```

Web Client Hardware Configuration

```
System Information report written at: 08/27/10
11:31:49
System Name: VCL1
[System Summary]

Item      Value
OS Name   Microsoft Windows Server 2008 R2 Standard

Version   6.1.7600 Build 7600
Other OS Description          Not Available
OS Manufacturer     Microsoft Corporation
System Name         VCL1
System Manufacturer Microsoft Corporation
System Model        Virtual Machine
System Type         x64-based PC
Processor Intel(R) Xeon(R) CPU           X5670  @
2.93GHz, 2932 Mhz, 2 Core(s), 2 Logical Processor(s)

BIOS Version/Date   American Megatrends Inc. 090004,
3/19/2009
SMBIOS Version      2.3
Windows Directory   C:\Windows
System Directory    C:\Windows\system32
Boot Device         \Device\HarddiskVolume1
Locale    United States
Hardware Abstraction Layer    Version =
"6.1.7600.16385"
User Name Not Available
Time Zone Central Daylight Time
Installed Physical Memory (RAM)         1.50 GB
Total Physical Memory         1.50 GB
Available Physical Memory     1.05 GB
Total Virtual Memory          3.00 GB
Available Virtual Memory      2.52 GB
Page File Space     1.50 GB
Page File C:\pagefile.sys

[Hardware Resources]



[Conflicts/Sharing]

Resource  Device
I/O Port 0x00000000-0x0000000F          Direct memory
access controller
I/O Port 0x00000000-0x0000000F          PCI bus

Memory Address 0xA0000-0xBFFFF          VgaSave
Memory Address 0xA0000-0xBFFFF          PCI bus

Memory Address 0xF8000000-0xFBFFFFFF    Microsoft
Emulated S3 Device Cap
Memory Address 0xF8000000-0xFBFFFFFF    PCI bus


[DMA]

Resource  Device    Status
Channel 4 Direct memory access controller         OK

Channel 2 Standard floppy disk controller         OK


[Forced Hardware]

Device    PNP Device ID

[I/O]

Resource  Device    Status
0x00000010-0x0000001F         Motherboard resources
          OK
0x00000022-0x0000003F         Motherboard resources
          OK
0x00000044-0x0000005F         Motherboard resources
          OK
0x00000062-0x00000063         Motherboard resources
          OK
0x00000065-0x0000006F         Motherboard resources
          OK
0x00000072-0x0000007F         Motherboard resources
          OK
0x00000080-0x00000080         Motherboard resources
          OK
0x00000084-0x00000086         Motherboard resources
          OK
0x00000088-0x00000088         Motherboard resources
          OK
0x0000008C-0x0000008E         Motherboard resources
          OK
0x00000090-0x0000009F         Motherboard resources
          OK
0x000000A2-0x000000BF         Motherboard resources
          OK
0x000000E0-0x000000EF         Motherboard resources
          OK
0x000001E0-0x000001EF         Motherboard resources
          OK
0x00000160-0x0000016F         Motherboard resources
          OK
0x00000278-0x0000027F         Motherboard resources
          OK
0x00000378-0x0000037F         Motherboard resources
          OK
0x00000678-0x0000067F         Motherboard resources
          OK
0x00000778-0x0000077F         Motherboard resources
          OK
0x000004D0-0x000004D1         Motherboard resources
          OK
0x00000400-0x0000043F         Motherboard resources
          OK
0x00000370-0x00000371         Motherboard resources
          OK
0x00000440-0x0000044F         Motherboard resources
          OK
0x0000FFA0-0x0000FFAF         Intel(R) 82371AB/EB PCI
Bus Master IDE Controller     OK
0x000000F0-0x000000FF         Numeric data processor
          OK
0x000001F0-0x000001F7         ATA Channel 0       OK

0x000003F6-0x000003F6         ATA Channel 0       OK

0x000003B0-0x000003BB         VgaSave   OK
0x000003C0-0x000003DF         VgaSave   OK
0x000001CE-0x000001CF         VgaSave   OK
0x000002E8-0x000002EF         VgaSave   OK
0x00000170-0x00000177         ATA Channel 1       OK

0x00000376-0x00000376         ATA Channel 1       OK

0x00000020-0x00000021         Programmable interrupt
controller          OK
0x000000A0-0x000000A1         Programmable interrupt
controller          OK
0x00000040-0x00000043         System timer        OK

0x00000000-0x0000000F         Direct memory access
controller          OK
0x00000000-0x0000000F         PCI bus   OK
0x00000081-0x00000083         Direct memory access
controller          OK
0x00000087-0x00000087         Direct memory access
controller          OK
0x00000089-0x0000008B         Direct memory access
controller          OK
0x0000008F-0x0000008F         Direct memory access
controller          OK
0x000000C0-0x000000DF         Direct memory access
controller          OK
0x00000060-0x00000060         Standard PS/2 Keyboard
          OK
```

```
0x00000064-0x00000064         Standard PS/2 Keyboard
          OK
0x000003F8-0x000003FF         Communications Port
(COM1)    OK
0x000002F8-0x000002FF         Communications Port
(COM2)    OK
0x000003F0-0x000003F5         Standard floppy disk
controller          OK
0x000003F7-0x000003F7         Standard floppy disk
controller          OK
0x00000061-0x00000061         System speaker      OK

0x00000D00-0x0000FFFF         PCI bus   OK
0x00000070-0x00000071         System CMOS/real time
clock     OK

[IRQs]

Resource  Device    Status
IRQ 13    Numeric data processor        OK
IRQ 12    Microsoft PS/2 Mouse          OK
IRQ 4294967294      Virtual Machine Bus OK
IRQ 4294967293      Virtual Machine Bus OK
IRQ 81    Microsoft ACPI-Compliant System         OK

IRQ 82    Microsoft ACPI-Compliant System         OK

IRQ 83    Microsoft ACPI-Compliant System         OK

IRQ 84    Microsoft ACPI-Compliant System         OK

IRQ 85    Microsoft ACPI-Compliant System         OK

IRQ 86    Microsoft ACPI-Compliant System         OK

IRQ 87    Microsoft ACPI-Compliant System         OK

IRQ 88    Microsoft ACPI-Compliant System         OK

IRQ 89    Microsoft ACPI-Compliant System         OK

IRQ 90    Microsoft ACPI-Compliant System         OK

IRQ 91    Microsoft ACPI-Compliant System         OK

IRQ 92    Microsoft ACPI-Compliant System         OK

IRQ 93    Microsoft ACPI-Compliant System         OK

IRQ 94    Microsoft ACPI-Compliant System         OK

IRQ 95    Microsoft ACPI-Compliant System         OK

IRQ 96    Microsoft ACPI-Compliant System         OK

IRQ 97    Microsoft ACPI-Compliant System         OK

IRQ 98    Microsoft ACPI-Compliant System         OK

IRQ 99    Microsoft ACPI-Compliant System         OK
```

```
IRQ 100   Microsoft ACPI-Compliant System         OK

IRQ 101   Microsoft ACPI-Compliant System         OK

IRQ 102   Microsoft ACPI-Compliant System         OK

IRQ 103   Microsoft ACPI-Compliant System         OK

IRQ 104   Microsoft ACPI-Compliant System         OK

IRQ 105   Microsoft ACPI-Compliant System         OK

IRQ 106   Microsoft ACPI-Compliant System         OK

IRQ 107   Microsoft ACPI-Compliant System         OK

IRQ 108   Microsoft ACPI-Compliant System         OK

IRQ 109   Microsoft ACPI-Compliant System         OK

IRQ 110   Microsoft ACPI-Compliant System         OK

IRQ 111   Microsoft ACPI-Compliant System         OK

IRQ 112   Microsoft ACPI-Compliant System         OK

IRQ 113   Microsoft ACPI-Compliant System         OK

IRQ 114   Microsoft ACPI-Compliant System         OK

IRQ 115   Microsoft ACPI-Compliant System         OK

IRQ 116   Microsoft ACPI-Compliant System         OK

IRQ 117   Microsoft ACPI-Compliant System         OK

IRQ 118   Microsoft ACPI-Compliant System         OK

IRQ 119   Microsoft ACPI-Compliant System         OK

IRQ 120   Microsoft ACPI-Compliant System         OK

IRQ 121   Microsoft ACPI-Compliant System         OK

IRQ 122   Microsoft ACPI-Compliant System         OK

IRQ 123   Microsoft ACPI-Compliant System         OK

IRQ 124   Microsoft ACPI-Compliant System         OK

IRQ 125   Microsoft ACPI-Compliant System         OK

IRQ 126   Microsoft ACPI-Compliant System         OK

IRQ 127   Microsoft ACPI-Compliant System         OK

IRQ 128   Microsoft ACPI-Compliant System         OK

IRQ 129   Microsoft ACPI-Compliant System         OK

IRQ 130   Microsoft ACPI-Compliant System         OK
```

```
IRQ 131   Microsoft ACPI-Compliant System         OK

IRQ 132   Microsoft ACPI-Compliant System         OK

IRQ 133   Microsoft ACPI-Compliant System         OK

IRQ 134   Microsoft ACPI-Compliant System         OK

IRQ 135   Microsoft ACPI-Compliant System         OK

IRQ 136   Microsoft ACPI-Compliant System         OK

IRQ 137   Microsoft ACPI-Compliant System         OK

IRQ 138   Microsoft ACPI-Compliant System         OK

IRQ 139   Microsoft ACPI-Compliant System         OK

IRQ 140   Microsoft ACPI-Compliant System         OK

IRQ 141   Microsoft ACPI-Compliant System         OK

IRQ 142   Microsoft ACPI-Compliant System         OK

IRQ 143   Microsoft ACPI-Compliant System         OK

IRQ 144   Microsoft ACPI-Compliant System         OK

IRQ 145   Microsoft ACPI-Compliant System         OK

IRQ 146   Microsoft ACPI-Compliant System         OK

IRQ 147   Microsoft ACPI-Compliant System         OK

IRQ 148   Microsoft ACPI-Compliant System         OK

IRQ 149   Microsoft ACPI-Compliant System         OK

IRQ 150   Microsoft ACPI-Compliant System         OK

IRQ 151   Microsoft ACPI-Compliant System         OK

IRQ 152   Microsoft ACPI-Compliant System         OK

IRQ 153   Microsoft ACPI-Compliant System         OK

IRQ 154   Microsoft ACPI-Compliant System         OK

IRQ 155   Microsoft ACPI-Compliant System         OK

IRQ 156   Microsoft ACPI-Compliant System         OK

IRQ 157   Microsoft ACPI-Compliant System         OK

IRQ 158   Microsoft ACPI-Compliant System         OK

IRQ 159   Microsoft ACPI-Compliant System         OK

IRQ 160   Microsoft ACPI-Compliant System         OK

IRQ 161   Microsoft ACPI-Compliant System         OK
IRQ 162   Microsoft ACPI-Compliant System         OK

IRQ 163   Microsoft ACPI-Compliant System         OK

IRQ 164   Microsoft ACPI-Compliant System         OK

IRQ 165   Microsoft ACPI-Compliant System         OK

IRQ 166   Microsoft ACPI-Compliant System         OK

IRQ 167   Microsoft ACPI-Compliant System         OK

IRQ 168   Microsoft ACPI-Compliant System         OK

IRQ 169   Microsoft ACPI-Compliant System         OK

IRQ 170   Microsoft ACPI-Compliant System         OK

IRQ 171   Microsoft ACPI-Compliant System         OK

IRQ 172   Microsoft ACPI-Compliant System         OK

IRQ 173   Microsoft ACPI-Compliant System         OK

IRQ 174   Microsoft ACPI-Compliant System         OK

IRQ 175   Microsoft ACPI-Compliant System         OK

IRQ 176   Microsoft ACPI-Compliant System         OK

IRQ 177   Microsoft ACPI-Compliant System         OK

IRQ 178   Microsoft ACPI-Compliant System         OK

IRQ 179   Microsoft ACPI-Compliant System         OK

IRQ 180   Microsoft ACPI-Compliant System         OK

IRQ 181   Microsoft ACPI-Compliant System         OK

IRQ 182   Microsoft ACPI-Compliant System         OK

IRQ 183   Microsoft ACPI-Compliant System         OK

IRQ 184   Microsoft ACPI-Compliant System         OK

IRQ 185   Microsoft ACPI-Compliant System         OK

IRQ 186   Microsoft ACPI-Compliant System         OK

IRQ 187   Microsoft ACPI-Compliant System         OK

IRQ 188   Microsoft ACPI-Compliant System         OK

IRQ 189   Microsoft ACPI-Compliant System         OK

IRQ 190   Microsoft ACPI-Compliant System         OK

IRQ 14    ATA Channel 0       OK
IRQ 15    ATA Channel 1       OK
IRQ 0     System timer        OK
IRQ 1     Standard PS/2 Keyboard        OK
```

```
IRQ 4     Communications Port (COM1)    OK
IRQ 3     Communications Port (COM2)    OK
IRQ 6     Standard floppy disk controller         OK

IRQ 5     Microsoft Emulated S3 Device Cap        OK

IRQ 8     System CMOS/real time clock   OK

[Memory]

Resource  Device    Status
0x0000-0x9FFFF      System board        OK
0xC0000-0xDFFFF     System board        OK
0xE0000-0xFFFFF     System board        OK
0x100000-0xF7FFFFFF System board        OK
0xFFFC0000-0xFFFFFFFF         System board        OK

0xFEC00000-0xFEC00FFF         Motherboard resources
          OK
0xFEE00000-0xFEE00FFF         Motherboard resources
          OK
0xA0000-0xBFFFF     VgaSave   OK
0xA0000-0xBFFFF     PCI bus   OK
0xFFB00000-0xFFEFFFFF         Microsoft Virtual
Machine Bus Video Device      OK
0xF8000000-0xFBFFFFFF         Microsoft Emulated S3
Device Cap          OK
0xF8000000-0xFBFFFFFF         PCI bus   OK

[Components]



[Multimedia]



[Audio Codecs]

CODEC     Manufacturer        Description
          Status    File      Version   Size
          Creation Date
c:\windows\system32\msg711.acm          Microsoft
Corporation                   OK
          C:\Windows\system32\MSG711.ACM
          6.1.7600.16385      14.50 KB (14,848 bytes)
          7/13/2009 7:18 PM
c:\windows\system32\imaadp32.acm        Microsoft
Corporation                   OK
          C:\Windows\system32\IMAADP32.ACM
          6.1.7600.16385      21.50 KB (22,016 bytes)
          7/13/2009 7:18 PM
c:\windows\system32\msgsm32.acm         Microsoft
Corporation                   OK
          C:\Windows\system32\MSGSM32.ACM
          6.1.7600.16385      28.50 KB (29,184 bytes)
          7/13/2009 7:18 PM
c:\windows\system32\msadp32.acm         Microsoft
Corporation                   OK
          C:\Windows\system32\MSADP32.ACM
          6.1.7600.16385      23.50 KB (24,064 bytes)
          7/13/2009 7:18 PM
```

```
[Video Codecs]

CODEC     Manufacturer        Description
          Status    File      Version   Size
          Creation Date
c:\windows\system32\msvidc32.dll        Microsoft
Corporation                   OK
          C:\Windows\system32\MSVIDC32.DLL
          6.1.7600.16385      37.50 KB (38,400 bytes)
          7/13/2009 7:18 PM
c:\windows\system32\msrle32.dll         Microsoft
Corporation                   OK
          C:\Windows\system32\MSRLE32.DLL
          6.1.7600.16385      15.50 KB (15,872 bytes)
          7/13/2009 7:18 PM
c:\windows\system32\msyuv.dll Microsoft Corporation
                     OK
          C:\Windows\system32\MSYUV.DLL
          6.1.7600.16385      24.00 KB (24,576 bytes)
          7/13/2009 7:06 PM
c:\windows\system32\iyuv_32.dll         Microsoft
Corporation                   OK
          C:\Windows\system32\IYUV_32.DLL
          6.1.7600.16385      52.50 KB (53,760 bytes)
          7/13/2009 7:06 PM
c:\windows\system32\tsbyuv.dll          Microsoft
Corporation                   OK
          C:\Windows\system32\TSBYUV.DLL
          6.1.7600.16385      14.00 KB (14,336 bytes)
          7/13/2009 7:06 PM


[CD-ROM]

Item      Value
Drive     D:
Description         CD-ROM Drive
Media Loaded        Yes
Media Type          DVD-ROM
Name      Msft Virtual CD/ROM ATA Device
Manufacturer        (Standard CD-ROM drives)
Status    OK
Transfer Rate       0.00 kbytes/sec
SCSI Target ID      0
PNP Device ID
          IDE\CDROMMSFT_VIRTUAL_CD/ROM_______________
______1.0_____\5&47E3A3F&0&1.0.0
Driver    c:\windows\system32\drivers\cdrom.sys
(6.1.7600.16385, 144.00 KB (147,456 bytes), 7/13/2009
6:19 PM)

[Sound Device]

Item      Value

[Display]

Item      Value
Name      Microsoft Virtual Machine Bus Video Device
```

```
PNP Device ID       VMBUS\{5620E0C7-8062-4DCE-AEB7-
520C7EF76171}\5&2126CDE1&0&{5620E0C7-8062-4DCE-AEB7-
520C7EF76171}
Adapter Type        Not Available, Microsoft
compatible
Adapter Description Microsoft Virtual Machine Bus
Video Device
Adapter RAM         Not Available
Installed Drivers   VMBusVideoD.dll
Driver Version      6.1.7600.16385
INF File  wvmbusvideo.inf (SynthVid section)
Color Planes        Not Available
Color Table Entries Not Available
Resolution          Not Available
Bits/Pixel          Not Available
Memory Address      0xFFB00000-0xFFEFFFFF
Driver    c:\windows\system32\drivers\vmbusvideom.sys
(6.1.7600.16385, 22.00 KB (22,528 bytes), 7/13/2009
6:43 PM)

[Infrared]

Item      Value

[Input]



[Keyboard]

Item      Value
Description         Standard PS/2 Keyboard
Name      Enhanced (101- or 102-key)
Layout    00000409
PNP Device ID       ACPI\PNP0303\4&30998706&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
(6.1.7600.16385, 103.00 KB (105,472 bytes), 7/13/2009
6:19 PM)

[Pointing Device]

Item      Value
Hardware Type       Microsoft PS/2 Mouse
Number of Buttons   0
Status    OK
PNP Device ID       ACPI\PNP0F03\4&30998706&0
Power Management Supported    No
Double Click Threshold        Not Available
Handedness          Not Available
IRQ Channel         IRQ 12
Driver    c:\windows\system32\drivers\i8042prt.sys
(6.1.7600.16385, 103.00 KB (105,472 bytes), 7/13/2009
6:19 PM)

Hardware Type       HID-compliant mouse
Number of Buttons   0
Status    OK
```

```
PNP Device ID       HID\{58F75A6D-D949-4320-99E1-
A2A2576D581C}\6&996B31D&0&0000
Power Management Supported    No
Double Click Threshold        Not Available
Handedness          Not Available
Driver    c:\windows\system32\drivers\mouhid.sys
(6.1.7600.16385, 30.50 KB (31,232 bytes), 7/13/2009
7:00 PM)

[Modem]

Item      Value

[Network]



[Adapter]

Item      Value
Name      [00000000] WAN Miniport (SSTP)
Adapter Type        Not Available
Product Type        WAN Miniport (SSTP)
Installed Yes
PNP Device ID       ROOT\MS_SSTPMINIPORT\0000
Last Reset          8/26/2010 6:23 PM
Index     0
Service Name        RasSstp
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\rassstp.sys
(6.1.7600.16385, 82.00 KB (83,968 bytes), 7/13/2009
7:10 PM)

Name      [00000001] WAN Miniport (IKEv2)
Adapter Type        Not Available
Product Type        WAN Miniport (IKEv2)
Installed Yes
PNP Device ID       ROOT\MS_AGILEVPNMINIPORT\0000
Last Reset          8/26/2010 6:23 PM
Index     1
Service Name        RasAgileVpn
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\agilevpn.sys
(6.1.7600.16385, 59.00 KB (60,416 bytes), 7/13/2009
7:10 PM)

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          8/26/2010 6:23 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
(6.1.7600.16385, 127.00 KB (130,048 bytes), 7/13/2009
7:10 PM)

Name      [00000003] WAN Miniport (PPTP)
Adapter Type        Not Available
Product Type        WAN Miniport (PPTP)
Installed Yes
PNP Device ID       ROOT\MS_PPTPMINIPORT\0000
Last Reset          8/26/2010 6:23 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         Not Available
Driver    c:\windows\system32\drivers\raspptp.sys
(6.1.7600.16385, 109.00 KB (111,616 bytes), 7/13/2009
7:10 PM)

Name      [00000004] WAN Miniport (PPPOE)
Adapter Type        Not Available
Product Type        WAN Miniport (PPPOE)
Installed Yes
PNP Device ID       ROOT\MS_PPPOEMINIPORT\0000
Last Reset          8/26/2010 6:23 PM
Index     4
Service Name        RasPppoe
IP Address          Not Available
IP Subnet Not Available
Default IP Gateway  Not Available
DHCP Enabled        No
DHCP Server         Not Available
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
MAC Address         Not Available
Driver    c:\windows\system32\drivers\raspppoe.sys
(6.1.7600.16385, 90.50 KB (92,672 bytes), 7/13/2009
7:10 PM)

Name      [00000005] WAN Miniport (IPv6)
Adapter Type        Not Available
Product Type        WAN Miniport (IPv6)
Installed Yes
```

```
PNP Device ID       ROOT\MS_NDISWANIPV6\0000
Last Reset          8/26/2010 6:23 PM
Index     5
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
(6.1.7600.16385, 160.50 KB (164,352 bytes), 7/13/2009
7:10 PM)

Name      [00000006] WAN Miniport (Network Monitor)

Adapter Type        Not Available
Product Type        WAN Miniport (Network Monitor)

Installed Yes
PNP Device ID       ROOT\MS_NDISWANBH\0000
Last Reset          8/26/2010 6:23 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
(6.1.7600.16385, 160.50 KB (164,352 bytes), 7/13/2009
7:10 PM)

Name      [00000007] Microsoft Virtual Machine Bus
Network Adapter
Adapter Type        Ethernet 802.3
Product Type        Microsoft Virtual Machine Bus
Network Adapter
Installed Yes
PNP Device ID       VMBUS\{FBACFC4D-5F02-4F3D-A269-
686EFAA2462E}\5&2126CDE1&0&{FBACFC4D-5F02-4F3D-A269-
686EFAA2462E}
Last Reset          8/26/2010 6:23 PM
Index     7
Service Name        netvsc
IP Address          130.172.20.1
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         00:15:5D:28:07:01
Driver    c:\windows\system32\drivers\netvsc60.sys
(6.1.7600.16385, 169.00 KB (173,056 bytes), 7/13/2009
6:42 PM)

Name      [00000008] Microsoft ISATAP Adapter
Adapter Type        Tunnel
Product Type        Microsoft ISATAP Adapter
Installed Yes
PNP Device ID       ROOT\*ISATAP\0000
Last Reset          8/26/2010 6:23 PM
Index     8
Service Name        tunnel
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\tunnel.sys
(6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
7:09 PM)

Name      [00000009] WAN Miniport (IP)
Adapter Type        Not Available
Product Type        WAN Miniport (IP)
Installed Yes
PNP Device ID       ROOT\MS_NDISWANIP\0000
Last Reset          8/26/2010 6:23 PM
Index     9
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
(6.1.7600.16385, 160.50 KB (164,352 bytes), 7/13/2009
7:10 PM)

Name      [00000010] Microsoft Virtual Machine Bus
Network Adapter
Adapter Type        Ethernet 802.3
Product Type        Microsoft Virtual Machine Bus
Network Adapter
Installed Yes
PNP Device ID       VMBUS\{8DD21FAA-967F-4128-B6D8-
85AF784FC60C}\5&2126CDE1&0&{8DD21FAA-967F-4128-B6D8-
85AF784FC60C}
Last Reset          8/26/2010 6:23 PM
Index     10
Service Name        netvsc
IP Address          130.168.20.1
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         00:15:5D:28:07:00
Driver    c:\windows\system32\drivers\netvsc60.sys
(6.1.7600.16385, 169.00 KB (173,056 bytes), 7/13/2009
6:42 PM)

Name      [00000011] RAS Async Adapter
Adapter Type        Wide Area Network (WAN)
Product Type        RAS Async Adapter
Installed Yes
PNP Device ID       SW\{EEAB7790-C514-11D1-B42B-
00805FC1270E}\ASYNCMAC
Last Reset          8/26/2010 6:23 PM
Index     11
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         20:41:53:59:4E:FF
Driver    c:\windows\system32\drivers\asyncmac.sys
(6.1.7600.16385, 22.50 KB (23,040 bytes), 7/13/2009
7:10 PM)

Name      [00000012] Microsoft ISATAP Adapter
Adapter Type        Tunnel
Product Type        Microsoft ISATAP Adapter
Installed Yes
PNP Device ID       ROOT\*ISATAP\0001
Last Reset          8/26/2010 6:23 PM
Index     12
Service Name        tunnel
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\tunnel.sys
(6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
7:09 PM)

Name      [00000013] Microsoft 6to4 Adapter
Adapter Type        Tunnel
Product Type        Microsoft 6to4 Adapter
Installed Yes
PNP Device ID       ROOT\*6TO4MP\0000
Last Reset          8/26/2010 6:23 PM
Index     13
Service Name        tunnel
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\tunnel.sys
(6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
7:09 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          63.99 KB (65,527 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      MSAFD Tcpip [TCP/IPv6]
Connectionless Service        No
Guarantees Delivery Yes
Guarantees Sequencing         Yes
Maximum Address Size          28 bytes
Maximum Message Size          0 bytes
Message Oriented    No
Minimum Address Size          28 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/IPv6]
Connectionless Service        Yes
Guarantees Delivery No
Guarantees Sequencing         No
Maximum Address Size          28 bytes
Maximum Message Size          63.99 KB (65,527 bytes)

Message Oriented    Yes
Minimum Address Size          28 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 TCPv6 Service Provider
Connectionless Service        No
Guarantees Delivery Yes
Guarantees Sequencing         Yes
Maximum Address Size          28 bytes
Maximum Message Size          0 bytes
Message Oriented    No
Minimum Address Size          28 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      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      RSVP UDPv6 Service Provider
Connectionless Service        Yes
Guarantees Delivery No
Guarantees Sequencing         No
Maximum Address Size          28 bytes
Maximum Message Size          63.99 KB (65,527 bytes)
```

```
Message Oriented    Yes
Minimum Address Size          28 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 UDP Service Provider
Connectionless Service        Yes
Guarantees Delivery No
Guarantees Sequencing         No
Maximum Address Size          16 bytes
Maximum Message Size          63.99 KB (65,527 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

[WinSock]

Item      Value
File      c:\windows\syswow64\wsock32.dll
Size      15.00 KB (15,360 bytes)
Version   6.1.7600.16385

File      c:\windows\system32\wsock32.dll
Size      18.00 KB (18,432 bytes)
Version   6.1.7600.16385

[Ports]



[Serial]

Item      Value
Name      Communications Port (COM1)
Status    OK
PNP Device ID       ACPI\PNP0501\1
Maximum Input Buffer Size     0
Maximum Output Buffer Size    No
Settable Baud Rate  Yes
Settable Data Bits  Yes
Settable Flow Control         Yes
Settable Parity     Yes
Settable Parity Check         Yes
Settable Stop Bits  Yes
Settable RLSD       Yes
Supports RLSD       Yes
Supports 16 Bit Mode          No
Supports Special Characters   No
Baud Rate 9600
Bits/Byte 8
Stop Bits 1
Parity    None
Busy      No
Abort Read/Write on Error     No
Binary Mode Enabled Yes
Continue XMit on XOff         No
CTS Outflow Control No
Discard NULL Bytes  No
DSR Outflow Control 0
DSR Sensitivity     0
DTR Flow Control Type         Enable
EOF Character       0
Error Replace Character       0
Error Replacement Enabled     No
Event Character     0
Parity Check Enabled          No
RTS Flow Control Type         Enable
XOff Character      19
XOffXMit Threshold  512
XOn Character       17
XOnXMit Threshold   2048
XOnXOff InFlow Control        0
XOnXOff OutFlow Control       0
IRQ Channel         IRQ 4
I/O Port  0x000003F8-0x000003FF
Driver    c:\windows\system32\drivers\serial.sys
(6.1.7600.16385, 92.00 KB (94,208 bytes), 7/13/2009
7:00 PM)

Name      Communications Port (COM2)
Status    OK
PNP Device ID       ACPI\PNP0501\2
Maximum Input Buffer Size     0
Maximum Output Buffer Size    No
Settable Baud Rate  Yes
Settable Data Bits  Yes
Settable Flow Control         Yes
Settable Parity     Yes
Settable Parity Check         Yes
Settable Stop Bits  Yes
Settable RLSD       Yes
Supports RLSD       Yes
Supports 16 Bit Mode          No
Supports Special Characters   No
Baud Rate 9600
Bits/Byte 8
Stop Bits 1
Parity    None
Busy      No
Abort Read/Write on Error     No
Binary Mode Enabled Yes
Continue XMit on XOff         No
CTS Outflow Control No
Discard NULL Bytes  No
DSR Outflow Control 0
DSR Sensitivity     0
DTR Flow Control Type         Enable
EOF Character       0
```

```
Error Replace Character       0
Error Replacement Enabled     No
Event Character     0
Parity Check Enabled          No
RTS Flow Control Type         Enable
XOff Character      19
XOffXMit Threshold  512
XOn Character       17
XOnXMit Threshold   2048
XOnXOff InFlow Control        0
XOnXOff OutFlow Control       0
IRQ Channel         IRQ 3
I/O Port  0x000002F8-0x000002FF
Driver    c:\windows\system32\drivers\serial.sys
(6.1.7600.16385, 92.00 KB (94,208 bytes), 7/13/2009
7:00 PM)

[Parallel]

Item      Value

[Storage]



[Drives]

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

Drive     C:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      71.90 GB (77,200,355,328 bytes)
Free Space          58.94 GB (63,285,141,504 bytes)

Volume Name
Volume Serial Number          10EC2319

Drive     D:
Description         CD-ROM Disc

[Disks]

Item      Value
Description         Disk drive
Manufacturer        (Standard disk drives)
Model     Virtual HD ATA Device
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          2
SCSI Bus  0
SCSI Logical Unit   0
SCSI Port 0
SCSI Target ID      0
Sectors/Track       63
Size      71.99 GB (77,301,181,440 bytes)
Total Cylinders     9,398
Total Sectors       150,978,870
```

```
Total Tracks        2,396,490
Tracks/Cylinder     255
Partition Disk #0, Partition #0
Partition Size      100.00 MB (104,857,600 bytes)
Partition Starting Offset     1,048,576 bytes
Partition Disk #0, Partition #1
Partition Size      71.90 GB (77,200,359,424 bytes)

Partition Starting Offset     105,906,176 bytes

[SCSI]

Item      Value
Name      Storage miniport driver
Manufacturer        Microsoft.
Status    OK
PNP Device ID       VMBUS\{D003008D-EDEF-4721-A7A7-
7859FF507824}\5&2126CDE1&0&{D003008D-EDEF-4721-A7A7-
7859FF507824}
Driver    c:\windows\system32\drivers\storvsc.sys
(6.1.7600.16385, 34.08 KB (34,896 bytes), 7/13/2009
6:42 PM)

[IDE]

Item      Value
Name      Intel(R) 82371AB/EB PCI Bus Master IDE
Controller
Manufacturer        Intel
Status    OK
PNP Device ID
          PCI\VEN_8086&DEV_7111&SUBSYS_00000000&REV_0
1\3&267A616A&1&39
I/O Port  0x0000FFA0-0x0000FFAF
Driver    c:\windows\system32\drivers\intelide.sys
(6.1.7600.16385, 16.56 KB (16,960 bytes), 7/13/2009
6:19 PM)

Name      ATA Channel 0
Manufacturer        (Standard IDE ATA/ATAPI
controllers)
Status    OK
PNP Device ID       PCIIDE\IDECHANNEL\4&182B817&0&0

I/O Port  0x000001F0-0x000001F7
I/O Port  0x000003F6-0x000003F6
IRQ Channel         IRQ 14
Driver    c:\windows\system32\drivers\atapi.sys
(6.1.7600.16385, 23.56 KB (24,128 bytes), 7/13/2009
6:19 PM)

Name      ATA Channel 1
Manufacturer        (Standard IDE ATA/ATAPI
controllers)
Status    OK
PNP Device ID       PCIIDE\IDECHANNEL\4&182B817&0&1

I/O Port  0x00000170-0x00000177
I/O Port  0x00000376-0x00000376
IRQ Channel         IRQ 15
```

```
Driver    c:\windows\system32\drivers\atapi.sys
(6.1.7600.16385, 23.56 KB (24,128 bytes), 7/13/2009
6:19 PM)

[Printing]

Name      Driver    Port Name Server Name
Fax (redirected 1)  Microsoft Shared Fax Driver
          TS004     Not Available
Microsoft XPS Document Writer (redirected 1)
          Microsoft XPS Document Writer TS005     Not
Available
CCM74 B&W - HP LaserJet M4345 mfp PCL6 (redirected 1)
          HP LaserJet M4345 mfp PCL6    TS001     Not
Available
Microsoft XPS Document Writer Microsoft XPS Document
Writer    XPSPort:  Not Available

[Problem Devices]

Device    PNP Device ID       Error Code

[USB]

Device    PNP Device ID

[Software Environment]



[System Drivers]

Name      Description         File      Type
          Started   Start Mode          State
          Status    Error Control       Accept Pause
          Accept Stop
1394ohci  1394 OHCI Compliant Host Controller
          c:\windows\system32\drivers\1394ohci.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

acpi      Microsoft ACPI Driver
          c:\windows\system32\drivers\acpi.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

acpipmi   ACPI Power Meter Driver
          c:\windows\system32\drivers\acpipmi.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

adp94xx   adp94xx
          c:\windows\system32\drivers\adp94xx.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

adpahci   adpahci
          c:\windows\system32\drivers\adpahci.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No
```

```
adpu320   adpu320
          c:\windows\system32\drivers\adpu320.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

afd       Ancillary Function Driver for Winsock
          c:\windows\system32\drivers\afd.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

agp440    Intel AGP Bus Filter
          c:\windows\system32\drivers\agp440.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

aliide    aliide
          c:\windows\system32\drivers\aliide.sys
          Kernel Driver       No        Manual
          Stopped   OK        Critical  No        No

amdide    amdide
          c:\windows\system32\drivers\amdide.sys
          Kernel Driver       No        Manual
          Stopped   OK        Critical  No        No

amdk8     AMD K8 Processor Driver
          c:\windows\system32\drivers\amdk8.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

amdppm    AMD Processor Driver
          c:\windows\system32\drivers\amdppm.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

amdsata   amdsata
          c:\windows\system32\drivers\amdsata.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

amdsbs    amdsbs
          c:\windows\system32\drivers\amdsbs.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

amdxata   amdxata
          c:\windows\system32\drivers\amdxata.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

appid     AppID Driver
          c:\windows\system32\drivers\appid.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

arc       arc
          c:\windows\system32\drivers\arc.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

arcsas    arcsas
          c:\windows\system32\drivers\arcsas.sys
```

```
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

asyncmac  RAS Asynchronous Media Driver
          c:\windows\system32\drivers\asyncmac.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

atapi     IDE Channel
          c:\windows\system32\drivers\atapi.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

b06bdrv   Broadcom NetXtreme II VBD
          c:\windows\system32\drivers\bxvbda.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

b57nd60a  Broadcom NetXtreme Gigabit Ethernet - NDIS
6.0       c:\windows\system32\drivers\b57nd60a.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

beep      Beep
          c:\windows\system32\drivers\beep.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

blbdrive  blbdrive
          c:\windows\system32\drivers\blbdrive.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

bowser    Browser Support Driver
          c:\windows\system32\drivers\bowser.sys
          File System Driver  Yes       Manual
          Running   OK        Normal    No        Yes

brfiltlo  Brother USB Mass-Storage Lower Filter
Driver    c:\windows\system32\drivers\brfiltlo.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

brfiltup  Brother USB Mass-Storage Upper Filter
Driver    c:\windows\system32\drivers\brfiltup.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

brserid   Brother MFC Serial Port Interface Driver
(WDM)     c:\windows\system32\drivers\brserid.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

brserwdm  Brother WDM Serial driver
          c:\windows\system32\drivers\brserwdm.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

brusbmdm  Brother MFC USB Fax Only Modem
          c:\windows\system32\drivers\brusbmdm.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

brusbser  Brother MFC USB Serial WDM Driver
          c:\windows\system32\drivers\brusbser.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

cdfs      CD/DVD File System Reader
          c:\windows\system32\drivers\cdfs.sys
          File System Driver  Yes       Disabled
          Running   OK        Normal    No        Yes

cdrom     CD-ROM Driver
          c:\windows\system32\drivers\cdrom.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

clfs      Common Log (CLFS)
          c:\windows\system32\clfs.sys  Kernel Driver
          Yes       Boot      Running   OK
          Critical  No        Yes
cmbatt    Microsoft ACPI Control Method Battery
Driver    c:\windows\system32\drivers\cmbatt.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

cmdide    cmdide
          c:\windows\system32\drivers\cmdide.sys
          Kernel Driver       No        Manual
          Stopped   OK        Critical  No        No

cng       CNG
          c:\windows\system32\drivers\cng.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

compbatt  Compbatt
          c:\windows\system32\drivers\compbatt.sys
          Kernel Driver       No        Manual
          Stopped   OK        Critical  No        No

compositebus        Composite Bus Enumerator Driver
          c:\windows\system32\drivers\compositebus.sy
s         Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

crcdisk   Crcdisk Filter Driver
          c:\windows\system32\drivers\crcdisk.sys
          Kernel Driver       No        Disabled
          Stopped   OK        Normal    No        No

dfsc      DFS Namespace Client Driver
          c:\windows\system32\drivers\dfsc.sys
          File System Driver  Yes       System
          Running   OK        Normal    No        Yes

discache  System Attribute Cache
          c:\windows\system32\drivers\discache.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes
```

```
disk      Disk Driver
          c:\windows\system32\drivers\disk.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

dxgkrnl   LDDM Graphics Subsystem
          c:\windows\system32\drivers\dxgkrnl.sys
          Kernel Driver       No        Manual
          Stopped   OK        Ignore    No        No

ebdrv     Broadcom NetXtreme II 10 GigE VBD
          c:\windows\system32\drivers\evbda.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

elxstor   elxstor
          c:\windows\system32\drivers\elxstor.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

errdev    Microsoft Hardware Error Device Driver
          c:\windows\system32\drivers\errdev.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

exfat     exFAT File System Driver
          c:\windows\system32\drivers\exfat.sys
          File System Driver  No        Manual
          Stopped   OK        Normal    No        No

fastfat   FAT12/16/32 File System Driver
          c:\windows\system32\drivers\fastfat.sys
          File System Driver  No        Manual
          Stopped   OK        Normal    No        No

fdc       Floppy Disk Controller Driver
          c:\windows\system32\drivers\fdc.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

fileinfo  File Information FS MiniFilter
          c:\windows\system32\drivers\fileinfo.sys
          File System Driver  No        Manual
          Stopped   OK        Normal    No        No

filetrace Filetrace
          c:\windows\system32\drivers\filetrace.sys
          File System Driver  No        Manual
          Stopped   OK        Normal    No        No

flpydisk  Floppy Disk Driver
          c:\windows\system32\drivers\flpydisk.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

fltmgr    FltMgr
          c:\windows\system32\drivers\fltmgr.sys
          File System Driver  Yes       Boot
          Running   OK        Critical  No        Yes

fsdepends File System Dependency Minifilter
          c:\windows\system32\drivers\fsdepends.sys
```

```
          File System Driver  No        Manual
          Stopped   OK        Critical  No        No

gagp30kx  Microsoft Generic AGPv3.0 Filter for K8
Processor Platforms
          c:\windows\system32\drivers\gagp30kx.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

hdaudbus  Microsoft UAA Bus Driver for High
Definition Audio
          c:\windows\system32\drivers\hdaudbus.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

hidbatt   HID UPS Battery Driver
          c:\windows\system32\drivers\hidbatt.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

hidusb    Microsoft HID Class Driver
          c:\windows\system32\drivers\hidusb.sys
          Kernel Driver       No        Manual
          Stopped   OK        Ignore    No        No

hpsamd    HpSAMD
          c:\windows\system32\drivers\hpsamd.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

http      HTTP
          c:\windows\system32\drivers\http.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

hwpolicy  Hardware Policy Driver
          c:\windows\system32\drivers\hwpolicy.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

i8042prt  i8042 Keyboard and PS/2 Mouse Port Driver
          c:\windows\system32\drivers\i8042prt.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

iastorv   iaStorV
          c:\windows\system32\drivers\iastorv.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

iirsp     iirsp
          c:\windows\system32\drivers\iirsp.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

intelide  intelide
          c:\windows\system32\drivers\intelide.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

intelppm  Intel Processor Driver
          c:\windows\system32\drivers\intelppm.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

ioatdma   Intel(R) QuickData Technology Device
          c:\windows\system32\drivers\qd260x64.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

ipfilterdriver      IP Traffic Filter Driver
          c:\windows\system32\drivers\ipfltdrv.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

ipmidrv   IPMIDRV
          c:\windows\system32\drivers\ipmidrv.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

ipnat     IP Network Address Translator
          c:\windows\system32\drivers\ipnat.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

isapnp    isapnp
          c:\windows\system32\drivers\isapnp.sys
          Kernel Driver       No        Manual
          Stopped   OK        Critical  No        No

iscsiprt  iScsiPort Driver
          c:\windows\system32\drivers\msiscsi.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

kbdclass  Keyboard Class Driver
          c:\windows\system32\drivers\kbdclass.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

kbdhid    Keyboard HID Driver
          c:\windows\system32\drivers\kbdhid.sys
          Kernel Driver       No        Manual
          Stopped   OK        Ignore    No        No

ksecdd    KSecDD
          c:\windows\system32\drivers\ksecdd.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

ksecpkg   KSecPkg
          c:\windows\system32\drivers\ksecpkg.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

ksthunk   Kernel Streaming Thunks
          c:\windows\system32\drivers\ksthunk.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

lltdio    Link-Layer Topology Discovery Mapper I/O
Driver    c:\windows\system32\drivers\lltdio.sys
          Kernel Driver       Yes       Auto
```

```
          Running   OK        Normal    No        Yes

lsi_fc    LSI_FC
          c:\windows\system32\drivers\lsi_fc.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

lsi_sas   LSI_SAS
          c:\windows\system32\drivers\lsi_sas.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

lsi_sas2  LSI_SAS2
          c:\windows\system32\drivers\lsi_sas2.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

lsi_scsi  LSI_SCSI
          c:\windows\system32\drivers\lsi_scsi.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

luafv     UAC File Virtualization
          c:\windows\system32\drivers\luafv.sys
          File System Driver  Yes       Auto
          Running   OK        Normal    No        Yes

megasas   megasas
          c:\windows\system32\drivers\megasas.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

megasr    MegaSR
          c:\windows\system32\drivers\megasr.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

modem     Modem
          c:\windows\system32\drivers\modem.sys
          Kernel Driver       No        Manual
          Stopped   OK        Ignore    No        No

monitor   Microsoft Monitor Class Function Driver
Service   c:\windows\system32\drivers\monitor.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

mouclass  Mouse Class Driver
          c:\windows\system32\drivers\mouclass.sys
          Kernel Driver       Yes       Manual
          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        Critical  No        Yes
```

```
mpio      mpio
          c:\windows\system32\drivers\mpio.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

mpsdrv    Windows Firewall Authorization Driver
          c:\windows\system32\drivers\mpsdrv.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

mrxsmb    SMB MiniRedirector Wrapper and Engine
          c:\windows\system32\drivers\mrxsmb.sys
          File System Driver  Yes       Manual
          Running   OK        Normal    No        Yes

mrxsmb10  SMB 1.x MiniRedirector
          c:\windows\system32\drivers\mrxsmb10.sys
          File System Driver  Yes       Manual
          Running   OK        Normal    No        Yes

mrxsmb20  SMB 2.0 MiniRedirector
          c:\windows\system32\drivers\mrxsmb20.sys
          File System Driver  Yes       Manual
          Running   OK        Normal    No        Yes

msahci    msahci
          c:\windows\system32\drivers\msahci.sys
          Kernel Driver       No        Manual
          Stopped   OK        Critical  No        No

msdsm     msdsm
          c:\windows\system32\drivers\msdsm.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

msfs      Msfs
          c:\windows\system32\drivers\msfs.sys
          File System Driver  Yes       System
          Running   OK        Normal    No        Yes

mshidkmdf Pass-through HID to KMDF Filter Driver
          c:\windows\system32\drivers\mshidkmdf.sys
          Kernel Driver       No        Manual
          Stopped   OK        Ignore    No        No

msisadrv  msisadrv
          c:\windows\system32\drivers\msisadrv.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

msrpc     MsRPC
          c:\windows\system32\drivers\msrpc.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

mssmbios  Microsoft System Management BIOS Driver
          c:\windows\system32\drivers\mssmbios.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

mtconfig  Microsoft Input Configuration Driver
          c:\windows\system32\drivers\mtconfig.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

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        Critical  No        Yes

ndiscap   NDIS Capture LightWeight Filter
          c:\windows\system32\drivers\ndiscap.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

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     NetBT
          c:\windows\system32\drivers\netbt.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

netvsc    netvsc
          c:\windows\system32\drivers\netvsc60.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

nfrd960   nfrd960
          c:\windows\system32\drivers\nfrd960.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

npfs      Npfs
          c:\windows\system32\drivers\npfs.sys
          File System Driver  Yes       System
```

```
          Running   OK        Normal    No        Yes
nsiproxy  NSI proxy service driver.
          c:\windows\system32\drivers\nsiproxy.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

ntfs      Ntfs
          c:\windows\system32\drivers\ntfs.sys
          File System Driver  Yes       Manual
          Running   OK        Normal    No        Yes

null      Null
          c:\windows\system32\drivers\null.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

nvraid    nvraid
          c:\windows\system32\drivers\nvraid.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

nvstor    nvstor
          c:\windows\system32\drivers\nvstor.sys
          Kernel Driver       No        Manual
          Stopped   OK        Critical  No        No

nv_agp    NVIDIA nForce AGP Bus Filter
          c:\windows\system32\drivers\nv_agp.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

ohci1394  1394 OHCI Compliant Host Controller
(Legacy)  c:\windows\system32\drivers\ohci1394.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

parport   Parallel port driver
          c:\windows\system32\drivers\parport.sys
          Kernel Driver       No        Manual
          Stopped   OK        Ignore    No        No

partmgr   Partition Manager
          c:\windows\system32\drivers\partmgr.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

pci       PCI Bus Driver
          c:\windows\system32\drivers\pci.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

pciide    pciide
          c:\windows\system32\drivers\pciide.sys
          Kernel Driver       No        Manual
          Stopped   OK        Critical  No        No

pcmcia    pcmcia
          c:\windows\system32\drivers\pcmcia.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No
```

```
pcw       Performance Counters for Windows Driver
          c:\windows\system32\drivers\pcw.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

peauth    PEAUTH
          c:\windows\system32\drivers\peauth.sys
          Kernel Driver       Yes       Auto
          Running   OK        Normal    No        Yes

pptpminiport        WAN Miniport (PPTP)
          c:\windows\system32\drivers\raspptp.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

processor Processor Driver
          c:\windows\system32\drivers\processr.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

psched    QoS Packet Scheduler
          c:\windows\system32\drivers\pacer.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

ql2300    ql2300
          c:\windows\system32\drivers\ql2300.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

ql40xx    ql40xx
          c:\windows\system32\drivers\ql40xx.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

rasacd    Remote Access Auto Connection Driver
          c:\windows\system32\drivers\rasacd.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

rasagilevpn         WAN Miniport (IKEv2)
          c:\windows\system32\drivers\agilevpn.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

rasl2tp   WAN Miniport (L2TP)
          c:\windows\system32\drivers\rasl2tp.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

raspppoe  Remote Access PPPOE Driver
          c:\windows\system32\drivers\raspppoe.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

rassstp   WAN Miniport (SSTP)
          c:\windows\system32\drivers\rassstp.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

rdbss     Redirected Buffering Sub Sysytem
          c:\windows\system32\drivers\rdbss.sys
          File System Driver  Yes       System
          Running   OK        Normal    No        Yes

rdpbus    Remote Desktop Device Redirector Bus Driver
          c:\windows\system32\drivers\rdpbus.sys
          Kernel Driver       Yes       Manual
          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

rdpencdd  RDP Encoder Mirror Driver
          c:\windows\system32\drivers\rdpencdd.sys
          Kernel Driver       Yes       System
          Running   OK        Ignore    No        Yes

rdprefmp  Reflector Display Driver used to gain
access to graphics data
          c:\windows\system32\drivers\rdprefmp.sys
          Kernel Driver       Yes       System
          Running   OK        Ignore    No        Yes

rdpwd     RDP Winstation Driver
          c:\windows\system32\drivers\rdpwd.sys
          Kernel Driver       Yes       Manual
          Running   OK        Ignore    No        Yes

rspndr    Link-Layer Topology Discovery Responder
          c:\windows\system32\drivers\rspndr.sys
          Kernel Driver       Yes       Auto
          Running   OK        Normal    No        Yes

s3cap     s3cap
          c:\windows\system32\drivers\vms3cap.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

sacdrv    sacdrv
          c:\windows\system32\drivers\sacdrv.sys
          Kernel Driver       No        Boot
          Stopped   OK        Ignore    No        No

sbp2port  sbp2port
          c:\windows\system32\drivers\sbp2port.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

scfilter  Smart card PnP Class Filter Driver
          c:\windows\system32\drivers\scfilter.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

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       Yes       Manual
          Running   OK        Normal    No        Yes

serial    Serial port driver
          c:\windows\system32\drivers\serial.sys
          Kernel Driver       Yes       System
          Running   OK        Ignore    No        Yes

sermouse  Serial Mouse Driver
          c:\windows\system32\drivers\sermouse.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

sffdisk   SFF Storage Class Driver
          c:\windows\system32\drivers\sffdisk.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

sffp_mmc  SFF Storage Protocol Driver for MMC
          c:\windows\system32\drivers\sffp_mmc.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

sffp_sd   SFF Storage Protocol Driver for SDBus
          c:\windows\system32\drivers\sffp_sd.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

sfloppy   High-Capacity Floppy Disk Drive
          c:\windows\system32\drivers\sfloppy.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

sisraid2  SiSRaid2
          c:\windows\system32\drivers\sisraid2.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

sisraid4  SiSRaid4
          c:\windows\system32\drivers\sisraid4.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

smb       Message-oriented TCP/IP and TCP/IPv6
Protocol (SMB session)
          c:\windows\system32\drivers\smb.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

spldr     Security Processor Loader Driver
          c:\windows\system32\drivers\spldr.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

srv       Server SMB 1.xxx Driver
          c:\windows\system32\drivers\srv.sys
          File System Driver  Yes       Manual
```

```
          Running   OK        Normal    No        Yes

srv2      Server SMB 2.xxx Driver
          c:\windows\system32\drivers\srv2.sys
          File System Driver  Yes       Manual
          Running   OK        Normal    No        Yes

srvnet    srvnet
          c:\windows\system32\drivers\srvnet.sys
          File System Driver  Yes       Manual
          Running   OK        Normal    No        Yes

stexstor  stexstor
          c:\windows\system32\drivers\stexstor.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

storflt   Disk Virtual Machine Bus Acceleration
Filter Driver
          c:\windows\system32\drivers\vmstorfl.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

storvsc   storvsc
          c:\windows\system32\drivers\storvsc.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

storvsp   storvsp
          c:\windows\system32\drivers\storvsp.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

swenum    Software Bus Driver
          c:\windows\system32\drivers\swenum.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

synthvid  SynthVid
          c:\windows\system32\drivers\vmbusvideom.sys
          Kernel Driver       Yes       Manual
          Running   OK        Ignore    No        Yes

tcpip     TCP/IP Protocol Driver
          c:\windows\system32\drivers\tcpip.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

tcpip6    Microsoft IPv6 Protocol Driver
          c:\windows\system32\drivers\tcpip.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

tcpipreg  TCP/IP Registry Compatibility
          c:\windows\system32\drivers\tcpipreg.sys
          Kernel Driver       Yes       Auto
          Running   OK        Normal    No        Yes

tdpipe    TDPIPE
          c:\windows\system32\drivers\tdpipe.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

tdtcp     TDTCP
          c:\windows\system32\drivers\tdtcp.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

tdx       NetIO Legacy TDI Support Driver
          c:\windows\system32\drivers\tdx.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

termdd    Terminal Device Driver
          c:\windows\system32\drivers\termdd.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

tssecsrv  Remote Desktop Services Security Filter
Driver    c:\windows\system32\drivers\tssecsrv.sys
          Kernel Driver       Yes       Manual
          Running   OK        Ignore    No        Yes

tunnel    Microsoft Tunnel Miniport Adapter Driver
          c:\windows\system32\drivers\tunnel.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

uagp35    Microsoft AGPv3.5 Filter
          c:\windows\system32\drivers\uagp35.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

udfs      udfs
          c:\windows\system32\drivers\udfs.sys
          File System Driver  No        Disabled
          Stopped   OK        Normal    No        No

uliagpkx  Uli AGP Bus Filter
          c:\windows\system32\drivers\uliagpkx.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

umbus     UMBus Enumerator Driver
          c:\windows\system32\drivers\umbus.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

umpass    Microsoft UMPass Driver
          c:\windows\system32\drivers\umpass.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

usbccgp   Microsoft USB Generic Parent Driver
          c:\windows\system32\drivers\usbccgp.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

usbehci   Microsoft USB 2.0 Enhanced Host Controller
Miniport Driver
          c:\windows\system32\drivers\usbehci.sys
          Kernel Driver       No        Manual
```

```
          Stopped   OK        Normal    No        No

usbhub    Microsoft USB Standard Hub Driver
          c:\windows\system32\drivers\usbhub.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

usbohci   Microsoft USB Open Host Controller Miniport
Driver    c:\windows\system32\drivers\usbohci.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

usbprint  Microsoft USB PRINTER Class
          c:\windows\system32\drivers\usbprint.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

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       No        Manual
          Stopped   OK        Normal    No        No

vdrvroot  Microsoft Virtual Drive Enumerator Driver
          c:\windows\system32\drivers\vdrvroot.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

vga       vga
          c:\windows\system32\drivers\vgapnp.sys
          Kernel Driver       No        Manual
          Stopped   OK        Ignore    No        No

vgasave   VgaSave
          c:\windows\system32\drivers\vga.sys
          Kernel Driver       Yes       System
          Running   OK        Ignore    No        Yes

vhdmp     vhdmp
          c:\windows\system32\drivers\vhdmp.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

viaide    viaide
          c:\windows\system32\drivers\viaide.sys
          Kernel Driver       No        Manual
          Stopped   OK        Critical  No        No

vid       Vid
          c:\windows\system32\drivers\vid.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

vmbus     Virtual Machine Bus
          c:\windows\system32\drivers\vmbus.sys
          Kernel Driver       Yes       Boot
```

```
          Running   OK        Normal    No        Yes

vmbushid  VMBusHID
          c:\windows\system32\drivers\vmbushid.sys
          Kernel Driver       Yes       Manual
          Running   OK        Ignore    No        Yes

volmgr    Volume Manager Driver
          c:\windows\system32\drivers\volmgr.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

volmgrx   Dynamic Volume Manager
          c:\windows\system32\drivers\volmgrx.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

volsnap   Storage volumes
          c:\windows\system32\drivers\volsnap.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

vsmraid   vsmraid
          c:\windows\system32\drivers\vsmraid.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

wacompen  Wacom Serial Pen HID Driver
          c:\windows\system32\drivers\wacompen.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

wanarp    Remote Access IP ARP Driver
          c:\windows\system32\drivers\wanarp.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

wanarpv6  Remote Access IPv6 ARP Driver
          c:\windows\system32\drivers\wanarp.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

wd        Wd
          c:\windows\system32\drivers\wd.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

wdf01000  Kernel Mode Driver Frameworks service
          c:\windows\system32\drivers\wdf01000.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

wfplwf    WFP Lightweight Filter
          c:\windows\system32\drivers\wfplwf.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

wimmount  WIMMount
          c:\windows\system32\drivers\wimmount.sys
          File System Driver  No        Manual
          Stopped   OK        Normal    No        No
```

```
wmiacpi   Microsoft Windows Management Interface for
ACPI      c:\windows\system32\drivers\wmiacpi.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

ws2ifsl   Winsock IFS Driver
          c:\windows\system32\drivers\ws2ifsl.sys
          Kernel Driver       No        Disabled
          Stopped   OK        Normal    No        No

wudfpf    User Mode Driver Frameworks Platform Driver
          c:\windows\system32\drivers\wudfpf.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No


[Environment Variables]

Variable  Value     User Name
ComSpec   %SystemRoot%\system32\cmd.exe <SYSTEM>
FP_NO_HOST_CHECK    NO        <SYSTEM>
OS        Windows_NT          <SYSTEM>
Path
          %SystemRoot%\system32;%SystemRoot%;%SystemR
oot%\System32\Wbem;%SYSTEMROOT%\System32\WindowsPower
Shell\v1.0\;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\DTS\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\        <SYSTEM>
PATHEXT
          .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF
;.WSH;.MSC          <SYSTEM>
PROCESSOR_ARCHITECTURE        AMD64     <SYSTEM>
TEMP      %SystemRoot%\TEMP   <SYSTEM>
TMP       %SystemRoot%\TEMP   <SYSTEM>
USERNAME  SYSTEM    <SYSTEM>
windir    %SystemRoot%        <SYSTEM>
PSModulePath
          %SystemRoot%\system32\WindowsPowerShell\v1.
0\Modules\          <SYSTEM>
NUMBER_OF_PROCESSORS          2         <SYSTEM>
PROCESSOR_LEVEL     6         <SYSTEM>
PROCESSOR_IDENTIFIER          Intel64 Family 6 Model
44 Stepping 2, GenuineIntel   <SYSTEM>
PROCESSOR_REVISION  2c02      <SYSTEM>
lib       C:\Program Files\SQLXML 4.0\bin\
          <SYSTEM>
TEMP      %USERPROFILE%\AppData\Local\Temp        NT
AUTHORITY\SYSTEM
TMP       %USERPROFILE%\AppData\Local\Temp        NT
AUTHORITY\SYSTEM
TEMP      %USERPROFILE%\AppData\Local\Temp        NT
AUTHORITY\LOCAL SERVICE
TMP       %USERPROFILE%\AppData\Local\Temp        NT
AUTHORITY\LOCAL SERVICE
```

```
TEMP      %USERPROFILE%\AppData\Local\Temp        NT
AUTHORITY\NETWORK SERVICE
TMP       %USERPROFILE%\AppData\Local\Temp        NT
AUTHORITY\NETWORK SERVICE
TEMP      %USERPROFILE%\AppData\Local\Temp
          VCL1\Administrator
TMP       %USERPROFILE%\AppData\Local\Temp
          VCL1\Administrator
TEMP      %USERPROFILE%\AppData\Local\Temp        IIS
APPPOOL\Classic .NET AppPool
TMP       %USERPROFILE%\AppData\Local\Temp        IIS
APPPOOL\Classic .NET AppPool

[Print Jobs]

Document  Size      Owner     Notify    Status
          Time Submitted      Start Time
          Until Time          Elapsed Time
          Pages Printed       Job ID    Priority
          Parameters          Driver    Print
Processor Host Print Queue    Data Type Name

[Network Connections]

Local Name          Remote Name         Type
          Status    User Name

[Running Tasks]

Name      Path      Process ID          Priority  Min
Working Set         Max Working Set     Start Time
          Version   Size      File Date
system idle process Not Available       0         0
          Not Available       Not Available       Not
Available Not Available       Not Available       Not
Available
system    Not Available       4         8         Not
Available Not Available       8/26/2010 6:23 PM   Not
Available Not Available       Not Available
smss.exe  Not Available       280       11        200
          1380      8/26/2010 6:23 PM   Not Available
          Not Available       Not Available
csrss.exe c:\windows\system32\csrss.exe 364       13
          200       1380      8/26/2010 6:23 PM
          6.1.7600.16385      7.50 KB (7,680 bytes)
          7/13/2009 6:19 PM
csrss.exe c:\windows\system32\csrss.exe 416       13
          200       1380      8/26/2010 6:24 PM
          6.1.7600.16385      7.50 KB (7,680 bytes)
          7/13/2009 6:19 PM
wininit.exe         c:\windows\system32\wininit.exe
          424       13        200       1380
          8/26/2010 6:24 PM   6.1.7600.16385
          126.00 KB (129,024 bytes)     7/13/2009
6:52 PM
winlogon.exe        c:\windows\system32\winlogon.exe
          456       13        200       1380
          8/26/2010 6:24 PM   6.1.7600.16385
          380.00 KB (389,120 bytes)     7/13/2009
6:52 PM
services.exe        c:\windows\system32\services.exe
          516       9         200       1380
```

```
          8/26/2010 6:24 PM   6.1.7600.16385
          321.00 KB (328,704 bytes)     7/13/2009
6:19 PM
lsass.exe c:\windows\system32\lsass.exe 524       9
          200       1380      8/26/2010 6:24 PM
          6.1.7600.16385      30.50 KB (31,232 bytes)
          7/13/2009 6:20 PM
lsm.exe   c:\windows\system32\lsm.exe   532       8
          200       1380      8/26/2010 6:24 PM
          6.1.7600.16385      325.50 KB (333,312
bytes)    7/13/2009 7:17 PM
svchost.exe         c:\windows\system32\svchost.exe
          628       8         200       1380
          8/26/2010 6:24 PM   6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
          704       8         200       1380
          8/26/2010 6:24 PM   6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
          800       8         200       1380
          8/26/2010 6:24 PM   6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
          844       8         200       1380
          8/26/2010 6:24 PM   6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
          892       8         200       1380
          8/26/2010 6:24 PM   6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
          940       8         200       1380
          8/26/2010 6:24 PM   6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
          980       8         200       1380
          8/26/2010 6:24 PM   6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
          12        8         200       1380
          8/26/2010 6:24 PM   6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
spoolsv.exe         c:\windows\system32\spoolsv.exe
          1036      8         200       1380
          8/26/2010 6:24 PM   6.1.7600.16385
          545.00 KB (558,080 bytes)     7/13/2009
7:39 PM
vmicsvc.exe         c:\windows\system32\vmicsvc.exe
          1104      8         200       1380
          8/26/2010 6:25 PM   6.1.7600.16385
          236.50 KB (242,176 bytes)     7/13/2009
6:43 PM
```

```
vmicsvc.exe         c:\windows\system32\vmicsvc.exe
          1124      8         200       1380
          8/26/2010 6:25 PM   6.1.7600.16385
          236.50 KB (242,176 bytes)     7/13/2009
6:43 PM
vmicsvc.exe         c:\windows\system32\vmicsvc.exe
          1152      8         200       1380
          8/26/2010 6:25 PM   6.1.7600.16385
          236.50 KB (242,176 bytes)     7/13/2009
6:43 PM
vmicsvc.exe         c:\windows\system32\vmicsvc.exe
          1176      8         200       1380
          8/26/2010 6:25 PM   6.1.7600.16385
          236.50 KB (242,176 bytes)     7/13/2009
6:43 PM
vmicsvc.exe         c:\windows\system32\vmicsvc.exe
          1208      8         200       1380
          8/26/2010 6:25 PM   6.1.7600.16385
          236.50 KB (242,176 bytes)     7/13/2009
6:43 PM
svchost.exe         c:\windows\system32\svchost.exe
          1240      8         200       1380
          8/26/2010 6:25 PM   6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
inetinfo.exe
          c:\windows\system32\inetsrv\inetinfo.exe
          1268      8         200       1380
          8/26/2010 6:25 PM   7.5.7600.16385
          15.00 KB (15,360 bytes)       7/13/2009
7:27 PM
smsvchost.exe
          c:\windows\microsoft.net\framework64\v3.0\w
indows communication foundation\smsvchost.exe
          1368      8         200       1380
          8/26/2010 6:25 PM   3.0.4506.4926
          113.83 KB (116,560 bytes)     7/13/2009
8:01 PM
taskhost.exe        c:\windows\system32\taskhost.exe
          1404      8         200       1380
          8/26/2010 6:25 PM   6.1.7600.16385
          67.50 KB (69,120 bytes)       7/13/2009
6:31 PM
dwm.exe   c:\windows\system32\dwm.exe   1472      8
          200       1380      8/26/2010 6:25 PM
          6.1.7600.16385      117.50 KB (120,320
bytes)    7/13/2009 6:37 PM
explorer.exe        c:\windows\explorer.exe
          1504      8         200       1380
          8/26/2010 6:25 PM   6.1.7600.16385
          2.74 MB (2,868,224 bytes)     7/13/2009
6:56 PM
svchost.exe         c:\windows\system32\svchost.exe
          1756      8         200       1380
          8/26/2010 6:25 PM   6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
          1784      8         200       1380
          8/26/2010 6:25 PM   6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
```

```
svchost.exe         c:\windows\system32\svchost.exe
          1752      8         200       1380
          8/26/2010 6:25 PM   6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
          304       8         200       1380
          8/26/2010 6:25 PM   6.1.7600.16385
          26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
csrss.exe c:\windows\system32\csrss.exe 2504      13
          200       1380      8/26/2010 6:25 PM
          6.1.7600.16385      7.50 KB (7,680 bytes)
          7/13/2009 6:19 PM
winlogon.exe        c:\windows\system32\winlogon.exe
          2528      13        200       1380
          8/26/2010 6:25 PM   6.1.7600.16385
          380.00 KB (389,120 bytes)     7/13/2009
6:52 PM
logonui.exe         c:\windows\system32\logonui.exe
          2592      13        200       1380
          8/26/2010 6:25 PM   6.1.7600.16385
          27.00 KB (27,648 bytes)       7/13/2009
6:52 PM
rdpclip.exe         c:\windows\system32\rdpclip.exe
          2660      8         200       1380
          8/26/2010 6:25 PM   6.1.7600.16385
          204.50 KB (209,408 bytes)     7/13/2009
7:17 PM
dllhost.exe         c:\windows\system32\dllhost.exe
          2964      8         200       1380
          8/26/2010 6:26 PM   6.1.7600.16385
          9.50 KB (9,728 bytes)         7/13/2009
6:59 PM
msdtc.exe c:\windows\system32\msdtc.exe 3052      8
          200       1380      8/26/2010 6:26 PM
          2001.12.8530.16385  138.50 KB (141,824
bytes)    7/13/2009 6:59 PM
printisolationhost.exe
          c:\windows\system32\printisolationhost.exe
          336       8         200       1380
          8/27/2010 11:29 AM  6.1.7600.16385
          18.50 KB (18,944 bytes)       7/13/2009
7:39 PM
regedit.exe         c:\windows\regedit.exe        624
          8         200       1380      8/27/2010
11:30 AM  6.1.7600.16385      417.00 KB (427,008
bytes)    7/13/2009 6:27 PM
msinfo32.exe        c:\windows\system32\msinfo32.exe
          2944      8         200       1380
          8/27/2010 11:30 AM  6.1.7600.16385
          370.00 KB (378,880 bytes)     7/13/2009
6:31 PM
wmiprvse.exe
          c:\windows\system32\wbem\wmiprvse.exe
          2472      8         200       1380
          8/27/2010 11:30 AM  6.1.7600.16385
          360.00 KB (368,640 bytes)     7/13/2009
6:47 PM
wmiprvse.exe
          c:\windows\system32\wbem\wmiprvse.exe
          1648      8         200       1380
```

```
          8/27/2010 11:30 AM  6.1.7600.16385
          360.00 KB (368,640 bytes)     7/13/2009
6:47 PM
printisolationhost.exe
          c:\windows\system32\printisolationhost.exe
          2580      8         200       1380
          8/27/2010 11:31 AM  6.1.7600.16385
          18.50 KB (18,944 bytes)       7/13/2009
7:39 PM

[Loaded Modules]

Name      Version   Size      File Date Manufacturer
          Path
csrss     6.1.7600.16385      7.50 KB (7,680 bytes)
          7/13/2009 6:19 PM   Microsoft Corporation
          c:\windows\system32\csrss.exe
ntdll     6.1.7600.16385      1.66 MB (1,736,792
bytes)    7/13/2009 6:22 PM   Microsoft Corporation
          c:\windows\system32\ntdll.dll
csrsrv    6.1.7600.16385      42.50 KB (43,520 bytes)
          7/13/2009 6:19 PM   Microsoft Corporation
          c:\windows\system32\csrsrv.dll
basesrv   6.1.7600.16385      51.50 KB (52,736 bytes)
          7/13/2009 6:18 PM   Microsoft Corporation
          c:\windows\system32\basesrv.dll
winsrv    6.1.7600.16385      209.00 KB (214,016
bytes)    7/13/2009 6:38 PM   Microsoft Corporation
          c:\windows\system32\winsrv.dll
user32    6.1.7600.16385      985.00 KB (1,008,640
bytes)    7/13/2009 6:38 PM   Microsoft Corporation
          c:\windows\system32\user32.dll
gdi32     6.1.7600.16385      395.00 KB (404,480
bytes)    7/13/2009 6:39 PM   Microsoft Corporation
          c:\windows\system32\gdi32.dll
kernel32  6.1.7600.16385      1.11 MB (1,162,240
bytes)    7/13/2009 6:28 PM   Microsoft Corporation
          c:\windows\system32\kernel32.dll
kernelbase          6.1.7600.16385      411.50 KB
(421,376 bytes)     7/13/2009 6:20 PM   Microsoft
Corporation
          c:\windows\system32\kernelbase.dll
lpk       6.1.7600.16385      41.00 KB (41,984 bytes)
          7/13/2009 6:38 PM   Microsoft Corporation
          c:\windows\system32\lpk.dll
usp10     1.626.7600.16385    782.50 KB (801,280
bytes)    7/13/2009 6:38 PM   Microsoft Corporation
          c:\windows\system32\usp10.dll
msvcrt    7.0.7600.16385      620.00 KB (634,880
bytes)    7/13/2009 6:19 PM   Microsoft Corporation
          c:\windows\system32\msvcrt.dll
sxssrv    6.1.7600.16385      31.00 KB (31,744 bytes)
          7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\sxssrv.dll
sxs       6.1.7600.16385      569.50 KB (583,168
bytes)    7/13/2009 6:27 PM   Microsoft Corporation
          c:\windows\system32\sxs.dll
rpcrt4    6.1.7600.16385      1.17 MB (1,221,632
bytes)    7/13/2009 6:23 PM   Microsoft Corporation
          c:\windows\system32\rpcrt4.dll
```

```
cryptbase 6.1.7600.16385      43.00 KB (44,032 bytes)
          7/13/2009 6:20 PM   Microsoft Corporation
          c:\windows\system32\cryptbase.dll
wininit   6.1.7600.16385      126.00 KB (129,024
bytes)    7/13/2009 6:52 PM   Microsoft Corporation
          c:\windows\system32\wininit.exe
sechost   6.1.7600.16385      111.00 KB (113,664
bytes)    7/13/2009 6:20 PM   Microsoft Corporation
          c:\windows\system32\sechost.dll
profapi   6.1.7600.16385      43.00 KB (44,032 bytes)
          7/13/2009 6:20 PM   Microsoft Corporation
          c:\windows\system32\profapi.dll
imm32     6.1.7600.16385      163.50 KB (167,424
bytes)    7/13/2009 6:38 PM   Microsoft Corporation
          c:\windows\system32\imm32.dll
msctf     6.1.7600.16385      1.02 MB (1,067,008
bytes)    7/13/2009 6:40 PM   Microsoft Corporation
          c:\windows\system32\msctf.dll
rpcrtremote         6.1.7600.16385      63.50 KB
(65,024 bytes)      7/13/2009 6:59 PM   Microsoft
Corporation
          c:\windows\system32\rpcrtremote.dll
apphelp   6.1.7600.16385      330.50 KB (338,432
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\apphelp.dll
advapi32  6.1.7600.16385      856.50 KB (877,056
bytes)    7/13/2009 7:41 PM   Microsoft Corporation
          c:\windows\system32\advapi32.dll
ws2_32    6.1.7600.16385      289.50 KB (296,448
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\ws2_32.dll
nsi       6.1.7600.16385      13.50 KB (13,824 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\nsi.dll
mswsock   6.1.7600.16385      312.50 KB (320,000
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\mswsock.dll
wshtcpip  6.1.7600.16385      13.00 KB (13,312 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\wshtcpip.dll
wship6    6.1.7600.16385      13.50 KB (13,824 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\wship6.dll
secur32   6.1.7600.16385      27.50 KB (28,160 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\secur32.dll
sspicli   6.1.7600.16385      133.00 KB (136,192
bytes)    7/13/2009 6:20 PM   Microsoft Corporation
          c:\windows\system32\sspicli.dll
credssp   6.1.7600.16385      20.00 KB (20,480 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\credssp.dll
winlogon  6.1.7600.16385      380.00 KB (389,120
bytes)    7/13/2009 6:52 PM   Microsoft Corporation
          c:\windows\system32\winlogon.exe
winsta    6.1.7600.16385      228.00 KB (233,472
bytes)    7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\winsta.dll
uxinit    6.1.7600.16385      24.50 KB (25,088 bytes)
          7/13/2009 6:54 PM   Microsoft Corporation
          c:\windows\system32\uxinit.dll
```

```
slc       6.1.7600.16385      30.00 KB (30,720 bytes)
          7/13/2009 6:51 PM   Microsoft Corporation
          c:\windows\system32\slc.dll
mpr       6.1.7600.16385      79.00 KB (80,896 bytes)
          7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\mpr.dll
uxtheme   6.1.7600.16385      324.50 KB (332,288
bytes)    7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\uxtheme.dll
services  6.1.7600.16385      321.00 KB (328,704
bytes)    7/13/2009 6:19 PM   Microsoft Corporation
          c:\windows\system32\services.exe
scext     6.1.7600.16385      87.00 KB (89,088 bytes)
          7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\scext.dll
scesrv    6.1.7600.16385      396.50 KB (406,016
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\scesrv.dll
srvcli    6.1.7600.16385      124.50 KB (127,488
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\srvcli.dll
authz     6.1.7600.16385      173.50 KB (177,664
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\authz.dll
ubpm      6.1.7600.16385      209.00 KB (214,016
bytes)    7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\ubpm.dll
wtsapi32  6.1.7600.16385      53.00 KB (54,272 bytes)
          7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\wtsapi32.dll
lsass     6.1.7600.16385      30.50 KB (31,232 bytes)
          7/13/2009 6:20 PM   Microsoft Corporation
          c:\windows\system32\lsass.exe
sspisrv   6.1.7600.16385      28.00 KB (28,672 bytes)
          7/13/2009 6:20 PM   Microsoft Corporation
          c:\windows\system32\sspisrv.dll
lsasrv    6.1.7600.16385      1.38 MB (1,446,912
bytes)    7/13/2009 6:51 PM   Microsoft Corporation
          c:\windows\system32\lsasrv.dll
samsrv    6.1.7600.16385      740.00 KB (757,760
bytes)    7/13/2009 6:54 PM   Microsoft Corporation
          c:\windows\system32\samsrv.dll
cryptdll  6.1.7600.16385      64.50 KB (66,048 bytes)
          7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\cryptdll.dll
msasn1    6.1.7600.16385      43.00 KB (44,032 bytes)
          7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\msasn1.dll
wevtapi   6.1.7600.16385      418.00 KB (428,032
bytes)    7/13/2009 6:46 PM   Microsoft Corporation
          c:\windows\system32\wevtapi.dll
cngaudit  6.1.7600.16385      18.50 KB (18,944 bytes)
          7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\cngaudit.dll
ncrypt    6.1.7600.16385      300.00 KB (307,200
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\ncrypt.dll
bcrypt    6.1.7600.16385      121.00 KB (123,904
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\bcrypt.dll
```

```
msprivs   6.1.7600.16385      2.00 KB (2,048 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\msprivs.dll
netjoin   6.1.7600.16385      184.50 KB (188,928
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\netjoin.dll
negoexts  6.1.7600.16385      114.50 KB (117,248
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\negoexts.dll
kerberos  6.1.7600.16385      697.50 KB (714,240
bytes)    7/13/2009 6:51 PM   Microsoft Corporation
          c:\windows\system32\kerberos.dll
cryptsp   6.1.7600.16385      78.00 KB (79,872 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\cryptsp.dll
msv1_0    6.1.7600.16385      304.00 KB (311,296
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\msv1_0.dll
netlogon  6.1.7600.16385      676.50 KB (692,736
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\netlogon.dll
dnsapi    6.1.7600.16385      348.00 KB (356,352
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\dnsapi.dll
logoncli  6.1.7600.16385      182.00 KB (186,368
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\logoncli.dll
schannel  6.1.7600.16385      340.50 KB (348,672
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\schannel.dll
crypt32   6.1.7600.16385      1.39 MB (1,454,592
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\crypt32.dll
wdigest   6.1.7600.16385      205.50 KB (210,432
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\wdigest.dll
rsaenh    6.1.7600.16385      274.66 KB (281,256
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\rsaenh.dll
tspkg     6.1.7600.16385      84.00 KB (86,016 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\tspkg.dll
pku2u     6.1.7600.16385      235.00 KB (240,640
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\pku2u.dll
bcryptprimitives    6.1.7600.16385      291.32 KB
(298,312 bytes)     7/13/2009 6:49 PM   Microsoft
Corporation
          c:\windows\system32\bcryptprimitives.dll

efslsaext 6.1.7600.16385      55.50 KB (56,832 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\efslsaext.dll
scecli    6.1.7600.16385      227.00 KB (232,448
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\scecli.dll
rassfm    6.1.7600.16385      28.50 KB (29,184 bytes)
          7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\rassfm.dll
iphlpapi  6.1.7600.16385      142.50 KB (145,920
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\iphlpapi.dll
```

```
winnsi    6.1.7600.16385      25.50 KB (26,112 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\winnsi.dll
netutils  6.1.7600.16385      28.00 KB (28,672 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\netutils.dll
userenv   6.1.7600.16385      104.50 KB (107,008
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\userenv.dll
samcli    6.1.7600.16385      65.50 KB (67,072 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\samcli.dll
samlib    6.1.7600.16385      104.50 KB (107,008
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\samlib.dll
dssenh    6.1.7600.16385      186.41 KB (190,880
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\dssenh.dll
gpapi     6.1.7600.16385      94.50 KB (96,768 bytes)
          7/13/2009 6:54 PM   Microsoft Corporation
          c:\windows\system32\gpapi.dll
cryptnet  6.1.7600.16385      135.50 KB (138,752
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\cryptnet.dll
wldap32   6.1.7600.16385      304.50 KB (311,808
bytes)    7/13/2009 6:54 PM   Microsoft Corporation
          c:\windows\system32\wldap32.dll
certpoleng          6.1.7600.16385      70.00 KB
(71,680 bytes)      7/13/2009 6:52 PM   Microsoft
Corporation
          c:\windows\system32\certpoleng.dll
lsm       6.1.7600.16385      325.50 KB (333,312
bytes)    7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\lsm.exe
sysntfy   6.1.7600.16385      22.50 KB (23,040 bytes)
          7/13/2009 6:52 PM   Microsoft Corporation
          c:\windows\system32\sysntfy.dll
wmsgapi   6.1.7600.16385      14.50 KB (14,848 bytes)
          7/13/2009 6:52 PM   Microsoft Corporation
          c:\windows\system32\wmsgapi.dll
pcwum     6.1.7600.16385      36.00 KB (36,864 bytes)
          7/13/2009 6:19 PM   Microsoft Corporation
          c:\windows\system32\pcwum.dll
ole32     6.1.7600.16385      1.99 MB (2,084,352
bytes)    7/13/2009 7:02 PM   Microsoft Corporation
          c:\windows\system32\ole32.dll
ntmarta   6.1.7600.16385      158.50 KB (162,304
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\ntmarta.dll
clbcatq   2001.12.8530.16385  593.50 KB (607,744
bytes)    7/13/2009 7:00 PM   Microsoft Corporation
          c:\windows\system32\clbcatq.dll
oleaut32  6.1.7600.16385      841.00 KB (861,184
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\oleaut32.dll
lsmproxy  6.1.7600.16385      47.50 KB (48,640 bytes)
          7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\lsmproxy.dll
svchost   6.1.7600.16385      26.50 KB (27,136 bytes)
          7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\svchost.exe
```

```
umpnpmgr  6.1.7600.16385      395.00 KB (404,480
bytes)    7/13/2009 6:27 PM   Microsoft Corporation
          c:\windows\system32\umpnpmgr.dll
spinf     6.1.7600.16385      103.00 KB (105,472
bytes)    7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\spinf.dll
devrtl    6.1.7600.16385      57.00 KB (58,368 bytes)
          7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\devrtl.dll
umpo      6.1.7600.16385      160.00 KB (163,840
bytes)    7/13/2009 6:27 PM   Microsoft Corporation
          c:\windows\system32\umpo.dll
setupapi  6.1.7600.16385      1.81 MB (1,899,520
bytes)    7/13/2009 6:27 PM   Microsoft Corporation
          c:\windows\system32\setupapi.dll
cfgmgr32  6.1.7600.16385      202.50 KB (207,360
bytes)    7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\cfgmgr32.dll
devobj    6.1.7600.16385      91.00 KB (93,184 bytes)
          7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\devobj.dll
rpcss     6.1.7600.16385      497.50 KB (509,440
bytes)    7/13/2009 7:00 PM   Microsoft Corporation
          c:\windows\system32\rpcss.dll
wmidcprv  6.1.7600.16385      187.00 KB (191,488
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\wmidcprv.dll
fastprox  6.1.7600.16385      888.00 KB (909,312
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\fastprox.dll
wbemcomn  6.1.7600.16385      517.50 KB (529,920
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbemcomn.dll
ntdsapi   6.1.7600.16385      148.50 KB (152,064
bytes)    7/13/2009 6:54 PM   Microsoft Corporation
          c:\windows\system32\ntdsapi.dll
wbemprox  6.1.7600.16385      42.50 KB (43,520 bytes)
          7/13/2009 6:46 PM   Microsoft Corporation
          c:\windows\system32\wbem\wbemprox.dll
wbemsvc   6.1.7600.16385      63.00 KB (64,512 bytes)
          7/13/2009 6:46 PM   Microsoft Corporation
          c:\windows\system32\wbem\wbemsvc.dll
wmiutils  6.1.7600.16385      134.00 KB (137,216
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\wmiutils.dll
wintrust  6.1.7600.16385      215.00 KB (220,160
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\wintrust.dll
rpcepmap  6.1.7600.16385      65.50 KB (67,072 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\rpcepmap.dll
firewallapi         6.1.7600.16385      730.50 KB
(748,032 bytes)     7/13/2009 7:08 PM   Microsoft
Corporation
          c:\windows\system32\firewallapi.dll
version   6.1.7600.16385      28.50 KB (29,184 bytes)
          7/13/2009 6:57 PM   Microsoft Corporation
          c:\windows\system32\version.dll
fwpuclnt  6.1.7600.16385      316.50 KB (324,096
bytes)    7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\fwpuclnt.dll
```

```
wevtsvc   6.1.7600.16385      1.57 MB (1,646,080
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\wevtsvc.dll
lmhsvc    6.1.7600.16385      23.00 KB (23,552 bytes)
          7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\lmhsvc.dll
nrpsrv    6.1.7600.16385      14.50 KB (14,848 bytes)
          7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\nrpsrv.dll
dhcpcore  6.1.7600.16385      307.00 KB (314,368
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\dhcpcore.dll
dhcpcore6 6.1.7600.16385      219.00 KB (224,256
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\dhcpcore6.dll
gpsvc     6.1.7600.16385      758.00 KB (776,192
bytes)    7/13/2009 6:54 PM   Microsoft Corporation
          c:\windows\system32\gpsvc.dll
nlaapi    6.1.7600.16385      68.50 KB (70,144 bytes)
          7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\nlaapi.dll
profsvc   6.1.7600.16385      203.50 KB (208,384
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\profsvc.dll
shlwapi   6.1.7600.16385      439.00 KB (449,536
bytes)    7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\shlwapi.dll
atl       3.5.2284.0          88.50 KB (90,624 bytes)
          7/13/2009 7:34 PM   Microsoft Corporation
          c:\windows\system32\atl.dll
dsrole    6.1.7600.16385      32.00 KB (32,768 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\dsrole.dll
sens      6.1.7600.16385      63.00 KB (64,512 bytes)
          7/13/2009 6:34 PM   Microsoft Corporation
          c:\windows\system32\sens.dll
shsvcs    6.1.7600.16385      361.00 KB (369,664
bytes)    7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\shsvcs.dll
schedsvc  6.1.7600.16385      1.05 MB (1,104,384
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\schedsvc.dll
shell32   6.1.7600.16385      13.51 MB (14,161,920
bytes)    7/13/2009 7:04 PM   Microsoft Corporation
          c:\windows\system32\shell32.dll
netapi32  6.1.7600.16385      71.00 KB (72,704 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\netapi32.dll
wkscli    6.1.7600.16385      70.00 KB (71,680 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\wkscli.dll
ktmw32    6.1.7600.16385      22.50 KB (23,040 bytes)
          7/13/2009 6:19 PM   Microsoft Corporation
          c:\windows\system32\ktmw32.dll
xmllite   1.3.1000.0          195.00 KB (199,680
bytes)    7/13/2009 7:41 PM   Microsoft Corporation
          c:\windows\system32\xmllite.dll
taskcomp  6.1.7600.16385      462.50 KB (473,600
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\taskcomp.dll
comctl32  6.10.7600.16385     1.94 MB (2,030,080
bytes)    7/13/2009 6:56 PM   Microsoft Corporation
```

```
          c:\windows\winsxs\amd64_microsoft.windows.c
ommon-
controls_6595b64144ccf1df_6.0.7600.16385_none_fa64530
3170382f6\comctl32.dll
propsys   7.0.7600.16385      1.16 MB (1,212,416
bytes)    7/13/2009 6:56 PM   Microsoft Corporation
          c:\windows\system32\propsys.dll
ikeext    6.1.7600.16385      826.00 KB (845,824
bytes)    7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\ikeext.dll
dhcpcsvc6 6.1.7600.16385      53.00 KB (54,272 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\dhcpcsvc6.dll
dhcpcsvc  6.1.7600.16385      85.00 KB (87,040 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\dhcpcsvc.dll
wmisvc    6.1.7600.16385      237.00 KB (242,688
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\wmisvc.dll
srvsvc    6.1.7600.16385      230.00 KB (235,520
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\srvsvc.dll
browser   6.1.7600.16385      133.00 KB (136,192
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\browser.dll
iphlpsvc  6.1.7600.16385      552.50 KB (565,760
bytes)    7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\iphlpsvc.dll
rtutils   6.1.7600.16385      50.50 KB (51,712 bytes)
          7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\rtutils.dll
sqmapi    6.1.7600.16385      229.50 KB (235,008
bytes)    7/13/2009 6:40 PM   Microsoft Corporation
          c:\windows\system32\sqmapi.dll
wdscore   6.1.7600.16385      265.00 KB (271,360
bytes)    7/13/2009 6:28 PM   Microsoft Corporation
          c:\windows\system32\wdscore.dll
sscore    6.1.7600.16385      13.00 KB (13,312 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\sscore.dll
clusapi   6.1.7600.16385      307.00 KB (314,368
bytes)    7/13/2009 6:34 PM   Microsoft Corporation
          c:\windows\system32\clusapi.dll
resutils  6.1.7600.16385      84.00 KB (86,016 bytes)
          7/13/2009 6:34 PM   Microsoft Corporation
          c:\windows\system32\resutils.dll
vssapi    6.1.7600.16385      1.66 MB (1,745,408
bytes)    7/13/2009 6:38 PM   Microsoft Corporation
          c:\windows\system32\vssapi.dll
vsstrace  6.1.7600.16385      75.00 KB (76,800 bytes)
          7/13/2009 6:36 PM   Microsoft Corporation
          c:\windows\system32\vsstrace.dll
netprofm  6.1.7600.16385      449.00 KB (459,776
bytes)    7/13/2009 7:12 PM   Microsoft Corporation
          c:\windows\system32\netprofm.dll
nci       6.1.7600.16385      87.50 KB (89,600 bytes)
          7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\nci.dll
rasadhlp  6.1.7600.16385      16.00 KB (16,384 bytes)
          7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\rasadhlp.dll
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wbemcore  6.1.7600.16385      1.16 MB (1,220,096
bytes)    7/13/2009 6:48 PM   Microsoft Corporation
          c:\windows\system32\wbem\wbemcore.dll
esscli    6.1.7600.16385      430.00 KB (440,320
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\esscli.dll
repdrvfs  6.1.7600.16385      441.00 KB (451,584
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\repdrvfs.dll
wmiprvsd  6.1.7600.16385      732.50 KB (750,080
bytes)    7/13/2009 6:48 PM   Microsoft Corporation
          c:\windows\system32\wbem\wmiprvsd.dll
ncobjapi  6.1.7600.16385      67.50 KB (69,120 bytes)
          7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\ncobjapi.dll
wbemess   6.1.7600.16385      494.00 KB (505,856
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\wbemess.dll
ncprov    6.1.7600.16385      76.50 KB (78,336 bytes)
          7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\ncprov.dll
npmproxy  6.1.7600.16385      31.00 KB (31,744 bytes)
          7/13/2009 7:12 PM   Microsoft Corporation
          c:\windows\system32\npmproxy.dll
certprop  6.1.7600.16385      78.50 KB (80,384 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\certprop.dll
winscard  6.1.7600.16385      212.50 KB (217,600
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\winscard.dll
sessenv   6.1.7600.16385      102.50 KB (104,960
bytes)    7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\sessenv.dll
wuaueng   7.3.7600.16385      2.31 MB (2,418,176
bytes)    7/13/2009 7:36 PM   Microsoft Corporation
          c:\windows\system32\wuaueng.dll
esent     6.1.7600.16385      2.45 MB (2,565,120
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\esent.dll
winspool  6.1.7600.16385      431.50 KB (441,856
bytes)    7/13/2009 7:39 PM   Microsoft Corporation
          c:\windows\system32\winspool.drv
winhttp   6.1.7600.16385      428.50 KB (438,784
bytes)    7/13/2009 7:11 PM   Microsoft Corporation
          c:\windows\system32\winhttp.dll
webio     6.1.7600.16385      385.50 KB (394,752
bytes)    7/13/2009 7:11 PM   Microsoft Corporation
          c:\windows\system32\webio.dll
cabinet   6.1.7600.16385      92.00 KB (94,208 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\cabinet.dll
mspatcha  6.1.7600.16385      45.50 KB (46,592 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\mspatcha.dll
psapi     6.1.7600.16385      9.00 KB (9,216 bytes)
          7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\psapi.dll
wer       6.1.7600.16385      473.00 KB (484,352
bytes)    7/13/2009 6:41 PM   Microsoft Corporation
          c:\windows\system32\wer.dll
```

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es        2001.12.8530.16385  393.50 KB (402,944
bytes)    7/13/2009 7:00 PM   Microsoft Corporation
          c:\windows\system32\es.dll
aelupsvc  6.1.7600.16385      70.50 KB (72,192 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\aelupsvc.dll
nsisvc    6.1.7600.16385      25.00 KB (25,600 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\nsisvc.dll
uxsms     6.1.7600.16385      38.00 KB (38,912 bytes)
          7/13/2009 6:37 PM   Microsoft Corporation
          c:\windows\system32\uxsms.dll
trkwks    6.1.7600.16385      117.00 KB (119,808
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\trkwks.dll
netman    6.1.7600.16385      352.00 KB (360,448
bytes)    7/13/2009 7:08 PM   Microsoft Corporation
          c:\windows\system32\netman.dll
netshell  6.1.7600.16385      2.53 MB (2,651,136
bytes)    7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\netshell.dll
rasdlg    6.1.7600.16385      840.50 KB (860,672
bytes)    7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\rasdlg.dll
mprapi    6.1.7600.16385      215.50 KB (220,672
bytes)    7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\mprapi.dll
rasapi32  6.1.7600.16385      375.50 KB (384,512
bytes)    7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\rasapi32.dll
rasman    6.1.7600.16385      98.00 KB (100,352
bytes)    7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\rasman.dll
netcfgx   6.1.7600.16385      505.00 KB (517,120
bytes)    7/13/2009 7:08 PM   Microsoft Corporation
          c:\windows\system32\netcfgx.dll
hnetcfg   6.1.7600.16385      414.50 KB (424,448
bytes)    7/13/2009 7:08 PM   Microsoft Corporation
          c:\windows\system32\hnetcfg.dll
umrdp     6.1.7600.16385      190.50 KB (195,072
bytes)    7/13/2009 7:18 PM   Microsoft Corporation
          c:\windows\system32\umrdp.dll
umb       6.1.7600.16385      58.50 KB (59,904 bytes)
          7/13/2009 6:35 PM   Microsoft Corporation
          c:\windows\system32\umb.dll
printui   6.1.7600.16385      1.00 MB (1,049,600
bytes)    7/13/2009 7:40 PM   Microsoft Corporation
          c:\windows\system32\printui.dll
puiapi    6.1.7600.16385      190.00 KB (194,560
bytes)    7/13/2009 7:40 PM   Microsoft Corporation
          c:\windows\system32\puiapi.dll
dnsrslvr  6.1.7600.16385      178.00 KB (182,272
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\dnsrslvr.dll
dnsext    6.1.7600.16385      8.00 KB (8,192 bytes)
          7/13/2009 7:12 PM   Microsoft Corporation
          c:\windows\system32\dnsext.dll
wkssvc    6.1.7600.16385      116.00 KB (118,784
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\wkssvc.dll
```

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cryptsvc  6.1.7600.16385      171.00 KB (175,104
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\cryptsvc.dll
nlasvc    6.1.7600.16385      295.00 KB (302,080
bytes)    7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\nlasvc.dll
ncsi      6.1.7600.16385      204.50 KB (209,408
bytes)    7/13/2009 7:08 PM   Microsoft Corporation
          c:\windows\system32\ncsi.dll
ssdpapi   6.1.7600.16385      50.00 KB (51,200 bytes)
          7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\ssdpapi.dll
wsmsvc    6.1.7600.16385      1.93 MB (2,018,816
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\wsmsvc.dll
httpapi   6.1.7600.16385      44.00 KB (45,056 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\httpapi.dll
wevtfwd   6.1.7600.16385      114.00 KB (116,736
bytes)    7/13/2009 6:46 PM   Microsoft Corporation
          c:\windows\system32\wevtfwd.dll
bfe       6.1.7600.16385      687.00 KB (703,488
bytes)    7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\bfe.dll
mpssvc    6.1.7600.16385      805.50 KB (824,832
bytes)    7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\mpssvc.dll
wfapigp   6.1.7600.16385      22.00 KB (22,528 bytes)
          7/13/2009 7:08 PM   Microsoft Corporation
          c:\windows\system32\wfapigp.dll
dps       6.1.7600.16385      159.00 KB (162,816
bytes)    7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\dps.dll
taskschd  6.1.7600.16385      1.11 MB (1,168,896
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\taskschd.dll
wdi       6.1.7600.16385      88.50 KB (90,624 bytes)
          7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\wdi.dll
radardt   6.1.7600.16385      95.50 KB (97,792 bytes)
          7/13/2009 6:32 PM   Microsoft Corporation
          c:\windows\system32\radardt.dll
wdiasqmmodule       6.1.7600.16385      35.00 KB
(35,840 bytes)      7/13/2009 6:40 PM   Microsoft
Corporation
          c:\windows\system32\wdiasqmmodule.dll
spoolsv   6.1.7600.16385      545.00 KB (558,080
bytes)    7/13/2009 7:39 PM   Microsoft Corporation
          c:\windows\system32\spoolsv.exe
powrprof  6.1.7600.16385      163.50 KB (167,424
bytes)    7/13/2009 6:27 PM   Microsoft Corporation
          c:\windows\system32\powrprof.dll
localspl  6.1.7600.16385      932.50 KB (954,880
bytes)    7/13/2009 7:40 PM   Microsoft Corporation
          c:\windows\system32\localspl.dll
spoolss   6.1.7600.16385      56.50 KB (57,856 bytes)
          7/13/2009 7:39 PM   Microsoft Corporation
          c:\windows\system32\spoolss.dll
printisolationproxy 6.1.7600.16385      47.00 KB
(48,128 bytes)      7/13/2009 7:39 PM   Microsoft
Corporation
          c:\windows\system32\printisolationproxy.dll

tcpmon    6.1.7600.16385      190.50 KB (195,072
bytes)    7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\tcpmon.dll
snmpapi   6.1.7600.16385      27.00 KB (27,648 bytes)
          7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\snmpapi.dll
wsnmp32   6.1.7600.16385      65.50 KB (67,072 bytes)
          7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\wsnmp32.dll
msxml6    6.30.7600.16385     1.91 MB (1,999,360
bytes)    7/13/2009 7:43 PM   Microsoft Corporation
          c:\windows\system32\msxml6.dll
usbmon    6.1.7600.16385      44.00 KB (45,056 bytes)
          7/13/2009 7:39 PM   Microsoft Corporation
          c:\windows\system32\usbmon.dll
wls0wndh  6.1.7600.16385      10.50 KB (10,752 bytes)
          7/13/2009 6:52 PM   Microsoft Corporation
          c:\windows\system32\wls0wndh.dll
wsdmon    6.1.7600.16385      219.50 KB (224,768
bytes)    7/13/2009 7:39 PM   Microsoft Corporation
          c:\windows\system32\wsdmon.dll
wsdapi    6.1.7600.16385      571.50 KB (585,216
bytes)    7/13/2009 6:36 PM   Microsoft Corporation
          c:\windows\system32\wsdapi.dll
webservices         6.1.7600.16385      1.11 MB
(1,159,168 bytes)   7/13/2009 7:01 PM   Microsoft
Corporation
          c:\windows\system32\webservices.dll
fundisc   6.1.7600.16385      190.00 KB (194,560
bytes)    7/13/2009 6:35 PM   Microsoft Corporation
          c:\windows\system32\fundisc.dll
fdpnp     6.1.7600.16385      50.00 KB (51,200 bytes)
          7/13/2009 6:35 PM   Microsoft Corporation
          c:\windows\system32\fdpnp.dll
winprint  6.1.7600.16385      38.50 KB (39,424 bytes)
          7/13/2009 7:39 PM   Microsoft Corporation
          c:\windows\system32\spool\prtprocs\x64\winp
rint.dll
win32spl  6.1.7600.16385      728.50 KB (745,984
bytes)    7/13/2009 7:40 PM   Microsoft Corporation
          c:\windows\system32\win32spl.dll
cscapi    6.1.7600.16385      45.00 KB (46,080 bytes)
          7/13/2009 6:24 PM   Microsoft Corporation
          c:\windows\system32\cscapi.dll
spfileq   6.1.7600.16385      95.50 KB (97,792 bytes)
          7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\spfileq.dll
hpzppwn7  0.3.7071.0          99.00 KB (101,376
bytes)    8/27/2010 11:29 AM  Hewlett-Packard
Corporation
          c:\windows\system32\spool\prtprocs\x64\hpzp
pwn7.dll
sfc       6.1.7600.16385      3.00 KB (3,072 bytes)
          7/13/2009 6:25 PM   Microsoft Corporation
          c:\windows\system32\sfc.dll
sfc_os    6.1.7600.16385      44.00 KB (45,056 bytes)
          7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\sfc_os.dll
mscms     6.1.7600.16385      611.00 KB (625,664
bytes)    7/13/2009 6:39 PM   Microsoft Corporation
          c:\windows\system32\mscms.dll
icm32     6.1.7600.16385      245.00 KB (250,880
bytes)    7/13/2009 6:38 PM   Microsoft Corporation
          c:\windows\system32\icm32.dll
unidrvui  0.3.7600.16385      863.50 KB (884,224
bytes)    7/13/2009 8:18 PM   Microsoft Corporation
          c:\windows\system32\spool\drivers\x64\3\uni
drvui.dll
mxdwdui   0.3.7600.16385      215.50 KB (220,672
bytes)    7/13/2009 8:19 PM   Microsoft Corporation
          c:\windows\system32\spool\drivers\x64\3\mxd
wdui.dll
fxsui     6.1.7600.16385      156.50 KB (160,256
bytes)    7/13/2009 7:36 PM   Microsoft Corporation
          c:\windows\system32\spool\drivers\x64\3\fxs
ui.dll
fxswzrd   6.1.7600.16385      153.00 KB (156,672
bytes)    7/13/2009 7:36 PM   Microsoft Corporation
          c:\windows\system32\spool\drivers\x64\3\fxs
wzrd.dll
tapi32    6.1.7600.16385      243.00 KB (248,832
bytes)    7/13/2009 7:41 PM   Microsoft Corporation
          c:\windows\system32\tapi32.dll
fxstiff   6.1.7600.16385      424.00 KB (434,176
bytes)    7/13/2009 7:35 PM   Microsoft Corporation
          c:\windows\system32\spool\drivers\x64\3\fxs
tiff.dll
fxsres    6.1.7600.16385      6.26 MB (6,565,888
bytes)    7/13/2009 8:19 PM   Microsoft Corporation
          c:\windows\system32\spool\drivers\x64\3\fxs
res.dll
fxsapi    6.1.7600.16385      608.50 KB (623,104
bytes)    7/13/2009 7:35 PM   Microsoft Corporation
          c:\windows\system32\spool\drivers\x64\3\fxs
api.dll
fxsdrv    0.3.7600.16385      371.00 KB (379,904
bytes)    7/13/2009 7:36 PM   Microsoft Corporation
          c:\windows\system32\spool\drivers\x64\3\fxs
drv.dll
vmicsvc   6.1.7600.16385      236.50 KB (242,176
bytes)    7/13/2009 6:43 PM   Microsoft Corporation
          c:\windows\system32\vmicsvc.exe
activeds  6.1.7600.16385      261.50 KB (267,776
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\activeds.dll
adsldpc   6.1.7600.16385      231.00 KB (236,544
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\adsldpc.dll
vmbuspipe 6.1.7600.16385      15.00 KB (15,360 bytes)
          7/13/2009 6:42 PM   Microsoft Corporation
          c:\windows\system32\vmbuspipe.dll
apphostsvc          7.5.7600.16385      64.00 KB
(65,536 bytes)      7/13/2009 7:27 PM   Microsoft
Corporation
          c:\windows\system32\inetsrv\apphostsvc.dll

iisutil   7.5.7600.16385      274.50 KB (281,088
bytes)    7/13/2009 7:27 PM   Microsoft Corporation
          c:\windows\system32\inetsrv\iisutil.dll
```

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nativerd  7.5.7600.16385      458.50 KB (469,504
bytes)    7/13/2009 7:27 PM   Microsoft Corporation
          c:\windows\system32\inetsrv\nativerd.dll

iisres    7.5.7600.16385      215.00 KB (220,160
bytes)    7/13/2009 7:26 PM   Microsoft Corporation
          c:\windows\system32\inetsrv\iisres.dll
mlang     6.1.7600.16385      221.50 KB (226,816
bytes)    7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\mlang.dll
inetinfo  7.5.7600.16385      15.00 KB (15,360 bytes)
          7/13/2009 7:27 PM   Microsoft Corporation
          c:\windows\system32\inetsrv\inetinfo.exe

rpcref    7.5.7600.16385      9.00 KB (9,216 bytes)
          7/13/2009 7:26 PM   Microsoft Corporation
          c:\windows\system32\inetsrv\rpcref.dll
iisrtl    7.5.7600.16385      187.00 KB (191,488
bytes)    7/13/2009 7:26 PM   Microsoft Corporation
          c:\windows\system32\iisrtl.dll
iisadmin  7.5.7600.16385      23.50 KB (24,064 bytes)
          7/13/2009 7:26 PM   Microsoft Corporation
          c:\windows\system32\inetsrv\iisadmin.dll

coadmin   7.5.7600.16385      81.50 KB (83,456 bytes)
          7/13/2009 7:26 PM   Microsoft Corporation
          c:\windows\system32\inetsrv\coadmin.dll
admwprox  7.5.7600.16385      54.00 KB (55,296 bytes)
          7/13/2009 7:26 PM   Microsoft Corporation
          c:\windows\system32\admwprox.dll
iiscfg    7.5.7600.16385      1.01 MB (1,057,792
bytes)    7/13/2009 7:26 PM   Microsoft Corporation
          c:\windows\system32\inetsrv\iiscfg.dll
abocomp   7.5.7600.16385      215.00 KB (220,160
bytes)    7/13/2009 7:27 PM   Microsoft Corporation
          c:\windows\system32\inetsrv\abocomp.dll
wsock32   6.1.7600.16385      18.00 KB (18,432 bytes)
          7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\wsock32.dll
metadata  7.5.7600.16385      277.00 KB (283,648
bytes)    7/13/2009 7:26 PM   Microsoft Corporation
          c:\windows\system32\inetsrv\metadata.dll

msxml3    8.110.7600.16385    1.79 MB (1,876,992
bytes)    7/13/2009 7:42 PM   Microsoft Corporation
          c:\windows\system32\msxml3.dll
svcext    7.5.7600.16385      16.50 KB (16,896 bytes)
          7/13/2009 7:26 PM   Microsoft Corporation
          c:\windows\system32\inetsrv\svcext.dll
wamreg    7.5.7600.16385      36.50 KB (37,376 bytes)
          7/13/2009 7:26 PM   Microsoft Corporation
          c:\windows\system32\inetsrv\wamreg.dll
smsvchost 3.0.4506.4926       113.83 KB (116,560
bytes)    7/13/2009 8:01 PM   Microsoft Corporation
          c:\windows\microsoft.net\framework64\v3.0\w
indows communication foundation\smsvchost.exe
mscoree   2.0.50727.4927      393.81 KB (403,264
bytes)    7/13/2009 3:37 PM   Microsoft Corporation
          c:\windows\system32\mscoree.dll
mscorwks  2.0.50727.4927      9.59 MB (10,059,072
bytes)    7/13/2009 3:37 PM   Microsoft Corporation
```

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          c:\windows\microsoft.net\framework64\v2.0.5
0727\mscorwks.dll
msvcr80   8.0.50727.4927      783.81 KB (802,624
bytes)    7/13/2009 3:37 PM   Microsoft Corporation
          c:\windows\winsxs\amd64_microsoft.vc80.crt_
1fc8b3b9a1e18e3b_8.0.50727.4927_none_88dce9872fb18caf
\msvcr80.dll
mscorlib.ni         2.0.50727.4927      14.85 MB
(15,566,848 bytes)  7/14/2009 12:08 AM  Microsoft
Corporation
          c:\windows\assembly\nativeimages_v2.0.50727
_64\mscorlib\9a017aa8d51322f18a40f414fa35872d\mscorli
b.ni.dll
mscorjit  2.0.50727.4927      1.50 MB (1,576,768
bytes)    7/13/2009 3:37 PM   Microsoft Corporation
          c:\windows\microsoft.net\framework64\v2.0.5
0727\mscorjit.dll
System.ni 2.0.50727.4927      10.11 MB (10,597,376
bytes)    7/14/2009 12:08 AM  Microsoft Corporation
          c:\windows\assembly\nativeimages_v2.0.50727
_64\system\247913fa7ae6fcf04ea33d28d24ab611\system.ni
.dll
System.ServiceProcess.ni      2.0.50727.4927
          288.50 KB (295,424 bytes)     7/14/2009
12:10 AM  Microsoft Corporation
          c:\windows\assembly\nativeimages_v2.0.50727
_64\system.serviceproce#\cdbb9ec9236094dc4ee8550f1102
6618\system.serviceprocess.ni.dll
System.ServiceModel.ni        3.0.4506.4926
          22.71 MB (23,812,096 bytes)   6/11/2010
4:37 PM   Microsoft Corporation
          c:\windows\assembly\nativeimages_v2.0.50727
_64\system.servicemodel\0270a4b611f4102a46c03a3703a19
871\system.servicemodel.ni.dll
SMDiagnostics.ni    3.0.4506.4926       341.00 KB
(349,184 bytes)     6/10/2010 3:46 PM   Microsoft
Corporation
          c:\windows\assembly\nativeimages_v2.0.50727
_64\smdiagnostics\9582e0909da23bef64014e4eacd0c8d8\sm
diagnostics.ni.dll
System.Configuration.ni       2.0.50727.4927
          1.25 MB (1,308,160 bytes)     7/14/2009
12:08 AM  Microsoft Corporation
          c:\windows\assembly\nativeimages_v2.0.50727
_64\system.configuration\907b2b3dae591e0484acfc0ea63e
8caa\system.configuration.ni.dll
System.Xml.ni       2.0.50727.4927      6.63 MB
(6,948,864 bytes)   7/14/2009 12:09 AM  Microsoft
Corporation
          c:\windows\assembly\nativeimages_v2.0.50727
_64\system.xml\1fb1b14199d6aec70df1a0626a3ae5f2\syste
m.xml.ni.dll
System.IdentityModel.ni       3.0.4506.4926
          1.37 MB (1,433,088 bytes)     6/11/2010
4:37 PM   Microsoft Corporation
          c:\windows\assembly\nativeimages_v2.0.50727
_64\system.identitymodel\4720ef897a36c2ce494b6c3d07fc
e065\system.identitymodel.ni.dll
wbhstipm  7.5.7600.16385      28.00 KB (28,672 bytes)
          7/13/2009 7:26 PM   Microsoft Corporation
          c:\windows\system32\inetsrv\wbhstipm.dll
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System.Runtime.Serialization.ni         3.0.4506.4926
          2.93 MB (3,073,536 bytes)     6/10/2010
3:46 PM   Microsoft Corporation
          c:\windows\assembly\nativeimages_v2.0.50727
_64\system.runtime.seri#\12aaff696a0c54773664b4c5407d
eaa2\system.runtime.serialization.ni.dll
taskhost  6.1.7600.16385      67.50 KB (69,120 bytes)
          7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\taskhost.exe
msctfmonitor        6.1.7600.16385      27.50 KB
(28,160 bytes)      7/13/2009 6:39 PM   Microsoft
Corporation
          c:\windows\system32\msctfmonitor.dll
msutb     6.1.7600.16385      230.00 KB (235,520
bytes)    7/13/2009 6:39 PM   Microsoft Corporation
          c:\windows\system32\msutb.dll
dimsjob   6.1.7600.16385      39.50 KB (40,448 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\dimsjob.dll
dwm       6.1.7600.16385      117.50 KB (120,320
bytes)    7/13/2009 6:37 PM   Microsoft Corporation
          c:\windows\system32\dwm.exe
dwmredir  6.1.7600.16385      125.50 KB (128,512
bytes)    7/13/2009 6:37 PM   Microsoft Corporation
          c:\windows\system32\dwmredir.dll
dwmcore   6.1.7600.16385      1.56 MB (1,634,304
bytes)    7/13/2009 6:39 PM   Microsoft Corporation
          c:\windows\system32\dwmcore.dll
windowscodecs       6.1.7600.16385      1.13 MB
(1,189,888 bytes)   7/13/2009 6:42 PM   Microsoft
Corporation
          c:\windows\system32\windowscodecs.dll
d3d10_1   6.1.7600.16385      192.50 KB (197,120
bytes)    7/13/2009 6:41 PM   Microsoft Corporation
          c:\windows\system32\d3d10_1.dll
d3d10_1core         6.1.7600.16385      311.50 KB
(318,976 bytes)     7/13/2009 6:41 PM   Microsoft
Corporation
          c:\windows\system32\d3d10_1core.dll
dxgi      6.1.7600.16385      643.00 KB (658,432
bytes)    7/13/2009 6:41 PM   Microsoft Corporation
          c:\windows\system32\dxgi.dll
dwmapi    6.1.7600.16385      80.50 KB (82,432 bytes)
          7/13/2009 6:37 PM   Microsoft Corporation
          c:\windows\system32\dwmapi.dll
explorer  6.1.7600.16385      2.74 MB (2,868,224
bytes)    7/13/2009 6:56 PM   Microsoft Corporation
          c:\windows\explorer.exe
explorerframe       6.1.7600.16385      1.78 MB
(1,863,680 bytes)   7/13/2009 6:57 PM   Microsoft
Corporation
          c:\windows\system32\explorerframe.dll
duser     6.1.7600.16385      254.50 KB (260,608
bytes)    7/13/2009 6:39 PM   Microsoft Corporation
          c:\windows\system32\duser.dll
dui70     6.1.7600.16385      954.00 KB (976,896
bytes)    7/13/2009 6:41 PM   Microsoft Corporation
          c:\windows\system32\dui70.dll
gdiplus   6.1.7600.16385      2.06 MB (2,165,248
bytes)    7/13/2009 6:40 PM   Microsoft Corporation
          c:\windows\winsxs\amd64_microsoft.windows.g
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diplus_6595b64144ccf1df_1.1.7600.16385_none_2b4f45e87
195fcc4\gdiplus.dll
ehstorshell         6.1.7600.16385      198.50 KB
(203,264 bytes)     7/13/2009 7:00 PM   Microsoft
Corporation
          c:\windows\system32\ehstorshell.dll
ntshrui   6.1.7600.16385      498.00 KB (509,952
bytes)    7/13/2009 6:57 PM   Microsoft Corporation
          c:\windows\system32\ntshrui.dll
iconcodecservice    6.1.7600.16385      14.00 KB
(14,336 bytes)      7/13/2009 6:37 PM   Microsoft
Corporation
          c:\windows\system32\iconcodecservice.dll

sndvolsso 6.1.7600.16385      220.00 KB (225,280
bytes)    7/13/2009 7:19 PM   Microsoft Corporation
          c:\windows\system32\sndvolsso.dll
hid       6.1.7600.16385      29.50 KB (30,208 bytes)
          7/13/2009 7:06 PM   Microsoft Corporation
          c:\windows\system32\hid.dll
mmdevapi  6.1.7600.16385      277.50 KB (284,160
bytes)    7/13/2009 7:18 PM   Microsoft Corporation
          c:\windows\system32\mmdevapi.dll
timedate  6.1.7600.16385      503.00 KB (515,072
bytes)    7/13/2009 6:56 PM   Microsoft Corporation
          c:\windows\system32\timedate.cpl
winbrand  6.1.7600.16385      16.00 KB (16,384 bytes)
          7/13/2009 6:30 PM   Microsoft Corporation
          c:\windows\system32\winbrand.dll
shdocvw   6.1.7600.16385      191.50 KB (196,096
bytes)    7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\shdocvw.dll
shacct    6.1.7600.16385      132.00 KB (135,168
bytes)    7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\shacct.dll
linkinfo  6.1.7600.16385      29.00 KB (29,696 bytes)
          7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\linkinfo.dll
msls31    3.10.349.0          217.00 KB (222,208
bytes)    7/13/2009 6:39 PM   Microsoft Corporation
          c:\windows\system32\msls31.dll
authui    6.1.7600.16385      1.84 MB (1,926,144
bytes)    7/13/2009 6:58 PM   Microsoft Corporation
          c:\windows\system32\authui.dll
cryptui   6.1.7600.16385      1.02 MB (1,065,984
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\cryptui.dll
winmm     6.1.7600.16385      212.50 KB (217,600
bytes)    7/13/2009 7:18 PM   Microsoft Corporation
          c:\windows\system32\winmm.dll
stobject  6.1.7600.16385      250.00 KB (256,000
bytes)    7/13/2009 6:56 PM   Microsoft Corporation
          c:\windows\system32\stobject.dll
batmeter  6.1.7600.16385      730.50 KB (748,032
bytes)    7/13/2009 6:56 PM   Microsoft Corporation
          c:\windows\system32\batmeter.dll
prnfldr   6.1.7600.16385      407.00 KB (416,768
bytes)    7/13/2009 7:40 PM   Microsoft Corporation
          c:\windows\system32\prnfldr.dll
dxp       6.1.7600.16385      449.00 KB (459,776
bytes)    7/13/2009 7:21 PM   Microsoft Corporation
          c:\windows\system32\dxp.dll
urlmon    8.0.7600.16385      1.42 MB (1,492,480
bytes)    7/13/2009 7:01 PM   Microsoft Corporation
          c:\windows\system32\urlmon.dll
iertutil  8.0.7600.16385      2.33 MB (2,440,704
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\iertutil.dll
syncreg   2007.94.7600.16385  72.00 KB (73,728 bytes)
          7/13/2009 7:22 PM   Microsoft Corporation
          c:\windows\system32\syncreg.dll
actioncenter        6.1.7600.16385      762.50 KB
(780,800 bytes)     7/13/2009 6:56 PM   Microsoft
Corporation
          c:\windows\system32\actioncenter.dll
imapi2    6.1.7600.16385      493.50 KB (505,344
bytes)    7/13/2009 7:01 PM   Microsoft Corporation
          c:\windows\system32\imapi2.dll
pnidui    6.1.7600.16385      1.72 MB (1,807,872
bytes)    7/13/2009 7:08 PM   Microsoft Corporation
          c:\windows\system32\pnidui.dll
qutil     6.1.7600.16385      105.00 KB (107,520
bytes)    7/13/2009 7:07 PM   Microsoft Corporation
          c:\windows\system32\qutil.dll
hgcpl     6.1.7600.16385      324.50 KB (332,288
bytes)    7/13/2009 6:57 PM   Microsoft Corporation
          c:\windows\system32\hgcpl.dll
qagent    6.1.7600.16385      259.00 KB (265,216
bytes)    7/13/2009 7:07 PM   Microsoft Corporation
          c:\windows\system32\qagent.dll
werconcpl 6.1.7600.16385      1.22 MB (1,280,512
bytes)    7/13/2009 6:41 PM   Microsoft Corporation
          c:\windows\system32\werconcpl.dll
framedynos          6.1.7600.16385      288.50 KB
(295,424 bytes)     7/13/2009 6:47 PM   Microsoft
Corporation
          c:\windows\system32\framedynos.dll
wercplsupport       6.1.7600.16385      82.50 KB
(84,480 bytes)      7/13/2009 6:40 PM   Microsoft
Corporation
          c:\windows\system32\wercplsupport.dll
hcproviders         6.1.7600.16385      30.50 KB
(31,232 bytes)      7/13/2009 6:56 PM   Microsoft
Corporation
          c:\windows\system32\hcproviders.dll
ieproxy   8.0.7600.16385      438.00 KB (448,512
bytes)    7/13/2009 6:58 PM   Microsoft Corporation
          c:\program files\internet
explorer\ieproxy.dll
drprov    6.1.7600.16385      24.00 KB (24,576 bytes)
          7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\drprov.dll
ntlanman  6.1.7600.16385      126.50 KB (129,536
bytes)    7/13/2009 6:48 PM   Microsoft Corporation
          c:\windows\system32\ntlanman.dll
msftedit  5.41.21.2509        781.00 KB (799,744
bytes)    7/13/2009 6:39 PM   Microsoft Corporation
          c:\windows\system32\msftedit.dll
searchfolder        6.1.7600.16385      845.00 KB
(865,280 bytes)     7/13/2009 6:59 PM   Microsoft
Corporation
          c:\windows\system32\searchfolder.dll
networkexplorer     6.1.7600.16385      1.60 MB
(1,672,704 bytes)   7/13/2009 7:08 PM   Microsoft
Corporation
          c:\windows\system32\networkexplorer.dll
actxprxy  6.1.7600.16385      936.50 KB (958,976
bytes)    7/13/2009 7:41 PM   Microsoft Corporation
          c:\windows\system32\actxprxy.dll
ieframe   8.0.7600.16385      11.78 MB (12,352,000
bytes)    7/13/2009 7:16 PM   Microsoft Corporation
          c:\windows\system32\ieframe.dll
oleacc    7.0.0.0   324.00 KB (331,776 bytes)
          7/13/2009 6:39 PM   Microsoft Corporation
          c:\windows\system32\oleacc.dll
wininet   8.0.7600.16385      1.14 MB (1,193,472
bytes)    7/13/2009 7:00 PM   Microsoft Corporation
          c:\windows\system32\wininet.dll
normaliz  6.1.7600.16385      2.50 KB (2,560 bytes)
          7/13/2009 6:26 PM   Microsoft Corporation
          c:\windows\system32\normaliz.dll
regsvc    6.1.7600.16385      155.50 KB (159,232
bytes)    7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\regsvc.dll
iisw3adm  7.5.7600.16385      440.50 KB (451,072
bytes)    7/13/2009 7:27 PM   Microsoft Corporation
          c:\windows\system32\inetsrv\iisw3adm.dll

w3tp      7.5.7600.16385      19.50 KB (19,968 bytes)
          7/13/2009 7:27 PM   Microsoft Corporation
          c:\windows\system32\inetsrv\w3tp.dll
termsrv   6.1.7600.16385      690.00 KB (706,560
bytes)    7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\termsrv.dll
icaapi    6.1.7600.16385      22.00 KB (22,528 bytes)
          7/13/2009 7:16 PM   Microsoft Corporation
          c:\windows\system32\icaapi.dll
regapi    6.1.7600.16385      92.50 KB (94,720 bytes)
          7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\regapi.dll
tlscsp    6.1.7600.16385      72.00 KB (73,728 bytes)
          7/13/2009 7:16 PM   Microsoft Corporation
          c:\windows\system32\tlscsp.dll
rdpcorekmts         6.1.7600.16385      146.00 KB
(149,504 bytes)     7/13/2009 7:17 PM   Microsoft
Corporation
          c:\windows\system32\rdpcorekmts.dll
rdpwsx    6.1.7600.16385      74.50 KB (76,288 bytes)
          7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\rdpwsx.dll
ipsecsvc  6.1.7600.16385      488.50 KB (500,224
bytes)    7/13/2009 7:08 PM   Microsoft Corporation
          c:\windows\system32\ipsecsvc.dll
fwremotesvr         6.1.7600.16385      74.00 KB
(75,776 bytes)      7/13/2009 7:08 PM   Microsoft
Corporation
          c:\windows\system32\fwremotesvr.dll
logonui   6.1.7600.16385      27.00 KB (27,648 bytes)
          7/13/2009 6:52 PM   Microsoft Corporation
          c:\windows\system32\logonui.exe
vaultcredprovider   6.1.7600.16385      78.50 KB
(80,384 bytes)      7/13/2009 6:53 PM   Microsoft
Corporation
          c:\windows\system32\vaultcredprovider.dll
```

```
smartcardcredentialprovider   6.1.7600.16385
          185.50 KB (189,952 bytes)     7/13/2009
6:50 PM   Microsoft Corporation
          c:\windows\system32\smartcardcredentialprov
ider.dll
certcredprovider    6.1.7600.16385      126.00 KB
(129,024 bytes)     7/13/2009 6:49 PM   Microsoft
Corporation
          c:\windows\system32\certcredprovider.dll

rasplap   6.1.7600.16385      396.00 KB (405,504
bytes)    7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\rasplap.dll
rdpclip   6.1.7600.16385      204.50 KB (209,408
bytes)    7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\rdpclip.exe
dllhost   6.1.7600.16385      9.50 KB (9,728 bytes)
          7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\dllhost.exe
comsvcs   2001.12.8530.16385  1.66 MB (1,735,680
bytes)    7/13/2009 7:01 PM   Microsoft Corporation
          c:\windows\system32\comsvcs.dll
txflog    2001.12.8530.16385  116.50 KB (119,296
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\txflog.dll
xolehlp   2001.12.8530.16385  58.00 KB (59,392 bytes)
          7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\xolehlp.dll
msdtcprx  2001.12.8530.16385  728.00 KB (745,472
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\msdtcprx.dll
mtxclu    2001.12.8530.16385  364.00 KB (372,736
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\mtxclu.dll
catsrv    2001.12.8530.16385  461.50 KB (472,576
bytes)    7/13/2009 7:00 PM   Microsoft Corporation
          c:\windows\system32\catsrv.dll
mfcsubs   2001.12.8530.16385  33.00 KB (33,792 bytes)
          7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\mfcsubs.dll
catsrvps  2001.12.8530.16385  55.00 KB (56,320 bytes)
          7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\catsrvps.dll
catsrvut  2001.12.8530.16385  513.50 KB (525,824
bytes)    7/13/2009 7:00 PM   Microsoft Corporation
          c:\windows\system32\catsrvut.dll
msdtc     2001.12.8530.16385  138.50 KB (141,824
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\msdtc.exe
msdtctm   2001.12.8530.16385  1.44 MB (1,509,888
bytes)    7/13/2009 7:00 PM   Microsoft Corporation
          c:\windows\system32\msdtctm.dll
msdtclog  2001.12.8530.16385  122.00 KB (124,928
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\msdtclog.dll
comres    2001.12.8530.16385  1.24 MB (1,297,408
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\comres.dll
msdtcvsp1res        2001.12.8530.16385  21.00 KB
(21,504 bytes)      7/13/2009 6:59 PM   Microsoft
Corporation
          c:\windows\system32\msdtcvsp1res.dll
```

```
mtxoci    2001.12.8530.16385  153.00 KB (156,672
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\mtxoci.dll
printisolationhost  6.1.7600.16385      18.50 KB
(18,944 bytes)      7/13/2009 7:39 PM   Microsoft
Corporation
          c:\windows\system32\printisolationhost.exe

hpzuiwn7  0.3.7071.0          2.37 MB (2,484,736
bytes)    7/13/2009 8:19 PM   Hewlett-Packard
Corporation
          c:\windows\system32\spool\drivers\x64\3\hpz
uiwn7.dll
compstui  6.1.7600.16385      295.00 KB (302,080
bytes)    7/13/2009 7:40 PM   Microsoft Corporation
          c:\windows\system32\compstui.dll
msimg32   6.1.7600.16385      8.00 KB (8,192 bytes)
          7/13/2009 6:38 PM   Microsoft Corporation
          c:\windows\system32\msimg32.dll
regedit   6.1.7600.16385      417.00 KB (427,008
bytes)    7/13/2009 6:27 PM   Microsoft Corporation
          c:\windows\regedit.exe
comdlg32  6.1.7600.16385      581.50 KB (595,456
bytes)    7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\comdlg32.dll
aclui     6.1.7600.16385      150.50 KB (154,112
bytes)    7/13/2009 6:57 PM   Microsoft Corporation
          c:\windows\system32\aclui.dll
ulib      6.1.7600.16385      143.50 KB (146,944
bytes)    7/13/2009 6:25 PM   Microsoft Corporation
          c:\windows\system32\ulib.dll
clb       6.1.7600.16385      17.00 KB (17,408 bytes)
          7/13/2009 6:25 PM   Microsoft Corporation
          c:\windows\system32\clb.dll
msinfo32  6.1.7600.16385      370.00 KB (378,880
bytes)    7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\msinfo32.exe
mfc42u    6.6.8063.0          1.29 MB (1,357,312
bytes)    7/13/2009 7:35 PM   Microsoft Corporation
          c:\windows\system32\mfc42u.dll
odbc32    6.1.7600.16385      696.00 KB (712,704
bytes)    7/13/2009 7:29 PM   Microsoft Corporation
          c:\windows\system32\odbc32.dll
odbcint   6.1.7600.16385      224.00 KB (229,376
bytes)    7/13/2009 7:28 PM   Microsoft Corporation
          c:\windows\system32\odbcint.dll
structuredquery     7.0.7600.16385      472.50 KB
(483,840 bytes)     7/13/2009 7:29 PM   Microsoft
Corporation
          c:\windows\system32\structuredquery.dll
thumbcache          6.1.7600.16385      110.50 KB
(113,152 bytes)     7/13/2009 6:55 PM   Microsoft
Corporation
          c:\windows\system32\thumbcache.dll
ehstorapi 6.1.7600.16385      141.50 KB (144,896
bytes)    7/13/2009 7:00 PM   Microsoft Corporation
          c:\windows\system32\ehstorapi.dll
wmiprvse  6.1.7600.16385      360.00 KB (368,640
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\wmiprvse.exe
```

```
cimwin32  6.1.7600.16385      1.96 MB (2,055,168
bytes)    7/13/2009 6:48 PM   Microsoft Corporation
          c:\windows\system32\wbem\cimwin32.dll
security  6.1.7600.16385      5.00 KB (5,120 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\security.dll
browcli   6.1.7600.16385      57.00 KB (58,368 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\browcli.dll
schedcli  6.1.7600.16385      23.50 KB (24,064 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\schedcli.dll
wmi       6.1.7600.16385      5.00 KB (5,120 bytes)
          7/13/2009 7:41 PM   Microsoft Corporation
          c:\windows\system32\wmi.dll
ntevt     6.1.7600.16385      260.00 KB (266,240
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\ntevt.dll
provthrd  6.1.7600.16385      300.00 KB (307,200
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\provthrd.dll
msvcirt   7.0.7600.16385      76.50 KB (78,336 bytes)
          7/13/2009 6:18 PM   Microsoft Corporation
          c:\windows\system32\msvcirt.dll
wmiperfclass        6.1.7600.16385      133.00 KB
(136,192 bytes)     7/13/2009 6:31 PM   Microsoft
Corporation
          c:\windows\system32\wbem\wmiperfclass.dll

pdh       6.1.7600.16385      293.00 KB (300,032
bytes)    7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\pdh.dll

[Services]

Display Name        Name      State     Start Mode
          Service Type        Path      Error Control
          Start Name          Tag ID
Application Experience        AeLookupSvc
          Running   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    localSystem         0
Application Layer Gateway Service       ALG
          Stopped   Manual    Own Process
          c:\windows\system32\alg.exe   Normal    NT
AUTHORITY\LocalService        0
Application Host Helper Service         AppHostSvc
          Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k apphost
          Normal    LocalSystem         0
Application Identity          AppIDSvc  Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation          Normal    NT
Authority\LocalService        0
Application Information       Appinfo   Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         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 Endpoint Builder
          AudioEndpointBuilder          Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal    LocalSystem
          0
Windows Audio       AudioSrv  Stopped   Manual
          Share Process
          c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal    NT
AUTHORITY\LocalService        0
Base Filtering Engine         BFE       Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k
localservicenonetwork         Normal    NT
AUTHORITY\LocalService        0
Background Intelligent Transfer Service BITS
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Computer Browser    Browser   Stopped   Disabled
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Certificate Propagation       CertPropSvc
          Running   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Microsoft .NET Framework NGEN 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

Microsoft .NET Framework NGEN 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 Running
          Manual    Own Process
          c:\windows\system32\dllhost.exe
/processid:{02d4b3f1-fd88-11d1-960d-00805fc79235}
          Normal    LocalSystem         0
Cryptographic Services        CryptSvc  Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k
networkservice      Normal    NT
Authority\NetworkService      0
DCOM Server Process Launcher  DcomLaunch
          Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k
dcomlaunch          Normal    LocalSystem         0
```

```
Disk Defragmenter   defragsvc Stopped   Manual    Own
Process   c:\windows\system32\svchost.exe -k
defragsvc Normal    localSystem         0
DHCP Client         Dhcp      Running   Auto
          Share Process
          c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal    NT
Authority\LocalService        0
DNS Client          Dnscache  Running   Auto
          Share Process
          c:\windows\system32\svchost.exe -k
networkservice      Normal    NT
AUTHORITY\NetworkService      0
Wired AutoConfig    dot3svc   Stopped   Manual
          Share Process
          c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal    localSystem
          0
Diagnostic Policy Service     DPS       Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k
localservicenonetwork         Normal    NT
AUTHORITY\LocalService        0
Extensible Authentication Protocol      EapHost
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    localSystem         0
Encrypting File System (EFS)  EFS       Stopped
          Manual    Share Process
          c:\windows\system32\lsass.exe Normal
          LocalSystem         0
Windows Event Log   eventlog  Running   Auto
          Share Process
          c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal    NT
AUTHORITY\LocalService        0
COM+ Event System   EventSystem         Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k
localservice        Normal    NT
AUTHORITY\LocalService        0
Microsoft Fibre Channel Platform Registration Service
          FCRegSvc  Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal    NT
AUTHORITY\LocalService        0
Function Discovery Provider Host        fdPHost
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localservice        Normal    NT
AUTHORITY\LocalService        0
Function Discovery Resource Publication FDResPub
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation          Normal    NT
AUTHORITY\LocalService        0
Windows Font Cache Service    FontCache Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation          Normal    NT
AUTHORITY\LocalService        0
```

```
Windows Presentation Foundation Font Cache 3.0.0.0
          FontCache3.0.0.0    Stopped   Manual    Own
Process
          c:\windows\microsoft.net\framework64\v3.0\w
pf\presentationfontcache.exe  Normal    NT
Authority\LocalService        0
Group Policy Client gpsvc     Running   Auto
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Human Interface Device Access hidserv   Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal    LocalSystem
          0
Health Key and Certificate Management   hkmsvc
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    localSystem         0
Windows CardSpace   idsvc     Stopped   Manual
          Share Process
          "c:\windows\microsoft.net\framework64\v3.0\
windows communication foundation\infocard.exe"
          Normal    LocalSystem         0
IIS Admin Service   IISADMIN  Running   Auto
          Share Process
          c:\windows\system32\inetsrv\inetinfo.exe
          Normal    LocalSystem         0
IKE and AuthIP IPsec Keying Modules     IKEEXT
          Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
PnP-X IP Bus Enumerator       IPBusEnum Stopped
          Disabled  Share Process
          c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal    LocalSystem
          0
IP Helper iphlpsvc  Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
CNG Key Isolation   KeyIso    Stopped   Manual
          Share Process
          c:\windows\system32\lsass.exe Normal
          LocalSystem         0
KtmRm for Distributed Transaction Coordinator
          KtmRm     Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
networkserviceandnoimpersonation        Normal    NT
AUTHORITY\NetworkService      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
networkservice      Normal    NT
AUTHORITY\NetworkService      0
Link-Layer Topology Discovery Mapper    lltdsvc
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
```

```
localservice        Normal    NT
AUTHORITY\LocalService        0
TCP/IP NetBIOS Helper         lmhosts   Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal    NT
AUTHORITY\LocalService        0
Multimedia Class Scheduler    MMCSS     Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Windows Firewall    MpsSvc    Running   Auto
          Share Process
          c:\windows\system32\svchost.exe -k
localservicenonetwork         Normal    NT
Authority\LocalService        0
Distributed Transaction Coordinator     MSDTC
          Running   Auto      Own Process
          c:\windows\system32\msdtc.exe Normal    NT
AUTHORITY\NetworkService      0
Microsoft iSCSI Initiator Service       MSiSCSI
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Windows Installer   msiserver Stopped   Manual    Own
Process   c:\windows\system32\msiexec.exe /v
          Normal    LocalSystem         0
Network Access Protection Agent         napagent
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
networkservice      Normal    NT
AUTHORITY\NetworkService      0
Netlogon  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
localsystemnetworkrestricted  Normal    LocalSystem
          0
Net.Msmq Listener Adapter     NetMsmqActivator
          Stopped   Disabled  Share Process
          "c:\windows\microsoft.net\framework64\v3.0\
windows communication foundation\smsvchost.exe" -
netmsmqactivator    Normal    NT
AUTHORITY\NetworkService      0
Net.Pipe Listener Adapter     NetPipeActivator
          Running   Auto      Share Process
          "c:\windows\microsoft.net\framework64\v3.0\
windows communication foundation\smsvchost.exe"
          Normal    NT AUTHORITY\LocalService     0

Network List Service          netprofm  Running
          Manual    Share Process
          c:\windows\system32\svchost.exe -k
localservice        Normal    NT
AUTHORITY\LocalService        0
Net.Tcp Listener Adapter      NetTcpActivator
          Running   Auto      Share Process
          "c:\windows\microsoft.net\framework64\v3.0\
windows communication foundation\smsvchost.exe"
```

```
          Normal    NT AUTHORITY\LocalService     0

Net.Tcp Port Sharing Service  NetTcpPortSharing
          Running   Auto      Share Process
          "c:\windows\microsoft.net\framework64\v3.0\
windows communication foundation\smsvchost.exe"
          Normal    NT AUTHORITY\LocalService     0

Network Location Awareness    NlaSvc    Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k
networkservice      Normal    NT
AUTHORITY\NetworkService      0
Network Store Interface Service         nsi
          Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k
localservice        Normal    NT
Authority\LocalService        0
Office Source Engine          ose       Stopped
          Manual    Own Process         "c:\program
files (x86)\common files\microsoft shared\source
engine\ose.exe"     Normal    LocalSystem         0

Performance Counter DLL Host  PerfHost  Stopped
          Manual    Own Process
          c:\windows\syswow64\perfhost.exe
          Normal    NT AUTHORITY\LocalService     0

Performance Logs & Alerts     pla       Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k
localservicenonetwork         Normal    NT
AUTHORITY\LocalService        0
Plug and Play       PlugPlay  Running   Auto
          Share Process
          c:\windows\system32\svchost.exe -k
dcomlaunch          Normal    LocalSystem         0

IPsec Policy Agent  PolicyAgent         Running
          Manual    Share Process
          c:\windows\system32\svchost.exe -k
networkservicenetworkrestricted         Normal    NT
Authority\NetworkService      0
Power     Power     Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k
dcomlaunch          Normal    LocalSystem         0

User Profile Service          ProfSvc   Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Protected Storage   ProtectedStorage    Stopped
          Manual    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
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

RPC Endpoint Mapper RpcEptMapper        Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k rpcss
          Normal    NT AUTHORITY\NetworkService   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\svchost.exe -k
localserviceandnoimpersonation          Normal    NT
AUTHORITY\LocalService        0
Task Scheduler      Schedule  Running   Auto
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Smart Card Removal Policy     SCPolicySvc
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Secondary Logon     seclogon  Stopped   Manual
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
System Event Notification Service       SENS
          Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Remote Desktop Configuration  SessionEnv
          Running   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    localSystem         0
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
SNMP Trap SNMPTRAP  Stopped   Manual    Own Process
          c:\windows\system32\snmptrap.exe
          Normal    NT AUTHORITY\LocalService     0

Print Spooler       Spooler   Running   Auto      Own
Process   c:\windows\system32\spoolsv.exe
          Normal    LocalSystem         0
Software Protection sppsvc    Stopped   Auto      Own
Process   c:\windows\system32\sppsvc.exe
          Normal    NT AUTHORITY\NetworkService   0

SPP Notification Service      sppuinotify
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localservice        Normal    NT
AUTHORITY\LocalService        0
SSDP Discovery      SSDPSRV   Stopped   Disabled
          Share Process
          c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation          Normal    NT
AUTHORITY\LocalService        0
Secure Socket Tunneling Protocol Service
          SstpSvc   Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localservice        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
Telephony TapiSrv   Stopped   Manual    Own Process
          c:\windows\system32\svchost.exe -k tapisrv
          Normal    NT AUTHORITY\NetworkService   0

TPM Base Services   TBS       Stopped   Manual
          Share Process
          c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation          Normal    NT
AUTHORITY\LocalService        0
Remote Desktop Services       TermService
          Running   Manual    Share Process
          c:\windows\system32\svchost.exe -k termsvcs
          Normal    NT Authority\NetworkService   0

Thread Ordering Server        THREADORDER
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localservice        Normal    NT
AUTHORITY\LocalService        0
Distributed Link Tracking Client        TrkWks
          Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k
```

```
localsystemnetworkrestricted  Normal    LocalSystem
          0
Windows Modules Installer     TrustedInstaller
          Stopped   Manual    Own Process
          c:\windows\servicing\trustedinstaller.exe
          Normal    localSystem         0
Interactive Services Detection          UI0Detect
          Stopped   Manual    Own Process
          c:\windows\system32\ui0detect.exe
          Normal    LocalSystem         0
Remote Desktop Services UserMode Port Redirector
          UmRdpService        Running   Manual
          Share Process
          c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal    localSystem
          0
UPnP Device Host    upnphost  Stopped   Disabled
          Share Process
          c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation          Normal    NT
AUTHORITY\LocalService        0
Desktop Window Manager Session Manager  UxSms
          Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal    localSystem
          0
Credential Manager  VaultSvc  Stopped   Manual
          Share Process
          c:\windows\system32\lsass.exe Normal
          LocalSystem         0
Virtual Disk        vds       Stopped   Manual    Own
Process   c:\windows\system32\vds.exe   Normal
          LocalSystem         0
Hyper-V Heartbeat Service     vmicheartbeat
          Running   Auto      Own Process
          c:\windows\system32\vmicsvc.exe -feature
heartbeat Normal    NT AUTHORITY\NetworkService   0

Hyper-V Data Exchange Service vmickvpexchange
          Running   Auto      Own Process
          c:\windows\system32\vmicsvc.exe -feature
kvpexchange         Normal    NT
AUTHORITY\LocalService        0
Hyper-V Guest Shutdown Service          vmicshutdown
          Running   Auto      Own Process
          c:\windows\system32\vmicsvc.exe -feature
shutdown  Normal    LocalSystem         0
Hyper-V Time Synchronization Service    vmictimesync
          Running   Auto      Own Process
          c:\windows\system32\vmicsvc.exe -feature
timesync  Normal    NT AUTHORITY\LocalService     0

Hyper-V Volume Shadow Copy Requestor    vmicvss
          Running   Auto      Own Process
          c:\windows\system32\vmicsvc.exe -feature
vss       Normal    LocalSystem         0
Volume Shadow Copy  VSS       Stopped   Manual    Own
Process   c:\windows\system32\vssvc.exe Normal
          LocalSystem         0
Windows Time        W32Time   Stopped   Manual
          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
Windows Process Activation Service      WAS
          Running   Manual    Share Process
          c:\windows\system32\svchost.exe -k iissvcs
          Normal    LocalSystem         0
Windows Color System          WcsPlugInService
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k wcssvc
          Normal    NT AUTHORITY\LocalService     0

Diagnostic Service Host       WdiServiceHost
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localservice        Normal    NT
AUTHORITY\LocalService        0
Diagnostic System Host        WdiSystemHost
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal    LocalSystem
          0
Windows Event Collector       Wecsvc    Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k
networkservice      Normal    NT
AUTHORITY\NetworkService      0
Problem Reports and Solutions Control Panel Support
          wercplsupport       Stopped   Manual
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    localSystem         0
Windows Error Reporting Service         WerSvc
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
wersvcgroup         Ignore    localSystem         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
Windows Remote Management (WS-Management)
          WinRM     Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k
networkservice      Normal    NT
AUTHORITY\NetworkService      0
WMI Performance Adapter       wmiApSrv  Stopped
          Manual    Own Process
          c:\windows\system32\wbem\wmiapsrv.exe
          Normal    localSystem         0
Portable Device Enumerator Service      WPDBusEnum
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
```

```
localsystemnetworkrestricted  Normal    LocalSystem
          0
Windows Update      wuauserv  Running   Auto
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem        0
Windows Driver Foundation - User-mode Driver
Framework wudfsvc   Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal    LocalSystem
          0

[Program Groups]

Group Name          Name      User Name
Start Menu          Default:Start Menu  Default
Start Menu\Programs Default:Start Menu\Programs
          Default
Start Menu\Programs\Accessories         Default:Start
Menu\Programs\Accessories     Default
Start Menu\Programs\Accessories\Accessibility
          Default:Start
Menu\Programs\Accessories\Accessibility Default
Start Menu\Programs\Accessories\System Tools
          Default:Start
Menu\Programs\Accessories\System Tools  Default
Start Menu\Programs\Maintenance         Default:Start
Menu\Programs\Maintenance     Default
Start Menu          Public:Start Menu   Public
Start Menu\Programs Public:Start Menu\Programs
          Public
Start Menu\Programs\Accessories         Public:Start
Menu\Programs\Accessories     Public
Start Menu\Programs\Accessories\Accessibility
          Public:Start
Menu\Programs\Accessories\Accessibility Public
Start Menu\Programs\Accessories\System Tools
          Public:Start
Menu\Programs\Accessories\System Tools  Public
Start Menu\Programs\Accessories\Windows PowerShell
          Public:Start
Menu\Programs\Accessories\Windows PowerShell
          Public
Start Menu\Programs\Administrative Tools
          Public:Start Menu\Programs\Administrative
Tools     Public
Start Menu\Programs\Administrative Tools\Terminal
Services  Public:Start Menu\Programs\Administrative
Tools\Terminal Services       Public
Start Menu\Programs\Maintenance         Public:Start
Menu\Programs\Maintenance     Public
Start Menu\Programs\Microsoft SQL Server 2005
          Public:Start Menu\Programs\Microsoft SQL
Server 2005         Public
Start Menu\Programs\Microsoft SQL Server
2005\Analysis Services        Public:Start
Menu\Programs\Microsoft SQL Server 2005\Analysis
Services  Public
Start Menu\Programs\Microsoft SQL Server
2005\Configuration Tools      Public:Start
Menu\Programs\Microsoft SQL Server 2005\Configuration
Tools     Public
```

```
Start Menu\Programs\Microsoft SQL Server
2005\Documentation and Tutorials        Public:Start
Menu\Programs\Microsoft SQL Server 2005\Documentation
and Tutorials       Public
Start Menu\Programs\Microsoft SQL Server
2005\Documentation and Tutorials\Tutorials
          Public:Start Menu\Programs\Microsoft SQL
Server 2005\Documentation and Tutorials\Tutorials
          Public
Start Menu\Programs\Microsoft SQL Server
2005\Performance Tools        Public:Start
Menu\Programs\Microsoft SQL Server 2005\Performance
Tools     Public
Start Menu\Programs\Microsoft Visual Studio 2005
          Public:Start Menu\Programs\Microsoft Visual
Studio 2005         Public
Start Menu\Programs\Microsoft Visual Studio
2005\Visual Studio Tools      Public:Start
Menu\Programs\Microsoft Visual Studio 2005\Visual
Studio Tools        Public
Start Menu\Programs\Startup   Public:Start
Menu\Programs\Startup         Public
Start Menu          VCL1\Administrator:Start Menu
          VCL1\Administrator
Start Menu\Programs VCL1\Administrator:Start
Menu\Programs       VCL1\Administrator
Start Menu\Programs\Accessories
          VCL1\Administrator:Start
Menu\Programs\Accessories     VCL1\Administrator
Start Menu\Programs\Accessories\Accessibility
          VCL1\Administrator:Start
Menu\Programs\Accessories\Accessibility
          VCL1\Administrator
Start Menu\Programs\Accessories\System Tools
          VCL1\Administrator:Start
Menu\Programs\Accessories\System Tools
          VCL1\Administrator
Start Menu\Programs\Administrative Tools
          VCL1\Administrator:Start
Menu\Programs\Administrative Tools
          VCL1\Administrator
Start Menu\Programs\Maintenance
          VCL1\Administrator:Start
Menu\Programs\Maintenance     VCL1\Administrator
Start Menu\Programs\Startup
          VCL1\Administrator:Start
Menu\Programs\Startup         VCL1\Administrator

[Startup Programs]

Program   Command   User Name Location

[OLE Registration]

Object    Local Server
WordPad Document    "%programfiles%\windows
nt\accessories\wordpad.exe"
Paintbrush Picture  %systemroot%\system32\mspaint.exe

Package   Not Available
Microsoft PenInputPanel Control         Not Available
```

```

[Windows Error Reporting]

Time      Type      Details
8/26/2010 6:51 PM   Application Error   Faulting
application name: w3wp.exe, version: 7.5.7600.16385,
time stamp: 0x4a5bcd2b&#x000d;&#x000a;Faulting module
name: ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5bdac7&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000f771&#x000d;&#x000a;Faulting process id:
0x988&#x000d;&#x000a;Faulting application start time:
0x01cb453cc4c91d60&#x000d;&#x000a;Faulting
application path:
C:\Windows\SysWOW64\inetsrv\w3wp.exe&#x000d;&#x000a;F
aulting module path:
C:\Windows\syswow64\ole32.dll&#x000d;&#x000a;Report
Id: fe2357f2-b142-11df-9427-00155d280701
8/25/2010 5:22 PM   Application Error   Faulting
application name: w3wp.exe, version: 7.5.7600.16385,
time stamp: 0x4a5bcd2b&#x000d;&#x000a;Faulting module
name: ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5bdac7&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000f771&#x000d;&#x000a;Faulting process id:
0xbcc&#x000d;&#x000a;Faulting application start time:
0x01cb447707f98f46&#x000d;&#x000a;Faulting
application path:
C:\Windows\SysWOW64\inetsrv\w3wp.exe&#x000d;&#x000a;F
aulting module path:
C:\Windows\syswow64\ole32.dll&#x000d;&#x000a;Report
Id: 5a3f09ae-b06d-11df-b1e8-00155d280701
8/24/2010 6:17 PM   Application Error   Faulting
application name: w3wp.exe, version: 7.5.7600.16385,
time stamp: 0x4a5bcd2b&#x000d;&#x000a;Faulting module
name: ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5bdac7&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000f771&#x000d;&#x000a;Faulting process id:
0x988&#x000d;&#x000a;Faulting application start time:
0x01cb43a59be9386e&#x000d;&#x000a;Faulting
application path:
C:\Windows\SysWOW64\inetsrv\w3wp.exe&#x000d;&#x000a;F
aulting module path:
C:\Windows\syswow64\ole32.dll&#x000d;&#x000a;Report
Id: df014ebc-afab-11df-b61e-00155d280701
8/23/2010 2:03 PM   Application Error   Faulting
application name: w3wp.exe, version: 7.5.7600.16385,
time stamp: 0x4a5bcd2b&#x000d;&#x000a;Faulting module
name: ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5bdac7&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000f771&#x000d;&#x000a;Faulting process id:
0x8fc&#x000d;&#x000a;Faulting application start time:
0x01cb42c54771d8a8&#x000d;&#x000a;Faulting
application path:
C:\Windows\SysWOW64\inetsrv\w3wp.exe&#x000d;&#x000a;F
aulting module path:
C:\Windows\syswow64\ole32.dll&#x000d;&#x000a;Report
Id: 2c6ee67a-aebf-11df-860c-00155d280701
8/17/2010 4:13 PM   Application Error   Faulting
application name: w3wp.exe, version: 7.5.7600.16385,
time stamp: 0x4a5bcd2b&#x000d;&#x000a;Faulting module
name: ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5bdac7&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000f771&#x000d;&#x000a;Faulting process id:
0x388&#x000d;&#x000a;Faulting application start time:
0x01cb3e20902b578a&#x000d;&#x000a;Faulting
application path:
C:\Windows\SysWOW64\inetsrv\w3wp.exe&#x000d;&#x000a;F
aulting module path:
C:\Windows\syswow64\ole32.dll&#x000d;&#x000a;Report
Id: 64cb61aa-aa1a-11df-8aae-00155d280701
8/11/2010 10:08 PM  Application Error   Faulting
application name: w3wp.exe, version: 7.5.7600.16385,
time stamp: 0x4a5bcd2b&#x000d;&#x000a;Faulting module
name: ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5bdac7&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000f771&#x000d;&#x000a;Faulting process id:
0x430&#x000d;&#x000a;Faulting application start time:
0x01cb399ab8b9d788&#x000d;&#x000a;Faulting
application path:
C:\Windows\SysWOW64\inetsrv\w3wp.exe&#x000d;&#x000a;F
aulting module path:
C:\Windows\syswow64\ole32.dll&#x000d;&#x000a;Report
Id: f6ed02f8-a594-11df-a2bd-00155d280701
8/9/2010 9:41 PM    Application Error   Faulting
application name: w3wp.exe, version: 7.5.7600.16385,
time stamp: 0x4a5bcd2b&#x000d;&#x000a;Faulting module
name: ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5bdac7&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000f771&#x000d;&#x000a;Faulting process id:
0x3d8&#x000d;&#x000a;Faulting application start time:
0x01cb3806393b9e1e&#x000d;&#x000a;Faulting
application path:
C:\Windows\SysWOW64\inetsrv\w3wp.exe&#x000d;&#x000a;F
aulting module path:
C:\Windows\syswow64\ole32.dll&#x000d;&#x000a;Report
Id: ee0f8c42-a3fe-11df-a3a1-00155d280701
8/5/2010 4:08 PM    Application Error   Faulting
application name: w3wp.exe, version: 7.5.7600.16385,
time stamp: 0x4a5bcd2b&#x000d;&#x000a;Faulting module
name: ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5bdac7&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000f771&#x000d;&#x000a;Faulting process id:
0x808&#x000d;&#x000a;Faulting application start time:
0x01cb34a375432780&#x000d;&#x000a;Faulting
application path:
C:\Windows\SysWOW64\inetsrv\w3wp.exe&#x000d;&#x000a;F
aulting module path:
C:\Windows\syswow64\ole32.dll&#x000d;&#x000a;Report
Id: ab3cebf4-a0ab-11df-a192-00155d280701
8/3/2010 5:46 PM    Application Error   Faulting
application name: w3wp.exe, version: 7.5.7600.16385,
time stamp: 0x4a5bcd2b&#x000d;&#x000a;Faulting module
name: ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5bdac7&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000f771&#x000d;&#x000a;Faulting process id:
0x6dc&#x000d;&#x000a;Faulting application start time:
0x01cb33183adcbc8c&#x000d;&#x000a;Faulting
application path:
C:\Windows\SysWOW64\inetsrv\w3wp.exe&#x000d;&#x000a;F
aulting module path:
C:\Windows\syswow64\ole32.dll&#x000d;&#x000a;Report
Id: 020d56b6-9f27-11df-b12e-00155d280701
7/21/2010 7:46 PM   Application Error   Faulting
application name: w3wp.exe, version: 7.5.7600.16385,
time stamp: 0x4a5bcd2b&#x000d;&#x000a;Faulting module
name: ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5bdac7&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000f771&#x000d;&#x000a;Faulting process id:
0x518&#x000d;&#x000a;Faulting application start time:
0x01cb2906caf11672&#x000d;&#x000a;Faulting
application path:
C:\Windows\SysWOW64\inetsrv\w3wp.exe&#x000d;&#x000a;F
aulting module path:
C:\Windows\syswow64\ole32.dll&#x000d;&#x000a;Report
Id: 9a52d4a4-9500-11df-abec-00155d280701
7/21/2010 6:56 PM   Application Error   Faulting
application name: w3wp.exe, version: 7.5.7600.16385,
time stamp: 0x4a5bcd2b&#x000d;&#x000a;Faulting module
name: ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5bdac7&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000f771&#x000d;&#x000a;Faulting process id:
0x17c&#x000d;&#x000a;Faulting application start time:
0x01cb2902e9066558&#x000d;&#x000a;Faulting
application path:
C:\Windows\SysWOW64\inetsrv\w3wp.exe&#x000d;&#x000a;F
aulting module path:
C:\Windows\syswow64\ole32.dll&#x000d;&#x000a;Report
Id: aade6b78-94f9-11df-abec-00155d280701
7/16/2010 6:12 PM   Application Error   Faulting
application name: w3wp.exe, version: 7.5.7600.16385,
time stamp: 0x4a5bcd2b&#x000d;&#x000a;Faulting module
name: ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5bdac7&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000f771&#x000d;&#x000a;Faulting process id:
0x31c&#x000d;&#x000a;Faulting application start time:
0x01cb25058bf135ba&#x000d;&#x000a;Faulting
application path:
C:\Windows\SysWOW64\inetsrv\w3wp.exe&#x000d;&#x000a;F
aulting module path:
C:\Windows\syswow64\ole32.dll&#x000d;&#x000a;Report
Id: a886142c-9105-11df-8d51-00155d280701
8/26/2010 6:51 PM   Windows Error Reporting
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Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
w3wp.exe&#x000d;&#x000a;P2:
7.5.7600.16385&#x000d;&#x000a;P3:
4a5bcd2b&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000f771&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71d
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;&#x000a;Analysis symbol: &#x000d;&#x000a;Rechecking
for solution: 0&#x000d;&#x000a;Report Id: fe2357f2-
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Status: 0
8/26/2010 6:51 PM   Windows Error Reporting
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Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
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7.5.7600.16385&#x000d;&#x000a;P3:
4a5bcd2b&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000f771&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
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be available
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\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71d
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for solution: 0&#x000d;&#x000a;Report Id: fe2357f2-
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Status: 4
8/25/2010 5:22 PM   Windows Error Reporting
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Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
w3wp.exe&#x000d;&#x000a;P2:
7.5.7600.16385&#x000d;&#x000a;P3:
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ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000f771&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
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be available
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Status: 0
8/25/2010 5:22 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
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0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
w3wp.exe&#x000d;&#x000a;P2:
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4a5bcd2b&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
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be available
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Status: 4
8/24/2010 6:17 PM   Windows Error Reporting
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Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
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7.5.7600.16385&#x000d;&#x000a;P3:
4a5bcd2b&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
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&#x000d;&#x000a;&#x000d;&#x000a;Attached
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be available
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Status: 0
8/24/2010 6:17 PM   Windows Error Reporting
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Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
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7.5.7600.16385&#x000d;&#x000a;P3:
4a5bcd2b&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
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be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
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for solution: 0&#x000d;&#x000a;Report Id: df014ebc-
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Status: 4
8/23/2010 2:03 PM   Windows Error Reporting
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Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
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w3wp.exe&#x000d;&#x000a;P2:
7.5.7600.16385&#x000d;&#x000a;P3:
4a5bcd2b&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
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be available
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Status: 0
8/23/2010 2:03 PM   Windows Error Reporting
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Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
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4a5bcd2b&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
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be available
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Status: 4
8/17/2010 4:13 PM   Windows Error Reporting
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available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
w3wp.exe&#x000d;&#x000a;P2:
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```
4a5bcd2b&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000f771&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
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be available
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available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
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7.5.7600.16385&#x000d;&#x000a;P3:
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ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
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be available
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8/11/2010 10:08 PM  Windows Error Reporting
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Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
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w3wp.exe&#x000d;&#x000a;P2:
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4a5bcd2b&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
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for solution: 0&#x000d;&#x000a;Report Id: f6ed02f8-
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available&#x000d;&#x000a;Cab Id:
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7.5.7600.16385&#x000d;&#x000a;P3:
4a5bcd2b&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
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Status: 4
8/9/2010 9:41 PM    Windows Error Reporting
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available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
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ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
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for solution: 0&#x000d;&#x000a;Report Id: ee0f8c42-
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8/9/2010 9:41 PM    Windows Error Reporting
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ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
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c0000005&#x000d;&#x000a;P8:
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Status: 4
8/5/2010 4:08 PM    Windows Error Reporting
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available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
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ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
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ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
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ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000f771&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71d
ad16b62778422247fc5f7_1b2a1c8d&#x000d;&#x000a;&#x000d
;&#x000a;Analysis symbol: &#x000d;&#x000a;Rechecking
for solution: 0&#x000d;&#x000a;Report Id: 020d56b6-
9f27-11df-b12e-00155d280701&#x000d;&#x000a;Report
Status: 0
8/3/2010 5:46 PM    Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
w3wp.exe&#x000d;&#x000a;P2:
7.5.7600.16385&#x000d;&#x000a;P3:
4a5bcd2b&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000f771&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71d
ad16b62778422247fc5f7_1b2a1c8d&#x000d;&#x000a;&#x000d
;&#x000a;Analysis symbol: &#x000d;&#x000a;Rechecking
for solution: 0&#x000d;&#x000a;Report Id: 020d56b6-
9f27-11df-b12e-00155d280701&#x000d;&#x000a;Report
Status: 4
7/21/2010 7:46 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
w3wp.exe&#x000d;&#x000a;P2:
7.5.7600.16385&#x000d;&#x000a;P3:
4a5bcd2b&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000f771&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
```

```
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71d
ad16b62778422247fc5f7_03b32e33&#x000d;&#x000a;&#x000d
;&#x000a;Analysis symbol: &#x000d;&#x000a;Rechecking
for solution: 0&#x000d;&#x000a;Report Id: 9a52d4a4-
9500-11df-abec-00155d280701&#x000d;&#x000a;Report
Status: 0
7/21/2010 7:46 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
w3wp.exe&#x000d;&#x000a;P2:
7.5.7600.16385&#x000d;&#x000a;P3:
4a5bcd2b&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000f771&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71d
ad16b62778422247fc5f7_03b32e33&#x000d;&#x000a;&#x000d
;&#x000a;Analysis symbol: &#x000d;&#x000a;Rechecking
for solution: 0&#x000d;&#x000a;Report Id: 9a52d4a4-
9500-11df-abec-00155d280701&#x000d;&#x000a;Report
Status: 4
7/21/2010 6:56 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
w3wp.exe&#x000d;&#x000a;P2:
7.5.7600.16385&#x000d;&#x000a;P3:
4a5bcd2b&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000f771&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71d
ad16b62778422247fc5f7_08b9bf09&#x000d;&#x000a;&#x000d
;&#x000a;Analysis symbol: &#x000d;&#x000a;Rechecking
for solution: 0&#x000d;&#x000a;Report Id: aade6b78-
94f9-11df-abec-00155d280701&#x000d;&#x000a;Report
Status: 0
7/21/2010 6:56 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
w3wp.exe&#x000d;&#x000a;P2:
7.5.7600.16385&#x000d;&#x000a;P3:
4a5bcd2b&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000f771&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;&#x000d;&#x000a;These files may
be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71d
ad16b62778422247fc5f7_08b9bf09&#x000d;&#x000a;&#x000d
;&#x000a;Analysis symbol: &#x000d;&#x000a;Rechecking
for solution: 0&#x000d;&#x000a;Report Id: aade6b78-
94f9-11df-abec-00155d280701&#x000d;&#x000a;Report
Status: 4
7/16/2010 6:12 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
w3wp.exe&#x000d;&#x000a;P2:
7.5.7600.16385&#x000d;&#x000a;P3:
4a5bcd2b&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000f771&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;C:\Windows\Temp\WERE8F4.tmp.app
compat.txt&#x000d;&#x000a;C:\Windows\Temp\WERF317.tmp
.WERInternalMetadata.xml&#x000d;&#x000a;C:\Windows\Te
mp\WERF327.tmp.hdmp&#x000d;&#x000a;C:\Windows\Temp\WE
R345.tmp.mdmp&#x000d;&#x000a;&#x000d;&#x000a;These
files may be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71d
ad16b62778422247fc5f7_cab_09ee03df&#x000d;&#x000a;&#x
000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: a886142c-9105-11df-8d51-
00155d280701&#x000d;&#x000a;Report Status: 0
7/16/2010 6:12 PM   Windows Error Reporting
          Fault bucket , type 0&#x000d;&#x000a;Event
Name: APPCRASH&#x000d;&#x000a;Response: Not
available&#x000d;&#x000a;Cab Id:
0&#x000d;&#x000a;&#x000d;&#x000a;Problem
signature:&#x000d;&#x000a;P1:
w3wp.exe&#x000d;&#x000a;P2:
7.5.7600.16385&#x000d;&#x000a;P3:
4a5bcd2b&#x000d;&#x000a;P4:
ole32.dll&#x000d;&#x000a;P5:
6.1.7600.16385&#x000d;&#x000a;P6:
4a5bdac7&#x000d;&#x000a;P7:
c0000005&#x000d;&#x000a;P8:
0000f771&#x000d;&#x000a;P9: &#x000d;&#x000a;P10:
&#x000d;&#x000a;&#x000d;&#x000a;Attached
files:&#x000d;&#x000a;C:\Windows\Temp\WERE8F4.tmp.app
compat.txt&#x000d;&#x000a;C:\Windows\Temp\WERF317.tmp
.WERInternalMetadata.xml&#x000d;&#x000a;C:\Windows\Te
mp\WERF327.tmp.hdmp&#x000d;&#x000a;C:\Windows\Temp\WE
R345.tmp.mdmp&#x000d;&#x000a;&#x000d;&#x000a;These
files may be available
here:&#x000d;&#x000a;C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71d
ad16b62778422247fc5f7_cab_09ee03df&#x000d;&#x000a;&#x
000d;&#x000a;Analysis symbol:
&#x000d;&#x000a;Rechecking for solution:
0&#x000d;&#x000a;Report Id: a886142c-9105-11df-8d51-
00155d280701&#x000d;&#x000a;Report Status: 4
```

Microsoft COM Component Configuration Parameters

```
Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\TPC
C
Class Name:        <NO CLASS>
Last Write Time:   9/29/2011 - 8:56 AM
Value 0
  Name:            Path
  Type:            REG_SZ
  Data:            C:\inetpub\wwwroot\

Value 1
  Name:            NumberOfDeliveryThreads
  Type:            REG_DWORD
  Data:            0xf

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:            tcp:130.168.209.14,2001

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
```

Internet Information Server Registry Parameters

```
Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\services\
InetInfo
Class Name:        <NO CLASS>
Last Write Time:   5/14/2010 - 1:27 PM

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\services\
InetInfo\Parameters
Class Name:        <NO CLASS>
Last Write Time:   5/14/2010 - 3:50 PM
Value 0
  Name:            PoolThreadLimit
  Type:            REG_DWORD
  Data:            0xffe

Value 1
  Name:            ThreadTimeout
  Type:            REG_DWORD
  Data:            0x15180

Value 2
  Name:            ListenBackLog
  Type:            REG_DWORD
  Data:            0xf


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\services\
InetInfo\Performance
Class Name:        <NO CLASS>
Last Write Time:   5/14/2010 - 1:27 PM
Value 0
  Name:            Close
  Type:            REG_SZ
  Data:            CloseINFOPerformanceData

Value 1
  Name:            Open
  Type:            REG_SZ
  Data:            OpenINFOPerformanceData

Value 2
  Name:            Collect
  Type:            REG_SZ
  Data:            CollectINFOPerformanceData

Value 3
  Name:            Library
  Type:            REG_SZ
  Data:            infoctrs.dll

Value 4
  Name:            InstallType
  Type:            REG_DWORD
  Data:            0x1

Value 5
  Name:            PerfIniFile
  Type:            REG_SZ
  Data:            infoctrs.ini

Value 6
  Name:            First Counter
  Type:            REG_DWORD
  Data:            0x1848

Value 7
  Name:            Last Counter
  Type:            REG_DWORD
  Data:            0x1888

Value 8
  Name:            First Help
  Type:            REG_DWORD
  Data:            0x1849

Value 9
  Name:            Last Help
  Type:            REG_DWORD
  Data:            0x1889

Value 10
  Name:            Object List
  Type:            REG_SZ
  Data:            6216
```

World Wide Web Service Registry Parameters

```
Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\W3S
VC
Class Name:        <NO CLASS>
Last Write Time:   2/25/2010 - 3:43 PM

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\W3S
VC\CurrentVersion
Class Name:        <NO CLASS>
Last Write Time:   2/25/2010 - 3:43 PM
Value 0
  Name:            PathName
  Type:            REG_EXPAND_SZ
  Data:
%windir%\system32\inetsrv\httpmib.dll
```

Benchcraft Profile

```
<?xml version="1.0"?>
<benchcraft_profile workload="TPC-C" version="5"
xmlns:bc="http://mssqlperf.partners.extranet.microsof
t.com/Benchcraft" iStatsRefreshInt="2"
iStatsSampleInt="60">
          <engine name="d1" description=""
directory="c:\d2.log" machine="n90" parameters="2.6"
pipe="DRIVER53164609" index="100000000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="0" Checked="1"
add_options=""/>
          <engine name="d2" description=""
directory="c:\d1.log" machine="n90" parameters="2.6"
pipe="DRIVER44265281" index="100300000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="1" Checked="1"
add_options=""/>
          <engine name="d3" description=""
directory="c:\d3.log" machine="n90" parameters="2.6"
```

```
pipe="DRIVER3439676359" index="100600000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="4" Checked="1"
add_options=""/>
          <engine name="d4" description=""
directory="c:\d4.log" machine="n90" parameters="2.6"
pipe="DRIVER4439706187" index="100900000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="5" Checked="1"
add_options=""/>
          <engine name="d5" description=""
directory="c:\d5.log" machine="n91" parameters="2.6"
pipe="DRIVER5346413218" index="101200000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="0" Checked="1"
add_options=""/>
          <engine name="d6" description=""
directory="c:\d6.log" machine="n91" parameters="2.6"
pipe="DRIVER62226046" index="101500000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="1" Checked="1"
add_options=""/>
          <engine name="d7" description=""
directory="c:\d7.log" machine="n91" parameters="2.6"
pipe="DRIVER72289718" index="101800000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="4" Checked="1"
add_options=""/>
          <engine name="d8" description=""
directory="c:\d8.log" machine="n91" parameters="2.6"
pipe="DRIVER82325578" index="102100000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="5" Checked="1"
add_options=""/>
          <engine name="d9" description=""
directory="c:\d9.log" machine="n92" parameters="2.6"
pipe="DRIVER92360187" index="102400000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="0" Checked="1"
add_options=""/>
          <engine name="d10" description=""
directory="c:\d10.log" machine="n92" parameters="2.6"
pipe="DRIVER102399796" index="102700000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="1" Checked="1"
add_options=""/>
          <engine name="d11" description=""
directory="c:\d11.log" machine="n92" parameters="2.6"
pipe="DRIVER1122682203" index="103000000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="4" Checked="1"
add_options=""/>
          <engine name="d12" description=""
directory="c:\d12.log" machine="n92" parameters="2.6"
pipe="DRIVER1222731546" index="103300000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="5" Checked="1"
add_options=""/>
          <engine name="d13" description=""
directory="c:\d13.log" machine="n93" parameters="2.6"
pipe="DRIVER13-1439076421" index="103600000"
seed="4678" cfg_users="7750" connect_rate="3"
start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d14" description=""
directory="c:\d14.log" machine="n93" parameters="2.6"
pipe="DRIVER14-1438943656" index="103900000"
seed="4678" cfg_users="7750" connect_rate="3"
start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d15" description=""
directory="c:\d15.log" machine="n93" parameters="2.6"
pipe="DRIVER15-1438852265" index="104200000"
seed="4678" cfg_users="7750" connect_rate="3"
start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d16" description=""
directory="c:\d16.log" machine="n93" parameters="2.6"
pipe="DRIVER16-1438790906" index="104500000"
seed="4678" cfg_users="7750" connect_rate="3"
start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d17" description=""
directory="c:\d17.log" machine="n94" parameters="2.6"
pipe="DRIVER17-57150250" index="104800000"
seed="4678" cfg_users="7750" connect_rate="3"
start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d18" description=""
directory="c:\d18.log" machine="n94" parameters="2.6"
pipe="DRIVER18-57076468" index="105100000"
seed="4678" cfg_users="7750" connect_rate="3"
start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d19" description=""
directory="c:\d19.log" machine="n94" parameters="2.6"
pipe="DRIVER19-57030562" index="105400000"
seed="4678" cfg_users="7750" connect_rate="3"
start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d20" description=""
directory="c:\d20.log" machine="n94" parameters="2.6"
pipe="DRIVER20-56992625" index="105700000"
seed="4678" cfg_users="7750" connect_rate="3"
start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d21" description=""
directory="c:\d21.log" machine="n95" parameters="2.6"
pipe="DRIVER2191781" index="106000000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="0" Checked="1"
add_options=""/>
          <engine name="d22" description=""
directory="c:\d22.log" machine="n95" parameters="2.6"
pipe="DRIVER221814250" index="106300000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="1" Checked="1"
add_options=""/>
          <engine name="d23" description=""
directory="c:\d23.log" machine="n95" parameters="2.6"
pipe="DRIVER231877968" index="106600000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="4" Checked="1"
add_options=""/>
          <engine name="d24" description=""
directory="c:\d24.log" machine="n95" parameters="2.6"
pipe="DRIVER242206343" index="106900000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="5" Checked="1"
add_options=""/>
          <engine name="d25" description=""
directory="c:\d25.log" machine="n96" parameters="2.6"
pipe="DRIVER252251500" index="107200000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="0" Checked="1"
add_options=""/>
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directory="c:\d26.log" machine="n96" parameters="2.6"
pipe="DRIVER262289250" index="107500000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="1" Checked="1"
add_options=""/>
          <engine name="d27" description=""
directory="c:\d27.log" machine="n96" parameters="2.6"
pipe="DRIVER272340437" index="107800000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="4" Checked="1"
add_options=""/>
          <engine name="d28" description=""
directory="c:\d28.log" machine="n96" parameters="2.6"
pipe="DRIVER282382234" index="108100000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="5" Checked="1"
add_options=""/>
          <engine name="d29" description=""
directory="c:\d29.log" machine="n97" parameters="2.6"
pipe="DRIVER292416328" index="108400000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
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max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="0" Checked="1"
add_options=""/>
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directory="c:\d30.log" machine="n97" parameters="2.6"
pipe="DRIVER302463687" index="108700000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="1" Checked="1"
add_options=""/>
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directory="c:\d31.log" machine="n97" parameters="2.6"
pipe="DRIVER3155814328" index="109000000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="4" Checked="1"
add_options=""/>
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directory="c:\d32.log" machine="n97" parameters="2.6"
pipe="DRIVER3255892765" index="109300000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="5" Checked="1"
add_options=""/>
          <engine name="d33" description=""
directory="c:\d33.log" machine="n98" parameters="2.6"
pipe="DRIVER3355948500" index="109600000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="0" Checked="1"
add_options=""/>
          <engine name="d34" description=""
directory="c:\d34.log" machine="n98" parameters="2.6"
pipe="DRIVER3455990593" index="109900000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="1" Checked="1"
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directory="c:\d35.log" machine="n98" parameters="2.6"
pipe="DRIVER3556027390" index="110200000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="4" Checked="1"
add_options=""/>
          <engine name="d36" description=""
directory="c:\d36.log" machine="n98" parameters="2.6"
pipe="DRIVER3656077062" index="110500000" seed="4678"
cfg_users="7750" connect_rate="3" start_rate="0"
max_concurrency="0" concurrency_rate="0"
iCLIENT_NURAND="25" CPU="5" Checked="1"
add_options=""/>
          <engine name="d37" description=""
directory="c:\d37.log" machine="n99" parameters="2.6"
pipe="DRIVER37766536203" index="110800000"
seed="4678" cfg_users="7750" connect_rate="3"
start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d38" description=""
directory="c:\d38.log" machine="n99" parameters="2.6"
pipe="DRIVER38766654375" index="111100000"
seed="4678" cfg_users="7750" connect_rate="3"
start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
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directory="c:\d39.log" machine="n99" parameters="2.6"
pipe="DRIVER39766760968" index="111400000"
seed="4678" cfg_users="7750" connect_rate="3"
start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d40" description=""
directory="c:\d40.log" machine="n99" parameters="2.6"
pipe="DRIVER40766820328" index="111700000"
seed="4678" cfg_users="7750" connect_rate="3"
start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d41" description=""
directory="c:\d38.log" machine="n100"
parameters="2.6" pipe="DRIVER41766909890"
index="112000000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d42" description=""
directory="c:\d42.log" machine="n100"
parameters="2.6" pipe="DRIVER42766941343"
index="112300000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d43" description=""
directory="c:\d43.log" machine="n100"
parameters="2.6" pipe="DRIVER43766990906"
index="112600000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d44" description=""
directory="c:\d44.log" machine="n100"
parameters="2.6" pipe="DRIVER44767023437"
index="112900000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d45" description=""
directory="c:\d45.log" machine="n101"
parameters="2.6" pipe="DRIVER45767085000"
index="113200000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d46" description=""
directory="c:\d46.log" machine="n101"
parameters="2.6" pipe="DRIVER46767120687"
index="113500000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d47" description=""
directory="c:\d47.log" machine="n101"
parameters="2.6" pipe="DRIVER47767168296"
index="113800000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d48" description=""
directory="c:\d48.log" machine="n101"
parameters="2.6" pipe="DRIVER48767212015"
index="114100000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d49" description=""
directory="c:\d49.log" machine="n102"
parameters="2.6" pipe="DRIVER49778610406"
index="114400000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d50" description=""
directory="c:\d50.log" machine="n102"
parameters="2.6" pipe="DRIVER50778666593"
index="114700000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d51" description=""
directory="c:\d51.log" machine="n102"
parameters="2.6" pipe="DRIVER51778705953"
index="115000000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d52" description=""
directory="c:\d52.log" machine="n102"
parameters="2.6" pipe="DRIVER52778774546"
index="115300000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d53" description=""
directory="c:\d53.log" machine="n103"
parameters="2.6" pipe="DRIVER53778801906"
index="115600000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d54" description=""
directory="c:\d54.log" machine="n103"
parameters="2.6" pipe="DRIVER54778828968"
index="115900000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d55" description=""
directory="c:\d55.log" machine="n103"
parameters="2.6" pipe="DRIVER55778888203"
index="116200000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
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          <engine name="d56" description=""
directory="c:\d56.log" machine="n103"
parameters="2.6" pipe="DRIVER56778926656"
index="116500000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d57" description=""
directory="c:\d57.log" machine="n104"
parameters="2.6" pipe="DRIVER57778954765"
index="116800000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d58" description=""
directory="c:\d58.log" machine="n104"
parameters="2.6" pipe="DRIVER58778987609"
index="117100000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d59" description=""
directory="c:\d59.log" machine="n104"
parameters="2.6" pipe="DRIVER59779021390"
index="117400000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d60" description=""
directory="c:\d60.log" machine="n104"
parameters="2.6" pipe="DRIVER60779145406"
index="117700000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d61" description=""
directory="c:\d61.log" machine="n105"
parameters="2.6" pipe="DRIVER613345406"
index="118000000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d62" description=""
directory="c:\d62.log" machine="n105"
parameters="2.6" pipe="DRIVER623453375"
index="118300000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d63" description=""
directory="c:\d63.log" machine="n105"
parameters="2.6" pipe="DRIVER633501687"
index="118600000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d64" description=""
directory="c:\d64.log" machine="n105"
parameters="2.6" pipe="DRIVER643542156"
index="118900000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d65" description=""
directory="c:\d65.log" machine="n106"
parameters="2.6" pipe="DRIVER653612937"
index="119200000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d66" description=""
directory="c:\d66.log" machine="n106"
parameters="2.6" pipe="DRIVER663655140"
index="119500000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d67" description=""
directory="c:\d67.log" machine="n106"
parameters="2.6" pipe="DRIVER673761906"
index="119800000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d68" description=""
directory="c:\d68.log" machine="n106"
parameters="2.6" pipe="DRIVER683819031"
index="120100000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d69" description=""
directory="c:\d69.log" machine="n107"
parameters="2.6" pipe="DRIVER693865343"
index="120400000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d70" description=""
directory="c:\d70.log" machine="n107"
parameters="2.6" pipe="DRIVER703910750"
index="120700000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d71" description=""
directory="c:\d71.log" machine="n107"
parameters="2.6" pipe="DRIVER713949343"
index="121000000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d72" description=""
directory="c:\d72.log" machine="n107"
parameters="2.6" pipe="DRIVER723985750"
index="121300000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d73" description=""
directory="c:\d73.log" machine="n108"
parameters="2.6" pipe="DRIVER732742140"
index="121600000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d74" description=""
directory="c:\d74.log" machine="n108"
parameters="2.6" pipe="DRIVER742768187"
index="121900000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d75" description=""
directory="c:\d75.log" machine="n108"
parameters="2.6" pipe="DRIVER752779937"
index="122200000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d76" description=""
directory="c:\d76.log" machine="n108"
parameters="2.6" pipe="DRIVER762790703"
index="122500000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d77" description=""
directory="c:\d77.log" machine="n109"
parameters="2.6" pipe="DRIVER772802046"
index="122800000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d78" description=""
directory="c:\d78.log" machine="n109"
parameters="2.6" pipe="DRIVER782810718"
index="123100000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d79" description=""
directory="c:\d79.log" machine="n109"
parameters="2.6" pipe="DRIVER792820421"
index="123400000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d80" description=""
directory="c:\d80.log" machine="n109"
parameters="2.6" pipe="DRIVER802842390"
index="123700000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d81" description=""
directory="c:\d81.log" machine="n110"
parameters="2.6" pipe="DRIVER812851328"
index="124000000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d82" description=""
directory="c:\d82.log" machine="n110"
parameters="2.6" pipe="DRIVER823364343"
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index="124300000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d83" description=""
directory="c:\d83.log" machine="n110"
parameters="2.6" pipe="DRIVER833381656"
index="124600000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d84" description=""
directory="c:\d84.log" machine="n110"
parameters="2.6" pipe="DRIVER843392562"
index="124900000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d85" description=""
directory="c:\d85.log" machine="n111"
parameters="2.6" pipe="DRIVER8554757562"
index="125200000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d86" description=""
directory="c:\d86.log" machine="n111"
parameters="2.6" pipe="DRIVER8654864968"
index="125500000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d87" description=""
directory="c:\d87.log" machine="n111"
parameters="2.6" pipe="DRIVER8754901734"
index="125800000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d88" description=""
directory="c:\d88.log" machine="n111"
parameters="2.6" pipe="DRIVER8855059343"
index="126100000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d89" description=""
directory="c:\d89.log" machine="n112"
parameters="2.6" pipe="DRIVER8955092343"
index="126400000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d90" description=""
directory="c:\d90.log" machine="n112"
parameters="2.6" pipe="DRIVER9055486578"
index="126700000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d91" description=""
directory="c:\d91.log" machine="n112"
parameters="2.6" pipe="DRIVER9155534031"
index="127000000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
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directory="c:\d92.log" machine="n112"
parameters="2.6" pipe="DRIVER9255579359"
index="127300000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
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directory="c:\d93.log" machine="n113"
parameters="2.6" pipe="DRIVER9355620406"
index="127600000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d94" description=""
directory="c:\d94.log" machine="n113"
parameters="2.6" pipe="DRIVER9455653265"
index="127900000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d95" description=""
directory="c:\d95.log" machine="n113"
parameters="2.6" pipe="DRIVER9555683343"
index="128200000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d96" description=""
directory="c:\d96.log" machine="n113"
parameters="2.6" pipe="DRIVER9655715281"
index="128500000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d97" description=""
directory="c:\d97.log" machine="n114"
parameters="2.6" pipe="DRIVER9791039015"
index="128800000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d98" description=""
directory="c:\d98.log" machine="n114"
parameters="2.6" pipe="DRIVER9891080187"
index="129100000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d99" description=""
directory="c:\d99.log" machine="n114"
parameters="2.6" pipe="DRIVER9991094312"
index="129400000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d100" description=""
directory="c:\d100.log" machine="n114"
parameters="2.6" pipe="DRIVER10091114343"
index="129700000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d101" description=""
directory="c:\d101.log" machine="n115"
parameters="2.6" pipe="DRIVER10191182218"
index="130000000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d102" description=""
directory="c:\d102.log" machine="n115"
parameters="2.6" pipe="DRIVER10291195265"
index="130300000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d103" description=""
directory="c:\d103.log" machine="n115"
parameters="2.6" pipe="DRIVER10391210015"
index="130600000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d104" description=""
directory="c:\d104.log" machine="n115"
parameters="2.6" pipe="DRIVER10491224609"
index="130900000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d105" description=""
directory="c:\d105.log" machine="n116"
parameters="2.6" pipe="DRIVER10591253062"
index="131200000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d106" description=""
directory="c:\d106.log" machine="n116"
parameters="2.6" pipe="DRIVER10691266500"
index="131500000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d107" description=""
directory="c:\d107.log" machine="n116"
parameters="2.6" pipe="DRIVER10791279375"
index="131800000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d108" description=""
directory="c:\d108.log" machine="n116"
parameters="2.6" pipe="DRIVER10891300515"
index="132100000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
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concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d109" description=""
directory="c:\d109.log" machine="n117"
parameters="2.6" pipe="DRIVER10991349968"
index="132400000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d110" description=""
directory="c:\d110.log" machine="n117"
parameters="2.6" pipe="DRIVER11091369218"
index="132700000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d111" description=""
directory="c:\d111.log" machine="n117"
parameters="2.6" pipe="DRIVER11191391000"
index="133000000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d112" description=""
directory="c:\d112.log" machine="n117"
parameters="2.6" pipe="DRIVER11291408671"
index="133300000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d113" description=""
directory="c:\d113.log" machine="n118"
parameters="2.6" pipe="DRIVER11391437843"
index="133600000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d114" description=""
directory="c:\d114.log" machine="n118"
parameters="2.6" pipe="DRIVER11491503046"
index="133900000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d115" description=""
directory="c:\d115.log" machine="n118"
parameters="2.6" pipe="DRIVER11591544156"
index="134200000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d116" description=""
directory="c:\d116.log" machine="n118"
parameters="2.6" pipe="DRIVER11691602328"
index="134500000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d117" description=""
directory="c:\d117.log" machine="n119"
parameters="2.6" pipe="DRIVER11791774937"
index="134800000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d118" description=""
directory="c:\d118.log" machine="n119"
parameters="2.6" pipe="DRIVER11891802062"
index="135100000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d119" description=""
directory="c:\d119.log" machine="n119"
parameters="2.6" pipe="DRIVER11991877296"
index="135400000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d120" description=""
directory="c:\d120.log" machine="n119"
parameters="2.6" pipe="DRIVER12091903921"
index="135700000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d121" description=""
directory="c:\d121.log" machine="n120"
parameters="2.6" pipe="DRIVER12191918468"
index="136000000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d122" description=""
directory="c:\d122.log" machine="n120"
parameters="2.6" pipe="DRIVER12291955406"
index="136300000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d123" description=""
directory="c:\d123.log" machine="n120"
parameters="2.6" pipe="DRIVER12391970531"
index="136600000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d124" description=""
directory="c:\d124.log" machine="n120"
parameters="2.6" pipe="DRIVER12491983140"
index="136900000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <engine name="d125" description=""
directory="c:\d125.log" machine="n121"
parameters="2.6" pipe="DRIVER12591999843"
index="137200000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="0"
Checked="1" add_options=""/>
          <engine name="d126" description=""
directory="c:\d126.log" machine="n121"
parameters="2.6" pipe="DRIVER12692036203"
index="137500000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="1"
Checked="1" add_options=""/>
          <engine name="d127" description=""
directory="c:\d127.log" machine="n121"
parameters="2.6" pipe="DRIVER12792054906"
index="137800000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="4"
Checked="1" add_options=""/>
          <engine name="d128" description=""
directory="c:\d128.log" machine="n121"
parameters="2.6" pipe="DRIVER12892076843"
index="138100000" seed="4678" cfg_users="7750"
connect_rate="3" start_rate="0" max_concurrency="0"
concurrency_rate="0" iCLIENT_NURAND="25" CPU="5"
Checked="1" add_options=""/>
          <user engine="d1" iis_server="vcr1"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="1" connectProtocol="0"
begin_wid="1" end_wid="775" min_warehouse="1"
max_warehouse="99200" scale="0" user_count="7750"
d_id="1" scale_down="0"/>
          <user engine="d2" iis_server="vcr1"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="2" connectProtocol="0"
begin_wid="776" end_wid="1550" min_warehouse="1"
max_warehouse="99200" scale="0" user_count="7750"
d_id="1" scale_down="0"/>
          <user engine="d3" iis_server="vcr1"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="3" connectProtocol="0"
begin_wid="1551" end_wid="2325" min_warehouse="1"
max_warehouse="99200" scale="0" user_count="7750"
d_id="1" scale_down="0"/>
          <user engine="d4" iis_server="vcr1"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="4" connectProtocol="0"
begin_wid="2326" end_wid="3100" min_warehouse="1"
max_warehouse="99200" scale="0" user_count="7750"
d_id="1" scale_down="0"/>
          <user engine="d5" iis_server="vcr2"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="5" connectProtocol="0"
begin_wid="3101" end_wid="3875" min_warehouse="1"
max_warehouse="99200" scale="0" user_count="7750"
d_id="1" scale_down="0"/>
          <user engine="d6" iis_server="vcr2"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="6" connectProtocol="0"
begin_wid="3876" end_wid="4650" min_warehouse="1"
max_warehouse="99200" scale="0" user_count="7750"
d_id="1" scale_down="0"/>
          <user engine="d7" iis_server="vcr2"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="7" connectProtocol="0"
begin_wid="4651" end_wid="5425" min_warehouse="1"
max_warehouse="99200" scale="0" user_count="7750"
d_id="1" scale_down="0"/>
          <user engine="d8" iis_server="vcr2"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
```

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user="sa" password="" list_id="8" connectProtocol="0"
begin_wid="5426" end_wid="6200" min_warehouse="1"
max_warehouse="99200" scale="0" user_count="7750"
d_id="1" scale_down="0"/>
          <user engine="d9" iis_server="vcr3"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="9" connectProtocol="0"
begin_wid="6201" end_wid="6975" min_warehouse="1"
max_warehouse="99200" scale="0" user_count="7750"
d_id="1" scale_down="0"/>
          <user engine="d10" iis_server="vcr3"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="10"
connectProtocol="0" begin_wid="6976" end_wid="7750"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d11" iis_server="vcr3"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="11"
connectProtocol="0" begin_wid="7751" end_wid="8525"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d12" iis_server="vcr3"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="12"
connectProtocol="0" begin_wid="8526" end_wid="9300"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d13" iis_server="vcr4"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="13"
connectProtocol="0" begin_wid="9301" end_wid="10075"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d14" iis_server="vcr4"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="14"
connectProtocol="0" begin_wid="10076" end_wid="10850"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d15" iis_server="vcr4"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="15"
connectProtocol="0" begin_wid="10851" end_wid="11625"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d16" iis_server="vcr4"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="16"
connectProtocol="0" begin_wid="11626" end_wid="12400"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d17" iis_server="vcr5"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="17"
connectProtocol="0" begin_wid="12401" end_wid="13175"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d18" iis_server="vcr5"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="18"
connectProtocol="0" begin_wid="13176" end_wid="13950"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d19" iis_server="vcr5"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="19"
connectProtocol="0" begin_wid="13951" end_wid="14725"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d20" iis_server="vcr5"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="20"
connectProtocol="0" begin_wid="14726" end_wid="15500"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d21" iis_server="vcr6"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="21"
connectProtocol="0" begin_wid="15501" end_wid="16275"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d22" iis_server="vcr6"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="22"
connectProtocol="0" begin_wid="16276" end_wid="17050"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d23" iis_server="vcr6"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="23"
connectProtocol="0" begin_wid="17051" end_wid="17825"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d24" iis_server="vcr6"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="24"
connectProtocol="0" begin_wid="17826" end_wid="18600"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d25" iis_server="vcr7"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="25"
connectProtocol="0" begin_wid="18601" end_wid="19375"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d26" iis_server="vcr7"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="26"
connectProtocol="0" begin_wid="19376" end_wid="20150"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d27" iis_server="vcr7"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="27"
connectProtocol="0" begin_wid="20151" end_wid="20925"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d28" iis_server="vcr7"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="28"
connectProtocol="0" begin_wid="20926" end_wid="21700"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d29" iis_server="vcr8"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="29"
connectProtocol="0" begin_wid="21701" end_wid="22475"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d30" iis_server="vcr8"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="30"
connectProtocol="0" begin_wid="22476" end_wid="23250"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d31" iis_server="vcr8"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="31"
connectProtocol="0" begin_wid="23251" end_wid="24025"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d32" iis_server="vcr8"
sql_server="tcp:130.168.209.14,2001" database="tpcc"
user="sa" password="" list_id="32"
connectProtocol="0" begin_wid="24026" end_wid="24800"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d33" iis_server="vcr9"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="33"
connectProtocol="0" begin_wid="24801" end_wid="25575"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d34" iis_server="vcr9"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="34"
connectProtocol="0" begin_wid="25576" end_wid="26350"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d35" iis_server="vcr9"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="35"
connectProtocol="0" begin_wid="26351" end_wid="27125"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d36" iis_server="vcr9"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="36"
connectProtocol="0" begin_wid="27126" end_wid="27900"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d37" iis_server="vcr10"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="37"
connectProtocol="0" begin_wid="27901" end_wid="28675"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d38" iis_server="vcr10"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="38"
connectProtocol="0" begin_wid="28676" end_wid="29450"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d39" iis_server="vcr10"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
```

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user="sa" password="" list_id="39"
connectProtocol="0" begin_wid="29451" end_wid="30225"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d40" iis_server="vcr10"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="40"
connectProtocol="0" begin_wid="30226" end_wid="31000"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d41" iis_server="vcr11"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="41"
connectProtocol="0" begin_wid="31001" end_wid="31775"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d42" iis_server="vcr11"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="42"
connectProtocol="0" begin_wid="31776" end_wid="32550"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d43" iis_server="vcr11"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="43"
connectProtocol="0" begin_wid="32551" end_wid="33325"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d44" iis_server="vcr11"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="44"
connectProtocol="0" begin_wid="33326" end_wid="34100"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d45" iis_server="vcr12"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="45"
connectProtocol="0" begin_wid="34101" end_wid="34875"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d46" iis_server="vcr12"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="46"
connectProtocol="0" begin_wid="34876" end_wid="35650"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d47" iis_server="vcr12"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="47"
connectProtocol="0" begin_wid="35651" end_wid="36425"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d48" iis_server="vcr12"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="48"
connectProtocol="0" begin_wid="36426" end_wid="37200"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d49" iis_server="vcr13"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="49"
connectProtocol="0" begin_wid="37201" end_wid="37975"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d50" iis_server="vcr13"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="50"
connectProtocol="0" begin_wid="37976" end_wid="38750"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d51" iis_server="vcr13"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="51"
connectProtocol="0" begin_wid="38751" end_wid="39525"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d52" iis_server="vcr13"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="52"
connectProtocol="0" begin_wid="39526" end_wid="40300"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d53" iis_server="vcr14"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="53"
connectProtocol="0" begin_wid="40301" end_wid="41075"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d54" iis_server="vcr14"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="54"
connectProtocol="0" begin_wid="41076" end_wid="41850"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d55" iis_server="vcr14"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="55"
connectProtocol="0" begin_wid="41851" end_wid="42625"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d56" iis_server="vcr14"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="56"
connectProtocol="0" begin_wid="42626" end_wid="43400"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d57" iis_server="vcr15"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="57"
connectProtocol="0" begin_wid="43401" end_wid="44175"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d58" iis_server="vcr15"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="58"
connectProtocol="0" begin_wid="44176" end_wid="44950"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d59" iis_server="vcr15"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="59"
connectProtocol="0" begin_wid="44951" end_wid="45725"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d60" iis_server="vcr15"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="60"
connectProtocol="0" begin_wid="45726" end_wid="46500"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d61" iis_server="vcr16"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="61"
connectProtocol="0" begin_wid="46501" end_wid="47275"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d62" iis_server="vcr16"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="62"
connectProtocol="0" begin_wid="47276" end_wid="48050"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d63" iis_server="vcr16"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="63"
connectProtocol="0" begin_wid="48051" end_wid="48825"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d64" iis_server="vcr16"
sql_server="tcp:130.168.209.15,2002" database="tpcc"
user="sa" password="" list_id="64"
connectProtocol="0" begin_wid="48826" end_wid="49600"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d65" iis_server="vcr17"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="65"
connectProtocol="0" begin_wid="49601" end_wid="50375"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d66" iis_server="vcr17"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="66"
connectProtocol="0" begin_wid="50376" end_wid="51150"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d67" iis_server="vcr17"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="67"
connectProtocol="0" begin_wid="51151" end_wid="51925"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d68" iis_server="vcr17"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="68"
connectProtocol="0" begin_wid="51926" end_wid="52700"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d69" iis_server="vcr18"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="69"
connectProtocol="0" begin_wid="52701" end_wid="53475"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d70" iis_server="vcr18"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
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user="sa" password="" list_id="70"
connectProtocol="0" begin_wid="53476" end_wid="54250"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d71" iis_server="vcr18"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="71"
connectProtocol="0" begin_wid="54251" end_wid="55025"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d72" iis_server="vcr18"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="72"
connectProtocol="0" begin_wid="55026" end_wid="55800"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d73" iis_server="vcr19"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="73"
connectProtocol="0" begin_wid="55801" end_wid="56575"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d74" iis_server="vcr19"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="74"
connectProtocol="0" begin_wid="56576" end_wid="57350"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d75" iis_server="vcr19"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="75"
connectProtocol="0" begin_wid="57351" end_wid="58125"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d76" iis_server="vcr19"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="76"
connectProtocol="0" begin_wid="58126" end_wid="58900"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d77" iis_server="vcr20"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="77"
connectProtocol="0" begin_wid="58901" end_wid="59675"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d78" iis_server="vcr20"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="78"
connectProtocol="0" begin_wid="59676" end_wid="60450"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d79" iis_server="vcr20"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="79"
connectProtocol="0" begin_wid="60451" end_wid="61225"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d80" iis_server="vcr20"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="80"
connectProtocol="0" begin_wid="61226" end_wid="62000"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d81" iis_server="vcr21"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="81"
connectProtocol="0" begin_wid="62001" end_wid="62775"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d82" iis_server="vcr21"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="82"
connectProtocol="0" begin_wid="62776" end_wid="63550"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d83" iis_server="vcr21"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="83"
connectProtocol="0" begin_wid="63551" end_wid="64325"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d84" iis_server="vcr21"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="84"
connectProtocol="0" begin_wid="64326" end_wid="65100"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d85" iis_server="vcr22"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="85"
connectProtocol="0" begin_wid="65101" end_wid="65875"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d86" iis_server="vcr22"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="86"
connectProtocol="0" begin_wid="65876" end_wid="66650"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d87" iis_server="vcr22"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="87"
connectProtocol="0" begin_wid="66651" end_wid="67425"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d88" iis_server="vcr22"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="88"
connectProtocol="0" begin_wid="67426" end_wid="68200"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d89" iis_server="vcr23"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="89"
connectProtocol="0" begin_wid="68201" end_wid="68975"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d90" iis_server="vcr23"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="90"
connectProtocol="0" begin_wid="68976" end_wid="69750"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d91" iis_server="vcr23"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="91"
connectProtocol="0" begin_wid="69751" end_wid="70525"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d92" iis_server="vcr23"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="92"
connectProtocol="0" begin_wid="70526" end_wid="71300"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d93" iis_server="vcr24"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="93"
connectProtocol="0" begin_wid="71301" end_wid="72075"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d94" iis_server="vcr24"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="94"
connectProtocol="0" begin_wid="72076" end_wid="72850"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d95" iis_server="vcr24"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="95"
connectProtocol="0" begin_wid="72851" end_wid="73625"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d96" iis_server="vcr24"
sql_server="tcp:130.168.209.16,2003" database="tpcc"
user="sa" password="" list_id="96"
connectProtocol="0" begin_wid="73626" end_wid="74400"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d97" iis_server="vcr25"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="97"
connectProtocol="0" begin_wid="74401" end_wid="75175"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d98" iis_server="vcr25"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="98"
connectProtocol="0" begin_wid="75176" end_wid="75950"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d99" iis_server="vcr25"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="99"
connectProtocol="0" begin_wid="75951" end_wid="76725"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d100" iis_server="vcr25"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="100"
connectProtocol="0" begin_wid="76726" end_wid="77500"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d101" iis_server="vcr26"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
```

```
user="sa" password="" list_id="101"
connectProtocol="0" begin_wid="77501" end_wid="78275"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d102" iis_server="vcr26"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="102"
connectProtocol="0" begin_wid="78276" end_wid="79050"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d103" iis_server="vcr26"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="103"
connectProtocol="0" begin_wid="79051" end_wid="79825"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d104" iis_server="vcr26"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="104"
connectProtocol="0" begin_wid="79826" end_wid="80600"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d105" iis_server="vcr27"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="105"
connectProtocol="0" begin_wid="80601" end_wid="81375"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d106" iis_server="vcr27"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="106"
connectProtocol="0" begin_wid="81376" end_wid="82150"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d107" iis_server="vcr27"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="107"
connectProtocol="0" begin_wid="82151" end_wid="82925"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d108" iis_server="vcr27"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="108"
connectProtocol="0" begin_wid="82926" end_wid="83700"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d109" iis_server="vcr28"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="109"
connectProtocol="0" begin_wid="83701" end_wid="84475"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d110" iis_server="vcr28"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="110"
connectProtocol="0" begin_wid="84476" end_wid="85250"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d111" iis_server="vcr28"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="111"
connectProtocol="0" begin_wid="85251" end_wid="86025"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d112" iis_server="vcr28"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="112"
connectProtocol="0" begin_wid="86026" end_wid="86800"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d113" iis_server="vcr29"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="113"
connectProtocol="0" begin_wid="86801" end_wid="87575"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d114" iis_server="vcr29"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="114"
connectProtocol="0" begin_wid="87576" end_wid="88350"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d115" iis_server="vcr29"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="115"
connectProtocol="0" begin_wid="88351" end_wid="89125"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d116" iis_server="vcr29"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="116"
connectProtocol="0" begin_wid="89126" end_wid="89900"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d117" iis_server="vcr30"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="117"
connectProtocol="0" begin_wid="89901" end_wid="90675"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d118" iis_server="vcr30"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="118"
connectProtocol="0" begin_wid="90676" end_wid="91450"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d119" iis_server="vcr30"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="119"
connectProtocol="0" begin_wid="91451" end_wid="92225"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d120" iis_server="vcr30"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="120"
connectProtocol="0" begin_wid="92226" end_wid="93000"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d121" iis_server="vcr31"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="121"
connectProtocol="0" begin_wid="93001" end_wid="93775"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d122" iis_server="vcr31"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="122"
connectProtocol="0" begin_wid="93776" end_wid="94550"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d123" iis_server="vcr31"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="123"
connectProtocol="0" begin_wid="94551" end_wid="95325"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d124" iis_server="vcr31"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="124"
connectProtocol="0" begin_wid="95326" end_wid="96100"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d125" iis_server="vcr32"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="125"
connectProtocol="0" begin_wid="96101" end_wid="96875"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d126" iis_server="vcr32"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="126"
connectProtocol="0" begin_wid="96876" end_wid="97650"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d127" iis_server="vcr32"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="127"
connectProtocol="0" begin_wid="97651" end_wid="98425"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <user engine="d128" iis_server="vcr32"
sql_server="tcp:130.168.209.17,2004" database="tpcc"
user="sa" password="" list_id="128"
connectProtocol="0" begin_wid="98426" end_wid="99200"
min_warehouse="1" max_warehouse="99200" scale="0"
user_count="7750" d_id="1" scale_down="0"/>
          <params name="~Default"
description="Default Parameter Set">
                    <param_new_order txnWeight="10"
thinkTime="12.05" keyTime="18.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_payment txnWeight="10"
thinkTime="12.05" keyTime="3.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_delivery txnWeight="1"
thinkTime="5.05" keyTime="2.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_stock_level txnWeight="1"
thinkTime="5.05" keyTime="2.01" RTDelay="0.1"
RTFence="20" menuDelay="0.1"/>
                    <param_order_status txnWeight="1"
thinkTime="10.05" keyTime="2.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
          </params>
          <params name="Tuned Distribution"
description="">
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                    <param_new_order
txnWeight="44.75" thinkTime="12.05" keyTime="18.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
                    <param_payment txnWeight="43.1"
thinkTime="12.05" keyTime="3.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_delivery txnWeight="4.05"
thinkTime="5.05" keyTime="2.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_stock_level
txnWeight="4.05" thinkTime="5.05" keyTime="2.01"
RTDelay="0.1" RTFence="20" menuDelay="0.1"/>
                    <param_order_status
txnWeight="4.05" thinkTime="10.05" keyTime="2.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
          </params>
          <params name="No Think" description="">
                    <param_new_order txnWeight="10"
thinkTime="0" keyTime="0" RTDelay="0" RTFence="5"
menuDelay="0"/>
                    <param_payment txnWeight="10"
thinkTime="0" keyTime="0" RTDelay="0" RTFence="5"
menuDelay="0"/>
                    <param_delivery txnWeight="1"
thinkTime="0" keyTime="0" RTDelay="0" RTFence="5"
menuDelay="0"/>
                    <param_stock_level txnWeight="1"
thinkTime="0" keyTime="0" RTDelay="0" RTFence="20"
menuDelay="0"/>
                    <param_order_status txnWeight="1"
thinkTime="0" keyTime="0" RTDelay="0" RTFence="5"
menuDelay="0"/>
          </params>
          <params name="0.95" description="">
                    <param_new_order
txnWeight="44.75" thinkTime="13" keyTime="18.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
                    <param_payment txnWeight="43.1"
thinkTime="13" keyTime="3.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_delivery txnWeight="4.05"
thinkTime="6" keyTime="2.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_stock_level
txnWeight="4.05" thinkTime="6" keyTime="2.01"
RTDelay="0.1" RTFence="20" menuDelay="0.1"/>
                    <param_order_status
txnWeight="4.05" thinkTime="11" keyTime="2.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
          </params>
          <params name="0.9" description="">
                    <param_new_order
txnWeight="44.83" thinkTime="16" keyTime="18.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
                    <param_payment txnWeight="43.05"
thinkTime="16" keyTime="3.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_delivery txnWeight="4.04"
thinkTime="9" keyTime="2.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_stock_level
txnWeight="4.04" thinkTime="9" keyTime="2.01"
RTDelay="0.1" RTFence="20" menuDelay="0.1"/>
                    <param_order_status
txnWeight="4.04" thinkTime="14" keyTime="2.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
          </params>
          <params name="3" description="">
                    <param_new_order
txnWeight="44.83" thinkTime="36.15" keyTime="0"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
                    <param_payment txnWeight="43.05"
thinkTime="36.15" keyTime="0" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_delivery txnWeight="4.04"
thinkTime="15.15" keyTime="0" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_stock_level
txnWeight="4.04" thinkTime="15.15" keyTime="0"
RTDelay="0.1" RTFence="20" menuDelay="0.1"/>
                    <param_order_status
txnWeight="4.04" thinkTime="30.15" keyTime="0"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
          </params>
          <params name="4" description="4.0 tt">
                    <param_new_order
txnWeight="44.83" thinkTime="48.2" keyTime="18.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
                    <param_payment txnWeight="43.05"
thinkTime="48.2" keyTime="3.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_delivery txnWeight="4.04"
thinkTime="20.2" keyTime="2.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_stock_level
txnWeight="4.04" thinkTime="20.2" keyTime="2.01"
RTDelay="0.1" RTFence="20" menuDelay="0.1"/>
                    <param_order_status
txnWeight="4.04" thinkTime="40.2" keyTime="2.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
          </params>
          <params name="3.8" description="3.8 tt">
                    <param_new_order
txnWeight="44.83" thinkTime="45.7" keyTime="18.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
                    <param_payment txnWeight="43.05"
thinkTime="45.7" keyTime="3.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_delivery txnWeight="4.04"
thinkTime="19.1" keyTime="2.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_stock_level
txnWeight="4.04" thinkTime="19.1" keyTime="2.01"
RTDelay="0.1" RTFence="20" menuDelay="0.1"/>
                    <param_order_status
txnWeight="4.04" thinkTime="38.1" keyTime="2.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
          </params>
          <params name="3.6" description="3.6 tt">
                    <param_new_order
txnWeight="44.83" thinkTime="43.3" keyTime="18.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
                    <param_payment txnWeight="43.05"
thinkTime="43.3" keyTime="3.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_delivery txnWeight="4.04"
thinkTime="18.1" keyTime="2.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_stock_level
txnWeight="4.04" thinkTime="18.1" keyTime="2.01"
RTDelay="0.1" RTFence="20" menuDelay="0.1"/>
                    <param_order_status
txnWeight="4.04" thinkTime="36.18" keyTime="2.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
          </params>
          <params name="3.4" description="3.4 tt">
                    <param_new_order
txnWeight="44.83" thinkTime="40.9" keyTime="18.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
                    <param_payment txnWeight="43.05"
thinkTime="40.9" keyTime="3.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_delivery txnWeight="4.04"
thinkTime="17.1" keyTime="2.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_stock_level
txnWeight="4.04" thinkTime="17.1" keyTime="2.01"
RTDelay="0.1" RTFence="20" menuDelay="0.1"/>
                    <param_order_status
txnWeight="4.04" thinkTime="17.1" keyTime="2.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
          </params>
          <params name="3.2" description="3.2 tt">
                    <param_new_order
txnWeight="44.83" thinkTime="38.5" keyTime="18.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
                    <param_payment txnWeight="43.05"
thinkTime="38.5" keyTime="3.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_delivery txnWeight="4.04"
thinkTime="16.1" keyTime="2.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_stock_level
txnWeight="4.04" thinkTime="16.1" keyTime="2.01"
RTDelay="0.1" RTFence="20" menuDelay="0.1"/>
                    <param_order_status
txnWeight="4.04" thinkTime="32.1" keyTime="2.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
          </params>
          <params name="2.8" description="2.8 tt">
                    <param_new_order
txnWeight="44.83" thinkTime="33.74" keyTime="18.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
                    <param_payment txnWeight="43.05"
thinkTime="33.74" keyTime="3.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_delivery txnWeight="4.04"
thinkTime="14.14" keyTime="2.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_stock_level
txnWeight="4.04" thinkTime="14.14" keyTime="2.01"
RTDelay="0.1" RTFence="20" menuDelay="0.1"/>
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                    <param_order_status
txnWeight="4.04" thinkTime="28.14" keyTime="2.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
          </params>
          <params name="2.6" description="2.6 tt">
                    <param_new_order
txnWeight="44.83" thinkTime="31.3" keyTime="18.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
                    <param_payment txnWeight="43.05"
thinkTime="31.3" keyTime="3.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_delivery txnWeight="4.04"
thinkTime="13.1" keyTime="2.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_stock_level
txnWeight="4.04" thinkTime="13.1" keyTime="2.01"
RTDelay="0.1" RTFence="20" menuDelay="0.1"/>
                    <param_order_status
txnWeight="4.04" thinkTime="26.1" keyTime="2.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
          </params>
          <params name="2.4" description="2.4 tt">
                    <param_new_order
txnWeight="44.83" thinkTime="28.9" keyTime="18.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
                    <param_payment txnWeight="43.05"
thinkTime="28.9" keyTime="3.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_delivery txnWeight="4.04"
thinkTime="12.1" keyTime="2.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_stock_level
txnWeight="4.04" thinkTime="12.1" keyTime="2.01"
RTDelay="0.1" RTFence="20" menuDelay="0.1"/>
                    <param_order_status
txnWeight="4.04" thinkTime="24.1" keyTime="2.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
          </params>
          <params name="2.2" description="2.2 tt">
                    <param_new_order
txnWeight="44.83" thinkTime="28.9" keyTime="18.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
                    <param_payment txnWeight="43.05"
thinkTime="28.9" keyTime="3.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_delivery txnWeight="4.04"
thinkTime="12.1" keyTime="2.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_stock_level
txnWeight="4.04" thinkTime="12.1" keyTime="2.01"
RTDelay="0.1" RTFence="20" menuDelay="0.1"/>
                    <param_order_status
txnWeight="4.04" thinkTime="24.12" keyTime="2.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
          </params>
          <params name="2" description="2.0 tt">
                    <param_new_order
txnWeight="44.83" thinkTime="24.1" keyTime="18.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
                    <param_payment txnWeight="43.05"
thinkTime="24.1" keyTime="3.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_delivery txnWeight="4.04"
thinkTime="10.1" keyTime="2.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
                    <param_stock_level
txnWeight="4.04" thinkTime="10.1" keyTime="2.01"
RTDelay="0.1" RTFence="20" menuDelay="0.1"/>
                    <param_order_status
txnWeight="4.04" thinkTime="20.1" keyTime="2.01"
RTDelay="0.1" RTFence="5" menuDelay="0.1"/>
          </params>
          <params name="5" description="5.0 tt">
                    <param_new_order
txnWeight="44.75" thinkTime="60.25" keyTime="18.01"
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                    <param_new_order
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```

```
                    <param_payment txnWeight="43.05"
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thinkTime="90.38" keyTime="3.01" RTDelay="0.1"
RTFence="5" menuDelay="0.1"/>
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txnWeight="4.04" thinkTime="37.88" keyTime="2.01"
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          <params name="8" description="8.0 tt">
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txnWeight="4.04" thinkTime="40.4" keyTime="2.01"
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          <params name="9.5" description="9.5 tt">
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RTFence="5" menuDelay="0.1"/>
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```

```
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</benchcraft_profile>
```

Appendix D:
60-Day Space

TPC-C 60 Day Space Requirements

Warehouses	**103,168**				TpmC	**1,207,982**
Table	Rows	Data KB	Index KB	Extra 5% KB	8hr Space	Total Space KB
Warehouse	103,168	**11,008**	**192**	560		11,760
District	1,031,680	**114,632**	**368**	5,750		120,750
Customer	3,095,040,000	**2,250,938,184**	**140,443,856**	119,569,102		2,510,951,142
History	3,095,040,000	**180,732,264**	**675,360**		36,900,390	181,407,624
New_order	928,512,000	**16,543,648**	**53,104**	829,838		17,426,590
Orders	3,095,040,000	**101,062,536**	**49,308,712**		143,508,241	150,371,248
Order_line	30,950,303,715	**2,029,528,120**	**4,791,536**		679,572,808	2,034,319,656
Item	100,000	**9,416**	**184**	480		10,080
Stock	10,316,800,000	**3,301,376,000**	**6,965,960**	165,417,098		3,473,759,058
Total		7,880,315,808	202,239,272	285,822,828	859,981,439	8,368,377,908
	MB					
Dynamic Space	2,257,151	Sum of Data for Order, Orderline and History				
Static Space	5,915,093	Sum of Data+Index+5%-Dynamic Space				
Free Space	na	Total Allocated Spac - (Dynamic + Static Space)				
Daily Growth	422,860	(Dynamic Space/(W*62.5))*tpmc				
Daily Spread	-	(Free Space -1.5*Daily Growth) Zero Assumed				
60 Day Space MB	31,286,663					
60 Day Space GB	30,553.38	GB				
Log Size	2,500,000.00	MB				
KB Per New Order	5.74	KB				
8 hr log MB	3,249,752	MB				
8 hr log GB	3,173.59	GB				
Space Usage	GB Needed	Disks Measured	GB Priced	Disk Size	Formatted Size	
60 Day Space DB	30,553	90	33,300.00	400	370.00	
		60	27,900.00	500	465.00	
			0.00			
Total DB			61,200.00			
8-hr log + mirror	6,347	36	9,720.00	300	270.00	
OS, Swap	3	2	138.00	72	69.00	
Total Storage	36,903.55	GB	71,058.00	GB		

	MSSQL_fg
	11,760
	120,750
	2,510,951,142
	218,308,014
	17,426,590
	293,879,489
	2,713,892,464
	10,080
	3,473,759,058
	9,228,359,346
files=	**20**
size=	**127,999,872**
Total=	2,559,997,440
8K blocks	20,479,979,520
	OK

tpmC	1,207,982									
	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	180,732,264	675,360	198,409,104	1,341,880	17,676,840	666,520	18,343,360	0.0636	36,900,389.83	36,035.54
Order	101,062,536	49,308,712	124,707,904	97,001,976	23,645,368	47,693,264	71,338,632	0.2475	143,508,241.17	140,144.77
Order-Line	2,029,528,120	4,791,536	2,362,743,864	9,394,680	333,215,744	4,603,144	337,818,888	1.1720	679,572,807.78	663,645.32
										839,825.62
	sum(*) Before		sum(*) After		Num New-Order					
d_next_o_id	3,096,071,680		3,384,308,618		288,236,938					
	Before MB		After MB		Grow MB			KB/New- Order	8-Hr Growth MB	8-Hr Growth GB
Log	9,812.75		1,625,280.20		1,615,467.45			5.7392	3,249,752.43	3,173.59
								5,876.9026	bytes	
2,500,000	0.39251		65.011208							
Database tpcc log used (%)										

Appendix E: Third Party Quotes

Microsoft Corporation
One Microsoft Way
Redmond, WA 98052-6399

Tel 425 882 8080
Fax 425 936 7329
http://www.microsoft.com/

Microsoft

November 12, 2011

Hewlett-Packard Company
Paul Cao
21555 SH 249
Houston, TX 77070

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 ($).

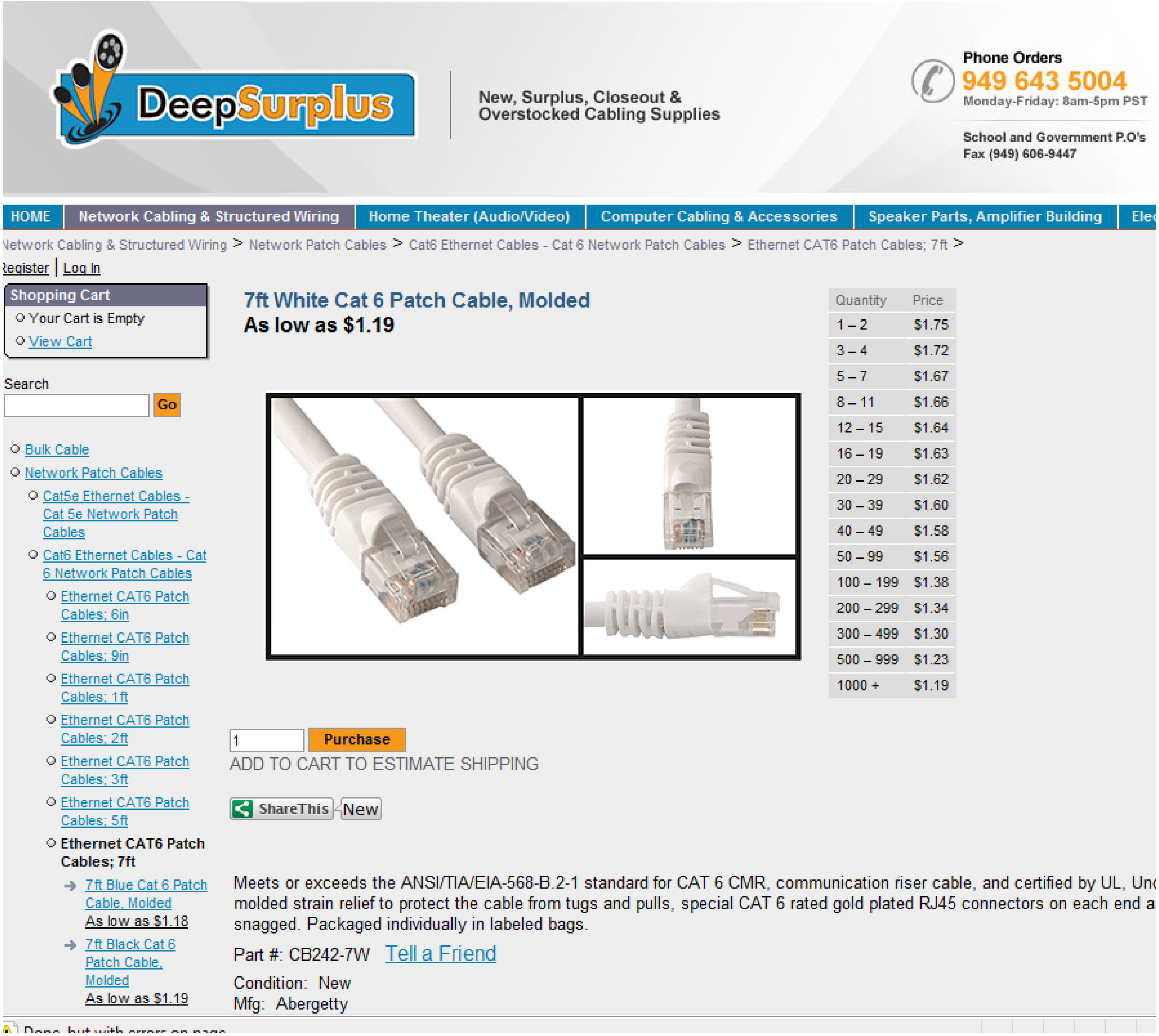
Part Number	Description	Unit Price	Quantity	Price
810-03134	**SQL Server 2005 Enterprise Edition** *Per Processor License* *Open Program - Level C* *Unit Price reflects a 6% discount from the retail unit price of $24,999.*	$23,432	2	$46,864
P72-04217	**Windows Server 2008 R2 Enterprise Edition** *Server License with 25 CALs* *Open Program - Level C* *Unit Price reflects a 43% discount from the retail unit price of $3,999.*	$2,280	1	$2,280
P73-04980	**Windows Server 2008 R2 Standard Edition** *Server License with 10 CALs* *Open Program - Level C* *Unit Price reflects a 31% discount from the retail unit price of $1,029.*	$711	20	$14,220
N/A	**Microsoft Problem Resolution Services** *Professional Support* *(1 Incident).*	$259	1	$259

SQL Server 2005 Enterprise Edition, Windows Server 2008 R2 Enterprise Edition, and Windows Server 2008 R2 Standard Edition are currently orderable and available through Microsoft's normal distribution channels. A list of Microsoft's resellers can be found in the Microsoft Product Information Center at
http://www.microsoft.com/products/info/render.aspx?view=22&type=how

Defect support is included in the purchase price. Additional support is available from Microsoft PSS on an incident by incident basis at $259 call.

This quote is valid for the next 90 days.

Reference ID: TPCC_qhtplylGYLKTVUKfiiiJjhiIilmOiif85757.



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Network Cabling & Structured Wiring > Network Patch Cables > Cat6 Ethernet Cables - Cat 6 Network Patch Cables > Ethernet CAT6 Patch Cables; 7ft >

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  - Cat6 Ethernet Cables - Cat 6 Network Patch Cables
    - Ethernet CAT6 Patch Cables; 6in
    - Ethernet CAT6 Patch Cables; 9in
    - Ethernet CAT6 Patch Cables; 1ft
    - Ethernet CAT6 Patch Cables; 2ft
    - Ethernet CAT6 Patch Cables; 3ft
    - Ethernet CAT6 Patch Cables; 5ft
    - **Ethernet CAT6 Patch Cables; 7ft**
      - → 7ft Blue Cat 6 Patch Cable, Molded
As low as $1.18
      - → 7ft Black Cat 6 Patch Cable, Molded
As low as $1.19

7ft White Cat 6 Patch Cable, Molded

As low as $1.19

Quantity	Price
1 – 2	$1.75
3 – 4	$1.72
5 – 7	$1.67
8 – 11	$1.66
12 – 15	$1.64
16 – 19	$1.63
20 – 29	$1.62
30 – 39	$1.60
40 – 49	$1.58
50 – 99	$1.56
100 – 199	$1.38
200 – 299	$1.34
300 – 499	$1.30
500 – 999	$1.23
1000 +	$1.19

1 Purchase

ADD TO CART TO ESTIMATE SHIPPING

Meets or exceeds the ANSI/TIA/EIA-568-B.2-1 standard for CAT 6 CMR, communication riser cable, and certified by UL, Und
molded strain relief to protect the cable from tugs and pulls, special CAT 6 rated gold plated RJ45 connectors on each end a
snagged. Packaged individually in labeled bags.

Part #: CB242-7W Tell a Friend

Condition: New

Mfg: Abergetty

Done, but with errors on page

Appendix F:
Price Verification and Availability

The HP PCIe SAS HBA will be available May 14, 2012.

ROM Features will be available February 20, 2012.

HP Direct: 800-203-6748
For price verification before order date: e-mail hp.pricing.desk@hp.com

Appendix G: TPC-Energy Disclosure Report

G.1. TPC-Energy Clause 2-related items (Methodology)

G.1.1. Minimum ambient temperature

The minimum ambient temperature must be disclosed

Minimum Temperature reported by EMSC = 20.44°C

G.1.2. External electric power source characteristics

The characteristics of the external electric power source must be disclosed. In particular, the voltage, frequency in Hertz, and phase information must be reported.

The external electric power source has the folowing characteristics: 208V, 60Hz, single phase.

G.1.3. Air-pressure alterations

A statement is required that assures that nothing was done to alter the air-pressure in the measurement environment.

Nothing was done to alter the air-pressure in the measurement environment.

G.1.4. Temperature measurement

A description of where the temperature was measured and how it was determined that this was representative of the lowest ambient temperature is required.

Temperature was measured at the SUT air inlet and the air conditioning returns blow cold air at SUT air inlet.

G.1.5. Cooling method

If a method of cooling other than circulation of ambient air is employed in the REC, a statement describing this method must be included.

No other method of cooling was used.

G.1.6. PTD license

To be compliant with licenses associated with EMS, the following statement must be included in every FDR which contains a TPC-Energy Metric:

The power and temperature characteristics of the MEC were measured using TPC's Energy Measurement Software (EMS). This includes the EMS-PTD, a modified version of the SPEC PTDaemon, which is provided under license from the Standard Performance Evaluation Corporation (SPEC).

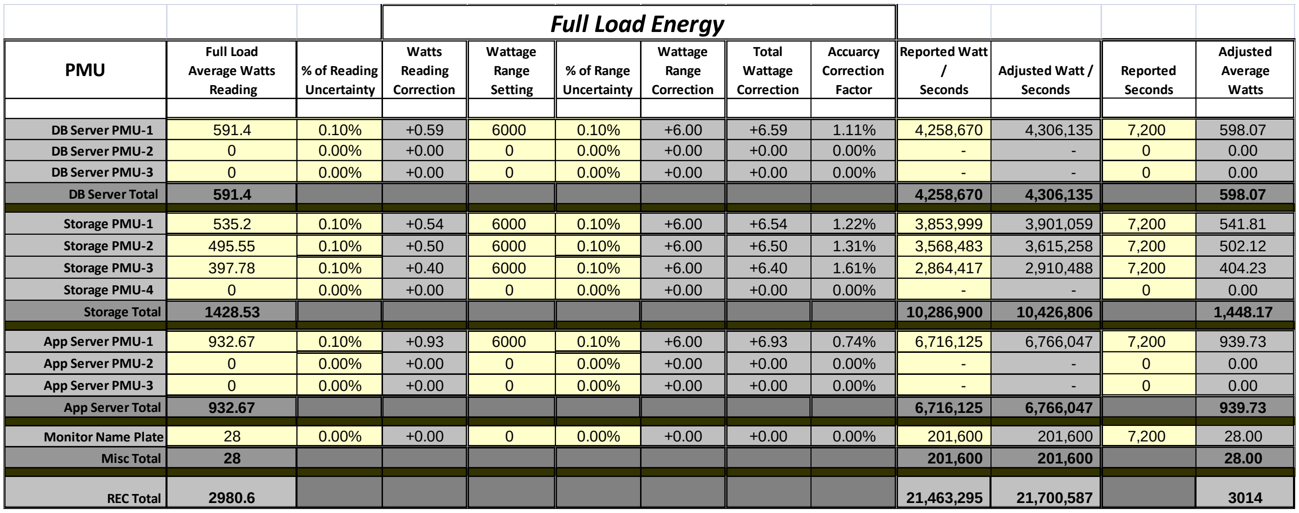
G.2. TPC-Energy Clause 3-related items (Metrics)

G.2.1. Primary Metric

The normalized work derived from the Performance Metric (as described in Clause 3.2.1) must be disclosed

2.49 watts / ktpmC

The computation for total energy used for each measurement segment that contributes to a Performance Metric must be disclosed. If the energy of the entire Priced Configuration is not derived from direct measurements, the methods for deriving the energy for components that were not measured must be disclosed (See Clause 7.3.3.4)



			Full Load Energy										
PMU	Full Load Average Watts Reading	% of Reading Uncertainty	Watts Reading Correction	Wattage Range Setting	% of Range Uncertainty	Wattage Range Correction	Total Wattage Correction	Accuarcy Correction Factor	Reported Watt / Seconds	Adjusted Watt / Seconds	Reported Seconds	Adjusted Average Watts
DB Server PMU-1	591.4	0.10%	+0.59	6000	0.10%	+6.00	+6.59	1.11%	4,258,670	4,306,135	7,200	598.07
DB Server PMU-2	0	0.00%	+0.00	0	0.00%	+0.00	+0.00	0.00%	-	-	0	0.00
DB Server PMU-3	0	0.00%	+0.00	0	0.00%	+0.00	+0.00	0.00%	-	-	0	0.00
DB Server Total	591.4								4,258,670	4,306,135		598.07
Storage PMU-1	535.2	0.10%	+0.54	6000	0.10%	+6.00	+6.54	1.22%	3,853,999	3,901,059	7,200	541.81
Storage PMU-2	495.55	0.10%	+0.50	6000	0.10%	+6.00	+6.50	1.31%	3,568,483	3,615,258	7,200	502.12
Storage PMU-3	397.78	0.10%	+0.40	6000	0.10%	+6.00	+6.40	1.61%	2,864,417	2,910,488	7,200	404.23
Storage PMU-4	0	0.00%	+0.00	0	0.00%	+0.00	+0.00	0.00%	-	-	0	0.00
Storage Total	1428.53								10,286,900	10,426,806		1,448.17
App Server PMU-1	932.67	0.10%	+0.93	6000	0.10%	+6.00	+6.93	0.74%	6,716,125	6,766,047	7,200	939.73
App Server PMU-2	0	0.00%	+0.00	0	0.00%	+0.00	+0.00	0.00%	-	-	0	0.00
App Server PMU-3	0	0.00%	+0.00	0	0.00%	+0.00	+0.00	0.00%	-	-	0	0.00
App Server Total	932.67								6,716,125	6,766,047		939.73
Monitor Name Plate	28	0.00%	+0.00	0	0.00%	+0.00	+0.00	0.00%	201,600	201,600	7,200	28.00
Misc Total	28								201,600	201,600		28.00
REC Total	2980.6								21,463,295	21,700,587		3014

All monitors power consumption in the Miscellanous Subsystem were calculated using nameplate values.

The duration of each measurement that produces a Performance Metric must be disclosed

The duration of the measured runs were 120 minutes.
The idle measurements were 10 minutes.

The average power requirement for each measurement that produces one of these metrics, TPC-C measurement interval average power requirement:

	Secondary Metrics	Additional Numerical Quanties				
	Watts / KtpmC	Full Load Avg Watts	Full Load % of REC	Full Load Watt Mins.	Idle Avg. Watts	Idle % of REC
Database Server	**0.50**	**598.07**	19.8%	**71,769**	**415.76**	15.5%
Storage	**1.20**	**1,448.17**	48.1%	**173,780**	**1,406.40**	52.5%
Application Server	**0.78**	**939.60**	31.2%	**112,767**	**827.04**	31%
Miscellaneous	**0.02**	**28.00**	0.9%	**3,360**	**28.00**	1.0%
Total REC	**2.49**	**3014**	100%	**361676**	**2677**	100.00%

The TPC-Energy Primary Metric must be disclosed, including the calculation that is used to derive it.

Total REC Energy Consumption = 361,676 Watt-minutes
SUT Total Work = 144,957,840 transactions

361,676 Watt-minutes / 144,957,840 transactions = 0.00249 watts / tpmC
0.00249 watts / tpmC * 1000 = 2.490 watts / ktpmC

G.2.2. Secondary Metrics At Reported Performance

If the TPC-Energy Secondary Metrics are reported, the components of the REC that are included in each subsystem must be identified. This can be achieved with separate lists to be included in the FDR or with a specific designation in the price spreadsheet. Every component in the REC that consumes energy must be included in exactly one subsystem.

Description	Part Number	Qty
Server Subsystem		
HP DL385G7 SFF CTO Chassis	573122-B21	1
HP DL385G7 6282SE FIO Kit	654868-L21	2
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Reg CAS-9 LP Kit	627808-B21	16
HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Reg CAS-7 LP Kit	627810-B21	8
HP 72GB 6G SAS 15K SFF DP ENT HDD	512545-B21	2
HP PCIe SAS HBA	631673-B21	5
HP SC08e 6Gb 2-ports Ext PCIe SAS Host Bus Adapter	614988-B21	1
Storage Subsystem		
HP 500GB 6G SAS 7.2K SFF DP ENT HDD	507610-B21	60
HP 400GB SAS 2.5in SSD SLC Drive	632494-B21	90
HP 300GB 6G SAS 10K rpm SFF Quick-release DP Ent 3yr Warranty Hard Drive	507127-B21	36
HP StorageWorks D2700 Disk Enclosure	AJ941A	10
HP StorageWorks P2000 G3 SAS MSA Dual Controller SFF Array System	AW594A	2
Application Server Subsystem		
HP DL360G7 CTO Chassis	579237-B21	4
HP X5670 DL360G6/G7 FIO Kit	588062-L21	8
HP 460W CS HE Power Supply Kit	503296-B21	4
HP NC365T 4-port Ethernet Server Adapter	593722-B21	8
HP 2GB 2Rx8 PC3-10600R-9 Kit	500656-B21	48
HP 300GB 6G SAS 10K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty	507127-B21	16
HP ProCurve 2910al-48G Switch	J9147A#ABA	1
Miscellaneous Subsystem		
HP 2011x 20-inch LED Monitor	XP597AA#ABA	1

For each defined subsystem, the calculations defined for the TPC-Energy Secondary Metrics in Clause 3.3 must be reported, using the Performance Metric of the entire SUT and the energy consumption for each REC subsystem.

	Secondary Metrics	Additional Numerical Quanties				
	Watts / KtpmC	Full Load Avg Watts	Full Load % of REC	Full Load Watt Mins.	Idle Avg. Watts	Idle % of REC
Database Server	0.50	598.07	19.8%	71,769	415.76	15.5%
Storage	1.20	1,448.17	48.1%	173,780	1,406.40	52.5%
Application Server	0.78	939.60	31.2%	112,767	827.04	31%
Miscellaneous	0.02	28.00	0.9%	3,360	28.00	1.0%
Total REC	2.49	3014	100%	361676	2677	100.00%
Reported tpmC	1,207,982	Sut Total Work		144,957,840		
KtpmC	1207.982	MI in Minutes		120		

1,207,982 tpmC * 120 minutes MI = 144,957,840 transactions (SUT Total Work)

71,769 Watt-min / 144,957,840 transactions x 1000 = 0.50 DBServer watts/KtpmC

173,780 Watt-min / 144,957,840 transactions x 1000 = 1.20 Storage watts/KtpmC

112,767 Watt-min / 144,957,840 transactions x 1000 = 0.78 AppServer watts/KtpmC

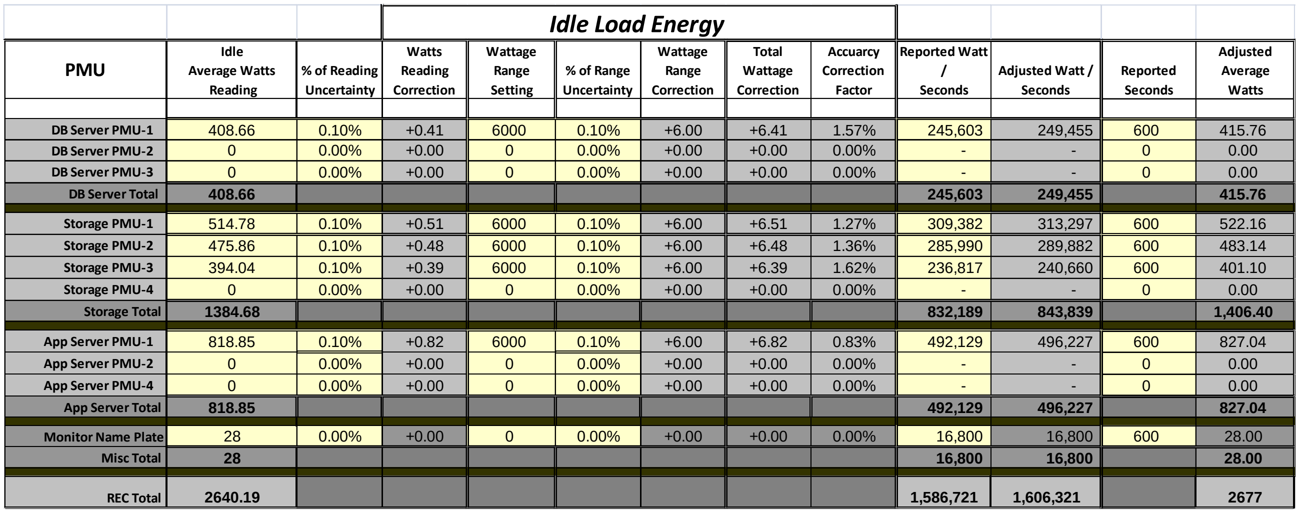
3,360 Watt-min / 144,957,840 transactions x 1000 = 0.02 Misc. watts/KtpmC

G.2.3. Idle Power reporting

The Idle Power measurement/calculation for the REC must be reported as numerical quantities.

The Idle power measurement for REC = 2677 Watts.

If TPC-Energy Secondary Metrics are reported, then the Idle Power measurement/calculation for each subsystem must also be reported as numerical quantities.



			Idle Load Energy									
PMU	**Idle Average Watts Reading**	**% of Reading Uncertainty**	**Watts Reading Correction**	**Wattage Range Setting**	**% of Range Uncertainty**	**Wattage Range Correction**	**Total Wattage Correction**	**Accuarcy Correction Factor**	**Reported Watt / Seconds**	**Adjusted Watt / Seconds**	**Reported Seconds**	**Adjusted Average Watts**
DB Server PMU-1	408.66	0.10%	+0.41	6000	0.10%	+6.00	+6.41	1.57%	245,603	249,455	600	415.76
DB Server PMU-2	0	0.00%	+0.00	0	0.00%	+0.00	+0.00	0.00%	-	-	0	0.00
DB Server PMU-3	0	0.00%	+0.00	0	0.00%	+0.00	+0.00	0.00%	-	-	0	0.00
DB Server Total	**408.66**								**245,603**	**249,455**		**415.76**
Storage PMU-1	514.78	0.10%	+0.51	6000	0.10%	+6.00	+6.51	1.27%	309,382	313,297	600	522.16
Storage PMU-2	475.86	0.10%	+0.48	6000	0.10%	+6.00	+6.48	1.36%	285,990	289,882	600	483.14
Storage PMU-3	394.04	0.10%	+0.39	6000	0.10%	+6.00	+6.39	1.62%	236,817	240,660	600	401.10
Storage PMU-4	0	0.00%	+0.00	0	0.00%	+0.00	+0.00	0.00%	-	-	0	0.00
Storage Total	**1384.68**								**832,189**	**843,839**		**1,406.40**
App Server PMU-1	818.85	0.10%	+0.82	6000	0.10%	+6.00	+6.82	0.83%	492,129	496,227	600	827.04
App Server PMU-2	0	0.00%	+0.00	0	0.00%	+0.00	+0.00	0.00%	-	-	0	0.00
App Server PMU-4	0	0.00%	+0.00	0	0.00%	+0.00	+0.00	0.00%	-	-	0	0.00
App Server Total	**818.85**								**492,129**	**496,227**		**827.04**
Monitor Name Plate	28	0.00%	+0.00	0	0.00%	+0.00	+0.00	0.00%	16,800	16,800	600	28.00
Misc Total	**28**								**16,800**	**16,800**		**28.00**
REC Total	**2640.19**								**1,586,721**	**1,606,321**		**2677**

The length of time between the conclusion of the performance measurement and the start of the idle measurement must be reported. The duration of the idle measurement must be reported

<u>Idle measurement for Server and Storage subsystems:</u>
This Idle measurement started 5.45 minutes after all processing stopped.
The duration of this measurement was 10 minutes.

<u>Idle measurement for Application Servers subsystem:</u>
This second idle measurement (clients) was started 2 minutes 1 second after proccesing stopped following the conclusion of a subsequent performance measurement, which had a TPC-C throughput greater-than 98% of the reported tpmC.

A statement is required that assures that the system is in a state that is ready to run the Application(s) of the benchmark for the duration of the idle measurement.

> The system is in a state that is ready to run the Application(s) of the benchmark for the duration of the idle measurement. This was verified by executing one transaction after the idle measurement interval was completed. The transaction time was compared to the allowed 90th percentile and found to meet the required specification.

G.2.4. Disclosure requirements when only part of the REC is measured for power

If all PMU's of the REC are not measured for energy use, the FDR must include a description of which PMUs of REC were measured with a power analyzer. The FDR must disclose which PMUs of the REC were computed based on the energy measurements of similar PMUs. A diagram must be included that identifies the portions of *the configuration which were measured for energy use and which were calculated. This diagram may be combined with other diagrams required by the TPC Benchmark Standard.*

- *The method used to determine which PMUs were measured must be disclosed.*
- *The power values for the each partial-REC measurement for duration of the performance and idle measurements must be disclosed.*
- *The calculation for the power requirements of the entire REC and, if applicable, each subsystem must be disclosed.*

N/A.

G.2.5. Disclosure requirements when component substitution is used

If the TPC Benchmark Standard allows the Priced Configuration to differ from the Measured Configuration, the methods used to assign energy or power characteristics to the substitute components must be disclosed

The monitor power consumption in the Miscellaneous Subsystem was calculated using nameplate values.

The method used to determine which PMUs were measured must be disclosed

Nameplate values were used for the monitor.

The power values for the each partial-REC measurement for duration of the performance and idle measurements must be disclosed.

N/A.

G.3. TPC-Energy Clause 4-related items (Drivers /Controller)

A statement indicating the version of EMS used must be included in the FDR, including a statement that no alterations of this code were made for the benchmark, except as specified by Clause 7.3.4.3. This includes levels for the EMS-PTD Manager, EMS-PTD and EMS-controller

EMS version was 1.4.2 and no alterations were made.

Input parameters for the EMS software must be disclosed

The following EMS scripts were used to configure the EMS software.

FILE: 385tpcen.bat

```
@echo off
rem ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
rem ++     TPC Energy Script      M. Nikolaiev      July 2009
rem ++
rem ++    Start instance(s) of PTD, PTDM, and EMSC for HP ProLiant TPC Benchmark
rem ++
rem ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
rem
set EMSPATH=c:\ems
echo +++ Script to start instance(s) of PTD PTDM and EMSC for ProLiant TPC Benchmark +++
echo EMSPATH = %EMSPATH%
rem

start "PTD Server Power 8889" /D%EMSPATH%  %EMSPATH%\ptd -p 8889 -g -b 0  8 6
echo Started PTD on port 8889
sleep 1

start "PTD Server Temperature 8894" /D%EMSPATH%  %EMSPATH%\ptd -t -p 8894 1001 com3
echo Started PTD on port 8894
sleep 1

start "PTD Storage 1 8890" /D%EMSPATH%  %EMSPATH%\ptd -p 8890 -g -b 0  8 2
echo Started PTD on port 8890
sleep 1

start "PTD Storage 2 8891" /D%EMSPATH%  %EMSPATH%\ptd -p 8891 -g -b 0  8 3
echo Started PTD on port 8891
sleep 1

start "PTD Storage 3 8892" /D%EMSPATH%  %EMSPATH%\ptd -p 8892 -g -b 0  8 4
echo Started PTD on port 8892
sleep 1

start "PTD Client Power 8893" /D%EMSPATH%  %EMSPATH%\ptd -p 8893 -g -b 1  8 7
echo Started PTD on port 8893
sleep 1

start "PTD Client Temperature 8895" /D%EMSPATH%  %EMSPATH%\ptd -t -p 8895 1001 com5
echo Started PTD on port 8895
```

```
sleep 1

echo
start "PTDM Server Power 8889" /D%EMSPATH%  %EMSPATH%\ptdm -r 1000 -i "srv_pwr" localhost
8889
echo Started PTDM on localhost connected to PTD Port = 8889
sleep 1


start "PTDM Server Temp 8894" /D%EMSPATH%  %EMSPATH%\ptdm -r 10000 -i "srv_temp"
localhost 8894
echo Started PTDM on localhost connected to PTD Port = 8894
sleep 2

echo
start "PTDM Storage Power 1 8890" /D%EMSPATH%  %EMSPATH%\ptdm -r 1000 -i "st_pwr1"
localhost 8890
echo Started PTDM on localhost connected to PTD Port = 8890
sleep 1

echo
start "PTDM Storage Power 2 8891" /D%EMSPATH%  %EMSPATH%\ptdm -r 1000 -i "st_pwr2"
localhost 8891
echo Started PTDM on localhost connected to PTD Port = 8891

echo
start "PTDM Storage Power 3 8892" /D%EMSPATH%  %EMSPATH%\ptdm -r 1000 -i "st_pwr3"
localhost 8892
echo Started PTDM on localhost connected to PTD Port = 8892

echo
start "PTDM Client Power 8893" /D%EMSPATH%  %EMSPATH%\ptdm -r 1000 -i "cl_pwr" localhost
8893
echo Started PTDM on localhost connected to PTD Port = 8893

start "PTDM Client Temp 8895" /D%EMSPATH%  %EMSPATH%\ptdm -r 10000 -i "cl_temp" localhost
8895
echo Started PTDM on localhost connected to PTD Port = 8895
sleep 2

start "EMS Controller" /D%EMSPATH%  %EMSPATH%\emsc
echo Started emsc...
echo
```

FILE: ready.ems

```
#
# ready.ems for DL385G7
#
#
set echo off
echo Setting-up to get ready for collecting data . . .
#
sleep 2
echo Starting Logging on Temperature PTDM(s)
#
start log >srv_temp
sleep 1
#
start log >cl_temp
sleep 1
#
echo Starting Logging on Server Power PTDM(s)
#
start log >srv_pwr
sleep 1
#
#
echo Starting Logging on Clients Power PTDM(s)
#
start log >cl_pwr
sleep 1
#
echo Starting Logging on Storage Power PTDM(s)
#
start log >st_pwr1
sleep 1
#
start log >st_pwr2
sleep 1
#
start log >st_pwr3
sleep 1
#
#
echo All Logs should be now started . . .
sleep 1
#
show ptdm
#
sleep 2
#
echo
echo Syncing time with all PTDMs
#
echo
time sync
sleep 3
#
#
echo
echo Logging READY message to all PTDMs
#
echo
echo
log ALL PTDMs ready and logging . . .
#
echo
echo !!!!! Reminder:  Set Power Meter Ranges and Sample Rates if required !!!!!
echo
#
```

FILE: set-ranges.ems

```
#
# set-ranges.ems for DL385G7
#
#
set echo off
echo Setting ranges for Server Power Meter
#
set amps 20 >srv_pwr
sleep 2
set volts 300 >srv_pwr
sleep 2
#
echo ==== Setting ranges for Client Power Meter =====
#
set amps 20 >cl_pwr
sleep 2
set volts 300 >cl_pwr
sleep 2
#
echo ===== Setting ranges for Storage Power Meters =====
#
set amps 20 >st_pwr1
sleep 2
set volts 300 >st_pwr1
sleep 1
set amps 20 >st_pwr2
sleep 2
set volts 300 >st_pwr2
sleep 1
set amps 20 >st_pwr3
sleep 2
set volts 300 >st_pwr3
sleep 2
#
echo =========== Ranges Set . . . ===========
#
echo ================ Server Power Meter Ranges =======================
get range >srv_pwr
#
sleep 2
echo ================ Client Power Meter Ranges =======================
get range >cl_pwr
#
sleep 2
echo ================ Storage Power Meter Ranges ======================
get range >st_pwr1
sleep 2
get range >st_pwr2
sleep 2
get range >st_pwr3
#
echo
echo
```

FILE: set-ranges.ems

```
#
# start-data.ems for DL385G7
#
#
set echo off
echo Starting Data Collection for Temperature Probes
#
start data >srv_temp
sleep 1
start data >cl_temp
#
#
Sleep 1
```

```
echo Starting Data Collection for Server Power Meter
#
start data >srv_pwr
sleep 1
#
echo Starting Data Collection for Client Power Meters
start data >cl_pwr
sleep 1
#
echo Starting Data Collection for Storage Power Meters
#
start data >st_pwr1
sleep 1
start data >st_pwr2
sleep 1
start data >st_pwr3
sleep 1
#
echo
echo Data Collection started on all PTDMs . . .
echo
#
#
```

Any changes in the EMS components must be documented. Documentation must include a description of the issue, the reason the change was necessary for disclosure of the Result, and the changes made to resolve it. Any change to TPC-Provided Code must be included with the submission as a Supporting File.

No changes to EMS components were made.

G.4. TPC-Energy Clause 6-related items (Instrumentation)

G.4.1. Power Analyzer information

			Power Analyzer Specifications and Settings						
PMU	**Make**	**Model**	**Serial Number**	**Calibration Date**	**Wattage (W) Range Setting**	**Voltage (V) Range Setting**	**Current (A) Range Setting**	**% of reading**	**% of Range**
DB Server PMU-1	Yokogawa	WT210	91K208942	1/24/2011	6000	300	20	0.10%	0.10%
Storage PMU-1	Yokogawa	WT210	91K208943	1/24/2011	6000	300	20	0.10%	0.10%
Storage PMU-2	Yokogawa	WT210	91GB47169	4/7/2011	6000	300	20	0.10%	0.10%
Storage PMU-3	Yokogawa	WT210	91GB53024	4/7/2011	6000	300	20	0.10%	0.10%
App Server PMU-1	Yokogawa	WT210	91GC23225	1/24/2011	6000	300	20	0.10%	0.10%

G.4.2. Temperature Sensor information

Make and model.
Accuracy and the source of info

Digi Watchport/H Temperature Probe.

Temperature accuracy from Manufactures Datasheet:
+/- 3.6º F (+/- 2º C) at -40º F to 14º F (-40º C to -10º C)
+/- 0.9º F (+/- 0.5º C) at 14º F to 185º F (-10º C to 85º C)

G.5. TPC-Energy Clause 8-related items

G.5.1. Auditor's attestation letter.

November 13, 2011

Mr. Paul Cao
Senior System Engineer
Hewlett-Packard Company
20555 SH 249
Houston, TX 77070

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

Platform:	HP ProLiant DL385 G7
Database Manager:	Microsoft SQL Server 2005 R2 Enterprise Edition
Operating System:	Microsoft Windows Server 2008 R2 Enterprise Edition
Transaction Monitor:	Microsoft COM+

System Under Test:				
CPU's	Memory	Disks (total)	90% Response	TpmC
2 AMD 16 core HT @ 2.6 Ghz	Main: 512 GB	90 SSD @ 400GB 60 @ 500 GB 36 @ 300GB 2 @ 72 GB	0.21	**1,207,982**
Clients: 4 DL360G7				
2 Xeon 6 coreHT @ 2.93 Ghz	24 GB	4 @ 300 GB	NA	NA

In addition to the performance metric, the energy consumption was measured during the performance runs in compliance with the TPC-Energy specification.

- The power analyzers used were verified to be approved and calibrated within one year prior to this measurement.
- The energy measurements met all requirements of the specification unless an exception is noted below.
- The calculations for the TPC-Energy Primary Metric were verified as completed correctly.
- The EMS software was verified to be the correct version and without any changes.
- The executive summary page and the FDR were verified for accuracy.

Auditor's Notes:

1. Idle measurements were collected on two different runs. The required transaction response time was collected only once. The required response time for New Order 90th% is 5 seconds. The New Order transaction after the second idle measurement was 0.03 seconds. This is consistent with other idle response times I have witnessed. Although the first idle measurement did not have a transaction response time, the idle response time was successfully demonstrated on the second idle measurement.

2. The logs for the power measurement of the clients in the performance run were corrupted near the end of the performance measurement interval. Therefore power measurements for the clients were taken from an earlier interval within the same performance run. While this is not expressly permitted by the specification, it is allowed to take multiple performance runs to measure different subsets of the configuration. Since this second window met all the requirements of a second performance run, the use of the alternate measurement window was allowed as the reported power measurement for the clients.

Sincerely,

Lorna Livingtree

Lorna Livingtree, Certified Auditor

TPC TRANSACTION PROCESSING PERFORMANCE COUNCIL
CERTIFIED AUDITOR

G.6. TPC-Energy Supporting Files Index

Clause	Description	Path
7.4.1	RGEN Report File	050.PTDM-cl_pwr.out
7.4.1	PTDM Log File	050.PTDM-cl_pwr.xml
7.4.1	RGEN Report File	050.PTDM-srv_pwr.out
7.4.1	PTDM Log File	050.PTDM-srv_pwr.xml
7.4.1	RGEN Report File	050.PTDM-srv_temp.out
7.4.1	PTDM Log File	050.PTDM-srv_temp.xml
7.4.1	RGEN Report File	050.PTDM-st_pwr1.out
7.4.1	PTDM Log File	050.PTDM-st_pwr1.xml
7.4.1	RGEN Report File	050.PTDM-st_pwr2.out
7.4.1	PTDM Log File	050.PTDM-st_pwr2.xml
7.4.1	RGEN Report File	050.PTDM-st_pwr3.out
7.4.1	PTDM Log File	050.PTDM-st_pwr3.xml
7.4.1	SQL Output File	1-NewOrder-after-idle.output
7.4.3	Windows Command File	385tpcen.bat
7.4.1	Spreadsheet File	DL385G7-TPC-C_Energy.xls
7.4.1	RGEN Report File	idle.050.PTDM-srv_pwr.out
7.4.1	RGEN Report File	idle.050.PTDM-srv_temp.out
7.4.1	RGEN Report File	idle.050.PTDM-st_pwr1.out
7.4.1	RGEN Report File	idle.050.PTDM-st_pwr2.out
7.4.1	RGEN Report File	idle.050.PTDM-st_pwr3.out
7.4.1	RGEN Report File	idle.057.PTDM-cl_pwr.out
7.4.1	PTDM Log File	idle.057.PTDM-cl_pwr.xml
7.4.3	EMSC Command File	ready.ems
7.4.3	EMSC Command File	run50-report.ems
7.4.3	EMSC Command File	set-ranges.ems
	EMSC Command File	start-data.ems