

TPC Benchmark™ C
Full Disclosure Report
for
Dell PowerEdge 2900
using
Oracle 11g Database Server Standard Edition
and
Microsoft Windows Server 2003 Standard
x64 Edition SP1

First Edition
Submitted for Review
February 20, 2009

First Edition, February 20, 2009

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The pricing information given in this FDR is accurate as of the first publication date, February 20, 2009 and is generally available.

Benchmark results are highly dependent upon workload, specific application requirements, and system design and implementation. Relative system performance will vary as a result for 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. Actual performance experienced by a particular customer may vary due to differences in system layout and configuration, hardware and/or software revision levels, and background system activity. The content of this document is for informational purposes only.

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Abstract

Overview

This report documents the methodology and results of the TPC Benchmark™ C test conducted on Dell PowerEdge 2900. The tests were run in a client/server configuration using one PowerEdge SC 1430 as client. The Database Management System used in this benchmark was Oracle 11g which was deployed on Microsoft Windows Server 2003 SP1 operating system on the database server and Microsoft Windows Server 2003 Standard Edition on the client. Microsoft COM+ provided the database connection queues. All tests were done in compliance with Revision 5.10 of the Transaction Processing Council's TPC Benchmark™ C Standard Specification. Two standard TPC Benchmark™ C metrics, transactions per second (tpmC) and price per tpmC (\$/tpmC) are reported and referred to in this document. The results from the tests are summarized below.

Hardware	Software	Total System Cost	tpmC	\$/tpmC	Availability Date
Dell PowerEdge 2900	Oracle Database 11g Standard Edition with Windows Server 2003 Standard x64 Edition SP1	\$62,567	104,492	\$.60	Feb 20, 2009

Auditor

The results of the benchmark and test methodology used to produce the results were audited by Lorna Livingtree of Performance Metrics and have fully met the TPC-C rev 5.10 specifications.

Additional copies of this Full Disclosure Report can be obtained from either the Transaction Processing Performance Council or Dell at the following address:

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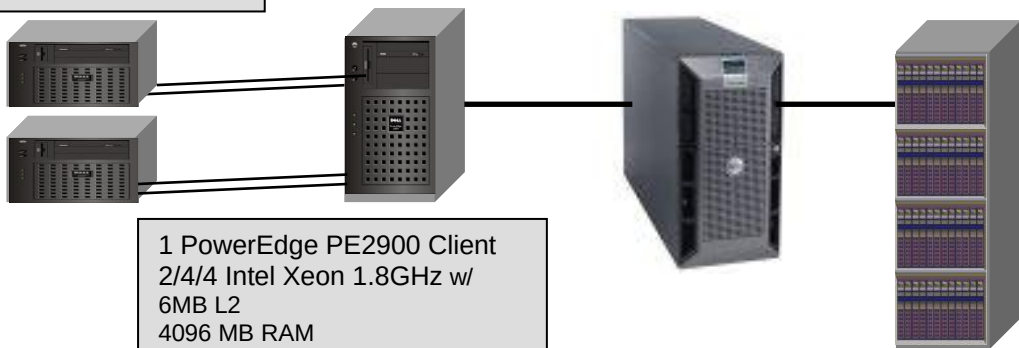
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		PowerEdge 2900 Server with Oracle Database 11g Standard Edition One		TPC-C Rev 5.10 Original Report Date February 20, 2009	
Total System Cost		TPC-C Throughput		Price/Performance	
\$62,567		104,492 tpmC		\$.60 / tpmC	
Availability Date		February 20, 2009			
Processors		Database Manager		OS	
Other Software		Number of Users			
1/4/4 Quad Core Intel® Xeon® 5440,2X6MB Cache, 2.83GHZ 1333MHZ FSB		Oracle Database 11g Standard Edition One		Microsoft Windows Server 2003 Standard x64 Edition SP1	
Windows Server 2003 Standard Edition w/ COM+ Internet Information Server 6.0 Microsoft Visual C++		82,600			

82,600 Emulated
Users
Running on 1
PE1600 and 1 R805
RTE Machines
Connected Through
Cross-over cables

PowerEdge 2900
1/4/4 Quad Core Intel® Xeon®
5440, 2x6MB Cache, 2.83GHZ,
32GB 667MHz FBD
4 Dell PERC6/E SAS RAID
Controller, 1 Integrated PERC5i
SAS RAID Controller.
6 146GB, 3GBPS, SAS, 3.5IN,
15K
2 On Board Broadcom ports

4 PowerVault MD1120 SAS Disk encl.
25 73GB 2.5" 15K RPM SAS Disks
71 36GB 2.5" 15K RPM SAS Disks



1 PowerEdge PE2900 Client
2/4/4 Intel Xeon 1.8GHz w/
6MB L2
4096 MB RAM
1 80GB SATA 7.2K Disk
1 Intel Pro 1000 Dual port NIC
2 onboard Broadcom ports

System Component		Server		Each Client	
Processor/Core/Cache	1	1/4/4 Quad Core Intel® Xeon® 5440, 2x6MB Cache, 2.83GHZ, 1333		2	2/4/4 Intel® Xeon® w/ 6MB L2, 1.8GHZ
Memory		32GB 667 FB-DIMM			4 GB
Disk Controllers	4 1	Dell PERC6/E RAID Integrated PERC5i RAID		1	Onboard SATA
Disk Drives	25 71 6	73GB 2.5" 15K SAS 36GB 2.5" 15K SAS 146GB 3.5" 15K SAS		1	80GB 7.2K SATA
Total Storage	102	6536 GB SAS		1	80GB SATA
Other	2 1	Broadcom NetXtreme II GigE ports CD-ROM		2 1 1	Broadcom on-board ports Dual port Intel Pro 1000 NIC CD-ROM

Dell System Performance Labs
TPC-C Full Disclosure Report
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MQTh, computed Maximum Qualified Throughput

104,491 tpmC

Response Times (in seconds)

	Average	90 th	Max
- New order	0.16	0.30	2.50
- Payment	0.14	0.20	1.63
- Delivery (interactive portion)	0.12	0.13	1.14
- Stock-Level	0.79	1.10	2.34
- Order Status	0.17	0.30	1.39
- Delivery (deferred portion)	0.04	0.08	1.24
- Menu	0.11	0.13	1.41

Response time delay added for emulated components

Menu 0.1

Resp 0.1

Transaction Mix, in percent of total transactions

- New-Order	44.92%
- Payment	43.00%
- Delivery	4.02%
- Stock-Level	4.01%
- Order-Status	4.02%

Keying/Think Times (in seconds),

	Min		Average		Max	
- New-Order	18.00	0.0	18.01	12.03	18.04	120.32
- Payment	3.00	0.0	3.00	12.03	3.03	120.32
- Delivery	2.00	0.0	2.00	5.03	2.03	50.31
- Stock-Level	2.00	0.0	2.00	5.04	2.04	50.32
- Order-Status	2.00	0.0	2.00	10.03	2.03	100.32

Test Duration

- Ramp-up time	20 minutes
- Measurement interval	120 minutes
- Number of checkpoints	4
- Checkpoint interval	28.04 minutes
- Number of transactions (all types)	27,909,256

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Introduction

Document Structure

The TPC Benchmark C Standard Specification Revision 5.10, written and approved by the Transaction Processing Performance Council (TPC), determines the contents of this report. The format of this report is based on this specification. Most sections of this report begin with the specification requirements printed in *italic type*, immediately followed by the detail in plain type of how Dell complied with the specification. Where extensive listings are required (such as listing of code), a note is included which references an appendix containing the listing.

Benchmark Overview

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.

System Overview

The hardware configuration used in this TPC-C test is a Dell PowerEdge 2900 server driven by one Dell PowerEdge SC1430 client. The client and server are networked together via cross-over cables. Two remote terminal emulators (RTE) systems PowerEdge 1600 and R805 emulate users executing the standard TPC-C workload. The RTE are connected to the client through cross-over cables. Oracle11g Database Server Standard Edition was the DBMS on the server machine. Microsoft Windows Server 2003, Standard x64 Edition SP1 was the operating system used on the server. Microsoft Windows Server 2003, Standard x64 Edition was used on the client.

The PowerEdge 2900 motherboard uses an Intel chipset and can hold up to 2/8/8 two Pentium® Xeon® Quad Core processors. This configuration used a single Quad processor 2.83 GHz 1333 with 2x6MB L2 cache. The system has 1 PCIe x8 slot, 3 PCIe x4 slots, and 2 PCI-x 64 Bit/133 MHz slots. The measured configuration used 32 GB of Fully Buffered 667 DDR2 RAM, which was achieved using 8 4GB DIMMs. The network adapters are embedded with Broadcom NetXtreme II GigE network adapters.

The PowerEdge 2900 has an integrated 6 slot riser board to which was attached 6 146GB SAS LFF DISKS in RAID 10 configuration containing the database log and OS via an internal channel on a Dell embedded PERC5i RAID controller. In addition, 4 Dell PERC6/E Dual Channel PCI-e RAID controllers were installed in PCI Express slots for the data volumes. The Dell PERC6/E PCI Express RAID controllers were connected to 4 MD1120 disk pods enclosing a total of 96 73GB/36GB, 2.5" 15K RPM SAS disks.

The client has 2 dual-core 1/2/2 2.0GHz Intel Xeon® processors with 2x4MB of L2 cache. The client has 4096 Mbytes of RAM, one 80 GB hard disk, one integrated Broadcomm NetXtreme Gigabit Ethernet adapter and one Intel Pro 1000 PCI Network Interface Card. The client was connected to the Database Server through a cross-over cable. The client was driven through two network segments to run a total of 82,600 emulated users.

General Items

Test Sponsor

A statement identifying the sponsor of the Benchmark and any other companies who have participated.

Dell was the test sponsor of this TPC Benchmark™ C.

Application Code and Definition Statements

The application program must be disclosed. This includes, but is not limited to, the code implementing the five transactions and the terminal input/output functions.

The application consists of a Remote Terminal Emulator (RTE) program emulating a set of users entering TPC-C transactions through web browsers, and communicating with Client machines running the Microsoft Internet Information Server (IIS) web server. The Client machines use the COM+ transaction monitor to communicate with the database server machine.

On each Client machine IIS loads a custom Microsoft Internet Information Server Application Programming Interface dynamic link library (ISAPI DLL) application program that communicates with the emulated web browsers through the HTTP protocol and with the database server through the COM+ transaction monitor. The application supplies fill-in screens to the user for each transaction, then parses the data in each request, and makes a call on the Oracle database Server through the COM+ layer, which manages a set of connections to the database server. The resulting data is passed back to the application where it is formatted into HTML and sent back to the user's browser. The Delivery transaction is handled directly from the application to the database without the use of COM+.

The web Client code is listed in Appendix A.

Parameter Settings

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

- Database options
- Recover/commit options
- Consistency/locking options
- System parameter, application parameters, and configuration parameters.

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

Appendix C contains all the database, Windows 2003 Server, and Internet Information Service parameters used in this benchmark.

Appendix D contains the 60 day space calculations.

Configuration Diagrams

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

Figures 1 and 2 respectively show the measured and priced full client/server configurations.

Figure 1: Measured Configuration

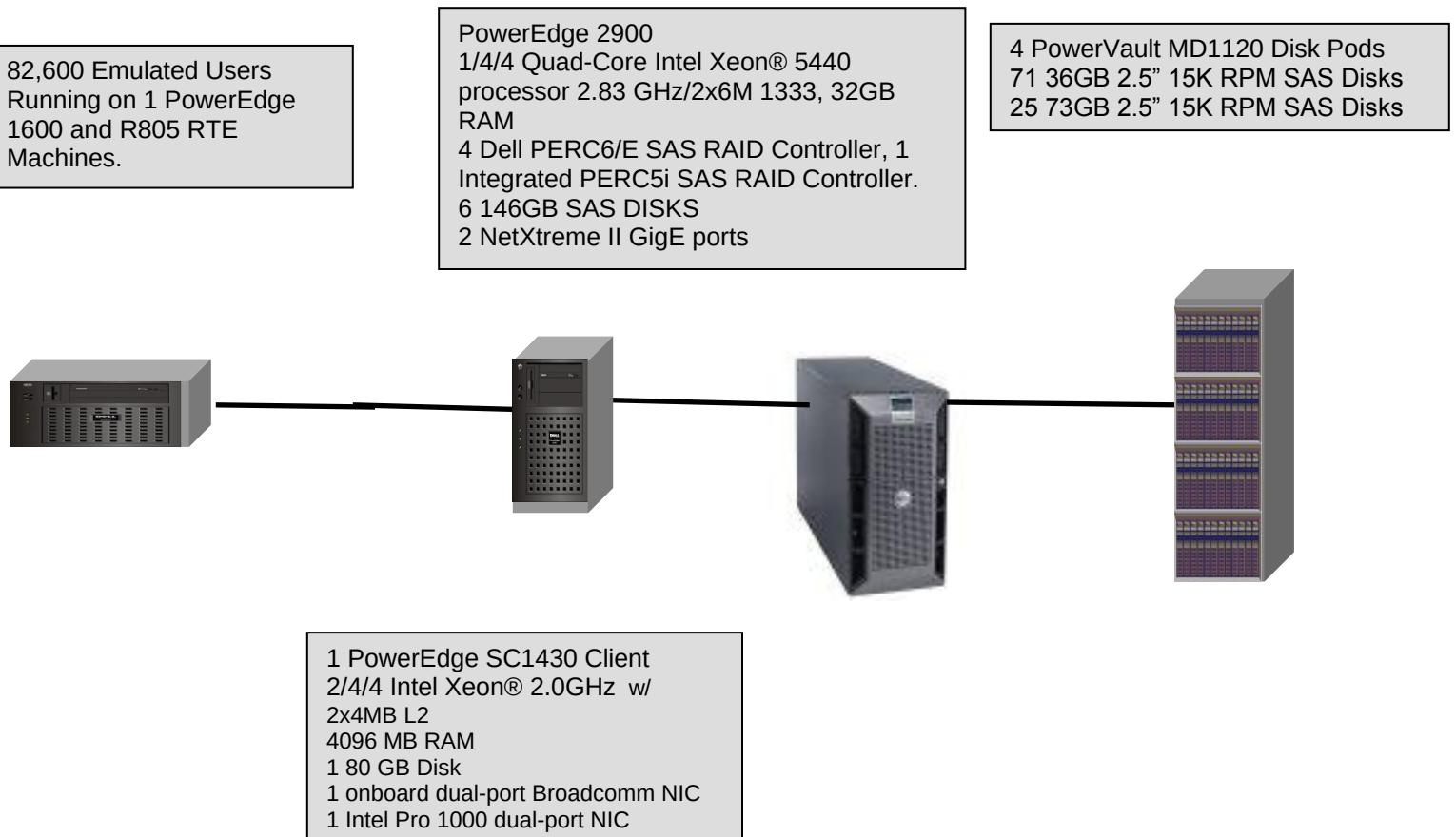
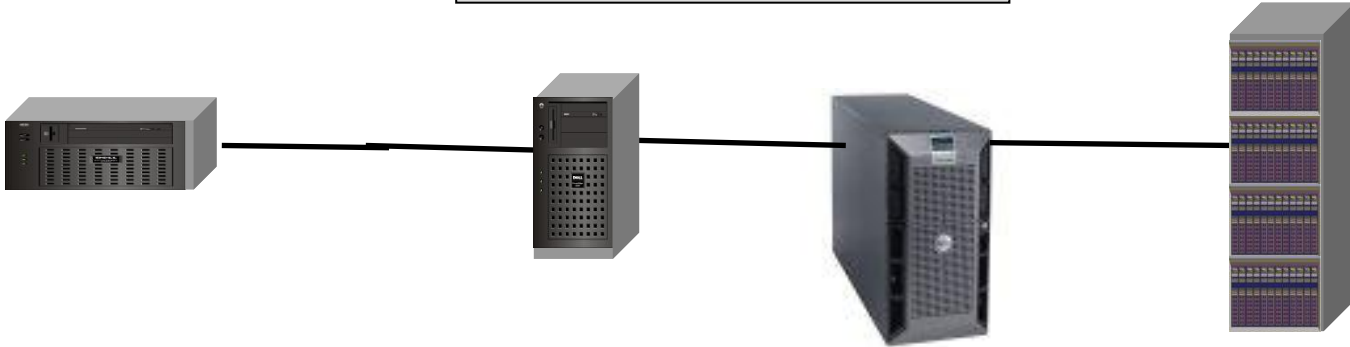


Figure 2: Priced Configuration

82,600 Emulated Users
Running on 1 PowerEdge
1600 and R805 RTE
Machines.

PowerEdge 2900
1/4/4 Quad-Core Intel Xeon® 5440
processor 2.83 GHz/2x6M 1333, 32GB
RAM
4 Dell PERC6/E SAS RAID Controller, 1
Integrated PERC5i SAS RAID Controller.
6 73GB SAS DISKS
2 NetXtreme II GigE ports

4 PowerVault MD1120 Disk Pods
71 36GB 2.5" 15K RPM SAS Disks
25 73GB 2.5" 15K RPM SAS Disks



1 PowerEdge PE2900 Client
2/4/4 Intel Xeon® 1.86GHz w/
2x4MB L2
4096 MB RAM
1 80 GB Disk
1 onboard dual-port Broadcom NIC
1 Intel Pro 1000 dual-port NIC

Clause 1 -- Logical Database Design Related Items

Table Definitions

Listings must be provided for all table definition statements and all other statements used to set-up the database. (8.1.2.1)

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

Physical Organization of the Database

The physical organization of tables and indices, within the database, must be disclosed. (8.1.2.2)

The measured configuration used 98 disk drives. The organization is shown in Table 5: Data Distribution.

Insert and Delete Operations

It must be ascertained that insert and/or delete operations to any of the tables can occur concurrently with the TPC-C transaction mix. Furthermore, any restriction in the SUT database implementation that precludes inserts beyond the limits defined in Clause 1.4.11 must be disclosed. This includes the maximum number of rows that can be inserted and the maximum key value for these new rows. (8.1.2.3)

Insert and delete functionality was fully operational during the benchmark.

Horizontal and Vertical Partitioning

While there are a few restrictions placed upon horizontal or vertical partitioning of tables and rows in the TPC-C benchmark (see Clause 1.6), any such partitioning must be disclosed. (8.1.2.4)

Partitioning was not used in this benchmark.

Replication

Replication of tables, if used, must be disclosed (see Clause 1.4.6). (8.1.2.5)

Replication was not used in this benchmark.

Table Attributes

Additional and/or duplicated attributes in any table must be disclosed along with a statement on the impact on performance (see Clause 1.4.7). (8.1.2.6)

No additional attributes were used in this benchmark.

Clause 2 -- Transaction and Terminal Profiles Related Items

Random Number Generation

The method of verification for the random number generation must be described. (8.1.3.1)

Random numbers were generated using the drand48() and lrand48() UNIX calls. These functions generate pseudo random numbers using the linear congruential algorithm and 48-bit integer arithmetic. The random number generators are initially seeded using the srand48() call.

Screen Layout

The actual layouts of the terminal input/output screens must be disclosed. (8.1.3.2)

The screen layouts are based on those in Clauses 2.4.3, 2.5.3, 2.6.3, 2.7.3, and 2.8.3 of the TPC-C Standard Specification. There are some very minor differences based on the fact that this is a web client implementation.

Terminal Verification

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

The terminal features were verified by allowing the auditor to manually execute each of the five transaction types.

Intelligent Terminals

Any usage of presentation managers or intelligent terminals must be explained. (8.1.3.4)

Comment 1: *The intent of this clause is to describe any special manipulations performed by a local terminal or workstation to off-load work from the SUT. This includes, but is not limited to: screen presentations, message bundling, and local storage of TPC-C rows.*

Comment 2: *This disclosure also requires that all data manipulation functions performed by the local terminal to provide navigational aids for transaction(s) must also be described. Within this disclosure, the purpose of such additional function(s) must be explained.*

Application code involved in the manipulation of data was run on the client. Screen manipulation commands in the form of HTML were downloaded to the web browser, which handled input and output presentation graphics. A listing of this code is included in Appendix A.

Transaction Profiles

The percentage of home and remote order-lines in the New-Order transactions must be disclosed. (8.1.3.5)

The percentage of New-Order transactions that were rolled back as a result of an unused item number must be disclosed. (8.1.3.6)

The number of items per orders entered by New-Order transactions must be disclosed. (8.1.3.7)

The percentage of home and remote Payment transactions must be disclosed. (8.1.3.8)

The percentage of Payment and Order-Status transactions that used non-primary key (C_LAST) access to the database must be disclosed. (8.1.3.9)

The percentage of Delivery transactions that were skipped as a result of an insufficient number of rows in the NEW-ORDER table must be disclosed. (8.1.3.10)

Table 1: Transaction Statistics

Transaction	Function	Value
New Order	Home Warehouse Items	99.00%
	Remote Warehouse Items	1.00%
	Rolled Back Transactions	1.00%
	Average Lines Per Order	10.00
Payment	Home Warehouse	84.99%
	Remote Warehouse	15.01%
	Non-Primary Key Access	60.01%
Order Status	Non-Primary Key Access	59.97%
Delivery	Skipped Transactions	0

Transaction Mix

The mix (i.e., percentages) of transaction types seen by the SUT must be disclosed. (8.1.3.11)

Table 2: Transaction mix

Transaction	Percentage
New Order	44.92%
Payment	43.00%
Order Status	4.02%
Delivery	4.02%
Stock Level	4.01%

Deferred Delivery Mechanism

The queuing mechanism used to defer the execution of the Delivery transaction must be disclosed. (8.1.3.12)

The application creates a thread pool consisting of a user-specified number of threads, which open connections on the database. When a Delivery transaction is posted one of these threads makes the database call while the transaction's original thread returns control to the user. Upon completion the Delivery thread writes an entry in the Delivery log and returns to the thread pool.

The source code is listed in Appendix A.

Clause 3 -- Transaction and System Properties Related Items

ACID Tests

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. (8.1.4.1)

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 shell 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 ten (10) minutes and included a checkpoint. The shell 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 seven 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 D was followed.

Durability

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

Durable Media Failure

Durability from media failure was demonstrated on the 8600 warehouse database. The standard driving mechanism was used to generate the full transaction load of 82600 users for the Loss of Data.

Loss of Data/ Loss of Log

Loss of data was demonstrated on the 8600 warehouse database. The standard driving mechanism was used to generate the transaction load of 82600 users for the test. To demonstrate recovery from a permanent failure of durable media containing TPC-C tables, the following steps were executed:

1. The 8600 warehouse database was used for this test.
2. A partition of a disk was backed up using an Oracle backup facility.
3. A sum of D_NEXT_O_ID was taken.
4. 82600 users were logged in to the database and ran transactions.
5. The system was run at steady state for 30 minutes.
6. The backed up partition was overwritten with garbage.
7. Oracle11g recorded errors about corrupt data on the partition. The database and the RTE were then shut down.
8. The backed up database partition was restored.
9. The database was then started and recovered using the recover command from SQLPLUS. The database was then opened.
10. Consistency was verified.
11. A new count of D_NEXT_O_ID was taken.
12. This number was compared with the number of new orders reported by the RTE. The difference was valid per the spec.
13. 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

Instantaneous Interruption and Loss of Memory were demonstrated on the database with 8000 warehouses in a single test. The standard driving mechanism was used to generate the transaction load of 76700 users for the test. To demonstrate recovery an instantaneous system interruption caused by powering off the Server, the following steps were executed:

1. The full database was used.
2. A sum of D_NEXT_O_ID was taken.
3. 82600 users were logged in to the database and ran transactions.
4. The system was run is steady state for 30 minutes
5. The Server was powered off by normal means, causing instantaneous interruption. No battery or UPS was providing power for the server.

-
6. The RTE was allowed to continue running. Completed transactions enroute from the clients were recorded. Error messages began appearing on the RTE screen.
 7. The RTE was stopped.
 8. The server was powered on again and rebooted.
 9. The database was restarted and automatically recovered.
 10. A new count of D_NEXT_O_ID was taken.
 11. Consistency was verified
 12. This number was compared with the number of new orders reported by the RTE. The difference was valid per the spec.
 13. Samples were taken from RTE transaction logs and used to query the database. It was demonstrated that successful transactions had corresponding rows in the ORDERS table.

Clause 4 -- Scaling and Database Population Related Items

Table Cardinality

The cardinality (e.g., the number of rows) of each table, as it existed at the start of the benchmark run (see Clause 4.2), must be disclosed. If the database was over-scaled and inactive rows of the WAREHOUSE table were deleted (see Clause 4.2.2), the cardinality of the WAREHOUSE table as initially configured and the number of rows deleted must be disclosed. (8.1.5.1)

The database was originally built with 8600 warehouses.

Table 3: Table Cardinality

Table	Cardinality as Benchmarked
Warehouse	8600
District	86000
Customer	258000000
History	258000000
NewOrder	77400000
Orders	258000000
OrderLine	2580392432
Item	100000
Stock	860000000
Deleted Warehouses	0

Constant Values

The following values were used as constant value inputs to the NURand function for this benchmark.

Table 4: Constant Values

Function	Constant C Value
C_LAST (Build)	1
C_LAST (Run)	100

Data Distribution

The distribution of tables and logs across all media must be explicitly depicted for the tested and priced systems. (8.1.5.2)

The Database was built using a total of 102 disks: 71 36GB and 25 73GB for data, 6 146GB for log and OS and application software. The data drives were configured as hardware RAID 0. Logs and OS were configured as hardware RAID 10. Each Dell Perc6/E was configured with 2 logical drives each. Each logical drive spanned 12 disk drives. The embedded PERC5i RAID Controller 0 was configured with 1 logical drive spanning 6 146GB drives. Each Windows 2003 data drive contained raw partitions for database files and data backups. The details are shown in

Table 5.

Table 5: Data Distribution

Slot	Controller	Disks	Capacity	Usage
0	Dell PERC5i	6x146GB,15K,SAS RAID10	Disk 6 36GB	OS
			408.37GB 372.37GB	Logs
3	Dell PERC6/E	12x73GB,15K,SAS RAID0	Disk 0 804.65GB	DB data
		12x73GB,15K,SAS RAID0	Disk 1 804.65GB	DB data
4	Dell PERC6/E	12x36GB,15K,SAS RAID0	Disk 2 400.48GB	DB data
		12x36GB,15K,SAS RAID0	Disk 3 400.48GB	DB data
5	Dell PERC6/E	12x36GB,15K,SAS RAID0	Disk 4 400.48GB	DB data
		12x36GB,15K,SAS RAID0	Disk 5 391.14GB	DB data
6	Dell PERC6/E	12x36GB,15K,SAS RAID0	Disk 7 391.14GB	DB data
		12x36GB,15K,SAS RAID0	Disk 8 391.14GB	DB data

Partition Mapping

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

Comment: *The intent is to provide sufficient detail about partitioning and replication to allow independent reconstruction of the test database. (8.1.5.3)*

An description of a database partitioning scheme is presented below as an example. The nomenclature of this example was outlined using the CUSTOMER table (in Clause 8.1.2.1), and has been extended to use the ORDER and ORDER_LINE tables as well.

The database was not replicated.

60 day Space Calculation

Details of the 60 day space computations along with proof that the database is configured to sustain 8 hours of growth for the dynamic tables (Order, Order-Line, and History) must be disclosed (see Clause 4.2.3). (8.1.5.5)

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

1. The size of the log groups was determined.
2. The checkpoint interval due to log switches was noted.
3. The final log space usage was calculated based on 1 and 2 above.
4. The log space usage for 8hr was extrapolated from 3 above.

The results of the above steps yielded a requirement 263.24 GB to sustain the log for 8 hours. Space available on the transaction log volume was 372.37 GB , indicating that enough storage was configured to sustain 8 hours of growth.

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

The details of the 60-day space requirement is shown in Appendix D.

Clause 5 -- Performance Metrics and Response Time Related Items

Measured TpmC

Measured tpmC must be reported. (8.1.6.1)

Measured TpmC	104,491.67
Price per TpmC	\$.60

Response Times

Ninetieth percentile, maximum and average response times must be reported for all transaction types as well as for the Menu response time. (8.1.6.2)

Table 6: Transaction Response Times

Transaction	Average	90%	Maximum
New Order	0.160	0.300	2.50
Payment	0.140	0.200	1.63
Order Status	0.170	0.300	1.39
Interactive Delivery	0.120	0.130	1.14
Stock Level	0.790	1.100	2.34
Deferred Delivery	0.040	0.079	1.24
Menu	0.110	0.130	2.43

Think Times & Key Times

The minimum, the average, and the maximum keying and think times must be reported for each transaction type. (8.1.6.3)

Table 7: Transaction Key Times

Transaction	Minimum	Average	Maximum
New Order	18.00	18.01	18.04
Payment	3.00	3.00	3.03
Order Status	2.00	2.00	2.03
Delivery	2.00	2.00	2.03
Stock Level	2.00	2.00	2.04

Table 8: Transaction Think Times

Transaction	Minimum	Average	Maximum
New Order	0.00	12.03	120.32
Payment	0.00	12.03	120.32
Order Status	0.00	10.03	100.32
Delivery	0.00	5.03	50.31
Stock Level	0.00	5.04	50.32

Response Time Distribution Curves

Response Time frequency distribution curves (see Clause 5.6.1) must be reported for each transaction type. (8.1.6.4)

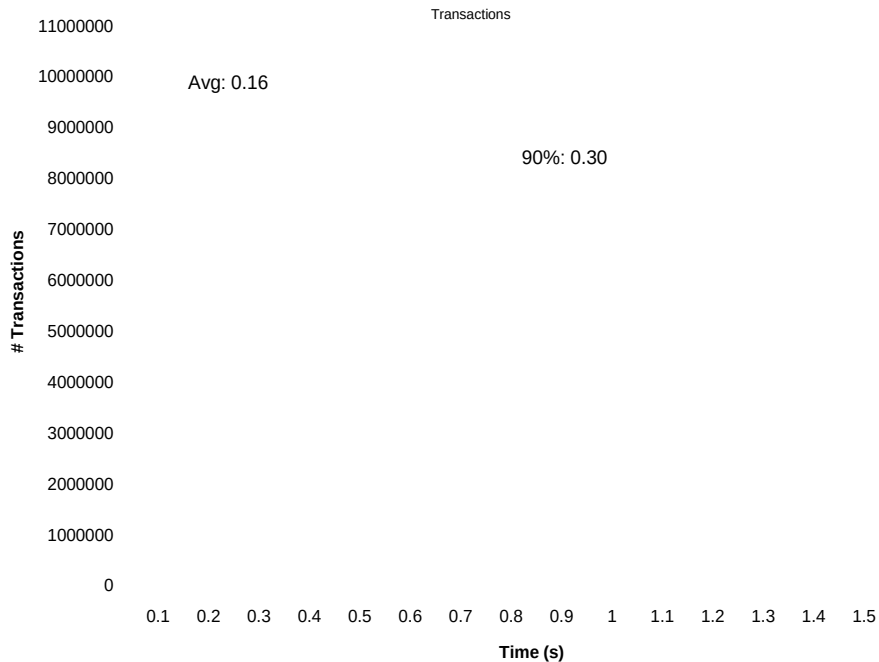
Figure 3: New Order Response Time Distribution

Figure 4: Payment Response Time Distribution

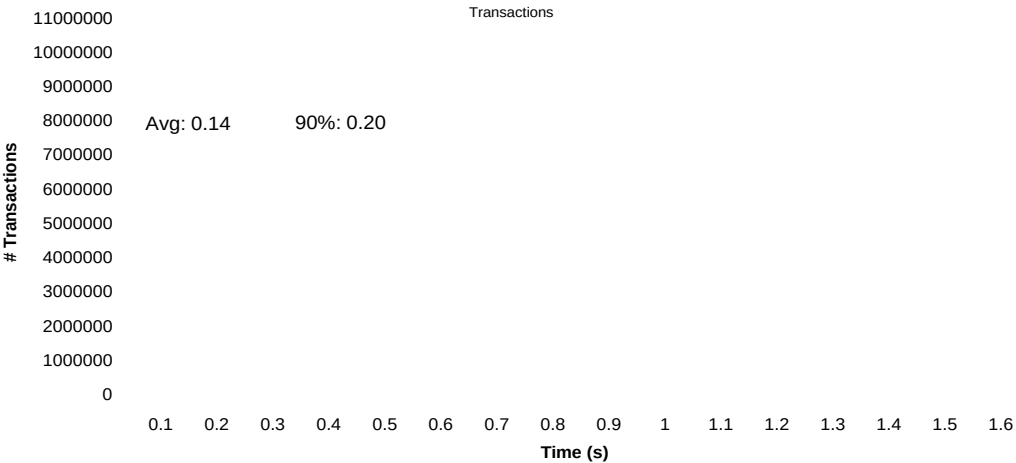


Figure 5: Order Status Response Time Distribution

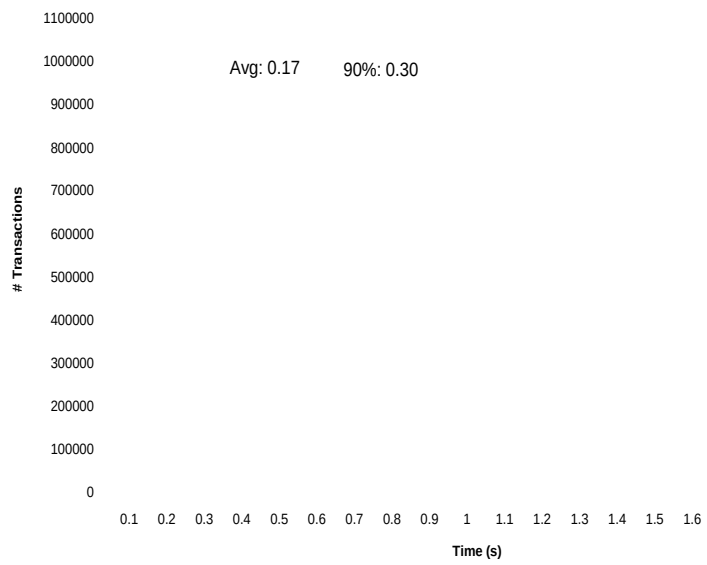


Figure 6: Delivery Response Time Distribution

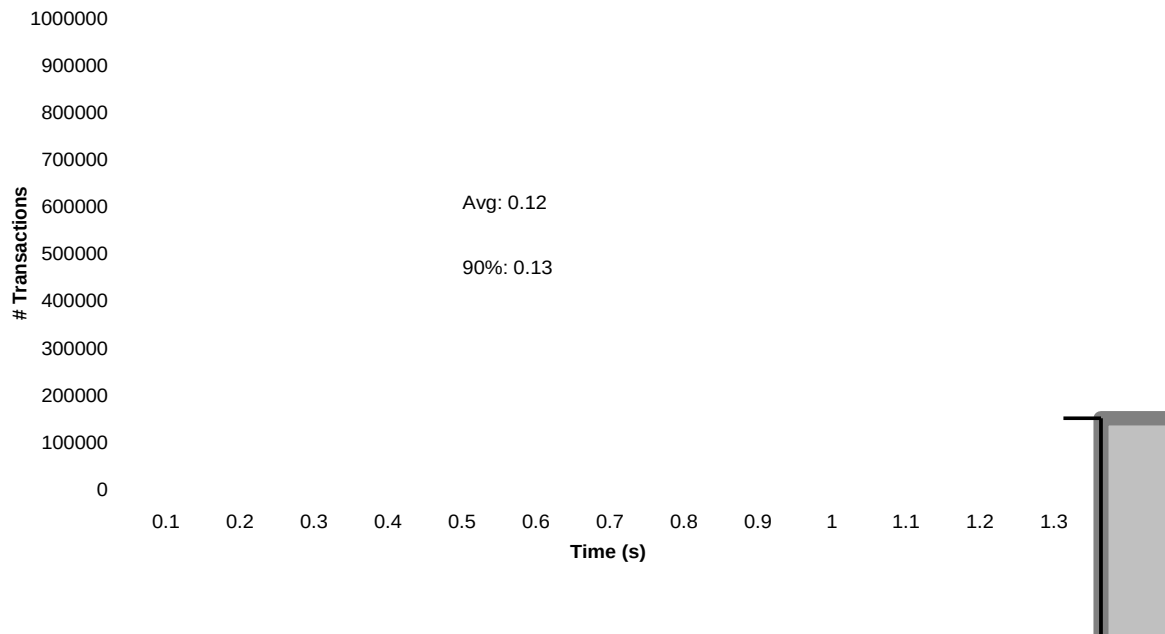
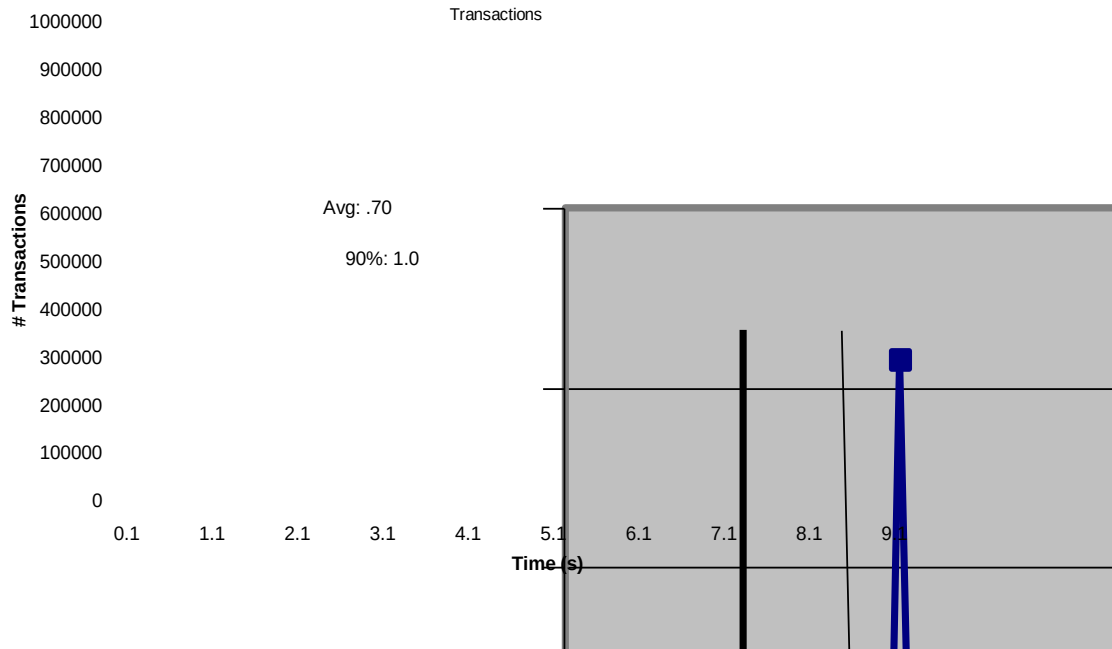


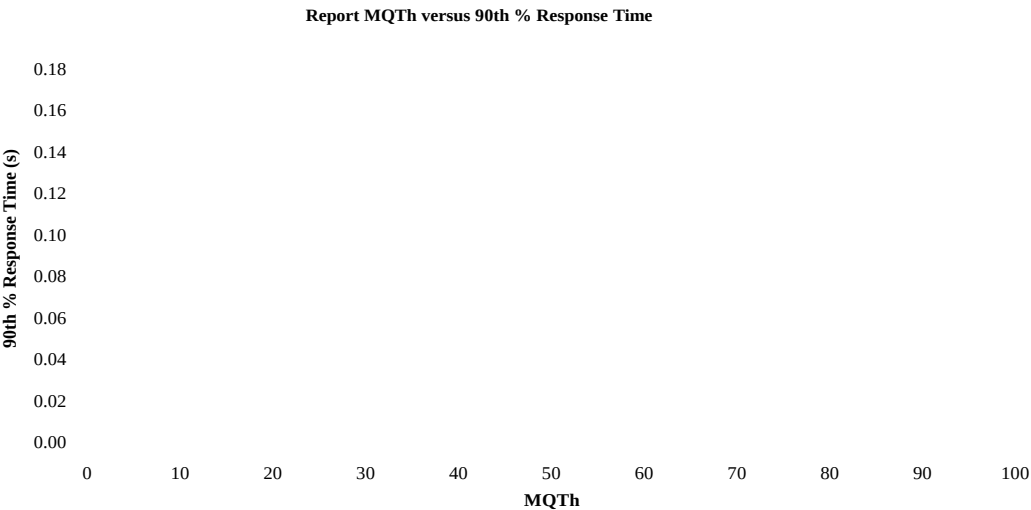
Figure 7: Stock Level Response Time Distribution



New-Order Response Time vs. Throughput Graph

The performance curve for response times versus throughput (see Clause 5.6.2) must be reported for the New-Order transaction. (8.1.6.5)

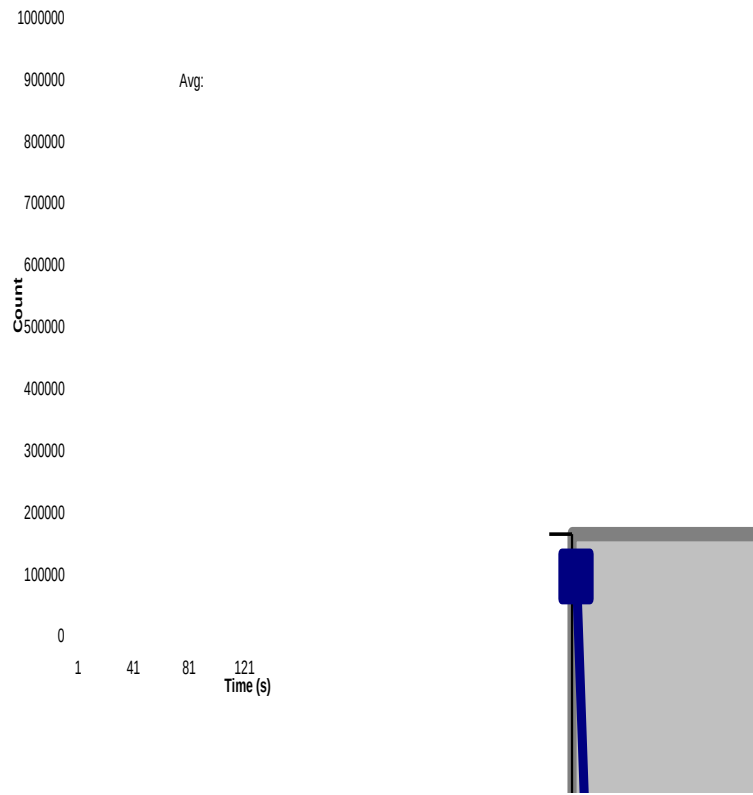
Figure 8: New Order Response Time vs. Throughput



New-Order Think Time Distribution Graph

Think Time frequency distribution curves (see Clause 5.6.3) must be reported for the New-Order transaction (8.1.6.6)

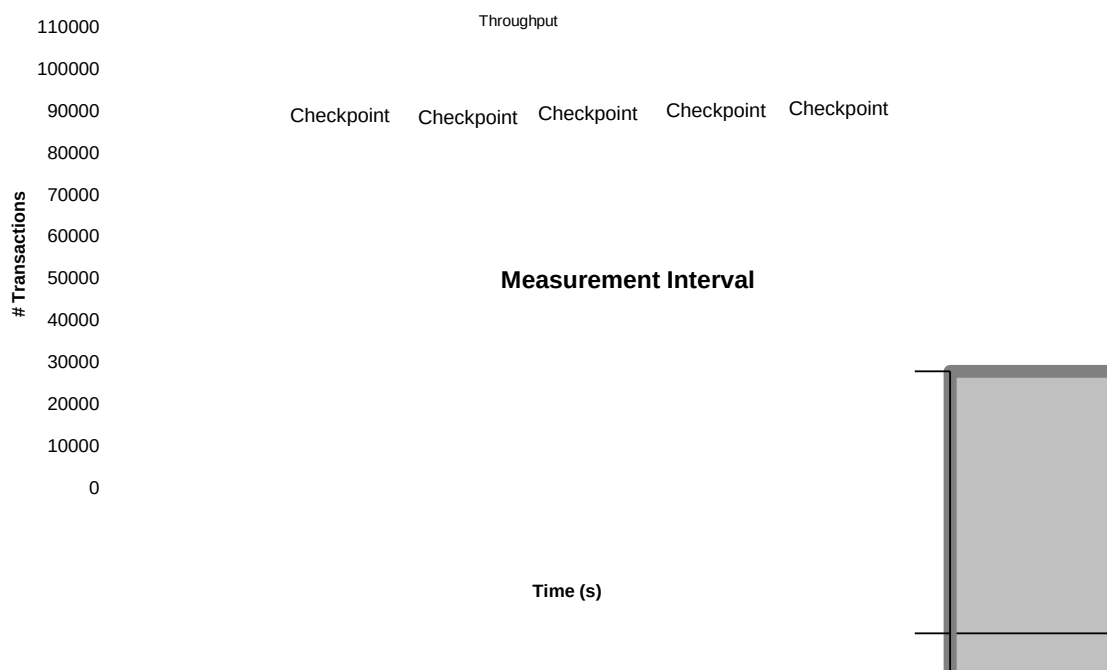
Figure 9: New Order Think Time Distribution



Steady-State Graph

A graph of throughput versus elapsed time (see Clause 5.6.5) must be reported for the New-Order transaction. (8.1.6.8)

Figure 10: New Order Throughput vs. Time



Steady-State Methodology

The method used to determine that the SUT had reached a steady state prior to commencing the measurement interval (see Clause 5.5) must be described. (8.1.6.9)

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

Work Performed During Steady State

A description of how the work normally performed during a sustained test (for example checkpointing, writing redo/undo log records, etc.), actually occurred during the measurement interval must be reported. (8.1.6.10)

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

The RTE generated the required input data for the chosen transaction. It waited to complete the minimum required key time before transmitting the HTTP request to the client. The transmission was timestamped. The return of the screen with the required response data was timestamped. The difference between these two timestamps was the response time for that transaction and was logged in the RTE log.

The RTE then waited the required think time interval before repeating the process starting at selecting another transaction from the menu.

The RTE transmissions were sent to the web-based application program running on the client machine through Ethernet LANs. The web client managed the emulated web browser interface as well as all requests to the database on the server. The applications communicated with the database server over another Ethernet LAN using the COM+ transaction monitor.

Measurement Interval

A statement of the duration of the measurement interval for the reported Maximum Qualified Throughput (tpmC) must be included. (8.1.6.12)

The measurement interval was 7200 minutes.

Measurement Period Duration and Checkpoint Duration

The start time and duration in seconds of at least the four (4) longest checkpoints during the measurement interval must be disclosed (see clause 5.5.2.2(2)) (8.1.6.11)

A statement of the duration of the measurement interval for the reported Maximum Qualified Throughput (tpmC) must be included. (8.1.6.12)

	Start	End	Duration
Measurement Interval	20:43:58	22:43:58	7,200
1 st Checkpoint	20:46:27	21:11:44	1517
2 nd Checkpoint	21:14:28	21:39:48	1520
3 rd Checkpoint	21:42:32	22:07:31	1499
4 th Checkpoint	22:10:14	22:35:11	1497

Transaction Mix

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

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

The percentage of the total mix for each transaction type must be disclosed. (8.1.6.14)

Table 9: Transaction Mix

Transaction	Percentage
New Order	44.92%
Payment	43.00%
Delivery	4.02%
Stock Level	4.01%
Order Status	4.02%

Other Metrics

The percentage of New-Order transactions rolled back as a result of invalid item number must be disclosed. (8.1.6.15)

The average number of order-lines entered per New-Order transaction must be disclosed. (8.1.6.16)

The percentage of remote order-lines entered per New-Order transaction must be disclosed.

(8.1.6.17)

The percentage of remote Payment transactions must be disclosed. (8.1.6.18)

The percentage of customer selections by customer last name in the Payment and Order-Status transactions must be disclosed. (8.1.6.19)

The percentage of Delivery transactions skipped due to there being fewer than necessary orders in the New-Order table must be disclosed. (8.1.6.20)

Table 10: Transaction Statistics

Transaction	Function	Value
New Order	Home Warehouse Items	99.00%
	Remote Warehouse Items	1.00%
	Rolled Back Transactions	1.00%
	Average Lines Per Order	10.00
Payment	Home Warehouse	84.99%
	Remote Warehouse	15.01%
	Non-Primary Key Access	60.01%
Order Status	Non-Primary Key Access	59.97%
Delivery	Skipped Transactions	0

Clause 6 -- SUT, Driver, and Communication Definition Related Items

RTE Parameters

The RTE input parameters, code fragments, functions, etc. used to generate each transaction input field must be disclosed. (8.1.7.1)

Comment: *The intent is to demonstrate the RTE was configured to generate transaction input data as specified in Clause 2.*

The RTE input parameters are listed in Appendix C - Tunable Parameters.

Emulated Components

It must be demonstrated that the functionality and performance of the components being emulated in the Driver System are equivalent to that of the priced system. The results of the test described in Clause 6.6.3.4 must be disclosed. (8.1.7.2)

No components were emulated.

Benchmarked and Targeted System Configuration 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 software and hardware functionality being performed on the Driver System, and its interface to the SUT must be disclosed (see Clause 6.6.3.6). (8.1.7.3)

The driver system performed transaction data generation and communication to the client through the standard web browser (HTTP) protocol. It also captured and timestamped the SUT output data for post-processing of the reported metrics. No other functionality was included on the driver system.

Figures 1 & 2 of this report contain detailed diagrams of both the benchmark configuration and the priced configuration.

Network Configuration

The network configurations of both the tested services and the proposed (target) services which are being represented and a thorough explanation of exactly which parts of the proposed configuration are being replaced with the Driver System must be disclosed (see Clause 6.6.4). (8.1.7.4)

The network configurations of the benchmarked and priced configurations were identical.

Network Bandwidth

The bandwidth of the network(s) used in the tested/priced configuration must be disclosed. (8.1.7.5)

The bandwidth of the tested and priced networks were as follows:

- 1000 BaseT (1000 Mbit/sec) network segments between the RTE/Emulated Users and the Client.
- 1000 BaseT (1000 Mbit/sec) between the Clients and Server.

Operator Intervention

If the configuration requires operator intervention (see Clause 6.6.6), the mechanism and the frequency of this intervention must be disclosed. (8.1.7.6)

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

Clause 7 -- Pricing Related Items

Hardware and Software List

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 date. If package-pricing is used, vendor part number of the package and a description uniquely identifying each of the components of the package must be disclosed.

Pricing source(s) and effective date(s) of price(s) must also be reported. (8.1.8.1)

The total 5-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. (8.1.8.2)

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 Date

The committed delivery date for general availability (availability date) of products used in the price calculations must be reported. When the priced system includes products with different availability dates, the reported availability date for the priced system must be the date at which all components are committed to be available. (8.1.8.3)

Hardware Availability Date: Feb 20, 2009
Software Availability Date: Feb 20, 2009

Measured TpmC

A statement of the measured tpmC, as well as the respective calculations for 5-year pricing, price/performance (price/tpmC), and the availability date must be included. (8.1.8.4)

Maximum Qualified Throughput: 104,492 tpmC
Price Performance Metric: \$.60

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. (8.1.8.5)

This system is being priced for the United States of America.

Usage Pricing

For any usage pricing, the sponsor must disclose (8.1.8.6):

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

Comment: *Usage pricing may include, but is not limited to, the operating system and database management software.*

The component pricing based on usage is shown below:

-
- 2 Microsoft Windows Server 2003, Standard x64 Edition License.
 - 1 Oracle Database 11g Standard Edition
 - 1 Microsoft Visual C++ Standard Edition.
 - 3 Year Support for Hardware Components.

System Pricing

System pricing should include subtotals for the following components: Server Hardware, Server Software, Client Hardware, Client Software, and Network Components used for terminal connection (see Clause 7.2.2.3). Clause 6.1 describes the Server and Client components. An example of the standard pricing sheet is shown in Appendix B. (8.1.8.7)

System pricing must include line item indication where non-sponsoring companies' brands are used. System pricing must also include line item indication of third party pricing. See example in Appendix B. (8.1.8.8)

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.

Clause 9 -- Audit Related Items

Auditor

The auditor's name, address, phone number, and a copy of the auditor's attestation letter indicating compliance must be included in the Full Disclosure Report. (8.1.9.1)

A review of the pricing model is required to ensure that all components required are priced (see Clause 9.2.8). The auditor is not required to review the final Full Disclosure Report or the final pricing prior to issuing the attestations letter. (8.1.9.2)

This TPC-C benchmark has been audited by Lorna Livingtree of Performance Metrics.

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:

Transaction Processing Performance Council
c/o Administrator, TPC
Presidio of San Francisco
Bldg 572B Ruger St.
San Francisco, CA 94129-0920
Phone: (415) 561-6272, Fax (415) 561-6120
www.tpc.org

or:

One Dell Way
Round Rock, TX 78682
Attention: Mike Molloy, Ph.D.



February 20, 2009

Mr. Nicholas Wakou
Dell Computer Corporation
One Dell Way
Round Rock, TX 78682

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

Platform: Dell PowerEdge 2900
Database Manager: Oracle Database 11g
Operating System: Microsoft Windows Server 2003 Enterprise x64 Edition
Transaction Monitor: COM+

System Under Test: Dell PowerEdge 2900 with:				
CPU's	Memory	Disks (total)	90% Response	TpmC
1 quad core Intel @ 2.83 Ghz	Main: 32 GB	71 @36GB 25 @ 73GB 6 @ 146GB	0.30	104,491

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 8,600 warehouses, 8,260 of which were active during the measured interval.
- * The ACID properties were successfully demonstrated.
- * Data loss durability was demonstrated on the SUT fully configured as it was for the performance test.
- * Input data was generated according to the specified percentages.
- * Eight hours of mirrored log space 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.
- * One checkpoint was taken in steady state before the measured interval opened.
- * Four checkpoints were completed inside the measured interval.
- * The system pricing was checked for major components and maintenance.
- * Third party quotes were verified for compliance.

Auditor Notes:

The tested client was a PowerEdge SC 1430. This system is no longer available. A PowerEdge 2900 has been substituted in the priced configuration. The specifications were verified and this change meets the substitution requirements.

Sincerely,

A handwritten signature in cursive script that reads "Lorna Livingtree".

Lorna Livingtree
Auditor

Appendix A - Application Source Code

modtpcc.cpp

```
// modtpcc.cpp : Defines the entry point for the DLL application.
//

#include "stdafx.h"
#include "modtpcc.h"
#include <httpext.h>

#ifdef DEBUG
#define DELIVERY_MUTEX
#define NEW_ALLOCATE_FORM
#endif

BOOL WINAPI DllMain( HANDLE hModule,
    DWORD ul_reason_for_call,
    LPVOID lpReserved
    )
{
    char string[MAXLEN];

    if (ul_reason_for_call == DLL_PROCESS_ATTACH) {
        int i;
        GetModuleFileName((HMODULE)hModule,
            DllPath, MAXLEN-1);

        strcpy(origin, DllPath);
        if (DllPath[0]!='\\' && DllPath[1]!='\\' &&
            DllPath[2]!='?' && DllPath[3]!='\\')
            strcpy(DllPath, DllPath+4);
        for (i=strlen(DllPath); DllPath[i]!='\\' && i--);
        DllPath[i]='\0';
        sprintf(InitFile, "%s\\%s", DllPath, InitName);
        sprintf(DllFile, "%s\\%s", DllPath, DllName);
        sprintf(LogFile, "%s\\%s", DllPath, LogName);

        OCInitialize(OCI_THREADED|OCI_OBJECT,(dvoid *)0,0,0,0);

        //                sprintf(LogFile,
        "d:\\%s", LogName);

        /* load DBConnection.dll */

        if ((dllinstance = LoadLibrary(DllFile)) == NULL)
            return FALSE;

        if ((mod_tpcc_neworder=(int
            (FAR*)(T_neworder_data *)) GetProcAddress((HMODULE)dllinstance,
            "mod_tpcc_neworder"))==NULL)
            return FALSE;

        if ((mod_tpcc_payment=(int
            (FAR*)(T_payment_data *)) GetProcAddress((HMODULE)dllinstance,
            "mod_tpcc_payment"))==NULL)
            return FALSE;

        if ((mod_tpcc_delivery=(int
            (FAR*)(T_delivery_data *, int)) GetProcAddress((HMODULE)dllinstance,
            "mod_tpcc_delivery"))==NULL)
            return FALSE;

        if ((mod_tpcc_orderstatus=(int
            (FAR*)(T_orderstatus_data *)) GetProcAddress((HMODULE)dllinstance,
            "mod_tpcc_orderstatus"))==NULL)
            FALSE;

        if ((mod_tpcc_stocklevel=(int
            (FAR*)(T_stocklevel_data *)) GetProcAddress((HMODULE)dllinstance,
            "mod_tpcc_stocklevel"))==NULL)
            return FALSE;

        if ((userlog=(void (FAR*)(char * str, ...))
            GetProcAddress((HMODULE)dllinstance, "userlog"))==NULL)
            return FALSE;

        if ((initDelLog=(void (FAR*)(int))
            GetProcAddress((HMODULE)dllinstance, "initDelLog"))==NULL)
            return FALSE;

        if ((endDelLog=(void (FAR*)(int))
            GetProcAddress((HMODULE)dllinstance, "endDelLog"))==NULL)
            return FALSE;
    }
}
```

```
DllPath);

        userlog("load modtpcc.dll, DllPath: %s\n",
            DllPath);

        if ((TlsPointer = TlsAlloc()) == 0xFFFFFFFF) {
            userlog("Error during TlsAlloc\n");
            return FALSE;
        }
        InitializeCriticalSection(&critical_initDelQueue);
        InitializeCriticalSection(&critical_memory);

        InitializeCriticalSection(&critical_DelQueue_free);

        InitializeCriticalSection(&critical_DelQueue_work);

        /* read ini parameters */
        readInit(string, "DBConnections",
            Default_DBConnections);
        DBConnections = atoi(string);
        userlog("number of DBConnections is %d\n",
            DBConnections);

#ifdef NEW_ALLOCATE_FORM
        readInit(string, "StartTerm",
            Default_StartTerm);
        userlog("number of Start Term is %s\n", string);
        /* StartTerm starts from 1 */
        if ((StartTerm = atoi(string)) < 0) {
            userlog("error: Start Term is
                %d\n", StartTerm);
            return FALSE;
        }

        /* w_id starts from 1, d_id starts from 1 */
        StartTerm+=10;
#endif

        readInit(string, "KMaxterms",
            Default_Maxterms);
        userlog("number of Max Terms is %s000\n",
            string);
        /* add one more form for special characters */
        if ((Maxterms = atoi(string) * 1000 + 1) <= 1) {
            userlog("number of Max Terms is
                %d\n", Maxterms - 1);
            return FALSE;
        }
        readInit(string, "DeliveryQueues",
            Default_DeliveryQueues);
        userlog("number of Delivery Queues is %s\n",
            string);
        if ((DeliveryQueues = atoi(string)) <= 0) {
            userlog("number of Delivery
                Queues is %d\n", DeliveryQueues);
            return FALSE;
        }

        readInit(string, "DeliveryThreads",
            Default_DeliveryThreads);
        userlog("number of Delivery Threads is %s\n",
            string);
        if ((DeliveryThreads = atoi(string)) <= 0) {
            userlog("number of Delivery
                Threads is %d\n", DeliveryThreads);
            return FALSE;
        }
        initDelLog(DeliveryThreads);

        modtpcc_ready=1;
    }
    else if (ul_reason_for_call == DLL_PROCESS_DETACH) {
        endDelLog(DeliveryThreads);

        if ((TlsFree(TlsPointer)) == NULL) {
            userlog("Error during TlsFree\n");
            return FALSE;
        }
        if (!deleteDelQueue())
        {
            userlog("Error during
                deleteDelQueue\n");
            return FALSE;
        }
        DeleteCriticalSection(&critical_initDelQueue);
        DeleteCriticalSection(&critical_memory);

        DeleteCriticalSection(&critical_DelQueue_free);

        DeleteCriticalSection(&critical_DelQueue_work);
    }
}
```

APPENDIX A - APPLICATION SOURCE CODE

```

DeleteCriticalSection(&(resp_global_pool.form_template_spinlock));

DeleteCriticalSection(&(txn_data_pool.form_template_spinlock));

int i_type, i_pool;
#define GPOOL txn_global_pool[i_type][i_pool]
for (i_type = 0; i_type <
POOL_TYPE_TXN_MAX; i_type++)
    for (i_pool = 0; i_pool <
TXN_TYPE_MAX; i_pool++)

DeleteCriticalSection(&(GPOOL.form_template_spinlock));
#undef GPOOL
}

return TRUE;
}

BOOL WINAPI GetExtensionVersion(HSE_VERSION_INFO *pVer)
{
    pVer->dwExtensionVersion = HSE_VERSION;
    strncpy(pVer->lpszExtensionDesc,
        "IIS ISAPI Extension", HSE_MAX_EXT_DLL_NAME_LEN);
    return TRUE;
}

DWORD WINAPI HttpExtensionProc(EXTENSION_CONTROL_BLOCK
*pECB)
{
    if (!modtpcc_ready)
        return FALSE;

    if (!memory_ready) {
        EnterCriticalSection(&critical_memory);
        if (!memory_ready) {
            allocateMemoryPool();
            memory_ready=1;
        }
        LeaveCriticalSection(&critical_memory);
    }

    if (!queue_ready) {
        EnterCriticalSection(&critical_initDelQueue);
        if (!queue_ready) {
            if (!initDelQueue()) {
                userlog("init
Delivery Queue failed\n");
            }
            LeaveCriticalSection(&critical_initDelQueue);
            return FALSE;
        }
        queue_ready=1;
    }
    LeaveCriticalSection(&critical_initDelQueue);
}

return process_query(pECB)==TRUE ?
HSE_STATUS_SUCCESS_AND_KEEP_CONN :
HSE_STATUS_ERROR;
/*

HSE_SEND_HEADER_EX_INFO info = { 0 };

char szOut[256];
DWORD nOut;

nOut = sprintf(szOut, "%s is the input, LogFile:%s, DllPath:%s,
DllFile:%s, origin:%s, ORACLE_HOME: %s", pECB-
>lpszQueryString, LogFile, DllPath, DllFile, origin,
getenv("ORACLE_HOME"));

char szHeader[256];
DWORD nHeader = sprintf(szHeader, "Content-Type: text/html\n\n"
"Content-Length: %d\n\n", nOut);

info.pszStatus = "200 OK";
info.cchStatus = strlen(info.pszStatus);
info.pszHeader = szHeader;
info.cchHeader = nHeader;
info.fKeepConn = false;

if (!pECB->ServerSupportFunction(pECB->ConnID,
HSE_REQ_SEND_RESPONSE_HEADER_EX, &info, 0, 0))

```

```

return HSE_STATUS_ERROR;

if (!pECB->WriteClient(pECB->ConnID, szOut, &nOut, HSE_IO_SYNC))
    return HSE_STATUS_ERROR;

return HSE_STATUS_SUCCESS;
*/
}

/*****
*****
* initialize / delete Delivery Queue
*****
*****/

int deleteDelQueue()
{
    DelQueue_info *ptr = DelQueue_begin, *next;

    DeliveryThreadstop = 1;

    for (int i=0; i<DeliveryThreads; i++) {
        if (!SetEvent(waitDelWork)) {
            userlog("Error on
SetEvent(waitDelWork) on deleteDelQueue\n");
        }

        if (WaitForSingleObject(DelThreadRunning,
100000) != WAIT_OBJECT_0) {
            userlog("Delivery Thread is not
loaded after 100 seconds\n");
        }

        if (waitAvailableDelQueue != 0) {
            if (!CloseHandle(waitAvailableDelQueue))
                userlog("error on
CloseHandle(waitAvailableDelQueue)\n");
            waitAvailableDelQueue = 0;
        }

        if (waitDelWork != 0) {
            if (!CloseHandle(waitDelWork))
                userlog("error on
CloseHandle(waitDelWork)\n");
            waitDelWork = 0;
        }

        if (DelThreadRunning != 0) {
            if (!CloseHandle(DelThreadRunning))
                userlog("error on
CloseHandle(DelThreadRunning)\n");
            DelThreadRunning = 0;
        }

        while (ptr != NULL) {
            next=ptr->Next;
        }

#ifdef DELIVERY_MUTEX
        CloseHandle(ptr->queue_lock);
#endif

        free(ptr->pdata);
        free(ptr);
        ptr=next;
    }

    ptr = DelQueue_free;
    while (ptr != NULL) {
        next=ptr->Next;
    }

#ifdef DELIVERY_MUTEX
    CloseHandle(ptr->queue_lock);
#endif

    free(ptr->pdata);
    free(ptr);
    ptr=next;
}

return TRUE;
}

int initDelQueue()
{
    int i;

```

APPENDIX A - APPLICATION SOURCE CODE

```

DelQueue_info *ptr, *curr;

userlog("execute initDelQueue\n");

for (i=0; i<DeliveryQueues; i++) {
    if ((ptr = (DelQueue_info *)
        malloc(sizeof(DelQueue_info))) == NULL) {
        userlog("malloc error in
        initDelQueue\n");
        return FALSE;
    }

    ptr->pdata=(T_delivery_data
*)malloc(sizeof(T_delivery_data));

#ifdef DELIVERY_MUTEX
    if ((ptr->queue_lock=CreateMutex(NULL,
FALSE, NULL))==NULL) {
        userlog("Cannot create mutex on
        queue lock\n");
        return FALSE;
    }
#endif

    if (i)
        DelQueue_free=curr=ptr;
    else {
        curr->Next = ptr;
        curr = ptr;
    }

    DelQueue_begin = DelQueue_end = curr->Next = NULL;

    if ((waitAvailableDelQueue = CreateEvent(NULL, FALSE,
FALSE, "Wait Empty Delivery Queue")) == NULL) {
        userlog("Cannot create event :
        waitAvailableDelQueue\n");
        return FALSE;
    }

    if ((waitDelWork = CreateEvent(NULL, FALSE, FALSE,
"Wait Delivery Work")) == NULL) {
        userlog("Cannot create event :
        waitDelWork\n");
        return FALSE;
    }

    if ((DelThreadRunning = CreateEvent(NULL, FALSE,
FALSE, "Delivery Thread Running")) == NULL) {
        userlog("Cannot create event :
        DelThreadRunning\n");
        return FALSE;
    }

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

        if (_beginthread(initDeliveryThread, 0, (void *)
&i) == -1) {
            userlog("Error on
            initDeliveryThread %d\n", i);
            return FALSE;
        }

        /* wait for 100 seconds */
        if (WaitForSingleObject(DelThreadRunning,
100000) != WAIT_OBJECT_0) {
            userlog("Delivery Thread (%d)
            hasn't initialized after 100 seconds\n", i);
            return FALSE;
        }

        userlog("receive Delivery Thread %d
        confirmation\n", i);
    }

    return TRUE;
}

void initDeliveryThread(void *thread_no)
{
    int thread_number=((int *)thread_no);
    DelQueue_info *queue_info;

    if (!SetEvent(DelThreadRunning))
        userlog("SetEvent Error on
        initDeliveryThread(%d)\n", thread_number);
    else {

```

```

        userlog("Delivery Thread %d is created\n",
        thread_number);

        while (!DeliveryThreadstop) {
            queue_info = NULL;
            while (!DeliveryThreadstop &&
            queue_info == NULL) {

                queue_info=DequeueDel();

                if (queue_info ==
                NULL) {
                    if
                    (WaitForSingleObject(waitDelWork, INFINITE) != WAIT_OBJECT_0) {
                        userlog("Error on WaitForSingleObject(waitDelQueueWork)
                        in initDeliveryThread\n");
                        endDeliveryThread(thread_number);
                        return;
                    }
                }

                if (!DeliveryThreadstop) {

                    (void)mod_tpcc_delivery(queue_info->pdata,
                    thread_number);

                    addFreeDelQueue(queue_info);
                }

                endDeliveryThread(thread_number);
            }
        }

        void endDeliveryThread(int thread_number)
        {
            if (!SetEvent(DelThreadRunning)) {
                userlog("SetEvent Error on
                endDeliveryThread(%d)\n", thread_number);
            }
            _endthread();
        }

        /******
        * Delivery Queue dequeue/enqueue
        *
        *****/

        DelQueue_info *DequeueDel()
        {
            DelQueue_info *ptr;

            if (DelQueue_begin == NULL) return NULL;

            EnterCriticalSection(&critical_DelQueue_work);

            if (DelQueue_begin == NULL) {
                LeaveCriticalSection(&critical_DelQueue_work);
                return NULL;
            }

            if (DelQueue_begin == DelQueue_end) {
                ptr = DelQueue_begin;
                DelQueue_begin = DelQueue_end = NULL;
            }
            else {
                ptr = DelQueue_begin;
                DelQueue_begin = DelQueue_begin->Next;
            }

            LeaveCriticalSection(&critical_DelQueue_work);

            return ptr;
        }

        void EnqueueDel(DelQueue_info *queue_info)
        {
            EnterCriticalSection(&critical_DelQueue_work);
            if (DelQueue_begin == NULL)
                DelQueue_begin=DelQueue_end=queue_info;

```

APPENDIX A - APPLICATION SOURCE CODE

```

        else {
            DelQueue_end->Next = queue_info;
            queue_info->Next = NULL;
            DelQueue_end = queue_info;
        }

        LeaveCriticalSection(&critical_DelQueue_work);
    }

void addFreeDelQueue(DelQueue_info *ptr)
{
    EnterCriticalSection(&critical_DelQueue_free);

    if (DelQueue_free==NULL) {
        DelQueue_free = ptr;
        ptr->Next = NULL;
    }
    else {
        ptr->Next = DelQueue_free;
        DelQueue_free = ptr;
    }
}

#ifdef DEBUG
useddel--;
if (useddel != 0 && useddel % 300 == 0)
    userlog("free a del queue: current: %d\n",
useddel);
#endif

LeaveCriticalSection(&critical_DelQueue_free);
if (!SetEvent(waitAvailableDelQueue))
    userlog("SetEvent Error on
addFreeDelQueue\n");
}

DelQueue_info *findFreeDelQueue()
{
    DelQueue_info *ptr=NULL;

    EnterCriticalSection(&critical_DelQueue_free);

    while (ptr==NULL) {
        if (DelQueue_free==NULL) {

            LeaveCriticalSection(&critical_DelQueue_free);
            if
(WaitForSingleObject(waitAvailableDelQueue, INFINITE) !=
WAIT_OBJECT_0) {

                userlog("WaitForSingleObject(waitAvailableDelQueue) in
findFreeDelQueue\n");
            }
            userlog("Delivery queue is full,
sleep for 10 seconds\n");
#ifdef DEBUG
            userlog("used del queue: %d\n",
useddel);
#endif

            /* sleep for 10 seconds */
            Sleep(10000);

            EnterCriticalSection(&critical_DelQueue_free);
        }
        else {
            ptr = DelQueue_free;
            DelQueue_free =

            DelQueue_free->Next;
#ifdef DEBUG
            useddel++;
            if (useddel % 300 == 0)
                userlog("allocate a
del queue current used: %d\n", useddel);
#endif

        }

        LeaveCriticalSection(&critical_DelQueue_free);

        return ptr;
    }

}

/*****
*****
* process query
*****
*****/

int process_query(EXTENSION CONTROL BLOCK *pECB)

```

```

{
    int w_id, ld_id, form;
    char *ptr, *cmd;

    form = w_id = ld_id = 0;

    /*
    This process the request_rec http:server/tpcc
    */

    if (strlen(pECB->lpszQueryString) == 0)
        return sendform_welcome(pECB, "Welcome!");

    if (getcharvalue(pECB->lpszQueryString, '3', &ptr)) {
        form = *ptr++;
        if (get_wid_did(ptr, &w_id, &ld_id, &ptr) == FALSE) {
            return
send_error_message(pECB, 0, INVALID_TERMID, "", w_id, ld_id, 0);
        }
    }
    else {
        form = '0';
    }

    if (getcharvalue(ptr, '0', &cmd) == FALSE)
        return send_error_message(pECB, 0, COMMAND_UNDEFINED, "",
w_id, ld_id, 0);

    if ((form == '0') && !(CMD_BEGIN(cmd)))
        return send_error_message(pECB, 0,
INVALID_FORM_AND_CMD_NOT_BEGIN, "", w_id, ld_id, 0);

    if (CMD_PROCESS(cmd)) { /* cmd = Process */

        if (form == 'N') {
            /* New Order transaction */
            return mod_neworder_query(pECB, w_id, ld_id, ptr);
        }
        else if (form == 'P') {
            /* Payment order transaction */
            return mod_payment_query(pECB, w_id, ld_id, ptr);
        }
        else if (form == 'D') {
            /* Delivery order transaction */
            return mod_delivery_query(pECB, w_id, ld_id, ptr);
        }
        else if (form == 'O') {
            /* Order Status order transaction
*/
            return mod_orderstatus_query(pECB, w_id, ld_id, ptr);
        }
        else if (form == 'S') {
            /* Stock Level order transaction */
            return mod_stocklevel_query(pECB, w_id, ld_id, ptr);
        }
        else
            return
send_error_message(pECB, 0, INVALID_FORM, "", w_id, ld_id, 0);
    }
    else if (CMD_BEGIN(cmd))
        return
mod_begin_cmd(pECB);
    else if (CMD_NEWORDER(cmd))
        return
mod_neworder_cmd(pECB, w_id, ld_id);
    else if (CMD_PAYMENT(cmd))
        return
mod_payment_cmd(pECB, w_id, ld_id);
    else if (CMD_DELIVERY(cmd))
        return mod_delivery_cmd(pECB,
w_id, ld_id);
    else if (CMD_ORDERSTATUS(cmd))
        return
mod_orderstatus_cmd(pECB, w_id, ld_id);
    else if (CMD_STOCKLEVEL(cmd))
        return mod_stocklevel_cmd(pECB,
w_id, ld_id);
    else if (CMD_EXIT(cmd))
        return mod_exit_cmd(pECB);
    else if (CMD_MENU(cmd))
        return mod_menu_cmd(pECB, w_id,
ld_id);
    else
        return send_error_message(pECB, 0, COMMAND_UNDEFINED, "",
w_id, ld_id, 0);

    return TRUE;
}

int getcharvalue(char *iptr, char key, char **optr)
{
    *optr = iptr;

    while (iptr) {
        if ((key == *iptr) && ('=' == **optr)) {
            *optr = ++iptr;
            return TRUE;
        }
        while (iptr) {
            if ('&' == *iptr) {
                iptr++; break;
            }
            iptr++;
        }
    }
}

```


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```

    }
    return FALSE;
}

void readInit(char *output, char *parameter, char *default_value)
{
    if (_access(InitFile, 0x00) != NULL) {
        userlog("Cannot access init file: %s\n", InitFile);
        strcpy(output, default_value);
    }
    else
        GetPrivateProfileString("TPCC", parameter, default_value,
        output, MAXLEN, InitFile);
}

void allocateMemoryPool()
{
    userlog("Allocate Memory Pool\n");
    allocate_template_pool();
    allocate_response_pool();
    allocate_transaction_pool();
}

void allocate_response_pool()
{
    int i;

    InitializeCriticalSection(&(resp_global_pool.form_template_spinlock));
    resp_global_pool.form_template_length = BUF_SIZE;
    resp_global_pool.form_template_size =
    resp_global_pool.form_template_length * Maxterms;
    resp_global_pool.form_template_storage = (char
    *)malloc(resp_global_pool.form_template_size);
    resp_global_pool.free_slot = 0;
    resp_global_pool.free_list = (int *)malloc((Maxterms - 1) * sizeof(int));
    for (i = 0; i < (Maxterms - 2); i++) {
        resp_global_pool.free_list[i] = i + 1;
    }
    resp_global_pool.free_list[Maxterms - 2] = -1;
}

void make_txn_form_template(char *input_form, char
*input_form_template,
char *response_form, char *response_form_template, int txn_type)
{
    int length;
    /*
    For input form.
    */
    length = sprintf(input_form, FormHeader, mod_name);
    length = build_form_index(input_form, input_form_template,
    form_index[POOL_TYPE_TXN_INPUT][txn_type], length);
    length = (length + 16) & (~(int)7);

    txn_global_pool[POOL_TYPE_TXN_INPUT][txn_type].form_template_len
    gth = length+150;

    /*
    For output form.
    */
    length = sprintf(response_form, FormHeader, mod_name);
    length = build_form_index(response_form, response_form_template,
    form_index[POOL_TYPE_TXN_OUTPUT][txn_type], length);
    length = (length + 128) & (~(int)7);

    txn_global_pool[POOL_TYPE_TXN_OUTPUT][txn_type].form_template_l
    ength = length+250;
    return;
}

int build_form_index(char *form, char *form_template,
    form_index_entry *f_index, int length)
{
    int current_index = 0;
    int i = 0;
    int j = 0;
    int current_length = length;

    while (form_template[j]) {
        if (form_template[j] != '#') {
            form[current_length] = form_template[j];
            i++;
            current_length++;
        }
        else {
            i = 0;
            f_index->index = current_length;
            while (form_template[j] == '#') {
                j++;
                form[current_length] = form_template[j];
                i++;
                current_length++;
            }
            f_index->length = j;
            f_index++;
            current_index++;
        }
    }
    form[current_length] = '\0';
    current_length++;
    return current_length;
}

void allocate_template_pool()
{
    #define FORM_PAD 64
    #define GPOOL txn_global_pool[i_type][i_pool]

    char DeliveryInput[sizeof(DeliveryFormInput_Template)+FORM_PAD];
    char
    OrderStatusInput[sizeof(OrderStatusInput_Template)+FORM_PAD];
    char PaymentInput[sizeof(PaymentInput_Template)+FORM_PAD];
    char NewOrderInput[sizeof(NewOrderInput_Template)+FORM_PAD];
    char StockLevelInput[sizeof(StockLevelInput_Template)+FORM_PAD];

    char
    DeliveryOutput[sizeof(DeliveryFormOutput_Template)+FORM_PAD];
    char
    OrderStatusOutput[sizeof(OrderStatusOutput_Template)+FORM_PAD];
    char PaymentOutput[sizeof(PaymentOutput_Template)+FORM_PAD];
    char
    NewOrderOutput[sizeof(NewOrderOutput_Template)+FORM_PAD];
    char
    StockLevelOutput[sizeof(StockLevelOutput_Template)+FORM_PAD];
    int i_type, i_pool, i;

    make_txn_form_template(DeliveryInput, DeliveryFormInput_Template,
    DeliveryOutput, DeliveryFormOutput_Template,
    TXN_TYPE_DELIVERY);

    make_txn_form_template(OrderStatusInput,
    OrderStatusInput_Template,
    OrderStatusOutput, OrderStatusOutput_Template,
    TXN_TYPE_ORDERSTATUS);

    make_txn_form_template(PaymentInput, PaymentInput_Template,
    PaymentOutput, PaymentOutput_Template, TXN_TYPE_PAYMENT);

    make_txn_form_template(NewOrderInput, NewOrderInput_Template,
    NewOrderOutput, NewOrderOutput_Template,
    TXN_TYPE_NEWORDER);

    make_txn_form_template(StockLevelInput, StockLevelInput_Template,
    StockLevelOutput, StockLevelOutput_Template,
    TXN_TYPE_STOCKLEVEL);

    for (i_type = 0; i_type < POOL_TYPE_TXN_MAX; i_type++) {
        for (i_pool = 0; i_pool < TXN_TYPE_MAX; i_pool++) {
            int i, form_length;

            InitializeCriticalSection(&(GPOOL.form_template_spinlock));

            GPOOL.form_template_size = Maxterms;
            GPOOL.form_template_storage = (char *)malloc(Maxterms *
            GPOOL.form_template_length);
            GPOOL.free_list = (int *)malloc((Maxterms - 1) * sizeof(int));

            GPOOL.free_slot = 0;
            form_length = GPOOL.form_template_length;

            for (i = 0; i < (Maxterms - 2); i++) {
                GPOOL.free_list[i] = i+1;
            }
            GPOOL.free_list[Maxterms-2] = -1;
        }
    }

    i_type = POOL_TYPE_TXN_INPUT; i_pool = TXN_TYPE_DELIVERY;
    strcpy((char *) (GPOOL.form_template_storage),
    DeliveryInput);

    i_type = POOL_TYPE_TXN_OUTPUT; i_pool =
    TXN_TYPE_DELIVERY;
    strcpy((char *) (GPOOL.form_template_storage),
    DeliveryOutput);

    i_type = POOL_TYPE_TXN_INPUT; i_pool =
    TXN_TYPE_STOCKLEVEL;

```

```

    }
    return FALSE;
}

void readInit(char *output, char *parameter, char *default_value)
{
    if (_access(InitFile, 0x00) != NULL) {
        userlog("Cannot access init file: %s\n", InitFile);
        strcpy(output, default_value);
    }
    else
        GetPrivateProfileString("TPCC", parameter, default_value,
        output, MAXLEN, InitFile);
}

void allocateMemoryPool()
{
    userlog("Allocate Memory Pool\n");
    allocate_template_pool();
    allocate_response_pool();
    allocate_transaction_pool();
}

void allocate_response_pool()
{
    int i;

    InitializeCriticalSection(&(resp_global_pool.form_template_spinlock));
    resp_global_pool.form_template_length = BUF_SIZE;
    resp_global_pool.form_template_size =
    resp_global_pool.form_template_length * Maxterms;
    resp_global_pool.form_template_storage = (char
    *)malloc(resp_global_pool.form_template_size);
    resp_global_pool.free_slot = 0;
    resp_global_pool.free_list = (int *)malloc((Maxterms - 1) * sizeof(int));
    for (i = 0; i < (Maxterms - 2); i++) {
        resp_global_pool.free_list[i] = i + 1;
    }
    resp_global_pool.free_list[Maxterms - 2] = -1;
}

void make_txn_form_template(char *input_form, char
*input_form_template,
char *response_form, char *response_form_template, int txn_type)
{
    int length;
    /*
    For input form.
    */
    length = sprintf(input_form, FormHeader, mod_name);
    length = build_form_index(input_form, input_form_template,
    form_index[POOL_TYPE_TXN_INPUT][txn_type], length);
    length = (length + 16) & (~(int)7);

    txn_global_pool[POOL_TYPE_TXN_INPUT][txn_type].form_template_len
    gth = length+150;

    /*
    For output form.
    */
    length = sprintf(response_form, FormHeader, mod_name);
    length = build_form_index(response_form, response_form_template,
    form_index[POOL_TYPE_TXN_OUTPUT][txn_type], length);
    length = (length + 128) & (~(int)7);

    txn_global_pool[POOL_TYPE_TXN_OUTPUT][txn_type].form_template_l
    ength = length+250;
    return;
}

int build_form_index(char *form, char *form_template,
    form_index_entry *f_index, int length)
{
    int current_index = 0;
    int i = 0;
    int j = 0;
    int current_length = length;

    while (form_template[j]) {
        if (form_template[j] != '#') {
            form[current_length] = form_template[j];
            i++;
            current_length++;
        }
        else {
            i = 0;
            f_index->index = current_length;
            while (form_template[j] == '#') {
                j++;
                form[current_length] = form_template[j];
                i++;
                current_length++;
            }
            f_index->length = j;
            f_index++;
            current_index++;
        }
    }
    form[current_length] = '\0';
    current_length++;
    return current_length;
}

void allocate_template_pool()
{
    #define FORM_PAD 64
    #define GPOOL txn_global_pool[i_type][i_pool]

    char DeliveryInput[sizeof(DeliveryFormInput_Template)+FORM_PAD];
    char
    OrderStatusInput[sizeof(OrderStatusInput_Template)+FORM_PAD];
    char PaymentInput[sizeof(PaymentInput_Template)+FORM_PAD];
    char NewOrderInput[sizeof(NewOrderInput_Template)+FORM_PAD];
    char StockLevelInput[sizeof(StockLevelInput_Template)+FORM_PAD];

    char
    DeliveryOutput[sizeof(DeliveryFormOutput_Template)+FORM_PAD];
    char
    OrderStatusOutput[sizeof(OrderStatusOutput_Template)+FORM_PAD];
    char PaymentOutput[sizeof(PaymentOutput_Template)+FORM_PAD];
    char
    NewOrderOutput[sizeof(NewOrderOutput_Template)+FORM_PAD];
    char
    StockLevelOutput[sizeof(StockLevelOutput_Template)+FORM_PAD];
    int i_type, i_pool, i;

    make_txn_form_template(DeliveryInput, DeliveryFormInput_Template,
    DeliveryOutput, DeliveryFormOutput_Template,
    TXN_TYPE_DELIVERY);

    make_txn_form_template(OrderStatusInput,
    OrderStatusInput_Template,
    OrderStatusOutput, OrderStatusOutput_Template,
    TXN_TYPE_ORDERSTATUS);

    make_txn_form_template(PaymentInput, PaymentInput_Template,
    PaymentOutput, PaymentOutput_Template, TXN_TYPE_PAYMENT);

    make_txn_form_template(NewOrderInput, NewOrderInput_Template,
    NewOrderOutput, NewOrderOutput_Template,
    TXN_TYPE_NEWORDER);

    make_txn_form_template(StockLevelInput, StockLevelInput_Template,
    StockLevelOutput, StockLevelOutput_Template,
    TXN_TYPE_STOCKLEVEL);

    for (i_type = 0; i_type < POOL_TYPE_TXN_MAX; i_type++) {
        for (i_pool = 0; i_pool < TXN_TYPE_MAX; i_pool++) {
            int i, form_length;

            InitializeCriticalSection(&(GPOOL.form_template_spinlock));

            GPOOL.form_template_size = Maxterms;
            GPOOL.form_template_storage = (char *)malloc(Maxterms *
            GPOOL.form_template_length);
            GPOOL.free_list = (int *)malloc((Maxterms - 1) * sizeof(int));

            GPOOL.free_slot = 0;
            form_length = GPOOL.form_template_length;

            for (i = 0; i < (Maxterms - 2); i++) {
                GPOOL.free_list[i] = i+1;
            }
            GPOOL.free_list[Maxterms-2] = -1;
        }
    }

    i_type = POOL_TYPE_TXN_INPUT; i_pool = TXN_TYPE_DELIVERY;
    strcpy((char *) (GPOOL.form_template_storage),
    DeliveryInput);

    i_type = POOL_TYPE_TXN_OUTPUT; i_pool =
    TXN_TYPE_DELIVERY;
    strcpy((char *) (GPOOL.form_template_storage),
    DeliveryOutput);

    i_type = POOL_TYPE_TXN_INPUT; i_pool =
    TXN_TYPE_STOCKLEVEL;

```

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```

strcpy((char *) (GPOOL.form_template_storage),
        StockLevelInput);

i_type = POOL_TYPE_TXN_OUTPUT; i_pool =
TXN_TYPE_STOCKLEVEL;
strcpy((char *) (GPOOL.form_template_storage),
        StockLevelOutput);

i_type = POOL_TYPE_TXN_INPUT; i_pool =
TXN_TYPE_NEWORDER;
strcpy((char *) (GPOOL.form_template_storage),
        NewOrderInput);

i_type = POOL_TYPE_TXN_OUTPUT; i_pool =
TXN_TYPE_NEWORDER;
strcpy((char *) (GPOOL.form_template_storage),
        NewOrderOutput);

i_type = POOL_TYPE_TXN_INPUT; i_pool =
TXN_TYPE_ORDERSTATUS;
strcpy((char *) (GPOOL.form_template_storage),
        OrderStatusInput);

i_type = POOL_TYPE_TXN_OUTPUT; i_pool =
TXN_TYPE_ORDERSTATUS;
strcpy((char *) (GPOOL.form_template_storage),
        OrderStatusOutput);

i_type = POOL_TYPE_TXN_INPUT; i_pool = TXN_TYPE_PAYMENT;
strcpy((char *) (GPOOL.form_template_storage),
        PaymentInput);

i_type = POOL_TYPE_TXN_OUTPUT; i_pool =
TXN_TYPE_PAYMENT;
strcpy((char *) (GPOOL.form_template_storage),
        PaymentOutput);

for (i_type = 0; i_type < POOL_TYPE_TXN_MAX; i_type++) {
    for (i_pool = 0; i_pool < TXN_TYPE_MAX; i_pool++) {
        for (i = 1; i < GPOOL.form_template_size; i++) {
            memcpy((char *) (GPOOL.form_template_storage + i *
GPOOL.form_template_length),
                    (char *) (GPOOL.form_template_storage),
                    GPOOL.form_template_length);
        }
    }
}

#undef FORM_PAD
#undef GPOOL
}

void allocate_transaction_pool()
{
    int i, pool_size;

    pool_size = 0;
    pool_size = MAX(pool_size, sizeof(T_connect_data));
    pool_size = MAX(pool_size, sizeof(T_delivery_data));
    pool_size = MAX(pool_size, sizeof(T_neworder_data));
    pool_size = MAX(pool_size, sizeof(T_stocklevel_data));
    pool_size = MAX(pool_size, sizeof(T_orderstatus_data));
    pool_size = MAX(pool_size, sizeof(T_payment_data));
    pool_size = MAX(pool_size, sizeof(T_login_data));

    InitializeCriticalSection(&(txn_data_pool.form_template_spinlock));
    txn_data_pool.form_template_length = pool_size;
    txn_data_pool.form_template_size =
txn_data_pool.form_template_length * Maxterms;
    txn_data_pool.form_template_storage = (char
*) malloc(txn_data_pool.form_template_size);
    txn_data_pool.free_slot = 0;
    txn_data_pool.free_list = (int *) malloc((Maxterms - 1) * sizeof(int));
    for (i = 0; i < (Maxterms - 2); i++) {
        txn_data_pool.free_list[i] = i + 1;
    }
    txn_data_pool.free_list[Maxterms - 2] = -1;
}

/*
 * This processes the form that provides the w_id and d_id of a terminal.
 */
int mod_begin_cmd(EXTENSION_CONTROL_BLOCK *pECB)
{
    char *ptr;
    int w_id, d_id;

    if ((getcharvalue(pECB->pszQueryString, '4', &ptr) == FALSE) || ((w_id
= atoi(ptr)) <= 0))
        return sendform_welcome(pECB, "Error: Invalid Warehouse ID");

    if ((getcharvalue(ptr, '5', &ptr) == FALSE) || ((d_id = atoi(ptr)) <= 0) ||
(d_id > 10))
        return sendform_welcome(pECB, "Error: Invalid District DID");

    /*
     * Perform activities related to database logon etc.
     */

    return sendform_mainmenu(pECB, w_id, d_id);
}

int mod_exit_cmd(EXTENSION_CONTROL_BLOCK *pECB)
{
    return sendform_welcome(pECB, "Goodbye!");
}

int mod_menu_cmd(EXTENSION_CONTROL_BLOCK *pECB, int w_id,
int d_id)
{
    return sendform_mainmenu(pECB, w_id, d_id);
}

int get_wid_did(char *ptr, int *wid, int *did, char **optr)
{
    int total = 0;
    int c, pc;
    int provided = FALSE;

    *wid = *did = 0;
    *optr = ptr;
    pc = (int)(unsigned char) *ptr++;
    if ((pc < '0') || (pc > '9'))
        return FALSE;
    c = (int)(unsigned char) *ptr++;
    while ((c >= '0') && (c <= '9')) {
        total = 10 * total + (pc - '0');
        pc = c;
        c = (int)(unsigned char) *ptr++;
        provided = TRUE;
    }
    if (provided) {
        *wid = total;
        *did = (int) (pc - '0') + 1;
        *optr = ptr;
        return TRUE;
    }
    return FALSE;
}

int sendform_welcome(EXTENSION_CONTROL_BLOCK *pECB, char
*mesg)
{
    char *response;
    int index = -1, ret;

    response = allocate_form(&resp_global_pool, &index);
    sprintf(response, WelcomeForm, mod_name, mesg);
    ret = send_response(pECB, response, strlen(response));
    free_form(&resp_global_pool, response, index);
    return ret;
}

int send_response(EXTENSION_CONTROL_BLOCK *pECB, char *form,
int size)
{
    HSE_RESPONSE_VECTOR vec;
    HSE_VECTOR_ELEMENT elem;
    char szHeader[256];
    DWORD nHeader = sprintf(szHeader, "Content-Type: text/html\r\n"
"Content-Length: %d\r\n" "Connection: Keep-Alive\r\n\r\n", size);

    elem.ElementType =
HSE_VECTOR_ELEMENT_TYPE_MEMORY_BUFFER;
    elem.cbOffset = 0;
    elem.cbSize = size;
    elem.pvContext = form;

    vec.pszHeaders = szHeader;
    vec.lpDataElementArray = &elem;
    vec.nElementCount = 1;
}

```

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```

vec.pszStatus = "200 OK";
vec.dwFlags = HSE_IO_SEND_HEADERS;

if (!pECB->ServerSupportFunction(pECB->ConnID,
HSE_REQ_VECTOR_SEND, &vec, 0, 0))
{
    userlog("ServerSupportFunction() returns false");
    return FALSE;
}

pECB->dwHttpStatusCode = 200;

return TRUE;
}

char *allocate_form_new(form_template_pool *pool, int index)
{
    int pool_index=index-StartTerm;
    if (pool_index <= Maxterms)
        return (char *) (pool->form_template_storage +
pool_index * pool->form_template_length);
    else
        userlog("allocate_form_new failed
max_threads = %d", Maxterms);
    return (char *)0;
}

char *allocate_form(form_template_pool *pool, int *pool_index)
{
    int current;

    EnterCriticalSection(&(pool->form_template_spinlock));
    current = pool->free_slot;
    if (current >= 0) {
        pool->free_slot = pool->free_list[current];
        LeaveCriticalSection(&(pool->form_template_spinlock));
        *pool_index = current;
        return (char *) (pool->form_template_storage + current * pool-
>form_template_length);
    }
    LeaveCriticalSection(&(pool->form_template_spinlock));
    userlog("allocate_form failed max_threads = %d", Maxterms);
    *pool_index = -1;
    return (char *)0;
}

void free_form(form_template_pool *pool, char *form_template, int
pool_index)
{
    if (!form_template || pool_index < 0) return;

    EnterCriticalSection(&(pool->form_template_spinlock));
    pool->free_list[pool_index] = pool->free_slot;
    pool->free_slot = pool_index;
    LeaveCriticalSection(&(pool->form_template_spinlock));
}

int send_error_message(EXTENSION_CONTROL_BLOCK *pECB, int
error_type, int error,
char *error_msg, int w_id, int ld_id, void *context)
{
    char *response;
    char *mesg = "";
    int index = -1, ret;
    T_error_message *err = error_message;

    while (err->error_code) {
        if (err->error_code == error) {
            mesg = err->error_mesg; break;
        }
        err++;
    }
    response = allocate_form(&resp_global_pool, &index);
    sprintf(response, ErrorForm, mod_name, WIDID(w_id, ld_id), error_type,
error, mesg, error_msg);
    ret=send_response(pECB, response, strlen(response));
    free_form(&resp_global_pool, response, index);
    return ret;
}

int sendform_mainmenu(EXTENSION_CONTROL_BLOCK *pECB, int
w_id, int ld_id)
{
    char *response;
    int index = -1, ret;

    response = allocate_form(&resp_global_pool, &index);
    sprintf(response, MainForm, mod_name, WIDID(w_id, ld_id), "");
    ret=send_response(pECB, response, strlen(response));
    free_form(&resp_global_pool, response, index);
    return ret;
}

int sendform_neworderinput(EXTENSION_CONTROL_BLOCK *pECB, int
w_id, int ld_id)
{
    char *form;
    int index = w_id*10+ld_id, ret;
    form_template_pool *pool;
#define SUBI POOL_TYPE_TXN_INPUT][TXN_TYPE_NEWORDER

    pool = &txn_global_pool[SUBI];

#ifdef NEW_ALLOCATE_FORM
    form = allocate_form_new(pool, index);
#else
    form = allocate_form(pool, &index);
#endif

    fill_number(form, WIDID(w_id, ld_id),
form_index[SUBI][NO_TERMID].index,
form_index[SUBI][NO_TERMID].length);
    fill_number(form, w_id, form_index[SUBI][NO_WID].index,
form_index[SUBI][NO_WID].length);
    ret=send_response(pECB, form, strlen(form));

#ifdef NEW_ALLOCATE_FORM
    free_form(pool, form, index);
#endif

    return ret;
#undef SUBI
}

int sendform_deliveryinput(EXTENSION_CONTROL_BLOCK *pECB, int
w_id, int ld_id)
{
    char *form;
    int index = w_id*10+ld_id, ret;
    form_template_pool *pool;
#define SUBI POOL_TYPE_TXN_INPUT][TXN_TYPE_DELIVERY

    pool = &txn_global_pool[SUBI];

#ifdef NEW_ALLOCATE_FORM
    form = allocate_form_new(pool, index);
#else
    form = allocate_form(pool, &index);
#endif

    fill_number(form, WIDID(w_id, ld_id),
form_index[SUBI][DE_TERMID].index,
form_index[SUBI][DE_TERMID].length);
    fill_number(form, w_id, form_index[SUBI][DE_WID].index,
form_index[SUBI][DE_WID].length);
    ret=send_response(pECB, form, strlen(form));

#ifdef NEW_ALLOCATE_FORM
    free_form(pool, form, index);
#endif

    return ret;
#undef SUBI
}

int sendform_stocklevelinput(EXTENSION_CONTROL_BLOCK *pECB,
int w_id, int ld_id)
{
    char *form;
    int index = w_id*10+ld_id, ret;
    form_template_pool *pool;
#define SUBI POOL_TYPE_TXN_INPUT][TXN_TYPE_STOCKLEVEL

    pool = &txn_global_pool[SUBI];

#ifdef NEW_ALLOCATE_FORM
    form = allocate_form_new(pool, index);
#else
    form = allocate_form(pool, &index);
#endif

```

```

    fill_number(form, WIDID(w_id, Id_id),
form_index[SUBI][SL_TERMID].index,
    form_index[SUBI][SL_TERMID].length);
    fill_number(form, w_id, form_index[SUBI][SL_WID].index,
    form_index[SUBI][SL_WID].length);
    fill_number(form, Id_id, form_index[SUBI][SL_DID].index,
    form_index[SUBI][SL_DID].length);
    ret=send_response(pECB, form, strlen(form));

#ifdef NEW_ALLOCATE_FORM
    free_form(pool, form, index);
#endif

    return ret;
#undef SUBI
}

int sendform_paymentinput(EXTENSION_CONTROL_BLOCK *pECB, int
w_id, int Id_id)
{
    char *form;
    int index = w_id*10+Id_id, ret;
    form_template_pool *pool;
#define SUBI POOL_TYPE_TXN_INPUT[TXN_TYPE_PAYMENT

    pool = &txn_global_pool[SUBI];

#ifdef NEW_ALLOCATE_FORM
    form = allocate_form_new(pool, index);
#else
    form = allocate_form(pool, &index);
#endif

    fill_number(form, WIDID(w_id, Id_id),
form_index[SUBI][PA_INPUT_TERMID].index,
    form_index[SUBI][PA_INPUT_TERMID].length);

    fill_number(form, w_id, form_index[SUBI][PA_INPUT_WID].index,
    form_index[SUBI][PA_INPUT_WID].length);

    ret=send_response(pECB, form, strlen(form));

#ifdef NEW_ALLOCATE_FORM
    free_form(pool, form, index);
#endif

    return ret;
#undef SUBI
}

int sendform_orderstatusinput(EXTENSION_CONTROL_BLOCK *pECB,
int w_id, int Id_id)
{
    char *form;
    int index = w_id*10+Id_id, ret;
    form_template_pool *pool;
#define SUBI POOL_TYPE_TXN_INPUT[TXN_TYPE_ORDERSTATUS

    pool = &txn_global_pool[SUBI];

#ifdef NEW_ALLOCATE_FORM
    form = allocate_form_new(pool, index);
#else
    form = allocate_form(pool, &index);
#endif

    fill_number(form, WIDID(w_id, Id_id),
form_index[SUBI][OS_TERMID].index,
    form_index[SUBI][OS_TERMID].length);
    fill_number(form, w_id, form_index[SUBI][OS_WID].index,
    form_index[SUBI][OS_WID].length);
    ret=send_response(pECB, form, strlen(form));

#ifdef NEW_ALLOCATE_FORM
    free_form(pool, form, index);
#endif

    return ret;
#undef SUBI
}

void fill_string(char *form, char *string, int index, int length, int *shift)
{
    char *ptr;
    int i;

    for (i=0, ptr=string; i<length && (*ptr)!='\0'; i++, ptr++) {

```

```

        form[index+i]=(char)(*ptr);
        switch (*ptr) {
            case '\0' : (*shift)+=5;
                break;
            case '&' : (*shift)+=4;
                break;
            case '>' : (*shift)+=3;
                break;
            case '<' : (*shift)+=3;
                break;
        }
    }
}

for (; i<length; i++)
    form[index+i]=' ';
}

void adjust_form(char *form, int *indexes, int *length, int size, int formlen,
int totalshift)
{
    int ptr, ptr2, ind;

    for (ptr=formlen, ptr2=formlen+totalshift, ind=size-1; ptr>=0; ptr--) {
        if (ind>=0 && ptr<indexes[ind])
            ind--;
        if (ind<0 || ptr>=indexes[ind]+length[ind])
            form[ptr2--]=form[ptr];
        else if (ptr==indexes[ind] && ptr<indexes[ind]+length[ind])
            switch (form[ptr]) {
                case '\0' : form[ptr2--]='.'; form[ptr2--]='t'; form[ptr2--]='o';
                    form[ptr2--]='u'; form[ptr2--]='q'; form[ptr2--]='&';
                    break;
                case '&' : form[ptr2--]='.'; form[ptr2--]='p'; form[ptr2--]='m';
                    form[ptr2--]='a'; form[ptr2--]='&';
                    break;
                case '>' : form[ptr2--]='.'; form[ptr2--]='t';
                    form[ptr2--]='t'; form[ptr2--]='&';
                    break;
                case '<' : form[ptr2--]='.'; form[ptr2--]='t';
                    form[ptr2--]='g'; form[ptr2--]='&';
                    break;
                default : form[ptr2--]=form[ptr];
                    break;
            }
    }
}

void fill_double(char *form, double value, int index, int length)
{
    int ptr = index + length - 1, DecPtr = ptr - 2;
    int avalue=abs((int)(value*100.0));
    int is_neg=(value<0.0);
    char asterick[] = "*****";

    if (avalue==0)
        form[ptr]='0';

    while ((avalue!=0 && ptr>=index) || ptr > DecPtr) {
        form[ptr--]='0' + avalue % 10;
        avalue/=10;
        if (ptr == DecPtr)
            form[ptr--]='.';
    }

    if (ptr < index && (is_neg || avalue!=0))
        memcpy(form+index, asterick, length);
    else {
        if (is_neg)
            form[ptr--]='-';
        while (ptr>=index)
            form[ptr--]=' ';
    }
}

void fill_number(char *form, int value, int index, int length)
{
    char *pstart = (char *)form + index;
    char *pend = pstart + length - 1;
    char asterick[] = "*****";
    int slen = length;
    int is_neg, avalue;

    is_neg = (value < 0);
    avalue = abs(value);

    do {
        *pend = (avalue % 10) + '0';
        avalue = avalue / 10;
        if (--length) pend--;
    } while (length);
}

/*
if (avalue==0 && length > 0) {

```

APPENDIX A - APPLICATION SOURCE CODE

```

do {
    *pend='-';
    if (--length) pend--;
} while (length);
}
*/
if (avalue) {
    memcpy(pstart, asterick, slen);
    return;
}

if (is_neg) {
    if (*pend == '0') {
        *pend = '-';
    } else {
        memcpy(pstart, asterick, slen);
        return;
    }
}
}

int parse_query_string(char *iptr, int max_cnt,
    char *txn_chars, value_index_entry *txn_vals)
{
    char *ptr = iptr;
    int key, i;

    for (i = 0; i < max_cnt; i++) {
        key = txn_chars[i];
        txn_vals[i].value = NULL;
        txn_vals[i].length = 0;
        if ((key == *ptr) && ('-' == *++ptr)) {
            txn_vals[i].value = ++ptr;
        }
        while (ptr && ptr[0] != '0') {
            if ('&' == *ptr) {
                ptr++; break;
            }
            ptr++; txn_vals[i].length++;
        }
    }

    return TRUE;
}

int get_number(char *ptr, int *value)
{
    int c, total;
    int has_value = FALSE;
    int is_neg = FALSE;

    if (*ptr == '-') {
        is_neg = TRUE; ptr++;
    }
    c = (int) (unsigned char) *ptr++;

    total = 0;
    while ((c >= '0') && (c <= '9')) {
        total = 10 * total + (c - '0');
        c = (int) (unsigned char) *ptr++;
        has_value = TRUE;
    }
    if ((c == '0') || (('&' == c) && has_value)) {
        *value = is_neg ? (0-total):total;
        return TRUE;
    }
    *value = 0;
    return FALSE;
}

/*****
*****
* mod transaction output
*****
*****/

int mod_neworder_query(EXTENSION_CONTROL_BLOCK *pECB, int
w_id, int ld_id, char *ptr)
{
    T_neworder_data *pdata;
    int index = w_id*10+ld_id, ret;
    int status = SUCCESS;

#ifdef NEW_ALLOCATE_FORM
    pdata = (T_neworder_data *)allocate_form_new(&txn_data_pool, index);
#else
    pdata = (T_neworder_data *)allocate_form(&txn_data_pool, &index);
#endif

    pdata->w_id = w_id; pdata->ld_id = ld_id; pdata->context = (void
*)pECB;

    status = parse_neworder_query(ptr, pdata);
    if (status != SUCCESS) {
        ret=send_error_message(pECB, 0, status, "", w_id, ld_id, 0);

#ifdef NEW_ALLOCATE_FORM
        free_form(&txn_data_pool, (char *) pdata, index);
#endif

        return ret;
    }

    status = mod_tpcc_neworder(pdata);
    ret=sendform_neworderoutput(status, pdata);

#ifdef NEW_ALLOCATE_FORM
    free_form(&txn_data_pool, (char *) pdata, index);
#endif

    return ret;
}

int mod_delivery_query(EXTENSION_CONTROL_BLOCK *pECB, int
w_id, int ld_id, char *ptr)
{
    DelQueue_info *queue_info;
    int index=-1, ret;
    int status = SUCCESS;

    queue_info = findFreeDelQueue();
    queue_info->pdata->w_id = w_id;
    queue_info->pdata->ld_id = ld_id;
    queue_info->pdata->context = (void *)pECB;

    status = parse_delivery_query(ptr, queue_info->pdata);
    if (status != SUCCESS) {
        ret=send_error_message(pECB, 0, status, "", w_id, ld_id, 0);
        return ret;
    }

    EnqueueDel(queue_info);
    if (!SetEvent(waitDelWork)) {
        userlog("Error on SetEvent(waitDelWork)\n");
        ret=sendform_deliveryoutput(status, queue_info->pdata);
        ret=FALSE;
    }
    else ret=sendform_deliveryoutput(status, queue_info->pdata);
    return ret;
}

int mod_payment_query(EXTENSION_CONTROL_BLOCK *pECB, int
w_id, int ld_id, char *ptr)
{
    T_payment_data *pdata;
    int index = w_id*10+ld_id, ret;
    int status = SUCCESS;

#ifdef NEW_ALLOCATE_FORM
    pdata = (T_payment_data *)allocate_form_new(&txn_data_pool, index);
#else
    pdata = (T_payment_data *)allocate_form(&txn_data_pool, &index);
#endif

    pdata->w_id = w_id; pdata->ld_id = ld_id; pdata->context = (void
*)pECB;

    status = parse_payment_query(ptr, pdata);
    if (status != SUCCESS) {
        ret=send_error_message(pECB, 0, status, "", w_id, ld_id, 0);

#ifdef NEW_ALLOCATE_FORM
        free_form(&txn_data_pool, (char *) pdata, index);
#endif

        return ret;
    }

    status = mod_tpcc_payment(pdata);
    ret=sendform_paymentoutput(status, pdata);

#ifdef NEW_ALLOCATE_FORM
    free_form(&txn_data_pool, (char *) pdata, index);
#endif

    return ret;
}

```

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```

int mod_orderstatus_query(EXTENSION_CONTROL_BLOCK *pECB, int
w_id, int ld_id, char *ptr)
{
    T_orderstatus_data *pdata;
    int index = w_id*10+ld_id, ret;
    int status = SUCCESS;

#ifdef NEW_ALLOCATE_FORM
    pdata = (T_orderstatus_data *)allocate_form_new(&txn_data_pool,
index);
#else
    pdata = (T_orderstatus_data *)allocate_form(&txn_data_pool, &index);
#endif

    pdata->w_id = w_id; pdata->ld_id = ld_id; pdata->context = (void
*)pECB;

    status = parse_orderstatus_query(ptr, pdata);
    if (status != SUCCESS) {
        ret=send_error_message(pECB, 0, status, "", w_id, ld_id, 0);

#ifdef NEW_ALLOCATE_FORM
        free_form(&txn_data_pool, (char *) pdata, index);
#endif

        return ret;
    }

    status = mod_tpcc_orderstatus(pdata);
    ret=sendform_orderstatusoutput(status, pdata);

#ifdef NEW_ALLOCATE_FORM
    free_form(&txn_data_pool, (char *) pdata, index);
#endif

    return ret;
}

int mod_stocklevel_query(EXTENSION_CONTROL_BLOCK *pECB, int
w_id, int ld_id, char *ptr)
{
    T_stocklevel_data *pdata;
    int index = w_id*10+ld_id, ret;
    int status = SUCCESS;

#ifdef NEW_ALLOCATE_FORM
    pdata = (T_stocklevel_data *)allocate_form_new(&txn_data_pool,
index);
#else
    pdata = (T_stocklevel_data *)allocate_form(&txn_data_pool, &index);
#endif

    pdata->w_id = w_id; pdata->ld_id = ld_id; pdata->context = (void
*)pECB;

    status = parse_stocklevel_query(ptr, pdata);

    if (status != SUCCESS) {
        ret=send_error_message(pECB, 0, status, "", w_id, ld_id, 0);

#ifdef NEW_ALLOCATE_FORM
        free_form(&txn_data_pool, (char *) pdata, index);
#endif

        return ret;
    }

    status = mod_tpcc_stocklevel(pdata);
    ret=sendform_stockleveloutput(status, pdata);

#ifdef NEW_ALLOCATE_FORM
    free_form(&txn_data_pool, (char *) pdata, index);
#endif

    return ret;
}

/*****
*****
* parse transaction query
*****
*****/

int parse_neworder_query(char *iptr, T_neworder_data *pdata)
{
    int status, i, items;
    value_index_entry value_ptr[NO_INPUT_MAX];
    char *ptr;

```

```

    status = parse_query_string(iptr, NO_INPUT_MAX, neworder_chars,
value_ptr);

    if ((ptr = value_ptr[NO_INPUT_DID].value) == NULL) {
        return NEWORDER_MISSING_DID;
    }
    if ((status = get_number(ptr, &pdata->d_id)) == FALSE) {
        return NEWORDER_DISTRICT_INVALID;
    }
    if ((pdata->d_id > 10) || (pdata->d_id < 1)) {
        return NEWORDER_DISTRICT_RANGE;
    }

    if ((ptr = value_ptr[NO_INPUT_CID].value) == NULL) {
        return NEWORDER_CUSTOMER_KEY;
    }
    if ((status = get_number(ptr, &pdata->c_id)) == FALSE) {
        return NEWORDER_CUSTOMER_INVALID;
    }
    if ((pdata->c_id > 3000) || (pdata->c_id <= 0)) {
        return NEWORDER_CUSTOMER_RANGE;
    }

    pdata->o_all_local = 1;

    for (i = 0, items = 0; i < 15; i++) {
        if ((ptr = value_ptr[i*3 + NO_INPUT_IID00].value) == NULL) {
            return NEWORDER_MISSING_IID_KEY;
        }
        if (value_ptr[i*3 + NO_INPUT_IID00].length > 0) {
            if ((status = get_number(ptr, &pdata->o_orderline[items].ol_i_id))
== FALSE) {
                return NEWORDER_ITEMID_INVALID;
            }
            if ((ptr = value_ptr[i*3 + NO_INPUT_SPW00].value) == NULL) {
                return NEWORDER_MISSING_SUPPW_KEY;
            }
            if ((status = get_number(ptr, &pdata-
>o_orderline[items].ol_supply_w_id)) == FALSE) {
                return NEWORDER_SUPPW_INVALID;
            }
            if ((ptr = value_ptr[i*3 + NO_INPUT_QTY00].value) == NULL) {
                return NEWORDER_MISSING_QTY_KEY;
            }
            if ((status = get_number(ptr, &pdata-
>o_orderline[items].ol_quantity)) == FALSE) {
                return NEWORDER_QTY_INVALID;
            }
            /*
            We use item number 111111 as the bad one.
            */
            if ((pdata->o_orderline[items].ol_i_id > 999999) ||
(pdata->o_orderline[items].ol_i_id < 1)) {
                return NEWORDER_ITEMID_RANGE;
            }
            if ((pdata->o_orderline[items].ol_quantity >= 100) ||
(pdata->o_orderline[items].ol_quantity < 1)) {
                return NEWORDER_QTY_RANGE;
            }
            if (pdata->o_all_local && pdata->o_orderline[items].ol_supply_w_id
!= pdata->w_id) {
                pdata->o_all_local = 0;
            }
            items++;
        } else {
            if (value_ptr[i*3 + NO_INPUT_SPW00].value == NULL) {
                return NEWORDER_MISSING_SUPPW_KEY;
            }
            if (value_ptr[i*3 + NO_INPUT_SPW00].length > 0) {
                return NEWORDER_SUPPW_WITHOUT_ITEMID;
            }
            if (value_ptr[i*3 + NO_INPUT_QTY00].value == NULL) {
                return NEWORDER_MISSING_QTY_KEY;
            }
            if (value_ptr[i*3 + NO_INPUT_QTY00].length > 0) {
                return NEWORDER_QTY_WITHOUT_ITEMID;
            }
        }
    }
    if (items == 0) {
        return NEWORDER_NOITEMS_ENTERED;
    }
    pdata->o_ol_cnt = items;
    return SUCCESS;
}

int parse_payment_query(char *iptr, T_payment_data *pdata)
{
    int status, see_dot, i;
    value_index_entry value_ptr[PA_INPUT_MAX];
    char *ptr;

```

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```

status = parse_query_string(iptr, PA_INPUT_MAX, payment_chars,
value_ptr);

if ((ptr = value_ptr[PA_INPUT_DID].value) == NULL) {
    return PAYMENT_MISSING_DID_KEY;
}
if ((status = get_number(ptr, &pdata->d_id)) == FALSE) {
    return PAYMENT_DISTRICT_INVALID;
}
if ((pdata->d_id > 10) || (pdata->d_id < 1)) {
    return PAYMENT_DISTRICT_RANGE;
}

if ((ptr = value_ptr[PA_INPUT_CID].value) == NULL) {
    return PAYMENT_MISSING_CID_KEY;
}

if (value_ptr[PA_INPUT_CID].length == 0) { /* c_id == 0 */
    pdata->c_id = 0;
    pdata->by_last_name = 1;
    if ((ptr = value_ptr[PA_INPUT_NAME].value) == NULL) {
        return PAYMENT_MISSING_CLASTNAME_KEY;
    }
    if (value_ptr[PA_INPUT_NAME].length == 0) {
        return PAYMENT_MISSING_CLASTNAME;
    }
    memcpy(pdata->c_last, ptr, value_ptr[PA_INPUT_NAME].length);
    pdata->c_last[value_ptr[PA_INPUT_NAME].length] = '\0';
    STRING_UPPERCASE(pdata->c_last);
    if (value_ptr[PA_INPUT_NAME].length > 16) {
        return PAYMENT_LAST_NAME_TO_LONG;
    }
} else { /* c_id != 0 */
    pdata->by_last_name = 0;
    if ((status = get_number(ptr, &pdata->c_id)) == FALSE) {
        return PAYMENT_CUSTOMER_INVALID;
    }
    if ((pdata->c_id > 3000) || (pdata->c_id <= 0)) {
        return PAYMENT_CID_RANGE;
    }
    if ((ptr = value_ptr[PA_INPUT_NAME].value) == NULL) {
        return PAYMENT_MISSING_CLASTNAME_KEY;
    }
    if (value_ptr[PA_INPUT_NAME].length > 0) {
        return PAYMENT_CID_AND_CLASTNAME;
    }
}

if ((ptr = value_ptr[PA_INPUT_CDID].value) == NULL) {
    return PAYMENT_MISSING_CDI_KEY;
}
if ((status = get_number(ptr, &pdata->c_d_id)) == FALSE) {
    return PAYMENT_CDI_INVALID;
}
if ((pdata->c_d_id > 10) || (pdata->c_d_id < 1)) {
    return PAYMENT_CDI_RANGE;
}
if ((ptr = value_ptr[PA_INPUT_CWID].value) == NULL) {
    return PAYMENT_MISSING_CWI_KEY;
}
if ((status = get_number(ptr, &pdata->c_w_id)) == FALSE) {
    return PAYMENT_CWI_INVALID;
}
if ((ptr = value_ptr[PA_INPUT_AMT].value) == NULL) {
    return PAYMENT_MISSING_HAM_KEY;
}

see_dot = FALSE;

for (i = 0; i < value_ptr[PA_INPUT_AMT].length; i++) {
    if (ptr[i] == '\0') {
        return PAYMENT_HAM_INVALID;
    }
    if (ptr[i] == '.') {
        if (see_dot) {
            return PAYMENT_HAM_INVALID;
        } else {
            see_dot = TRUE;
        }
    }
    if ((ptr[i] > '9') || (ptr[i] < '0')) {
        return PAYMENT_HAM_INVALID;
    }
}
pdata->h_amount = atof(ptr);

if ((pdata->h_amount < 0) || (pdata->h_amount >= 10000.0)) {
    return PAYMENT_HAM_RANGE;
}
return SUCCESS;
}

```

```

int parse_delivery_query(char *iptr, T_delivery_data *pdata)
{
    int status = SUCCESS;
    value_index_entry value_ptr[DE_INPUT_MAX];
    int i, see_dot;
    char *ptr;

    status = parse_query_string(iptr, DE_INPUT_MAX, delivery_chars,
value_ptr);

    if ((ptr = value_ptr[DE_INPUT_DID].value) == NULL) {
        return DELIVERY_MISSING_OCD_KEY;
    }
    if ((status = get_number(ptr, &pdata->o_carrier_id)) == FALSE) {
        return DELIVERY_CARRIER_INVALID;
    }
    if ((pdata->o_carrier_id > 10) || (pdata->o_carrier_id < 1)) {
        return DELIVERY_CARRIER_ID_RANGE;
    }

    if ((ptr = value_ptr[DE_INPUT_QTIME].value) == NULL) {
        GetLocalTime(&(pdata->enqueue_date_time));
        pdata->enqueue_time = GetTickCount();
        return SUCCESS;
    }

    if (value_ptr[DE_INPUT_QTIME].length == 0) {
        return DELIVERY_MISSING_QUEUEETIME_KEY;
    }

    see_dot = FALSE;

    for (i = 0; i < value_ptr[DE_INPUT_QTIME].length; i++) {
        if (ptr[i] == '\0') {
            return DELIVERY_MISSING_QUEUEETIME_KEY;
        }
        if (ptr[i] == '.') {
            if (see_dot) {
                return DELIVERY_MISSING_QUEUEETIME_KEY;
            } else {
                see_dot = TRUE;
            }
        }
        if ((ptr[i] > '9') || (ptr[i] < '0')) {
            return DELIVERY_MISSING_QUEUEETIME_KEY;
        }
    }

    pdata->enqueue_time = atof(ptr);

    return SUCCESS;
}

int parse_orderstatus_query(char *iptr, T_orderstatus_data *pdata)
{
    int status = SUCCESS;
    value_index_entry value_ptr[OS_INPUT_MAX];
    char *ptr;

    status = parse_query_string(iptr, OS_INPUT_MAX, orderstatus_chars,
value_ptr);

    if ((ptr = value_ptr[OS_INPUT_DID].value) == NULL) {
        return ORDERSTATUS_MISSING_DID_KEY;
    }
    if ((status = get_number(ptr, &pdata->d_id)) == FALSE) {
        return ORDERSTATUS_DID_INVALID;
    }
    if ((pdata->d_id > 10) || (pdata->d_id < 1)) {
        return ORDERSTATUS_DID_RANGE;
    }

    if ((ptr = value_ptr[OS_INPUT_CID].value) == NULL) {
        return ORDERSTATUS_MISSING_CID_KEY;
    }

    if (value_ptr[OS_INPUT_CID].length == 0) {
        pdata->c_id = 0;
        pdata->by_last_name = 1;
        if ((ptr = value_ptr[OS_INPUT_NAME].value) == NULL) {
            return ORDERSTATUS_MISSING_CLASTNAME_KEY;
        }
        memcpy(pdata->c_last, ptr, value_ptr[OS_INPUT_NAME].length);
        pdata->c_last[value_ptr[OS_INPUT_NAME].length] = '\0';
        STRING_UPPERCASE(pdata->c_last);
        if (value_ptr[OS_INPUT_NAME].length > 16) {
            return ORDERSTATUS_CLASTNAME_RANGE;
        }
    } else { /* c_id != 0 */
        pdata->by_last_name = 0;

```

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    if ((status = get_number(ptr, &pdata->c_id)) == FALSE) {
        return ORDERSTATUS_CID_INVALID;
    }
    if ((pdata->c_id > 3000) || (pdata->c_id <= 0)) {
        return ORDERSTATUS_CID_RANGE;
    }
    if ((ptr = value_ptr[OS_INPUT_NAME].value) == NULL) {
        return ORDERSTATUS_MISSING_CLASTNAME_KEY;
    }
    if (value_ptr[OS_INPUT_NAME].length > 0) {
        return ORDERSTATUS_CID_AND_CLASTNAME;
    }
}
return SUCCESS;
}

int parse_stocklevel_query(char *iptr, T_stocklevel_data *pdata)
{
    value_index_entry value_ptr[SL_INPUT_MAX];
    char *ptr;
    int status = SUCCESS;

    status = parse_query_string(iptr, SL_INPUT_MAX, stocklevel_chars,
    value_ptr);

    if ((ptr = value_ptr[SL_INPUT_THRESHOLD].value) == NULL) {
        return STOCKLEVEL_MISSING_THRESHOLD_KEY;
    }
    if ((status = get_number(ptr, &pdata->threshold)) == FALSE) {
        return STOCKLEVEL_THRESHOLD_INVALID;
    }
    if ((pdata->threshold >= 100) || (pdata->threshold < 0)) {
        return STOCKLEVEL_THRESHOLD_RANGE;
    }

    return SUCCESS;
}

/*****
*****
* sendform output
*****
*****/

int sendform_neworderoutput(int status, T_neworder_data *pdata)
{
    EXTENSION_CONTROL_BLOCK *pECB;
    int w_id, ld_id, ret;
    char *form, *form2;
    char blank[] = "          ";
    int index = -1, formlen, strcount=0, shift=0, i, j, lineStart=15;
    int indexes[NO_FORMINDEX_SIZE], indLen[NO_FORMINDEX_SIZE],
    index2=-1;
    form_template_pool *pool;

#define SUBI POOL_TYPE_TXN_OUTPUT[TXN_TYPE_NEWORDER

    w_id = pdata->w_id; ld_id = pdata->ld_id;
    pECB = (EXTENSION_CONTROL_BLOCK *) pdata-
>context;

    if (status != SUCCESS && status != DB_SUCCESS) {
        return send_error_message(pECB, 0, status, "", w_id, ld_id, 0);
    }

    if (pdata->txn_status != DB_RETURN_OCI_SUCCESS) {
        return send_error_message(pECB, 0, pdata-
>txn_status, " --- DATABASE ERROR ", w_id, ld_id, 0);
    }

    pool = &txn_global_pool[SUBI];
    index=w_id*10+ld_id;

#ifdef NEW_ALLOCATE_FORM
    form = allocate_form_new(pool, index);
#else
    form = allocate_form(pool, &index);
#endif

    formlen=strlen(form);

    fill_number(form, WID(w_id, ld_id),
    form_index[SUBI][NO_TERMID].index,
    form_index[SUBI][NO_TERMID].length);
    fill_number(form, w_id, form_index[SUBI][NO_WID].index,
    form_index[SUBI][NO_WID].length);

    fill_number(form, pdata->d_id, form_index[SUBI][NO_DID].index,
    form_index[SUBI][NO_DID].length);

```

```

    if (!pdata->status) {
        fill_string(form, pdata->o_entry_d.DateString,
        form_index[SUBI][NO_DATE].index,
        form_index[SUBI][NO_DATE].length, &shift);
        indexes[strcount]=form_index[SUBI][NO_DATE].index;
        indLen[strcount++]=form_index[SUBI][NO_DATE].length;
    } else {
        memcpy(form+form_index[SUBI][NO_DATE].index, blank,
        form_index[SUBI][NO_DATE].length);
    }

    fill_number(form, pdata->c_id, form_index[SUBI][NO_CID].index,
    form_index[SUBI][NO_CID].length);

    fill_string(form, pdata->c_last, form_index[SUBI][NO_NAME].index,
    form_index[SUBI][NO_NAME].length, &shift);
    indexes[strcount]=form_index[SUBI][NO_NAME].index;
    indLen[strcount++]=form_index[SUBI][NO_NAME].length;

    fill_string(form, pdata->c_credit, form_index[SUBI][NO_CREDIT].index,
    form_index[SUBI][NO_CREDIT].length, &shift);
    indexes[strcount]=form_index[SUBI][NO_CREDIT].index;
    indLen[strcount++]=form_index[SUBI][NO_CREDIT].length;

    fill_double(form, pdata->c_discount,
    form_index[SUBI][NO_DISC].index,
    form_index[SUBI][NO_DISC].length);

    fill_number(form, pdata->o_id, form_index[SUBI][NO_OID].index,
    form_index[SUBI][NO_OID].length);

    fill_number(form, pdata->o_ol_cnt, form_index[SUBI][NO_LINES].index,
    form_index[SUBI][NO_LINES].length);

    fill_double(form, pdata->w_tax, form_index[SUBI][NO_WTAX].index,
    form_index[SUBI][NO_WTAX].length);

    fill_double(form, pdata->d_tax, form_index[SUBI][NO_DTAX].index,
    form_index[SUBI][NO_DTAX].length);

    if (!pdata->status) {
        for (i=0; i<pdata->o_ol_cnt; i++) {
            fill_number(form, pdata->o_orderline[i].ol_supply_w_id,
            form_index[SUBI][NO_SUPPW+i*8].index,
            form_index[SUBI][NO_SUPPW+i*8].length);

            fill_number(form, pdata->o_orderline[i].ol_i_id,
            form_index[SUBI][NO_ITEMID+i*8].index,
            form_index[SUBI][NO_ITEMID+i*8].length);

            fill_string(form, pdata->o_orderline[i].i_name,
            form_index[SUBI][NO_INAME+i*8].index,
            form_index[SUBI][NO_INAME+i*8].length, &shift);
            indexes[strcount]=form_index[SUBI][NO_INAME+i*8].index;
            indLen[strcount++]=form_index[SUBI][NO_INAME+i*8].length;

            fill_number(form, pdata->o_orderline[i].ol_quantity,
            form_index[SUBI][NO_QTY+i*8].index,
            form_index[SUBI][NO_QTY+i*8].length);

            fill_number(form, pdata->o_orderline[i].s_quantity,
            form_index[SUBI][NO_STOCK+i*8].index,
            form_index[SUBI][NO_STOCK+i*8].length);

            fill_string(form, pdata->o_orderline[i].b_g,
            form_index[SUBI][NO_BRAND+i*8].index,
            form_index[SUBI][NO_BRAND+i*8].length, &shift);
            indexes[strcount]=form_index[SUBI][NO_BRAND+i*8].index;
            indLen[strcount++]=form_index[SUBI][NO_BRAND+i*8].length;

            fill_double(form, pdata->o_orderline[i].i_price,
            form_index[SUBI][NO_PRICE+i*8].index,
            form_index[SUBI][NO_PRICE+i*8].length);

            fill_double(form, pdata->o_orderline[i].ol_amount,
            form_index[SUBI][NO_AMOUNT+i*8].index,
            form_index[SUBI][NO_AMOUNT+i*8].length);
        }

        for (j=NO_SUPPW+i*8; j<NO_SUPPW+15*8; j++)
            memcpy(form+form_index[SUBI][j].index, blank, form_index[SUBI][j].length);

        for (lineStart=j=i; j<15; j++) {
            form[form_index[SUBI][NO_PRICE+j*8].index-1]=' ';
            form[form_index[SUBI][NO_AMOUNT+j*8].index-1]=' ';
        }
    } else {

```


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```

/*
    for (j=NO_DISC; j<=NO_DTAX; j++)

memcpy(form+form_index[SUBI][j].index, blank, form_index[SUBI][j].length);
;
*/

    for (j=NO_SUPPW; j<NO_SUPPW+15*8; j++)

memcpy(form+form_index[SUBI][j].index, blank, form_index[SUBI][j].length);
;

    for (lineStart=j=0; j<15; j++) {
        form[form_index[SUBI][NO_PRICE+j*8].index-1]=' ';
        form[form_index[SUBI][NO_AMOUNT+j*8].index-1]=' ';
    }
}

if (!pdata->status) {
    fill_string(form, "Transaction committed",
        form_index[SUBI][NO_STATUS].index,
        form_index[SUBI][NO_STATUS].length, &shift);
    indexes[strcount]=form_index[SUBI][NO_STATUS].index;
    indLen[strcount++]=form_index[SUBI][NO_STATUS].length;

    fill_double(form, pdata->total_amount,
        form_index[SUBI][NO_TOTAL].index,
        form_index[SUBI][NO_TOTAL].length);
} else {
    fill_string(form, "Item number is not valid",
        form_index[SUBI][NO_STATUS].index,
        form_index[SUBI][NO_STATUS].length, &shift);
    indexes[strcount]=form_index[SUBI][NO_STATUS].index;
    indLen[strcount++]=form_index[SUBI][NO_STATUS].length;

    memcpy(form+form_index[SUBI][NO_TOTAL].index-1, blank,
        form_index[SUBI][NO_TOTAL].length+1);
}

if (shift)
    adjust_form(form, indexes, indLen, strcount, formlen, shift);

ret=send_response(pECB, form, strlen(form));

if (shift) {
    allocate_last_form(form2, pool);
    memcpy(form, form2, formlen+1);
}
for (j=lineStart; j<15; j++) {
    form[form_index[SUBI][NO_PRICE+j*8].index-1]=' ';
    form[form_index[SUBI][NO_AMOUNT+j*8].index-1]=' ';
}

#endif NEW_ALLOCATE_FORM
free_form(pool, form, index);
#endif

return ret;
#undef SUBI
}

int sendform_paymentoutput(int status, T_payment_data *pdata)
{
    EXTENSION_CONTROL_BLOCK *pECB;
    int w_id, ld_id, ret;
    char *form, *form2;
    char blank[] = " ";
    int index = -1, formlen, strcount=0, shift=0, i=0, j, datalen;
    int indexes[PA_FORMINDEX_SIZE], indLen[PA_FORMINDEX_SIZE],
    index2=-1;
    form_template_pool *pool;

    w_id = pdata->w_id; ld_id = pdata->ld_id;
    pECB = (EXTENSION_CONTROL_BLOCK *) pdata-
>context;

    if (status != SUCCESS && status != DB_SUCCESS) {
        return send_error_message(pECB, 0, status, "", w_id, ld_id, 0);
    }

    if (pdata->txn_status != DB_RETURN_OCI_SUCCESS) {
        return send_error_message(pECB, 0, pdata->txn_status, " ---
DATABASE ERROR ", w_id, ld_id, 0);
    }

#define SUBI_POOL_TYPE_TXN_OUTPUT[TXN_TYPE_PAYMENT

    pool = &txn_global_pool[SUBI];
    index=w_id*10+ld_id;

#endif NEW_ALLOCATE_FORM
    form = allocate_form_new(pool, index);

```

```

#else
    form = allocate_form(pool, &index);
#endif

    formlen=strlen(form);

    fill_number(form, WDID(w_id, ld_id),
        form_index[SUBI][PA_TERMID].index,
        form_index[SUBI][PA_TERMID].length);

    fill_string(form, pdata->h_date.DateString,
        form_index[SUBI][PA_DATE].index,
        form_index[SUBI][PA_DATE].length, &shift);
    indexes[strcount]=form_index[SUBI][PA_DATE].index;
    indLen[strcount++]=form_index[SUBI][PA_DATE].length;

    fill_number(form, w_id, form_index[SUBI][PA_WID].index,
        form_index[SUBI][PA_WID].length);

    fill_number(form, pdata->d_id, form_index[SUBI][PA_DID].index,
        form_index[SUBI][PA_DID].length);

    fill_string(form, pdata->w_street_1, form_index[SUBI][PA_WST1].index,
        form_index[SUBI][PA_WST1].length, &shift);
    indexes[strcount]=form_index[SUBI][PA_WST1].index;
    indLen[strcount++]=form_index[SUBI][PA_WST1].length;

    fill_string(form, pdata->d_street_1, form_index[SUBI][PA_DST1].index,
        form_index[SUBI][PA_DST1].length, &shift);
    indexes[strcount]=form_index[SUBI][PA_DST1].index;
    indLen[strcount++]=form_index[SUBI][PA_DST1].length;

    fill_string(form, pdata->w_street_2, form_index[SUBI][PA_WST2].index,
        form_index[SUBI][PA_WST2].length, &shift);
    indexes[strcount]=form_index[SUBI][PA_WST2].index;
    indLen[strcount++]=form_index[SUBI][PA_WST2].length;

    fill_string(form, pdata->d_street_2, form_index[SUBI][PA_DST2].index,
        form_index[SUBI][PA_DST2].length, &shift);
    indexes[strcount]=form_index[SUBI][PA_DST2].index;
    indLen[strcount++]=form_index[SUBI][PA_DST2].length;

    fill_string(form, pdata->w_city, form_index[SUBI][PA_WCITY].index,
        form_index[SUBI][PA_WCITY].length, &shift);
    indexes[strcount]=form_index[SUBI][PA_WCITY].index;
    indLen[strcount++]=form_index[SUBI][PA_WCITY].length;

    fill_string(form, pdata->w_state, form_index[SUBI][PA_WSTATE].index,
        form_index[SUBI][PA_WSTATE].length, &shift);
    indexes[strcount]=form_index[SUBI][PA_WSTATE].index;
    indLen[strcount++]=form_index[SUBI][PA_WSTATE].length;

    fill_string(form, pdata->w_zip, form_index[SUBI][PA_WZIP].index,
        form_index[SUBI][PA_WZIP].length, &shift);
    indexes[strcount]=form_index[SUBI][PA_WZIP].index;
    indLen[strcount++]=form_index[SUBI][PA_WZIP].length;

    fill_string(form, pdata->d_city, form_index[SUBI][PA_DCITY].index,
        form_index[SUBI][PA_DCITY].length, &shift);
    indexes[strcount]=form_index[SUBI][PA_DCITY].index;
    indLen[strcount++]=form_index[SUBI][PA_DCITY].length;

    fill_string(form, pdata->d_state, form_index[SUBI][PA_DSTATE].index,
        form_index[SUBI][PA_DSTATE].length, &shift);
    indexes[strcount]=form_index[SUBI][PA_DSTATE].index;
    indLen[strcount++]=form_index[SUBI][PA_DSTATE].length;

    fill_string(form, pdata->d_zip, form_index[SUBI][PA_DZIP].index,
        form_index[SUBI][PA_DZIP].length, &shift);
    indexes[strcount]=form_index[SUBI][PA_DZIP].index;
    indLen[strcount++]=form_index[SUBI][PA_DZIP].length;

    fill_number(form, pdata->c_id, form_index[SUBI][PA_CID].index,
        form_index[SUBI][PA_CID].length);

    fill_number(form, pdata->c_w_id, form_index[SUBI][PA_CWARE].index,
        form_index[SUBI][PA_CWARE].length);

    fill_number(form, pdata->c_d_id, form_index[SUBI][PA_CDIST].index,
        form_index[SUBI][PA_CDIST].length);

    fill_string(form, pdata->c_first, form_index[SUBI][PA_CFIRST].index,
        form_index[SUBI][PA_CFIRST].length, &shift);
    indexes[strcount]=form_index[SUBI][PA_CFIRST].index;
    indLen[strcount++]=form_index[SUBI][PA_CFIRST].length;

    fill_string(form, pdata->c_middle,
        form_index[SUBI][PA_CMIDDLE].index,
        form_index[SUBI][PA_CMIDDLE].length, &shift);
    indexes[strcount]=form_index[SUBI][PA_CMIDDLE].index;
    indLen[strcount++]=form_index[SUBI][PA_CMIDDLE].length;

```

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```

fill_string(form, pdata->c_last, form_index[SUBI][PA_CLAST].index,
            form_index[SUBI][PA_CLAST].length, &shift);
indexes[strcount]=form_index[SUBI][PA_CLAST].index;
indLen[strcount++]=form_index[SUBI][PA_CLAST].length;

fill_string(form, pdata->c_since, DateString,
            form_index[SUBI][PA_SINCE].index,
            form_index[SUBI][PA_SINCE].length, &shift);
indexes[strcount]=form_index[SUBI][PA_SINCE].index;
indLen[strcount++]=form_index[SUBI][PA_SINCE].length;

fill_string(form, pdata->c_street_1, form_index[SUBI][PA_CST1].index,
            form_index[SUBI][PA_CST1].length, &shift);
indexes[strcount]=form_index[SUBI][PA_CST1].index;
indLen[strcount++]=form_index[SUBI][PA_CST1].length;

fill_string(form, pdata->c_credit, form_index[SUBI][PA_CREDIT].index,
            form_index[SUBI][PA_CREDIT].length, &shift);
indexes[strcount]=form_index[SUBI][PA_CREDIT].index;
indLen[strcount++]=form_index[SUBI][PA_CREDIT].length;

fill_string(form, pdata->c_street_2, form_index[SUBI][PA_CST2].index,
            form_index[SUBI][PA_CST2].length, &shift);
indexes[strcount]=form_index[SUBI][PA_CST2].index;
indLen[strcount++]=form_index[SUBI][PA_CST2].length;

fill_double(form, pdata->c_discount, form_index[SUBI][PA_DISC].index,
            form_index[SUBI][PA_DISC].length);

fill_string(form, pdata->c_city, form_index[SUBI][PA_CCITY].index,
            form_index[SUBI][PA_CCITY].length, &shift);
indexes[strcount]=form_index[SUBI][PA_CCITY].index;
indLen[strcount++]=form_index[SUBI][PA_CCITY].length;

fill_string(form, pdata->c_state, form_index[SUBI][PA_CSTATE].index,
            form_index[SUBI][PA_CSTATE].length, &shift);
indexes[strcount]=form_index[SUBI][PA_CSTATE].index;
indLen[strcount++]=form_index[SUBI][PA_CSTATE].length;

fill_string(form, pdata->c_zip, form_index[SUBI][PA_CZIP].index,
            form_index[SUBI][PA_CZIP].length, &shift);
indexes[strcount]=form_index[SUBI][PA_CZIP].index;
indLen[strcount++]=form_index[SUBI][PA_CZIP].length;

fill_string(form, pdata->c_phone,
            form_index[SUBI][PA_CPHONE].index,
            form_index[SUBI][PA_CPHONE].length, &shift);
indexes[strcount]=form_index[SUBI][PA_CPHONE].index;
indLen[strcount++]=form_index[SUBI][PA_CPHONE].length;

fill_double(form, pdata->h_amount,
            form_index[SUBI][PA_AMOUNT].index,
            form_index[SUBI][PA_AMOUNT].length);

fill_double(form, pdata->c_balance, form_index[SUBI][PA_CBAL].index,
            form_index[SUBI][PA_CBAL].length);

fill_double(form, pdata->c_credit_lim,
            form_index[SUBI][PA_LIMIT].index,
            form_index[SUBI][PA_LIMIT].length);

if (pdata->c_credit[0]=='B' && pdata->c_credit[1]=='C') {
    datalen=strlen(pdata->c_data);
    for (i=0; i<4; i++) {
        if (i * form_index[SUBI][PA_CUSTDATA+i].length >= datalen) break;
        fill_string(form, pdata-
>c_data+(i*form_index[SUBI][PA_CUSTDATA+i].length),
            form_index[SUBI][PA_CUSTDATA+i].index,
            form_index[SUBI][PA_CUSTDATA+i].length, &shift);
        indexes[strcount]=form_index[SUBI][PA_CUSTDATA+i].index;
        indLen[strcount++]=form_index[SUBI][PA_CUSTDATA+i].length;
    }
}

for (j=i; j<4; j++)
    memcpy(form+form_index[SUBI][PA_CUSTDATA+j].index, blank,
           form_index[SUBI][PA_CUSTDATA+j].length);

if (shift)
    adjust_form(form, indexes, indLen, strcount, formlen, shift);

ret=send_response(pECB, form, strlen(form));

if (shift) {
    allocate_last_form(form2, pool);
    memcpy(form, form2, formlen+1);
}

#endif NEW_ALLOCATE_FORM
free_form(pool, form, index);
#endif

```

```

return ret;
#undef SUBI
}

int sendform_orderstatusoutput(int status, T_orderstatus_data *pdata)
{
    EXTENSION_CONTROL_BLOCK *pECB;
    int w_id, ld_id, indexes[OS_FORMINDEX_SIZE],
    indLen[OS_FORMINDEX_SIZE];
    char *form, *form2;
    int index = -1, strcount=0, formlen, shift=0, i, j, index2=-1, lineStart=15,
    ret;
    form_template_pool *pool;
    char blank[] = " ";

    w_id = pdata->w_id; ld_id = pdata->ld_id;
    pECB = (EXTENSION_CONTROL_BLOCK *) pdata-
>context;

    if (status != SUCCESS && status != DB_SUCCESS) {
        return send_error_message(pECB, 0, status, "", w_id, ld_id, 0);
    }

    if (pdata->txn_status != DB_RETURN_OCI_SUCCESS) {
        return send_error_message(pECB, 0, pdata->txn_status, " ---
DATABASE ERROR ", w_id, ld_id, 0);
    }

#define SUBI
POOL_TYPE_TXN_OUTPUT[TXN_TYPE_ORDERSTATUS

    pool = &txn_global_pool[SUBI];
    index=w_id*10+ld_id;

#ifdef NEW_ALLOCATE_FORM
    form = allocate_form_new(pool, index);
#else
    form = allocate_form(pool, &index);
#endif

    formlen = strlen(form);

    fill_number(form, WID(w_id, ld_id),
    form_index[SUBI][OS_TERMID].index,
    form_index[SUBI][OS_TERMID].length);
    fill_number(form, w_id, form_index[SUBI][OS_WID].index,
    form_index[SUBI][OS_WID].length);
    fill_number(form, pdata->d_id, form_index[SUBI][OS_DID].index,
    form_index[SUBI][OS_DID].length);
    fill_number(form, pdata->c_id, form_index[SUBI][OS_CID].index,
    form_index[SUBI][OS_CID].length);
    fill_string(form, pdata->c_first, form_index[SUBI][OS_FIRST].index,
    form_index[SUBI][OS_FIRST].length, &shift);
    indexes[strcount]=form_index[SUBI][OS_FIRST].index;
    indLen[strcount++]=form_index[SUBI][OS_FIRST].length;

    fill_string(form, pdata->c_middle,
    form_index[SUBI][OS_MIDDLE].index,
    form_index[SUBI][OS_MIDDLE].length, &shift);
    indexes[strcount]=form_index[SUBI][OS_MIDDLE].index;
    indLen[strcount++]=form_index[SUBI][OS_MIDDLE].length;

    fill_string(form, pdata->c_last, form_index[SUBI][OS_LAST].index,
    form_index[SUBI][OS_LAST].length, &shift);
    indexes[strcount]=form_index[SUBI][OS_LAST].index;
    indLen[strcount++]=form_index[SUBI][OS_LAST].length;

    fill_double(form, pdata->c_balance,
    form_index[SUBI][OS_CBALANCE].index,
    form_index[SUBI][OS_CBALANCE].length);

    fill_number(form, pdata->o_id, form_index[SUBI][OS_OID].index,
    form_index[SUBI][OS_OID].length);

    fill_string(form, pdata->o_entry_d, DateString,
    form_index[SUBI][OS_ENTRY_DATE].index,
    form_index[SUBI][OS_ENTRY_DATE].length, &shift);
    indexes[strcount]=form_index[SUBI][OS_ENTRY_DATE].index;
    indLen[strcount++]=form_index[SUBI][OS_ENTRY_DATE].length;

    fill_number(form, pdata->o_carrier_id,
    form_index[SUBI][OS_CARID].index,
    form_index[SUBI][OS_CARID].length);

    for (i=0; i < pdata->o_ol_cnt; i++) {
        fill_number(form, pdata->o_orderline[i].ol_supply_w_id,
        form_index[SUBI][OS_SUPW+i*5].index,
        form_index[SUBI][OS_SUPW+i*5].length);

        fill_number(form, pdata->o_orderline[i].ol_i_id,

```

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```

        form_index[SUBI][OS_ITEMID+i*5].index,
        form_index[SUBI][OS_ITEMID+i*5].length);

    fill_number(form, pdata->o_orderline[i].ol_quantity,
        form_index[SUBI][OS_QTY+i*5].index,
        form_index[SUBI][OS_QTY+i*5].length);

    fill_double(form, pdata->o_orderline[i].ol_amount,
        form_index[SUBI][OS_AMOUNT+i*5].index,
        form_index[SUBI][OS_AMOUNT+i*5].length);

    fill_string(form, pdata->o_orderline[i].ol_delivery_d.DateString,
        form_index[SUBI][OS_DELDATE+i*5].index,
        form_index[SUBI][OS_DELDATE+i*5].length, &shift);
    indexes[strcount]=form_index[SUBI][OS_DELDATE+i*5].index;
    indLen[strcount++]=form_index[SUBI][OS_DELDATE+i*5].length;
}

for (lineStart=j=i; j<15;j++) {
    memcpy(form+form_index[SUBI][OS_SUPW+j*5].index, blank,
        form_index[SUBI][OS_SUPW+j*5].length);
    memcpy(form+form_index[SUBI][OS_ITEMID+j*5].index, blank,
        form_index[SUBI][OS_ITEMID+j*5].length);
    memcpy(form+form_index[SUBI][OS_QTY+j*5].index, blank,
        form_index[SUBI][OS_QTY+j*5].length);
    memcpy(form+form_index[SUBI][OS_AMOUNT+j*5].index-1, blank,
        form_index[SUBI][OS_AMOUNT+j*5].length+1);
    memcpy(form+form_index[SUBI][OS_DELDATE+j*5].index, blank,
        form_index[SUBI][OS_DELDATE+j*5].length);
}

if (shift)
    adjust_form(form, indexes, indLen, strcount, formLen, shift);

ret=send_response(pECB, form, strlen(form));

if (shift) {
    allocate_last_form(form2, pool);
    memcpy(form, form2, formLen+1);
}

for (j=lineStart; j<15; j++)
    form[form_index[SUBI][OS_AMOUNT+j*5].index-1]="$";

#ifdef NEW_ALLOCATE_FORM
    free_form(pool, form, index);
#endif

    return ret;
#undef SUBI
}

int sendform_deliveryoutput(int status, T_delivery_data *pdata)
{
    EXTENSION_CONTROL_BLOCK *pECB;

    int w_id, ld_id;
    char *form;
    int index = -1, ret;
    form_template_pool *pool;

    w_id = pdata->w_id; ld_id = pdata->ld_id;
    pECB = (EXTENSION_CONTROL_BLOCK *) pdata-
>context;
    if (status != SUCCESS && status != DB_SUCCESS) {
        return send_error_message(pECB, 0, status, "", w_id, ld_id, 0);
    }

#define SUBI_POOL_TYPE_TXN_OUTPUT[TXN_TYPE_DELIVERY

    pool = &txn_global_pool[SUBI];
    index=w_id*10+ld_id;

#ifdef NEW_ALLOCATE_FORM
    form = allocate_form_new(pool, index);
#else
    form = allocate_form(pool, &index);
#endif

    fill_number(form, WDID(w_id, ld_id),
        form_index[SUBI][DE_TERMID].index,
        form_index[SUBI][DE_TERMID].length);
    fill_number(form, w_id, form_index[SUBI][SL_WID].index,
        form_index[SUBI][SL_WID].length);
    fill_number(form, ld_id, form_index[SUBI][SL_DID].index,
        form_index[SUBI][SL_DID].length);
    fill_number(form, pdata->threshold,
        form_index[SUBI][SL_THRESHOLD].index,
        form_index[SUBI][SL_THRESHOLD].length);
    fill_number(form, pdata->low_stock,
        form_index[SUBI][SL_LOWSTOCK].index,
        form_index[SUBI][SL_LOWSTOCK].length);

    ret=send_response(pECB, form, strlen(form));

#ifdef NEW_ALLOCATE_FORM
    free_form(pool, form, index);
#endif

    return ret;
#undef SUBI
}

int (FAR * mod_tpcc_neworder)(T_neworder_data *);
int (FAR * mod_tpcc_payment)(T_payment_data *);
int (FAR * mod_tpcc_delivery)(T_delivery_data *, int);
int (FAR * mod_tpcc_orderstatus)(T_orderstatus_data *);
int (FAR * mod_tpcc_stocklevel)(T_stocklevel_data *);
void (FAR * userlog)(char * str, ...);
void (FAR * initDelLog)(int);
void (FAR * endDelLog)(int);

#include "..\DBConnection\mod_tpcc.h"
#include "..\DBConnection\tpcc_struct.h"
#include "..\DBConnection\mod_tpcc_error.h"
#include <oratypes.h>
#include <oci.h>
#include <ocidfn.h>

#define allocate_last_form(form, pool) \
(form)=(char *)((pool)->form_template_storage + \
(Maxterms - 1) * (pool)->form_template_length)

#define MAXLEN 100
#define Default_DBConnections "20"
#define Default_Maxterms "100"

```

```
#define Default_DeliveryQueues "500"
#define Default_DeliveryThreads "50"
#define Default_StartTerm "1"
#define LogName "log\\modtpcc.log"
#define InitName "DBInit.ini"
#define DllName "DBConnection.dll"
#define mod_name "tpcc/modtpcc.dll"

typedef struct _DelQueue_info {
    _DelQueue_info *Next;
    T_delivery_data *pdata;
    HANDLE queue_lock;
} DelQueue_info;

/*****
*****
* global functions
*****
*****/

//void userlog(char *, ...);
void readInit(char *, char *, char *);
void allocateMemoryPool();
int initDelQueue();
int deleteDelQueue();
void endDeliveryThread(int);
void initDeliveryThread(void *);
DelQueue_info *DequeueDel();
void EnqueueDel(DelQueue_info *);
void addFreeDelQueue(DelQueue_info *);
DelQueue_info *findFreeDelQueue();

int parse_neworder_query(char *ptr, T_neworder_data *pdata);
int parse_payment_query(char *ptr, T_payment_data *pdata);
int parse_delivery_query(char *ptr, T_delivery_data *pdata);
int parse_orderstatus_query(char *ptr, T_orderstatus_data *pdata);
int parse_stocklevel_query(char *ptr, T_stocklevel_data *pdata);

int sendform_neworderoutput(int status, T_neworder_data *pdata);
int sendform_paymentoutput(int status, T_payment_data *pdata);
int sendform_orderstatusoutput(int status, T_orderstatus_data *pdata);
int sendform_deliveryoutput(int status, T_delivery_data *pdata);
int sendform_stockleveloutput(int status, T_stocklevel_data *pdata);

extern int (FAR * mod_tpcc_neworder)(T_neworder_data *);
extern int (FAR * mod_tpcc_payment)(T_payment_data *);
extern int (FAR * mod_tpcc_delivery)(T_delivery_data *, int);
extern int (FAR * mod_tpcc_orderstatus)(T_orderstatus_data *);
extern int (FAR * mod_tpcc_stocklevel)(T_stocklevel_data *);
extern void (FAR *userlog)(char * str, ...);
extern void (FAR *initDelLog)(int);
extern void (FAR *endDelLog)(int);

/*****
*****
* global variables
*****
*****/

DWORD TIsPointer;
char DllPath[MAXLEN];
char LogFile[MAXLEN];
char InitFile[MAXLEN];
char DllFile[MAXLEN];
char origin[MAXLEN];
CRITICAL_SECTION critical_initDelQueue;
CRITICAL_SECTION critical_memory;
CRITICAL_SECTION critical_DelQueue_free;
CRITICAL_SECTION critical_DelQueue_work;
HANDLE waitAvailableDelQueue;
HANDLE waitDelWork;
HANDLE DelThreadRunning;
HINSTANCE dllinstance;
int useddel=0;
int DBConnections;
int Maxterms;
int DeliveryQueues;
int DeliveryThreads;
int modtpcc_ready=0;
int memory_ready=0;
int queue_ready=0;
int DeliveryThreadstop=0;
int StartTerm=1;
DelQueue_info *DelQueue_begin = NULL;
DelQueue_info *DelQueue_end = NULL;
DelQueue_info *DelQueue_free = NULL;
```

```
static form_index_entry
form_index[POOL_TYPE_TXN_MAX][TXN_TYPE_MAX][MAX_FORM_INDEX];
static form_template_pool
txn_global_pool[POOL_TYPE_TXN_MAX][TXN_TYPE_MAX];
static form_template_pool txn_data_pool;
static form_template_pool resp_global_pool;
```

```
char delivery_chars [] = {'6', '7'};
char orderstatus_chars [] = {'8', '9', 'Y'};
char payment_chars [] = {'8', '9', 'Z', 'v', 'Y', 'w'};
char stocklevel_chars [] = {'x'};
char neworder_chars [] = {'8', '9',
'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I',
'J', 'K', 'L', 'M', 'N', 'O', 'P', 'Q', 'R',
'S', 'T', 'U', 'V', 'W', 'X', 'a', 'b', 'c',
'd', 'e', 'f', 'g', 'h', 'i', 'j', 'k', 'l',
'm', 'n', 'o', 'p', 'q', 'r', 's', 't', 'u'};
```

stdafx.cpp

```
// stdafx.cpp : source file that includes just the standard includes
// modtpcc.pch will be the pre-compiled header
// stdafx.obj will contain the pre-compiled type information
```

```
#include "stdafx.h"
```

```
// TODO: reference any additional headers you need in STDAFX.H
// and not in this file
```

stdafx.h

```
// stdafx.h : include file for standard system include files,
// or project specific include files that are used frequently, but
// are changed infrequently
//
```

```
#if
#ifdef (AFX_STDAFX_H_FBB80AB0_1068_4095_8E53_EEA38B5CF4_7B_INCLUDED_)
#define
AFX_STDAFX_H_FBB80AB0_1068_4095_8E53_EEA38B5CF47B_INCLUDED_
```

```
#if _MSC_VER > 1000
#pragma once
#endif // _MSC_VER > 1000
```

```
// Insert your headers here
#define WIN32_LEAN_AND_MEAN // Exclude rarely-used stuff from Windows headers
```

```
#include <windows.h>
#include <stdio.h>
#include <stdlib.h>
#include <atlbase.h>
#include <io.h>
#include <time.h>
#include <process.h>
#include <sys/stat.h>
```

dbconnection.cpp

```
// DBConnection.cpp : Defines the entry point for the DLL application.
//
```

```
#include "stdafx.h"
#include "DBConnection.h"
```

```
//#define OPS_LOGIN
//#define CONNECTION_MUTEX
//#define DEBUG
//#define DEBUG_DETAIL
//#define LOOPBACK
```

APPENDIX A - APPLICATION SOURCE CODE

```

BOOL APIENTRY DllMain( HANDLE hModule,
                      DWORD ul_reason_for_call,
                      LPVOID lpReserved
                      )
{
    char string[MAXLEN];

    if (ul_reason_for_call == DLL_PROCESS_ATTACH) {
        int i;

        DisableThreadLibraryCalls((HMODULE)hModule);

        GetModuleFileName((HMODULE)hModule, DllPath,
MAXLEN-1);
        if (DllPath[0]!='\\' && DllPath[1]!='\\' && DllPath[2]!='?' &&
DllPath[3]!='\\')
            strcpy(DllPath, DllPath+4);
        for (i=strlen(DllPath); DllPath[i]!='\\' && i--);
        DllPath[i]='\0';
        sprintf(LogFile, "%s\\%s", DllPath, LogName);
        sprintf(InitFile, "%s\\%s", DllPath, InitName);
        sprintf(DelLogFile, "%s\\%s", DllPath, DelLogName);

        if (!SetCurrentDirectory(DllPath)) {
            userlog("Cannot change current directory to %s, Error: %n", DllPath,
GetLastError());
            return FALSE;
        }

        if ((TlsPtr = TlsAlloc()) == 0xFFFFFFFF) {
            userlog("Error during TlsAlloc\n");
            return FALSE;
        }

        readInit(string, "DBConnections", Default_DBConnections);
        DBConnections = atoi(string);
        userlog("number of DBConnections is %d\n",
DBConnections);

        TotalLoop=DBConnections*2;

        DBExecution_lock=(HANDLE*)malloc(sizeof(HANDLE)*DBC
onnections);
        for (i=0; i<DBConnections; i++)
            if ((DBExecution_lock[i]=CreateMutex(NULL,
FALSE, NULL))==NULL) {
                userlog("Cannot create mutex :
DBExecution_lock[%d]\n", i);
                return FALSE;
            }

        if (initializeDBExecutionPool() != TRUE) {
            userlog("initializeDBExecutionPool failed\n");
            return FALSE;
        }

        if ((waitIdle = CreateEvent(NULL, FALSE, FALSE, "Wait Idle
Event")) == NULL) {
            userlog("Cannot create event : waitIdle\n");
            return FALSE;
        }

        ready=1;
    }
    else if (ul_reason_for_call == DLL_PROCESS_DETACH) {
        int i;

        if ((TlsFree(TlsPtr)) == NULL) {
            userlog("Error during TlsFree\n");
            return FALSE;
        }

        for (i=0; i<DBConnections; i++) {
            ((DBExecution
*)(DBExecution_pool[i].pointer))->TPCexit();
            free(DBExecution_pool[i].pointer);
        }
        free (DBExecution_pool);
        CloseHandle(waitIdle);

        for (i=0; i<DBConnections; i++)
            CloseHandle(DBExecution_lock[i]);
    }

    return TRUE;
}

void initDelLog(int DelThreads)
{
    char filename[MAXLEN];

    DelFiles=(FILE **)malloc(sizeof(FILE *)*DelThreads);
    for (int i=0; i<DelThreads; i++) {
        sprintf(filename, "%s%d", DelLogFile, i);

        if ((DelFiles[i]=fopen(filename, "a"))==(FILE *) NULL) {
            userlog("Can't open file : %s\n", filename);
            exit(-1);
        }
        setvbuf(DelFiles[i], NULL, _IOFBF, 102400);
    }

    void endDelLog(int DelThreads)
    {
        for (int i=0; i<DelThreads; i++) {
            fclose(DelFiles[i]);
        }
        free(DelFiles);
    }

    /*****
    *****
    * Execute transactions
    *****
    *****/

    #ifndef LOOPBACK

    int mod_tpcc_neworder(T_neworder_data *output)
    {
        int i;
        #ifdef CONNECTION_MUTEX
            HANDLE *mutexptr=NULL;
        #endif
        DBExecution_pool_info* ptr;

        DBExecution *dbexec;
        struct newstruct input;

        input.newin.w_id = output->w_id;
        input.newin.d_id = output->d_id;
        input.newin.c_id = output->c_id;

        for (i=0; i<output->o_orderline[i].ol_i_id; i++) {
            input.newin.ol_i_id[i] = output->o_orderline[i].ol_i_id;
            input.newin.ol_supply_w_id[i] = output-
>o_orderline[i].ol_supply_w_id;
            input.newin.ol_quantity[i] = output-
>o_orderline[i].ol_quantity;
        }

        for (; i<15; i++) {
            input.newin.ol_i_id[i] = 0;
            input.newin.ol_supply_w_id[i] = 0;
            input.newin.ol_quantity[i] = 0;
        }

        #ifdef CONNECTION_MUTEX
            ptr=findIdleDBExecution(mutexptr);
        #else
            ptr=findIdleDBExecution();
        #endif
        dbexec=(DBExecution *) (ptr->pointer);
        ptr->neworder_count++;

        if (dbexec->TPCnew(&input) == -1) {
            convert_status(output->txn_status, dbexec-
>execstatus);
            #ifdef CONNECTION_MUTEX
                freeDBExecution(ptr, mutexptr);
            #else
                freeDBExecution(ptr);
            #endif
            userlog("TPCnew returns -1\n");
            return SUCCESS;
        }
        else {
            output->txn_status = DB_RETURN_OCI_SUCCESS;
        }

        output->status = dbexec->status;

        #ifdef CONNECTION_MUTEX
            freeDBExecution(ptr, mutexptr);
        #else
            freeDBExecution(ptr);
        #endif

        output->o_id = input.newout.o_id;
    }
    }

```

```

        output->o_ol_cnt = input.newout.o_ol_cnt;
        output->c_discount = input.newout.c_discount;
        output->w_tax = input.newout.w_tax;
        output->d_tax = input.newout.d_tax;
        output->total_amount = input.newout.total_amount;
        strncpy(output->o_entry_d.DateString,
input.newout.o_entry_d,20);
        strncpy(output->c_last, input.newout.c_last,17);
        strncpy(output->c_credit, input.newout.c_credit,3);
        for (i=0; i<output->o_ol_cnt; i++) {
            output->o_orderline[i].ol_amount =
input.newout.ol_amount[i];
            output->o_orderline[i].i_price =
input.newout.i_price[i];
            output->o_orderline[i].s_quantity =
input.newout.s_quantity[i];
            output->o_orderline[i].b_g[0] =
input.newout.brand_generic[i];
            strncpy(output->o_orderline[i].i_name,
input.newout.i_name[i], 25);
        }

        return SUCCESS;
    }

int mod_tpcc_payment(T_payment_data *output)
{
#ifdef CONNECTION_MUTEX
    HANDLE *mutexptr=NULL;
#endif
    DBExecution_pool_info* ptr;
    DBExecution *dbexec;
    struct paystruct input;

    input.payin.w_id = output->w_id;
    input.payin.d_id = output->d_id;
    input.payin.c_w_id = output->c_w_id;
    input.payin.c_d_id = output->c_d_id;
    input.payin.bylastname = output->by_last_name;
    input.payin.h_amount = (int)(output->h_amount * 100);

    if (input.payin.bylastname) {
        input.payin.c_id = 0;
        strncpy(input.payin.c_last, output->c_last, 17);
        input.payin.c_last[16]='\0';
    } else {
        input.payin.c_id = output->c_id;
        input.payin.c_last[0]='\0';
    }

#ifdef CONNECTION_MUTEX
    ptr=findIdleDBExecution(mutexptr);
#else
    ptr=findIdleDBExecution();
#endif
    dbexec=(DBExecution *) (ptr->pointer);
    //
    ptr->payment_count++;

    if (dbexec->TPCpay(&input) == -1) {
        convert_status(output->txn_status, dbexec-
>execstatus);
#ifdef CONNECTION_MUTEX
        freeDBExecution(ptr, mutexptr);
#else
        freeDBExecution(ptr);
#endif
        userlog("TPCpay returns -1\n");
        return SUCCESS;
    } else {
        output->txn_status =
DB_RETURN_OCI_SUCCESS;
    }

#ifdef CONNECTION_MUTEX
    freeDBExecution(ptr, mutexptr);
#else
    freeDBExecution(ptr);
#endif

    strncpy(output->w_street_1, input.payout.w_street_1, 21);
    strncpy(output->w_street_2, input.payout.w_street_2, 21);
    strncpy(output->w_city, input.payout.w_city, 21);
    strncpy(output->w_state, input.payout.w_state, 3);
    strncpy(output->w_zip, input.payout.w_zip, 10);
    strncpy(output->d_street_1, input.payout.d_street_1, 21);
    strncpy(output->d_street_2, input.payout.d_street_2, 21);
    strncpy(output->d_city, input.payout.d_city, 21);
    strncpy(output->d_state, input.payout.d_state, 3);
    strncpy(output->d_zip, input.payout.d_zip, 10);
    output->c_id = input.payout.c_id;
    strncpy(output->c_first, input.payout.c_first, 17);

```

```

        strncpy(output->c_middle, input.payout.c_middle, 3);
        strncpy(output->c_last, input.payout.c_last, 17);
        strncpy(output->c_street_1, input.payout.c_street_1, 21);
        strncpy(output->c_street_2, input.payout.c_street_2, 21);
        strncpy(output->c_city, input.payout.c_city, 21);
        strncpy(output->c_state, input.payout.c_state, 3);
        strncpy(output->c_zip, input.payout.c_zip, 10);
        strncpy(output->c_phone, input.payout.c_phone, 17);
        strncpy(output->c_credit, input.payout.c_credit, 3);
        strncpy(output->c_since.DateString, input.payout.c_since,
11);

        strncpy(output->h_date.DateString, input.payout.h_date, 20);
        strncpy(output->c_data, input.payout.c_data, 200);
        output->c_credit_lim = input.payout.c_credit_lim;
        output->c_discount = input.payout.c_discount;
        output->c_balance = input.payout.c_balance;

        return SUCCESS;
    }

int mod_tpcc_delivery(T_delivery_data *output, int id)
{
#ifdef CONNECTION_MUTEX
    HANDLE *mutexptr=NULL;
#endif
    DBExecution_pool_info *ptr;
    DBExecution *dbexec;
    struct delstruct input;

    input.delin.w_id = output->w_id;
    input.delin.plsqlflag = 1;
    input.delin.o_carrier_id = output->o_carrier_id;

#ifdef CONNECTION_MUTEX
    ptr=findIdleDBExecution(mutexptr);
#else
    ptr=findIdleDBExecution();
#endif
    dbexec=(DBExecution *) (ptr->pointer);
    //
    if (dbexec->TPCdel(&input) == -1) {
        convert_status(output->txn_status, dbexec-
>execstatus);
#ifdef CONNECTION_MUTEX
        freeDBExecution(ptr, mutexptr);
#else
        freeDBExecution(ptr);
#endif
        userlog("TPCdel returns -1\n");
        return SUCCESS;
    } else {
        output->txn_status =
DB_RETURN_OCI_SUCCESS;
    }

    output->complete_time = GetTickCount();
    for (int i=0; i<10; i++)
        output->o_id[i]=dbexec->del_o_id[i];

#ifdef CONNECTION_MUTEX
    freeDBExecution(ptr, mutexptr);
#else
    freeDBExecution(ptr);
#endif

    write_delivery_log(output, id);

    return SUCCESS;
}

int mod_tpcc_orderstatus(T_orderstatus_data *output)
{
#ifdef CONNECTION_MUTEX
    HANDLE *mutexptr=NULL;
#endif
    DBExecution_pool_info* ptr;
    DBExecution *dbexec;
    struct ordstruct input;

    input.ordin.w_id = output->w_id;
    input.ordin.d_id = output->d_id;
    input.ordin.bylastname = output->by_last_name;
    if (input.ordin.bylastname) {
        input.ordin.c_id = 0;
        strncpy(input.ordin.c_last, output->c_last, 17);
        input.ordin.c_last[16]='\0';
    } else {

```

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```

        input.ordin.c_id = output->c_id;
        input.ordin.c_last[0]='\0';
    }

#ifdef CONNECTION_MUTEX
    ptr=findIdleDBExecution(mutexptr);
#else
    ptr=findIdleDBExecution();
#endif
    dbexec=(DBExecution *) (ptr->pointer);
    //
    if (dbexec->TPCord(&input) == -1) {
        convert_status(output->txn_status, dbexec-
>execstatus);
#ifdef CONNECTION_MUTEX
        freeDBExecution(ptr, mutexptr);
#else
        freeDBExecution(ptr);
#endif
        userlog("TPCord returns -1\n");
        return SUCCESS;
    } else {
        output->txn_status =
DB_RETURN_OCI_SUCCESS;
    }

#ifdef CONNECTION_MUTEX
    freeDBExecution(ptr, mutexptr);
#else
    freeDBExecution(ptr);
#endif

    output->c_id = input.ordout.c_id;
    strncpy(output->c_last, input.ordout.c_last, 17);
    strncpy(output->c_first, input.ordout.c_first, 17);
    strncpy(output->c_middle, input.ordout.c_middle, 3);
    strncpy(output->o_entry_d, input.ordout.o_entry_d, 20);
    output->c_balance = input.ordout.c_balance;
    output->o_id = input.ordout.o_id;
    output->o_carrier_id = input.ordout.o_carrier_id;
    output->o_ol_cnt = input.ordout.o_ol_cnt;
    for (int i=0; i<output->o_ol_cnt; i++) {
        output->o_orderline[i].ol_supply_w_id =
input.ordout.ol_supply_w_id[i];
        output->o_orderline[i].ol_i_id =
input.ordout.ol_i_id[i];
        output->o_orderline[i].ol_quantity =
input.ordout.ol_quantity[i];
        output->o_orderline[i].ol_amount =
input.ordout.ol_amount[i];
        strncpy(output-
>o_orderline[i].ol_delivery_d, input.ordout.ol_delivery_d[i], 11);
    }

    return SUCCESS;
}

int mod_tpcc_stocklevel(T_stocklevel_data *output)
{
#ifdef CONNECTION_MUTEX
    HANDLE *mutexptr=NULL;
#endif
    DBExecution_pool_info* ptr;
    DBExecution *dbexec;
    struct stostruct input;

    input.stoout.low_stock=-123;
    input.stoin.w_id = output->w_id;
    input.stoin.d_id = output->d_id;
    input.stoin.threshold = output->threshold;

#ifdef CONNECTION_MUTEX
    ptr=findIdleDBExecution(mutexptr);
#else
    ptr=findIdleDBExecution();
#endif
    dbexec=(DBExecution *) (ptr->pointer);
    //
    if (dbexec->TPCsto(&input) == -1) {
        convert_status(output->txn_status, dbexec-
>execstatus);
#ifdef CONNECTION_MUTEX
        freeDBExecution(ptr, mutexptr);
#else
        freeDBExecution(ptr);
#endif
        userlog("TPCsto returns -1\n");
    }
}

} else {
    return SUCCESS;
    output->txn_status =
DB_RETURN_OCI_SUCCESS;
}

#ifdef CONNECTION_MUTEX
    freeDBExecution(ptr, mutexptr);
#else
    freeDBExecution(ptr);
#endif

    output->low_stock = input.stoout.low_stock;

    return SUCCESS;
}

void write_delivery_log(T_delivery_data *pdata, int threadId)
{
    fprintf(DelFiles[threadId],
        "%d/%d/%d %d:%d:%d.%d %ld %ld %ld %ld %ld\n",
        pdata->enqueue_date_time.wMonth, pdata-
>enqueue_date_time.wDay,
        pdata->enqueue_date_time.wYear, pdata-
>enqueue_date_time.wHour,
        pdata->enqueue_date_time.wMinute, pdata-
>enqueue_date_time.wSecond,
        pdata->enqueue_date_time.wMilliseconds,
        pdata->enqueue_time,
        pdata->complete_time, pdata->complete_time-
pdata->enqueue_time, pdata->w_id,
        pdata->d_id, pdata->o_carrier_id, pdata-
>o_id[0], pdata->o_id[1],
        pdata->o_id[2], pdata->o_id[3], pdata->o_id[4],
        pdata->o_id[5],
        pdata->o_id[6], pdata->o_id[7], pdata->o_id[8],
        pdata->o_id[9]);
}

#ifdef CONNECTION_MUTEX
    int freeDBExecution(DBExecution_pool_info *ptr, HANDLE *mutexptr)
#else
    int freeDBExecution(DBExecution_pool_info *ptr)
#endif
{
    ptr->current_status = IDLE;

#ifdef DEBUG_DETAIL
    userlog("Thread %d release connection\n",
GetCurrentThreadId());
#endif

#ifdef CONNECTION_MUTEX
    if (mutexptr==NULL)
        userlog("Thread %d has mutexptr=NULL\n",
GetCurrentThreadId());
    ReleaseMutex((*mutexptr));
#endif
    if (!SetEvent(waitIdle)) {
        userlog("Error on SetEvent, in function: free
DBExecution\n");
        return FALSE;
    }
    return TRUE;
}

#ifdef CONNECTION_MUTEX
    DBExecution_pool_info* findIdleDBExecution(HANDLE *mutexptr)
#else
    DBExecution_pool_info* findIdleDBExecution()
#endif
{
    int current=GetCurrentThreadId() % DBConnections;

#ifdef DEBUG
    findDBExecutionCall++;
#endif

    while (1) {
        for (int count=0; count<TotalLoop; count++) {

```

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```

        if
(DBExecution_pool[current].current_status == IDLE) {

        switch(WaitForSingleObject(DBExecution_lock[current], 0)) {

                                case
WAIT_ABANDONED:
#ifdef DEBUG
                                userlog("connection mutex returns WAIT_ABANDONED\n");
#endif

                                case
WAIT_OBJECT_0:
#ifdef DEBUG_DETAIL
                                userlog("Thread %d get connection: %d\n",
GetCurrentThreadId(), current);
#endif

                                if (DBExecution_pool[current].current_status == IDLE) {
                                        DBExecution_pool[current].current_status =
IN_USE;
#ifdef CONNECTION_MUTEX
                                        ReleaseMutex(DBExecution_lock[current]);
#else
                                        mutexptr=&(DBExecution_lock[current]);
#endif

                                        TlsSetValue(TlsPtr, (void *)
DBExecution_pool[current].pointer);

                                        return &(DBExecution_pool[current]);

                                }

                                else {

                                        ReleaseMutex(DBExecution_lock[current]);

#ifdef DEBUG
                                        userlog("get connection mutex, but
current_status is not IDLE\n");
#endif

                                }

                                break;

                                case
WAIT_TIMEOUT:

                                break;

                                default:

                                userlog("Error on WaitForSingleObject, DBExecution\n");

                                return NULL;

                                }

                                }

                                current++;
                                if (current==DBConnections)

                                current=0;

                                }

#ifdef DEBUG
                                findDBExecutionWait++;
                                if (findDBExecutionWait !=0 &&
findDBExecutionWait % 100000 == 0)
                                        userlog("wait: %d, total call:
%d\n", findDBExecutionWait, findDBExecutionCall);
#endif

                                if ((WaitForSingleObject(waitIdle, INFINITE)) !=
WAIT_OBJECT_0) {

                                        userlog("Error on
WaitForSingleObject, in function findIdleDBExecution\n");

                                        return NULL;

                                }

                                }

                                return NULL;

}

```

```

void readInit(char *output, char *parameter, char *default_value)
{
        if (_access(InitFile, 0x00) != NULL) {
                userlog("Cannot access init file: %s\n", InitFile);
                strcpy(output, default_value);
        }
        else
                GetPrivateProfileString("TPCC", parameter, default_value,
output, MAXLEN, InitFile);
}

int initializeDBExecutionPool()
{
        DBExecution *ptr;

        userlog("execute initializeDBExecutionPool()\n");

        DBExecution_pool = (DBExecution_pool_info *) malloc
(sizeof(DBExecution_pool_info)*DBConnections);
        if (DBExecution_pool == 0) {
                userlog("malloc failed in
initializeDBExecutionPool\n");
                return FALSE;
        }
        memset((void*)DBExecution_pool, 0,
sizeof(DBExecution_pool_info)*DBConnections);

        for (int i=0; i<DBConnections; i++) {
                if ((ptr=new DBExecution) == NULL) {
                        userlog("Cannot create
DBExecution object\n");
                        return FALSE;
                }

                if ((TlsSetValue(TlsPtr, (void *) ptr)) == NULL) {
                        userlog("TlsSetValue failed\n");
                        return FALSE;
                }

                if (ptr->TPCinit(i, "tpcc", "tpcc")) {
                        userlog("TPCinit failed\n");
                        return FALSE;
                }

                DBExecution_pool[i].current_status = IDLE;
                DBExecution_pool[i].pointer = (void *) ptr;

                userlog ("DBExecution %d is initialized\n", i);

        }

        return TRUE;
}

void userlog (char * str, ...)
{
        HANDLE logMutex;
        FILE *file;
        time_t t;
        struct tm *curtime;
        va_list va;
        int threadId;

        logMutex = CreateMutex(NULL, FALSE, "TPCC_LOG");
        // Wait for initialization ended
        WaitForSingleObject(logMutex, INFINITE);

        threadId = GetCurrentThreadId();

        time (&t);
        curtime = localtime(&t);

        if ((file=fopen(LogFile, "a"))==(FILE *) NULL) {

                fprintf(stderr, "Can't open file : %s\n", LogFile);
                exit(-1);

        }

        va_start(va, str);
        fprintf(file, "[Time %d:%d:%d Thread: %d] ", curtime-
>tm_hour, curtime->tm_min, curtime->tm_sec, threadId);
        vfprintf(file, str, va);
        fprintf(file, "\n");
        va_end(va);

        fclose(file);
}

```



```

        ReleaseMutex(logMutex);
        CloseHandle(logMutex);
    }

    sb4 no_data(dvoid *ctxp, OCIBind *bp, ub4 iter, ub4 index,
        dvoid **bufpp, ub4 *alenp, ub1 *piecep,
        dvoid **indpp)
    {
        *bufpp = (dvoid*)0;
        *alenp = 0;
        *indpp = (dvoid*)0;
        *piecep = OCI_ONE_PIECE;
        return (OCI_CONTINUE);
    }

    sb4 TPC_oid_data(dvoid *ctxp, OCIBind *bp, ub4 iter, ub4 index,
        dvoid **bufpp, ub4 **alenp, ub1 *piecep,
        dvoid **indpp, ub2 **rcodepp)
    {
        DBExecution *dbc;

        dbc = (DBExecution*) TlsGetValue(TlsPtr);
        if (dbc == 0) {
            userlog("TlsGetValue failed in TPC_oid_data\n");
            exit(-1);
        }

        *bufpp = &dbc->dctx->del_o_id[iter];
        *indpp = &dbc->dctx->del_o_id_ind[iter];
        dbc->dctx->del_o_id_len[iter] = sizeof(dbc->dctx->del_o_id[0]);
        *alenp = &dbc->dctx->del_o_id_len[iter];
        *rcodepp = &dbc->dctx->del_o_id_rcode[iter];
        *piecep = OCI_ONE_PIECE;
        return (OCI_CONTINUE);
    }

    sb4 cid_data(dvoid *ctxp, OCIBind *bp, ub4 iter, ub4 index,
        dvoid **bufpp, ub4 **alenp, ub1 *piecep,
        dvoid **indpp, ub2 **rcodepp)
    {
        DBExecution *dbc;

        dbc = (DBExecution*) TlsGetValue(TlsPtr);
        if (dbc == 0) {
            userlog("TlsGetValue failed in cid_data\n");
            exit(-1);
        }

        *bufpp = &dbc->dctx->c_id[iter];
        *indpp = &dbc->dctx->c_id_ind[iter];
        dbc->dctx->c_id_len[iter] = sizeof(dbc->dctx->c_id[0]);
        *alenp = &dbc->dctx->c_id_len[iter];
        *rcodepp = &dbc->dctx->c_id_rcode[iter];
        *piecep = OCI_ONE_PIECE;
        return (OCI_CONTINUE);
    }

    sb4 amt_data(dvoid *ctxp, OCIBind *bp, ub4 iter, ub4 index,
        dvoid **bufpp, ub4 **alenp, ub1 *piecep,
        dvoid **indpp, ub2 **rcodepp)
    {
        amtctx *actx;
        actx = (amtctx*)ctxp;

        *bufpp = &actx->ol_amt[index];
        *indpp = &actx->ol_amt_ind[index];
        actx->ol_amt_len[index] = sizeof(actx->ol_amt[0]);
        *alenp = &actx->ol_amt_len[index];
        *rcodepp = &actx->ol_amt_rcode[index];
        *piecep = OCI_ONE_PIECE;
        return (OCI_CONTINUE);
    }

    /*****
    * DBExecution member functions
    *****/

    DBExecution::DBExecution()
    {
        tracelevel = 0;
        logon = 0;

```

```

        new_init = 0;
        pay_init = 0;
        ord_init = 0;
        del_init_oci = 0;
        del_init_plsql = 0;
        sto_init = 0;
    }

    DBExecution::~DBExecution()
    {
    }

    #define SQLTXNEW2 "BEGIN inittpcc.init_no(:idx1arr); END;"
    #define SQLTXTDEL "BEGIN inittpcc.init_del; END;"
    #define SQLTXTDEL1 "DELETE FROM iord WHERE no_d_id = :d_id \
        AND no_w_id = :w_id and rownum <= 1 \
        RETURNING no_o_id into :o_id "

    #define SQLTXTDEL3 "UPDATE ordr SET o_carrier_id = :carrier_id \
        WHERE o_id = :o_id and o_d_id = :d_id and o_w_id = :w_id \
        returning o_c_id into :o_c_id"

    #define SQLTXTDEL4 "UPDATE ordl \
        SET ol_delivery_d = :cr_date \
        WHERE ol_w_id = :w_id AND ol_d_id = :d_id AND ol_o_id = :o_id \
        RETURNING sum(ol_amount) into :ol_amount "

    #define SQLTXTDEL6 "UPDATE cust SET c_balance = c_balance + :amt, \
        \
        c_delivery_cnt = c_delivery_cnt + 1 WHERE c_w_id = :w_id AND \
        c_d_id = :d_id AND c_id = :c_id"

    #define SQLCUR0 "SELECT rowid FROM cust \
        WHERE c_d_id = :d_id AND c_w_id = :w_id AND c_last = \
        :c_last \
        ORDER BY c_last, c_d_id, c_w_id, c_first"

    #define SQLCUR1 "SELECT /*+ USE_NL(cust) INDEX_DESC(ordr iordr2) \
        */ \
        c_id, c_balance, c_first, c_middle, c_last, \
        o_id, o_entry_d, o_carrier_id, o_ol_cnt \
        FROM cust, ordr \
        WHERE cust.rowid = :cust_rowid \
        AND o_d_id = c_d_id AND o_w_id = c_w_id AND o_c_id = \
        c_id \
        ORDER BY o_c_id DESC, o_d_id DESC, o_w_id DESC, o_id \
        DESC"

    #define SQLCUR2 "SELECT /*+ USE_NL(cust) INDEX_DESC(ordr \
        iordr2) */ \
        c_balance, c_first, c_middle, c_last, \
        o_id, o_entry_d, o_carrier_id, o_ol_cnt \
        FROM cust, ordr \
        WHERE c_id = :c_id AND c_d_id = :d_id AND c_w_id = :w_id \
        AND o_d_id = c_d_id AND o_w_id = c_w_id AND o_c_id = c_id \
        \
        ORDER BY o_c_id DESC, o_d_id DESC, o_w_id DESC, o_id \
        DESC"

    #define SQLCUR3 "SELECT /*+ INDEX(ordl) */ \
        ol_i_id, ol_supply_w_id, ol_quantity, ol_amount, ol_delivery_d \
        FROM ordl \
        WHERE ol_o_id = :o_id AND ol_d_id = :d_id AND ol_w_id = \
        :w_id"

    #define SQLCUR4 "SELECT count(c_last) FROM cust \
        WHERE c_d_id = :d_id AND c_w_id = :w_id AND c_last = \
        :c_last "

    #ifdef PLSQLSTO
    #define SQLTXSTO "BEGIN stocklevel.getstocklevel (:w_id, :d_id, \
        :threshold, \
        :low_stock); END;"
    #else
    #define SQLTXSTO "SELECT /*+ nocache (stok) */ count (DISTINCT \
        s_i_id) \
        FROM ordl, stok, dist \
        WHERE d_id = :d_id AND d_w_id = :w_id AND \
        d_id = ol_d_id AND d_w_id = ol_w_id AND \
        ol_i_id = s_i_id AND ol_w_id = s_w_id AND \
        s_quantity < :threshold AND \
        ol_o_id BETWEEN (d_next_o_id - 20) AND (d_next_o_id - 1) \
        order by ol_o_id desc"

    #endif

    #define SQLTXT_INIT "BEGIN inittpcc.init_pay; END;"

```

```

int DBExecution::sqlfile(char *fname, text *linebuf)
{
    FILE *fd;
    int nulpt = 0;
    char realfile[512];

    sprintf(realfile,"%s",fname);
    fd = fopen(realfile,"r");
    if (!fd){
        fprintf(stderr," fopen on %s failed %d\n",fname,fd);
        exit(-1);
    }
    while (fgetc((char *)linebuf+nulpt, SQL_BUF_SIZE,fd))
        nulpt = strlen((char *)linebuf);

    fclose(fd);

    return(nulpt);
}

int DBExecution::ocierror(char *fname, int lineno, OCIErr *errhp, sword
status)
{
    text errbuf[512];
    sb4 errcode;
    sb4 lstat;
    ub4 recno=2;

    switch (status) {
    case OCI_SUCCESS:
        break;
    case OCI_SUCCESS_WITH_INFO:
        userlog("ocierror: Module %s Line %d\n", fname, lineno);
        userlog("ocierror: Error - OCI_SUCCESS_WITH_INFO\n");
        lstat = OCIErrGet (errhp, recno++, (text *) NULL, &errcode, errbuf,
            (ub4) sizeof(errbuf), OCI_HTYPE_ERROR);
        userlog("ocierror: Error - %s\n", errbuf);
        break;
    case OCI_NEED_DATA:
        userlog("ocierror: Module %s Line %d\n", fname, lineno);
        userlog("ocierror: Error - OCI_NEED_DATA\n");
        return (IRRECERR);
    case OCI_NO_DATA:
        userlog("ocierror: Module %s Line %d\n", fname, lineno);
        userlog("ocierror: Error - OCI_NO_DATA\n");
        return (IRRECERR);
    case OCI_ERROR:
        lstat = OCIErrGet (errhp, (ub4) 1,
            (text *) NULL, &errcode, errbuf,
            (ub4) sizeof(errbuf),
OCI_HTYPE_ERROR);
        if (errcode == NOT_SERIALIZABLE) return (errcode);
        if (errcode == SNAPSHOT_TOO_OLD) return (errcode);
        while (lstat != OCI_NO_DATA)
        {
            userlog("ocierror: Module %s Line %d\n", fname, lineno);
            userlog("ocierror: Error - %s\n", errbuf);
            lstat = OCIErrGet (errhp, recno++, (text *) NULL, &errcode, errbuf,
                (ub4) sizeof(errbuf), OCI_HTYPE_ERROR);
        }
        return (errcode);
    /* vmm313 TPCexit(1); */
    /* vmm313 exit(1); */
    case OCI_INVALID_HANDLE:
        userlog("ocierror: Module %s Line %d\n", fname, lineno);
        userlog("ocierror: Error - OCI_INVALID_HANDLE\n");
        TPCexit(1);
        exit(-1);
    case OCI_STILL_EXECUTING:
        userlog("ocierror: Module %s Line %d\n", fname, lineno);
        userlog("ocierror: Error - OCI_STILL_EXECUTE\n");
        return (IRRECERR);
    case OCI_CONTINUE:
        userlog("ocierror: Module %s Line %d\n", fname, lineno);
        userlog("ocierror: Error - OCI_CONTINUE\n");
        return (IRRECERR);
    default:
        userlog("ocierror: Module %s Line %d\n", fname, lineno);
        userlog("ocierror: Status - %s\n", status);
        return (IRRECERR);
    }
    return (RECOVER);
}

/*****
*****
* TPCinit TPCexit
*****

```

```

*****/

int DBExecution::TPCinit (int id, char *uid, char *pwd)
{
    // OCIInitialize(OCI_DEFAULT|OCI_OBJECT,(dvoid *)0,0,0,0);
    // OCIEnvCreate(&tpcenv, OCI_DEFAULT|OCI_OBJECT,(dvoid
    *)0,0,0,0, (dvoid **)0);

    #ifndef LOOPBACK

        text stmbuf[100];
        int i;

        #define SQLTXT "alter session set isolation_level = serializable"
        #define SQLTXTTRC "alter session set sql_trace = true"
        #define SQLTXTTIM "alter session set timed_statistics = true"
        #define SQLTXTOPS "alter session set current_schema = tpcc"

        proc_no = id;
        /*
        char *temp;

        if ((temp = getenv("LOCAL"))!=NULL)
            _putenv( "LOCAL=tpcc" );

        OCIInitialize(OCI_DEFAULT|OCI_OBJECT,(dvoid *)0,0,0,0); */
        // OCIErrGet (errhp, OCIInitialize(OCI_THREADED|OCI_OBJECT,(dvoid
        *)0,0,0,0);
        // OCIErrGet (errhp, OCIEnvInit(&tpcenv, OCI_DEFAULT, 0, (dvoid **)0));

        OCIEnvCreate(&tpcenv, OCI_DEFAULT|OCI_OBJECT,(dvoid
        *)0,0,0,0, (dvoid **)0);

        OCIErrGet (errhp, OCIHandleAlloc((dvoid *)tpcenv, (dvoid **)tpcsrv,
        OCI_HTYPE_SERVER, 0, (dvoid **)0));
        OCIErrGet (errhp, OCIHandleAlloc((dvoid *)tpcenv, (dvoid **)errhp,
        OCI_HTYPE_ERROR, 0, (dvoid **)0));
        OCIErrGet (errhp, OCIHandleAlloc((dvoid *)tpcenv, (dvoid **)tpcsvc,
        OCI_HTYPE_SVCCTX, 0, (dvoid **)0));

        for (i=0; i<100; i++) {

            execstatus = OCIServerAttach(tpcsrv, errhp,
            (text *)0,0,OCI_DEFAULT);
            if (execstatus == OCI_SUCCESS || execstatus
            == OCI_SUCCESS_WITH_INFO)
                break;
            OCIErrGet (errhp, execstatus);
            Sleep(10);
        }

        if (i==100) {
            userlog("Can't attach to Server after 100 tries\n");
            return -1;
        }

        OCIErrGet (errhp, OCIAttrSet((dvoid *)tpcsvc, OCI_HTYPE_SVCCTX,
        (dvoid *)tpcsrv, (ub4)0,OCI_ATTR_SERVER, errhp));
        OCIErrGet (errhp, OCIHandleAlloc((dvoid *)tpcenv, (dvoid **)tpcsrv,
        OCI_HTYPE_SESSION, 0, (dvoid **)0));
        #ifdef OPS_LOGIN
            OCIErrGet (errhp, OCISessionBegin(tpcsvc, errhp, tpcusr,
            OCI_CRED_EXT, OCI_DEFAULT));
        #else
            OCIErrGet (errhp, OCIAttrSet((dvoid *)tpcsrv, OCI_HTYPE_SESSION,
            (dvoid *)uid, (ub4)strlen(uid),OCI_ATTR_USERNAME, errhp));
            OCIErrGet (errhp, OCIAttrSet((dvoid *)tpcsrv, OCI_HTYPE_SESSION,
            (dvoid *)pwd, (ub4)strlen(pwd),
            OCI_ATTR_PASSWORD, errhp));
            OCIErrGet (errhp, OCISessionBegin(tpcsvc, errhp, tpcusr,
            OCI_CRED_RDBMS, OCI_DEFAULT));
        #endif

        OCIErrGet (errhp, OCIAttrSet(tpcsvc, OCI_HTYPE_SVCCTX, tpcusr, 0,
        OCI_ATTR_SESSION, errhp));

        /* run all transaction in serializable mode */

        OCIHandleAlloc(tpcenv, (dvoid **)curi, OCI_HTYPE_STMT, 0,
        (dvoid **)0);
        sprintf ((char *) stmbuf, SQLTXT);
        OCISmtPrepare(curi, errhp, stmbuf, strlen((char *)stmbuf),
        OCI_NTV_SYNTAX, OCI_DEFAULT);
        OCIErrGet (errhp,OCISmtExecute(tpcsvc, curi,
        errhp,1,0,0,0,OCI_DEFAULT));

        OCIHandleFree(curi, OCI_HTYPE_STMT);

    #endif OPS_LOGIN

```

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```
void DBExecution::TPCexit()
{
    #ifndef LOOPBACK
        if (new_init) {
            tkvcndone();
            new_init = 0;
        }
        if (pay_init) {
            tkvcpdone();
            pay_init = 0;
        }
    #endif
}
```

```

int DBExecution:tkvcninit ()
{
    text stmbuff[32*1024];

    nctx = (newctx *) malloc (sizeof(newctx));
    DISCARD memset(nctx, (char)0, sizeof(newctx));
    nctx->w_id_len = sizeof(w_id);
    nctx->d_id_len = sizeof(d_id);
    nctx->c_id_len = sizeof(c_id);
    nctx->o_all_local_len = sizeof(o_all_local);
    nctx->o_of_cnt_len = sizeof(o_of_cnt);
    nctx->w_tax_len = 0;
    nctx->d_tax_len = 0;
    nctx->o_id_len = sizeof(o_id);
    nctx->c_discount_len = 0;
    nctx->c_credit_len = 0;
    nctx->c_last_len = 0;
    nctx->retries_len = sizeof(retries);
    nctx->cr_date_len = sizeof(cr_date);

    /* open first cursor */
    DISCARD OCIError(errhp, OCIDHandleAlloc(tpcenv, (dvoid **)&nctx->cur1),
        OCI_HTYPE_STMT, 0, (dvoid**)0));

    #if defined(ISO)
        sqlfile(" \\blocks\\tkvcnpnew_iso.sql", stmbuff);
    #else
    #if defined(ISO7)
        sqlfile(" \\blocks\\tkvcnpnew_iso7.sql", stmbuff);
    #else
        sqlfile(" \\blocks\\tkvcnpnew.sql", stmbuff);
    #endif
    #endif

    DISCARD OCIError(errhp, OCISStmtPrepare(nctx->cur1, errhp,
        stmbuff,
        strlen((char *)stmbuff), OCI_NTV_SYNTAX, OCI_DEFAULT));

    /* bind variables */

    OCIBNDPL(nctx->cur1, nctx->w_id_bp, errhp,
    "w_id", ADDR(w_id), SIZE(w_id),
        SQLT_INT, &nctx->w_id_len);
    OCIBNDPL(nctx->cur1, nctx->d_id_bp, errhp,
    "d_id", ADDR(d_id), SIZE(d_id),
        SQLT_INT, &nctx->d_id_len);
    OCIBNDPL(nctx->cur1, nctx->c_id_bp, errhp,
    "c_id", ADDR(c_id), SIZE(c_id),
        SQLT_INT, &nctx->c_id_len);
    OCIBNDPL(nctx->cur1, nctx->o_all_local_bp, errhp, "o all local",

```

APPENDIX A - APPLICATION SOURCE CODE

```

        ADR(o_all_local), SIZ(o_all_local), SQLT_INT, &nctx-
>o_all_local_len);
    OCIBNDPL(nctx->curr1, nctx->o_all_cnt_bp, errhp,
    "o_all_cnt", ADR(o_all_cnt),
        SIZ(o_all_cnt), SQLT_INT, &nctx->o_all_cnt_len);
    OCIBNDPL(nctx->curr1, nctx->w_tax_bp, errhp,
    "w_tax", ADR(w_tax), SIZ(w_tax),
        SQLT_FLT, &nctx->w_tax_len);
    OCIBNDPL(nctx->curr1, nctx->d_tax_bp, errhp,
    "d_tax", ADR(d_tax), SIZ(d_tax),
        SQLT_FLT, &nctx->d_tax_len);
    OCIBNDPL(nctx->curr1, nctx->o_id_bp, errhp,
    "o_id", ADR(o_id), SIZ(o_id),
        SQLT_INT, &nctx->o_id_len);
    OCIBNDPL(nctx->curr1, nctx->c_discount_bp, errhp, "c_discount",
        ADR(c_discount), SIZ(c_discount), SQLT_FLT, &nctx-
>c_discount_len);
    OCIBNDPL(nctx->curr1, nctx->c_credit_bp, errhp, "c_credit", c_credit,
        SIZ(c_credit), SQLT_CHR, &nctx->c_credit_len);
    OCIBNDPL(nctx->curr1, nctx->c_last_bp, errhp,
    "c_last", c_last, SIZ(c_last),
        SQLT_STR, &nctx->c_last_len);
    OCIBNDPL(nctx->curr1, nctx->retries_bp, errhp, "retry", ADR(retries),
        SIZ(retries), SQLT_INT, &nctx->retries_len);
    OCIBNDPL(nctx->curr1, nctx->cr_date_bp, errhp, "cr_date", &cr_date,
        SIZ(OCIDate), SQLT_ODT, &nctx->cr_date_len);

    OCIBNDPLA(nctx->curr1, nctx->ol_i_id_bp, errhp, "ol_i_id", nol_i_id,
        SIZ(int), SQLT_INT, nctx->nol_i_id_len, NITEMS, &nctx-
>nol_i_count);
    OCIBNDPLA(nctx->curr1, nctx->ol_supply_w_id_bp, errhp,
    "ol_supply_w_id",
        nol_supply_w_id, SIZ(int), SQLT_INT, nctx->nol_supply_w_id_len,
        NITEMS, &nctx->nol_s_count);

#ifdef USE_IEEE_NUMBER
    OCIBNDPLA(nctx->curr1, nctx->ol_quantity_bp, errhp, "ol_quantity",
        nol_quantity, SIZ(double), SQLT_BDOUBLE, nctx->nol_quantity_len,
        NITEMS, &nctx->nol_q_count);

    OCIBNDPLA(nctx->curr1, nctx-
>i_price_bp, errhp, "i_price", i_price, SIZ(double),
        SQLT_BDOUBLE, nctx->i_price_len, NITEMS, &nctx-
>nol_item_count);
#else
    OCIBNDPLA(nctx->curr1, nctx->ol_quantity_bp, errhp, "ol_quantity",
        nol_quantity, SIZ(int), SQLT_INT, nctx->nol_quantity_len,
        NITEMS, &nctx->nol_q_count);

    OCIBNDPLA(nctx->curr1, nctx-
>i_price_bp, errhp, "i_price", i_price, SIZ(int),
        SQLT_INT, nctx->i_price_len, NITEMS, &nctx->nol_item_count);
#endif /* USE_IEEE_NUMBER */
    OCIBNDPLA(nctx->curr1, nctx->i_name_bp, errhp, "i_name", i_name,
        SIZ(i_name[0]), SQLT_STR, nctx->i_name_len, NITEMS,
        &nctx->nol_name_count);

#ifdef USE_IEEE_NUMBER
    OCIBNDPLA(nctx->curr1, nctx-
>s_quantity_bp, errhp, "s_quantity", s_quantity,
        SIZ(double), SQLT_BDOUBLE, nctx->s_quant_len, NITEMS, &nctx-
>nol_qty_count);
#else
    OCIBNDPLA(nctx->curr1, nctx-
>s_quantity_bp, errhp, "s_quantity", s_quantity,
        SIZ(int), SQLT_INT, nctx->s_quant_len, NITEMS, &nctx-
>nol_qty_count);
#endif /* USE_IEEE_NUMBER */

    OCIBNDPLA(nctx->curr1, nctx-
>s_bg_bp, errhp, "brand_generic", brand_generic,
        SIZ(char), SQLT_CHR, nctx->s_bg_len, NITEMS, &nctx-
>nol_bg_count);
#ifdef USE_IEEE_NUMBER
    OCIBNDPLA(nctx->curr1, nctx-
>ol_amount_bp, errhp, "ol_amount", nol_amount,
        SIZ(double), SQLT_BDOUBLE, nctx->nol_amount_len, NITEMS, &nctx-
>nol_am_count);

    OCIBNDPLA(nctx->curr1, nctx->s_remote_bp, errhp, "s_remote", nctx-
>s_remote,
        SIZ(double), SQLT_BDOUBLE, nctx->s_remote_len, NITEMS, &nctx-
>s_remote_count);
#else
    OCIBNDPLA(nctx->curr1, nctx-
>ol_amount_bp, errhp, "ol_amount", nol_amount,
        SIZ(int), SQLT_INT, nctx->nol_amount_len, NITEMS, &nctx-
>nol_am_count);

    OCIBNDPLA(nctx->curr1, nctx->s_remote_bp, errhp, "s_remote", nctx-
>s_remote,

```

```

        SIZ(int), SQLT_INT, nctx->s_remote_len, NITEMS, &nctx-
>s_remote_count);
#endif /* USE_IEEE_NUMBER */

    /* open second cursor */
    DISCARD OCIErrror(errhp, OCIDHandleAlloc(tpcenv, (dvoid **)&nctx-
>curr2),
        OCI_HTYPE_STMT, 0, (dvoid**)0);
    DISCARD sprintf((char *) stmbuf, SQLTXTNW2);
    DISCARD OCIErrror(errhp, OCISmtPrepare(nctx->curr2, errhp,
    stmbuf,
        strlen((char *)stmbuf), OCI_NTV_SYNTAX, OCI_DEFAULT));

    /* execute second cursor to init newinit package */
    {
        int idx1arr[NITEMS];
        OCIBind *idx1arr_bp;
        ub2 idx1arr_len[NITEMS];
        sb2 idx1arr_ind[NITEMS];
        ub4 idx1arr_count;
        ub2 idx;

        for (idx = 0; idx < NITEMS; idx++) {
            idx1arr[idx] = idx + 1;
            idx1arr_ind[idx] = TRUE;
            idx1arr_len[idx] = sizeof(int);
        }
        idx1arr_count = NITEMS;
        o_all_cnt = NITEMS;

        /* Bind array */
        OCIBNDPLA(nctx->curr2, idx1arr_bp, errhp, "idx1arr", idx1arr,
            SIZ(int), SQLT_INT, idx1arr_len, NITEMS, &idx1arr_count);

        execstatus = OCISmtExecute(tpcenv, nctx->curr2, errhp, 1, 0,
            NULLP(CONST
OCISnapshot), NULLP(OCISnapshot), OCI_DEFAULT);

        if (execstatus != OCI_SUCCESS) {
            OCITransRollback(tpcenv, errhp, OCI_DEFAULT);
            errcode = OCIErrror(errhp, execstatus);
            return -1;
        }
    }

    return (0);
}

void DBExecution::tkvcndone ()
{
    if (nctx)
    {
        DISCARD OCIDHandleFree((dvoid *)nctx->curr1, OCI_HTYPE_STMT);
        DISCARD OCIDHandleFree((dvoid *)nctx->curr2, OCI_HTYPE_STMT);
        free (nctx);
    }
}

int DBExecution::tkvcndinit (int plsqliflag)
{
    text stmbuf[SQL_BUF_SIZE];

    if (plsqliflag)
    {
        pldctx = (pldctx *) malloc (sizeof(pldctx));
        DISCARD memset(pldctx, (char)0, (ub4)sizeof(pldctx));
        /* Initialize */
        DISCARD OCIDHandleAlloc(tpcenv, (dvoid **)&pldctx->curp1,
        OCI_HTYPE_STMT, 0,
            (dvoid**)0);
        DISCARD sprintf((char *) stmbuf, SQLTXTDDEL);
        DISCARD OCISmtPrepare(pldctx->curp1, errhp, stmbuf,
            (ub4) strlen((char *)stmbuf),
            OCI_NTV_SYNTAX, OCI_DEFAULT);
        DISCARD OCIErrror(errhp,
            OCISmtExecute(tpcenv, pldctx-
>curp1, errhp, 1, 0, NULLP(OCISnapshot),
            NULLP(OCISnapshot), OCI_DEFAULT));

        DISCARD OCIDHandleAlloc(tpcenv, (dvoid **)&pldctx->curp2,
        OCI_HTYPE_STMT,
            0, (dvoid**)0);
        #if defined(ISO5) || defined(ISO6) || defined(ISO8)

```

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```
#if defined(ISO5)
sqlfile(".\\blocks\\tkvcpdel_iso5.sql", stmbuf);
#endif
#if defined(ISO6)
sqlfile(".\\blocks\\tkvcpdel_iso6.sql", stmbuf);
#endif
#if defined(ISO8)
sqlfile(".\\blocks\\tkvcpdel_iso8.sql", stmbuf);
#endif
#else
sqlfile(".\\blocks\\tkvcpdel.sql", stmbuf);
#endif
DISCARD OCISmtPrepare(pldctx->curp2, errhp, stmbuf,
(ub4)strlen((char *)stmbuf), OCI_NTV_SYNTAX,
OCI_DEFAULT);
OCIBNDPL(pldctx->curp2, pldctx->w_id_bp, errhp, "w_id",
ADR(w_id), SIZ(int), SQLT_INT, &pldctx->w_id_len);
OCIBNDPL(pldctx->curp2, pldctx->ordcnt_bp, errhp, "ordcnt",
ADR(pldctx->ordcnt), SIZ(int), SQLT_INT, &pldctx->ordcnt_len);
OCIBNDPL(pldctx->curp2, pldctx->del_date_bp, errhp, "now",
ADR(pldctx->del_date), SIZ(OCIDate), SQLT_ODT, &pldctx-
>del_date_len);
OCIBNDPL(pldctx->curp2, pldctx->carrier_id_bp, errhp,
"carrier_id", ADR(o_carrier_id), SIZ(int),
SQLT_INT, &pldctx->carrier_id_len);

OCIBNDPLA(pldctx->curp2, pldctx->d_id_bp, errhp, "d_id",
pldctx->del_d_id, SIZ(int), SQLT_INT, pldctx->del_d_id_len,
NDISTS, &pldctx->del_d_id_rcnt);
OCIBNDPLA(pldctx->curp2, pldctx->o_id_bp, errhp, "order_id",
pldctx->del_o_id, SIZ(int), SQLT_INT, pldctx-
>del_o_id_len, NDISTS,
&pldctx->del_o_id_rcnt);
#ifdef USE_IEEE_NUMBER
OCIBNDPLA(pldctx->curp2, pldctx->sums_bp, errhp, "sums",
pldctx->sums, SIZ(double), SQLT_Bdouble, pldctx-
>sums_len, NDISTS,
&pldctx->sums_rcnt);
#else
OCIBNDPLA(pldctx->curp2, pldctx->sums_bp, errhp, "sums",
pldctx->sums, SIZ(int), SQLT_INT, pldctx->sums_len, NDISTS,
&pldctx->sums_rcnt);
#endif

OCIBNDPLA(pldctx->curp2, pldctx->o_c_id_bp, errhp, "o_c_id",
pldctx->o_c_id, SIZ(int), SQLT_INT, pldctx->o_c_id_len, NDISTS,
&pldctx->o_c_id_rcnt);
OCIBND(pldctx->curp2, pldctx->retry_bp, errhp, "retry",
ADR(pldctx->retry), SIZ(int), SQLT_INT);
}
else
{
dctx = (delctx *) malloc(sizeof(delctx));
memset(dctx, (char)0, sizeof(delctx));
dctx->norow = 0;
actx = (amtx *) malloc(sizeof(amtx));
memset(actx, (char)0, sizeof(amtx));

OCIHandleAlloc(tpcenv, (dvoid **)&dctx->curd1, OCI_HTYPE_STMT,
0,
(dvoid**)0);
DISCARD sprintf((char *) stmbuf, "%s", SQLTXDEL1);
DISCARD OCISmtPrepare(dctx->curd1, errhp, stmbuf,
strlen((char *)stmbuf), OCI_NTV_SYNTAX,
OCI_DEFAULT);

OCIBND(dctx->curd1, dctx->w_id_bp, errhp, "w_id", dctx->w_id, SIZ(int),
SQLT_INT);
OCIBNDRA(dctx->curd1, dctx->d_id_bp, errhp, "d_id", dctx-
>d_id, SIZ(int),
SQLT_INT, NULL, NULL, NULL);

OCIBNDRAD(dctx->curd1, dctx->del_o_id_bp, errhp, "o_id",
SIZ(int), SQLT_INT, NULL,
&dctx->oid_ctx, no_data, TPC_oid_data);

/* open third cursor */

DISCARD OCIHandleAlloc(tpcenv, (dvoid **)&dctx->curd3,
OCI_HTYPE_STMT,
0, (dvoid**)0);
DISCARD sprintf((char *) stmbuf, SQLTXDEL3);
DISCARD OCISmtPrepare(dctx->curd3, errhp, stmbuf, strlen((char
*)stmbuf),
OCI_NTV_SYNTAX, OCI_DEFAULT);

/* bind variables */

OCIBNDRA(dctx->curd3, dctx->carrier_id_bp, errhp, "carrier id",
```

```
dctx->carrier_id, SIZ(dctx->carrier_id[0]), SQLT_INT,
dctx->carrier_id_ind, dctx->carrier_id_len, dctx->carrier_id_rcode);

OCIBNDRA(dctx->curd3, dctx->w_id_bp3, errhp, "w_id", dctx-
>w_id, SIZ(int),
SQLT_INT, NULL, NULL, NULL);
OCIBNDRA(dctx->curd3, dctx->d_id_bp3, errhp, "d_id", dctx-
>d_id, SIZ(int),
SQLT_INT, NULL, NULL, NULL);
OCIBNDRA(dctx->curd3, dctx->del_o_id_bp3, errhp, "o_id", dctx-
>del_o_id,
SIZ(int), SQLT_INT, NULL, NULL, NULL);
OCIBNDRAD(dctx->curd3, dctx->c_id_bp3, errhp, "o_c_id", SIZ(int),
SQLT_INT, NULL, &dctx->cid_ctx, no_data, cid_data);

/* open fourth cursor */

DISCARD OCIHandleAlloc(tpcenv, (dvoid **)&dctx->curd4,
OCI_HTYPE_STMT, 0,
(dvoid**)0);
DISCARD sprintf((char *) stmbuf, SQLTXDEL4);
DISCARD OCISmtPrepare(dctx->curd4, errhp, stmbuf, strlen((char
*)stmbuf),
OCI_NTV_SYNTAX, OCI_DEFAULT);

/* bind variables */

OCIBND(dctx->curd4, dctx->w_id_bp4, errhp, "w_id", dctx->w_id,
SIZ(int), SQLT_INT);
OCIBND(dctx->curd4, dctx->d_id_bp4, errhp, "d_id", dctx->d_id,
SIZ(int), SQLT_INT);
OCIBND(dctx->curd4, dctx->o_id_bp, errhp, "o_id", dctx->del_o_id,
SIZ(int), SQLT_INT);
OCIBND(dctx->curd4, dctx->cr_date_bp, errhp, "cr_date", dctx-
>del_date,
SIZ(OCIDate), SQLT_ODT);
OCIBNDRAD(dctx->curd4, dctx->olamt_bp, errhp, "ol_amount",
SIZ(int), SQLT_INT, NULL, actx, no_data, amt_data);

/* open sixth cursor */

DISCARD OCIHandleAlloc(tpcenv, (dvoid **)&dctx->curd6,
OCI_HTYPE_STMT,
0, (dvoid**)0);
DISCARD sprintf((char *) stmbuf, SQLTXDEL6);
DISCARD OCISmtPrepare(dctx->curd6, errhp, stmbuf, strlen((char
*)stmbuf),
OCI_NTV_SYNTAX, OCI_DEFAULT);

/* bind variables */

OCIBND(dctx->curd6, dctx->amt_bp, errhp, "amt", dctx->amt, SIZ(int),
SQLT_INT);
OCIBND(dctx->curd6, dctx->w_id_bp6, errhp, "w_id", dctx-
>w_id, SIZ(int),
SQLT_INT);
OCIBND(dctx->curd6, dctx->d_id_bp6, errhp, "d_id", dctx->d_id, SIZ(int),
SQLT_INT);
OCIBND(dctx->curd6, dctx->c_id_bp, errhp, "c_id", dctx->c_id, SIZ(int),
SQLT_INT);
}
return (0);
}

void DBExecution::shiftdata(int from)
{
int i;
for (i=from; i<NDISTS-1; i++)
{
dctx->del_o_id_ind[i] = dctx->del_o_id_ind[i+1];
dctx->del_o_id[i] = dctx->del_o_id[i+1];
dctx->w_id[i] = dctx->w_id[i+1];
dctx->d_id[i] = dctx->d_id[i+1];
dctx->carrier_id[i] = dctx->carrier_id[i+1];
}
}

void DBExecution::tkvcdone(int plsflag)
{
if (plsflag)
{
if (pldctx)
{
DISCARD OCIHandleFree((dvoid *)dctx->curd0, OCI_HTYPE_STMT);
```

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```

        DISCARD free(pldctx);
    }
}
else
{
    if (dctx)
    {
        OCIHandleFree((dvoid *)dctx->curd1,OCI_HTYPE_STMT);
        OCIHandleFree((dvoid *)dctx->curd2,OCI_HTYPE_STMT);
        OCIHandleFree((dvoid *)dctx->curd3,OCI_HTYPE_STMT);
        OCIHandleFree((dvoid *)dctx->curd4,OCI_HTYPE_STMT);
        OCIHandleFree((dvoid *)dctx->curd5,OCI_HTYPE_STMT);
        OCIHandleFree((dvoid *)dctx->curd6,OCI_HTYPE_STMT);
        DISCARD free (dctx);
    }
}

int DBExecution::tkvcoinot ()
{
    int i;
    text stmbuf[SQL_BUF_SIZE];

    octx = (ordctx *) malloc (sizeof(ordctx));
    DISCARD memset(octx,(char)0,sizeof(ordctx));
    octx->cs = 1;
    octx->norow = 0;
    octx->somerows = 10;
    for(i=0;i<100;i++) {
        DISCARD OCIERROR(errhp, OCIDescriptorAlloc(tpcenv,
            (dvoid**) &octx->c_rowid_ptr[i],
            OCI_DTYPE_ROWID,0,(dvoid**)0));
    }

    DISCARD OCIERROR(errhp,
        OCIHandleAlloc(tpcenv,(dvoid**) &octx-
        >curo0,OCI_HTYPE_STMT,0,(dvoid**)0));
    DISCARD OCIERROR(errhp,
        OCIHandleAlloc(tpcenv,(dvoid**) &octx-
        >curo0,OCI_HTYPE_STMT,0,(dvoid**)0));
    DISCARD OCIERROR(errhp,
        OCIHandleAlloc(tpcenv,(dvoid**) &octx-
        >curo1,OCI_HTYPE_STMT,0,(dvoid**)0));
    DISCARD OCIERROR(errhp,
        OCIHandleAlloc(tpcenv,(dvoid**) &octx-
        >curo2,OCI_HTYPE_STMT,0,(dvoid**)0));
    DISCARD OCIERROR(errhp,
        OCIHandleAlloc(tpcenv,(dvoid**) &octx-
        >curo3,OCI_HTYPE_STMT,0,(dvoid**)0));
    DISCARD OCIERROR(errhp,
        OCIHandleAlloc(tpcenv,(dvoid**) &octx-
        >curo4,OCI_HTYPE_STMT,0,(dvoid**)0));

    /* c_id = 0, use find customer by lastname. Get an array or rowid's back*/
    DISCARD sprintf((char *) stmbuf, SQLCUR0);
    DISCARD OCIERROR(errhp,
        OCISmtPrepare(octx->curo0,errhp,stmbuf,(ub4)strlen((char *)stmbuf),
            OCI_NTV_SYNTAX,OCI_DEFAULT));
    DISCARD OCIERROR(errhp,
        OCIAttrSet(octx->curo0,OCI_HTYPE_STMT,&octx->norow,0,
            OCI_ATTR_PREFETCH_ROWS,errhp));
    /* get order/customer info back based on rowid */
    DISCARD sprintf((char *) stmbuf, SQLCUR1);
    DISCARD OCIERROR(errhp,
        OCISmtPrepare(octx->curo1,errhp,stmbuf,(ub4)strlen((char *)stmbuf),
            OCI_NTV_SYNTAX,OCI_DEFAULT));
    DISCARD OCIERROR(errhp,
        OCIAttrSet(octx->curo1,OCI_HTYPE_STMT,&octx->norow,0,
            OCI_ATTR_PREFETCH_ROWS,errhp));

    /* c_id == 0, use lastname to find customer */
    DISCARD sprintf((char *) stmbuf, SQLCUR2);
    DISCARD OCIERROR(errhp,
        OCISmtPrepare(octx->curo2,errhp,stmbuf,(ub4)strlen((char *)stmbuf),
            OCI_NTV_SYNTAX,OCI_DEFAULT));
    DISCARD OCIERROR(errhp,
        OCIAttrSet(octx->curo2,OCI_HTYPE_STMT,&octx->norow,0,
            OCI_ATTR_PREFETCH_ROWS,errhp));

    DISCARD sprintf((char *) stmbuf, SQLCUR3);
    DISCARD OCIERROR(errhp,
        OCISmtPrepare(octx->curo3,errhp,stmbuf,(ub4)strlen((char *)stmbuf),
            OCI_NTV_SYNTAX,OCI_DEFAULT));
    DISCARD OCIERROR(errhp,
        OCIAttrSet(octx->curo3,OCI_HTYPE_STMT,&octx->norow,0,
            OCI_ATTR_PREFETCH_ROWS,errhp));

    DISCARD sprintf((char *) stmbuf, SQLCUR4);
    DISCARD OCIERROR(errhp,
        OCISmtPrepare(octx->curo4,errhp,stmbuf,(ub4)strlen((char *)stmbuf),
            OCI_NTV_SYNTAX,OCI_DEFAULT));
    DISCARD OCIERROR(errhp,
        OCIAttrSet(octx->curo4,OCI_HTYPE_STMT,&octx->norow,0,
            OCI_ATTR_PREFETCH_ROWS,errhp));

    for (i = 0; i < NITEMS; i++) {
        octx->ol_supply_w_id_len[i] = sizeof(int);
        octx->ol_i_id_len[i] = sizeof(int);
        octx->ol_quantity_len[i] = sizeof(int);
        octx->ol_amount_len[i] = sizeof(int);
        octx->ol_delivery_d_len[i] = sizeof(ol_d_base[0]);
    }
    octx->ol_supply_w_id_csize = NITEMS;
    octx->ol_i_id_csize = NITEMS;
    octx->ol_quantity_csize = NITEMS;
    octx->ol_amount_csize = NITEMS;
    octx->ol_delivery_d_csize = NITEMS;
    octx->ol_w_id_csize = NITEMS;
    octx->ol_o_id_csize = NITEMS;
    octx->ol_d_id_csize = NITEMS;
    octx->ol_w_id_len = sizeof(int);
    octx->ol_d_id_len = sizeof(int);
    octx->ol_o_id_len = sizeof(int);

    /* bind variables */

    /* c_id (customer id) is not known */
    OCIBND(octx->curo0,octx->w_id_bp[0],errhp,"w_id",ADR(w_id),
        SIZ(int),SQLT_INT);
    OCIBND(octx->curo0,octx->d_id_bp[0],errhp,"d_id",ADR(d_id),
        SIZ(int),SQLT_INT);
    OCIBND(octx->curo0,octx->c_last_bp[0],errhp,"c_last",c_last,
        SIZ(c_last),SQLT_STR);
    OCIDFNRA(octx->curo0,octx->c_rowid_dp,errhp,1,octx->c_rowid_ptr,
        SIZ(OCIRowid*),SQLT_RDD,NULL,octx->c_rowid_len,NULL);

    OCIBND(octx->curo1,octx->c_rowid_bp,errhp,"cust_rowid", &octx-
    >c_rowid_cust,
        sizeof(octx->c_rowid_ptr[0]),SQLT_RDD);
    OCIDF(octx->curo1,octx-
    >c_id_dp,errhp,1,ADR(c_id),SIZ(int),SQLT_INT);
    #ifdef USE_IEEE_NUMBER
        OCIDF(octx->curo1,octx->c_balance_dp[0],errhp,2,ADR(c_balance),
            SIZ(double),SQLT_BDOUBLE);
    #else
        OCIDF(octx->curo1,octx->c_balance_dp[0],errhp,2,ADR(c_balance),
            SIZ(double),SQLT_FLT);
    #endif /* USE_IEEE_NUMBER */
    OCIDF(octx->curo1,octx->c_first_dp[0],errhp,3,c_first,SIZ(c_first)-1,
        SQLT_CHR);
    OCIDF(octx->curo1,octx->c_middle_dp[0],errhp,4,c_middle,
        SIZ(c_middle)-1,SQLT_AFC);
    OCIDF(octx->curo1,octx->c_last_dp[0],errhp,5,c_last,SIZ(c_last)-1,
        SQLT_CHR);
    OCIDF(octx->curo1,octx-
    >o_id_dp[0],errhp,6,ADR(o_id),SIZ(int),SQLT_INT);
    OCIDF(octx->curo1,octx->o_entry_d_dp[0],errhp,7,
        &o_entry_d_base,SIZ(OCIDate),SQLT_ODT);
    OCIDF(octx->curo1,octx->o_cr_id_dp[0],errhp,8,ADR(o_carrier_id),
        SIZ(int),SQLT_INT);
    OCIDF(octx->curo1,octx->o_ol_cnt_dp[0],errhp,9,ADR(o_ol_cnt),
        SIZ(int),SQLT_INT);

    /* Bind for third cursor , no-zero customer id */
    OCIBND(octx->curo2,octx->w_id_bp[1],errhp,"w_id",ADR(w_id),
        SIZ(int),SQLT_INT);
    OCIBND(octx->curo2,octx->d_id_bp[1],errhp,"d_id",ADR(d_id),
        SIZ(int),SQLT_INT);
    OCIBND(octx->curo2,octx->c_id_bp,errhp,"c_id",ADR(c_id),
        SIZ(int),SQLT_INT);
    #ifdef USE_IEEE_NUMBER
        OCIDF(octx->curo2,octx->c_balance_dp[1],errhp,1,ADR(c_balance),
            SIZ(double),SQLT_BDOUBLE);
    #else
        OCIDF(octx->curo2,octx->c_balance_dp[1],errhp,1,ADR(c_balance),
            SIZ(double),SQLT_FLT);
    #endif /* USE_IEEE_NUMBER */
    OCIDF(octx->curo2,octx->c_first_dp[1],errhp,2,c_first,SIZ(c_first)-1,
        SQLT_CHR);
    OCIDF(octx->curo2,octx->c_middle_dp[1],errhp,3,c_middle,
        SIZ(c_middle)-1,SQLT_AFC);
    OCIDF(octx->curo2,octx->c_last_dp[1],errhp,4,c_last,SIZ(c_last)-1,
        SQLT_CHR);
    OCIDF(octx->curo2,octx-
    >o_id_dp[1],errhp,5,ADR(o_id),SIZ(int),SQLT_INT);
    OCIDF(octx->curo2,octx->o_entry_d_dp[1],errhp,6, &o_entry_d_base,
        SIZ(OCIDate),SQLT_ODT);
    OCIDF(octx->curo2,octx->o_cr_id_dp[1],errhp,7,ADR(o_carrier_id),
        SIZ(int),SQLT_INT);
    OCIDF(octx->curo2,octx->o_ol_cnt_dp[1],errhp,8,ADR(o_ol_cnt),

```

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```

        SIZ(int),SOLT_INT);

/* Bind for last cursor */

        OCIBND(octx->curo3,octx->w_id_bp[2],errhp,"w_id",ADR(w_id),
        SIZ(int),SOLT_INT);
        OCIBND(octx->curo3,octx->d_id_bp[2],errhp,"d_id",ADR(d_id),
        SIZ(int),SOLT_INT);
        OCIBND(octx->curo3,octx->o_id_bp,errhp,"o_id",ADR(o_id),
        SIZ(int),SOLT_INT);
/*
        OCIBND(octx->curo3,octx->c_id_bp,errhp,"c_id",ADR(c_id),
        SIZ(int),SOLT_INT);
*/

        OCIDFNRA(octx->curo3, octx->ol_i_id_dp, errhp, 1,
        ol_i_id,SIZ(int),SOLT_INT,
                NULL,octx->ol_i_id_len, NULL);
        OCIDFNRA(octx->curo3,octx->ol_supply_w_id_dp,errhp,2,
        ol_supply_w_id,
                SIZ(int),SOLT_INT, NULL,
                octx->ol_supply_w_id_len, NULL);
#ifdef USE_IEEE_NUMBER
        OCIDFNRA(octx->curo3, octx->ol_quantity_dp,errhp,3,
        ol_quantity,SIZ(double),
                SOLT_Bdouble, NULL,octx->ol_quantity_len, NULL);
        OCIDFNRA(octx->curo3,octx->ol_amount_dp,errhp,4,ol_amount,
        SIZ(double),
                SOLT_Bdouble,NULL, octx->ol_amount_len, NULL);
#else
        OCIDFNRA(octx->curo3, octx->ol_quantity_dp,errhp,3,
        ol_quantity,SIZ(int),
                SOLT_INT, NULL,octx->ol_quantity_len, NULL);
        OCIDFNRA(octx->curo3,octx->ol_amount_dp,errhp,4,ol_amount,
        SIZ(int),
                SOLT_INT,NULL, octx->ol_amount_len, NULL);
#endif /* USE_IEEE_NUMBER */
        OCIDFNRA(octx->curo3,octx->ol_d_base_dp,errhp,5,ol_d_base,SIZ(OCIDate),
        SOLT_ODT, NULL,octx->ol_delivery_d_len,NULL);

        OCIBND(octx->curo4,octx->w_id_bp[3],errhp,"w_id",ADR(w_id),
        SIZ(int),SOLT_INT);
        OCIBND(octx->curo4,octx->d_id_bp[3],errhp,"d_id",ADR(d_id),
        SIZ(int),SOLT_INT);
        OCIBND(octx->curo4,octx->c_last_bp[1],errhp,"c_last",c_last,
        SIZ(c_last), SOLT_STR);
        OCIDF(octx->curo4,octx->c_count_dp,errhp,1,ADR(octx->
        rcount),SIZ(int),
                SOLT_INT);

        return (0);
}

void DBExecution::tkvcodone ()
{
    if (octx)
        free (octx);
}

int DBExecution::tkvcpin (void)
{
    text stmbuff[SQL_BUF_SIZE];
    pctx = (payctx *)malloc(sizeof(payctx));
    memset(pctx,(char)0,sizeof(payctx));

/* cursor for init */
    DISCARD OCIERROR(errhp,OCIHandleAlloc(tpcenv, (dvoid **)&(pctx->
    curpi)),
            OCI_HTYPE_STMT,0,(dvoid**)0);

    DISCARD OCIERROR(errhp,OCIHandleAlloc(tpcenv, (dvoid **)&(pctx->
    curp0)),
            OCI_HTYPE_STMT,0,(dvoid**)0);
    DISCARD OCIERROR(errhp,OCIHandleAlloc(tpcenv, (dvoid **)&(pctx->
    curp1)),
            OCI_HTYPE_STMT,0,(dvoid**)0);

/* build the init statement and execute it */

    sprintf ((char*)stmbuff, SOLTXT_INIT);
    DISCARD OCIERROR(errhp,OCIStmtPrepare(pctx->curpi, errhp,
    stmbuff,
            strlen((char *)stmbuff), OCI_NTV_SYNTAX, OCI_DEFAULT));
    DISCARD OCIERROR(errhp, OCIStmtExecute(tpcenv,pctx->
    curpi,errhp,1,0,

```

```

        NULLP(CONST
        OCISnapshot,NULLP(OCISnapshot),OCI_DEFAULT));

/* customer id != 0, go by last name */

    sqlfile(".\\blocks\\paynz.sql",stmbuff);
    DISCARD OCIERROR(errhp,OCIStmtPrepare(pctx->curp0, errhp,
    stmbuff,
            strlen((char *)stmbuff), OCI_NTV_SYNTAX, OCI_DEFAULT));

/* customer id == 0, go by last name */

    sqlfile(".\\blocks\\payz.sql",stmbuff); /* sqlfile opens $O/bench/.../blocks/...
*/
    DISCARD OCIERROR(errhp,OCIStmtPrepare(pctx->curp1, errhp,
    stmbuff,
            strlen((char *)stmbuff), OCI_NTV_SYNTAX, OCI_DEFAULT));

    pctx->w_id_len = SIZ(w_id);
    pctx->d_id_len = SIZ(d_id);
    pctx->c_w_id_len = SIZ(c_w_id);
    pctx->c_d_id_len = SIZ(c_d_id);
    pctx->c_id_len = 0;
    pctx->h_amount_len = SIZ(h_amount);
    pctx->c_last_len = 0;
    pctx->w_street_1_len = 0;
    pctx->w_street_2_len = 0;
    pctx->w_city_len = 0;
    pctx->w_state_len = 0;
    pctx->w_zip_len = 0;
    pctx->d_street_1_len = 0;
    pctx->d_street_2_len = 0;
    pctx->d_city_len = 0;
    pctx->d_state_len = 0;
    pctx->d_zip_len = 0;
    pctx->c_first_len = 0;
    pctx->c_middle_len = 0;
    pctx->c_street_1_len = 0;
    pctx->c_street_2_len = 0;
    pctx->c_city_len = 0;
    pctx->c_state_len = 0;
    pctx->c_zip_len = 0;
    pctx->c_phone_len = 0;
    pctx->c_since_len = 0;
    pctx->c_credit_len = 0;
    pctx->c_credit_lim_len = 0;
    pctx->c_discount_len = 0;
    pctx->c_balance_len = sizeof(double);
    pctx->c_data_len = 0;
    pctx->h_date_len = 0;
    pctx->retries_len = SIZ(retries) ;
    pctx->cr_date_len = 7;

/* bind variables */

    OCIBNDPL(pctx->curp0, pctx->w_id_bp[0],
    errhp,"w_id",ADR(w_id),SIZ(int),
            SOLT_INT, NULL);
    OCIBNDPL(pctx->curp0, pctx->d_id_bp[0],
    errhp,"d_id",ADR(d_id),SIZ(int),
            SOLT_INT, NULL);
    OCIBND(pctx->curp0, pctx->c_w_id_bp[0],
    errhp,"c_w_id",ADR(c_w_id),SIZ(int),
            SOLT_INT);
    OCIBND(pctx->curp0, pctx->c_d_id_bp[0],
    errhp,"c_d_id",ADR(c_d_id),SIZ(int),
            SOLT_INT);
    OCIBND(pctx->curp0, pctx->c_id_bp[0], errhp,"c_id",ADR(c_id),SIZ(int),
            SOLT_INT);
#ifdef USE_IEEE_NUMBER
    OCIBNDPL(pctx->curp0, pctx->h_amount_bp[0],
    errhp,"h_amount",ADR(h_amount),
            SIZ(double),SOLT_Bdouble, &pctx->h_amount_len);
#else
    OCIBNDPL(pctx->curp0, pctx->h_amount_bp[0],
    errhp,"h_amount",ADR(h_amount),
            SIZ(int),SOLT_INT, &pctx->h_amount_len);
#endif /* USE_IEEE_NUMBER */
    OCIBNDPL(pctx->curp0, pctx->c_last_bp[0],
    errhp,"c_last",c_last,SIZ(c_last),
            SOLT_STR, &pctx->c_last_len);
    OCIBNDPL(pctx->curp0, pctx->w_street_1_bp[0],
    errhp,"w_street_1",w_street_1,
            SIZ(w_street_1),SOLT_STR, &pctx->w_street_1_len);
    OCIBNDPL(pctx->curp0, pctx->w_street_2_bp[0],
    errhp,"w_street_2",w_street_2,
            SIZ(w_street_2),SOLT_STR, &pctx->w_street_2_len);
    OCIBNDPL(pctx->curp0, pctx->w_city_bp[0],
    errhp,"w_city",w_city,SIZ(w_city),

```

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```

        SQLT_STR, &pctx->w_city_len);
    OCIBNDPL(pctx->curp0, pctx->w_state_bp[0], errhp,"w_state",w_state,
        SIZ(w_state), SQLT_STR, &pctx->w_state_len);
    OCIBNDPL(pctx->curp0, pctx->w_zip_bp[0],
errhp,"w_zip",w_zip,SIZ(w_zip),
        SQLT_STR, &pctx->w_zip_len);
    OCIBNDPL(pctx->curp0, pctx->d_street_1_bp[0],
errhp,"d_street_1",d_street_1,
        SIZ(d_street_1),SQLT_STR, &pctx->d_street_1_len);
    OCIBNDPL(pctx->curp0, pctx->d_street_2_bp[0],
errhp,"d_street_2",d_street_2,
        SIZ(d_street_2),SQLT_STR, &pctx->d_street_2_len);
    OCIBNDPL(pctx->curp0, pctx->d_city_bp[0],
errhp,"d_city",d_city,SIZ(d_city),
        SQLT_STR, &pctx->d_city_len);
    OCIBNDPL(pctx->curp0, pctx->d_state_bp[0], errhp,"d_state",d_state,
        SIZ(d_state), SQLT_STR, &pctx->d_state_len);
    OCIBNDPL(pctx->curp0, pctx->d_zip_bp[0],
errhp,"d_zip",d_zip,SIZ(d_zip),
        SQLT_STR, &pctx->d_zip_len);
    OCIBNDPL(pctx->curp0, pctx->c_first_bp[0], errhp,"c_first",c_first,
        SIZ(c_first), SQLT_STR, &pctx->c_first_len);
    OCIBNDPL(pctx->curp0, pctx->c_middle_bp[0],
errhp,"c_middle",c_middle,2,
        SQLT_AFC, &pctx->c_middle_len);
    OCIBNDPL(pctx->curp0, pctx->d_street_1_bp[0],
errhp,"c_street_1",c_street_1,
        SIZ(c_street_1),SQLT_STR, &pctx->c_street_1_len);
    OCIBNDPL(pctx->curp0, pctx->c_street_2_bp[0],
errhp,"c_street_2",c_street_2,
        SIZ(c_street_2),SQLT_STR, &pctx->c_street_2_len);
    OCIBNDPL(pctx->curp0, pctx->c_city_bp[0],
errhp,"c_city",c_city,SIZ(c_city),
        SQLT_STR, &pctx->c_city_len);
    OCIBNDPL(pctx->curp0, pctx->c_state_bp[0], errhp,"c_state",c_state,
        SIZ(c_state), SQLT_STR, &pctx->c_state_len);
    OCIBNDPL(pctx->curp0, pctx->c_zip_bp[0],
errhp,"c_zip",c_zip,SIZ(c_zip),
        SQLT_STR, &pctx->c_zip_len);
    OCIBNDPL(pctx->curp0, pctx->c_phone_bp[0],
errhp,"c_phone",c_phone,
        SIZ(c_phone), SQLT_STR, &pctx->c_phone_len);
    OCIBNDPL(pctx->curp0, pctx->c_since_bp[0],
errhp,"c_since",&c_since,
        SIZ(OCIDate), SQLT_ODT, &pctx->c_since_len);
    OCIBNDPL(pctx->curp0, pctx->c_credit_bp[0], errhp,"c_credit",c_credit,
        SIZ(c_credit),SQLT_CHR, &pctx->c_credit_len);
    OCIBNDPL(pctx->curp0, pctx->c_credit_lim_bp[0], errhp,"c_credit_lim",
        ADR(c_credit_lim),SIZ(int), SQLT_INT, &pctx->c_credit_lim_len);
    OCIBNDPL(pctx->curp0, pctx->c_discount_bp[0], errhp,"c_discount",
        ADR(c_discount),SIZ(c_discount), SQLT_FLT, &pctx-
>c_discount_len);
#ifdef USE_IEEE_NUMBER
    OCIBNDPL(pctx->curp0, pctx->c_balance_bp[0], errhp,"c_balance",
        ADR(c_balance), SIZ(double),SQLT_BDOUBLE, &pctx-
>c_balance_len);
#else
    OCIBNDPL(pctx->curp0, pctx->c_balance_bp[0], errhp,"c_balance",
        ADR(c_balance), SIZ(double),SQLT_FLT, &pctx->c_balance_len);
#endif /* USE_IEEE_NUMBER */
    OCIBNDPL(pctx->curp0, pctx->c_data_bp[0],
errhp,"c_data",c_data,SIZ(c_data),
        SQLT_STR, &pctx->c_data_len);
/*
    OCIBNDR(pctx->curp0, pctx->h_date_bp,
errhp,"h_date",h_date,
        SQLT_STR, &pctx->h_date_ind, &pctx->h_date_len, &pctx-
>h_date_ro);
*/
    OCIBNDPL(pctx->curp0, pctx->retries_bp[0], errhp,"retry",ADR(retries),
        SIZ(int), SQLT_INT, &pctx->retries_len);
    OCIBNDPL(pctx->curp0, pctx->cr_date_bp[0],
errhp,"cr_date",ADR(cr_date),
        SIZ(OCIDate),SQLT_ODT, &pctx->cr_date_len);

/* ---- Binds for the second cursor */

    OCIBNDPL(pctx->curp1, pctx->w_id_bp[1],
errhp,"w_id",ADR(w_id),SIZ(int),
        SQLT_INT, &pctx->w_id_len);
    OCIBNDPL(pctx->curp1, pctx->d_id_bp[1],
errhp,"d_id",ADR(d_id),SIZ(int),
        SQLT_INT, &pctx->d_id_len);
    OCIBND(pctx->curp1, pctx->c_w_id_bp[1],
errhp,"c_w_id",ADR(c_w_id),SIZ(int),
        SQLT_INT);
    OCIBND(pctx->curp1, pctx->c_d_id_bp[1],
errhp,"c_d_id",ADR(c_d_id),SIZ(int),
        SQLT_INT);
    OCIBNDPL(pctx->curp1, pctx->c_id_bp[1],
errhp,"c_id",ADR(c_id),SIZ(int),

```

```

        SQLT_INT, &pctx->c_id_len);
#ifdef USE_IEEE_NUMBER
    OCIBNDPL(pctx->curp1, pctx->h_amount_bp[1],
errhp,"h_amount",ADR(h_amount),
        SIZ(double),SQLT_BDOUBLE, &pctx->h_amount_len);
#else
    OCIBNDPL(pctx->curp1, pctx->h_amount_bp[1],
errhp,"h_amount",ADR(h_amount),
        SIZ(int),SQLT_INT, &pctx->h_amount_len);
#endif /* USE_IEEE_NUMBER */
    OCIBND(pctx->curp1, pctx->c_last_bp[1],
errhp,"c_last",c_last,SIZ(c_last),
        SQLT_STR);
    OCIBNDPL(pctx->curp1, pctx->w_street_1_bp[1],
errhp,"w_street_1",w_street_1,
        SIZ(w_street_1),SQLT_STR, &pctx->w_street_1_len);
    OCIBNDPL(pctx->curp1, pctx->w_street_2_bp[1],
errhp,"w_street_2",w_street_2,
        SIZ(w_street_2),SQLT_STR, &pctx->w_street_2_len);
    OCIBNDPL(pctx->curp1, pctx->w_city_bp[1],
errhp,"w_city",w_city,SIZ(w_city),
        SQLT_STR, &pctx->w_city_len);
    OCIBNDPL(pctx->curp1, pctx->w_state_bp[1], errhp,"w_state",w_state,
        SIZ(w_state), SQLT_STR, &pctx->w_state_len);
    OCIBNDPL(pctx->curp1, pctx->w_zip_bp[1],
errhp,"w_zip",w_zip,SIZ(w_zip),
        SQLT_STR, &pctx->w_zip_len);
    OCIBNDPL(pctx->curp1, pctx->d_street_1_bp[1],
errhp,"d_street_1",d_street_1,
        SIZ(d_street_1),SQLT_STR, &pctx->d_street_1_len);
    OCIBNDPL(pctx->curp1, pctx->d_street_2_bp[1],
errhp,"d_street_2",d_street_2,
        SIZ(d_street_2),SQLT_STR, &pctx->d_street_2_len);
    OCIBNDPL(pctx->curp1, pctx->d_city_bp[1],
errhp,"d_city",d_city,SIZ(d_city),
        SQLT_STR, &pctx->d_city_len);
    OCIBNDPL(pctx->curp1, pctx->d_state_bp[1], errhp,"d_state",d_state,
        SIZ(d_state), SQLT_STR, &pctx->d_state_len);
    OCIBNDPL(pctx->curp1, pctx->d_zip_bp[1],
errhp,"d_zip",d_zip,SIZ(d_zip),
        SQLT_STR, &pctx->d_zip_len);
    OCIBNDPL(pctx->curp1, pctx->c_first_bp[1], errhp,"c_first",c_first,
        SIZ(c_first), SQLT_STR, &pctx->c_first_len);
    OCIBNDPL(pctx->curp1, pctx->c_middle_bp[1],
errhp,"c_middle",c_middle,2,
        SQLT_AFC, &pctx->c_middle_len);

    OCIBNDPL(pctx->curp1, pctx->c_street_1_bp[1],
errhp,"c_street_1",c_street_1,
        SIZ(c_street_1),SQLT_STR, &pctx->c_street_1_len);
    OCIBNDPL(pctx->curp1, pctx->c_street_2_bp[1],
errhp,"c_street_2",c_street_2,
        SIZ(c_street_2),SQLT_STR, &pctx->c_street_2_len);
    OCIBNDPL(pctx->curp1, pctx->c_city_bp[1], errhp,"c_city",c_city,
        SIZ(c_city),SQLT_STR, &pctx->c_city_len);
    OCIBNDPL(pctx->curp1, pctx->c_state_bp[1], errhp,"c_state",c_state,
        SIZ(c_state), SQLT_STR, &pctx->c_state_len);
    OCIBNDPL(pctx->curp1, pctx->c_zip_bp[1],
errhp,"c_zip",c_zip,SIZ(c_zip),
        SQLT_STR, &pctx->c_zip_len);
    OCIBNDPL(pctx->curp1, pctx->c_phone_bp[1],
errhp,"c_phone",c_phone,
        SIZ(c_phone), SQLT_STR, &pctx->c_phone_len);
    OCIBNDPL(pctx->curp1, pctx->c_since_bp[1],
errhp,"c_since",&c_since,
        SIZ(OCIDate), SQLT_ODT, &pctx->c_since_len);
    OCIBNDPL(pctx->curp1, pctx->c_credit_bp[1], errhp,"c_credit",c_credit,
        SIZ(c_credit),SQLT_CHR, &pctx->c_credit_len);
    OCIBNDPL(pctx->curp1, pctx->c_credit_lim_bp[1], errhp,"c_credit_lim",
        ADR(c_credit_lim),SIZ(int), SQLT_INT, &pctx->c_credit_lim_len);
    OCIBNDPL(pctx->curp1, pctx->c_discount_bp[1], errhp,"c_discount",
        ADR(c_discount),SIZ(c_discount), SQLT_FLT, &pctx-
>c_discount_len);
#ifdef USE_IEEE_NUMBER
    OCIBNDPL(pctx->curp1, pctx->c_balance_bp[1], errhp,"c_balance",
        ADR(c_balance), SIZ(double),SQLT_BDOUBLE, &pctx-
>c_balance_len);
#else
    OCIBNDPL(pctx->curp1, pctx->c_balance_bp[1], errhp,"c_balance",
        ADR(c_balance), SIZ(double),SQLT_FLT, &pctx->c_balance_len);
#endif /* USE_IEEE_NUMBER */
    OCIBNDPL(pctx->curp1, pctx->c_data_bp[1],
errhp,"c_data",c_data,SIZ(c_data),
        SQLT_STR, &pctx->c_data_len);
/*
    OCIBNDR(pctx->curp1, pctx->h_date_bp1,
errhp,"h_date",h_date,SIZ(h_date),
        SQLT_STR, &pctx->h_date_ind, &pctx->h_date_len, &pctx-
>h_date_ro);
*/
    OCIBNDPL(pctx->curp1, pctx->retries_bp[1], errhp,"retry",ADR(retries),
        SIZ(int), SQLT_INT, &pctx->retries_len);

```


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```

OCIBNDPL(pctx->curp1, pctx->cr_date_bp[1],
errhp,"cr_date",ADR(cr_date),
        SIZ(OCIDate),SQLT_ODT, &pctx->cr_date_len);

    return (0);
}

void DBExecution::tkvcpdone ()
{
    if(pctx) {
        free(pctx);
    }
}

int DBExecution::tkvcsinit ()
{
    text stmbuff[SQL_BUF_SIZE];
    sctx = (stoctx *)malloc(sizeof(stoctx));
    memset(sctx,(char)0,sizeof(stoctx));

    sctx->norow=0;

    OCIERROR(errhp,
        OCIHandleAlloc(tpcenv,(dvoid**)&sctx-
>curs,OCI_HTYPE_STMT,0,(dvoid**)0));
    sprintf ((char *) stmbuff, SQLTXTSTO);
    OCIERROR(errhp,OCIStmtPrepare(sctx->curs,errhp,stmbuff,strlen((char
*)stmbuff),
                                OCI_NTV_SYNTAX,OCI_DEFAULT));
    #ifndef PLSQLSTO
    OCIERROR(errhp,
        OCIAttrSet(sctx->curs,OCI_HTYPE_STMT,(dvoid*)&sctx->norow,0,
        OCI_ATTR_PREFETCH_ROWS,errhp));
    #endif

    /* bind variables */

    OCIBND(sctx->curs,sctx->w_id_bp,errhp, "w_id", ADR(w_id),sizeof(int),
        SQLT_INT);
    OCIBND(sctx->curs,sctx->d_id_bp,errhp, "d_id", ADR(d_id),sizeof(int),
        SQLT_INT);
    #ifdef USE_IEEE_NUMBER
    OCIBND(sctx->curs,sctx->threshold_bp,errhp, "threshold",
    ADR(threshold),
        sizeof(double),SQLT_Bdouble);
    #else
    OCIBND(sctx->curs,sctx->threshold_bp,errhp, "threshold",
    ADR(threshold),
        sizeof(int),SQLT_INT);
    #endif /* USE_IEEE_NUMBER */
    #ifndef PLSQLSTO
    OCIBND(sctx->curs,sctx->low_stock_bp,errhp,"low_stock" ,
    ADR(low_stock),
        sizeof(int), SQLT_INT);
    #else
    OCIDEFINE(sctx->curs,sctx->low_stock_bp,errhp, 1, ADR(low_stock),
    sizeof(int), SQLT_INT);
    #endif

    return (0);
}

void DBExecution::tkvcsdone ()
{
    if(sctx) free(sctx);
}

/*****
*****
* tkvcn tkvcd tkvcp tkvco tkvcs
*****
*****/

int DBExecution::tkvcn ()
{
    int i;
    int rcount;

    retry:

    status = 0;          /* number of invalid items */

    /* get number of order lines, and check if all are local */

    o_ol_cnt = NITEMS;
    o_all_local = 1;
    for (i = 0; i < NITEMS; i++) {
        if (nol_i_id[i] == 0) {
            o_ol_cnt = i;
            break;
        }
        if (nol_supply_w_id[i] != w_id) {
            #ifdef USE_IEEE_NUMBER
            nctx->s_remote[i] = 1.0;
            #else
            nctx->s_remote[i] = 1;
            #endif /* USE_IEEE_NUMBER */
            o_all_local = 0;
        }
        else
            nctx->s_remote[i] = 0;
    }

    nctx->w_id_len = sizeof(w_id);
    nctx->d_id_len = sizeof(d_id);
    nctx->c_id_len = sizeof(c_id);
    nctx->o_all_local_len = sizeof(o_all_local);
    nctx->o_ol_cnt_len = sizeof(o_ol_cnt);
    nctx->w_tax_len = 0;
    nctx->d_tax_len = 0;
    nctx->o_id_len = sizeof(o_id);
    nctx->c_discount_len = 0;
    nctx->c_credit_len = 0;
    nctx->c_last_len = 0;
    nctx->retries_len = sizeof(retries);
    nctx->cr_date_len = sizeof(cr_date);
    /* this is the row count */
    rcount = o_ol_cnt;
    nctx->nol_i_count = o_ol_cnt;
    nctx->nol_q_count = o_ol_cnt;
    nctx->nol_s_count = o_ol_cnt;
    nctx->s_remote_count = o_ol_cnt;

    nctx->nol_qty_count = 0;
    nctx->nol_bg_count = 0;
    nctx->nol_item_count = 0;
    nctx->nol_name_count = 0;
    nctx->nol_am_count = 0;

    /* initialization for array operations */
    for (i = 0; i < o_ol_cnt; i++) {
        nctx->ol_number[i] = i + 1;
        nctx->nol_i_id_len[i] = sizeof(int);
        nctx->nol_supply_w_id_len[i] = sizeof(int);
        nctx->nol_quantity_len[i] = sizeof(int);
        nctx->nol_amount_len[i] = sizeof(int);
        nctx->ol_o_id_len[i] = sizeof(int);
        nctx->ol_number_len[i] = sizeof(int);
        nctx->ol_dist_info_len[i] = nctx->s_dist_info_len[i];
        nctx->s_remote_len[i] = sizeof(int);
        nctx->s_quant_len[i] = sizeof(int);
        nctx->i_name_len[i]=0;
        nctx->s_bg_len[i] = 0;
    }
    for (i = o_ol_cnt; i < NITEMS; i++) {

        nctx->nol_i_id_len[i] = 0;
        nctx->nol_supply_w_id_len[i] = 0;
        nctx->nol_quantity_len[i] = 0;
        nctx->nol_amount_len[i] = 0;
        nctx->ol_o_id_len[i] = 0;
        nctx->ol_number_len[i] = 0;
        nctx->ol_dist_info_len[i] = 0;
        nctx->s_remote_len[i] = 0;
        nctx->s_quant_len[i] = 0;
        nctx->i_name_len[i]=0;
        nctx->s_bg_len[i] = 0;
    }

    execstatus = OCIStmtExecute(tpcsvc,nctx->curp1,errhp,1,0,0,0,
        OCI_DEFAULT |
OCI_COMMIT_ON_SUCCESS);

    if(execstatus != OCI_SUCCESS) {
        OCITransRollback(tpcsvc,errhp,OCI_DEFAULT);
        errcode = OCIERROR(errhp,execstatus);
        if(errcode == NOT_SERIALIZABLE) {
            retries++;
            goto retry;
        } else if (errcode == RECOVER) {
            retries++;
            goto retry;
        } else if (errcode == SNAPSHOT_TOO_OLD) {

```

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```

        retries++;
        goto retry;
    } else {
        return -1;
    }
}

/* did the txn succeed ? */
if (rcount != o_ol_cnt)
{
    status = rcount - o_ol_cnt;
    o_ol_cnt = rcount;
}

total_amount = 0;
for (i = 0; i < o_ol_cnt; i++) total_amount += nol_amount[i];
total_amount *= ((double)(1.0 - c_discount)) *
    (double)(1.0 + (double)(d_tax) + (double)(w_tax));
total_amount = total_amount/100;

return (0);
}

int DBExecution::tkvcd (int plsqliflag)
{
    int i;
    int rpc,rcount;
    int invalid;

    if (plsqliflag)
    {
        pldctx->w_id_len = sizeof (int);
        pldctx->carrier_id_len = sizeof (int);
        for (i = 0; i < NDISTS; i++)
        {
            pldctx->del_o_id_len[i] = sizeof(int);
            del_o_id[i] = 0;
        }
        pldctx->del_date_len = DEL_DATE_LEN;
        DISCARD memcpy(&pldctx->del_date,&cr_date,sizeof(OCIDate));

        pldctx->retry=0;

        DISCARD OCIERROR(errhp,
            OCISmtExecute(tpcsvc,pldctx->curp2,errhp,1,0,NULLP(CONST
OCISnapshot),
            NULLP(OCISnapshot),OCI_DEFAULT));
        for (i = 0; i < NDISTS; i++)
        {
            del_o_id[i] = 0;
        }
        for (i = 0; i < (int)pldctx->del_o_id_rcnt; i++)
            del_o_id[pldctx->del_d_id[i] - 1] = pldctx->del_o_id[i];
    }
    else
    {
        retry:

        invalid = 0;

        /* initialization for array operations */

        for (i = 0; i < NDISTS; i++)
        {
            dctx->del_o_id_ind[i] = TRUE;
            dctx->d_id_ind[i] = TRUE;
            dctx->c_id_ind[i] = TRUE;
            dctx->del_date_ind[i] = TRUE;
            dctx->carrier_id_ind[i] = TRUE;
            dctx->amt_ind[i] = TRUE;

            dctx->del_o_id_len[i] = SIZ(dctx->del_o_id[0]);
            dctx->w_id_len[i] = SIZ(dctx->w_id[0]);
            dctx->d_id_len[i] = SIZ(dctx->d_id[0]);
            dctx->c_id_len[i] = SIZ(dctx->c_id[0]);
            dctx->del_date_len[i] = DEL_DATE_LEN;
            dctx->carrier_id_len[i] = SIZ(dctx->carrier_id[0]);
            dctx->amt_len[i] = SIZ(dctx->amt[0]);

            dctx->w_id[i] = w_id;
            dctx->d_id[i] = i+1;
            dctx->carrier_id[i] = o_carrier_id;
            memcpy(&dctx->del_date[i],&cr_date,sizeof(OCIDate));
        }

        memset(actx.char0,sizeof(amtctx));
    }
}

```

```

/* array select from new_order and orders tables */

execstatus=OCISmtExecute(tpcsvc,dctx->curd1,errhp,NDISTS,0,
    NULLP(CONST
OCISnapshot),NULLP(OCISnapshot),OCI_DEFAULT);
if((execstatus != OCI_SUCCESS) && (execstatus != OCI_NO_DATA))
{
    DISCARD OCITransRollback(tpcsvc,errhp,OCI_DEFAULT);
    errcode = OCIERROR(errhp,execstatus);
    if(errcode == NOT_SERIALIZABLE)
    {
        retries++;
        goto retry;
    }
    else if (errcode == RECOVER)
    {
        retries++;
        goto retry;
    }
    else if (errcode == SNAPSHOT_TOO_OLD)
    {
        retries++;
        goto retry;
    }
    else
    {
        return -1;
    }
}

/* mark districts with no new order */
DISCARD OCIAttrGet(dctx-
>curd1,OCI_HTYPE_STMT,&rcount,NULLP(ub4),
    OCI_ATTR_ROW_COUNT,errhp);

rpc = rcount;
if (rcount != NDISTS )
{
    int j = 0;
    for (i=0;i < NDISTS; i++)
    {
        if (dctx->del_o_id_ind[i] == 0) /* there is data here */
            j++;
        else
            shiftdata(j);
    }
}

execstatus=OCISmtExecute(tpcsvc,dctx->curd3,errhp,rpc,0,
    NULLP(CONST
OCISnapshot),NULLP(OCISnapshot),OCI_DEFAULT);
if((execstatus != OCI_SUCCESS)
{
    DISCARD OCITransRollback(tpcsvc,errhp,OCI_DEFAULT);
    errcode = OCIERROR(errhp,execstatus);
    if(errcode == NOT_SERIALIZABLE)
    {
        retries++;
        goto retry;
    }
    else if (errcode == RECOVER)
    {
        retries++;
        goto retry;
    }
    else if (errcode == SNAPSHOT_TOO_OLD)
    {
        retries++;
        goto retry;
    }
    else
    {
        return -1;
    }
}

DISCARD OCIAttrGet(dctx-
>curd3,OCI_HTYPE_STMT,&rcount,NULLP(ub4),
    OCI_ATTR_ROW_COUNT,errhp);

if (rcount != rpc)
{
    userlog ("Error in TPC-C server %d: %d rows selected, %d ords
updated\n",
        proc_no, rpc, rcount);
    DISCARD OCITransRollback(tpcsvc,errhp,OCI_DEFAULT);
    return (-1);
}

/* array update of order_line table */
execstatus=OCISmtExecute(tpcsvc,dctx->curd4,errhp,rpc,0,
    NULLP(CONST
OCISnapshot),NULLP(OCISnapshot),OCI_DEFAULT);

```

```

if(execstatus != OCI_SUCCESS)
{
    DISCARD OCITransRollback(tpcsvc, errhp, OCI_DEFAULT);
    errcode = OCIERROR(errhp, execstatus);
    if(errcode == NOT_SERIALIZABLE)
    {
        retries++;
        goto retry;
    }
    else if (errcode == RECOVERR)
    {
        retries++;
        goto retry;
    }
    else if (errcode == SNAPSHOT_TOO_OLD)
    {
        retries++;
        goto retry;
    }
    else
    {
        return -1;
    }
}
DISCARD OCIAAttrGet(dctx->curd4, OCI_HTYPE_STMT, &rcount, NULLP(ub4),
    OCI_ATTR_ROW_COUNT, errhp);
/* transfer amounts */
for (i=0; i<rpc; i++)
{
    dctx->amt[i]=0;
    if (actx->ol_amt_rcode[i] == 0)
    {
        dctx->amt[i] = actx->ol_amt[i];
    }
}
#ifdef OLD
if (rcount > rpc) {
    userlog
    ("Error in TPC-C server %d: %d ordnrs updated, %d ordl
updated\n",
    proc_no, rpc, rcount);
}
#endif

/* array update of customer table */
execstatus=OCISmtExecute(tpcsvc, dctx->curd6, errhp, rpc, 0,
    NULLP(CONST OCISnapshot), NULLP(OCISnapshot),
    OCI_COMMIT_ON_SUCCESS | OCI_DEFAULT);

if(execstatus != OCI_SUCCESS)
{
    OCITransRollback(tpcsvc, errhp, OCI_DEFAULT);
    errcode = OCIERROR(errhp, execstatus);
    if(errcode == NOT_SERIALIZABLE)
    {
        retries++;
        goto retry;
    }
    else if (errcode == RECOVERR)
    {
        retries++;
        goto retry;
    }
    else if (errcode == SNAPSHOT_TOO_OLD)
    {
        retries++;
        goto retry;
    }
    else
    {
        return -1;
    }
}

DISCARD OCIAAttrGet(dctx->curd6, OCI_HTYPE_STMT, &rcount, NULLP(ub4),
    OCI_ATTR_ROW_COUNT, errhp);

if (rcount != rpc) {
    userlog ("Error in TPC-C server %d: %d rows selected, %d cust
updated\n",
    proc_no, rpc, rcount);
    DISCARD OCITransRollback(tpcsvc, errhp, OCI_DEFAULT);
    return (-1);
}

/* return o_id's in district id order */

for (i = 0; i < NDISTS; i++)
    del_o_id[i] = 0;
for (i = 0; i < rpc; i++)
    del_o_id[dctx->d_id[i] - 1] = dctx->del_o_id[i];
}
return (0);
}

int DBExecution::tkvco ()
{
    int i;
    int rcount;

#ifdef ISO9
    int secondread = 0;
    char sdate[30];
    ub4 datelen;
    sysdate(sdate);
    printf("Order Status started at: %s\n", sdate);
#endif

    for (i = 0; i < NITEMS; i++) {
        octx->ol_supply_w_id_len[i] = sizeof(int);
        octx->ol_i_id_len[i] = sizeof(int);
        octx->ol_quantity_len[i] = sizeof(int);
        octx->ol_amount_len[i] = sizeof(int);
        octx->ol_delivery_d_len[i] = sizeof(OCIDate);
    }
    octx->ol_supply_w_id_csize = NITEMS;
    octx->ol_i_id_csize = NITEMS;
    octx->ol_quantity_csize = NITEMS;
    octx->ol_amount_csize = NITEMS;
    octx->ol_delivery_d_csize = NITEMS;
    retry:
    if (bylastname)
    {
        cbctx.reexec = FALSE;
        execstatus=OCISmtExecute(tpcsvc, octx->curo0, errhp, 100, 0,
            NULLP(CONST
            OCISnapshot), NULLP(OCISnapshot), OCI_DEFAULT);
        /* will get OCI_NO_DATA if <100 found */
        if ((execstatus != OCI_NO_DATA) && (execstatus != OCI_SUCCESS))
        {
            errcode=OCIERROR(errhp, execstatus);
            if((errcode == NOT_SERIALIZABLE) || (errcode == RECOVERR))
            {
                DISCARD OCITransCommit(tpcsvc, errhp, OCI_DEFAULT);
                retries++;
                goto retry;
            }
            else {
                return -1;
            }
        }
        if (execstatus == OCI_NO_DATA) /* there are no more rows */
        {
            /* get rowcount, find middle one */
            DISCARD OCIAAttrGet(octx->curo0, OCI_HTYPE_STMT, &rcount, NULL,
                OCI_ATTR_ROW_COUNT, errhp);
            if (rcount < 1)
            {
                /*
                userlog("ORDERSTATUS
                rcount=%d\n", rcount);
                */
                return (-1);
            }
            octx->cust_idx=(rcount)/2 ;
        }
        else
        {
            /* count the number of rows */
            execstatus=OCISmtExecute(tpcsvc, octx->curo4, errhp, 1, 0,
                NULLP(CONST
                OCISnapshot), NULLP(OCISnapshot), OCI_DEFAULT);
            if ((execstatus != OCI_NO_DATA) && (execstatus !=
                OCI_SUCCESS))
            {
                errcode=OCIERROR(errhp, execstatus);
                if ((errcode == NOT_SERIALIZABLE) || (errcode ==
                RECOVERR))
                {
                    DISCARD OCITransCommit(tpcsvc, errhp, OCI_DEFAULT);
                    retries++;
                    goto retry;
                }
                else {
                    return -1;
                }
            }
            cbctx.reexec = TRUE;
            cbctx.count = (octx->rcount+1)/2 ;
            execstatus=OCISmtExecute(tpcsvc, octx->curo0, errhp, cbctx.count,

```

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```

0,NULLP(CONST OCISnapshot),
NULLP(OCISnapshot),OCI_DEFAULT);

DISCARD OCIAAttrGet(octx-
>curo0,OCI_HTYPE_STMT,&rcount,NULL,
OCI_ATTR_ROW_COUNT,errhp);

/* will get OCI_NO_DATA if <100 found */
if ((int)cbctx.count != rcount)
{
/*
userlog ("did not get all rows");
*/
return (-1);
}

if ((execstatus != OCI_NO_DATA) && (execstatus !=
OCI_SUCCESS))
{
errcode=OCIERROR(errhp, execstatus);
if((errcode == NOT_SERIALIZABLE) || (errcode == RECOVER))
{
DISCARD OCITransCommit(tpcsvc,errhp,OCI_DEFAULT);
retries++;
goto retry;
} else {
return -1;
}
}
octx->cust_idx=cbctx.count - 1 ;
}

octx->c_rowid_cust = octx->c_rowid_ptr[octx->cust_idx];
execstatus=OCISmttExecute(tpcsvc,octx->curo1,errhp,1,0,
NULLP(CONST
OCISnapshot),NULLP(OCISnapshot),OCI_DEFAULT);
if (execstatus != OCI_SUCCESS)
{
errcode=OCIERROR(errhp,execstatus);
DISCARD OCITransCommit(tpcsvc,errhp,OCI_DEFAULT);
if((errcode == NOT_SERIALIZABLE) || (errcode == RECOVER))
|| (errcode == SNAPSHOT_TOO_OLD))
{
retries++;
goto retry;
} else {
return -1;
}
}
} else
{
execstatus=OCISmttExecute(tpcsvc,octx->curo2,errhp,1,0,
NULLP(CONST OCISnapshot),NULLP(OCISnapshot),
OCI_DEFAULT);
if (execstatus != OCI_SUCCESS)
{
errcode=OCIERROR(errhp,execstatus);
DISCARD OCITransCommit(tpcsvc,errhp,OCI_DEFAULT);
if((errcode == NOT_SERIALIZABLE) || (errcode == RECOVER))
|| (errcode == SNAPSHOT_TOO_OLD))
{
retries++;
goto retry;
} else
{
return -1;
}
}
}
#endif ISO9
sysdate (sdate);
if (!secondread)
printf ("----- FIRST READ RESULT (out) %s -----\\n", sdate);
else
printf ("----- SECOND READ RESULT (out) %s -----\\n", sdate);

printf ("c_id = %d\\n", c_id);
printf ("c_last = %s\\n", c_last);
printf ("c_first = %s\\n", c_first);
printf ("c_middle = %s\\n", c_middle);
printf ("c_balance = %7.2f\\n", (double)c_balance/100);
printf ("o_id = %d\\n", o_id);
datelen = sizeof(o_entry_d);

OCIERROR(errhp,OCIDateToText(errhp,&o_entry_d_base,(text*)FULLDA
TE,SIZ(FULLDATE),(text*)0,0,&datelen,o_entry_d));
printf ("o_entry_d = %s\\n", o_entry_d);
printf ("o_carrier_id = %d\\n", o_carrier_id);
printf ("o_ol_cnt = %d\\n", o_ol_cnt);
printf ("-----\\n\\n", sdate);

if (!secondread) {
printf ("Sleep before re-read order at: %s\\n", sdate);
sleep (30);
sysdate (sdate);
printf ("Wake up and reread at: %s\\n", sdate);
secondread = 1;
goto retry;
}
}
#endif /* ISO9 */
}

octx->ol_w_id_len = sizeof(int);
octx->ol_d_id_len = sizeof(int);
octx->ol_o_id_len = sizeof(int);

execstatus = OCISmttExecute(tpcsvc,octx->curo3,errhp,o_ol_cnt,0,
NULLP(CONST OCISnapshot),NULLP(OCISnapshot),
OCI_DEFAULT | OCI_COMMIT_ON_SUCCESS);
if (execstatus != OCI_SUCCESS )
{
errcode=OCIERROR(errhp,execstatus);
DISCARD OCITransCommit(tpcsvc,errhp,OCI_DEFAULT);
if((errcode == NOT_SERIALIZABLE) || (errcode == RECOVER))
|| (errcode == SNAPSHOT_TOO_OLD))
{
retries++;
goto retry;
}
else
{
return -1;
}
}

/* clean up and convert the delivery dates */
for (i = 0; i < o_ol_cnt; i++)
{
ol_del_len[i]=sizeof(ol_delivery_d[i]);
DISCARD OCIERROR(errhp,OCIDateToText(errhp,&ol_d_base[i],
(const text*)SHORTDATE,(ub1)strlen(SHORTDATE),(text*)0,0,
&ol_del_len[i], ol_delivery_d[i]));
/*
cvtdmy(ol_d_base[i],ol_delivery_d[i]);
*/
}

return (0);
}

int DBExecution::tkvcp ()
{
retry:

pctx->w_id_len = SIZ(w_id);
pctx->d_id_len = SIZ(d_id);
pctx->c_w_id_len = 0;
pctx->c_d_id_len = 0;
pctx->c_id_len = 0;
pctx->h_amount_len = SIZ(h_amount);
pctx->c_last_len = SIZ(c_last);
pctx->w_street_1_len = 0;
pctx->w_street_2_len = 0;
pctx->w_city_len = 0;
pctx->w_state_len = 0;
pctx->w_zip_len = 0;
pctx->d_street_1_len = 0;
pctx->d_street_2_len = 0;
pctx->d_city_len = 0;
pctx->d_state_len = 0;
pctx->d_zip_len = 0;
pctx->c_first_len = 0;
pctx->c_middle_len = 0;
pctx->c_street_1_len = 0;
pctx->c_street_2_len = 0;
pctx->c_city_len = 0;
pctx->c_state_len = 0;
pctx->c_zip_len = 0;
pctx->c_phone_len = 0;
pctx->c_since_len = 0;
pctx->c_credit_len = 0;
pctx->c_credit_lim_len = 0;
pctx->c_discount_len = 0;
pctx->c_balance_len = sizeof(double);
pctx->c_data_len = 0;
pctx->h_date_len = 0;
pctx->retries_len = SIZ(retries);
pctx->cr_date_len = 7;

w_street_1[0]='\0';

```

```

w_street_2[0]='\0';
w_city[0]='\0';
w_state[0]='\0';
w_zip[0]='\0';
c_first[0]='\0';
c_middle[0]='\0';
c_street_1[0]='\0';
c_street_2[0]='\0';
c_city[0]='\0';
c_state[0]='\0';
c_zip[0]='\0';
c_phone[0]='\0';
c_credit[0]='\0';
c_credit_lim=0;
c_discount=0.0;
c_balance=0.0;
c_data[0]='\0';
d_street_1[0]='\0';
d_street_2[0]='\0';
d_city[0]='\0';
d_state[0]='\0';
d_zip[0]='\0';

if (bylastname)
    c_id=0;
else
    c_last[0]='\0';

if(bylastname) {
    execstatus=OCIStmtExecute(tpcsvc,pctx->curp1,errhp,1,0,
        NULLP(CONST OCISnapshot),NULLP(OCISnapshot),
        OCI_DEFAULT|OCI_COMMIT_ON_SUCCESS);
} else {
    execstatus=OCIStmtExecute(tpcsvc,pctx->curp0,errhp,1,0,
        NULLP(CONST OCISnapshot),NULLP(OCISnapshot),
        OCI_DEFAULT|OCI_COMMIT_ON_SUCCESS);
}

if(execstatus != OCI_SUCCESS) {
    OCITransRollback(tpcsvc,errhp,OCI_DEFAULT);
    errcode = OCIERROR(errhp,execstatus);
    if(errcode == NOT_SERIALIZABLE) {
        retries++;
        goto retry;
    } else if (errcode == RECOVER) {
        retries++;
        goto retry;
    } else if (errcode == SNAPSHOT_TOO_OLD) {
        retries++;
        goto retry;
    } else {
        return -1;
    }
}
return 0;
}

int DBExecution::tkvcs ()
{
    retry:

    execstatus= OCIStmtExecute(tpcsvc,sctx->curs,errhp,1,0,0,0,
        OCI_COMMIT_ON_SUCCESS | OCI_DEFAULT);

    if (execstatus != OCI_SUCCESS)
    {
        errcode=OCIERROR(errhp,execstatus);
        OCITransCommit(tpcsvc,errhp,OCI_DEFAULT);
        if((errcode == NOT_SERIALIZABLE) || (errcode == RECOVER)
            || (errcode == SNAPSHOT_TOO_OLD))
        {
            retries++;
            goto retry;
        } else {
            return -1;
        }
    }

    return (0);
}

/*****
*****
* TPCnew TPCpay TPCdel TPCord TPCsto
*
*****
*****/

int DBExecution::TPCnew (struct newstruct *str)
{
    int i;

    w_id = str->newin.w_id;
    d_id = str->newin.d_id;
    c_id = str->newin.c_id;
    for (i = 0; i < 15; i++) {
        nol_i_id[i] = str->newin.ol_i_id[i];
        nol_supply_w_id[i] = str->newin.ol_supply_w_id[i];
        nol_quantity[i] = str->newin.ol_quantity[i];
    }
    retries = 0;

#ifdef AVOID_DEADLOCK

    for (i = NITEMS; i > 0; i--) {
        if (nol_i_id[i-1] > 0) {
            ordl_cnt = i;
            break;
        }
    }

    for (i = 0; i < NITEMS; i++) indx[i] = i;

    q_sort(nol_i_id, str, 0, ordl_cnt-1);

#endif

    /*
    vgetdate(cr_date); */

    OCIERROR(errhp,OCIDateSysDate(errhp,&cr_date));

    if (str->newout.terror != tkvcn ()) {
        if (str->newout.terror != RECOVER)
            str->newout.terror = IRECERR;
        return (-1);
    }

    /* fill in date for o_entry_d from time in beginning of txn*/
    /*
    cvtdmyhms(cr_date,o_entry_d);
    */
    datelen = sizeof(o_entry_d);
    OCIERROR(errhp,

    OCIDateToText(errhp,&cr_date,(text*)FULLDATE,SIZ(FULLDATE),(text*)
    0,0,

        &datelen,o_entry_d));

    str->newout.terror = NOERR;
    str->newout.o_id = o_id;
    str->newout.o_ol_cnt = o_ol_cnt;
    strncpy (str->newout.c_last, c_last, 17);
    strncpy (str->newout.c_credit, c_credit, 3);
    str->newout.c_discount = c_discount;
    str->newout.w_tax = (double)(w_tax);
    str->newout.d_tax = (double)(d_tax);
    strncpy (str->newout.o_entry_d, (char*)o_entry_d, 20);
    str->newout.total_amount = total_amount;
    for (i = 0; i < o_ol_cnt; i++) {
        strncpy (str->newout.i_name[i], i_name[i], 25);
        str->newout.brand_generic[i] = brand_generic[i][0];
#ifdef USE_IEEE_NUMBER
        str->newout.s_quantity[i] = (int) s_quantity[i];
        str->newout.i_price[i] = i_price[i]/100;
        str->newout.ol_amount[i] = nol_amount[i]/100;
#else
        str->newout.s_quantity[i] = s_quantity[i];
        str->newout.i_price[i] = (double)(i_price[i])/100;
        str->newout.ol_amount[i] = (double)(nol_amount[i])/100;
#endif /* USE_IEEE_NUMBER */
    }

#ifdef AVOID_DEADLOCK
    q_sort(indx, str, 0, ordl_cnt-1);
#endif

    if (status)
        strcp (str->newout.status, "Item number is not valid");
    else
        str->newout.status[0] = '\0';
    str->newout.retry = retries;
    return(1);
}

```

```

int DBExecution::TPCpay (struct paystruct *str)
{
    w_id = str->payin.w_id;
    d_id = str->payin.d_id;
    c_w_id = str->payin.c_w_id;
    c_d_id = str->payin.c_d_id;
#ifdef USE_IEEE_NUMBER
    h_amount = (double) str->payin.h_amount;
#else
    h_amount = str->payin.h_amount;
#endif /* USE_IEEE_NUMBER */
    bylastname = str->payin.bylastname;

    /*
    vgetdate(cr_date); */
    OCIERROR(errhp,OCIDateSysDate(errhp,&cr_date));

    if (bylastname) {
        c_id = 0;
        strncpy (c_last, str->payin.c_last, 17);
    }
    else {
        c_id = str->payin.c_id;
        strcpy (c_last, " ");
    }
    retries = 0;

    if (str->payout.error == tkvcp ()) {
        if (str->payout.error != RECOVER)
            str->payout.error = IRRECERR;
        return (-1);
    }

    /*
    cvtdmyhms(cr_date,h_date);
    */
    hlen=SIZE(h_date);
    OCIERROR(errhp,OCIDateToText(errhp,&cr_date,
        (text*)FULLDATE,strlen(FULLDATE),(text*)0,0,&hlen,h_date));

    /*
    cvtdmy(c_since,c_since_d);
    */
    sincelen=SIZE(c_since_d);
    OCIERROR(errhp,OCIDateToText(errhp,&c_since,
        (text*)SHORTDATE,strlen(SHORTDATE),(text*)0,0,&sincelen,c_since_d));

    str->payout.error = NOERR;
    strncpy (str->payout.w_street_1, w_street_1, 21);
    strncpy (str->payout.w_street_2, w_street_2, 21);
    strncpy (str->payout.w_city, w_city, 21);
    strncpy (str->payout.w_state, w_state, 3);
    strncpy (str->payout.w_zip, w_zip, 10);
    strncpy (str->payout.d_street_1, d_street_1, 21);
    strncpy (str->payout.d_street_2, d_street_2, 21);
    strncpy (str->payout.d_city, d_city, 21);
    strncpy (str->payout.d_state, d_state, 3);
    strncpy (str->payout.d_zip, d_zip, 10);
    str->payout.c_id = c_id;
    strncpy (str->payout.c_first, c_first, 17);
    strncpy (str->payout.c_middle, c_middle, 3);
    strncpy (str->payout.c_last, c_last, 17);
    strncpy (str->payout.c_street_1, c_street_1, 21);
    strncpy (str->payout.c_street_2, c_street_2, 21);
    strncpy (str->payout.c_city, c_city, 21);
    strncpy (str->payout.c_state, c_state, 3);
    strncpy (str->payout.c_zip, c_zip, 10);
    strncpy (str->payout.c_phone, c_phone, 17);
    strncpy (str->payout.c_since, (char*)c_since_d, 11);
    strncpy (str->payout.c_credit, c_credit, 3);
    str->payout.c_credit_lim = (double)(c_credit_lim)/100;
    str->payout.c_discount = c_discount;
    str->payout.c_balance = (double)(c_balance)/100;
    strncpy (str->payout.c_data, c_data, 201);
    strncpy (str->payout.h_date, (char*)h_date, 20);
    str->payout.retry = retries;
    return(1);
}

int DBExecution::TPCord (struct ordstruct *str)
{

```

```

    int i;
    w_id = str->ordin.w_id;
    d_id = str->ordin.d_id;
    bylastname = str->ordin.bylastname;
    if (bylastname) {
        c_id = 0;
        strncpy (c_last, str->ordin.c_last, 17);
    }
    else {
        c_id = str->ordin.c_id;
        strcpy (c_last, " ");
    }
    retries = 0;

    if (str->ordout.error == tkvco ()) {
        if (str->ordout.error != RECOVER)
            str->ordout.error = IRRECERR;
        return (-1);
    }

    datelen = sizeof(o_entry_d);
    OCIERROR(errhp,

    OCIDateToText(errhp,&o_entry_d_base,(text*)FULLDATE,SIZE(FULLDATE),
    (text*)0,0,
        &datelen,o_entry_d));

    str->ordout.error = NOERR;
    str->ordout.c_id = c_id;
    strncpy (str->ordout.c_last, c_last, 17);
    strncpy (str->ordout.c_first, c_first, 17);
    strncpy (str->ordout.c_middle, c_middle, 3);
    str->ordout.c_balance = c_balance/100;
    str->ordout.o_id = o_id;
    strncpy (str->ordout.o_entry_d, (char*)o_entry_d, 20);
    if (o_carrier_id == 11)
        str->ordout.o_carrier_id = 0;
    else
        str->ordout.o_carrier_id = o_carrier_id;
    str->ordout.o_ol_cnt = o_ol_cnt;
    for (i = 0; i < o_ol_cnt; i++) {
        ol_delivery_d[i][10] = '0';
        if (!strcmp((char*)ol_delivery_d[i],"15-09-1911"))
            strncpy((char*)ol_delivery_d[i],"NOT DELIVR",10);
        str->ordout.ol_supply_w_id[i] = ol_supply_w_id[i];
        str->ordout.ol_i_id[i] = ol_i_id[i];
#ifdef USE_IEEE_NUMBER
        str->ordout.ol_quantity[i] = (int) ol_quantity[i];
        str->ordout.ol_amount[i] = ol_amount[i]/100;
#else
        str->ordout.ol_quantity[i] = ol_quantity[i];
        str->ordout.ol_amount[i] = (double)(ol_amount[i])/100;
#endif /* USE_IEEE_NUMBER */
        strncpy (str->ordout.ol_delivery_d[i], (char*)ol_delivery_d[i], 11);
    }
    str->ordout.retry = retries;
    return(1);
}

int DBExecution::TPCdel (struct delstruct *str)
{
    int i;

    w_id = str->delin.w_id;
    o_carrier_id = str->delin.o_carrier_id;
    retries = 0;

    /*
    vgetdate(cr_date); */
    OCIERROR(errhp,OCIDateSysDate(errhp,&cr_date));

    if (str->delout.error == tkvcd (str->delin.plsqlflag)) {
        if (str->delout.error == DEL_ERROR)
            return DEL_ERROR;
        if (str->delout.error != RECOVER)
            str->delout.error = IRRECERR;
        return (-1);
    }

    for (i = 0; i < 10; i++) {
        if (del_o_id[i] <= 0) {
            userlog ("DELIVERY: no new order for w_id: %d, d_id %d\n",
                w_id, i + 1);
        }
    }
    str->delout.error = NOERR;
    str->delout.retry = retries;
    return(1);
}

```

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```

int DBExecution::TPCsto (struct stostruct *str)
{
    w_id = str->stoin.w_id;
    d_id = str->stoin.d_id;
    #ifdef USE_IEEE_NUMBER
        threshold = (double) str->stoin.threshold;
    #else
        threshold = str->stoin.threshold;
    #endif /* USE_IEEE_NUMBER */
    retries = 0;

    if (str->stoout.error == tkvcs ()) {
        if (str->stoout.error != RECOVERR)
            str->stoout.error = IRRECERR;
        return (-1);
    }

    str->stoout.error = NOERR;
    str->stoout.low_stock = low_stock;
    str->stoout.retry = retries;
    return(1);
}

#ifdef AVOID_DEADLOCK

void DBExecution::q_sort(int *arr,struct newstruct *str,int left, int right)
{
    int i, last;

    if(left >= right)
        return;
    swap(str,left,(left+right)/2);
    last = left;
    for(i=left+1;i<=right;i++)
        if(arr[i] < arr[left])
            swap(str,last,i);
    swap(str,left,last);
    q_sort(arr,str,left,last-1);
    q_sort(arr,str,last+1,right);
}

void DBExecution::swap(struct newstruct *str, int i, int j)
{
    int temp;
    double tmpf;
    char tmpstr[25];
    char tmpch;
    #ifdef USE_IEEE_NUMBER
        double temp_double;
    #endif;

    temp = indxi[i];
    indxi[i] = indxi[j];
    indxi[j] = temp;

    temp = nol_i_id[i];
    nol_i_id[i] = nol_i_id[j];
    nol_i_id[j] = temp;

    temp = nol_supply_w_id[i];
    nol_supply_w_id[i] = nol_supply_w_id[j];
    nol_supply_w_id[j] = temp;

    #ifdef USE_IEEE_NUMBER
        temp_double = nol_quantity[i];
        nol_quantity[i] = nol_quantity[j];
        nol_quantity[j] = temp_double;

        temp_double = str->newout.i_price[i];
        str->newout.i_price[i] = str->newout.i_price[j];
        str->newout.i_price[j] = temp_double;

        temp_double = str->newout.ol_amount[i];
        str->newout.ol_amount[i] = str->newout.ol_amount[j];
        str->newout.ol_amount[j] = temp_double;

        temp_double = (double)str->newout.s_quantity[i];
        str->newout.s_quantity[i] = str->newout.s_quantity[j];
        str->newout.s_quantity[j] = (int)temp_double;
    #else
        temp = nol_quantity[i];
        nol_quantity[i] = nol_quantity[j];
        nol_quantity[j] = temp;

        tmpf = str->newout.i_price[i];
        str->newout.i_price[i] = str->newout.i_price[j];
        str->newout.i_price[j] = tmpf;

        temp = str->newout.ol_amount[i];
        str->newout.ol_amount[i] = str->newout.ol_amount[j];
        str->newout.ol_amount[j] = temp;

        temp = str->newout.s_quantity[i];
        str->newout.s_quantity[i] = str->newout.s_quantity[j];
        str->newout.s_quantity[j] = temp;
    #endif /* USE_IEEE_NUMBER */

    strncpy(tmpstr,str->newout.i_name[i], 25);
    strncpy(str->newout.i_name[i],str->newout.i_name[j], 25);
    strncpy(str->newout.i_name[j],tmpstr, 25);

    tmpch = str->newout.brand_generic[i];
    str->newout.brand_generic[i] = str->newout.brand_generic[j];
    str->newout.brand_generic[j] = tmpch;
}

#endif

#ifdef LOOPBACK

int mod_tpcc_neworder(T_neworder_data *output)
{
    output->txn_status= DB_RETURN_OCI_SUCCESS;
    output->d_id=1;
    output->c_id=1;
    output->o_ol_cnt=7;
    output->o_all_local=0;
    strcpy(output->o_entry_d.DateString, "20-01-2004
11:59:10");
    strcpy(output->c_last, "TESTLASTNAME<>");
    strcpy(output->c_credit, "GC");
    output->c_discount=.1791;
    output->w_tax=.093099996;
    output->d_tax=.159700006;
    output->o_id=2101;

    output->o_orderline[0].ol_i_id=98752;
    output->o_orderline[0].ol_supply_w_id=2;
    output->o_orderline[0].ol_quantity=5;
    output->o_orderline[0].ol_amount=2576.48;
    output->o_orderline[0].i_price=3.71;
    output->o_orderline[0].s_quantity=45;
    strcpy(output->o_orderline[0].i_name, "item98752");
    output->o_orderline[0].b_g[0]='G';

    output->o_orderline[1].ol_i_id=80479;
    output->o_orderline[1].ol_supply_w_id=1;
    output->o_orderline[1].ol_quantity=6;
    output->o_orderline[1].ol_amount=3490.03;
    output->o_orderline[1].i_price=6.81;
    output->o_orderline[1].s_quantity=58;
    strcpy(output->o_orderline[1].i_name, "item80479");
    output->o_orderline[1].b_g[0]='G';

    output->o_orderline[2].ol_i_id=58617;
    output->o_orderline[2].ol_supply_w_id=1;
    output->o_orderline[2].ol_quantity=6;
    output->o_orderline[2].ol_amount=1234.56;
    output->o_orderline[2].i_price=4.01;
    output->o_orderline[2].s_quantity=22;
    strcpy(output->o_orderline[2].i_name, "item58617");
    output->o_orderline[2].b_g[0]='G';

    output->o_orderline[3].ol_i_id=3394;
    output->o_orderline[3].ol_supply_w_id=1;
    output->o_orderline[3].ol_quantity=5;
    output->o_orderline[3].ol_amount=2345.67;
    output->o_orderline[3].i_price=1.73;
    output->o_orderline[3].s_quantity=18;
    strcpy(output->o_orderline[3].i_name, "item3394");
    output->o_orderline[3].b_g[0]='G';

    output->o_orderline[4].ol_i_id=2242;
    output->o_orderline[4].ol_supply_w_id=1;
    output->o_orderline[4].ol_quantity=4;
    output->o_orderline[4].ol_amount=3456.78;
    output->o_orderline[4].i_price=4.48;
    output->o_orderline[4].s_quantity=29;
    strcpy(output->o_orderline[4].i_name, "item2242");
    output->o_orderline[4].b_g[0]='G';

    output->o_orderline[6].ol_i_id=37310;
    output->o_orderline[6].ol_supply_w_id=1;
    output->o_orderline[6].ol_quantity=5;

```

```

        output->o_orderline[6].ol_amount=4567.89;
        output->o_orderline[6].i_price=5.50;
        output->o_orderline[6].s_quantity=21;
        strcpy(output->o_orderline[6].i_name, "item37310");
        output->o_orderline[6].b_g[0]='G';

        output->o_orderline[5].ol_i_id=19395;
        output->o_orderline[5].ol_supply_w_id=3;
        output->o_orderline[5].ol_quantity=6;
        output->o_orderline[5].ol_amount=5678.90;
        output->o_orderline[5].i_price=10.19;
        output->o_orderline[5].s_quantity=80;
        strcpy(output->o_orderline[5].i_name, "item19395");
        output->o_orderline[5].b_g[0]='G';

        return SUCCESS;
    }

```

```

int mod_tpcc_payment(T_payment_data *output)
{
    int i;
    char c;

```

```

    output->txn_status= DB_RETURN_OCI_SUCCESS;
    output->d_id=2;
    output->c_id=99;
    strcpy(output->c_last, "paymentCLast");
    output->c_w_id=2;
    output->c_d_id=5;
    output->h_amount=54321.09;
    strcpy(output->h_date.DateString, "20-01-2004 11:59:10");
    strcpy(output->w_street_1, "WareStreet1");
    strcpy(output->w_street_2, "WareStreet2");
    strcpy(output->w_city, "WareCity");
    strcpy(output->w_state, "WareState");
    strcpy(output->w_zip, "WareZip");
    strcpy(output->d_street_1, "DistStreet1");
    strcpy(output->d_street_2, "DistStreet2");
    strcpy(output->d_city, "DistCity");
    strcpy(output->d_state, "DistState");
    strcpy(output->d_zip, "DistZip");
    strcpy(output->c_first, "CFirst");
    strcpy(output->c_middle, "PA");
    strcpy(output->c_street_1, "CustStreet1");
    strcpy(output->c_street_2, "CustStreet2");
    strcpy(output->c_city, "CustCity");
    strcpy(output->c_state, "CustState");
    strcpy(output->c_zip, "CustZip");
    strcpy(output->c_phone, "9876543");
    strcpy(output->c_since.DateString, "20-01-2004 11:59:05");
    strcpy(output->c_credit, "BC");
    output->c_credit_lim=34567.89;
    output->c_discount=.234;
    output->c_balance=876543.21;

```

```

    for (i=0, c='a'; i<143; i++, c++) {
        if (c=='z') c='a';
        output->c_data[i]=(char) c;
    }
    return SUCCESS;
}

```

```

int mod_tpcc_delivery(T_delivery_data *output, int id)
{
    output->txn_status= DB_RETURN_OCI_SUCCESS;
    output->o_carrier_id=4;
    write_delivery_log(output, id);
    return SUCCESS;
}

```

```

int mod_tpcc_orderstatus(T_orderstatus_data *output)
{
    output->txn_status= DB_RETURN_OCI_SUCCESS;
    output->d_id=8;
    output->c_id=4321;
    strcpy(output->c_last, "orderstatusCLast");
    strcpy(output->c_first, "CFirst");
    strcpy(output->c_middle, "OS");
    output->c_balance=7543.21;
    output->o_id=9832;
    output->o_ol_cnt=5;
    output->o_carrier_id=2;
    strcpy(output->o_entry_d.DateString, "20-01-2004 11:59:08");

    output->o_orderline[0].ol_i_id=98752;
    output->o_orderline[0].ol_supply_w_id=2;

```

```

    output->o_orderline[0].ol_quantity=5;
    output->o_orderline[0].ol_amount=2576.48;
    strcpy(output->o_orderline[0].ol_delivery_d.DateString, "20-01-2004
11:58:00");

```

```

    output->o_orderline[1].ol_i_id=80479;
    output->o_orderline[1].ol_supply_w_id=1;
    output->o_orderline[1].ol_quantity=6;
    output->o_orderline[1].ol_amount=3490.03;
    strcpy(output->o_orderline[1].ol_delivery_d.DateString, "20-01-2004
11:58:01");

```

```

    output->o_orderline[2].ol_i_id=58617;
    output->o_orderline[2].ol_supply_w_id=1;
    output->o_orderline[2].ol_quantity=6;
    output->o_orderline[2].ol_amount=1234.56;
    strcpy(output->o_orderline[2].ol_delivery_d.DateString, "20-01-2004
11:58:02");

```

```

    output->o_orderline[3].ol_i_id=3394;
    output->o_orderline[3].ol_supply_w_id=1;
    output->o_orderline[3].ol_quantity=5;
    output->o_orderline[3].ol_amount=2345.67;
    strcpy(output->o_orderline[3].ol_delivery_d.DateString, "20-01-2004
11:58:03");

```

```

    output->o_orderline[4].ol_i_id=2242;
    output->o_orderline[4].ol_supply_w_id=1;
    output->o_orderline[4].ol_quantity=4;
    output->o_orderline[4].ol_amount=3456.78;
    strcpy(output->o_orderline[4].ol_delivery_d.DateString, "20-01-2004
11:58:04");

```

```

    return SUCCESS;
}

```

```

int mod_tpcc_stocklevel(T_stocklevel_data *output)
{
    output->threshold=10;
    output->low_stock=1;
    output->txn_status= DB_RETURN_OCI_SUCCESS;
    return SUCCESS;
}

```

```

#endif

```

dbconnection.h

```

#include "tpccpl.h"
#include "tpccstruct.h"
#include "tpcc_struct.h"
#include "mod_tpcc_error.h"
#include "mod_tpcc.h"

```

```

#define MAXLEN 100
#define LogName "log\\DBConnection.log"
#define InitName "DBInit.ini"

```

```

// Execution Pool Status
#define IDLE 1
#define IN_USE 2

```

```

#define Default_DBConnections "20"
#define DelLogName "log\\DeliveryLog"

```

```

#define convert_status(A,B) \
{
    switch (B) { \
        case OCI_SUCCESS: (A)=DB_RETURN_OCI_SUCCESS; break; \
        case OCI_SUCCESS_WITH_INFO: \
        (A)=DB_RETURN_OCI_SUCCESS_WITH_INFO; break; \
        case OCI_NEED_DATA: (A)=DB_RETURN_OCI_NEED_DATA; break; \
        case OCI_NO_DATA: (A)=DB_RETURN_OCI_NO_DATA; break; \
        case OCI_ERROR: (A)=DB_RETURN_OCI_ERROR; break; \
        case OCI_INVALID_HANDLE: \
        (A)=DB_RETURN_OCI_INVALID_HANDLE; break; \
        case OCI_STILL_EXECUTING: \
        (A)=DB_RETURN_OCI_STILL_EXECUTING; break; \
        case OCI_CONTINUE: (A)=DB_RETURN_OCI_CONTINUE; break; \
    }; \
}

```


APPENDIX A - APPLICATION SOURCE CODE

```

/*****
*****
* DBExecution_pool_info *
*****
*****/

typedef struct _DBExecution_pool_info {

    int current_status;
    int neworder_count;
    int payment_count;
    int orderstatus_count;
    int delivery_count;
    int stocklevel_count;
    void *pointer;

} DBExecution_pool_info;

/*****
*****
* global functions *
*****
*****/

sb4 no_data(dvoid *,OCIBind *,ub4,ub4,dvoid **,ub4 *,ub1 *,dvoid **);
sb4 TPC_oid_data(dvoid *,OCIBind *,ub4,ub4,dvoid **,ub4 **,ub1 *,dvoid
**,ub2 **);
sb4 cid_data(dvoid *,OCIBind *,ub4,ub4,dvoid **,ub4 **,ub1 *,dvoid **,ub2
**);
sb4 amt_data(dvoid *,OCIBind *,ub4,ub4,dvoid **,ub4 **,ub1 *,dvoid
**,ub2 **);
void userlog(char *, ...);
void readInit(char *, char *, char *);
int initializeDBExecutionPool();

DBExecution_pool_info* findIdleDBExecution();
int freeDBExecution(DBExecution_pool_info *);

//DBExecution_pool_info* findIdleDBExecution(HANDLE *);
//int freeDBExecution(DBExecution_pool_info *, HANDLE *);

void write_delivery_log(T_delivery_data *pdata, int id);
void initDelLog(int);
void endDelLog(int);

/*****
*****
* global variables *
*****
*****/

HANDLE waitIdle;
HANDLE *DBExecution_lock;
DWORD TlsPtr;
DBExecution_pool_info *DBExecution_pool;
char DllPath[MAXLEN];
char LogFile[MAXLEN];
char InitFile[MAXLEN];
char DelLogFile[MAXLEN];
int TotalLoop=0;
int findDBExecutionCall=0;
int findDBExecutionWait=0;
int DBConnections;
int ready=0;
FILE **DelFiles;

/*****
*****
* DBExecution *
*****
*****/

class DBExecution
{
public:
    DBExecution();
    ~DBExecution();

    int TPCinit(int, char *, char *);
    int TPCnew(struct newstruct *);
    int TPCpay(struct paystruct *);
    int TPCdel(struct delstruct *);
    int TPCord(struct ordstruct *);
    int TPCsto(struct stostruct *);
    void TPCexit();

#ifdef AVOID_DEADLOCK
    void swap(struct newstruct *, int, int);
#endif
};

void q_sort(int *, struct newstruct *, int, int);
#endif

int ocierror(char *, int, OCIError *, sword);
void shiftdata(int);
int sqlfile(char *, text *);

int tkvcninit();
int tkvcn();
void tkvcndone();

int tkvcpinit();
int tkvcpc();
void tkvcpcdone();

int tkvcninit();
int tkvcnco();
void tkvcncdone();

int tkvcndinit(int);
int tkvcnd(int);
void tkvcnddone(int);

int tkvcscinit();
int tkvcsc();
void tkvcscdone();

delctx *dctx;
int execstatus;
int status;
int del_o_id[10];

private:
    int proc_no;
    int logon;
    int new_init;
    int pay_init;
    int ord_init;
    int del_init_oci;
    int del_init_plsql;
    int sto_init;
    int errcode;
    int indx[NITEMS];
    int ordl_cnt;

    /* for stock-level transaction */

    int w_id;
    int d_id;
    int c_id;
#ifdef USE_IEEE_NUMBER
    double threshold;
#else
    int threshold;
#endif /* USE_IEEE_NUMBER */
    int low_stock;

    /* for delivery transaction */

    int retries;

    /* for order-status transaction */

    int bylastname;
    char c_last[17];
    char c_first[17];
    char c_middle[3];
    double c_balance;
    int o_id;
    text o_entry_d[20];
    ub4 datelen;
    int o_carrier_id;
    int o_ol_cnt;
    int ol_supply_w_id[15];
    int ol_i_id[15];
#ifdef USE_IEEE_NUMBER
    double ol_quantity[15];
    double ol_amount[15];
#else
    int ol_quantity[15];
    int ol_amount[15];
#endif /* USE_IEEE_NUMBER */
    ub4 ol_del_len[15];
    text ol_delivery_d[15][11];
    OCIRowid *o_rowid;

    /* for payment transaction */

    int c_w_id;
    int c_d_id;
#ifdef USE_IEEE_NUMBER

```

```

double h_amount;
#else
    int h_amount;
#endif /* USE_IEEE_NUMBER */
    char w_street_1[21];
    char w_street_2[21];
    char w_city[21];
    char w_state[3];
    char w_zip[10];
    char d_street_1[21];
    char d_street_2[21];
    char d_city[21];
    char d_state[3];
    char d_zip[10];
    char c_street_1[21];
    char c_street_2[21];
    char c_city[21];
    char c_state[3];
    char c_zip[10];
    char c_phone[17];
    ub4 sincelen;
    text c_since_d[11];
    double c_discount;
    char c_credit[3];
    int c_credit_lim;
    char c_data[201];
    ub4 hlen;
    text h_date[20];

/* for new order transaction */

    int nol_i_id[15];
    int nol_supply_w_id[15];
#ifdef USE_IEEE_NUMBER
    double nol_quantity[15];
    double nol_amount[15];
    double s_quantity[15];
    double i_price[15];
#else
    int nol_quantity[15];
    int nol_amount[15];
    int s_quantity[15];
    int i_price[15];
#endif /* USE_IEEE_NUMBER */
    int nol_quant10[15];
    int nol_quant91[15];
    int nol_ytdqty[15];
    int o_all_local;
    double w_tax;
    double d_tax;
    double total_amount;
    char i_name[15][25];
    char brand_gen[15];
    char brand_generic[15][1];
    int tracelevel;

    OCIDate cr_date;
    OCIDate c_since;
    OCIDate o_entry_d_base;
    OCIDate ol_d_base[15];
    dvoid *xmem;

    OCIEnv *tpcenv;
    OCIServer *tpcsrv;
    OCIError *errhp;
    OCISvcCtx *tpcsvc;
    OCISession *tpcusr;
    OCISmt *curi;

    newctx *nctx;
    ordctx *octx;
    defctx *cbctx;
    pldctx *pldctx;
    amtctx *actx;
    payctx *pctx;
    stoctx *sctx;
};

```

Dbconnection/loopback.cpp

```

#include "stdafx.h"
#include "DBConnection.h"

```

Dbconnection/mod_tpcc.h

```

/* Copyright (c) 2004, Oracle Corporation. All rights reserved. */

```

```

/*
NAME
    mod_tpcc.h - <one-line expansion of the name>

DESCRIPTION
    <short description of facility this file declares/defines>

RELATED DOCUMENTS
    <note any documents related to this facility>

EXPORT FUNCTION(S)
    <external functions declared for use outside package - one-line
    descriptions>

INTERNAL FUNCTION(S)
    <other external functions declared - one-line descriptions>

EXAMPLES

NOTES
    <other useful comments, qualifications, etc.>

MODIFIED (MM/DD/YY)
    xnie      01/30/04 - the real mod_tpcc.h
    shuang    01/22/04 - shuang_rte
    shuang    01/21/04 - Creation
*/

```

```

#include <httpext.h>

#define CMD_PROCESS(p)      (p[0] == 'P') && (p[1] == 'r')
#define CMD_NEWORDER(p)    (p[0] == 'N')
#define CMD_PAYMENT(p)     (p[0] == 'P') && (p[1] == 'a')
#define CMD_DELIVERY(p)    (p[0] == 'D')
#define CMD_ORDERSTATUS(p) (p[0] == 'O')
#define CMD_STOCKLEVEL(p)  (p[0] == 'S')
#define CMD_EXIT(p)        (p[0] == 'E')
#define CMD_MENU(p)        (p[0] == 'M')
#define CMD_BEGIN(p)       (p[0] == 'B')

#define TXN_TYPE_DELIVERY   0
#define TXN_TYPE_STOCKLEVEL 1
#define TXN_TYPE_NEWORDER   2
#define TXN_TYPE_ORDERSTATUS 3
#define TXN_TYPE_PAYMENT    4
#define TXN_TYPE_MAX        5

#define POOL_TYPE_TXN_INPUT 0
#define POOL_TYPE_TXN_OUTPUT 1
#define POOL_TYPE_TXN_MAX   2

#define MAX_FORM_INDEX      164
#define BUF_SIZE            4096
#define FILENAMESIZE        128
#define MYLOGFILE            "/tmp/mod_tpcc.log"
#define WID(w_id,d_id)      (10 * w_id + (d_id - 1))

#define MAX(a, b)            ((a > b) ? a : b)
#define MIN(a, b)            ((a > b) ? b : a)
#define STRING_UPPERCASE(x) \
    { \
        int str_pos; \
        int len = strlen(x); \
        for (str_pos=0; str_pos < len; str_pos++) \
            x[str_pos] = toupper(x[str_pos]); \
    }

```

```

struct value_index_entry
{
    char *value;
    int length;
};
typedef struct value_index_entry value_index_entry;

struct form_index_entry
{
    int index;
    int length;
};
typedef struct form_index_entry form_index_entry;

struct form_template_pool
{
    CRITICAL_SECTION form_template_spinlock;
    /* mutex for serialisation */
}

```

APPENDIX A - APPLICATION SOURCE CODE

```

int form_template_length;          /* Length of each form */
int form_template_size;           /* Number of form in the pool */
char *form_template_storage;
/* The space allocated for the whole pool */

int free_slot;
int *free_list;
};
typedef struct form_template_pool form_template_pool;

//static int tpcc_handler(request_rec *r);
//static int tpcc_post_config(apr_pool_t *p, apr_pool_t *pl,
// apr_pool_t *pt, server_rec *s);
//static void tpcc_child_init(apr_pool_t *p, server_rec *s);
//static void tpcc_register_hooks(apr_pool_t *p);

void allocate_response_pool();
void allocate_transaction_pool();
void allocate_template_pool();

int sendform_mainmenu(EXTENSION_CONTROL_BLOCK *pECB, int
w_id, int ld_id);
int sendform_welcome(EXTENSION_CONTROL_BLOCK *, char *);
int sendform_neworderinput(EXTENSION_CONTROL_BLOCK *pECB, int
w_id, int ld_id);
int sendform_paymentinput(EXTENSION_CONTROL_BLOCK *pECB, int
w_id, int ld_id);
int sendform_orderstatusinput(EXTENSION_CONTROL_BLOCK *pECB,
int w_id, int ld_id);
int sendform_deliveryinput(EXTENSION_CONTROL_BLOCK *pECB, int
w_id, int ld_id);
int sendform_stocklevelinput(EXTENSION_CONTROL_BLOCK *pECB,
int w_id, int ld_id);

int mod_neworder_query(EXTENSION_CONTROL_BLOCK *pECB, int
w_id, int ld_id, char *ptr);
int mod_delivery_query(EXTENSION_CONTROL_BLOCK *pECB, int
w_id, int ld_id, char *ptr);
int mod_payment_query(EXTENSION_CONTROL_BLOCK *pECB, int
w_id, int ld_id, char *ptr);
int mod_orderstatus_query(EXTENSION_CONTROL_BLOCK *pECB, int
w_id, int ld_id, char *ptr);
int mod_stocklevel_query(EXTENSION_CONTROL_BLOCK *pECB, int
w_id, int ld_id, char *ptr);
int process_query(EXTENSION_CONTROL_BLOCK *);
int mod_begin_cmd(EXTENSION_CONTROL_BLOCK *);
int mod_menu_cmd(EXTENSION_CONTROL_BLOCK *, int, int);
int mod_exit_cmd(EXTENSION_CONTROL_BLOCK *);
int send_error_message(EXTENSION_CONTROL_BLOCK *, int, int, char
*,int,int,void *);

int get_wid_did(char *iptr, int *wid, int *did, char **optr);
int getcharvalue(char *iptr, char key, char **optr);
char *allocate_form(form_template_pool *pool, int *index);
char *allocate_form_new(form_template_pool *pool, int index);
void free_form(form_template_pool *pool, char *form_template, int index);
void make_txn_form_template(char *, char *, char *, char *, int);
int build_form_index(char *form, char *form_template, form_index_entry
*f_index, int length);
int send_response(EXTENSION_CONTROL_BLOCK *, char *, int);
void fill_number(char *form, int value, int index, int length);
void fill_double(char *form, double value, int index, int length);
void fill_string(char *form, char *string, int index, int length, int *shift);
void adjust_form(char *form, int *indexes, int *length, int size, int formlen,
int totalshift);
int get_number(char *ptr, int *value);
int parse_query_string(char *iptr, int max_cnt, char *txn_chars,
value_index_entry *txn_vals);

#define mod_neworder_cmd(rec, w_id, ld_id)
sendform_neworderinput(rec, w_id, ld_id)
#define mod_delivery_cmd(rec, w_id, ld_id)
sendform_deliveryinput(rec, w_id, ld_id)
#define mod_payment_cmd(rec, w_id, ld_id)
sendform_paymentinput(rec, w_id, ld_id)
#define mod_orderstatus_cmd(rec, w_id, ld_id)
sendform_orderstatusinput(rec, w_id, ld_id)
#define mod_stocklevel_cmd(rec, w_id, ld_id)
sendform_stocklevelinput(rec, w_id, ld_id)

/* -----
The following defines the form layout of the different screens (forms).

NAME=1 - Command.

VALUE = NewOrder      - neworder bring out new order input form
Delivery              - delivery bring out delivery input form
OrderStatus           - order status bring out order status input form
Payment                - payment bring out payment input form
StockLevel            - stock level bring out stock level input form
Menu                  - display main menu
Process               - perform the specified transaction after providing
input

```

```

Begin      - send wid and did

NAME=2 - Form Type.

VALUE = d,n,p,s,o [D,N,P,S,O] output/input. Plus terminal ID.
= W login
= M main menu

Delivery
3 - district number.

Order Status
3 - district number.
4 - customer id.
5 - customer last name.

Payment
3 - district number.
4 - customer id.
5 - customer warehouse.
6 - customer district.
7 - name
8 - amount paid

Stock Level
3 - stock level threshold

New Order
3 - district number.
4 - customer number.

```

----- */

```

#define TRANSACTION_MENU \
"<HR>\n"
"<INPUT TYPE=submit NAME=0 VALUE=NewOrder>\n"
"<INPUT TYPE=submit NAME=0 VALUE=Payment>\n"
"<INPUT TYPE=submit NAME=0 VALUE=Delivery>\n"
"<INPUT TYPE=submit NAME=0 VALUE=StockLevel>\n"
"<INPUT TYPE=submit NAME=0 VALUE=OrderStatus>\n"
"<INPUT TYPE=submit NAME=0 VALUE=Exit>"

```

```

/* static char WelcomeForm [] =
"<BODY><FORM ACTION=%s METHOD=GET>"
"<INPUT TYPE=hidden NAME=2 VALUE=B000>"
"%s. Please provide your warehouse ID and district ID.<BR>"
"Warehouse ID <INPUT NAME=3 SIZE=7><BR>"
"District ID <INPUT NAME=4 SIZE=2><BR>"
"<HR>"
"<INPUT TYPE=submit NAME=1 VALUE=Begin>"
"</FORM></BODY>"; */
static char WelcomeForm [] =
"<BODY><FORM ACTION=%s METHOD=GET>"
"<INPUT TYPE=hidden NAME=3 VALUE=W000>"
"%s. Please provide your warehouse ID and district ID.<BR>"
"Warehouse ID <INPUT NAME=4 SIZE=7><BR>"
"District ID <INPUT NAME=5 SIZE=2><BR>"
"<HR>"
"<INPUT TYPE=submit NAME=0 VALUE=Begin>"
"</FORM></BODY>";

```

```

static char FormHeader [] =
"<BODY><FORM ACTION=%s METHOD=GET>";

```

```

#define FORM_BEGIN  "<BODY><FORM ACTION=%s"
METHOD=GET>"
#define FORM_END    "</FORM></BODY>"
#define FORM_SUBMIT "<INPUT TYPE=submit NAME=0"
VALUE=Process>"
#define FORM_MENU   "<INPUT TYPE=submit NAME=0"
VALUE=Menu>"

```

```

static char MainForm [] =
FORM_BEGIN
"<INPUT TYPE=hidden NAME=3 VALUE=M%07d>"
"%60s<BR>"
"Please Select the Next Transaction.<BR>"
TRANSACTION_MENU
FORM_END;

```

```

static char ErrorForm [] =
FORM_BEGIN
"<INPUT TYPE=hidden NAME=3 VALUE=e%06d>"
"Error: %d %d %40s %s<BR>"
TRANSACTION_MENU
FORM_END;

```

```

/*
static char ErrorForm [] =
FORM_BEGIN

```

```

"<INPUT TYPE=hidden NAME=3 VALUE=e%06d>"
"Error: %d (%s): %s<BR>"
TRANSACTION_MENU
FORM_END;
*/
#define DE_EXTRA_ID 0
#define DE_INPUT_DID DE_EXTRA_ID + 1
#define DE_INPUT_QTIME DE_INPUT_DID + 1
#define DE_INPUT_MAX DE_INPUT_QTIME + 1

#define OS_INPUT_DID 0
#define OS_INPUT_CID OS_INPUT_DID + 1
#define OS_INPUT_NAME OS_INPUT_CID + 1
#define OS_INPUT_MAX OS_INPUT_NAME + 1

#define PA_INPUT_DID 0
#define PA_INPUT_CID PA_INPUT_DID + 1
#define PA_INPUT_CWID PA_INPUT_CID + 1
#define PA_INPUT_CDID PA_INPUT_CWID + 1
#define PA_INPUT_NAME PA_INPUT_CDID + 1
#define PA_INPUT_AMT PA_INPUT_NAME + 1
#define PA_INPUT_MAX PA_INPUT_AMT + 1

#define SL_INPUT_THRESHOLD 0
#define SL_INPUT_MAX SL_INPUT_THRESHOLD + 1

#define NO_INPUT_DID 0
#define NO_INPUT_CID NO_INPUT_DID + 1
#define NO_INPUT_SPW00 NO_INPUT_CID + 1
#define NO_INPUT_IID00 NO_INPUT_SPW00 + 1
#define NO_INPUT_QTY00 NO_INPUT_IID00 + 1
#define NO_INPUT_SPW01 NO_INPUT_QTY00 + 1
#define NO_INPUT_IID01 NO_INPUT_SPW01 + 1
#define NO_INPUT_SPW02 NO_INPUT_IID01 + 1
#define NO_INPUT_IID02 NO_INPUT_SPW02 + 1
#define NO_INPUT_QTY02 NO_INPUT_IID02 + 1
#define NO_INPUT_SPW03 NO_INPUT_QTY02 + 1
#define NO_INPUT_IID03 NO_INPUT_SPW03 + 1
#define NO_INPUT_QTY03 NO_INPUT_IID03 + 1
#define NO_INPUT_SPW04 NO_INPUT_QTY03 + 1
#define NO_INPUT_IID04 NO_INPUT_SPW04 + 1
#define NO_INPUT_QTY04 NO_INPUT_IID04 + 1
#define NO_INPUT_SPW05 NO_INPUT_QTY04 + 1
#define NO_INPUT_IID05 NO_INPUT_SPW05 + 1
#define NO_INPUT_QTY05 NO_INPUT_IID05 + 1
#define NO_INPUT_SPW06 NO_INPUT_QTY05 + 1
#define NO_INPUT_IID06 NO_INPUT_SPW06 + 1
#define NO_INPUT_QTY06 NO_INPUT_IID06 + 1
#define NO_INPUT_SPW07 NO_INPUT_QTY06 + 1
#define NO_INPUT_IID07 NO_INPUT_SPW07 + 1
#define NO_INPUT_QTY07 NO_INPUT_IID07 + 1
#define NO_INPUT_SPW08 NO_INPUT_QTY07 + 1
#define NO_INPUT_IID08 NO_INPUT_SPW08 + 1
#define NO_INPUT_QTY08 NO_INPUT_IID08 + 1
#define NO_INPUT_SPW09 NO_INPUT_QTY08 + 1
#define NO_INPUT_IID09 NO_INPUT_SPW09 + 1
#define NO_INPUT_QTY09 NO_INPUT_IID09 + 1
#define NO_INPUT_SPW10 NO_INPUT_QTY09 + 1
#define NO_INPUT_IID10 NO_INPUT_SPW10 + 1
#define NO_INPUT_QTY10 NO_INPUT_IID10 + 1
#define NO_INPUT_SPW11 NO_INPUT_QTY10 + 1
#define NO_INPUT_IID11 NO_INPUT_SPW11 + 1
#define NO_INPUT_QTY11 NO_INPUT_IID11 + 1
#define NO_INPUT_SPW12 NO_INPUT_QTY11 + 1
#define NO_INPUT_IID12 NO_INPUT_SPW12 + 1
#define NO_INPUT_QTY12 NO_INPUT_IID12 + 1
#define NO_INPUT_SPW13 NO_INPUT_QTY12 + 1
#define NO_INPUT_IID13 NO_INPUT_SPW13 + 1
#define NO_INPUT_QTY13 NO_INPUT_IID13 + 1
#define NO_INPUT_SPW14 NO_INPUT_QTY13 + 1
#define NO_INPUT_IID14 NO_INPUT_SPW14 + 1
#define NO_INPUT_QTY14 NO_INPUT_IID14 + 1
#define NO_INPUT_MAX NO_INPUT_QTY14 + 1

#define DE_TERMID 0
#define DE_WID DE_TERMID+1
#define DE_CARID DE_WID+1
#define DE_FORMINDEX_SIZE DE_CARID+1

static char DeliveryFormInput_Template [] =
"<INPUT TYPE=hidden NAME=3 VALUE=D#####>"
"<INPUT TYPE=hidden NAME=6 VALUE=0>"
"<PRE> Delivery <BR>"
"Warehouse: ##### <BR><BR>"
"Carrier Number: <INPUT NAME=7 SIZE=2><BR><BR>"
"Execution Status: <BR><PRE>"
FORM_MENU
FORM_SUBMIT
FORM_END;

static char DeliveryFormOutput_Template [] =

```

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APPENDIX A - APPLICATION SOURCE CODE

```

#define
OCIBNDRAA(stmp,bndp,errp,sqlvar,progvl,progvl,ftype,indp,alen,arcodc,m
s,cu)\
    ocierror(__FILE__,__LINE__,(errp),\

OCIHandleAlloc((stmp),&(bndp),OCI_HTYPE_BIND,0,(dvoid**)0));\
    ocierror(__FILE__,__LINE__,(errp),\
        OCIBindByName((stmp),&(bndp), (errp), (text
*)(sqlvar),strlen((sqlvar)),\

(progvl),(progvl),(ftype),(indp),(alen),(arcodc),(ms),(cu),OCI_DEFAULT);

#define OCIDFNE(stmp,dfnp,errp,pos,progvl,progvl,ftype)\
    OCIDFNEByPos((stmp),&(dfnp), (errp), (pos), (progvl), (progvl), (ftype),\
        0,0,0,OCI_DEFAULT);

#define OCIDF(stmp,dfnp,errp,pos,progvl,progvl,ftype)\
    OCIHandleAlloc((stmp), (dvoid**)0,&(dfnp),OCI_HTYPE_DEFINE,0,\
        (dvoid**)0);\
    OCIDFNEByPos((stmp),&(dfnp), (errp), (pos), (progvl), (progvl),\
        (ftype),NULL,NULL,NULL,OCI_DEFAULT);\

#define
OCIDFNRA(stmp,dfnp,errp,pos,progvl,progvl,ftype,indp,alen,arcodc)\
    OCIHandleAlloc((stmp), (dvoid**)0,&(dfnp),OCI_HTYPE_DEFINE,0,\
        (dvoid**)0);\
    OCIDFNEByPos((stmp),&(dfnp), (errp), (pos), (progvl),\

(progvl),(ftype),(indp),(alen),\

(arcodc),OCI_DEFAULT);\

#define OBNDVR(la,cursor,sqlvar,progvl,progvl,ftype)\
    if (obndvr((cursor),(text*)(sqlvar),NA,(ub1*)(progvl),(progvl),(ftype),NA,\
        (sb2 *)0, (text *)0, NA, NA))\
    {errprt(la,cursor);return(-1);\}
    else\
        DISCARD 0

#define OBNDRA(la,cursor,sqlvar,progvl,progvl,ftype,indp,alen,arcodc)\
    if (obndra((cursor),(text*)(sqlvar),NA,(ub1*)(progvl),(progvl),(ftype),NA,\
        (indp),(alen),(arcodc),(ub4*)0,(ub4*)0,(text*)0,NA,NA))\
    {errprt(la,cursor);return(-1);\}
    else\
        DISCARD 0

#define
OBNDRAA(la,cursor,sqlvar,progvl,progvl,ftype,indp,alen,arcodc,ms,cs)\
    if (obndra((cursor),(text*)(sqlvar),NA,(ub1*)(progvl),(progvl),(ftype),NA,\
        (indp),(alen),(arcodc),(ub4)(ms),(ub4*)(cs),(text*)0,NA,NA))\
    {errprt(la,cursor);return(-1);\}
    else\
        DISCARD 0

#define
ODEFIN(la,cursor,pos,buf,buf,ftype,scale,indp,fmt,fmtl,fmtt,rln,rco)\
    if (odefin((cursor),(pos),(ub1*)(buf),(buf),(buf),(ftype),(scale),(indp),\
        (text*)(fmt),(fmtl),(fmtt),(rln),(rco))\
    {errprt(la,cursor);return(-1);\}
    else\
        DISCARD 0

#define OEXFET(la,cursor,nrows,cancel,exact)\
    if (oexfet((cursor),(nrows),(cancel),(exact))\
    {if ((cursor)->rc == 1403)\
        {errprt(la,cursor); orol(la); return(-1);\} \
        else if (errprt(la,cursor)==RECOVER)\
        {orol(la);return(RECOVER);\} \
        else{orol(la);return(-1);\}}\
    else\
        DISCARD 0

#define OOPEN(la,cursor)\
    if (oopen((cursor),(la),(text*)0,NA,NA,(text*)0,NA))\
    {errprt(la,cursor);return(-1);\}
    else\
        DISCARD 0

#define OPARSE(la,cursor,sqlstm,sql,defflg,lngflg)\
    if (oparse((cursor),(sqlstm),(sb4)(sql),(defflg),(ub4)(lngflg))\
    {errprt(la,cursor);return(-1);\}
    else\
        DISCARD 0

#define OFEN(la,cursor,nrows)\
    if (ofen((cursor),(nrows))\
    {if (errprt(la,cursor)==RECOVER)\
        {orol(la);return(RECOVER);\} \
        else{orol(la);return(-1);\}}\

else\
    DISCARD 0

#define OEXEC(la,cursor)\
    if (oexec((cursor))\
    {if (errprt(la,cursor)==RECOVER)\
        {orol(la);return(RECOVER);\} \
        else{orol(la);return(-1);\}}\
    else\
        DISCARD 0

#define OCOM(la,cursor)\
    if (ocom((la))\
    {errprt(la,cursor);orol(la);return(-1);\}
    else\
        DISCARD 0

#define OEXN(la,cursor,itors,rowoff)\
    if (oexn((cursor),(itors),(rowoff))\
    {if (errprt(la,cursor)==RECOVER)\
        {orol(la);return(RECOVER);\} \
        else{orol(la);return(-1);\}}\
    else\
        DISCARD 0

/* bind in/out for plsql without indicator and rcode */
#define OCIBNDPL(stmp,bndp,errp,sqlvar,progvl,progvl,ftype,alen)\
    DISCARD ocierror(__FILE__,__LINE__,(errp),\

OCIHandleAlloc((stmp),(dvoid**)0,&(bndp),OCI_HTYPE_BIND,0,(dvoid**)0
);\
    DISCARD ocierror(__FILE__,__LINE__,(errp),\
        OCIBindByName((stmp),&(bndp), (errp), (const text *) (sqlvar),\
        (sb4)strlen((const char *) (sqlvar)), (dvoid*)(progvl),(progvl),(ftype),\
        NULLP(dvoid), (alen), NULLP(ub2),
0,NULLP(ub4),OCI_DEFAULT));

/* bind in/out for plsql arrays without indicator and rcode */
#define
OCIBNDPLA(stmp,bndp,errp,sqlvar,progvl,progvl,ftype,alen,ms,cu)\
    DISCARD ocierror(__FILE__,__LINE__,(errp),\

OCIHandleAlloc((stmp),(dvoid**)0,&(bndp),OCI_HTYPE_BIND,0,(dvoid**)0
);\
    DISCARD ocierror(__FILE__,__LINE__,(errp),\
        OCIBindByName((stmp),&(bndp), (errp), (CONST text *) (sqlvar),\
        (sb4)strlen((CONST char *) (sqlvar)), (void *) (progvl),\
        (progvl),(ftype),NULL,(alen),NULL,(ms),(cu),OCI_DEFAULT));

#define OCIDFNE(stmp,dfnp,errp,pos,progvl,progvl,ftype)\
    OCIDFNEByPos((stmp),&(dfnp), (errp), (pos), (progvl), (progvl), (ftype),\
        0,0,0,OCI_DEFAULT);

#define OCIDF(stmp,dfnp,errp,pos,progvl,progvl,ftype)\
    OCIHandleAlloc((stmp),(dvoid**)0,&(dfnp),OCI_HTYPE_DEFINE,0,\
        (dvoid**)0);\
    OCIDFNEByPos((stmp),&(dfnp), (errp), (pos), (progvl), (progvl),\
        (ftype),NULL,NULL,NULL,OCI_DEFAULT);\

#define
OCIDFNRA(stmp,dfnp,errp,pos,progvl,progvl,ftype,indp,alen,arcodc)\
    OCIHandleAlloc((stmp),(dvoid**)0,&(dfnp),OCI_HTYPE_DEFINE,0,\
        (dvoid**)0);\
    OCIDFNEByPos((stmp),&(dfnp), (errp), (pos), (progvl),\

(progvl),(ftype),(indp),(alen),\

(arcodc),OCI_DEFAULT);

#define
OCIDFNDYN(stmp,dfnp,errp,pos,progvl,progvl,ftype,indp,ctxp,cbf_data)\
    ocierror(__FILE__,__LINE__,(errp),\
    OCIHandleAlloc((stmp),(dvoid**)0,&(dfnp),OCI_HTYPE_DEFINE,0,\
        (dvoid**)0);\
    ocierror(__FILE__,__LINE__,(errp),\
    OCIDFNEByPos((stmp),&(dfnp), (errp), (pos), (progvl), (progvl), (ftype),\
        (indp),NULL,NULL, OCI_DYNAMIC_FETCH));\
    ocierror(__FILE__,__LINE__,(errp),\
    OCIDFNEByPos((dfnp), (errp), (ctxp), (cbf_data));

#endif

```

Dbconnection/tpcc_struct.h

```
/* Copyright (c) 2004, Oracle Corporation. All rights reserved. */
```

```
/*
NAME
    tpcc_struct.h - <one-line expansion of the name>

DESCRIPTION
    <short description of facility this file declares/defines>

RELATED DOCUMENTS
    <note any documents related to this facility>

EXPORT FUNCTION(S)
    <external functions declared for use outside package - one-line
    descriptions>

INTERNAL FUNCTION(S)
    <other external functions declared - one-line descriptions>

EXAMPLES

NOTES
    <other useful comments, qualifications, etc.>

MODIFIED   (MM/DD/YY)
xnie       02/09/04 - add status field to carry error status
shuang     01/22/04 - shuang_rte
shuang     01/21/04 - Creation
*/
```

```
#define MAX_ORDERLINE 15
#define SMALL_BUF_SIZE 32
```

```
#define TXN_COMMON_DATA \
    int w_id; \
    int ld_id; \
    int txn_status; \
    int db_status; \
    void *context
```

```
struct T_connect_data
{
    TXN_COMMON_DATA;
};
typedef struct T_connect_data T_connect_data;
```

```
struct T_date
{
    char DateString[20];
};
typedef struct T_date T_date;
```

```
struct T_delivery_data
{
    TXN_COMMON_DATA;
    SYSTEMTIME enqueue_date_time;
    DWORD enqueue_time;
    DWORD complete_time;
    int o_carrier_id;
    int o_id[10];
};
typedef struct T_delivery_data T_delivery_data;
```

```
struct T_orderline
{
    int ol_i_id;
    int ol_supply_w_id;
    int ol_quantity;
    char i_name[25];
    int s_quantity;
    char b_g[2];
    double i_price;
    double ol_amount;
};
typedef struct T_orderline T_orderline;
```

```
struct T_neworder_data
{
    TXN_COMMON_DATA;
    int d_id;
    int c_id;
    int o_ol_cnt;
    int o_all_local;
    T_orderline o_orderline[MAX_ORDERLINE];
    T_date o_entry_d;
    char o_cool[17];
};
```

```
char c_credit[3];
double c_discount;
double w_tax;
double d_tax;
int o_id;
double total_amount;
int status;
};
typedef struct T_neworder_data T_neworder_data;

struct T_stocklevel_data
{
    TXN_COMMON_DATA;
    int threshold;
    int low_stock;
};
typedef struct T_stocklevel_data T_stocklevel_data;

struct T_orderline_status
{
    int ol_supply_w_id;
    int ol_i_id;
    int ol_quantity;
    double ol_amount;
    T_date ol_delivery_d;
};
typedef struct T_orderline_status T_orderline_status;

struct T_orderstatus_data
{
    TXN_COMMON_DATA;
    int by_last_name;
    int d_id;
    int c_id;
    char c_last[17];
    char c_first[17];
    char c_middle[3];
    double c_balance;
    int o_id;
    T_date o_entry_d;
    int o_carrier_id;
    int o_ol_cnt;
    T_orderline_status o_orderline[MAX_ORDERLINE];
};
typedef struct T_orderstatus_data T_orderstatus_data;

struct T_payment_data
{
    TXN_COMMON_DATA;
    int by_last_name;
    int d_id;
    int c_id;
    char c_last[17];
    int c_w_id;
    int c_d_id;
    double h_amount;
    T_date h_date;
    char w_street_1[21];
    char w_street_2[21];
    char w_city[21];
    char w_state[3];
    char w_zip[10];
    char d_street_1[21];
    char d_street_2[21];
    char d_city[21];
    char d_state[3];
    char d_zip[10];
    char c_first[17];
    char c_middle[3];
    char c_street_1[21];
    char c_street_2[21];
    char c_city[21];
    char c_state[3];
    char c_zip[10];
    char c_phone[17];
    T_date c_since;
    char c_credit[3];
    double c_credit_lim;
    double c_discount;
    double c_balance;
    char c_data[201];
};
typedef struct T_payment_data T_payment_data;

struct T_transaction_data
{
    int txn_type;
    union {
        T_delivery_data delivery_data;
        T_payment_data payment_data;
        T_neworder_data neworder_data;
    };
};
```


APPENDIX A - APPLICATION SOURCE CODE

```
T_stocklevel_data stocklevel_data;
T_orderstatus_data orderstatus_data;
} txn_data;

};
typedef struct T_transaction_data T_transaction_data;

struct T_login_data
{
    TXN_COMMON_DATA;
    char server[SMALL_BUF_SIZE];
    char database[SMALL_BUF_SIZE];
    char user[SMALL_BUF_SIZE];
    char password[SMALL_BUF_SIZE];
    char application[SMALL_BUF_SIZE];
};
typedef struct T_login_data T_login_data;
```

Dbconnection/tpccstruct.h

```
#define NITEMS 15
#define ROWIDLEN 20
#define OCIROWLEN 20
```

```
struct newctx {

    ub2 nol_i_id_len[NITEMS];
    ub2 nol_supply_w_id_len[NITEMS];
    ub2 nol_quantity_len[NITEMS];
    ub2 nol_amount_len[NITEMS];
    ub2 s_quantity_len[NITEMS];
    ub2 i_name_len[NITEMS];
    ub2 i_price_len[NITEMS];
    ub2 s_dist_info_len[NITEMS];
    ub2 ol_o_id_len[NITEMS];
    ub2 ol_number_len[NITEMS];
    ub2 s_remote_len[NITEMS];
    ub2 s_quant_len[NITEMS];
    ub2 ol_dist_info_len[NITEMS];
    ub2 s_bg_len[NITEMS];

    int ol_o_id[NITEMS];
    int ol_number[NITEMS];

#ifdef USE_IEEE_NUMBER
    double s_remote[NITEMS];
#else
    int s_remote[NITEMS];
#endif
    char s_dist_info[NITEMS][25];
    OCISmt *curn1;
    OCIBind *ol_i_id_bp;
    OCIBind *ol_supply_w_id_bp;
    OCIBind *i_price_bp;
    OCIBind *i_name_bp;
    OCIBind *s_bg_bp;
    ub4 nol_i_count;
    ub4 nol_s_count;
    ub4 nol_q_count;
    ub4 nol_item_count;
    ub4 nol_name_count;
    ub4 nol_qty_count;
    ub4 nol_bg_count;
    ub4 nol_am_count;
    ub4 s_remote_count;
    OCISmt *curn2;
    OCIBind *ol_quantity_bp;
    OCIBind *s_remote_bp;
    OCIBind *s_quantity_bp;
    OCIBind *w_id_bp;
    OCIBind *d_id_bp;
    OCIBind *c_id_bp;
    OCIBind *o_all_local_bp;
    OCIBind *o_all_cnt_bp;
    OCIBind *w_tax_bp;
    OCIBind *d_tax_bp;
    OCIBind *o_id_bp;
    OCIBind *c_discount_bp;
    OCIBind *c_credit_bp;
    OCIBind *c_last_bp;
    OCIBind *retries_bp;
    OCIBind *cr_date_bp;
    OCIBind *ol_o_id_bp;

    OCIBind *ol_amount_bp;

    ub2 w_id_len;
    ub2 d_id_len;
    ub2 c_id_len;
    ub2 o_all_local_len;
    ub2 o_all_cnt_len;
    ub2 w_tax_len;
    ub2 d_tax_len;
    ub2 o_id_len;
    ub2 c_discount_len;
    ub2 c_credit_len;
    ub2 c_last_len;
    ub2 retries_len;
    ub2 cr_date_len;
};

typedef struct newctx newctx;

#define NDISTS 10
#define ROWIDLEN 20

struct delctx {
    sb2 del_o_id_ind[NDISTS];
    sb2 d_id_ind[NDISTS];
    sb2 c_id_ind[NDISTS];
    sb2 del_date_ind[NDISTS];
    sb2 carrier_id_ind[NDISTS];
    sb2 amt_ind[NDISTS];

    ub4 del_o_id_len[NDISTS];
    ub4 c_id_len[NDISTS];
    int oid_ctx;
    int cid_ctx;
    OCIBind *olamt_bp;

    ub2 w_id_len[NDISTS];
    ub2 d_id_len[NDISTS];
    ub2 del_date_len[NDISTS];
    ub2 carrier_id_len[NDISTS];
    ub2 amt_len[NDISTS];

    ub2 del_o_id_rcode[NDISTS];
    ub2 cons_rcode[NDISTS];
    ub2 w_id_rcode[NDISTS];
    ub2 d_id_rcode[NDISTS];
    ub2 c_id_rcode[NDISTS];
    ub2 del_date_rcode[NDISTS];
    ub2 carrier_id_rcode[NDISTS];
    ub2 amt_rcode[NDISTS];

    int del_o_id[NDISTS];
    int del_d_id[NDISTS];
    int cons[NDISTS];
    int w_id[NDISTS];
    int d_id[NDISTS];
    int c_id[NDISTS];
    int carrier_id[NDISTS];
    int amt[NDISTS];
    ub4 del_o_id_rcnt;
    int retry;
    OCIRowid *no_rowid_ptr[NDISTS];
    OCIRowid *o_rowid_ptr[NDISTS];
    OCIDate del_date[NDISTS];
    OCISmt *curd0;
    OCISmt *curd1;
    OCISmt *curd2;
    OCISmt *curd3;
    OCISmt *curd4;
    OCISmt *curd5;
    OCISmt *curd6;
    OCISmt *curdtest;

    OCIBind *w_id_bp;
    OCIBind *w_id_bp3;
    OCIBind *w_id_bp4;
    OCIBind *w_id_bp5;
    OCIBind *w_id_bp6;
    OCIBind *d_id_bp;
    OCIBind *d_id_bp3;
    OCIBind *d_id_bp4;
    OCIBind *d_id_bp6;
    OCIBind *o_id_bp;
    OCIBind *cr_date_bp;
    OCIBind *c_id_bp;
    OCIBind *c_id_bp3;
    OCIBind *no_rowid_bp;
    OCIBind *carrier_id_bp;
    OCIBind *o_rowid_bp;
```

APPENDIX A - APPLICATION SOURCE CODE

```

OCIBind *del_o_id_bp;
OCIBind *del_o_id_bp3;
OCIBind *amt_bp;
OCIBind *bstr1_bp[10];
OCIBind *bstr2_bp[10];
OCIBind *retry_bp;
OCIDefine *inum_dp;
OCIDefine *d_id_dp;
OCIDefine *del_o_id_dp;
OCIDefine *no_rowid_dp;
OCIDefine *c_id_dp;
OCIDefine *o_rowid_dp;
OCIDefine *cons_dp;
OCIDefine *amt_dp;

int norow;
};

typedef struct delctx delctx;
struct pldelctx {

    ub2 del_d_id_len[NDISTS];
    ub2 del_o_id_len[NDISTS];

    ub2 w_id_len;
    ub2 d_id_len[NDISTS];
    ub2 o_c_id_len[NDISTS];
    ub2 sums_len[NDISTS];
    ub2 carrier_id_len;
    ub2 ordcnt_len;
    ub2 del_date_len;

    int del_o_id[NDISTS];
    int del_d_id[NDISTS];
    int o_c_id[NDISTS];
#ifdef USE_IEEE_NUMBER
    double sums[NDISTS];
#else
    int sums[NDISTS];
#endif
    OCIDate del_date;
    int carrier_id;
    int ordcnt;

    ub4 del_o_id_rcnt;
    ub4 del_d_id_rcnt;
    ub4 o_c_id_rcnt;
    ub4 sums_rcnt;

    int retry;
    OCISmt *curp1;
    OCISmt *curp2;
    OCIBind *w_id_bp;
    OCIBind *d_id_bp;
    OCIBind *o_id_bp;
    OCIBind *o_c_id_bp;
    OCIBind *ordcnt_bp;
    OCIBind *sums_bp;
    OCIBind *del_date_bp;
    OCIBind *carrier_id_bp;
    OCIBind *retry_bp;

    int norow;

};

typedef struct pldelctx pldelctx;

struct amtctx {
    int ol_amt[NITEMS];
    sb2 ol_amt_ind[NITEMS];
    ub4 ol_amt_len[NITEMS];
    ub2 ol_amt_rcode[NITEMS];
    int ol_cnt;
};

typedef struct amtctx amtctx;

struct ordctx {

    ub2 c_rowid_len[100];
    ub2 ol_supply_w_id_len[NITEMS];
    ub2 ol_i_id_len[NITEMS];
    ub2 ol_quantity_len[NITEMS];
    ub2 ol_amount_len[NITEMS];
    ub2 ol_delivery_d_len[NITEMS];
    ub2 ol_w_id_len;
    ub2 ol_d_id_len;
    ub2 ol_o_id_len;

    ub4 ol_supply_w_id_csize;

```

```

    ub4 ol_i_id_csize;
    ub4 ol_quantity_csize;
    ub4 ol_amount_csize;
    ub4 ol_delivery_d_csize;
    ub4 ol_w_id_csize;
    ub4 ol_d_id_csize;
    ub4 ol_o_id_csize;

    OCISmt *curo0;
    OCISmt *curo1;
    OCISmt *curo2;
    OCISmt *curo3;
    OCISmt *curo4;
    OCIBind *c_id_bp;
    OCIBind *w_id_bp[4];
    OCIBind *d_id_bp[4];
    OCIBind *c_last_bp[2];
    OCIBind *o_id_bp;
    OCIBind *c_rowid_bp;
    OCIDefine *c_rowid_dp;
    OCIDefine *c_last_dp[2];
    OCIDefine *c_id_dp;
    OCIDefine *c_first_dp[2];
    OCIDefine *c_middle_dp[2];
    OCIDefine *c_balance_dp[2];
    OCIDefine *o_id_dp[2];
    OCIDefine *o_entry_d_dp[2];
    OCIDefine *o_cr_id_dp[2];
    OCIDefine *o_ol_cnt_dp[2];
    OCIDefine *ol_d_dp;
    OCIDefine *ol_i_id_dp;
    OCIDefine *ol_supply_w_id_dp;
    OCIDefine *ol_quantity_dp;
    OCIDefine *ol_amount_dp;
    OCIDefine *ol_d_base_dp;
    OCIDefine *c_count_dp;
    OCIRowid *c_rowid_ptr[100];
    OCIRowid *c_rowid_cust;
    int cs;
    int cust_idx;
    int norow;
    int rcourt;
    int somerows;
};

typedef struct ordctx ordctx;

struct defctx
{
    boolean reexec;
    ub4 count;
};

typedef struct defctx defctx;

struct payctx {
    OCISmt *curpi;
    OCISmt *curp0;
    OCISmt *curp1;
    OCIBind *w_id_bp[2];
    ub2 w_id_len;

    OCIBind *d_id_bp[2];
    ub2 d_id_len;

    OCIBind *c_w_id_bp[2];
    ub2 c_w_id_len;

    OCIBind *c_d_id_bp[2];
    ub2 c_d_id_len;

    OCIBind *c_id_bp[2];
    ub2 c_id_len;

    OCIBind *h_amount_bp[2];
    ub2 h_amount_len;

    OCIBind *c_last_bp[2];
    ub2 c_last_len;

    OCIBind *w_street_1_bp[2];
    ub2 w_street_1_len;

    OCIBind *w_street_2_bp[2];
    ub2 w_street_2_len;

    OCIBind *w_city_bp[2];
    ub2 w_city_len;

    OCIBind *w_state_bp[2];
    ub2 w_state_len;

```

APPENDIX A - APPLICATION SOURCE CODE

```

OCIBind *w_zip_bp[2];
ub2 w_zip_len;

OCIBind *d_street_1_bp[2];
ub2 d_street_1_len;

OCIBind *d_street_2_bp[2];
ub2 d_street_2_len;

OCIBind *d_city_bp[2];
ub2 d_city_len;

OCIBind *d_state_bp[2];
ub2 d_state_len;

OCIBind *d_zip_bp[2];
ub2 d_zip_len;

OCIBind *c_first_bp[2];
ub2 c_first_len;

OCIBind *c_middle_bp[2];
ub2 c_middle_len;

OCIBind *c_street_1_bp[2];
ub2 c_street_1_len;

OCIBind *c_street_2_bp[2];
ub2 c_street_2_len;

OCIBind *c_city_bp[2];
ub2 c_city_len;

OCIBind *c_state_bp[2];
ub2 c_state_len;

OCIBind *c_zip_bp[2];
ub2 c_zip_len;

OCIBind *c_phone_bp[2];
ub2 c_phone_len;

OCIBind *c_since_bp[2];
ub2 c_since_len;

OCIBind *c_credit_bp[2];
ub2 c_credit_len;

OCIBind *c_credit_lim_bp[2];
ub2 c_credit_lim_len;

OCIBind *c_discount_bp[2];
ub2 c_discount_len;

OCIBind *c_balance_bp[2];
ub2 c_balance_len;

OCIBind *c_data_bp[2];
ub2 c_data_len;

OCIBind *h_date_bp[2];
ub2 h_date_len;

OCIBind *retries_bp[2];
ub2 retries_len;

OCIBind *cr_date_bp[2];
ub2 cr_date_len;

OCIBind *byln_bp[2];
ub2 byln_len;
};

typedef struct payctx payctx;

struct stoctx {
    OCISmit *curs;
    OCIBind *w_id_bp;
    OCIBind *d_id_bp;
    OCIBind *threshold_bp;
#ifdef PLSQLSTO
    OCIBind *low_stock_bp;
#else
    OCIDefine *low_stock_bp;
#endif
    int norow;
};

typedef struct stoctx stoctx;

/* New order */

struct newinstruct {
    int w_id;
    int d_id;
    int c_id;
    int ol_i_id[15];
    int ol_supply_w_id[15];
    int ol_quantity[15];
};

struct newoutstruct {
    int terror;
    int o_id;
    int o_ol_cnt;
    char c_last[17];
    char c_credit[3];
    double c_discount;
    double w_tax;
    double d_tax;
    char o_entry_d[20];
    double total_amount;
    char i_name[15][25];
    int s_quantity[15];
    char brand_generic[15];
    double i_price[15];
    double ol_amount[15];
    char status[26];
    int retry;
};

struct newstruct {
    struct newinstruct newin;
    struct newoutstruct newout;
};

/* Payment */

struct payinstruct {
    int w_id;
    int d_id;
    int c_w_id;
    int c_d_id;
    int c_id;
    int bylastname;
    int h_amount;
    char c_last[17];
};

struct payoutstruct {
    int terror;
    char w_street_1[21];
    char w_street_2[21];
    char w_city[21];
    char w_state[3];
    char w_zip[10];
    char d_street_1[21];
    char d_street_2[21];
    char d_city[21];
    char d_state[3];
    char d_zip[10];
    int c_id;
    char c_first[17];
    char c_middle[3];
    char c_last[17];
    char c_street_1[21];
    char c_street_2[21];
    char c_city[21];
    char c_state[3];
    char c_zip[10];
    char c_phone[17];
    char c_since[11];
    char c_credit[3];
    double c_credit_lim;
    double c_discount;
    double c_balance;
    char c_data[201];
    char h_date[20];
    int retry;
};

struct paystruct {
    struct payinstruct payin;
    struct payoutstruct payout;
};

/* Order status */

struct ordinstruct {

```

```

int w_id;
int d_id;
int c_id;
int bylastname;
char c_last[17];
};

struct ordoutstruct {
int terror;
int c_id;
char c_last[17];
char c_first[17];
char c_middle[3];
double c_balance;
int o_id;
char o_entry_d[20];
int o_carrier_id;
int o_ol_cnt;
int ol_supply_w_id[15];
int ol_i_id[15];
int ol_quantity[15];
double ol_amount[15];
char ol_delivery_d[15][11];
int retry;
};

struct ordstruct {
struct ordinstruct ordin;
struct ordoutstruct ordout;
};

/* Delivery */

struct delinstruct {
int w_id;
int o_carrier_id;
double qtime;
int in_timing_int;
int plsqflag;
};

struct deloutstruct {
int terror;
int retry;
};

struct delstruct {
struct delinstruct delin;
struct deloutstruct delout;
};

```

```
/* Stock level */
```

```

struct stoinstruct {
int w_id;
int d_id;
int threshold;
};

struct stooutstruct {
int terror;
int low_stock;
int retry;
};

struct stostruct {
struct stoinstruct stoin;
struct stooutstruct stoout;
};

```

Blocks/load_ordordl.sql

```
-- anonymous block for loading order/orderline
```

```

DECLARE
order_idx PLS_INTEGER;
order_rows PLS_INTEGER;
ordl_rows PLS_INTEGER;
ordl_idx PLS_INTEGER;
ordl_idx_hi PLS_INTEGER;
local_idx PLS_INTEGER;
BEGIN
order_rows := :order_rows;
ordl_rows := :ordl_rows;

```

```

order_idx := 1;
ordl_idx := 1;

WHILE (order_idx <= order_rows) LOOP

INSERT INTO ord (O_ID, O_D_ID, O_W_ID, O_C_ID, O_ENTRY_D,
O_CARRIER_ID, O_OL_CNT, O_ALL_LOCAL)
VALUES (:o_id(order_idx), :o_d_id(order_idx), :o_w_id(order_idx),
:o_c_id(order_idx), SYSDATE, :o_carrier_id(order_idx),
:o_ol_cnt(order_idx), 1);

ordl_idx_hi := ordl_idx + :o_ol_cnt(order_idx) - 1;

IF (:o_id(order_idx) < 2101 ) THEN
FORALL local_idx IN ordl_idx .. ordl_idx_hi
INSERT INTO ordl (OL_O_ID, OL_D_ID, OL_W_ID,
OL_NUMBER,
OL_DELIVERY_D, OL_I_ID, OL_SUPPLY_W_ID,
OL_QUANTITY,
OL_AMOUNT, OL_DIST_INFO)
VALUES (:ol_o_id(local_idx), :ol_d_id(local_idx),
:ol_w_id(local_idx), :ol_number(local_idx),
SYSDATE, :ol_i_id(local_idx),
:ol_supply_w_id(local_idx), 5, 0,
:ol_dist_info(local_idx));
ELSE
FORALL local_idx IN ordl_idx .. ordl_idx_hi
INSERT INTO ordl (OL_O_ID, OL_D_ID, OL_W_ID,
OL_NUMBER,
OL_DELIVERY_D, OL_I_ID, OL_SUPPLY_W_ID,
OL_QUANTITY,
OL_AMOUNT, OL_DIST_INFO)
VALUES (:ol_o_id(local_idx), :ol_d_id(local_idx),
:ol_w_id(local_idx), :ol_number(local_idx),
to_date('01-Jan-1811'), :ol_i_id(local_idx),
:ol_supply_w_id(local_idx), 5,
:ol_amount(local_idx), :ol_dist_info(local_idx));
END IF;
ordl_idx := ordl_idx_hi + 1;
order_idx := order_idx + 1;
END LOOP;
END;

```

Blocks/paynz.sql

```

DECLARE /* paynz */
not_serializable EXCEPTION;
PRAGMA EXCEPTION_INIT(not_serializable,-8177);
deadlock EXCEPTION;
PRAGMA EXCEPTION_INIT(deadlock,-60);
snapshot_too_old EXCEPTION;
PRAGMA EXCEPTION_INIT(snapshot_too_old,-1555);
BEGIN
LOOP BEGIN
UPDATE ware
SET w_ytd = w_ytd + :h_amount
WHERE w_id = :w_id
RETURNING w_name, w_street_1, w_street_2, w_city, w_state,
w_zip
INTO initpcc.ware_name, :w_street_1, :w_street_2, :w_city,
:w_state, :w_zip;

UPDATE cust
SET c_balance = c_balance - :h_amount,
c_ytd_payment = c_ytd_payment + :h_amount,
c_payment_cnt = c_payment_cnt+1
WHERE c_id = :c_id AND c_d_id = :c_d_id AND
c_w_id = :c_w_id
RETURNING rowid, c_first, c_middle, c_last, 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
INTO initpcc.cust_rowid, :c_first, :c_middle, :c_last, :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;
IF SQL%NOTFOUND THEN
raise NO_DATA_FOUND;
END IF;

IF :c_credit = 'BC' THEN
UPDATE cust
SET c_data = substr ((to_char (:c_id) || ' ' ||
to_char (:c_d_id) || ' ' ||

```

```

        to_char (:c_w_id) || '' ||
        to_char (:d_id) || '' ||
        to_char (:w_id) || '' ||
        to_char (:h_amount/100, '9999.99') || '' )
        || c_data, 1, 500)
WHERE rowid = initpcc.cust_rowid
RETURNING substr(c_data,1, 200)
INTO :c_data;

END IF;

UPDATE dist
SET d_ytd = d_ytd + :h_amount
WHERE d_id = :d_id
AND d_w_id = :w_id
RETURNING d_name, d_street_1, d_street_2, d_city, d_state, d_zip
INTO initpcc.dist_name, :d_street_1, :d_street_2, :d_city, :d_state,
:d_zip;
IF SQL%NOTFOUND THEN
raise NO_DATA_FOUND;
END IF;

INSERT INTO hist (h_c_id, h_c_d_id, h_c_w_id, h_d_id, h_w_id,
h_amount, h_date, h_data)
VALUES
(:c_id, :c_d_id, :c_w_id, :d_id, :w_id, :h_amount,
:cr_date, initpcc.ware_name || ' ' || initpcc.dist_name);
EXIT;

EXCEPTION
WHEN not_serializable OR deadlock OR snapshot_too_old THEN
ROLLBACK;
:retry := :retry + 1;
END;

END LOOP;
END;
```

Blocks/payz.sql

```

DECLARE /* payz */
not_serializable EXCEPTION;
PRAGMA EXCEPTION_INIT(not_serializable,-8177);
deadlock EXCEPTION;
PRAGMA EXCEPTION_INIT(deadlock,-60);
snapshot_too_old EXCEPTION;
PRAGMA EXCEPTION_INIT(snapshot_too_old,-1555);
BEGIN
LOOP BEGIN
UPDATE ware
SET w_ytd = w_ytd + :h_amount
WHERE w_id = :w_id
RETURNING w_name,
w_street_1, w_street_2, w_city, w_state, w_zip
INTO initpcc.ware_name,
:w_street_1, :w_street_2, :w_city, :w_state, :w_zip;

SELECT rowid
BULK COLLECT INTO initpcc.row_id
FROM cust
WHERE c_d_id = :c_d_id AND c_w_id = :c_w_id AND c_last =
:c_last
ORDER BY c_last, c_d_id, c_w_id, c_first;

initpcc.c_num := sql%rowcount;
initpcc.cust_rowid := initpcc.row_id((initpcc.c_num) / 2);

UPDATE cust
SET c_balance = c_balance - :h_amount,
c_ytd_payment = c_ytd_payment + :h_amount,
c_payment_cnt = c_payment_cnt + 1
WHERE rowid = initpcc.cust_rowid
RETURNING
c_id, c_first, c_middle, c_last, 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
INTO :c_id, :c_first, :c_middle, :c_last,
: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;

:c_data := '';
IF :c_credit = 'BC' THEN
```

```

UPDATE cust
SET c_data = substr ((to_char (:c_id) || '' ||
to_char (:c_d_id) || '' ||
to_char (:c_w_id) || '' ||
to_char (:d_id) || '' ||
to_char (:w_id) || '' ||
to_char (:h_amount/100, '9999.99') || '' )
|| c_data, 1, 500)
WHERE rowid = initpcc.cust_rowid
RETURNING substr(c_data,1, 200)
INTO :c_data;

END IF;

UPDATE dist
SET d_ytd = d_ytd + :h_amount
WHERE d_id = :d_id
AND d_w_id = :w_id
RETURNING d_name, d_street_1, d_street_2, d_city,
d_state, d_zip
INTO initpcc.dist_name, :d_street_1, :d_street_2, :d_city,
:d_state, :d_zip;

IF SQL%NOTFOUND
THEN
raise NO_DATA_FOUND;
END IF;

INSERT INTO hist (h_c_id, h_c_d_id, h_c_w_id, h_d_id, h_w_id,
h_amount, h_date, h_data)
VALUES (:c_id, :c_d_id, :c_w_id, :d_id, :w_id, :h_amount,
:cr_date, initpcc.ware_name || ' ' || initpcc.dist_name);
EXIT;

EXCEPTION
WHEN not_serializable OR deadlock OR snapshot_too_old THEN
ROLLBACK;
:retry := :retry + 1;
END;

END LOOP;
END;
```

Blocks/tkvcpdel.sql

```

declare
TYPE numarray IS TABLE OF NUMBER INDEX BY BINARY_INTEGER;
TYPE numlist is varray (10) of number;
dist numarray;
amt numarray;
cnt pls_integer;

not_serializable EXCEPTION;
PRAGMA EXCEPTION_INIT(not_serializable, -8177);
deadlock EXCEPTION;
PRAGMA EXCEPTION_INIT(deadlock, -60);
snapshot_too_old EXCEPTION;
PRAGMA EXCEPTION_INIT(snapshot_too_old, -1555);

BEGIN
LOOP BEGIN
FORALL d IN 1..10
DELETE FROM nord N
WHERE no_d_id = initpcc.dist(d)
AND no_w_id = :w_id
AND no_o_id = (select min (no_o_id)
from nord
where no_d_id = N.no_d_id
and no_w_id = N.no_w_id)
RETURNING no_d_id, no_o_id BULK COLLECT INTO :d_id,
:order_id;

:ordcnt := SQL%ROWCOUNT;

FORALL o in 1..:ordcnt
UPDATE ord SET o_carrier_id = :carrier_id
WHERE o_id = :order_id (o)
AND o_d_id = :d_id (o)
AND o_w_id = :w_id
RETURNING o_c_id BULK COLLECT INTO :o_c_id;

FORALL o in 1..:ordcnt
UPDATE ord SET ol_delivery_d = :now
WHERE ol_w_id = :w_id
AND ol_d_id = :d_id (o)
AND ol_o_id = :order_id (o)
```

APPENDIX A - APPLICATION SOURCE CODE

```

RETURNING sum(ol_amount) BULK COLLECT INTO :sums;

FORALL c IN 1..:ordcnt
  UPDATE cust
    SET c_balance = c_balance + :sums(c),
        c_delivery_cnt = c_delivery_cnt + 1
  WHERE c_w_id = :w_id
    AND c_d_id = :d_id(c)
    AND c_id = :o_c_id(c);
COMMIT;
EXIT;
EXCEPTION
  WHEN not_serializable OR deadlock OR snapshot_too_old
  THEN
    ROLLBACK;
    :retry := :retry + 1;
END;

END LOOP; -- for retry
END;

```

Blocks/tkvcnew

-- New Order Anonymous block

```

DECLARE
  idx          PLS_INTEGER;
  dummy_local  PLS_INTEGER;
  cache_ol_cnt PLS_INTEGER;
  not_serializable EXCEPTION;
  PRAGMA EXCEPTION_INIT(not_serializable,-8177);
  deadlock     EXCEPTION;
  PRAGMA EXCEPTION_INIT(deadlock,-60);
  snapshot_too_old EXCEPTION;
  PRAGMA EXCEPTION_INIT(snapshot_too_old,-1555);

PROCEDURE u1 IS
BEGIN
  FORALL idx IN 1..cache_ol_cnt
    UPDATE stock_item
      SET s_order_cnt = s_order_cnt + 1,
          s_ytd = s_ytd + :ol_quantity(idx),
          s_remote_cnt = s_remote_cnt + :s_remote(idx),
          s_quantity = (CASE WHEN s_quantity < :ol_quantity (idx) + 10
                          THEN s_quantity +91
                          ELSE s_quantity
                        END) - :ol_quantity(idx)
    WHERE i_id = :ol_i_id(idx)
    AND s_w_id = :ol_supply_w_id(idx)
    RETURNING i_price, i_name, s_quantity, s_dist_01,
              i_price*ol_quantity(idx),
              CASE WHEN i_data NOT LIKE '%ORIGINAL%'
                THEN 'G'
                ELSE (CASE WHEN s_data NOT LIKE '%ORIGINAL%'
                  THEN 'G'
                  ELSE 'B'
                END)
              END
    BULK COLLECT INTO :i_price, :i_name, :s_quantity, initpcc.s_dist,
                      :ol_amount,:brand_generic;
END u1;

PROCEDURE u2 IS
BEGIN
  FORALL idx IN 1..cache_ol_cnt
    UPDATE stock_item
      SET s_order_cnt = s_order_cnt + 1,
          s_ytd = s_ytd + :ol_quantity(idx),
          s_remote_cnt = s_remote_cnt + :s_remote(idx),
          s_quantity = (CASE WHEN s_quantity < :ol_quantity (idx) + 10
                          THEN s_quantity +91
                          ELSE s_quantity
                        END) - :ol_quantity(idx)
    WHERE i_id = :ol_i_id(idx)
    AND s_w_id = :ol_supply_w_id(idx)
    RETURNING i_price, i_name, s_quantity, s_dist_02,
              i_price*ol_quantity(idx),
              CASE WHEN i_data NOT LIKE '%ORIGINAL%'
                THEN 'G'
                ELSE (CASE WHEN s_data NOT LIKE '%ORIGINAL%'
                  THEN 'G'
                  ELSE 'B'
                END)
              END
    BULK COLLECT INTO :i_price, :i_name, :s_quantity, initpcc.s_dist,
                      :ol_amount,:brand_generic;
END u2;

```

```

END u2;

PROCEDURE u3 IS
BEGIN
  FORALL idx IN 1..cache_ol_cnt
    UPDATE stock_item
      SET s_order_cnt = s_order_cnt + 1,
          s_ytd = s_ytd + :ol_quantity(idx),
          s_remote_cnt = s_remote_cnt + :s_remote(idx),
          s_quantity = (CASE WHEN s_quantity < :ol_quantity (idx) + 10
                          THEN s_quantity +91
                          ELSE s_quantity
                        END) - :ol_quantity(idx)
    WHERE i_id = :ol_i_id(idx)
    AND s_w_id = :ol_supply_w_id(idx)
    RETURNING i_price, i_name, s_quantity, s_dist_03,
              i_price*ol_quantity(idx),
              CASE WHEN i_data NOT LIKE '%ORIGINAL%'
                THEN 'G'
                ELSE (CASE WHEN s_data NOT LIKE '%ORIGINAL%'
                  THEN 'G'
                  ELSE 'B'
                END)
              END
    BULK COLLECT INTO :i_price, :i_name, :s_quantity, initpcc.s_dist,
                      :ol_amount,:brand_generic;
END u3;

PROCEDURE u4 IS
BEGIN
  FORALL idx IN 1..cache_ol_cnt
    UPDATE stock_item
      SET s_order_cnt = s_order_cnt + 1,
          s_ytd = s_ytd + :ol_quantity(idx),
          s_remote_cnt = s_remote_cnt + :s_remote(idx),
          s_quantity = (CASE WHEN s_quantity < :ol_quantity (idx) + 10
                          THEN s_quantity +91
                          ELSE s_quantity
                        END) - :ol_quantity(idx)
    WHERE i_id = :ol_i_id(idx)
    AND s_w_id = :ol_supply_w_id(idx)
    RETURNING i_price, i_name, s_quantity, s_dist_04,
              i_price*ol_quantity(idx),
              CASE WHEN i_data NOT LIKE '%ORIGINAL%'
                THEN 'G'
                ELSE (CASE WHEN s_data NOT LIKE '%ORIGINAL%'
                  THEN 'G'
                  ELSE 'B'
                END)
              END
    BULK COLLECT INTO :i_price, :i_name, :s_quantity, initpcc.s_dist,
                      :ol_amount,:brand_generic;
END u4;

PROCEDURE u5 IS
BEGIN
  FORALL idx IN 1..cache_ol_cnt
    UPDATE stock_item
      SET s_order_cnt = s_order_cnt + 1,
          s_ytd = s_ytd + :ol_quantity(idx),
          s_remote_cnt = s_remote_cnt + :s_remote(idx),
          s_quantity = (CASE WHEN s_quantity < :ol_quantity (idx) + 10
                          THEN s_quantity +91
                          ELSE s_quantity
                        END) - :ol_quantity(idx)
    WHERE i_id = :ol_i_id(idx)
    AND s_w_id = :ol_supply_w_id(idx)
    RETURNING i_price, i_name, s_quantity, s_dist_05,
              i_price*ol_quantity(idx),
              CASE WHEN i_data NOT LIKE '%ORIGINAL%'
                THEN 'G'
                ELSE (CASE WHEN s_data NOT LIKE '%ORIGINAL%'
                  THEN 'G'
                  ELSE 'B'
                END)
              END
    BULK COLLECT INTO :i_price, :i_name, :s_quantity, initpcc.s_dist,
                      :ol_amount,:brand_generic;
END u5;

PROCEDURE u6 IS
BEGIN
  FORALL idx IN 1..cache_ol_cnt
    UPDATE stock_item
      SET s_order_cnt = s_order_cnt + 1,
          s_ytd = s_ytd + :ol_quantity(idx),
          s_remote_cnt = s_remote_cnt + :s_remote(idx),
          s_quantity = (CASE WHEN s_quantity < :ol_quantity (idx) + 10
                          THEN s_quantity +91
                          ELSE s_quantity
                        END) - :ol_quantity(idx)
    WHERE i_id = :ol_i_id(idx)

```

APPENDIX A - APPLICATION SOURCE CODE

```

AND s_w_id = :ol_supply_w_id(idx)
RETURNING i_price, i_name, s_quantity, s_dist_06,
         i_price*ol_quantity(idx),
CASE WHEN i_data NOT LIKE '%ORIGINAL%'
THEN 'G'
ELSE (CASE WHEN s_data NOT LIKE '%ORIGINAL%'
THEN 'G'
ELSE 'B'
END)
END
BULK COLLECT INTO :i_price, :i_name, :s_quantity, initpcc.s_dist,
                  :ol_amount, :brand_generic;
END u6;

PROCEDURE u7 IS
BEGIN
FORALL idx IN 1 .. cache_ol_cnt
UPDATE stock_item
SET s_order_cnt = s_order_cnt + 1,
s_ytd = s_ytd + :ol_quantity(idx),
s_remote_cnt = s_remote_cnt + :s_remote(idx),
s_quantity = (CASE WHEN s_quantity < :ol_quantity (idx) + 10
THEN s_quantity + 91
ELSE s_quantity
END) - :ol_quantity(idx)
WHERE i_id = :ol_i_id(idx)
AND s_w_id = :ol_supply_w_id(idx)
RETURNING i_price, i_name, s_quantity, s_dist_07,
         i_price*ol_quantity(idx),
CASE WHEN i_data NOT LIKE '%ORIGINAL%'
THEN 'G'
ELSE (CASE WHEN s_data NOT LIKE '%ORIGINAL%'
THEN 'G'
ELSE 'B'
END)
END)
END
BULK COLLECT INTO :i_price, :i_name, :s_quantity, initpcc.s_dist,
                  :ol_amount, :brand_generic;
END u7;

PROCEDURE u8 IS
BEGIN
FORALL idx IN 1 .. cache_ol_cnt
UPDATE stock_item
SET s_order_cnt = s_order_cnt + 1,
s_ytd = s_ytd + :ol_quantity(idx),
s_remote_cnt = s_remote_cnt + :s_remote(idx),
s_quantity = (CASE WHEN s_quantity < :ol_quantity (idx) + 10
THEN s_quantity + 91
ELSE s_quantity
END) - :ol_quantity(idx)
WHERE i_id = :ol_i_id(idx)
AND s_w_id = :ol_supply_w_id(idx)
RETURNING i_price, i_name, s_quantity, s_dist_08,
         i_price*ol_quantity(idx),
CASE WHEN i_data NOT LIKE '%ORIGINAL%'
THEN 'G'
ELSE (CASE WHEN s_data NOT LIKE '%ORIGINAL%'
THEN 'G'
ELSE 'B'
END)
END)
END
BULK COLLECT INTO :i_price, :i_name, :s_quantity, initpcc.s_dist,
                  :ol_amount, :brand_generic;
END u8;

PROCEDURE u9 IS
BEGIN
FORALL idx IN 1 .. cache_ol_cnt
UPDATE stock_item
SET s_order_cnt = s_order_cnt + 1,
s_ytd = s_ytd + :ol_quantity(idx),
s_remote_cnt = s_remote_cnt + :s_remote(idx),
s_quantity = (CASE WHEN s_quantity < :ol_quantity (idx) + 10
THEN s_quantity + 91
ELSE s_quantity
END) - :ol_quantity(idx)
WHERE i_id = :ol_i_id(idx)
AND s_w_id = :ol_supply_w_id(idx)
RETURNING i_price, i_name, s_quantity, s_dist_09,
         i_price*ol_quantity(idx),
CASE WHEN i_data NOT LIKE '%ORIGINAL%'
THEN 'G'
ELSE (CASE WHEN s_data NOT LIKE '%ORIGINAL%'
THEN 'G'
ELSE 'B'
END)
END)
END
BULK COLLECT INTO :i_price, :i_name, :s_quantity, initpcc.s_dist,
                  :ol_amount, :brand_generic;
END u9;

```

```

PROCEDURE u10 IS
BEGIN
FORALL idx IN 1 .. cache_ol_cnt
UPDATE stock_item
SET s_order_cnt = s_order_cnt + 1,
s_ytd = s_ytd + :ol_quantity(idx),
s_remote_cnt = s_remote_cnt + :s_remote(idx),
s_quantity = (CASE WHEN s_quantity < :ol_quantity (idx) + 10
THEN s_quantity + 91
ELSE s_quantity
END) - :ol_quantity(idx)
WHERE i_id = :ol_i_id(idx)
AND s_w_id = :ol_supply_w_id(idx)
RETURNING i_price, i_name, s_quantity, s_dist_10,
         i_price*ol_quantity(idx),
CASE WHEN i_data NOT LIKE '%ORIGINAL%'
THEN 'G'
ELSE (CASE WHEN s_data NOT LIKE '%ORIGINAL%'
THEN 'G'
ELSE 'B'
END)
END)
END
BULK COLLECT INTO :i_price, :i_name, :s_quantity, initpcc.s_dist,
                  :ol_amount, :brand_generic;
END u10;

PROCEDURE fix_items IS
rows_lost          PLS_INTEGER;
max_index          PLS_INTEGER;
temp_index         PLS_INTEGER;
BEGIN
idx := 1;
rows_lost := 0;
max_index := dummy_local;

WHILE (max_index != cache_ol_cnt) LOOP

WHILE (idx <= sql%rowcount AND
sql%bulk_rowcount(idx + rows_lost) = 1)
LOOP
idx := idx + 1;
END LOOP;

temp_index := max_index;
WHILE (temp_index >= idx + rows_lost) LOOP
:ol_amount(temp_index + 1) := :ol_amount(temp_index);
:i_price(temp_index + 1) := :i_price(temp_index);
:i_name(temp_index + 1) := :i_name(temp_index);
:s_quantity(temp_index + 1) := :s_quantity(temp_index);
initpcc.s_dist(temp_index + 1) := initpcc.s_dist(temp_index);
:brand_generic(temp_index + 1) := :brand_generic(temp_index);
temp_index := temp_index - 1;
END LOOP;

IF (idx + rows_lost <= cache_ol_cnt) THEN
:i_price(idx + rows_lost) := 0;
:i_name(idx + rows_lost) := 'NO ITEM';
:s_quantity(idx + rows_lost) := 0;
initpcc.s_dist(idx + rows_lost) := NULL;
:brand_generic(idx + rows_lost) := '';
:ol_amount(idx + rows_lost) := 0;
rows_lost := rows_lost + 1;
max_index := max_index + 1;
END IF;

END LOOP;
END fix_items;

BEGIN
LOOP BEGIN
cache_ol_cnt := :o_ol_cnt;

UPDATE dist SET d_next_o_id = d_next_o_id + 1
WHERE d_id = :d_id AND d_w_id = :w_id
RETURNING d_tax, d_next_o_id-1
INTO :d_tax, :o_id;

SELECT c_discount, c_last, c_credit
INTO :c_discount, :c_last, :c_credit
FROM cust
WHERE c_id = :c_id AND c_d_id = :d_id AND c_w_id = :w_id;

SELECT w_tax
INTO :w_tax
FROM ware
WHERE w_id = :w_id;

INSERT INTO nord (no_o_id, no_d_id, no_w_id)
VALUES (:o_id, :d_id, :w_id);

INSERT INTO ord (o_id, o_d_id, o_w_id, o_c_id, o_entry_d,

```

```

        o_carrier_id, o_ol_cnt, o_all_local)
VALUES (:o_id, :d_id, :w_id, :c_id,
       :cr_date, 11, :o_ol_cnt, :o_all_local);

dummy_local := :d_id;

IF (dummy_local < 6) THEN
  IF (dummy_local < 3) THEN
    IF (dummy_local = 1) THEN
      u1;
    ELSE
      u2;
    END IF;
  ELSE
    IF (dummy_local = 3) THEN
      u3;
    ELSIF (dummy_local = 4) then
      u4;
    ELSE
      u5;
    END IF;
  END IF;
ELSE
  IF (dummy_local < 8) THEN
    IF (dummy_local = 6) THEN
      u6;
    ELSE
      u7;
    END IF;
  ELSE
    IF (dummy_local = 8) THEN
      u8;
    ELSIF (dummy_local = 9) then
      u9;
    ELSE
      u10;
    END IF;
  END IF;
END IF;

dummy_local := sql%rowcount;

IF (dummy_local != cache_ol_cnt ) THEN fix_items; END IF;

FORALL idx IN 1..dummy_local
  INSERT INTO ordl
    (ol_o_id, ol_d_id, ol_w_id, ol_number, ol_delivery_d, ol_i_id,
     ol_supply_w_id, ol_quantity, ol_amount, ol_dist_info)
  VALUES (:o_id, :d_id, :w_id, inittpc.idx1arr(idx), inittpc.nulldate,
          :ol_i_id(idx), :ol_supply_w_id(idx),
          :ol_quantity(idx), :ol_amount(idx), inittpc.s_dist(idx));

IF (dummy_local != :o_ol_cnt) THEN
  :o_ol_cnt := dummy_local;
  ROLLBACK;
END IF;

EXIT;

EXCEPTION
  WHEN not_serializable OR deadlock OR snapshot_too_old THEN
    ROLLBACK;
    :retry := :retry + 1;
  END;
END LOOP;
END;
```

Blocks/views.sql

```

connect tpcc/tpcc;
set echo on;

create or replace view wh_cust
(w_id, w_tax, c_id, c_d_id, c_w_id, c_discount, c_last, c_credit)
as select w.w_id, w.w_tax,
       c.c_id, c.c_d_id, c.c_w_id, c.c_discount, c.c_last, c.c_credit
   from cust c, ware w
  where w.w_id = c.c_w_id;

create or replace view wh_dist
(w_id, d_id, d_tax, d_next_o_id, w_tax )
as select w.w_id, d.d_id, d.d_tax, d.d_next_o_id, w.w_tax
   from dist d, ware w
  where w.w_id = d.d_w_id;

create or replace view stock_item
(i_id, s_w_id, i_price, i_name, i_data, s_data, s_quantity,
```

```

s_order_cnt, s_ytd, s_remote_cnt,
s_dist_01, s_dist_02, s_dist_03, s_dist_04, s_dist_05,
s_dist_06, s_dist_07, s_dist_08, s_dist_09, s_dist_10)
as
select /*+ leading(s) use_nl(i) */
  i.i_id, s_w_id, i.i_price, i.i_name, i.i_data, s_data, s_quantity,
  s_order_cnt, s_ytd, s_remote_cnt,
  s_dist_01, s_dist_02, s_dist_03, s_dist_04, s_dist_05,
  s_dist_06, s_dist_07, s_dist_08, s_dist_09, s_dist_10
  from stok s, item i
 where i.i_id = s.s_i_id;

set echo off
```

modtpcc.h

```

#include "..\DBConnection\mod_tpcc.h"
#include "..\DBConnection\tpcc_struct.h"
#include "..\DBConnection\mod_tpcc_error.h"
#include <oratypes.h>
#include <oci.h>
#include <ocidfn.h>

#define allocate_last_form(form, pool) \
(form)=(char *)((pool)->form_template_storage + \
(Maxterms - 1) * (pool)->form_template_length)
```

```

#define MAXLEN 100
#define Default_DBConnections "20"
#define Default_Maxterms "100"
#define Default_DeliveryQueues "500"
#define Default_DeliveryThreads "50"
#define Default_StartTerm "1"
#define LogName "log\modtpcc.log"
#define InitName "DBInit.ini"
#define DLLName "DBConnection.dll"
#define mod_name "tpcc/modtpcc.dll"
```

```

typedef struct _DelQueue_info {
    _DelQueue_info *Next;
    T_delivery_data *pdata;
    HANDLE queue_lock;
} DelQueue_info;
```

```

/*****
*****
* global functions
*****
*****/
```

```

//void userlog (char *, ...);
void readInit(char *, char *, char *);
void allocateMemoryPool();
long initDelQueue();
long deleteDelQueue();
void endDeliveryThread(long);
void initDeliveryThread(void *);
DelQueue_info *DequeueDel();
void EnqueueDel(DelQueue_info *);
void addFreeDelQueue(DelQueue_info *);
DelQueue_info *findFreeDelQueue();
```

```

long parse_neworder_query(char *ptr, T_neworder_data *pdata);
long parse_payment_query(char *ptr, T_payment_data *pdata);
long parse_delivery_query(char *ptr, T_delivery_data *pdata);
long parse_orderstatus_query(char *ptr, T_orderstatus_data *pdata);
long parse_stocklevel_query(char *ptr, T_stocklevel_data *pdata);
```

```

long sendform_neworderoutput(long status, T_neworder_data
*pdata);
long sendform_paymentoutput(long status, T_payment_data *pdata);
long sendform_orderstatusoutput(long status, T_orderstatus_data
*pdata);
long sendform_deliveryoutput(long status, T_delivery_data *pdata);
long sendform_stockleveloutput(long status, T_stocklevel_data
*pdata);
```

```

extern long (FAR * mod_tpcc_neworder)(T_neworder_data *);
extern long (FAR * mod_tpcc_payment)(T_payment_data *);
extern long (FAR * mod_tpcc_delivery)(T_delivery_data *, long);
extern long (FAR * mod_tpcc_orderstatus)(T_orderstatus_data *);
extern long (FAR * mod_tpcc_stocklevel)(T_stocklevel_data *);
extern void (FAR *userlog)(char * str, ...);
extern void (FAR *initDell og)(long);
```


APPENDIX A - APPLICATION SOURCE CODE

```
extern void (FAR *endDelLog)(long);

/*****
*****
* global variables
*****
*****/

DWORD TlsPointer;
char DllPath[MAXLEN];
char LogFile[MAXLEN];
char InitFile[MAXLEN];
char DllFile[MAXLEN];
char origin[MAXLEN];
CRITICAL_SECTION critical_initDelQueue;
CRITICAL_SECTION critical_memory;
CRITICAL_SECTION critical_DelQueue_free;
CRITICAL_SECTION critical_DelQueue_work;
HANDLE waitAvailableDelQueue;
HANDLE waitDelWork;
HANDLE DelThreadRunning;
HINSTANCE dllinstance;
long useddel=0;
long DBConnections;
long Maxterms;
long DeliveryQueues;
long DeliveryThreads;
long modtpcc_ready=0;
long memory_ready=0;
long queue_ready=0;
long DeliveryThreadstop=0;
long StartTerm=1;
DelQueue_info *DelQueue_begin = NULL;
DelQueue_info *DelQueue_end = NULL;
DelQueue_info *DelQueue_free = NULL;

static form_index_entry
form_index[POOL_TYPE_TXN_MAX][TXN_TYPE_MAX][MAX_FORM_I
NDEX];
static form_template_pool
txn_global_pool[POOL_TYPE_TXN_MAX][TXN_TYPE_MAX];
static form_template_pool txn_data_pool;
static form_template_pool resp_global_pool;

char delivery_chars [] = {'6', '7'};
char orderstatus_chars [] = {'8', '9', 'Y'};
char payment_chars [] = {'8', '9', 'Z', 'v', 'V', 'w'};
char stocklevel_chars [] = {'x'};
char neworder_chars [] = {'8', '9',
'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I',
'J', 'K', 'L', 'M', 'N', 'O', 'P', 'Q', 'R',
'S', 'T', 'U', 'V', 'W', 'X', 'a', 'b', 'c',
'd', 'e', 'f', 'g', 'h', 'i', 'j', 'k', 'l',
'm', 'n', 'o', 'p', 'q', 'r', 's', 't', 'u'};
```

APPENDIX B: DATABASE DESIGN

defaultopts.sh

```
# configurable vars
tpcc_os=unix
tpcc_version=tnt
tpcc_ldrive=1
tpcc_scale=10
tpcc_np=1
tpcc_cpu=1
#megabytes
tpcc_memsize=512
#minutes
tpcc_runlen=24

tpcc_temp_imp=temp
tpcc_temp_size=10M
tpcc_temp_ext=calc
tpcc_temp_nf=calc
tpcc_temp_bs=2K

tpcc_ware_imp=iot
tpcc_ware_size=10M
tpcc_ware_ext=calc
tpcc_ware_nf=calc
tpcc_ware_bs=auto

tpcc_ware_used=-1
tpcc_ware_free=-1
tpcc_ware_trans=-1

tpcc_ware_indices=1-

tpcc_ware_autospace=t
tpcc_ware_flg=30
tpcc_ware_fl=22

tpcc_iware_imp=none
tpcc_iware_size=1M
tpcc_iware_ext=calc
tpcc_iware_nf=calc
tpcc_iware_bs=2K

tpcc_iware_used=-1
tpcc_iware_free=-1
tpcc_iware_trans=-1

tpcc_iware_autospace=t
tpcc_iware_flg=30
tpcc_iware_fl=22

tpcc_iware_indices=1-

tpcc_dist_imp=cluster
tpcc_dist_size=10M
tpcc_dist_ext=calc
tpcc_dist_nf=calc
tpcc_dist_bs=auto

tpcc_dist_used=-1
tpcc_dist_free=-1
tpcc_dist_trans=-1

tpcc_dist_indices=2-1-

tpcc_dist_autospace=t
tpcc_dist_flg=30
tpcc_dist_fl=22

tpcc_idist_imp=index
tpcc_idist_size=1M
tpcc_idist_ext=calc
tpcc_idist_nf=calc
tpcc_idist_bs=2K

tpcc_idist_used=-1
tpcc_idist_free=-1
tpcc_idist_trans=-1

tpcc_idist_autospace=t
tpcc_idist_flg=30
tpcc_idist_fl=22
```

```
tpcc_idist_indices=2-1-

tpcc_item_imp=cluster
tpcc_item_size=15M
tpcc_item_ext=calc
tpcc_item_nf=calc
tpcc_item_bs=auto

tpcc_item_used=-1
tpcc_item_free=-1
tpcc_item_trans=-1

tpcc_item_indices=1-

tpcc_item_autospace=t
tpcc_item_flg=30
tpcc_item_fl=22

tpcc_iitem_imp=index
tpcc_iitem_size=1M
tpcc_iitem_ext=calc
tpcc_iitem_nf=calc
tpcc_iitem_bs=2K

tpcc_iitem_used=-1
tpcc_iitem_free=-1
tpcc_iitem_trans=-1

tpcc_iitem_autospace=t
tpcc_iitem_flg=30
tpcc_iitem_fl=22

tpcc_iitem_indices=1-

tpcc_nord_imp=iot
tpcc_nord_size=10M
tpcc_nord_ext=calc
tpcc_nord_nf=calc
tpcc_nord_bs=auto

tpcc_nord_used=-1
tpcc_nord_free=-1
tpcc_nord_trans=-1

tpcc_nord_indices=1-2-3-

tpcc_nord_autospace=t
tpcc_nord_flg=30
tpcc_nord_fl=22

tpcc_inord_imp=none
tpcc_inord_size=1M
tpcc_inord_ext=calc
tpcc_inord_nf=calc
tpcc_inord_bs=2K

tpcc_inord_used=-1
tpcc_inord_free=-1
tpcc_inord_trans=-1

tpcc_inord_autospace=t
tpcc_inord_flg=30
tpcc_inord_fl=22

tpcc_inord_indices=1-2-3-

tpcc_ordl_imp=iot
tpcc_ordl_size=10M
tpcc_ordl_ext=calc
tpcc_ordl_nf=calc
tpcc_ordl_bs=auto

tpcc_ordl_used=-1
tpcc_ordl_free=-1
tpcc_ordl_trans=-1

tpcc_ordl_indices=1-2-3-4-

tpcc_ordl_autospace=t
tpcc_ordl_flg=30
tpcc_ordl_fl=22

tpcc_iordl_imp=none
```

APPENDIX B: DATABASE DESIGN

tpcc_iordl_size=1M
tpcc_iordl_ext=calc
tpcc_iordl_nf=calc
tpcc_iordl_bs=2K

tpcc_iordl_used=-1
tpcc_iordl_free=-1
tpcc_iordl_trans=-1

tpcc_iordl_autospace=t
tpcc_iordl_flg=30
tpcc_iordl_fl=22

tpcc_iordl_indices=1-2-3-4-

tpcc_ordr_imp=table
tpcc_ordr_size=10M
tpcc_ordr_ext=calc
tpcc_ordr_nf=calc
tpcc_ordr_bs=auto

tpcc_ordr_used=-1
tpcc_ordr_free=-1
tpcc_ordr_trans=-1

tpcc_ordr_indices=2-3-1

tpcc_ordr_autospace=t
tpcc_ordr_flg=30
tpcc_ordr_fl=22

tpcc_iordr1_imp=index
tpcc_iordr1_size=1M
tpcc_iordr1_ext=calc
tpcc_iordr1_nf=calc
tpcc_iordr1_bs=2K

tpcc_iordr1_used=-1
tpcc_iordr1_free=-1
tpcc_iordr1_trans=-1

tpcc_iordr1_autospace=t
tpcc_iordr1_flg=30
tpcc_iordr1_fl=22

tpcc_iordr1_indices=2-3-1

tpcc_iordr2_imp=index
tpcc_iordr2_size=1M
tpcc_iordr2_ext=calc
tpcc_iordr2_nf=calc
tpcc_iordr2_bs=2K

tpcc_iordr2_used=-1
tpcc_iordr2_free=-1
tpcc_iordr2_trans=-1

tpcc_iordr2_autospace=t
tpcc_iordr2_flg=30
tpcc_iordr2_fl=22

tpcc_iordr2_indices=2-3-4-1

tpcc_stok_imp=cluster
tpcc_stok_size=35M
tpcc_stok_ext=calc
tpcc_stok_nf=calc
tpcc_stok_bs=auto

tpcc_stok_used=-1
tpcc_stok_free=-1
tpcc_stok_trans=-1

tpcc_stok_indices=1-2-

tpcc_stok_autospace=t
tpcc_stok_flg=30
tpcc_stok_fl=22

tpcc_istok_imp=index
tpcc_istok_size=1M
tpcc_istok_ext=calc
tpcc_istok_nf=calc
tpcc_istok_bs=2K

tpcc_istok_used=-1
tpcc_istok_free=-1
tpcc_istok_trans=-1

tpcc_istok_autospace=t

tpcc_istok_flg=30
tpcc_istok_fl=22

tpcc_istok_indices=1-2-

tpcc_cust_imp=cluster
tpcc_cust_size=25M
tpcc_cust_ext=calc
tpcc_cust_nf=calc
#bs
tpcc_cust_bs=2K

tpcc_cust_used=-1
tpcc_cust_free=-1
tpcc_cust_trans=-1

tpcc_cust_indices=1-2-3-

tpcc_cust_autospace=t
tpcc_cust_flg=30
tpcc_cust_fl=22

tpcc_icust1_imp=index
tpcc_icust1_size=1M
tpcc_icust1_ext=calc
tpcc_icust1_nf=calc
tpcc_icust1_bs=2K

tpcc_icust1_used=-1
tpcc_icust1_free=-1
tpcc_icust1_trans=-1

tpcc_icust1_autospace=t
tpcc_icust1_flg=30
tpcc_icust1_fl=22

tpcc_icust1_indices=1-2-3-

tpcc_icust2_imp=index
tpcc_icust2_size=1M
tpcc_icust2_ext=calc
tpcc_icust2_nf=calc
tpcc_icust2_bs=2K

tpcc_icust2_used=-1
tpcc_icust2_free=-1
tpcc_icust2_trans=-1

tpcc_icust2_autospace=t
tpcc_icust2_flg=30
tpcc_icust2_fl=22

tpcc_icust2_indices=6-7-1-2-3-

tpcc_hist_imp=table
tpcc_hist_size=10M
tpcc_hist_ext=calc
tpcc_hist_nf=calc
tpcc_hist_bs=auto

tpcc_hist_used=-1
tpcc_hist_free=-1
tpcc_hist_trans=-1

tpcc_hist_indices=no

tpcc_hist_autospace=t
tpcc_hist_flg=30

driver.sh

#!/bin/sh

./stepenv.sh

```
if expr $# \< 1 > /dev/null; then
    echo "$0 <starting stepname> <optional: only>"
    echo OR use:
    echo "$0 buildcreate - to build the database creation scripts"
    echo "$0 create - to create the database (after buildcreate)"
    echo "$0 steps - to list individual steps"
    exit 1
fi
```

```
if expr x$1 = xsteps > /dev/null; then
    echo stepnames are from creation scripts: $tpcc_create_steps
    echo
```

```

echo or running steps: $tpcc_steps
echo "use the 'only' option to only do that step (otherwise all steps after
will also be executed.)"
echo " (e.g. $0 listfiles only)"
echo "use the 'through' option to do a sequence of steps (inclusively.)"
echo " (e.g. $0 shutdowndb through startupdb-p_build)"
exit 1
fi

startstep=$1
controlcmd=$2
endstep=$3

# Aliases for special steps
if test $startstep = buildcreate; then
    startstep='echo $tpcc_create_steps | cut -d ' ' -f1'`
fi

if test $startstep = create; then
    startstep='echo $tpcc_steps | cut -d ' ' -f1'`
fi

if test "x$controlcmd" = x; then
    endstep=
    # Since endstep is null it won't match any other steps, so we keep going.
elif test "x$controlcmd" = xonly; then
    controlcmd=only
    # this is allowed
elif test "x$controlcmd" = xthrough; then
    actualstep=f
    for step in $tpcc_create_steps $tpcc_steps ; do
        if test "x$step" = "x$endstep"; then
            actualstep=t
        fi
    done
    if test $actualstep = f; then
        echo "Invalid step $endstep. Use $0 steps to show steps."
        exit 1
    fi
else
    echo "Invalid syntax. Use $0 by itself for help."
    exit 1
fi

echo Starting from step: $startstep

dostep=f
for step in $tpcc_create_steps $tpcc_steps ; do
    if expr $step = $startstep > /dev/null; then
        dostep=t
    fi

    if expr $dostep = t > /dev/null; then
        echo STEP: $step
        cd $tpcc_bench
        $tpcc_scripts/echo $step | cut -d- -f1`.sh `echo $step | sed -e's/-*/-/` |
        cut -d- -f2- | sed -e's/-/ /g`
        lasterror=$?
        cd $tpcc_bench
        if test -n "`find $tpcc_bench/scripts -name *.log`"; then
            mv -f *.log `find $tpcc_bench/scripts -name *.log`
        $tpcc_bench/log/
        else
            if test -n "`find $tpcc_bench/ -name *.log`"; then
                mv -f *.log $tpcc_bench/log/
            fi
        fi

        if expr $lasterror != 0 > /dev/null; then
            if expr $lasterror != 99 > /dev/null; then
                echo Step $step failed. Stopping driver.
                exit 1
            else
                echo Step $step has completed and requested stop. Stopping driver.
                exit 0
            fi
        fi
        if test "x$controlcmd" = xonly; then
            exit 0
        fi
        if test "x$endstep" = "x$step"; then
            echo The driver reached the last desired step. Stopping driver.
            exit 0
        fi
    fi
done

if expr $dostep = f > /dev/null; then
    echo No such step: $1
fi

```

localoptions.sh

```

#LOCAL OPTION FILE- You must fill these in
# before the driver will work.

#oracle sid to use for the run
ORACLE_SID=tpcc

#folder location of the database files (or links to raw partitions)
#tpcc_disks_location=/location/of/db/files

#FOR NT
#tpcc_disks_location=\\.\.\\
tpcc_disks_location=C:\mnt\

#FOR RAC

#node id
#tpcc_rac_id=1

# How many createts_node*.sh will be run in this node, started from
tpcc_rac_id
# eq. if tpcc_rac_id is 3 and tpcc_rac_createts_count is 2
# createts_node3.sh and createts_node4.sh will be executed

#tpcc_rac_createts_count=1

#locations of various files used in the generation scripts.
#(you can usually leave these alone.)
tpcc_sql_dir=${tpcc_bench}/scripts/sql
tpcc_log_dir=${tpcc_bench}/log
tpcc_genscripts_dir=${tpcc_bench}/scripts/generated

#Once you have filled all the options, comment
#out or delete this line.

```

Options.sh

```

tpcc_tpcc_os='unix'
tpcc_version='t1t'
tpcc_ldrive='8'
tpcc_scale='8600'
tpcc_np='1'
tpcc_cpu='4'
tpcc_memsize='16384'
tpcc_runlen='20'
tpcc_compress='t'
tpcc_overflow='t'
tpcc_defbs='2'
tpcc_jeec_number='f'
tpcc_numfiles='0'

tpcc_cust_imp='cluster'
tpcc_cust_size='calc'
tpcc_cust_ext='calc'
tpcc_cust_nf='calc'
tpcc_cust_bs='auto'
tpcc_cust_used='-1'
tpcc_cust_free='0'
tpcc_cust_trans='3'
tpcc_cust_autospace='t'
tpcc_cust_flg='43'
tpcc_cust_fl='22'
tpcc_cust_rsize='auto'
tpcc_cust_hkey='auto'
tpcc_cust_hash='auto'
tpcc_cust_bpool='recycle'
tpcc_cust_indices='3-2-1-

tpcc_dist_imp='cluster'
tpcc_dist_size='calc'
tpcc_dist_ext='calc'
tpcc_dist_nf='calc'
tpcc_dist_bs='auto'
tpcc_dist_used='-1'
tpcc_dist_free='-1'
tpcc_dist_trans='4'
tpcc_dist_autospace='t'
tpcc_dist_flg='43'
tpcc_dist_fl='22'
tpcc_dist_rsize='auto'
tpcc_dist_hkey='auto'

```

APPENDIX B: DATABASE DESIGN

tpcc_dist_hash='auto'
tpcc_dist_bpool='default'
tpcc_dist_indices=2-1-

tpcc_hist_imp='table'
tpcc_hist_size='1791'
tpcc_hist_ext='calc'
tpcc_hist_nf='calc'
tpcc_hist_bs='auto'
tpcc_hist_used='-1'
tpcc_hist_free='5'
tpcc_hist_trans='4'
tpcc_hist_autospace='t'
tpcc_hist_flg='43'
tpcc_hist_fl='22'
tpcc_hist_rsize='auto'
tpcc_hist_hkey='auto'
tpcc_hist_hash='auto'
tpcc_hist_bpool='recycle'
tpcc_hist_indices=no

tpcc_item_imp='cluster'
tpcc_item_size='calc'
tpcc_item_ext='calc'
tpcc_item_nf='calc'
tpcc_item_bs='auto'
tpcc_item_used='-1'
tpcc_item_free='0'
tpcc_item_trans='3'
tpcc_item_autospace='t'
tpcc_item_flg='43'
tpcc_item_fl='22'
tpcc_item_rsize='auto'
tpcc_item_hkey='auto'
tpcc_item_hash='auto'
tpcc_item_bpool='keep'
tpcc_item_indices=1-

tpcc_nord_imp='queue'
tpcc_nord_size='178'
tpcc_nord_ext='calc'
tpcc_nord_nf='calc'
tpcc_nord_bs='auto'
tpcc_nord_used='-1'
tpcc_nord_free='5'
tpcc_nord_trans='4'
tpcc_nord_autospace='t'
tpcc_nord_flg='43'
tpcc_nord_fl='22'
tpcc_nord_rsize='auto'
tpcc_nord_hkey='auto'
tpcc_nord_hash='auto'
tpcc_nord_bpool='default'
tpcc_nord_indices=1-2-3-

tpcc_ordl_imp='queue'
tpcc_ordl_size='21775'
tpcc_ordl_ext='calc'
tpcc_ordl_nf='calc'
tpcc_ordl_bs='16K'
tpcc_ordl_used='-1'
tpcc_ordl_free='5'
tpcc_ordl_trans='4'
tpcc_ordl_autospace='t'
tpcc_ordl_flg='43'
tpcc_ordl_fl='22'
tpcc_ordl_rsize='auto'
tpcc_ordl_hkey='auto'
tpcc_ordl_hash='auto'
tpcc_ordl_bpool='default'
tpcc_ordl_indices=1-2-3-4-

tpcc_ordr_imp='queue'
tpcc_ordr_size='1206'
tpcc_ordr_ext='calc'
tpcc_ordr_nf='calc'
tpcc_ordr_bs='16K'
tpcc_ordr_used='-1'
tpcc_ordr_free='5'
tpcc_ordr_trans='4'
tpcc_ordr_autospace='t'
tpcc_ordr_flg='43'
tpcc_ordr_fl='22'
tpcc_ordr_rsize='auto'
tpcc_ordr_hkey='auto'
tpcc_ordr_hash='auto'
tpcc_ordr_bpool='default'
tpcc_ordr_indices=2-3-1-

tpcc_stok_imp='cluster'
tpcc_stok_size='calc'
tpcc_stok_ext='calc'
tpcc_stok_nf='calc'

tpcc_stok_bs='auto'
tpcc_stok_used='-1'
tpcc_stok_free='0'
tpcc_stok_trans='2'
tpcc_stok_autospace='t'
tpcc_stok_flg='43'
tpcc_stok_fl='22'
tpcc_stok_rsize='auto'
tpcc_stok_hkey='auto'
tpcc_stok_hash='auto'
tpcc_stok_bpool='keep'
tpcc_stok_indices=1-2-

tpcc_ware_imp='cluster'
tpcc_ware_size='calc'
tpcc_ware_ext='calc'
tpcc_ware_nf='calc'
tpcc_ware_bs='auto'
tpcc_ware_used='-1'
tpcc_ware_free='-1'
tpcc_ware_trans='2'
tpcc_ware_autospace='t'
tpcc_ware_flg='43'
tpcc_ware_fl='22'
tpcc_ware_rsize='auto'
tpcc_ware_hkey='auto'
tpcc_ware_hash='auto'
tpcc_ware_bpool='default'
tpcc_ware_indices=1-

tpcc_icust1_imp='index'
tpcc_icust1_size='736'
tpcc_icust1_ext='calc'
tpcc_icust1_nf='calc'
tpcc_icust1_bs='16K'
tpcc_icust1_used='-1'
tpcc_icust1_free='1'
tpcc_icust1_trans='3'
tpcc_icust1_autospace='t'
tpcc_icust1_flg='43'
tpcc_icust1_fl='22'
tpcc_icust1_rsize='auto'
tpcc_icust1_hkey='auto'
tpcc_icust1_hash='auto'
tpcc_icust1_bpool='default'
tpcc_icust1_indices=3-2-1-

tpcc_icust2_imp='index'
tpcc_icust2_size='4591'
tpcc_icust2_ext='calc'
tpcc_icust2_nf='calc'
tpcc_icust2_bs='auto'
tpcc_icust2_used='-1'
tpcc_icust2_free='1'
tpcc_icust2_trans='3'
tpcc_icust2_autospace='t'
tpcc_icust2_flg='43'
tpcc_icust2_fl='22'
tpcc_icust2_rsize='auto'
tpcc_icust2_hkey='auto'
tpcc_icust2_hash='auto'
tpcc_icust2_bpool='default'
tpcc_icust2_indices=6-3-2-7-1-

tpcc_idist_imp='index'
tpcc_idist_size='4'
tpcc_idist_ext='calc'
tpcc_idist_nf='calc'
tpcc_idist_bs='auto'
tpcc_idist_used='-1'
tpcc_idist_free='5'
tpcc_idist_trans='3'
tpcc_idist_autospace='t'
tpcc_idist_flg='43'
tpcc_idist_fl='22'
tpcc_idist_rsize='auto'
tpcc_idist_hkey='auto'
tpcc_idist_hash='auto'
tpcc_idist_bpool='default'
tpcc_idist_indices=2-1-

tpcc_iitem_imp='index'
tpcc_iitem_size='2048'
tpcc_iitem_ext='calc'
tpcc_iitem_nf='calc'
tpcc_iitem_bs='auto'
tpcc_iitem_used='-1'
tpcc_iitem_free='5'
tpcc_iitem_trans='4'
tpcc_iitem_autospace='t'
tpcc_iitem_flg='43'
tpcc_iitem_fl='22'
tpcc_iitem_rsize='auto'

```
tpcc_item_hkey='auto'
tpcc_item_hash='auto'
tpcc_item_bpool='default'
tpcc_item_indices=1-
```

```
tpcc_inord_imp='none'
tpcc_inord_size='229'
tpcc_inord_ext='calc'
tpcc_inord_nf='calc'
tpcc_inord_bs='auto'
tpcc_inord_used='-1'
tpcc_inord_free='5'
tpcc_inord_trans='4'
tpcc_inord_autospace='t'
tpcc_inord_flg='43'
tpcc_inord_fl='22'
tpcc_inord_rsize='auto'
tpcc_inord_hkey='auto'
tpcc_inord_hash='auto'
tpcc_inord_bpool='default'
tpcc_inord_indices=1-2-3-
```

```
tpcc_iordl_imp='none'
tpcc_iordl_size='8072'
tpcc_iordl_ext='calc'
tpcc_iordl_nf='calc'
tpcc_iordl_bs='auto'
tpcc_iordl_used='-1'
tpcc_iordl_free='5'
tpcc_iordl_trans='4'
tpcc_iordl_autospace='t'
tpcc_iordl_flg='43'
tpcc_iordl_fl='22'
tpcc_iordl_rsize='auto'
tpcc_iordl_hkey='auto'
tpcc_iordl_hash='auto'
tpcc_iordl_bpool='default'
tpcc_iordl_indices=1-2-3-4-
```

```
tpcc_iordr1_imp='none'
tpcc_iordr1_size='703'
tpcc_iordr1_ext='calc'
tpcc_iordr1_nf='calc'
tpcc_iordr1_bs='auto'
tpcc_iordr1_used='-1'
tpcc_iordr1_free='1'
tpcc_iordr1_trans='3'
tpcc_iordr1_autospace='t'
tpcc_iordr1_flg='43'
tpcc_iordr1_fl='22'
tpcc_iordr1_rsize='auto'
tpcc_iordr1_hkey='auto'
tpcc_iordr1_hash='auto'
tpcc_iordr1_bpool='default'
tpcc_iordr1_indices=2-3-1-
```

```
tpcc_iordr2_imp='index'
tpcc_iordr2_size='1135'
tpcc_iordr2_ext='calc'
tpcc_iordr2_nf='calc'
tpcc_iordr2_bs='auto'
tpcc_iordr2_used='-1'
tpcc_iordr2_free='25'
tpcc_iordr2_trans='4'
tpcc_iordr2_autospace='t'
tpcc_iordr2_flg='43'
tpcc_iordr2_fl='22'
tpcc_iordr2_rsize='auto'
tpcc_iordr2_hkey='auto'
tpcc_iordr2_hash='auto'
tpcc_iordr2_bpool='default'
tpcc_iordr2_indices=2-3-4-1-
```

```
tpcc_istok_imp='index'
tpcc_istok_size='2090'
tpcc_istok_ext='calc'
tpcc_istok_nf='calc'
tpcc_istok_bs='16K'
tpcc_istok_used='-1'
tpcc_istok_free='1'
tpcc_istok_trans='3'
tpcc_istok_autospace='t'
tpcc_istok_flg='43'
tpcc_istok_fl='22'
tpcc_istok_rsize='auto'
tpcc_istok_hkey='auto'
tpcc_istok_hash='auto'
tpcc_istok_bpool='default'
tpcc_istok_indices=1-2-
```

```
tpcc_iware_imp='index'
tpcc_iware_size='1'
tpcc_iware_ext='calc'
```

```
tpcc_iware_nf='calc'
tpcc_iware_bs='auto'
tpcc_iware_used='-1'
tpcc_iware_free='1'
tpcc_iware_trans='3'
tpcc_iware_autospace='t'
tpcc_iware_flg='43'
tpcc_iware_fl='22'
tpcc_iware_rsize='auto'
tpcc_iware_hkey='auto'
tpcc_iware_hash='auto'
tpcc_iware_bpool='default'
tpcc_iware_indices=1-
```

```
tpcc_temp_imp='temp'
tpcc_temp_size='16145'
tpcc_temp_ext='calc'
tpcc_temp_nf='calc'
tpcc_temp_bs='auto'
tpcc_temp_used='-1'
tpcc_temp_free='0'
tpcc_temp_trans='3'
tpcc_temp_autospace='t'
tpcc_temp_flg='43'
tpcc_temp_fl='22'
tpcc_temp_rsize='auto'
tpcc_temp_hkey='auto'
tpcc_temp_hash='auto'
tpcc_temp_bpool='default'
tpcc_temp_indices=no
```

p_build2.ora

```
compatible = 10.1.0.0.0
db_name = tpcc
control_files = (C:\mnt\control_001,C:\mnt\control_002)
parallel_max_servers = 100
recovery_parallelism = 40
db_files = 213
db_cache_size = 5461M
db_8k_cache_size = 2048M
db_16k_cache_size = 5461M
dml_locks = 500
statistics_level = basic
log_buffer = 1048576
processes = 150
sessions = 150
transactions = 150
shared_pool_size = 1024M
cursor_space_for_time = TRUE
db_block_size = 2048
undo_management = auto
undo_retention = 2
plsql_optimize_level=2
```

```
UNDO_TABLESPACE = undo_1
db_4k_cache_size = 20M
```

p_build.ora

```
compatible = 10.1.0.0.0
db_name = tpcc
control_files = (C:\mnt\control_001,C:\mnt\control_002)
parallel_max_servers = 100
recovery_parallelism = 40
db_files = 208
db_cache_size = 2461M
db_8k_cache_size = 1024M
db_16k_cache_size = 1461M
dml_locks = 500
statistics_level = basic
log_buffer = 1048576
processes = 150
sessions = 150
transactions = 150
shared_pool_size = 512M
db_block_size = 2048
undo_management = auto
undo_retention = 2
plsql_optimize_level=2
```

```
UNDO_TABLESPACE = undo_1
db_4k_cache_size = 20M
```

P_create.ora

```
compatible = 10.1.0.0.0
db_name = tpcc
control_files = (C:\mnt\control_001, C:\mnt\control_002)
db_block_size = 2048
db_cache_size = 2461M
db_8k_cache_size = 1024M
log_buffer = 1048576
db_16k_cache_size = 1461M
undo_management = manual
statistics_level = basic
shared_pool_size = 512M
plsql_optimize_level=2
db_4k_cache_size = 20M
```

p_run.ora

```
compatible = 11.1.0.0.0
db_name = tpcc
control_files = (C:\mnt\control_001,C:\mnt\control_002)
processes = 500
sessions = 800
db_block_size = 2048
transactions = 600
db_files = 200
db_file_multiblock_read_count = 32
fast_start_mttr_target = 0
parallel_max_servers = 0
dml_locks = 500
remote_login_passwordfile = shared
aq_tm_processes = 0
utl_file_dir = *
max_dump_file_size = 1M
resource_manager_plan = ''
statistics_level = basic

db_cache_size = 5500M
db_8k_cache_size = 512M
db_16k_cache_size = 7200M
db_keep_cache_size = 12500M
db_recycle_cache_size = 3500M
shared_pool_size = 1600M

log_buffer = 10485760
log_checkpoint_interval = 0
log_checkpoint_timeout = 0
log_checkpoints_to_alert = true

plsql_optimize_level = 2
db_writer_processes = 2
disk_asynch_io = true
replication_dependency_tracking = false
db_block_checking = false
db_block_checksum = false
undo_management = auto
undo_retention = 0
undo_tablespace = undo_1
transactions_per_rollback_segment = 1
trace_enabled = false
query_rewrite_enabled = false

timed_statistics = false
#timed_statistics = true

max_dump_file_size = 2G
```

stepenv.sh

```
# forces any env variables we set to be exported
set -a
tpcc_kit=t
tpcc_bench=c:\tpcc8000
tpcc_scripts=$tpcc_bench/scripts
tpcc_require=$tpcc_scripts/require_vars.sh
tpcc_lcm=$tpcc_scripts/lcm.sh
tpcc_tokilobytes=$tpcc_scripts/tokilobytes.sh
tpcc_fromkilobytes=$tpcc_scripts/fromkilobytes.sh
tpcc_estsize=$tpcc_scripts/estsize.sh
tpcc_nolog=$tpcc_scripts/nolog.sh
```

```
tpcc_isneg=$tpcc_scripts/isneg.sh
```

```
# need a better way to check for bc, may
# resort to checking each directory in path
# if this doesn't work
#11/7/02 - alex.ni this is causing too many problems
#because systems have bc in some odd place. typically
#mangled cygwin installs w/ mksnt/cygwin mixes
#if test -x /usr/bin/bc -o -x /bin/bc; then
#tpcc_bcexpr=$tpcc_scripts/bcexpr.sh
#else
tpcc_bcexpr=expr
#fi
```

```
# the ksh version is a bit faster, so we want
# to use it if we have ksh. Otherwise we have
# a compatible version.
#if test -x /bin/ksh; then
#tpcc_createts=$tpcc_scripts/createts.ksh
#else
tpcc_createts=$tpcc_scripts/createts.sh
#fi
```

```
tpcc_tabledata=$tpcc_scripts/tabledata.sh
tpcc_load=$tpcc_bench/benchmark/bin/tpccload.exe
tpcc_createtablespace=$tpcc_scripts/createtablespace.sh
```

```
##
tpcc_sqlplus=cat
tpcc_sqlplus_args='/nolog'
tpcc_internal_connect='connect / as sysdba'
tpcc_user_pass='tpcc/tpcc'
tpcc_dba_user_pass='system/manager'
oracle_dba_system
oracle_dba_password=manager
tpcc_sqlplus=sqlplus
```

```
# import options generated by gui
.{tpcc_bench}/options.sh
```

```
#8gb oracle filesize limit (in k)
tpcc_fsize_limit_k=8243200
#2gb - 1k oracle extent limit (in k)
tpcc_extent_limit_k=2048000
#file number limit: 1024
tpcc_file_number_limit=1024
```

```
# Runlen calculations should be in hours, but
# this was the old calculation, which assumed
# minutes, and also 8 times:
# tpcc_runlen=$tpcc_bcexpr 8 \* 60 \* $tpcc_runlen`
# we just want to keep the value as it is.
```

```
tpcc_system_size=400M
tpcc_kilo_bytes=1024
#tpcc_logfile_size=$tpcc_bcexpr 20 + \(`tpcc_scale` \)
```

```
if test $tpcc_np -gt 1 ; then
# 4.69k per commit * 2.1 commit per TPMC ~ 9.85K
# 9.85k * 30 minutes * 12.5 TPMC per Warehouse = 3693
tpcc_logfile_size=$tpcc_bcexpr \(`tpcc_scale` \* 3693 \) /
$tpcc_kilo_bytes`
else
# 2.4k per commit * 2.1 commit per TPMC ~ 5k
# 5k * 30 minutes * 12.5 TPMC per Warehouse = 1875
tpcc_logfile_size=$tpcc_bcexpr \(`tpcc_scale` \* 1875 \) /
$tpcc_kilo_bytes`
fi
```

```
if test $tpcc_logfile_size -lt 1024; then
tpcc_logfile_size=1024
fi
tpcc_logfile_size="${tpcc_logfile_size}M"
```

```
tpcc_undo_size=$tpcc_bcexpr 2 \* $tpcc_scale`
if test $tpcc_undo_size -gt 8096; then
tpcc_undo_size=8096
fi
```

```
if test $tpcc_undo_size -lt 512; then
tpcc_undo_size=512
fi
tpcc_undo_size="${tpcc_undo_size}M"
```

```
tpcc_undo_bs=8K
```

```
tpcc_statpack_size=$tpcc_bcexpr 1 \* $tpcc_scale`
if test $tpcc_statpack_size -gt 2048; then
tpcc_statpack_size=2048
fi
if test $tpcc_statpack_size -lt 300; then
tpcc_statpack_size=300
```

APPENDIX B: DATABASE DESIGN

```
fi
tpcc_statpack_size="${tpcc_statpack_size}M"

tpcc_sysaux_size=120M

# fixed table params

#table list (note temp is always at the end since it may use numbers from
other tables, and it's not included in these lists)
tpcc_table_list='ware cust dist hist stok item ordi ordl inord'
tpcc_index_list='ware icust1 icust2 idist istok item iordr1 iordr2 iordl inord'
#for these I use average row length, calculated from multi-blocksize stats.
#we figure out how many new rows we will gain in a run (in
createtablespace.sh)
#and add that much to the base tablespace size.
tpcc_hist_growth=51
tpcc_ordi_growth=35
tpcc_nord_growth=regular
#tpcc_ordl_growth=660
tpcc_ordl_growth=900

#i started indices at 1/10th... need an exact figure
tpcc_iordr1_growth=20
tpcc_iordr2_growth=20
tpcc_iordl_growth=66
tpcc_inord_growth=2

tpcc_item_growth=0
tpcc_item_growth=0
tpcc_temp_growth=0

tpcc_cust_growth=regular
tpcc_icust1_growth=regular
tpcc_icust2_growth=regular

tpcc_stok_growth=regular
tpcc_istok_growth=regular

tpcc_ware_growth=regular
tpcc_iware_growth=regular

tpcc_dist_growth=regular
tpcc_idist_growth=regular

# minimum size of temp tablespace
tpcc_tempts_min=10240

# for Linux, set appropriate tablespace heuristics
# to set high io tables to have 64 files, and minimize
# others.
if expr $tpcc_os = linux > /dev/null; then
# for table in $tpcc_table_list $tpcc_index_list temp; do
# eval "tpcc_${table}_tsfileinc=1"
# done
if test $tpcc_numfiles = 0 ; then
tpcc_numfiles=256
fi
tpcc_os=unix

# tpcc_stok_tsfileinc=64
# tpcc_cust_tsfileinc=64
# tpcc_iordl2_tsfileinc=16
# tpcc_icust2_tsfileinc=16
# tpcc_iordl_tsfileinc=16
else
#in case someone changes out of linux, and the shell is stuck
for table in $tpcc_table_list $tpcc_index_list temp; do
eval "tpcc_${table}_tsfileinc="
done
fi
tpcc_stok_tsfileinc=
tpcc_cust_tsfileinc=
tpcc_iordl2_tsfileinc=
tpcc_icust2_tsfileinc=
tpcc_iordl_tsfileinc=
#fi

# import local options
. ${tpcc_bench}/localoptions.sh

if expr `echo x$tpcc_no_options` = xt > /dev/null; then
echo Please modify ${tpcc_bench}/localoptions.sh to configure the
generator.
exit 1
fi

tpcc_fixordrdrd=${tpcc_genscripts_dir}/loadfixordrdrd.sh
tpcc_updateordrdrd=${tpcc_scripts}/updateordrdrd.sh

#tp- get table param. (that is, $tpcc_tablename_tableparam)
tp(){
eval echo `eval "tpcc_${1}_$2" `
}
```

```
}

# automatically generated variables
if expr `echo $tpcc_version | cut -b1` = t > /dev/null; then
tpcc_auto_undo=t
else
tpcc_auto_undo=f
fi
if expr `echo $tpcc_version | cut -b2` = t > /dev/null; then
tpcc_autospace_avail=t
else
tpcc_autospace_avail=f
fi
if expr `echo $tpcc_version | cut -b3` = t > /dev/null; then
tpcc_queue_avail=t
tpcc_use_sysaux=t
else
tpcc_queue_avail=f
tpcc_use_sysaux=f
fi

# for NT, ORACLE does not like $variables in sql scripts, so we must
# hardcode these things for it.
if test x$tpcc_os = xnt; then
tpcc_hardcode=t
else
tpcc_hardcode=f
fi

# if this is unset we need to make sure it's something anyway
if test x$tpcc_defbs = x; then
tpcc_defbs=2
fi

# used for loading program
if test x$tpcc_hash_overflow = xt; then
tpcc_hash_overflow=t
else
unset tpcc_hash_overflow
fi
if test x$tpcc_overflow = xt; then
tpcc_hash_overflow=t
else
unset tpcc_hash_overflow
fi

tpcc_create_steps="buildtpccflags buildcreatets buildcreatedb \
buildcreatetable-ware buildcreatetable-cust buildcreatetable-dist
buildcreatetable-hist buildcreatetable-stok buildcreatetable-item
buildcreatetable-ordi buildcreatetable-ordl buildcreatetable-nord \
buildloadware buildloadaddit buildloaditem buildloadhist buildloadnord
buildloadordrdrd buildloadcust buildloadstok \
buildcreateindex-iware buildcreateindex-icust1 buildcreateindex-icust2
buildcreateindex-idist buildcreateindex-istok buildcreateindex-item
buildcreateindex-iordr1 buildcreateindex-iordr2 buildcreateindex-iordl
buildcreateindex-inord \
buildstoreprocs buildspacestats listfiles
"

# remove runscript-loadfixordrdrd - shuang, 030626

tpcc_steps="runsqllocal-createdb shutdowndb startupdb-p_build
createuser ddview runscript-createts assigntemp \
runsql-createtable-ware runsql-createtable-cust runsql-createtable-dist
runsql-createtable-hist runsql-createtable-stok runsql-createtable-item
runsql-createtable-ordi runsql-createtable-ordl runsql-createtable-nord \
runscript-loadware runscript-loadaddit runscript-loaditem runscript-loadhist
runscript-loadnord runscript-loadordrdrd runscript-loadcust runscript-
loadstok \
analyze runsql-createindex-iware runsql-createindex-icust1 runsql-
createindex-icust2 runsql-createindex-idist runsql-createindex-istok
runsql-createindex-item runsql-createindex-iordr1 runsql-
createindex-iordr2 runsql-createindex-iordl runsql-createindex-inord \
createtstats createtstoreprocs createtpacestats createtmisc"

tpcc_total_files=524

# no longer automatically exports env variables
set +a

# check for problems with configuration
badconf=
for table in $tpcc_table_list; do
if expr `tp $table imp` = queue > /dev/null; then
if expr $tpcc_queue_avail = f > /dev/null; then
echo Table $table may not be a queue, since queues are
echo are unavailable in the selected Oracle version.
badconf=t
fi
fi
if expr $tpcc_autospace_avail = f \& `tp $table autospace` = t > /dev/null;
then
```


APPENDIX B: DATABASE DESIGN

```
echo Table $table may not use bitmapped space management
echo since it is not available in the selected Oracle version.
badconf=t
fi
fi

# make sure we have everything
if $tpcc_require ORACLE_SID \
tpcc_tokilobytes tpcc_createts tpcc_lcm\
tpcc_sqlplus tpcc_internal_connect\
tpcc_np tpcc_cpu tpcc_os tpcc_runlen tpcc_ldrive tpcc_scale
tpcc_disks_location tpcc_auto_undo tpcc_temptps_min\
tpcc_system_size tpcc_logfile_size\
tpcc_undo_size tpcc_undo_bs\
oracle_dba oracle_dba_password tpcc_dba_user_pass
then exit 1; fi

if test x$tpcc_hardcode != xt; then
tpcc_disks_location=${tpcc_disks_location}/
# tpcc_sql_dir=${tpcc_sql_dir}
# tpcc_statspack_size=${tpcc_statspack_size}
# tpcc_genscripts_dir=${tpcc_genscripts_dir}
fi
```

```
done
if test -n "$badconf"; then
exit 1
```

createdb.sql

APPENDIX B: DATABASE DESIGN

```
/* created automatically by /tmp/tpcc/scripts/buildcreatedb.sh Thu Apr 24
17:19:15 PDT 2008 */
spool createdb.log
```

```
set echo on
```

```
shutdown abort
```

```
startup pfile=p_create.ora nomount
create database tpcc
controlfile reuse
maxinstances 1
datafile
'C:\mnt\system_1' size 400M reuse
logfile 'C:\mnt\log_1_1' size 14500M reuse,
'C:\mnt\log_1_2' size 14500M reuse
sysaux datafile 'C:\mnt\tpccaux_0_0' size 120M reuse ;
```

```
create undo tablespace undo_1 datafile
'C:\mnt\roll1' size 8096M reuse blocksizes 8K;
```

```
set echo off
exit sql.sqlcode
```

createindex_icust1.sql

```
/* created automatically by /scratch/shuang/tpcc/dell/tpcc-
kit/scripts/buildcreateindex.sh Mon Dec 3 10:23:11 PST 2007 */
set timing on
set sqlblanklines on
spool createindex_icust1.log ;
set echo on ;
drop index icust1 ;
create unique index icust1 on cust ( c_w_id
, c_d_id
, c_id )
pctfree 1 intrans 3
storage ( buffer_pool default )
parallel 1 compute statisticstablespace icust1_0 ;
set echo off
spool off
exit sql.sqlcode;
```

createindex_icust2.sql

```
/* created automatically by /scratch/shuang/tpcc/dell/tpcc-
kit/scripts/buildcreateindex.sh Mon Dec 3 10:23:12 PST 2007 */
set timing on
set sqlblanklines on
spool createindex_icust2.log ;
set echo on ;
drop index icust2 ;
create unique index icust2 on cust ( c_last
, c_w_id
, c_d_id
, c_first
, c_id )
pctfree 1 intrans 3
storage ( buffer_pool default )
parallel 1
compute statistics
tablespace icust2_0 ;
set echo off
spool off
exit sql.sqlcode;
```

createindex_idist.sql

```
/* created automatically by /scratch/shuang/tpcc/dell/tpcc-
kit/scripts/buildcreateindex.sh Mon Dec 3 10:23:13 PST 2007 */
set timing on
```

```
set sqlblanklines on
spool createindex_idist.log ;
set echo on ;
drop index idist ;
create unique index idist on dist ( d_w_id
, d_id )
pctfree 5 intrans 3
storage ( buffer_pool default )
parallel 1
compute statistics
tablespace idist_0 ;
set echo off
spool off
exit sql.sqlcode;
```

createindex_iitem.sql

```
/* created automatically by /scratch/shuang/tpcc/dell/tpcc-
kit/scripts/buildcreateindex.sh Mon Dec 3 10:23:16 PST 2007 */
set timing on
set sqlblanklines on
spool createindex_iitem.log ;
set echo on ;
drop index iitem ;
create unique index iitem on item ( i_id )
pctfree 5 intrans 4
storage ( buffer_pool default )

compute statistics
tablespace iitem_0 ;
set echo off
spool off
exit sql.sqlcode;
```

createindex_inord.sql

```
/* created automatically by /scratch/shuang/tpcc/dell/tpcc-
kit/scripts/buildcreateindex.sh Mon Dec 3 10:23:20 PST 2007 */
set timing on
exit 0;
```

createindex_iordl.sql

```
/* created automatically by /scratch/shuang/tpcc/dell/tpcc-
kit/scripts/buildcreateindex.sh Mon Dec 3 10:23:19 PST 2007 */
set timing on
exit 0;
```

createindex_iordr1.sql

```
/* created automatically by /scratch/shuang/tpcc/dell/tpcc-
kit/scripts/buildcreateindex.sh Mon Dec 3 10:23:17 PST 2007 */
set timing on
exit 0;
```

createindex_iordr2.sql

```
/* created automatically by /scratch/shuang/tpcc/dell/tpcc-
kit/scripts/buildcreateindex.sh Mon Dec 3 10:23:18 PST 2007 */
set timing on
set sqlblanklines on
spool createindex_iordr2.log ;
set echo on ;
drop index iordr2 ;
create unique index iordr2 on ord ( o_c_id
, o_d_id
, o_w_id
, o_id )
pctfree 25 intrans 4
storage ( buffer_pool default )
parallel 1
```

```
compute statistics
tablespace iordr2_0 ;
set echo off
spool off
exit sql.sqlcode;
```

createindex_istok.sql

```
/* created automatically by /scratch/shuang/tpcc/dell/tpcc-
kit/scripts/buildcreateindex.sh Mon Dec 3 10:23:15 PST 2007 */
set timing on
set sqlblanklines on
spool createindex_istok.log ;
set echo on ;
drop index istok ;
create unique index istok on stok ( s_i_id
, s_w_id )
pctfree 1 initrans 3
storage ( buffer_pool default )
parallel 1
compute statistics
tablespace istok_0 ;
set echo off
spool off
exit sql.sqlcode ;
```

createindex_iware.sql

```
/* created automatically by /scratch/shuang/tpcc/dell/tpcc-
kit/scripts/buildcreateindex.sh Mon Dec 3 10:23:10 PST 2007 */
set timing on
set sqlblanklines on
spool createindex_iware.log ;
set echo on ;
drop index iware ;
create unique index iware on ware ( w_id )
pctfree 1 initrans 3
storage ( buffer_pool default )
parallel 1
compute statistics
tablespace iware_0 ;
set echo off
spool off
exit sql.sqlcode;
```

createspacestats.sql

```
@space_init
@space_get 12 10
@space_rpt
spool off
exit sql.sqlcode;
```

createstoreprocs.sql

```
spool createstoreprocs.log
@tkvcin.sql
spool off
exit sql.sqlcode;
```

createtable_cust.sql

```
/* created automatically by /tmp/tpcc/scripts/buildcreatetable.sh Thu Apr
24 17:19:19 PDT 2008 */
set timing on
set sqlblanklines on
spool createtable_cust.log
set echo on
```

```
drop cluster custcluster including tables ;
```

```
create cluster custcluster (
c_id number
, c_d_id number
, c_w_id number
)
single table
hashkeys 240000000
hash is ( (c_id * ( 8000 * 10 ) + c_w_id * 10 + c_d_id ) )
size 180
pctfree 0 initrans 3
storage ( buffer_pool recycle ) parallel ( degree 4 )
tablespace cust_0;
```

```
create table cust (
c_id number
, c_d_id number
, c_w_id number
, c_discount number
, c_credit char(2)
, c_last varchar2(16)
, c_first varchar2(16)
, c_credit_lim number
, c_balance number
, c_ytd_payment number
, c_payment_cnt number
, c_delivery_cnt number
, c_street_1 varchar2(20)
, c_street_2 varchar2(20)
, c_city varchar2(20)
, c_state char(2)
, c_zip char(9)
, c_phone char(16)
, c_since date
, c_middle char(2)
, c_data char(500)
)
cluster custcluster (
c_id
, c_d_id
, c_w_id
);
set echo off
spool off
exit sql.sqlcode;
```

createtable_dist.sql

```
/* created automatically by /tmp/tpcc/scripts/buildcreatetable.sh Thu Apr
24 17:19:24 PDT 2008 */
set timing on
set sqlblanklines on
spool createtable_dist.log
set echo on
drop cluster distcluster including tables ;
```

```
create cluster distcluster (
d_id number
, d_w_id number
)
single table
hashkeys 80000
hash is ( ((d_w_id * 10) + d_id ) )
size 1448
initrans 4
storage ( buffer_pool default )
tablespace dist_0;
```

```
create table dist (
d_id number
, d_w_id number
, d_ytd number
, d_next_o_id number
, d_tax number
, d_name varchar2(10)
, d_street_1 varchar2(20)
, d_street_2 varchar2(20)
, d_city varchar2(20)
, d_state char(2)
, d_zip char(9)
)
cluster distcluster (
d_id
, d_w_id
);
set echo off
spool off
```

```
exit sql.sqlcode;
```

createtable_hist.sql

```
/* created automatically by /tmp/tpcc/scripts/buildcreatetable.sh Thu Apr
24 17:19:27 PDT 2008 */
set timing on
set sqlblanklines on
spool createtable_hist.log
set echo on
drop table hist ;

create table hist (
  h_c_id number
, h_c_d_id number
, h_c_w_id number
, h_d_id number
, h_w_id number
, h_date date
, h_amount number
, h_data varchar2(24)
)
pctfree 5 intrans 4
storage ( buffer_pool recycle )
tablespace hist_0 ;
set echo off
spool off
exit sql.sqlcode;
```

createtable_item.sql

```
/* created automatically by /tmp/tpcc/scripts/buildcreatetable.sh Thu Apr
24 17:19:34 PDT 2008 */
set timing on
set sqlblanklines on
spool createtable_item.log
set echo on
drop cluster itemcluster including tables ;

create cluster itemcluster (
  i_id number(6,0)
)
single table
hashkeys 100000
hash is ( (i_id) )
size 120
pctfree 0 intrans 3
storage ( buffer_pool keep )
tablespace item_0;

create table item (
  i_id number(6,0)
, i_name varchar2(24)
, i_price number
, i_data varchar2(50)
, i_im_id number
)
cluster itemcluster (
  i_id
);
set echo off
spool off
exit sql.sqlcode;
```

createtable_nord.sql

```
/* created automatically by
/tmp/tpcc/scripts/buildcreatetable.sh Thu Apr 24 17:19:40 PDT 2008 */
set timing on
set sqlblanklines on
spool createtable_nord.log
set echo on
drop cluster nordcluster_queue including tables ;

create cluster nordcluster_queue (
  no_w_id number
, no_d_id number
, no_o_id number SORT
```

```
)

hashkeys 80000
hash is ( (no_w_id - 1) * 10 + no_d_id - 1 )
size 190
tablespace nord_0;

create table nord (
  no_w_id number
, no_d_id number
, no_o_id number sort
, constraint nord_uk primary key ( no_w_id
, no_d_id
, no_o_id )
)
cluster nordcluster_queue (
  no_w_id
, no_d_id
, no_o_id
);
set echo off
spool off
exit sql.sqlcode;
```

createtable_ordl.sql

```
/* created automatically by /tmp/tpcc/scripts/buildcreatetable.sh Thu Apr
24 17:19:38 PDT 2008 */
set timing on
set sqlblanklines on
spool createtable_ordl.log
set echo on
create table ordl (
  ol_w_id number
, ol_d_id number
, ol_o_id number sort
, ol_number number sort
, ol_i_id number
, ol_delivery_d date
, ol_amount number
, ol_supply_w_id number
, ol_quantity number
, ol_dist_info char(24)
, constraint ordl_uk primary key (ol_w_id, ol_d_id, ol_o_id, ol_number )
) CLUSTER ordcluster_queue(ol_w_id, ol_d_id, ol_o_id, ol_number) ;
set echo off
spool off
exit sql.sqlcode;
```

createtable_ordr.sql

```
/* created automatically by /tmp/tpcc/scripts/buildcreatetable.sh Thu Apr
24 17:19:36 PDT 2008 */
set timing on
set sqlblanklines on
spool createtable_ordr.log
set echo on
drop cluster ordcluster_queue including tables ;

create cluster ordcluster_queue (
  o_w_id number
, o_d_id number
, o_id number SORT
, o_number number SORT
)

hashkeys 80000
hash is ( (o_w_id - 1) * 10 + o_d_id - 1 )
size 1490
tablespace ord_0;

create table ord (
  o_id number sort
, o_w_id number
, o_d_id number
, o_c_id number
, o_carrier_id number
, o_ol_cnt number
, o_all_local number
, o_entry_d date
, constraint ord_uk primary key ( o_w_id
, o_d_id
, o_id )
)
cluster ordcluster_queue (
```

```

    o_w_id
  , o_d_id
  , o_id
);
set echo off
spool off
exit sql.sqlcode;

```

createtable_stok.sql

```

/* created automatically by /tmp/tpcc/scripts/buildcreatetable.sh Thu Apr
24 17:19:29 PDT 2008 */
set timing on
set sqlblanklines on
spool createtable_stok.log
set echo on
drop cluster stokcluster including tables ;

```

```

create cluster stokcluster (
  s_i_id number
, s_w_id number
)
single table
hashkeys 800000000
hash is ( (s_i_id * 8000 + s_w_id) )
size 256
pctfree 0 intrans 2 maxtrans 2
storage ( buffer_pool keep ) parallel ( degree 4 )
tablespace stok_0;

```

```

create table stok (
  s_i_id number
, s_w_id number
, s_quantity number
, s_ytd number
, s_order_cnt number
, s_remote_cnt number
, s_data varchar2(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)
)
cluster stokcluster (
  s_i_id
, s_w_id
);
set echo off
spool off
exit sql.sqlcode;

```

createtable_ware.sql

```

/* created automatically by /tmp/tpcc/scripts/buildcreatetable.sh Thu Apr
24 17:19:16 PDT 2008 */
set timing on
set sqlblanklines on
spool createtable_ware.log
set echo on
drop cluster warecluster including tables ;

```

```

create cluster warecluster (
  w_id number
)
single table
hashkeys 8000
hash is ( (w_id - 1) )
size 1448
initrans 2
storage ( buffer_pool default )
tablespace ware_0;

```

```

create table ware (
  w_id number
, w_ytd number
, w_tax number

```

```

, w_name varchar2(10)
, w_street_1 varchar2(20)
, w_street_2 varchar2(20)
, w_city varchar2(20)
, w_state char(2)
, w_zip char(9)
)
cluster warecluster (
  w_id
);
set echo off
spool off
exit sql.sqlcode;

```

space_get.sql

```

REM=====
=====+
REM      Copyright (c) 1995 Oracle Corp. Redwood Shores, CA   |
REM      OPEN SYSTEMS PERFORMANCE GROUP                     |
REM      All Rights Reserved                                   |
REM=====
=====+
REM FILENAME
REM      space_get.sql
REM DESCRIPTION
REM      Get sizes of tables, indexes and tablespaces.
REM      Usage: sqlplus 'sys/change_on_install as sysdba' @space_get
[<tpm> <# of warehouses>]
REM=====
=====*/

```

```

set echo on;
delete from tpcc_data;
delete from tpcc_space;
delete from tpcc_totSPACE;

```

```

insert into tpcc_data
select substr(segment_name,1,18), substr(segment_type,1,15),
       sum(blocks), t.block_size,
       round(sum(blocks) * 0.05), 0,
       sum(blocks) + round(sum(blocks) * 0.05)
from   dba_extents e, dba_tablespaces t
where  owner = 'TPCC' AND ( segment_type = 'INDEX' OR
                           segment_type = 'INDEX PARTITION' OR segment_type =
'CLUSTER'
                           OR segment_type = 'TABLE' OR segment_type = 'TABLE
PARTITION')
       AND e.tablespace_name <> 'SYSTEM' AND e.tablespace_name <>
'SP_0'
       AND e.tablespace_name = t.tablespace_name
group by segment_name, segment_type, t.block_size;

```

```

insert into tpcc_data
select 'SYSTEM', 'SYS', sum(blocks), t.block_size, 0, 0, sum(blocks)
from   dba_data_files f, dba_tablespaces t
where  f.tablespace_name = 'SYSTEM' and t.tablespace_name =
f.tablespace_name
group by t.block_size;

```

```

insert into tpcc_data
select 'SYSAUX', 'SYS', sum(blocks), t.block_size, 0, 0, sum(blocks)
from   dba_data_files f, dba_tablespaces t
where  f.tablespace_name = 'SYSAUX' and t.tablespace_name =
f.tablespace_name
group by t.block_size;

```

```

insert into tpcc_data
select 'ROLL_SEG', 'SYS', sum(blocks), t.block_size, 0, 0,
sum(blocks)
from   dba_data_files f, dba_tablespaces t
where  f.tablespace_name like '%UNDO_TS%' and
f.tablespace_name = t.tablespace_name
group by f.tablespace_name, t.block_size;

```

```

insert into tpcc_data
select 'DB_STAT', 'SYS', sum(blocks), t.block_size, 0, 0, sum(blocks)
from   dba_data_files f, dba_tablespaces t
where  f.tablespace_name like '%SP_0%' and f.tablespace_name =
t.tablespace_name
group by f.tablespace_name, t.block_size;

```

```

update tpcc_data
set five_pct = 0,
    daily_grow = round(blocks * &&1 / 62.5 / &&2),
    total = blocks + round(blocks * &&1 / 62.5 / &&2)
where segment = 'HIST' OR segment = 'ORDRCLUSTER_QUEUE'
OR

```

```

segment = 'ORDRCL';

```

```

insert into tpcc_space
select substr(ex$.name,1,18), sum(sp$.sz_blocks), sp$.block_size, 0, 0,
0, 0
from
(select f.tablespace_name, sum(blocks) sz_blocks, t.block_size
block_size
from dba_data_files f, dba_tablespaces t
where f.tablespace_name <> 'SYSTEM' and f.tablespace_name =
t.tablespace_name
group by f.tablespace_name, t.block_size
) sp$,
(select distinct tablespace_name, segment_name name
from dba_extents
where owner = 'TPCC'
and (segment_type = 'CLUSTER' or segment_type = 'TABLE'
or segment_type = 'TABLE PARTITION' or segment_type = 'INDEX'
or segment_type = 'INDEX PARTITION')
and tablespace_name <> 'SYSTEM'
) ex$
where sp$.tablespace_name = ex$.tablespace_name
group by ex$.name, sp$.block_size;

insert into tpcc_space
select substr(f.tablespace_name,1,18), sum(blocks), t.block_size, 0, 0,
0, 0
from dba_data_files f, dba_tablespaces t
where (f.tablespace_name = 'SYSTEM' or f.tablespace_name =
'SYSAUX')
and f.tablespace_name = t.tablespace_name
group by f.tablespace_name, t.block_size;

insert into tpcc_space
select 'ROLL_SEG', sum(blocks), t.block_size, 0, 0, 0, 0
from dba_data_files f, dba_tablespaces t
where f.tablespace_name = 'UNDO_TS' and f.tablespace_name =
t.tablespace_name
group by f.tablespace_name, t.block_size;

insert into tpcc_space
select 'DB_STAT', sum(blocks), t.block_size, 0, 0, 0, 0
from dba_data_files f, dba_tablespaces t
where f.tablespace_name = 'SP_0' and f.tablespace_name =
t.tablespace_name
group by f.tablespace_name, t.block_size;

update tpcc_space
set required =
(
select sum(total)
from tpcc_data
where tpcc_data.segment = tpcc_space.segment
)
where segment in
(
select segment from tpcc_data
);

update tpcc_space
set static =
(
select sum(total)
from tpcc_data
where tpcc_data.segment = tpcc_space.segment
)
where segment in
(
select segment from tpcc_data
);

update tpcc_space
set static = 0,
dynamic =
(
select sum(blocks)
from tpcc_data
where tpcc_data.segment = tpcc_space.segment
)
where segment in ('HIST', 'ORDRCLUSTER_QUEUE', 'IORDL');

update tpcc_space
set oversize = blocks - required;

insert into tpcc_totSPACE
select &&1, &&2, sum(static * block_size)/1024, sum(dynamic *
block_size)/1024, sum(oversize * block_size)/1024, 0, 0, 0
from tpcc_space;

update tpcc_totSPACE
set daily_grow =
(
select sum(daily_grow * block_size)/1024

```

```

from tpcc_data
);
update tpcc_totSPACE
set space60 = static + 60 * daily_grow;
set echo off;

```

space_init.sql

```

REM=====
=====+
REM FILENAME
REM space_init.sql
REM DESCRIPTION
REM Create tables for space calculations.
REM Usage: sqlplus 'sys/change_on_install as sysdba' @space_init.sql
REM=====
=====*/

set echo on;
drop table tpcc_data;
drop table tpcc_space;
drop table tpcc_totSPACE;
create table tpcc_data (
segment varchar2(18),
type varchar2(15),
blocks number,
block_size number,
five_pct number,
daily_grow number,
total number
);
create table tpcc_space (
segment varchar2(18),
blocks number,
block_size number,
required number,
static number,
dynamic number,
oversize number
);
create table tpcc_totSPACE (
tpm number,
nware number,
static number,
dynamic number,
oversize number,
daily_grow number,
daily_spre number,
space60 number
);
create unique index tpcc_data on tpcc_data (segment);
create unique index tpcc_space on tpcc_space (segment);
set echo off;

```

space_rpt.sql

```

REM=====
=====+
REM Copyright (c) 1995 Oracle Corp, Redwood Shores, CA |
REM OPEN SYSTEMS PERFORMANCE GROUP |
REM All Rights Reserved |
REM=====
=====+
REM FILENAME
REM space_rpt.sql
REM DESCRIPTION
REM Generate space report and save it in space.rpt
REM Usage: sqlplus 'sys/change_on_install as sysdba' @space_rpt.sql
REM=====
=====*/

set space 2
set pagesize 2000
set echo off
set termout off
set verify off
set feedback off
set pagesize 60 linesize 120
spool space.rpt
select tpm, nware from tpcc_totSPACE;
select * from tpcc_data order by segment;
select * from tpcc_space order by segment;
select static, dynamic, oversize, daily_grow, daily_spre, space60
from tpcc_totSPACE;
spool off;

```

tkvcinin.sql

```
-- The initnew package for storing variables used in the
-- New Order anonymous block

CREATE OR REPLACE PACKAGE inittpcc
AS
TYPE intarray IS TABLE OF INTEGER INDEX BY BINARY_INTEGER;
TYPE distarray IS TABLE OF VARCHAR(24) INDEX BY
BINARY_INTEGER;
nulldate DATE;
TYPE rowidarray IS TABLE OF ROWID INDEX BY PLS_INTEGER;
s_dist          intarray;
idx1arr         intarray;
s_remote        intarray;
dist            intarray;
row_id          rowidarray;
cust_rowid      rowid;
dist_name       VARCHAR2(11);
ware_name       VARCHAR2(11);
c_num           PLS_INTEGER;

PROCEDURE init_no(idxarr intarray);
PROCEDURE init_del;
PROCEDURE init_pay;
END inittpcc;
/
show errors;

CREATE OR REPLACE PACKAGE BODY inittpcc AS
PROCEDURE init_no (idxarr intarray)
IS
BEGIN
-- initialize null date
nulldate := TO_DATE('01-01-1811', 'MM-DD-YYYY');
idx1arr := idxarr;
END init_no;

PROCEDURE init_del
IS
BEGIN
FOR i IN 1 .. 10 LOOP
dist(i) := i;
END LOOP;
END init_del;

PROCEDURE init_pay IS
BEGIN
NULL;
END init_pay;

END inittpcc;
/
show errors
exit
```

createts.sh

```
#!/bin/sh
#NOTE - ANY CHANGES MUST BE MADE TO CREATETS.KSH AS
WELL.
# createts.sh [name] [no. of file] [no. of partition] [filesize] [ext_size]
# [unix/nt] [1: temporary ts / 0: others] [filecount] [no of cpu]
# [blocksize] [t: bitmapped / f: manual manage / d:
dictionary ]

name=$1
fileno=$2
noofts=$3
filesize=$4
extsize=$5
ver=$6
isTemp=$7
filecount=$8
para= `expr $9 % 2`
#blocksize=`{10} sh bug workaround
blocksize=`echo $@ | cut -d ' ' -f10`
#autospace=`{11} sh bug workaround
autospace=`echo $@ | cut -d ' ' -f11`

addts=$tpcc_scripts/addts.sh
addfile=$tpcc_scripts/addfile.sh

if expr "x$tpcc_createts_print" = "xt" > /dev/null ; then
createtsout=${tpcc_genscripts_dir}/createts_node${tpcc_rac_node}.sh
fileavg=`expr $fileno / $tpcc_np`
```

```
if test $noofts -gt 1 ; then
avg_ts_node=`expr $noofts / $tpcc_np`
if test "x$tpcc_rac_createts_phase" = "x1" ; then
fileavg=$avg_ts_node
else
if test "x$tpcc_rac_createts_phase" = "x2" ; then
fileavg=`expr $fileavg - $avg_ts_node`
fi
fi
fi

fileend=`expr $fileavg \* $tpcc_rac_node`
filestart=`expr $fileend - $fileavg`
if expr $tpcc_rac_node = $tpcc_np > /dev/null; then
fileend=$fileno
fi
fi

#if test $ver = unix;
#then
fileaddr="$tpcc_disks_location";
#elif test $ver = nt;
#then
# fileaddr=\\.\.\\
#fi

filecounter=0
i=0
while test $i -lt $noofts; do

filecount=`expr $filecount + 1`;
if expr "x$tpcc_createts_print" = "xt" > /dev/null ; then
if test "x$tpcc_rac_createts_phase" = "x1" ; then
if test "x$name" = "xitem" -o "x$name" = "xiitem" -o "x$name" =
"xtemp" -o "x$name" = "xrestbl" ; then
if test $tpcc_rac_node = 1 ; then
echo $addts $name\_ $i $fileaddr$name\_ $\_0 $filesize $extsize
$blocksize $isTemp $autospace \& >> $createtsout
rac_count=`expr $rac_count + 1`
if test "$rac_count" = "$para" ; then
rac_count=0
echo wait >> $createtsout
fi
fi
else
if test $filecounter -ge $filestart -a $filecounter -lt $fileend ; then
echo $addts $name\_ $i $fileaddr$name\_ $\_0 $filesize $extsize
$blocksize $isTemp $autospace \& >> $createtsout
rac_count=`expr $rac_count + 1`
if test "$rac_count" = "$para" ; then
rac_count=0
echo wait >> $createtsout
fi
fi
fi
fi
else
$addts $name\_ $i $fileaddr$name\_ $\_0 $filesize $extsize $blocksize
$isTemp $autospace \> junk$filecount 2\>\&1 \&;
fi
eval "proc$filecount=$i"
filecounter=`expr $filecounter + 1`

p=`expr $filecount % $para`;
if test $p = 0;
then
k=`expr $filecount - $para + 1`;
if test $k -le $8;
then
k=`expr $8 + 1`;
fi
while test $k -le $filecount ; do
# wait `eval echo $proc$k`
wait
eval "proc$k=$?"
k=`expr $k + 1`;
done
fi

i=`expr $i + 1`;

done

p=`expr $filecount % $para`
if test $p != 0;
then
k=`expr $filecount - $p + 1`;
if test $k -le $8;
then
k=`expr $8 + 1`;
fi
while test $k -le $filecount; do
# wait `eval echo $proc$k`
```


APPENDIX B: DATABASE DESIGN

```
wait
eval "proc$k=$?"
k=`expr $k + 1`
done
fi

if test "$tpcc_createts_print" = "xt" -a "$tpcc_rac_createts_phase" = "x1"
; then
echo $rac_count
exit 0
fi

if test "$tpcc_createts_print" = "xt" -a "$noofts -gt 1 -a
"$tpcc_rac_createts_phase" = "x2"; then
filecounter=0
fi

filecount=0
fileperts=`expr $fileno / $noofts - 1`
if test $fileperts -gt 0 ;
then
i=0
while test $i -lt $noofts ; do
j=0;
while test $j -lt $fileperts ; do

filecount=`expr $filecount + 1`;
if expr "$tpcc_createts_print" = "xt" > /dev/null ; then
if test "$tpcc_rac_createts_phase" = "x2"; then
if test "$sname" = "xitem" -o "$sname" = "xtemp" -o "$sname" =
"xresttbl"; then
if test $tpcc_rac_node = 1 ; then
echo $saddfile $sname\_ $i $fileaddr$sname\_ $\i\_ `expr $j + 1`
$filesize $isTemp \& >> $createtsout
rac_count=`expr $rac_count + 1`
if test "$rac_count" = "$para"; then
rac_count=0
echo wait >> $createtsout
fi
fi
else
if test $filecounter -ge $filestart -a $filecounter -lt $fileend ; then
echo $saddfile $sname\_ $i $fileaddr$sname\_ $\i\_ `expr $j + 1`
$filesize $isTemp \& >> $createtsout
rac_count=`expr $rac_count + 1`
if test "$rac_count" = "$para"; then
rac_count=0
echo wait >> $createtsout
fi
fi
fi
else
$saddfile $sname\_ $i $fileaddr$sname\_ $\i\_ `expr $j + 1` $filesize
$isTemp \> junk$filecount 2\>\&1 &
fi
eval "proc$filecount=$i"

filecounter=`expr $filecounter + 1`

p=`expr $filecount % $para`;
if test $p = 0;
then
wait
# k=`expr $filecount - $para + 1`;
# if test $k -le $8;
# then
# k=`expr $8 + 1`;
# fi
# while test $k -le $filecount ; do
# wait
# eval "proc$k=$?"
# k=`expr $k + 1`;
# done
fi

j=`expr $j + 1`
done

i=`expr $i + 1`
done

p=`expr $filecount % $para`
if test $p != 0;
then
k=`expr $filecount - $p + 1`;
if test $k -le $8;
then
k=`expr $8 + 1`;
fi
while test $k -le $filecount; do
# wait `eval echo '$proc$k'`
wait

```

```
eval "proc$k=$?"
k=`expr $k + 1`
done
fi

if test "$tpcc_createts_print" = "xt"; then
echo $rac_count
fi

exit 0

i=`expr $8 + 1`
proc=0
while test $i -le $filecount ;do
eval 'process=$proc'"$i"
proc=`expr $proc + $process`
i=`expr $i + 1`
done

out=`expr $proc % 127`
# Added wait here for all tablespaces to be created
wait
if expr x$tpcc_listfiles = xt > /dev/null; then
exit 0
fi

if test $out -ne 0
then
exit 1;
else
exit 0;
fi
```

generated/createts.sh

#created automatically by /tmp/tpcc/scripts/buildcreatets.sh Thu Apr 24 17:18:55 PDT 2008

Tablespace ware, ts size 20M (20480K)
each file 20M (20480K)
extents 18144K (18144K)
1 files

\$tpcc_createts ware 1 1 20M 18144K nt 0 0 4 auto t
if expr \$? != 0 > /dev/null; then
echo Creating tablespace for ware failed. Exiting.
exit 0
fi

Tablespace cust, ts size 215100M (220262400K)
each file 7170M (7342080K)
extents 104782K (104782K)
30 files

\$tpcc_createts cust 30 1 7170M 104782K nt 0 1 4 auto t
if expr \$? != 0 > /dev/null; then
echo Creating tablespace for cust failed. Exiting.
exit 0
fi

Tablespace dist, ts size 180M (184320K)
each file 180M (184320K)
extents 172224K (172224K)
1 files

\$tpcc_createts dist 1 1 180M 172224K nt 0 31 4 auto t
if expr \$? != 0 > /dev/null; then
echo Creating tablespace for dist failed. Exiting.
exit 0
fi

Tablespace hist, ts size 24000M (24576000K)
each file 4000M (4096000K)
extents 102170K (102170K)
6 files

\$tpcc_createts hist 6 1 4000M 102170K nt 0 32 4 auto t
if expr \$? != 0 > /dev/null; then
echo Creating tablespace for hist failed. Exiting.
exit 0
fi

Tablespace stok, ts size 241500M (247296000K)
each file 8050M (8243200K)
extents 104218K (104218K)
30 files

APPENDIX B: DATABASE DESIGN

```
$tpcc_createts stok 30 1      8050M 104218K nt 0    38 4 auto t
if expr $? != 0 > /dev/null; then
    echo Creating tablespace for stok failed. Exiting.
    exit 0
fi

# Tablespace item, ts size 20M (20480K)
# each file 20M (20480K)
# extents 16892K (16892K)
# 1 files

$tpcc_createts item 1 1      20M 16892K nt 0      68 4 auto t
if expr $? != 0 > /dev/null; then
    echo Creating tablespace for item failed. Exiting.
    exit 0
fi

# Tablespace ordr, ts size 341820M (350023680K)
# each file 56970M (58337280K)
# extents 103424K (103424K)
# 6 files

$tpcc_createts ordr 8 1      43000M 103424K nt 0    69 4 16K t
if expr $? != 0 > /dev/null; then
    echo Creating tablespace for ordr failed. Exiting.
    exit 0
fi

# Tablespace nord, ts size 2800M (2867200K)
# each file 2800M (2867200K)
# extents 286358K (286358K)
# 1 files

$tpcc_createts nord 1 1      2800M 286358K nt 0    77 4 auto t
if expr $? != 0 > /dev/null; then
    echo Creating tablespace for nord failed. Exiting.
    exit 0
fi

# Tablespace iware, ts size 20M (20480K)
# each file 20M (20480K)
# extents 11264K (11264K)
# 1 files

$tpcc_createts iware 1 1      20M 11264K nt 0      78 4 auto t
if expr $? != 0 > /dev/null; then
    echo Creating tablespace for iware failed. Exiting.
    exit 0
fi

# Tablespace icust1, ts size 5660M (5795840K)
# each file 5660M (5795840K)
# extents 181024K (181024K)
# 1 files

$tpcc_createts icust1 1 1      5660M 181024K nt 0   79 4 16K t
if expr $? != 0 > /dev/null; then
    echo Creating tablespace for icust1 failed. Exiting.
    exit 0
fi

# Tablespace icust2, ts size 14280M (14622720K)
# each file 2380M (2437120K)
# extents 76024K (76024K)
# 6 files

$tpcc_createts icust2 3 1      5610M 179148 nt 0    80 4 auto t
if expr $? != 0 > /dev/null; then
    echo Creating tablespace for icust2 failed. Exiting.
    exit 0
fi

# Tablespace idist, ts size 50M (51200K)
# each file 50M (51200K)
# extents 41024K (41024K)
# 1 files

$tpcc_createts idist 1 1      50M 41024K nt 0      88 4 auto t
if expr $? != 0 > /dev/null; then
    echo Creating tablespace for idist failed. Exiting.
    exit 0
fi

# Tablespace istok, ts size 16710M (17111040K)
# each file 16710M (17111040K)
# extents 534368K (534368K)
# 1 files

$tpcc_createts istok 1 1      16710M 534368K nt 0   87 4 16K t
if expr $? != 0 > /dev/null; then
    echo Creating tablespace for istok failed. Exiting.
    exit 0
fi
```

```
# Tablespace iitem, ts size 20M (20480K)
# each file 20M (20480K)
# extents 11264K (11264K)
# 1 files

$tpcc_createts iitem 1 1      20M 11264K nt 0     86 4 auto t
if expr $? != 0 > /dev/null; then
    echo Creating tablespace for iitem failed. Exiting.
    exit 0
fi
```

```
# Tablespace iordr2, ts size 13740M (14069760K)
# each file 2290M (2344960K)
# extents 73138K (73138K)
# 6 files
```

```
$tpcc_createts iordr2 3 1      5410M 102518K nt 0   87 4 auto t
if expr $? != 0 > /dev/null; then
    echo Creating tablespace for iordr2 failed. Exiting.
    exit 0
fi
```

```
# Tablespace temp, ts size 41940M (42946560K)
# each file 6990M (7157760K)
# extents 204198K (204198K)
# 6 files
```

```
$tpcc_createts temp 9 1      5530M 202082K nt 1    93 4 auto t
if expr $? != 0 > /dev/null; then
    echo Creating tablespace for temp failed. Exiting.
    exit 0
fi
```

loadcust.sh

```
# created automatically by /tmp/tpcc/scripts/evenload.sh Thu Apr 24
17:19:42 PDT 2008
rm -f loadcust*.log
cd $tpcc_bench
allprocs=
$tpcc_load -M 8000 -C -I 1 -m 375 >> loadcust0.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -C -I 376 -m 750 >> loadcust1.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -C -I 751 -m 1125 >> loadcust2.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -C -I 1126 -m 1500 >> loadcust3.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -C -I 1501 -m 1875 >> loadcust4.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -C -I 1876 -m 2250 >> loadcust5.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -C -I 2251 -m 2625 >> loadcust6.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -C -I 2626 -m 3000 >> loadcust7.log 2>&1 &
allprocs="$allprocs ${!}"
error=0
for curproc in $allprocs; do
    wait $curproc
    error=$((expr $? + $error)
done
exit `expr $error != 0`
```

loaddist.sh

```
cd $tpcc_bench
$tpcc_load -M $tpcc_scale -d > loaddist.log 2>&1
```

loadhist.sh

```
# created automatically by /tmp/tpcc/scripts/evenload.sh Thu Apr 24
17:19:41 PDT 2008
rm -f loadhist*.log
cd $tpcc_bench
allprocs=
$tpcc_load -M 8000 -h -b 1 -e 1000 >> loadhist0.log 2>&1 &
allprocs="$allprocs ${!}"
```

```
$tpcc_load -M 8000 -h -b 1001 -e 2000 >> loadhist1.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -h -b 2001 -e 3000 >> loadhist2.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -h -b 3001 -e 4000 >> loadhist3.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -h -b 4001 -e 5000 >> loadhist4.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -h -b 5001 -e 6000 >> loadhist5.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -h -b 6001 -e 7000 >> loadhist6.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -h -b 7001 -e 8000 >> loadhist7.log 2>&1 &
allprocs="$allprocs ${!}"
error=0
for curproc in $allprocs; do
    wait $curproc
    error=`expr $? + $error`
done
exit `expr $error != 0`
```

loaditem.sh

```
cd $tpcc_bench
$tpcc_load -M $tpcc_scale -i > loaditem.log 2>&1
```

loadnord.sh

```
#created automatically by /tmp/tpcc/scripts/evenload.sh Thu Apr 24
17:19:41 PDT 2008
rm -f loadnord*.log
cd $tpcc_bench
allprocs=
$tpcc_load -M 8000 -n -b 1 -e 8000 >> loadnord0.log 2>&1 &
allprocs="$allprocs ${!}"
error=0
for curproc in $allprocs; do
    wait $curproc
    error=`expr $? + $error`
done
exit `expr $error != 0`
```

loadordrordl.sh

```
#created automatically by /tmp/tpcc/scripts/evenload.sh Thu Apr 24
17:19:42 PDT 2008
rm -f loadordrordl*.log
cd $tpcc_bench
allprocs=
$tpcc_load -M 8000 -o \\\dummy0.dat -b 1 -e 1000 >> loadordrordl0.log
2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -o \\\dummy1.dat -b 1001 -e 2000 >>
loadordrordl1.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -o \\\dummy2.dat -b 2001 -e 3000 >>
loadordrordl2.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -o \\\dummy3.dat -b 3001 -e 4000 >>
loadordrordl3.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -o \\\dummy4.dat -b 4001 -e 5000 >>
loadordrordl4.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -o \\\dummy5.dat -b 5001 -e 6000 >>
loadordrordl5.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -o \\\dummy6.dat -b 6001 -e 7000 >>
loadordrordl6.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -o \\\dummy7.dat -b 7001 -e 8000 >>
loadordrordl7.log 2>&1 &
allprocs="$allprocs ${!}"
error=0
for curproc in $allprocs; do
    wait $curproc
    error=`expr $? + $error`
done
exit `expr $error != 0`
```

loadstok.sh

```
#created automatically by /tmp/tpcc/scripts/evenload.sh Thu Apr 24
17:19:43 PDT 2008
rm -f loadstok*.log
cd $tpcc_bench
allprocs=
$tpcc_load -M 8000 -S -j 1 -k 12500 >> loadstok0.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -S -j 12501 -k 25000 >> loadstok1.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -S -j 25001 -k 37500 >> loadstok2.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -S -j 37501 -k 50000 >> loadstok3.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -S -j 50001 -k 62500 >> loadstok4.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -S -j 62501 -k 75000 >> loadstok5.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -S -j 75001 -k 87500 >> loadstok6.log 2>&1 &
allprocs="$allprocs ${!}"
$tpcc_load -M 8000 -S -j 87501 -k 100000 >> loadstok7.log 2>&1 &
allprocs="$allprocs ${!}"
error=0
for curproc in $allprocs; do
    wait $curproc
    error=`expr $? + $error`
done
exit `expr $error != 0`
```

loadware.sh

```
cd $tpcc_bench
$tpcc_load -M $tpcc_scale -w > loadware.log 2>&1
```

analyze.sql

```
#!/bin/sh
$tpcc_sqlplus $tpcc_user_pass @$tpcc_sql_dir/analyze >
$tpcc_log_dir/junk 2>&1
```

```
if test $? -ne 0
then
    exit 1;
else
    exit 0;
fi
```

assigntemp.sql

```
#!/bin/sh

echo Assigning temporary tablespace to user tpcc...
$tpcc_sqlplus $tpcc_dbu_user_pass @$tpcc_sql_dir/assigntemp > junk
2>&1
if test $? -ne 0
then
    exit 1;
else
    exit 0;
fi
```

createuser.sql

```
#!/bin/sh

echo Creating user tpcc...
$tpcc_sqlplus $tpcc_dbu_user_pass @$tpcc_sql_dir/createuser > junk
2>&1
if test $? -ne 0
then
    exit 1;
else
    exit 0;
```

fi

DBInit.ini

```
[TPCC]
StartTerm=1
DBConnections=330
KMaxterms=80
DeliveryQueues=400
DeliveryThreads=100
```

Create_raw_partitions

```
select disk=0
create partition extended
select disk=1
create partition extended
select disk=2
create partition extended
select disk=3
create partition extended
select disk=4
create partition extended
select disk=5
create partition extended
select disk=6
create partition extended

select disk=0
create partition logical size=100
assign mount=c:\mntlware_0_0

select disk=1
create partition logical size=8500
assign mount=c:\mntlcust_0_0

select disk=2
create partition logical size=8500
assign mount=c:\mntlcust_0_1

select disk=3
create partition logical size=8500
assign mount=c:\mntlcust_0_2

select disk=4
create partition logical size=8500
assign mount=c:\mntlcust_0_3

select disk=5
create partition logical size=8500
assign mount=c:\mntlcust_0_4

select disk=0
create partition logical size=8500
assign mount=c:\mntlcust_0_5

select disk=1
create partition logical size=8500
assign mount=c:\mntlcust_0_6

select disk=2
create partition logical size=8500
assign mount=c:\mntlcust_0_7

select disk=3
create partition logical size=8500
assign mount=c:\mntlcust_0_8

select disk=4
create partition logical size=8500
assign mount=c:\mntlcust_0_9

select disk=5
create partition logical size=8500
assign mount=c:\mntlcust_0_10

select disk=0
create partition logical size=8500
assign mount=c:\mntlcust_0_11

select disk=1
create partition logical size=8500
assign mount=c:\mntlcust_0_12
```

```
select disk=2
create partition logical size=8500
assign mount=c:\mntlcust_0_13

select disk=3
create partition logical size=8500
assign mount=c:\mntlcust_0_14

select disk=4
create partition logical size=8500
assign mount=c:\mntlcust_0_15

select disk=5
create partition logical size=8500
assign mount=c:\mntlcust_0_16

select disk=0
create partition logical size=8500
assign mount=c:\mntlcust_0_17

select disk=1
create partition logical size=8500
assign mount=c:\mntlcust_0_18

select disk=2
create partition logical size=8500
assign mount=c:\mntlcust_0_19

select disk=3
create partition logical size=8500
assign mount=c:\mntlcust_0_20

select disk=4
create partition logical size=8500
assign mount=c:\mntlcust_0_21

select disk=5
create partition logical size=8500
assign mount=c:\mntlcust_0_22

select disk=0
create partition logical size=8500
assign mount=c:\mntlcust_0_23

select disk=1
create partition logical size=8500
assign mount=c:\mntlcust_0_24

select disk=2
create partition logical size=8500
assign mount=c:\mntlcust_0_25

select disk=3
create partition logical size=8500
assign mount=c:\mntlcust_0_26

select disk=4
create partition logical size=8500
assign mount=c:\mntlcust_0_27

select disk=5
create partition logical size=8500
assign mount=c:\mntlcust_0_28

select disk=0
create partition logical size=8500
assign mount=c:\mntlcust_0_29

select disk=1
create partition logical size=8500
assign mount=c:\mntlcust_0_30

select disk=2
create partition logical size=8500
assign mount=c:\mntlcust_0_31

select disk=3
create partition logical size=8500
assign mount=c:\mntlcust_0_32

select disk=4
create partition logical size=400
assign mount=c:\mntldist_0_0

select disk=5
create partition logical size=5300
assign mount=c:\mntlhst_0_0

select disk=0
create partition logical size=5300
assign mount=c:\mntlhst_0_1

select disk=1
```

APPENDIX B: DATABASE DESIGN

```

create partition logical size=5300
assign mount=c:\mntlhist_0_2

select disk=2
create partition logical size=5300
assign mount=c:\mntlhist_0_3

select disk=3
create partition logical size=5300
assign mount=c:\mntlhist_0_4

select disk=4
create partition logical size=5300
assign mount=c:\mntlhist_0_5

select disk=5
create partition logical size=8700
assign mount=c:\mntlstok_0_0

select disk=0
create partition logical size=8700
assign mount=c:\mntlstok_0_1

select disk=1
create partition logical size=8700
assign mount=c:\mntlstok_0_2

select disk=2
create partition logical size=8700
assign mount=c:\mntlstok_0_3

select disk=3
create partition logical size=8700
assign mount=c:\mntlstok_0_4

select disk=4
create partition logical size=8700
assign mount=c:\mntlstok_0_5

select disk=5
create partition logical size=8700
assign mount=c:\mntlstok_0_6

select disk=0
create partition logical size=8700
assign mount=c:\mntlstok_0_7

select disk=1
create partition logical size=8700
assign mount=c:\mntlstok_0_8

select disk=2
create partition logical size=8700
assign mount=c:\mntlstok_0_9

select disk=3
create partition logical size=8700
assign mount=c:\mntlstok_0_10

select disk=4
create partition logical size=8700
assign mount=c:\mntlstok_0_11

select disk=5
create partition logical size=8700
assign mount=c:\mntlstok_0_12

select disk=0
create partition logical size=8700
assign mount=c:\mntlstok_0_13

select disk=1
create partition logical size=8700
assign mount=c:\mntlstok_0_14

select disk=2
create partition logical size=8700
assign mount=c:\mntlstok_0_15

select disk=3
create partition logical size=8700
assign mount=c:\mntlstok_0_16

select disk=4
create partition logical size=8700
assign mount=c:\mntlstok_0_17

select disk=5
create partition logical size=8700
assign mount=c:\mntlstok_0_18

select disk=0
create partition logical size=8700

```

```

assign mount=c:\mntlstok_0_19

select disk=1
create partition logical size=8700
assign mount=c:\mntlstok_0_20

select disk=2
create partition logical size=8700
assign mount=c:\mntlstok_0_21

select disk=3
create partition logical size=8700
assign mount=c:\mntlstok_0_22

select disk=4
create partition logical size=8700
assign mount=c:\mntlstok_0_23

select disk=5
create partition logical size=8700
assign mount=c:\mntlstok_0_24

select disk=0
create partition logical size=8700
assign mount=c:\mntlstok_0_25

select disk=1
create partition logical size=8700
assign mount=c:\mntlstok_0_26

select disk=2
create partition logical size=8700
assign mount=c:\mntlstok_0_27

select disk=3
create partition logical size=8700
assign mount=c:\mntlstok_0_28

select disk=4
create partition logical size=8700
assign mount=c:\mntlstok_0_29

select disk=5
create partition logical size=8700
assign mount=c:\mntlstok_0_30

select disk=0
create partition logical size=8700
assign mount=c:\mntlstok_0_31

select disk=1
create partition logical size=8700
assign mount=c:\mntlstok_0_32

select disk=2
create partition logical size=8700
assign mount=c:\mntlstok_0_33

select disk=3
create partition logical size=8700
assign mount=c:\mntlstok_0_34

select disk=4
create partition logical size=8700
assign mount=c:\mntlstok_0_35

select disk=5
create partition logical size=80
assign mount=c:\mntlitem_0_0

select disk=0
create partition logical size=52000
assign mount=c:\mntlorder_0_0

select disk=1
create partition logical size=52000
assign mount=c:\mntlorder_0_1

select disk=2
create partition logical size=52000
assign mount=c:\mntlorder_0_2

select disk=3
create partition logical size=52000
assign mount=c:\mntlorder_0_3

select disk=4
create partition logical size=52000
assign mount=c:\mntlorder_0_4

select disk=5
create partition logical size=52000
assign mount=c:\mntlorder_0_5

```

APPENDIX B: DATABASE DESIGN

```
select disk=0
create partition logical size=52000
assign mount=c:\mntltdr_0_6
```

```
select disk=1
create partition logical size=52000
assign mount=c:\mntltdr_0_7
```

```
select disk=2
create partition logical size=52000
assign mount=c:\mntltdr_0_8
```

```
select disk=3
create partition logical size=80
assign mount=c:\mntliware_0_0
```

```
select disk=4
create partition logical size=8000
assign mount=c:\mntlicust1_0_0
```

```
select disk=5
create partition logical size=6500
assign mount=c:\mntlicust2_0_0
```

```
select disk=0
create partition logical size=6500
assign mount=c:\mntlicust2_0_1
```

```
select disk=1
create partition logical size=6500
assign mount=c:\mntlicust2_0_2
```

```
select disk=2
create partition logical size=100
assign mount=c:\mntlidist_0_0
```

```
select disk=3
create partition logical size=23000
assign mount=c:\mntlistok_0_0
```

```
select disk=4
create partition logical size=100
assign mount=c:\mntliitem_0_0
```

```
select disk=5
create partition logical size=6500
assign mount=c:\mntliordr2_0_0
```

```
select disk=0
create partition logical size=6500
assign mount=c:\mntliordr2_0_1
```

```
select disk=1
create partition logical size=6500
assign mount=c:\mntliordr2_0_2
```

```
select disk=2
create partition logical size=6500
assign mount=c:\mntlitemp_0_0
```

```
select disk=3
create partition logical size=6500
assign mount=c:\mntlitemp_0_1
```

```
select disk=4
create partition logical size=6500
assign mount=c:\mntlitemp_0_2
```

```
select disk=5
create partition logical size=6500
assign mount=c:\mntlitemp_0_3
```

```
select disk=0
create partition logical size=6500
assign mount=c:\mntlitemp_0_4
```

```
select disk=1
create partition logical size=6500
assign mount=c:\mntlitemp_0_5
```

```
select disk=2
create partition logical size=6500
assign mount=c:\mntlitemp_0_6
```

```
select disk=3
create partition logical size=6500
assign mount=c:\mntlitemp_0_7
```

```
select disk=4
create partition logical size=6500
assign mount=c:\mntlitemp_0_8
```

```
select disk=5
create partition logical size=300
assign mount=c:\mntltpcaux_0_0
```

```
select disk=0
create partition logical size=80
assign mount=c:\mntlcontrol_001
```

```
select disk=1
create partition logical size=80
assign mount=c:\mntlcontrol_002
```

```
select disk=2
create partition logical size=3000
assign mount=c:\mntlisp_0
```

```
select disk=3
create partition logical size=600
assign mount=c:\mntlssystem_1
```

```
select disk=4
create partition logical size=10000
assign mount=c:\mntlroll1
```

```
select disk=5
create partition logical size=4400
assign mount=c:\mntlnord_0_0
```

```
select disk=6
create partition logical size=20000
assign mount=c:\mntllog_1_1
```

```
select disk=6
create partition logical size=20000
assign mount=c:\mntllog_1_2
```

```
select disk=0
create partition logical size=100
assign mount=c:\mntlbnk_ware_0_0
```

```
select disk=1
create partition logical size=8500
assign mount=c:\mntlbnk_cust_0_0
```

```
select disk=2
create partition logical size=8500
assign mount=c:\mntlbnk_cust_0_1
```

```
select disk=3
create partition logical size=8500
assign mount=c:\mntlbnk_cust_0_2
```

```
select disk=4
create partition logical size=8500
assign mount=c:\mntlbnk_cust_0_3
```

```
select disk=5
create partition logical size=8500
assign mount=c:\mntlbnk_cust_0_4
```

```
select disk=0
create partition logical size=8500
assign mount=c:\mntlbnk_cust_0_5
```

```
select disk=1
create partition logical size=8500
assign mount=c:\mntlbnk_cust_0_6
```

```
select disk=2
create partition logical size=8500
assign mount=c:\mntlbnk_cust_0_7
```

```
select disk=3
create partition logical size=8500
assign mount=c:\mntlbnk_cust_0_8
```

```
select disk=4
create partition logical size=8500
assign mount=c:\mntlbnk_cust_0_9
```

```
select disk=5
create partition logical size=8500
assign mount=c:\mntlbnk_cust_0_10
```

```
select disk=0
create partition logical size=8500
assign mount=c:\mntlbnk_cust_0_11
```

```
select disk=1
create partition logical size=8500
```

APPENDIX B: DATABASE DESIGN

assign mount=c:\mntlbc_cust_0_12

select disk=2
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_13

select disk=3
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_14

select disk=4
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_15

select disk=5
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_16

select disk=0
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_17

select disk=1
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_18

select disk=2
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_19

select disk=3
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_20

select disk=4
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_21

select disk=5
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_22

select disk=0
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_23

select disk=1
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_24

select disk=2
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_25

select disk=3
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_26

select disk=4
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_27

select disk=5
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_28

select disk=0
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_29

select disk=1
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_30

select disk=2
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_31

select disk=3
create partition logical size=8500
assign mount=c:\mntlbc_cust_0_32

select disk=4
create partition logical size=400
assign mount=c:\mntlbc_dist_0_0

select disk=5
create partition logical size=5300
assign mount=c:\mntlbc_hist_0_0

select disk=0
create partition logical size=5300
assign mount=c:\mntlbc_hist_0_1

select disk=1
create partition logical size=5300
assign mount=c:\mntlbc_hist_0_2

select disk=2
create partition logical size=5300
assign mount=c:\mntlbc_hist_0_3

select disk=3
create partition logical size=5300
assign mount=c:\mntlbc_hist_0_4

select disk=4
create partition logical size=5300
assign mount=c:\mntlbc_hist_0_5

select disk=5
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_0

select disk=0
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_1

select disk=1
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_2

select disk=2
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_3

select disk=3
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_4

select disk=4
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_5

select disk=5
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_6

select disk=0
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_7

select disk=1
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_8

select disk=2
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_9

select disk=3
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_10

select disk=4
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_11

select disk=5
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_12

select disk=0
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_13

select disk=1
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_14

select disk=2
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_15

select disk=3
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_16

select disk=4
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_17

select disk=5
create partition logical size=8700
assign mount=c:\mntlbc_stok_0_18

APPENDIX B: DATABASE DESIGN

```

select disk=0
create partition logical size=8700
assign mount=c:\mntlbn_stok_0_19

select disk=1
create partition logical size=8700
assign mount=c:\mntlbn_stok_0_20

select disk=2
create partition logical size=8700
assign mount=c:\mntlbn_stok_0_21

select disk=3
create partition logical size=8700
assign mount=c:\mntlbn_stok_0_22

select disk=4
create partition logical size=8700
assign mount=c:\mntlbn_stok_0_23

select disk=5
create partition logical size=8700
assign mount=c:\mntlbn_stok_0_24

select disk=0
create partition logical size=8700
assign mount=c:\mntlbn_stok_0_25

select disk=1
create partition logical size=8700
assign mount=c:\mntlbn_stok_0_26

select disk=2
create partition logical size=8700
assign mount=c:\mntlbn_stok_0_27

select disk=3
create partition logical size=8700
assign mount=c:\mntlbn_stok_0_28

select disk=4
create partition logical size=8700
assign mount=c:\mntlbn_stok_0_29

select disk=5
create partition logical size=8700
assign mount=c:\mntlbn_stok_0_30

select disk=0
create partition logical size=8700
assign mount=c:\mntlbn_stok_0_31

select disk=1
create partition logical size=8700
assign mount=c:\mntlbn_stok_0_32

select disk=2
create partition logical size=8700
assign mount=c:\mntlbn_stok_0_33

select disk=3
create partition logical size=8700
assign mount=c:\mntlbn_stok_0_34

select disk=4
create partition logical size=8700
assign mount=c:\mntlbn_stok_0_35

select disk=5
create partition logical size=80
assign mount=c:\mntlbn_item_0_0

select disk=0
create partition logical size=52000
assign mount=c:\mntlbn_ordr_0_0

select disk=1
create partition logical size=52000
assign mount=c:\mntlbn_ordr_0_1

select disk=2
create partition logical size=52000
assign mount=c:\mntlbn_ordr_0_2

select disk=3
create partition logical size=52000
assign mount=c:\mntlbn_ordr_0_3

select disk=4
create partition logical size=52000
assign mount=c:\mntlbn_ordr_0_4

select disk=5

```

```

create partition logical size=52000
assign mount=c:\mntlbn_ordr_0_5

select disk=0
create partition logical size=52000
assign mount=c:\mntlbn_ordr_0_6

select disk=1
create partition logical size=52000
assign mount=c:\mntlbn_ordr_0_7

select disk=2
create partition logical size=52000
assign mount=c:\mntlbn_ordr_0_8

select disk=3
create partition logical size=80
assign mount=c:\mntlbn_iware_0_0

select disk=4
create partition logical size=8000
assign mount=c:\mntlbn_icust1_0_0

select disk=5
create partition logical size=6500
assign mount=c:\mntlbn_icust2_0_0

select disk=0
create partition logical size=6500
assign mount=c:\mntlbn_icust2_0_1

select disk=1
create partition logical size=6500
assign mount=c:\mntlbn_icust2_0_2

select disk=2
create partition logical size=100
assign mount=c:\mntlbn_idist_0_0

select disk=3
create partition logical size=23000
assign mount=c:\mntlbn_istok_0_0

select disk=4
create partition logical size=100
assign mount=c:\mntlbn_iitem_0_0

select disk=5
create partition logical size=6500
assign mount=c:\mntlbn_iordr2_0_0

select disk=0
create partition logical size=6500
assign mount=c:\mntlbn_iordr2_0_1

select disk=1
create partition logical size=6500
assign mount=c:\mntlbn_iordr2_0_2

select disk=2
create partition logical size=6500
assign mount=c:\mntlbn_temp_0_0

select disk=3
create partition logical size=6500
assign mount=c:\mntlbn_temp_0_1

select disk=4
create partition logical size=6500
assign mount=c:\mntlbn_temp_0_2

select disk=5
create partition logical size=6500
assign mount=c:\mntlbn_temp_0_3

select disk=0
create partition logical size=6500
assign mount=c:\mntlbn_temp_0_4

select disk=1
create partition logical size=6500
assign mount=c:\mntlbn_temp_0_5

select disk=2
create partition logical size=6500
assign mount=c:\mntlbn_temp_0_6

select disk=3
create partition logical size=6500
assign mount=c:\mntlbn_temp_0_7

select disk=4
create partition logical size=6500

```


APPENDIX B: DATABASE DESIGN

```
assign mount=c:\mntlbnk_temp_0_8

select disk=5
create partition logical size=300
assign mount=c:\mntlbnk_tpccaux_0_0

select disk=0
create partition logical size=80
assign mount=c:\mntlbnk_control_001

select disk=1
create partition logical size=80
assign mount=c:\mntlbnk_control_002

select disk=2
create partition logical size=3000
assign mount=c:\mntlbnk_sp_0

select disk=3
create partition logical size=600
assign mount=c:\mntlbnk_system_1

select disk=4
create partition logical size=10000
assign mount=c:\mntlbnk_roll1

select disk=5
create partition logical size=4400
assign mount=c:\mntlbnk_nord_0_0

select disk=6
create partition logical size=20000
assign mount=c:\mntlbnk_log_1_1

select disk=6
create partition logical size=20000
assign mount=c:\mntlbnk_log_1_2
```

Appendix C - Tunable Parameters

Server Configuration Parameters

Microsoft Windows 2003 Server Parameters

The following services were disabled on the server:

- * Alerter
- * Automatic Updates
- * Computer Browser
- * Cryptographic Services
- * DHCP Client
- * Distributed File System
- * Distributed Link Tracking Client
- * DNS Client
- * Global Array Manager Server
- * Help and Support
- * IPSEC Policy Agent
- * License Logging Service
- * Messenger
- * MSSQLserver
- * Microsoft Search
- * Print Spooler
- * Process Control Service
- * Remote Registry Service
- * Removable Storage
- * Run as Service
- * System Event Notification
- * SSDP Discovery service
- * Task Scheduler
- * Wireless configuration

Oracle Startup Sequence

1. Boot up systems: clients, servers, & RTEs.
2. Startup the database on the server using p_run.ora.
3. Start the RTE.
4. Adjust RTE throttle.

DB Server msinfo32 export

System Information report written at: 05/28/08 14:12:12

APPENDIX C - TUNABLE PARAMETERS

System Name: PE2900_2
[System Summary]

Item	Value
OS Name	Microsoft(R) Windows(R) Server 2003 Standard x64 Edition
Version	5.2.3790 Service Pack 1 Build 3790
Other OS Description	Not Available
OS Manufacturer	Microsoft Corporation
System Name	PE2900_2
System Manufacturer	Dell Inc.
System Model	PowerEdge 2900
System Type	x64-based PC
Processor	EM64T Family 6 Model 23 Stepping 4 GenuineIntel ~2826 Mhz
Processor	EM64T Family 6 Model 23 Stepping 4 GenuineIntel ~2826 Mhz
Processor	EM64T Family 6 Model 23 Stepping 4 GenuineIntel ~2826 Mhz
Processor	EM64T Family 6 Model 23 Stepping 4 GenuineIntel ~2826 Mhz
BIOS Version/Date	Dell Inc. 2.0.1, 10/27/2007
SMBIOS Version	2.4
Windows Directory	C:\WINDOWS
System Directory	C:\WINDOWS\system32
Boot Device	\Device\HarddiskVolume155
Locale	United States
Hardware Abstraction Layer	Version = "5.2.3790.1830 (srv03_sp1_rtm.050324-1447)"
User Name	Not Available
Time Zone	Central Daylight Time
Total Physical Memory	32,762.63 MB
Available Physical Memory	30.87 GB
Total Virtual Memory	33.06 GB
Available Virtual Memory	32.77 GB
Page File Space	2.00 GB
Page File	C:\pagefile.sys

[Hardware Resources]

[Conflicts/Sharing]

Resource	Device
I/O Port 0x00000000-0x00000CF7	PCI bus
I/O Port 0x00000000-0x00000CF7	Direct memory access controller

IRQ 20 Standard Universal PCI to USB Host Controller
IRQ 20 Standard Universal PCI to USB Host Controller

IRQ 21 Standard Universal PCI to USB Host Controller
IRQ 21 Standard Universal PCI to USB Host Controller
IRQ 21 Standard Enhanced PCI to USB Host Controller

Memory Address 0xDA000000-0xDDFFFFFF	PCI standard PCI-to-PCI bridge
Memory Address 0xDA000000-0xDDFFFFFF	PCI standard PCI-to-PCI bridge
Memory Address 0xDA000000-0xDDFFFFFF	Broadcom BCM5708C NetXtreme II GigE

I/O Port 0x0000E000-0x0000EFFF	PCI standard PCI-to-PCI bridge
I/O Port 0x0000E000-0x0000EFFF	PCI standard PCI-to-PCI bridge
I/O Port 0x0000E000-0x0000EFFF	PCI standard PCI-to-PCI bridge

Memory Address 0xD6000000-0xD9FFFFFF	PCI standard PCI-to-PCI bridge
Memory Address 0xD6000000-0xD9FFFFFF	PCI standard PCI-to-PCI bridge
Memory Address 0xD6000000-0xD9FFFFFF	Broadcom BCM5708C NetXtreme II GigE

IRQ 16 PCI standard host CPU bridge
 IRQ 16 PCI standard PCI-to-PCI bridge
 IRQ 16 PCI standard PCI-to-PCI bridge
 IRQ 16 PCI standard PCI-to-PCI bridge
 IRQ 16 Broadcom BCM5708C NetXtreme II GigE
 IRQ 16 PCI standard PCI-to-PCI bridge
 IRQ 16 PCI standard PCI-to-PCI bridge
 IRQ 16 PCI standard PCI-to-PCI bridge
 IRQ 16 RAID Controller
 IRQ 16 PCI standard PCI-to-PCI bridge
 IRQ 16 PCI standard PCI-to-PCI bridge
 IRQ 16 RAID Controller
 IRQ 16 PCI standard PCI-to-PCI bridge
 IRQ 16 Broadcom BCM5708C NetXtreme II GigE

Memory Address 0xA0000-0xBFFFF	PCI bus
Memory Address 0xA0000-0xBFFFF	Standard VGA Graphics Adapter

Memory Address 0xF8000000-0xF80FFFFF	PCI standard PCI-to-PCI bridge
Memory Address 0xF8000000-0xF80FFFFF	PCI standard PCI-to-PCI bridge

[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
0x00000000-0x00000CF7	PCI bus	OK
0x00000000-0x00000CF7	Direct memory access controller	OK
0x00000D00-0x0000FFFF	PCI bus	OK
0x0000E000-0x0000EFFF	PCI standard PCI-to-PCI bridge	OK
0x0000E000-0x0000EFFF	PCI standard PCI-to-PCI bridge	OK
0x0000E000-0x0000EFFF	PCI standard PCI-to-PCI bridge	OK
0x0000EC00-0x0000ECFF	RAID Controller	OK
0x0000D000-0x0000DFFF	PCI standard PCI-to-PCI bridge	OK
0x0000DC00-0x0000DCFF	RAID Controller	OK
0x0000C000-0x0000CFFF	PCI standard PCI-to-PCI bridge	OK
0x0000CC00-0x0000CCFF	RAID Controller	OK
0x0000ACE0-0x0000ACFF	Standard Universal PCI to USB Host Controller	OK
0x0000ACC0-0x0000ACDF	Standard Universal PCI to USB Host Controller	OK
0x0000ACA0-0x0000ACBF	Standard Universal PCI to USB Host Controller	OK
0x0000AC80-0x0000AC9F	Standard Universal PCI to USB Host Controller	OK

APPENDIX C - TUNABLE PARAMETERS

0x0000BC00-0x0000BCFF	Standard VGA Graphics Adapter	OK
0x000003B0-0x000003BB	Standard VGA Graphics Adapter	OK
0x000003C0-0x000003DF	Standard VGA Graphics Adapter	OK
0x00000080-0x0000009F	Direct memory access controller	OK
0x000000C0-0x000000DF	Direct memory access controller	OK
0x000000F0-0x000000FF	Numeric data processor	OK
0x00000020-0x0000003F	Programmable interrupt controller	OK
0x000000A0-0x000000BF	Programmable interrupt controller	OK
0x000004D0-0x000004D1	Programmable interrupt controller	OK
0x00000061-0x00000061	System board	OK
0x00000070-0x0000007F	System CMOS/real time clock	OK
0x00000040-0x0000005F	System timer	OK
0x000003F0-0x000003F5	Standard floppy disk controller	OK
0x000003F7-0x000003F7	Standard floppy disk controller	OK
0x000003F8-0x000003FF	Communications Port (COM1)	OK
0x000002F8-0x000002FF	Communications Port (COM2)	OK
0x00000800-0x0000087F	System board	OK
0x00000880-0x000008BF	System board	OK
0x000008C0-0x000008DF	System board	OK
0x000008E0-0x000008E3	System board	OK
0x00000900-0x00000900	System board	OK
0x00000C00-0x00000C7F	System board	OK
0x00000CA0-0x00000CA7	System board	OK
0x00000CA9-0x00000CAB	System board	OK
0x00000CAD-0x00000CAF	System board	OK
0x00000060-0x00000060	System board	OK
0x00000064-0x00000064	System board	OK
0x00000CA8-0x00000CA8	System board	OK
0x00000CAC-0x00000CAC	System board	OK
0x0000FC00-0x0000FC0F	Standard Dual Channel PCI IDE Controller	OK
0x000001F0-0x000001F7	Primary IDE Channel	OK
0x000003F6-0x000003F6	Primary IDE Channel	OK
0x00000170-0x00000177	Secondary IDE Channel	OK
0x00000376-0x00000376	Secondary IDE Channel	OK
0x0000AC78-0x0000AC7F	Standard Dual Channel PCI IDE Controller	OK
0x0000AC70-0x0000AC73	Standard Dual Channel PCI IDE Controller	OK
0x0000AC60-0x0000AC67	Standard Dual Channel PCI IDE Controller	OK
0x0000AC58-0x0000AC5B	Standard Dual Channel PCI IDE Controller	OK
0x0000AC40-0x0000AC4F	Standard Dual Channel PCI IDE Controller	OK

[IRQs]

Resource	Device	Status
IRQ 9	Microsoft ACPI-Compliant System	OK
IRQ 16	PCI standard host CPU bridge	OK
IRQ 16	PCI standard PCI-to-PCI bridge	OK
IRQ 16	PCI standard PCI-to-PCI bridge	OK
IRQ 16	PCI standard PCI-to-PCI bridge	OK
IRQ 16	Broadcom BCM5708C NetXtreme II GigE	OK
IRQ 16	PCI standard PCI-to-PCI bridge	OK
IRQ 16	PCI standard PCI-to-PCI bridge	OK
IRQ 16	PCI standard PCI-to-PCI bridge	OK
IRQ 16	RAID Controller	OK
IRQ 16	PCI standard PCI-to-PCI bridge	OK
IRQ 16	PCI standard PCI-to-PCI bridge	OK

APPENDIX C - TUNABLE PARAMETERS

IRQ 16	RAID Controller	OK
IRQ 16	PCI standard PCI-to-PCI bridge	OK
IRQ 16	Broadcom BCM5708C NetXtreme II GigE	OK
IRQ 17	RAID Controller	OK
IRQ 142	DELL PERC 5/I Adapter RAID Controller	OK
IRQ 21	Standard Universal PCI to USB Host Controller	OK
IRQ 21	Standard Universal PCI to USB Host Controller	OK
IRQ 21	Standard Enhanced PCI to USB Host Controller	OK
IRQ 20	Standard Universal PCI to USB Host Controller	OK
IRQ 20	Standard Universal PCI to USB Host Controller	OK
IRQ 13	Numeric data processor	OK
IRQ 8	System CMOS/real time clock	OK
IRQ 0	System timer	OK
IRQ 6	Standard floppy disk controller	OK
IRQ 4	Communications Port (COM1)	OK
IRQ 3	Communications Port (COM2)	OK
IRQ 14	Primary IDE Channel	OK
IRQ 23	Standard Dual Channel PCI IDE Controller	OK

[Memory]

Resource	Device	Status
0xA0000-0xBFFFF	PCI bus	OK
0xA0000-0xBFFFF	Standard VGA Graphics Adapter	OK
0x80000000-0xFDFFFFFF	PCI bus	OK
0xD2000000-0xD9FFFFFF	PCI standard PCI-to-PCI bridge	OK
0xD4000000-0xD9FFFFFF	PCI standard PCI-to-PCI bridge	OK
0xD6000000-0xD9FFFFFF	PCI standard PCI-to-PCI bridge	OK
0xD6000000-0xD9FFFFFF	PCI standard PCI-to-PCI bridge	OK
0xD6000000-0xD9FFFFFF	Broadcom BCM5708C NetXtreme II GigE	OK
0xD5E00000-0xD5FFFFFF	PCI standard PCI-to-PCI bridge	OK
0xD5F80000-0xD5FBFFFF	RAID Controller	OK
0xD5F40000-0xD5F7FFFF	RAID Controller	OK
0xDE500000-0xDE6FFFFF	PCI standard PCI-to-PCI bridge	OK
0xDE680000-0xDE6BFFFF	RAID Controller	OK
0xDE640000-0xDE67FFFF	RAID Controller	OK
0xDE700000-0xDE9FFFFFF	PCI standard PCI-to-PCI bridge	OK
0xF8000000-0xF80FFFFF	PCI standard PCI-to-PCI bridge	OK
0xF8000000-0xF80FFFFF	PCI standard PCI-to-PCI bridge	OK
0xDE800000-0xDE9FFFFFF	PCI standard PCI-to-PCI bridge	OK
0xF80F0000-0xF80FFFFF	DELL PERC 5/I Adapter RAID Controller	OK
0xDE9C0000-0xDE9DFFFF	DELL PERC 5/I Adapter RAID Controller	OK
0xDE300000-0xDE4FFFFFF	PCI standard PCI-to-PCI bridge	OK
0xDE480000-0xDE4BFFFF	RAID Controller	OK
0xDE440000-0xDE47FFFF	RAID Controller	OK
0xDA000000-0xDDFFFFFF	PCI standard PCI-to-PCI bridge	OK
0xDA000000-0xDDFFFFFF	PCI standard PCI-to-PCI bridge	OK
0xDA000000-0xDDFFFFFF	Broadcom BCM5708C NetXtreme II GigE	OK
0xDEA00400-0xDEA007FF	Standard Enhanced PCI to USB Host Controller	OK
0xF0000000-0xF7FFFFFF	Standard VGA Graphics Adapter	OK
0xDE2D0000-0xDE2DFFFF	Standard VGA Graphics Adapter	OK
0xDEA00000-0xDEA003FF	Standard Dual Channel PCI IDE Controller	OK
0xE0000000-0xEFFFFFFF	Motherboard resources	OK
0xFED00000-0xFED003FF	High precision event timer	OK

APPENDIX C - TUNABLE PARAMETERS

[Components]

[Multimedia]

[Audio Codecs]

CODEC	Manufacturer	Description	Status	File	Version	Size	Creation Date
c:\windows\system32\tsssoft32.acm	DSP GROUP, INC.		OK				
	C:\WINDOWS\system32\TSSOFT32.ACM		1.01		13.50 KB (13,824 bytes)		3/25/2005 6:00 AM
c:\windows\system32\msgsm32.acm	Microsoft Corporation		OK				
	C:\WINDOWS\system32\MSGSM32.ACM		5.2.3790.1830	(srv03_sp1_rtm.050324-1447)	34.50 KB (35,328 bytes)		3/25/2005 6:00 AM
c:\windows\system32\msg711.acm	Microsoft Corporation		OK				
	C:\WINDOWS\system32\MSG711.ACM		5.2.3790.1830	(srv03_sp1_rtm.050324-1447)	13.50 KB (13,824 bytes)		3/25/2005 6:00 AM
c:\windows\system32\imaadp32.acm	Microsoft Corporation		OK				
	C:\WINDOWS\system32\IMAADP32.ACM		5.2.3790.1830	(srv03_sp1_rtm.050324-1447)	24.00 KB (24,576 bytes)		3/25/2005 6:00 AM
c:\windows\system32\msadp32.acm	Microsoft Corporation		OK				
	C:\WINDOWS\system32\MSADP32.ACM		5.2.3790.1830	(srv03_sp1_rtm.050324-1447)	23.50 KB (24,064 bytes)		3/25/2005 6:00 AM

[Video Codecs]

CODEC	Manufacturer	Description	Status	File	Version	Size	Creation Date
c:\windows\system32\msyuv.dll	Microsoft Corporation		OK				
	C:\WINDOWS\system32\MSYUV.DLL		5.2.3790.1830	(srv03_sp1_rtm.050324-1447)	21.00 KB (21,504 bytes)		3/24/2005 11:21 AM
c:\windows\system32\msvidc32.dll	Microsoft Corporation		OK				
	C:\WINDOWS\system32\MSVIDC32.DLL		5.2.3790.1830	(srv03_sp1_rtm.050324-1447)	43.00 KB (44,032 bytes)		3/25/2005 6:00 AM
c:\windows\system32\msrle32.dll	Microsoft Corporation		OK				
	C:\WINDOWS\system32\MSRLE32.DLL		5.2.3790.1830	(srv03_sp1_rtm.050324-1447)	15.50 KB (15,872 bytes)		3/25/2005 6:00 AM
c:\windows\system32\iyuv_32.dll	Microsoft Corporation		OK				
	C:\WINDOWS\system32\IYUV_32.DLL		5.2.3790.1830	(srv03_sp1_rtm.050324-1447)	52.50 KB (53,760 bytes)		3/24/2005 11:19 AM
c:\windows\system32\tsbyuv.dll	Microsoft Corporation		OK				
	C:\WINDOWS\system32\TSBYUV.DLL		5.2.3790.1830	(srv03_sp1_rtm.050324-1447)	12.50 KB (12,800 bytes)		3/24/2005 11:34 AM

[CD-ROM]

Item	Value
Drive	D:
Description	CD-ROM Drive
Media Loaded	Yes
Media Type	CD-ROM
Name	HL-DT-ST DVD-ROM GDR8164B
Manufacturer	(Standard CD-ROM drives)
Status	OK
Transfer Rate	Not Available

SCSI Target ID 0
 PNP Device ID IDE\CDROMHL-DT-ST_DVD-ROM_GDR8164B_____0D08____\5&41A3CB2&0&0.0.0
 Driver c:\windows\system32\drivers\cdrom.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 75.50 KB (77,312 bytes), 3/25/2005 6:00 AM)

[Sound Device]

Item	Value
------	-------

[Display]

Item	Value
Name	Standard VGA Graphics Adapter
PNP Device ID	PCI\VEN_1002&DEV_515E&SUBSYS_01B11028&REV_02\4&2014205D&0&68F0
Adapter Type	Not Available
Adapter Description	(Standard display types)
Adapter RAM	Not Available
Installed Drivers	Not Available
Driver Version	Not Available
INF File	5.2.3790.1830 (display.inf section)
Color Planes	vga
Color Table Entries	Not Available
Resolution	Not Available
Bits/Pixel	Not Available
Memory Address	0xF0000000-0xF7FFFFFF
I/O Port	0x0000BC00-0x0000BCFF
Memory Address	0xDE2D0000-0xDE2DFFFF
I/O Port	0x000003B0-0x000003BB
I/O Port	0x000003C0-0x000003DF
Memory Address	0xA0000-0xBFFFF
Driver	c:\windows\system32\drivers\vgapnp.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 33.00 KB (33,792 bytes), 4/1/2008 6:37 PM)

[Infrared]

Item	Value
------	-------

[Input]

[Keyboard]

Item	Value
Description	USB Human Interface Device
Name	Enhanced (101- or 102-key)
Layout	00000409
PNP Device ID	USB\VID_09AE&PID_0002&MI_00\6&8FA055B&0&0000
Number of Function Keys	12
Driver	c:\windows\system32\drivers\hidusb.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 18.50 KB (18,944 bytes), 3/25/2005 6:00 AM)

[Pointing Device]

APPENDIX C - TUNABLE PARAMETERS

Item Value
Hardware Type USB Human Interface Device
Number of Buttons 3
Status OK
PNP Device ID USB\VID_09AE&PID_0002&MI_01\6&8FA055B&0&0001
Power Management Supported No
Double Click Threshold 6
Handedness Right Handed Operation
Driver c:\windows\system32\drivers\hidusb.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 18.50 KB (18,944 bytes), 3/25/2005 6:00 AM)

[Modem]

Item Value

[Network]

[Adapter]

Item Value
Name [00000001] RAS Async Adapter
Adapter Type Not Available
Product Type RAS Async Adapter
Installed Yes
PNP Device ID Not Available
Last Reset 5/28/2008 1:41 PM
Index 1
Service Name AsyncMac
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available

Name [00000002] WAN Miniport (L2TP)
Adapter Type Not Available
Product Type WAN Miniport (L2TP)
Installed Yes
PNP Device ID ROOT\MS_L2TPMINIPORT\0000
Last Reset 5/28/2008 1:41 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

APPENDIX C - TUNABLE PARAMETERS

Name [00000003] WAN Miniport (PPTP)
Adapter Type Wide Area Network (WAN)
Product Type WAN Miniport (PPTP)
Installed Yes
PNP Device ID ROOT\MS_PPTPMINIPOINT\0000
Last Reset 5/28/2008 1:41 PM
Index 3
Service Name PptpMiniport
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 50:50:54:50:30:30

Name [00000004] WAN Miniport (PPPOE)
Adapter Type Wide Area Network (WAN)
Product Type WAN Miniport (PPPOE)
Installed Yes
PNP Device ID ROOT\MS_PPPOEMINIPOINT\0000
Last Reset 5/28/2008 1:41 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 33:50:6F:45:30:30

Name [00000005] Direct Parallel
Adapter Type Not Available
Product Type Direct Parallel
Installed Yes
PNP Device ID ROOT\MS_PTIMINIPOINT\0000
Last Reset 5/28/2008 1:41 PM
Index 5
Service Name Raspti
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available

Name [00000006] WAN Miniport (IP)
Adapter Type Not Available
Product Type WAN Miniport (IP)
Installed Yes

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PNP Device ID ROOT\MS_NDISWANIP\0000
Last Reset 5/28/2008 1:41 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

Name [00000007] Broadcom BCM5708C NetXtreme II GigE (NDIS VBD Client)
Adapter Type Ethernet 802.3
Product Type Broadcom BCM5708C NetXtreme II GigE (NDIS VBD Client)
Installed Yes
PNP Device ID
B06BDRVL2ND&PCI_164C14E4&SUBSYS_01B11028&REV_12\6&2F68317E&0&2005
0500
Last Reset 5/28/2008 1:41 PM
Index 7
Service Name l2nd
IP Address 192.1.1.107
IP Subnet 255.255.255.0
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:1E:4F:1F:47:D8
Driver c:\windows\system32\drivers\bxnd52a.sys (2.6.14.0 built by: WinDDK, 78.00 KB (79,872 bytes), 4/3/2006 2:53 PM)

Name [00000008] Broadcom BCM5708C NetXtreme II GigE (NDIS VBD Client)
Adapter Type Ethernet 802.3
Product Type Broadcom BCM5708C NetXtreme II GigE (NDIS VBD Client)
Installed Yes
PNP Device ID
B06BDRVL2ND&PCI_164C14E4&SUBSYS_01B11028&REV_12\8&126A2D63&0&2005
0900
Last Reset 5/28/2008 1:41 PM
Index 8
Service Name l2nd
IP Address 0.0.0.0
IP Subnet 0.0.0.0
Default IP Gateway Not Available
DHCP Enabled Yes
DHCP Server
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:1E:4F:1F:47:DA
Driver c:\windows\system32\drivers\bxnd52a.sys (2.6.14.0 built by: WinDDK, 78.00 KB (79,872 bytes), 4/3/2006 2:53 PM)

APPENDIX C - TUNABLE PARAMETERS

[Protocol]

Item Value

Name MSAFD Tcpip [TCP/IP]

Connectionless Service No

Guarantees Delivery Yes

Guarantees Sequencing Yes

Maximum Address Size 16 bytes

Maximum Message Size 0 bytes

Message Oriented No

Minimum Address Size 16 bytes

Pseudo Stream Oriented No

Supports Broadcasting No

Supports Connect Data No

Supports Disconnect Data No

Supports Encryption No

Supports Expedited Data Yes

Supports Graceful Closing Yes

Supports Guaranteed Bandwidth No

Supports Multicasting No

Name MSAFD Tcpip [UDP/IP]

Connectionless Service Yes

Guarantees Delivery No

Guarantees Sequencing No

Maximum Address Size 16 bytes

Maximum Message Size 63.93 KB (65,467 bytes)

Message Oriented Yes

Minimum Address Size 16 bytes

Pseudo Stream Oriented No

Supports Broadcasting Yes

Supports Connect Data No

Supports Disconnect Data No

Supports Encryption No

Supports Expedited Data No

Supports Graceful Closing No

Supports Guaranteed Bandwidth No

Supports Multicasting Yes

Name RSVP UDP Service Provider

Connectionless Service Yes

Guarantees Delivery No

Guarantees Sequencing No

Maximum Address Size 16 bytes

Maximum Message Size 63.93 KB (65,467 bytes)

Message Oriented Yes

Minimum Address Size 16 bytes

Pseudo Stream Oriented No

Supports Broadcasting Yes

Supports Connect Data No

Supports Disconnect Data No

Supports Encryption Yes

Supports Expedited Data No

Supports Graceful Closing No

Supports Guaranteed Bandwidth No

Supports Multicasting Yes

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

[WinSock]

Item Value
File c:\windows\system32\wssock32.dll
Size 24.50 KB (25,088 bytes)
Version 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)

[Ports]

[Serial]

Item Value
Name Communications Port (COM1)
Status OK
PNP Device ID ACPI\PNP0501\1
Maximum Input Buffer Size 0
Maximum Output Buffer Size No
Settable Baud Rate Yes
Settable Data Bits Yes
Settable Flow Control Yes
Settable Parity Yes
Settable Parity Check Yes
Settable Stop Bits Yes
Settable RLSD Yes
Supports RLSD Yes
Supports 16 Bit Mode No
Supports Special Characters No
Baud Rate 9600
Bits/Byte 8
Stop Bits 1
Parity None
Busy No
Abort Read/Write on Error No
Binary Mode Enabled Yes

APPENDIX C - TUNABLE PARAMETERS

Continue XMit on XOff No
CTS Outflow Control No
Discard NULL Bytes No
DSR Outflow Control 0
DSR Sensitivity 0
DTR Flow Control Type Enable
EOF Character 0
Error Replace Character 0
Error Replacement Enabled No
Event Character 0
Parity Check Enabled No
RTS Flow Control Type Enable
XOff Character 19
XOffXMit Threshold 512
XOn Character 17
XOnXMit Threshold 2048
XOnXOff InFlow Control 0
XOnXOff OutFlow Control 0
I/O Port 0x000003F8-0x000003FF
IRQ Channel IRQ 4
Driver c:\windows\system32\drivers\serial.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447),
118.50 KB (121,344 bytes), 3/25/2005 6:00 AM)

Name Communications Port (COM2)

Status OK

PNP Device ID ACPI\PNP0501\2

Maximum Input Buffer Size 0

Maximum Output Buffer Size No

Settable Baud Rate Yes

Settable Data Bits Yes

Settable Flow Control Yes

Settable Parity Yes

Settable Parity Check Yes

Settable Stop Bits Yes

Settable RLSD Yes

Supports RLSD Yes

Supports 16 Bit Mode No

Supports Special Characters No

Baud Rate 9600

Bits/Byte 8

Stop Bits 1

Parity None

Busy No

Abort Read/Write on Error No

Binary Mode Enabled Yes

Continue XMit on XOff No

CTS Outflow Control No

Discard NULL Bytes No

DSR Outflow Control 0

DSR Sensitivity 0

DTR Flow Control Type Enable

EOF Character 0

Error Replace Character 0

Error Replacement Enabled No

Event Character 0

APPENDIX C - TUNABLE PARAMETERS

Parity Check Enabled No
RTS Flow Control Type Enable
XOff Character 19
XOffXmit Threshold 512
XOn Character 17
XOnXmit Threshold 2048
XOnXOff InFlow Control 0
XOnXOff OutFlow Control 0
I/O Port 0x000002F8-0x000002FF
IRQ Channel IRQ 3
Driver c:\windows\system32\drivers\serial.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447),
118.50 KB (121,344 bytes), 3/25/2005 6:00 AM)

[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 36.00 GB (38,658,781,184 bytes)
Free Space 23.18 GB (24,884,924,416 bytes)
Volume Name
Volume Serial Number 287D4B2D

Drive D:
Description CD-ROM Disc

Drive E:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 10.43 GB (11,194,605,568 bytes)
Free Space 10.37 GB (11,135,696,896 bytes)
Volume Name New Volume
Volume Serial Number 50ADAE84

Drive Y:
Description Network Connection
Provider Name \\tpccarm\c\$

Drive Z:
Description Network Connection
Provider Name \\192.1.1.106\c\$

[Disks]

Item Value
Description Disk drive
Manufacturer (Standard disk drives)
Model DELL PERC 5/i SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 5
SCSI Bus 1
SCSI Logical Unit 0
SCSI Port 7
SCSI Target ID 0
Sectors/Track 63
Size 270.99 GB (290,977,505,280 bytes)
Total Cylinders 35,376
Total Sectors 568,315,440
Total Tracks 9,020,880
Tracks/Cylinder 255
Partition Disk #6, Partition #0
Partition Size 36.00 GB (38,658,783,744 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #6, Partition #1
Partition Size 234.99 GB (252,318,689,280 bytes)
Partition Starting Offset 38,658,816,000 bytes

Description Disk drive
Manufacturer (Standard disk drives)
Model DELL PERC 6/E Adapter SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 38
SCSI Bus 1
SCSI Logical Unit 0
SCSI Port 5
SCSI Target ID 2
Sectors/Track 63
Size 488.93 GB (524,986,721,280 bytes)
Total Cylinders 63,826
Total Sectors 1,025,364,690
Total Tracks 16,275,630
Tracks/Cylinder 255
Partition Disk #2, Partition #0
Partition Size 488.92 GB (524,978,496,000 bytes)
Partition Starting Offset 8,225,280 bytes

Description Disk drive
Manufacturer (Standard disk drives)
Model DELL PERC 6/E Adapter SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 38

APPENDIX C - TUNABLE PARAMETERS

SCSI Bus 1
SCSI Logical Unit 0
SCSI Port 5
SCSI Target ID 3
Sectors/Track 63
Size 488.93 GB (524,986,721,280 bytes)
Total Cylinders 63,826
Total Sectors 1,025,364,690
Total Tracks 16,275,630
Tracks/Cylinder 255
Partition Disk #3, Partition #0
Partition Size 488.92 GB (524,978,496,000 bytes)
Partition Starting Offset 8,225,280 bytes

Description Disk drive
Manufacturer (Standard disk drives)
Model DELL PERC 6/E Adapter SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 38
SCSI Bus 1
SCSI Logical Unit 0
SCSI Port 6
SCSI Target ID 4
Sectors/Track 63
Size 500.62 GB (537,538,498,560 bytes)
Total Cylinders 65,352
Total Sectors 1,049,879,880
Total Tracks 16,664,760
Tracks/Cylinder 255
Partition Disk #4, Partition #0
Partition Size 500.61 GB (537,530,273,280 bytes)
Partition Starting Offset 8,225,280 bytes

Description Disk drive
Manufacturer (Standard disk drives)
Model DELL PERC 6/E Adapter SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 39
SCSI Bus 1
SCSI Logical Unit 0
SCSI Port 6
SCSI Target ID 5
Sectors/Track 63
Size 500.62 GB (537,538,498,560 bytes)
Total Cylinders 65,352
Total Sectors 1,049,879,880
Total Tracks 16,664,760
Tracks/Cylinder 255
Partition Disk #5, Partition #0
Partition Size 500.61 GB (537,530,273,280 bytes)
Partition Starting Offset 8,225,280 bytes

Description Disk drive
Manufacturer (Standard disk drives)
Model DELL PERC 6/E Adapter SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 38
SCSI Bus 1
SCSI Logical Unit 0
SCSI Port 4
SCSI Target ID 0
Sectors/Track 63
Size 1,016.24 GB (1,091,182,095,360 bytes)
Total Cylinders 132,662
Total Sectors 2,131,215,030
Total Tracks 33,828,810
Tracks/Cylinder 255
Partition Disk #0, Partition #0
Partition Size 1,016.23 GB (1,091,173,870,080 bytes)
Partition Starting Offset 8,225,280 bytes

Description Disk drive
Manufacturer (Standard disk drives)
Model DELL PERC 6/E Adapter SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 39
SCSI Bus 1
SCSI Logical Unit 0
SCSI Port 4
SCSI Target ID 1
Sectors/Track 63
Size 1,016.24 GB (1,091,182,095,360 bytes)
Total Cylinders 132,662
Total Sectors 2,131,215,030
Total Tracks 33,828,810
Tracks/Cylinder 255
Partition Disk #1, Partition #0
Partition Size 1,005.81 GB (1,079,979,264,000 bytes)
Partition Starting Offset 8,225,280 bytes
Partition Disk #1, Partition #1
Partition Size 10.43 GB (11,194,606,080 bytes)
Partition Starting Offset 1,079,987,489,280 bytes

[SCSI]

Item Value
Name RAID Controller
Manufacturer Not Available
Status OK
PNP Device ID
 PCI\VEN_1000&DEV_0060&SUBSYS_1F0A1028&REV_04\6&26D2E9F4&0&00080010
Memory Address 0xD5F80000-0xD5FBFFFF

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I/O Port 0x0000EC00-0x0000ECFF

Memory Address 0xD5F40000-0xD5F7FFFF

IRQ Channel IRQ 17

Driver c:\windows\system32\drivers\msas2k3.sys (2.8.0.64 built by: WinDDK, 26.50 KB (27,136 bytes), 4/1/2008 6:28 PM)

Name RAID Controller

Manufacturer Not Available

Status OK

PNP Device ID

PCI\VEN_1000&DEV_0060&SUBSYS_1F0A1028&REV_04\4&201440C3&0&0020

Memory Address 0xDE680000-0xDE6BFFFF

I/O Port 0x0000DC00-0x0000DCFF

Memory Address 0xDE640000-0xDE67FFFF

IRQ Channel IRQ 16

Driver c:\windows\system32\drivers\msas2k3.sys (2.8.0.64 built by: WinDDK, 26.50 KB (27,136 bytes), 4/1/2008 6:28 PM)

Name DELL PERC 5/I Adapter RAID Controller

Manufacturer LSI Logic Corp.,

Status OK

PNP Device ID

PCI\VEN_1028&DEV_0015&SUBSYS_1F031028&REV_00\5&22FD9970&0&700028

Memory Address 0xF80F0000-0xF80FFFFF

Memory Address 0xDE9C0000-0xDE9DFFFF

IRQ Channel IRQ 142

Driver c:\windows\system32\drivers\msas2k3.sys (2.8.0.64 built by: WinDDK, 26.50 KB (27,136 bytes), 4/1/2008 6:28 PM)

Name RAID Controller

Manufacturer Not Available

Status OK

PNP Device ID

PCI\VEN_1000&DEV_0060&SUBSYS_1F0A1028&REV_04\4&149DD53B&0&0030

Memory Address 0xDE480000-0xDE4BFFFF

I/O Port 0x0000CC00-0x0000CCFF

Memory Address 0xDE440000-0xDE47FFFF

IRQ Channel IRQ 16

Driver c:\windows\system32\drivers\msas2k3.sys (2.8.0.64 built by: WinDDK, 26.50 KB (27,136 bytes), 4/1/2008 6:28 PM)

[IDE]

Item Value

Name Standard Dual Channel PCI IDE Controller

Manufacturer (Standard IDE ATA/ATAPI controllers)

Status OK

PNP Device ID PCI\VEN_8086&DEV_269E&SUBSYS_01B11028&REV_09\3&61AAA01&0&F9

I/O Port 0x0000FC00-0x0000FC0F

Driver c:\windows\system32\drivers\pciide.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 6.00 KB (6,144 bytes), 3/25/2005 6:00 AM)

Name Primary IDE Channel

Manufacturer (Standard IDE ATA/ATAPI controllers)

Status OK

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PNP Device ID PCIIDE\IDECHANNEL\4&1D8A9C03&0&0
I/O Port 0x000001F0-0x000001F7
I/O Port 0x000003F6-0x000003F6
IRQ Channel IRQ 14
Driver c:\windows\system32\drivers\atapi.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 145.00 KB (148,480 bytes), 3/25/2005 6:00 AM)

Name Secondary IDE Channel
Manufacturer (Standard IDE ATA/ATAPI controllers)
Status OK
PNP Device ID PCIIDE\IDECHANNEL\4&1D8A9C03&0&1
I/O Port 0x00000170-0x00000177
I/O Port 0x00000376-0x00000376
Driver c:\windows\system32\drivers\atapi.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 145.00 KB (148,480 bytes), 3/25/2005 6:00 AM)

Name Standard Dual Channel PCI IDE Controller
Manufacturer (Standard IDE ATA/ATAPI controllers)
Status OK
PNP Device ID PCI\VEN_8086&DEV_2680&SUBSYS_01B11028&REV_09\3&61AAA01&0&FA
I/O Port 0x0000AC78-0x0000AC7F
I/O Port 0x0000AC70-0x0000AC73
I/O Port 0x0000AC60-0x0000AC67
I/O Port 0x0000AC58-0x0000AC5B
I/O Port 0x0000AC40-0x0000AC4F
Memory Address 0xDEA00000-0xDEA003FF
IRQ Channel IRQ 23
Driver c:\windows\system32\drivers\pciide.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 6.00 KB (6,144 bytes), 3/25/2005 6:00 AM)

Name Primary IDE Channel
Manufacturer (Standard IDE ATA/ATAPI controllers)
Status OK
PNP Device ID PCIIDE\IDECHANNEL\4&1AB79DC0&0&0
Driver c:\windows\system32\drivers\atapi.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 145.00 KB (148,480 bytes), 3/25/2005 6:00 AM)

Name Secondary IDE Channel
Manufacturer (Standard IDE ATA/ATAPI controllers)
Status OK
PNP Device ID PCIIDE\IDECHANNEL\4&1AB79DC0&0&1
Driver c:\windows\system32\drivers\atapi.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 145.00 KB (148,480 bytes), 3/25/2005 6:00 AM)

[Printing]

Name	Driver	Port Name	Server Name
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[Problem Devices]

Device	PNP Device ID	Error Code
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[USB]

Device	PNP Device ID
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Standard Universal PCI to USB Host Controller
 PCI\VEN_8086&DEV_2688&SUBSYS_01B11028&REV_09\3&61AAA01&0&E8
 Standard Universal PCI to USB Host Controller
 PCI\VEN_8086&DEV_2689&SUBSYS_01B11028&REV_09\3&61AAA01&0&E9
 Standard Universal PCI to USB Host Controller
 PCI\VEN_8086&DEV_268A&SUBSYS_01B11028&REV_09\3&61AAA01&0&EA
 Standard Universal PCI to USB Host Controller
 PCI\VEN_8086&DEV_268B&SUBSYS_01B11028&REV_09\3&61AAA01&0&EB
 Standard Enhanced PCI to USB Host Controller
 PCI\VEN_8086&DEV_268C&SUBSYS_01B11028&REV_09\3&61AAA01&0&EF

[Software Environment]

[System Drivers]

Name	Description	File	Type	Started	Start Mode	State	Status	Error Control
	Accept Pause	Accept	Stop					
abiosdsk	Abiosdsk		Not Available	Kernel Driver	No	Disabled		
	Stopped	OK	Ignore	No	No			
acpi	Microsoft ACPI Driver	c:\windows\system32\drivers\acpi.sys	Kernel Driver	Yes				
	Boot Running	OK	Normal	No	Yes			
acpiec	ACPIEC	c:\windows\system32\drivers\acpiec.sys	Kernel Driver	No				
	Disabled	Stopped	OK	Normal	No	No		
adpu160m	adpu160m		Not Available	Kernel Driver	No	Disabled		
	Stopped	OK	Normal	No	No			
adpu320	adpu320		Not Available	Kernel Driver	No	Disabled		
	Stopped	OK	Normal	No	No			
afd	AFD	c:\windows\system32\drivers\afd.sys	Kernel Driver	Yes			System	
	Running	OK	Normal	No	Yes			
aic78u2	aic78u2	Not Available	Kernel Driver	No	Disabled	Stopped		OK
	Normal	No	No					
aic78xx	aic78xx	Not Available	Kernel Driver	No	Disabled	Stopped		OK
	Normal	No	No					
aliide	Aliide	Not Available	Kernel Driver	No	Disabled	Stopped		OK
	Normal	No	No					
amdide	AmdIde	Not Available	Kernel Driver	No	Disabled	Stopped		OK
	Normal	No	No					
arc	arc	Not Available	Kernel Driver	No	Disabled	Stopped		OK
	Normal	No	No					
asynmac	RAS Asynchronous Media Driver	c:\windows\system32\drivers\asynmac.sys	Kernel Driver	No		Manual		
	Stopped	OK	Normal	No	No			
atapi	Standard IDE/ESDI Hard Disk Controller	c:\windows\system32\drivers\atapi.sys	Kernel	Yes				
Driver	Yes	Boot Running	OK	Normal	No	Yes		
atdisk	Atdisk	Not Available	Kernel Driver	No	Disabled	Stopped		OK
	Ignore	No	No					
atmarpc	ATM ARP Client Protocol	c:\windows\system32\drivers\atmarpc.sys	Kernel Driver	No	Manual	Stopped	OK	Normal
	Kernel Driver	No	Manual	Stopped	OK	Normal	No	No
audstub	Audio Stub Driver	c:\windows\system32\drivers\audstub.sys	Kernel Driver	Yes				
	Yes	Manual Running	OK	Normal	No	Yes		
b06bdrv	Broadcom NetXtreme II VBD	c:\windows\system32\drivers\bxvbda.sys	Kernel Driver	Yes	Boot Running	OK	Normal	No
	Kernel Driver	Yes	Boot Running	OK	Normal	No	Yes	

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beep	Beep	c:\windows\system32\drivers\beep.sys	Kernel Driver	Yes	System			
	Running	OK	Normal	No	Yes			
blfp	Broadcom Advanced Server Program Driver	c:\windows\system32\drivers\basamd64.sys	Kernel Driver	No	Manual			
	Stopped	OK	Normal	No	No			
cdac15ba	CdaC15BA	c:\windows\system32\drivers\cdac15ba.sys	Kernel Driver					
	Yes	Auto	Running	OK	Normal	No	Yes	
cdad10ba	CdaD10BA	c:\windows\system32\drivers\cdad10ba.sys	Kernel Driver					
	Yes	Auto	Running	OK	Normal	No	Yes	
cdfs	Cdfs	c:\windows\system32\drivers\cdfs.sys	File System Driver		No			
	Disabled	Stopped	OK	Normal	No	No		
cdrom	CD-ROM Driver	c:\windows\system32\drivers\cdrom.sys	Kernel Driver	Yes	System			
	Running	OK	Normal	No	Yes			
changer	Changer	Not Available	Kernel Driver	No	System Stopped			
	OK	Ignore	No	No				
clusdisk	Cluster Disk Driver	c:\windows\system32\drivers\clusdisk.sys	Kernel Driver					
	No	Disabled	Stopped	OK	Normal	No	No	
cmdide	CmdIde	Not Available	Kernel Driver	No	Disabled	Stopped	OK	
	Normal	No	No					
cpqccism	cpqccism	Not Available	Kernel Driver	No	Disabled			
	Stopped	OK	Normal	No	No			
crcdisk	CRC Disk Filter Driver	c:\windows\system32\drivers\crcdisk.sys	Kernel Driver	Yes				
	Boot	Running	OK	Normal	No	Yes		
dfsdriver	DfsDriver	c:\windows\system32\drivers\dfs.sys	File System Driver					
	Yes	Boot	Running	OK	Normal	No	Yes	
disk	Disk Driver	c:\windows\system32\drivers\disk.sys	Kernel Driver	Yes	Boot			
	Running	OK	Normal	No	Yes			
dmboot	dmboot	c:\windows\system32\drivers\dmboot.sys	Kernel Driver	No				
	Disabled	Stopped	OK	Normal	No	No		
dmio	Logical Disk Manager Driver	c:\windows\system32\drivers\dmio.sys	Kernel Driver					
	Yes	Boot	Running	OK	Normal	No	Yes	
dmload	dmload	c:\windows\system32\drivers\dmload.sys	Kernel Driver	Yes	Boot			
	Running	OK	Normal	No	Yes			
dpti2o	dpti2o	Not Available	Kernel Driver	No	Disabled	Stopped	OK	
	Normal	No	No					
elxstor	elxstor	Not Available	Kernel Driver	No	Disabled	Stopped	OK	
	Normal	No	No					
fastfat	Fastfat	c:\windows\system32\drivers\fastfat.sys	File System Driver	No				
	Disabled	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	
fips	Fips	c:\windows\system32\drivers\fips.sys	Kernel Driver	Yes	System			
	Running	OK	Normal	No	Yes			
flpydisk	Floppy Disk Driver	c:\windows\system32\drivers\flpydisk.sys	Kernel Driver					
	Yes	Manual	Running	OK	Normal	No	Yes	
fltmgr	FltMgr	c:\windows\system32\drivers\fltmgr.sys	File System Driver	Yes	Boot			
	Running	OK	Normal	No	Yes			
ftdisk	Volume Manager Driver	c:\windows\system32\drivers\ftdisk.sys	Kernel Driver	Yes				
	Boot	Running	OK	Normal	No	Yes		
gpc	Generic Packet Classifier	c:\windows\system32\drivers\msgpc.sys	Kernel Driver					
	Yes	Manual	Running	OK	Normal	No	Yes	
hidusb	Microsoft HID Class Driver	c:\windows\system32\drivers\hidusb.sys	Kernel Driver					
	Yes	Manual	Running	OK	Ignore	No	Yes	
hpciss	hpciss	Not Available	Kernel Driver	No	Disabled	Stopped	OK	
	Normal	No	No					

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http	HTTP	c:\windows\system32\drivers\http.sys	Kernel Driver	No	Manual		
	Stopped	OK	Normal	No	No		
i2omgmt	i2omgmt	Not Available	Kernel Driver	No	System Stopped		
	OK	Normal	No	No			
i8042prt	i8042prt	c:\windows\system32\drivers\i8042prt.sys	Kernel Driver				
	No	System Stopped	OK	Ignore	No	No	
iirsp	iirsp	Not Available	Kernel Driver	No	Disabled	Stopped	OK
	Normal	No	No				
imapi	CD-Burning Filter Driver	c:\windows\system32\drivers\imapi.sys	Kernel Driver	No			
	System Stopped	OK	Normal	No	No		
intelide	IntelIde	Not Available	Kernel Driver	No	Disabled	Stopped	OK
	Normal	No	No				
intelppm	Intel Processor Driver	c:\windows\system32\drivers\intelppm.sys	Kernel				
Driver	Yes	Manual Running	OK	Normal	No	Yes	
ip6fw	IPv6 Windows Firewall Driver	c:\windows\system32\drivers\ip6fw.sys	Kernel Driver				
	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	
ipinip	IP in IP Tunnel Driver	c:\windows\system32\drivers\ipinip.sys	Kernel Driver	No			
	Manual Stopped	OK	Normal	No	No		
ipnat	IP Network Address Translator	c:\windows\system32\drivers\ipnat.sys	Kernel Driver				
	No	Manual Stopped	OK	Normal	No	No	
ipsec	IPSEC driver	c:\windows\system32\drivers\ipsec.sys	Kernel Driver	Yes	System		
	Running	OK	Normal	No	Yes		
irenum	IR Enumerator Service	c:\windows\system32\drivers\irenum.sys	Kernel Driver	No			
	Manual Stopped	OK	Normal	No	No		
isapnp	PnP ISA/EISA Bus Driver	c:\windows\system32\drivers\isapnp.sys	Kernel Driver				
	Yes	Boot Running	OK	Critical	No	Yes	
kbdclass	Keyboard Class Driver	c:\windows\system32\drivers\kbdclass.sys	Kernel				
Driver	Yes	System Running	OK	Normal	No	Yes	
kbdhid	Keyboard HID Driver	c:\windows\system32\drivers\kbdhid.sys	Kernel Driver	Yes			
	System Running	OK	Ignore	No	Yes		
ksecdd	KSecDD	c:\windows\system32\drivers\ksecdd.sys	Kernel Driver	Yes	Boot		
	Running	OK	Normal	No	Yes		
ksthunk	Kernel Streaming WOW64 Thunk Service	c:\windows\system32\drivers\ksthunk.sys	Kernel Driver	Yes	Manual		
	Running	OK	Normal	No	Yes		
l2nd	Broadcom NetXtreme II BXND	c:\windows\system32\drivers\bxnd52a.sys	Kernel				
Driver	Yes	Manual Running	OK	Normal	No	Yes	
lp6nds35	lp6nds35	Not Available	Kernel Driver	No	Disabled		
	Stopped	OK	Normal	No	No		
mnmd	mnmd	c:\windows\system32\drivers\mnmd.sys	Kernel Driver	Yes	System		
	Running	OK	Ignore	No	Yes		
modem	Modem	c:\windows\system32\drivers\modem.sys	Kernel Driver	No	Manual		
	Stopped	OK	Ignore	No	No		
mouclass	Mouse Class Driver	c:\windows\system32\drivers\mouclass.sys	Kernel				
Driver	Yes	System Running	OK	Normal	No	Yes	
mouhid	Mouse HID Driver	c:\windows\system32\drivers\mouhid.sys	Kernel Driver				
	Yes	Manual Running	OK	Ignore	No	Yes	
mountmgr	Mount Point Manager	c:\windows\system32\drivers\mountmgr.sys	Kernel				
Driver	Yes	Boot Running	OK	Normal	No	Yes	
mrraid35x	mrraid35x	Not Available	Kernel Driver	No	Disabled		
	Stopped	OK	Normal	No	No		
mrxdav	WebDav Client Redirector	c:\windows\system32\drivers\mrxdav.sys	File				
System Driver	No	Manual Stopped	OK	Normal	No	No	

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mrxsmb	MRXSMB	c:\windows\system32\drivers\mrxsmb.sys	File System Driver						
	Yes	System Running	OK	Normal	No	Yes			
msas2k3	msas2k3	c:\windows\system32\drivers\msas2k3.sys	Kernel Driver						
	Yes	Boot Running	OK	Normal	No	Yes			
msfs	Msfs	c:\windows\system32\drivers\msfs.sys	File System Driver				Yes	System	
	Running	OK	Normal	No	Yes				
mssmbios	Microsoft System Management BIOS Driver								
		c:\windows\system32\drivers\mssmbios.sys	Kernel Driver	Yes	Manual				
	Running	OK	Normal	No	Yes				
mup	Mup	c:\windows\system32\drivers\mup.sys	File System Driver				Yes	Boot	
	Running	OK	Normal	No	Yes				
ndis	NDIS System Driver	c:\windows\system32\drivers\ndis.sys	Kernel Driver	Yes					
	Boot Running	OK	Normal	No	Yes				
ndistapi	Remote Access NDIS TAPI Driver								
		c:\windows\system32\drivers\ndistapi.sys							
	Kernel Driver	Yes	Manual	Running	OK	Normal	No	Yes	
ndisuio	NDIS Usermode I/O Protocol								
		c:\windows\system32\drivers\ndisuio.sys	Kernel Driver						
	No	Manual Stopped	OK	Normal	No	No			
ndiswan	Remote Access NDIS WAN Driver								
		c:\windows\system32\drivers\ndiswan.sys	Kernel Driver	Yes	Manual				
	Running	OK	Normal	No	Yes				
ndproxy	NDIS Proxy	c:\windows\system32\drivers\ndproxy.sys	Kernel Driver	Yes					
	Manual Running	OK	Normal	No	Yes				
netbios	NetBIOS Interface								
		c:\windows\system32\drivers\netbios.sys	File System						
Driver	Yes	System Running	OK	Normal	No	Yes			
netbt	NetBios over Tcpip	c:\windows\system32\drivers\netbt.sys	Kernel Driver	Yes					
	System Running	OK	Normal	No	Yes				
nfrd960	nfrd960	Not Available	Kernel Driver	No	Disabled	Stopped	OK		
	Normal	No	No						
npfs	Npfs	c:\windows\system32\drivers\npfs.sys	File System Driver	Yes	System				
	Running	OK	Normal	No	Yes				
ntfs	Ntfs	c:\windows\system32\drivers\ntfs.sys	File System Driver	Yes					
	Disabled	Running	OK	Normal	No	Yes			
null	Null	c:\windows\system32\drivers\null.sys	Kernel Driver	Yes	System				
	Running	OK	Normal	No	Yes				
parport	Parport	c:\windows\system32\drivers\parport.sys	Kernel Driver	No	Manual				
	Stopped	OK	Ignore	No	No				
partmgr	Partition Manager								
		c:\windows\system32\drivers\partmgr.sys	Kernel Driver						
	Yes	Boot Running	OK	Normal	No	Yes			
pci	PCI Bus Driver	c:\windows\system32\drivers\pci.sys	Kernel Driver	Yes	Boot				
	Running	OK	Critical	No	Yes				
pciide	PCIIde	c:\windows\system32\drivers\pciide.sys	Kernel Driver	Yes	Boot				
	Running	OK	Normal	No	Yes				
pcmcia	Pcmcia	c:\windows\system32\drivers\pcmcia.sys	Kernel Driver	No	Disabled				
	Stopped	OK	Normal	No	No				
pdcomp	PDCOMP	Not Available	Kernel Driver	No	Manual	Stopped	OK		
	Ignore	No	No						
pdframe	PDFRAME	Not Available	Kernel Driver	No	Manual	Stopped			
	OK	Ignore	No	No					
pdreli	PDRELI	Not Available	Kernel Driver	No	Manual	Stopped	OK		
	Ignore	No	No						
pdrframe	PDRFRAME	Not Available	Kernel Driver	No	Manual	Stopped			
	OK	Ignore	No	No					
pptpminiport	WAN Miniport (PPTP)								
Driver	Yes	Manual Running	OK	Normal	No	Yes			Kernel

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ptilink	Direct Parallel Link Driver	c:\windows\system32\drivers\ptilink.sys	Kernel Driver						
	Yes Manual Running	OK Normal No Yes							
ql2300	ql2300 Not Available	Kernel Driver	No Disabled	Stopped	OK				
	Normal No No								
rasacd	Remote Access Auto Connection Driver	c:\windows\system32\drivers\rasacd.sys	Kernel Driver						
Driver	Yes System Running	OK Normal No Yes							
rasl2tp	WAN Miniport (L2TP)	c:\windows\system32\drivers\rasl2tp.sys	Kernel Driver	Yes					
	Manual Running	OK Normal No Yes							
rasppoe	Remote Access PPPOE Driver	c:\windows\system32\drivers\rasppoe.sys							
	Kernel Driver Yes Manual Running	OK Normal No Yes							
raspti	Direct Parallel	c:\windows\system32\drivers\raspti.sys	Kernel Driver	Yes	Manual				
	Running OK Normal No Yes								
rdcss	Rdbss	c:\windows\system32\drivers\rdbss.sys	File System Driver	Yes	System				
	Running OK Normal No Yes								
rdpcdd	RDPCDD	c:\windows\system32\drivers\rdpcdd.sys	Kernel Driver	Yes	System				
	Running OK Ignore No Yes								
rdpdr	Terminal Server Device Redirector Driver	c:\windows\system32\drivers\rdpdr.sys							
	Kernel Driver Yes Manual Running	OK Normal No Yes							
rdpwd	RDPWD	c:\windows\system32\drivers\rdpwd.sys	Kernel Driver	Yes	Manual				
	Running OK Ignore No Yes								
redbook	Digital CD Audio Playback Filter Driver								
	c:\windows\system32\drivers\redbook.sys	Kernel Driver	Yes	System					
	Running OK Normal No Yes								
secdrv	Security Driver	c:\windows\system32\drivers\secdrv.sys	Kernel Driver	Yes	Auto				
	Running OK Normal No Yes								
serenum	Serenum Filter Driver	c:\windows\system32\drivers\serenum.sys							
Driver	Yes Manual Running	OK Normal No Yes							
serial	Serial port driver	c:\windows\system32\drivers\serial.sys	Kernel Driver	Yes					
	System Running	OK Ignore No Yes							
sfloppy	Sfloppy	c:\windows\system32\drivers\sfloppy.sys	Kernel Driver	No	System				
	Stopped OK Ignore No No								
simbad	Simbad Not Available	Kernel Driver	No Disabled	Stopped	OK				
	Normal No No								
srv	Srv	c:\windows\system32\drivers\srv.sys	File System Driver	Yes	Manual				
	Running OK Normal No Yes								
swenum	Software Bus Driver	c:\windows\system32\drivers\swenum.sys							
Driver	Yes Manual Running	OK Normal No Yes							
symc8xx	symc8xx	Not Available	Kernel Driver	No Disabled					
	Stopped OK Normal No No								
symmpi	symmpi Not Available	Kernel Driver	No Disabled	Stopped	OK				
	Normal No No								
sym_hi	sym_hi Not Available	Kernel Driver	No Disabled	Stopped	OK				
	Normal No No								
sym_u3	sym_u3 Not Available	Kernel Driver	No Disabled	Stopped	OK				
	Normal No No								
tcpip	TCP/IP Protocol Driver	c:\windows\system32\drivers\tcpip.sys	Kernel Driver	Yes					
	System Running	OK Normal No Yes							
tdpipe	TDPIPE	c:\windows\system32\drivers\tdpipe.sys	Kernel Driver	No	Manual				
	Stopped OK Ignore No No								
tdtcp	TDTCP	c:\windows\system32\drivers\tdtcp.sys	Kernel Driver	Yes	Manual				
	Running OK Ignore No Yes								
termdd	Terminal Device Driver	c:\windows\system32\drivers\termdd.sys	Kernel Driver	Yes					
	System Running	OK Normal No Yes							
toside	Toside Not Available	Kernel Driver	No Disabled	Stopped	OK				
	Normal No No								

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udfs	Udfs	c:\windows\system32\drivers\udfs.sys	File System Driver	Yes				
	Disabled	Running	OK	Normal	No	Yes		
ultra	ultra	Not Available	Kernel Driver	No	Disabled	Stopped	OK	
	Normal	No	No					
update	Microcode Update Driver	c:\windows\system32\drivers\update.sys	Kernel Driver					
	Yes	Manual Running	OK	Normal	No	Yes		
usbccgp	Microsoft USB Generic Parent Driver							
	c:\windows\system32\drivers\usbccgp.sys		Kernel Driver	Yes	Manual			
	Running	OK	Normal	No	Yes			
usbehci	Microsoft USB 2.0 Enhanced Host Controller Miniport Driver							
	c:\windows\system32\drivers\usbehci.sys		Kernel Driver	Yes	Manual			
	Running	OK	Normal	No	Yes			
usbhub	Microsoft USB Standard Hub Driver	c:\windows\system32\drivers\usbhub.sys						
	Kernel Driver	Yes	Manual Running	OK	Normal	No	Yes	
usbstor	USB Mass Storage Driver	c:\windows\system32\drivers\usbstor.sys						Kernel
Driver	No	Manual Stopped	OK	Normal	No	No		
usbuhci	Microsoft USB Universal Host Controller Miniport Driver							
	c:\windows\system32\drivers\usbuhci.sys		Kernel Driver	Yes	Manual			
	Running	OK	Normal	No	Yes			
vga	vga	c:\windows\system32\drivers\vgapnp.sys	Kernel Driver	Yes	Manual			
	Running	OK	Ignore	No	Yes			
vgasave	VGA Display Controller.	c:\windows\system32\drivers\vga.sys	Kernel Driver					
	No	System Stopped	OK	Ignore	No	No		
viaide	Vialde	Not Available	Kernel Driver	No	Disabled	Stopped	OK	
	Normal	No	No					
volsnap	Storage volumes	c:\windows\system32\drivers\volsnap.sys	Kernel Driver					
	Yes	Boot Running	OK	Normal	No	Yes		
wanarp	Remote Access IP ARP Driver	c:\windows\system32\drivers\wanarp.sys						Kernel
Driver	Yes	Manual Running	OK	Normal	No	Yes		
wdica	WDICA	Not Available	Kernel Driver	No	Manual Stopped	OK	Ignore	
	No	No						
wlbs	Network Load Balancing	c:\windows\system32\drivers\wlbs.sys	Kernel Driver					
	No	Manual Stopped	OK	Normal	No	No		

[Signed Drivers]

Device Name	Signed	Device Class	Driver Version	Driver Date	Manufacturer	INF
Name	Driver Name	Device ID				
Microsoft System Management BIOS Driver	Yes	SYSTEM	5.2.3790.1830	10/1/2002	Not Available	
	10/1/2002	(Standard system devices)	machine.inf			
	ROOT\SYSTEM\0002					
Microcode Update Device	Yes	SYSTEM	5.2.3790.1830	10/1/2002	Not Available	ROOT\SYSTEM\0001
	(Standard system devices)	machine.inf				
Plug and Play Software Device Enumerator	Yes	SYSTEM	5.2.3790.1830	10/1/2002	Not Available	ROOT\SYSTEM\0000
	10/1/2002	(Standard system devices)	machine.inf			
	ROOT\SYSTEM\0000					
Terminal Server Mouse Driver	Yes	SYSTEM	5.2.3790.1830	10/1/2002	Not Available	ROOT\RDPMOU\0000
	(Standard system devices)	machine.inf				
Terminal Server Keyboard Driver	Yes	SYSTEM	5.2.3790.1830	10/1/2002	Not Available	ROOT\RDPM_KBD\0000
	(Standard system devices)	machine.inf				
Terminal Server Device Redirector	Yes	SYSTEM	5.2.3790.1830	10/1/2002	Not Available	ROOT\RDPM_PDR\0000
	(Standard system devices)	machine.inf				
Direct Parallel	Yes	NET	5.2.3790.1830	10/1/2002	Microsoft	netrasa.inf
	Not Available	ROOT\MS_PT\MINI\PORT\0000				

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WAN Miniport (PPTP)	Yes	NET	5.2.3790.1830	10/1/2002	Microsoft
netrasa.inf	Not Available		ROOT\MS_PPTPMINIPORT\0000		
WAN Miniport (PPPOE)	Yes	NET	5.2.3790.1830	10/1/2002	Microsoft
netrasa.inf	Not Available		ROOT\MS_PPPOEMINIPORT\0000		
WAN Miniport (IP)	Yes	NET	5.2.3790.1830	10/1/2002	Microsoft
netrasa.inf	Not Available		ROOT\MS_NDISWANIP\0000		
WAN Miniport (L2TP)	Yes	NET	5.2.3790.1830	10/1/2002	Microsoft
netrasa.inf	Not Available		ROOT\MS_L2TPMINIPORT\0000		
Video Codecs	Yes	MEDIA	5.2.3790.1830	10/1/2002	(Standard system devices)
wave.inf	Not Available		ROOT\MEDIA\MS_MMVID		
Legacy Video Capture Devices	Yes	MEDIA	5.2.3790.1830	10/1/2002	(Standard system devices)
wave.inf	Not Available		ROOT\MEDIA\MS_MMVCD		
Media Control Devices	Yes	MEDIA	5.2.3790.1830	10/1/2002	(Standard system devices)
wave.inf	Not Available		ROOT\MEDIA\MS_MMMCI		
Legacy Audio Drivers	Yes	MEDIA	5.2.3790.1830	10/1/2002	(Standard system devices)
wave.inf	Not Available		ROOT\MEDIA\MS_MMDRV		
Audio Codecs	Yes	MEDIA	5.2.3790.1830	10/1/2002	(Standard system devices)
wave.inf	Not Available		ROOT\MEDIA\MS_MMACM		
Remote Access IP ARP Driver	Not Available		LEGACYDRIVER	Not Available	Not Available
Available	Not Available	Not Available	Not Available		
			ROOT\LEGACY_WANARP\0000		
volsnap	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Not Available	Not Available	ROOT\LEGACY_VOLSNAPI\0000			
TDTCP	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Not Available	Not Available	ROOT\LEGACY_TDTCP\0000			
TCP/IP Protocol Driver	Not Available	LEGACYDRIVER	Not Available	Not Available	
Not Available	Not Available	Not Available	ROOT\LEGACY_TCPIP\0000		
Security Driver	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Available	Not Available	Not Available	ROOT\LEGACY_SECDRV\0000		
RDPWD	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Available	Not Available	Not Available	ROOT\LEGACY_RDPWD\0000		
RDPCDD	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Available	Not Available	Not Available	ROOT\LEGACY_RDPCDD\0000		
Remote Access Auto Connection Driver	Not Available	LEGACYDRIVER	Not Available	Not Available	
Not Available	Not Available	Not Available	Not Available		
			ROOT\LEGACY_RASACD\0000		
Partition Manager	Not Available	LEGACYDRIVER	Not Available	Not Available	
Not Available	Not Available	Not Available	ROOT\LEGACY_PARTMGR\0000		
Null	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Not Available	Not Available	ROOT\LEGACY_NULL\0000			
NetBios over Tcpip	Not Available	LEGACYDRIVER	Not Available	Not Available	
Not Available	Not Available	Not Available	ROOT\LEGACY_NETBT\0000		
NDProxy	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Available	Not Available	Not Available	ROOT\LEGACY_NDPROXY\0000		
NDIS Usermode I/O Protocol	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Available	Not Available	Not Available	Not Available		
			ROOT\LEGACY_NDISUIO\0000		
Remote Access NDIS TAPI Driver	Not Available	LEGACYDRIVER	Not Available	Not Available	
Not Available	Not Available	Not Available	Not Available		
			ROOT\LEGACY_NDISTAPI\0000		
NDIS System Driver	Not Available	LEGACYDRIVER	Not Available	Not Available	
Not Available	Not Available	Not Available	ROOT\LEGACY_NDIS\0000		
mountmgr	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Available	Not Available	Not Available	ROOT\LEGACY_MOUNTMGR\0000		

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mnmd	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
	Not Available	Not Available	ROOT\LEGACY_MNMDD\0000		
ksecdd	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
	Not Available	Not Available	ROOT\LEGACY_KSECDD\0000		
IPSEC driver	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
	Not Available	Not Available	ROOT\LEGACY_IPSEC\0000		
IP Network Address Translator	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
	Not Available	Not Available	Not Available	ROOT\LEGACY_IPNAT\0000	
Generic Packet Classifier	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
	Not Available	Not Available	Not Available	ROOT\LEGACY_GPC\0000	
Fips	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
	Not Available	Not Available	ROOT\LEGACY_FIPS\0000		
dmload	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
	Not Available	Not Available	ROOT\LEGACY_DMLOAD\0000		
dmboot	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
	Not Available	Not Available	ROOT\LEGACY_DMBOOT\0000		
CRC Disk Filter Driver	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
	Not Available	Not Available	Not Available	ROOT\LEGACY_CRCDISK\0000	
CdaD10BA	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
	Not Available	Not Available	ROOT\LEGACY_CDAD10BA\0000		
CdaC15BA	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
	Not Available	Not Available	ROOT\LEGACY_CDAC15BA\0000		
Beep	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
	Not Available	Not Available	ROOT\LEGACY_BEEP\0000		
AFD	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
	Not Available	Not Available	ROOT\LEGACY_AFD\0000		
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
	volume.inf	Not Available			
			STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET7158D1E200LE		
			NGTH5641800		
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
	volume.inf	Not Available			
			STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET6FC263E800LE		
			NGTH1966D7C00		
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
	volume.inf	Not Available			
			STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET6E2BF5EE00LE		
			NGTH1966D7C00		
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
	volume.inf	Not Available			
			STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET6C9587F400LE		
			NGTH1966D7C00		
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
	volume.inf	Not Available			
			STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET5FE3132800LEN		
			GTHCB2744E00		
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
	volume.inf	Not Available			
			STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET53309E5C00LE		
			NGTHCB2744E00		
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
	volume.inf	Not Available			
			STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET51106CB000LE		
			NGTH220312E00		

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Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET4EF03B0400LE NGTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET4CD0095800LE NGTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET4AAFD7AC00LE NGTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET488FA60000LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET466F745400LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET4524090C00LEN GTH14B6ACA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET4310969400LEN GTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET40FD241C00LE NGTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET3EE9B1A400LE NGTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET3CD63F2C00LE NGTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET3AC2CCB400LE NGTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET38AF5A3C00LE NGTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET38A9F5A600LE NGTH5641800				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft

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STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET371387AC00LE					
NGTH1966D7C00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET357D19B200LE					
NGTH1966D7C00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET33E6ABB800LE					
NGTH1966D7C00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET273436EC00LE					
NGTHCB2744E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET1A81C22000LE					
NGTHCB2744E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET1861907400LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET16415EC800LE					
NGTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET14212D1C00LE					
NGTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET1200FB7000LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSETFE0C9C400LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSETDC0981800LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSETC752CD000LEN					
GTH14B6ACA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSETA61BA5800LEN					
GTH21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET84E47E000LEN					
GTH21371FA00					

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Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET63AD56800LEN				
GTH21371FA00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET42762F000LEN				
GTH21371FA00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET213F07800LEN				
GTH21371FA00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSET7E0000LENGTH				
21371FA00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE70BC56F3OFFSETFB74454A00LE				
NGTH29B402200				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET6D3EAC2600LE				
NGTH5641800				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET6BA83E2C00LE				
NGTH1966D7C00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET6A11D03200LEN				
GTH1966D7C00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET687B623800LEN				
GTH1966D7C00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET5BC8ED6C00LE				
NGTHCB2744E00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET4F1678A000LEN				
GTHCB2744E00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET4CF646F400LEN				
GTH220312E00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET4AD6154800LEN				
GTH220312E00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			

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STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET48B5E39C00LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET4695B1F000LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET4475804400LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET42554E9800LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET4109E35000LEN					
GTH14B6ACA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET3EF670D800LEN					
GTH21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET3CE2FE6000LE					
NGTH21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET3ACF8BE800LE					
NGTH21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET38BC197000LEN					
GTH21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET36A8A6F800LEN					
GTH21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET36A2475E00LEN					
GTH65F1C00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET369CE2C800LE					
NGTH5641800					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET350674CE00LEN					
GTH1966D7C00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET337006D400LEN					
GTH1966D7C00					

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Generic volume Yes volume.inf STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET31D998DA00LE NGTH1966D7C00	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
Generic volume Yes volume.inf STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET2527240E00LEN GTHCB2744E00	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
Generic volume Yes volume.inf STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET1874AF4200LEN GTHCB2744E00	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
Generic volume Yes volume.inf STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET16547D9600LEN GTH220312E00	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
Generic volume Yes volume.inf STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET14344BEA00LEN GTH220312E00	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
Generic volume Yes volume.inf STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET12141A3E00LEN GTH220312E00	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
Generic volume Yes volume.inf STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSETF3E89200LEN GTH220312E00	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
Generic volume Yes volume.inf STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSETH3B6E600LEN GTH220312E00	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
Generic volume Yes volume.inf STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSETB3B3853A00LEN GTH220312E00	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
Generic volume Yes volume.inf STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSETH6819F200LENG TH14B6ACA00	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
Generic volume Yes volume.inf STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSETH54A77A00LEN GTH21371FA00	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
Generic volume Yes volume.inf STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSETH641350200LENG TH21371FA00	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
Generic volume Yes volume.inf STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSETH42DC28A00LEN GTH21371FA00	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft

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STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET21A501200LENG					
TH21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET6DD9A00LENGT					
H21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATUREA0932386OFFSET7E0000LENGTH					
65F1C00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET561EB95000LEN					
GTH113096400					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET550BAF6E00LEN					
GTH113096400					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET54F890A000LEN					
GTH131E5000					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET536222A600LEN					
GTH1966D7C00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET51CBB4AC00LE					
NGTH1966D7C00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET503546B200LEN					
GTH1966D7C00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET4382D1E600LEN					
GTHCB2744E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET437D6D5000LEN					
GTH5641800					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET415D3BA400LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET3F3D09F800LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET3D1CD84C00LE					
NGTH220312E00					

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Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET3AFCA6A000LE NGTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET38DC74F400LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET36BC434800LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET3570D80000LEN GTH14B6ACA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET335D658800LEN GTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET3149F31000LEN GTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET2F36809800LEN GTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET2D230E2000LEN GTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET2B0F9BA800LEN GTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET29FC91C600LEN GTH113096400				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET29E972F800LEN GTH131E5000				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET285304FE00LEN GTH1966D7C00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET26BC970400LEN GTH1966D7C00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft

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STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET2526290A00LEN					
GTH1966D7C00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET1873B43E00LEN					
GTHCB2744E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET186E4FA800LEN					
GTH5641800					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET164E1DFC00LE					
NGTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET142DEC5000LE					
NGTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET120DBAA400LE					
NGTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSETFED88F800LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSETDCD574C00LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSETBAD25A000LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSETA61BA5800LEN					
GTH14B6ACA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET84E47E000LEN					
GTH21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET63AD56800LEN					
GTH21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET42762F000LENG					
TH21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET213F07800LENG					
TH21371FA00					

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Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589557OFFSET7E0000LENGTH 21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET5732BE3600LEN GTH27115F800				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET559C503C00LEN GTH1966D7C00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET5405E24200LEN GTH1966D7C00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET53FF82A800LEN GTH65F1C00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET520B70B000LEN GTH1F4117A00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET4558FBE400LEN GTHCB2744E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET4338CA3800LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET4118988C00LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET3EF866E000LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET3CD8353400LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET3AB8038800LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET3897D1DC00LE NGTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft

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STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET374C669400LEN					
GTH14B6ACA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET373365AE00LEN					
GTH19006800					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET351FF33600LEN					
GTH21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET330C80BE00LEN					
GTH21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET30F90E4600LEN					
GTH21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET2EE59BCE00LE					
NGTH21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET2CD2295600LEN					
GTH21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET2A6112E000LEN					
GTH27115F800					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET28CAA4E600LE					
NGTH1966D7C00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET273436EC00LEN					
GTH1966D7C00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET272DD75200LEN					
GTH65F1C00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET2539C55A00LEN					
GTH1F4117A00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET1887508E00LEN					
GTHCB2744E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET16671EE200LEN					
GTH220312E00					

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Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET1446ED3600LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET1226BB8A00LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET100689DE00LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSETDE6583200LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSETBC6268600LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSETA7ABB3E00LEN GTH14B6ACA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSETA61BA5800LEN GTH19006800				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET84E47E000LEN GTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET63AD56800LEN GTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET42762F000LENG TH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET213F07800LENG TH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589554OFFSET7E0000LENGTH 21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET602E15DA00LEN GTH25BF9C00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft

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STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET5E97A7E000LEN					
GTH1966D7C00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET5D0139E600LEN					
GTH1966D7C00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET5763477C00LEN					
GTH59DF1EC00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET575DE2E600LEN					
GTH5641800					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET4AAB6E1A00LE					
NGTHCB2744E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET488B3C6E00LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET466B0AC200LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET444AD91600LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET422AA76A00LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET400A75BE00LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET3DEA441200LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET3C9ED8CA00LE					
NGTH14B6ACA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET3A8B665200LEN					
GTH21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET3877F3DA00LEN					
GTH21371FA00					

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Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET3664816200LEN GTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET34510EEA00LEN GTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET323D9C7200LEN GTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET302A29FA00LEN GTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET300469E000LEN GTH25BF9C00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET2E6DFBE600LE NGTH1966D7C00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET2CD78DEC00LE NGTH1966D7C00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET27399B8200LEN GTH59DF1EC00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET273436EC00LEN GTH5641800				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET1A81C22000LEN GTHCB2744E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET1861907400LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET16415EC800LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET14212D1C00LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft

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STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET1200FB7000LEN
GTH220312E00
Generic volume Yes VOLUME 5.2.3790.1830 10/1/2002 Microsoft
volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSETFE0C9C400LEN
GTH220312E00
Generic volume Yes VOLUME 5.2.3790.1830 10/1/2002 Microsoft
volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSETD0981800LEN
GTH220312E00
Generic volume Yes VOLUME 5.2.3790.1830 10/1/2002 Microsoft
volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSETC752CD000LEN
GTH14B6ACA00
Generic volume Yes VOLUME 5.2.3790.1830 10/1/2002 Microsoft
volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSETA61BA5800LEN
GTH21371FA00
Generic volume Yes VOLUME 5.2.3790.1830 10/1/2002 Microsoft
volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET84E47E000LEN
GTH21371FA00
Generic volume Yes VOLUME 5.2.3790.1830 10/1/2002 Microsoft
volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET63AD56800LEN
GTH21371FA00
Generic volume Yes VOLUME 5.2.3790.1830 10/1/2002 Microsoft
volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET42762F000LENG
TH21371FA00
Generic volume Yes VOLUME 5.2.3790.1830 10/1/2002 Microsoft
volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET213F07800LENG
TH21371FA00
Generic volume Yes VOLUME 5.2.3790.1830 10/1/2002 Microsoft
volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589555OFFSET7E0000LENGTH
21371FA00
Generic volume Yes VOLUME 5.2.3790.1830 10/1/2002 Microsoft
volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET6EEF160A00LEN
GTHBBC50000
Generic volume Yes VOLUME 5.2.3790.1830 10/1/2002 Microsoft
volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET6D58A81000LEN
GTH1966D7C00
Generic volume Yes VOLUME 5.2.3790.1830 10/1/2002 Microsoft
volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET6BC23A1600LEN
GTH1966D7C00
Generic volume Yes VOLUME 5.2.3790.1830 10/1/2002 Microsoft
volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET6BBBDA7C00LE
NGTH65F1C00

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Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET5F0965B000LEN GTHCB2744E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET5256F0E400LEN GTHCB2744E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET5036BF3800LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET4E168D8C00LE NGTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET4BF65BE000LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET49D62A3400LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET47B5F88800LEN GTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET4595C6DC00LE NGTH220312E00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET444A5B9400LEN GTH14B6ACA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET4236E91C00LEN GTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET402376A400LEN GTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET3E10042C00LEN GTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET3BFC91B400LE NGTH21371FA00				
Generic volume Yes volume.inf	VOLUME Not Available	5.2.3790.1830	10/1/2002	Microsoft

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STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET39E91F3C00LEN					
GTH21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET37D5ACC400LE					
NGTH21371FA00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET3719E74600LEN					
GTHBBC50000					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET3583794C00LEN					
GTH1966D7C00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET33ED0B5200LEN					
GTH1966D7C00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET33E6ABB800LE					
NGTH65F1C00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET273436EC00LEN					
GTHCB2744E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET1A81C22000LEN					
GTHCB2744E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET1861907400LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET16415EC800LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET14212D1C00LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET1200FB7000LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSETFE0C9C400LEN					
GTH220312E00					
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf		Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSETDC0981800LEN					
GTH220312E00					

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Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSETC752CD000LEN				
GTH14B6ACA00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSETA61BA5800LEN				
GTH21371FA00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET84E47E000LEN				
GTH21371FA00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET63AD56800LEN				
GTH21371FA00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET42762F000LENG				
TH21371FA00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET213F07800LENG				
TH21371FA00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE9B589552OFFSET7E0000LENGTH				
21371FA00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE5210521OFFSET17A6C5FA00LEN				
GTH4E22C6E00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE5210521OFFSET12C4990E00LENG				
TH4E22C6E00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE5210521OFFSETDE26C2200LENG				
TH4E22C6E00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE5210521OFFSET9003F3600LENGT				
H4E22C6E00				
Generic volume Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available			
STORAGE\VOLUME\1&30A96598&0&SIGNATURE5210521OFFSET7E00LENGTH900				
3E3A00				
Volume Manager	Yes	SYSTEM	5.2.3790.1830	10/1/2002
system devices)machine.inf	Not Available	ROOT\FTDISK\0000		(Standard
Logical Disk Manager	Yes	SYSTEM	5.2.3790.1830	10/1/2002
system devices)machine.inf	Not Available	ROOT\DMIO\0000		(Standard
ACPI Fixed Feature Button	Yes	SYSTEM	5.2.3790.1830	10/1/2002
(Standard system devices)	machine.inf	Not Available		
ACPI\FIXEDBUTTON\2&DABA3FF&0				

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High precision event timer (Standard system devices)	Yes	SYSTEM	5.2.3790.1830	10/1/2002	machine.inf	Not Available	ACPI\PNP0103\0
Motherboard resources (Standard system devices)	Yes	SYSTEM	5.2.3790.1830	10/1/2002	machine.inf	Not Available	ACPI\PNP0C02\0
Secondary IDE Channel (Standard IDE ATA/ATAPI controllers)	Yes	HDC	5.2.3790.1830	10/1/2002	mshdc.inf	Not Available	(Standard IDE PCI\IDE\IDECHANNEL\4&1AB79DC0&0&1
Primary IDE Channel (Standard IDE ATA/ATAPI controllers)	Yes	HDC	5.2.3790.1830	10/1/2002	mshdc.inf	Not Available	(Standard IDE PCI\IDE\IDECHANNEL\4&1AB79DC0&0&0
Standard Dual Channel PCI IDE Controller (Standard IDE ATA/ATAPI controllers)	Yes	HDC	5.2.3790.1830	10/1/2002	mshdc.inf	Not Available	PCI\VEN_8086&DEV_2680&SUBSYS_01B11028&REV_09\3&61AAA01&0&FA
Secondary IDE Channel (Standard IDE ATA/ATAPI controllers)	Yes	HDC	5.2.3790.1830	10/1/2002	mshdc.inf	Not Available	(Standard IDE PCI\IDE\IDECHANNEL\4&1D8A9C03&0&1
CD-ROM Drive (Standard CD-ROM drives)	Yes	CDROM	5.2.3790.1830	10/1/2002	cdrom.inf	Not Available	(Standard CD-ROM IDE\CDROMHL-DT-ST_DVD-ROM_GDR8164B_0D08_5&41A3CB2&0&0.0.0
Primary IDE Channel (Standard IDE ATA/ATAPI controllers)	Yes	HDC	5.2.3790.1830	10/1/2002	mshdc.inf	Not Available	(Standard IDE PCI\IDE\IDECHANNEL\4&1D8A9C03&0&0
Standard Dual Channel PCI IDE Controller (Standard IDE ATA/ATAPI controllers)	Yes	HDC	5.2.3790.1830	10/1/2002	mshdc.inf	Not Available	PCI\VEN_8086&DEV_269E&SUBSYS_01B11028&REV_09\3&61AAA01&0&F9
System board (Standard system devices)	Yes	SYSTEM	5.2.3790.1830	10/1/2002	machine.inf	Not Available	(Standard system ACPI\PI0001\5
System board (Standard system devices)	Yes	SYSTEM	5.2.3790.1830	10/1/2002	machine.inf	Not Available	(Standard system ACPI\PNP0C01\0
Communications Port (Standard port types)	Yes	PORTS	5.2.3790.1830	10/1/2002	msports.inf	Not Available	(Standard port types) ACPI\PNP0501\2
Communications Port (Standard port types)	Yes	PORTS	5.2.3790.1830	10/1/2002	msports.inf	Not Available	(Standard port types) ACPI\PNP0501\1
Floppy disk drive (Standard floppy disk drives)	Yes	FLOPPYDISK	5.2.3790.1830	10/1/2002	flpydisk.inf	Not Available	(Standard FDC\GENERIC_FLOPPY_DRIVE\5&33C0F973&0&0
Standard floppy disk controller (Standard floppy disk controllers)	Yes	FDC	5.2.3790.1830	10/1/2002	fdc.inf	Not Available	(Standard ACPI\PNP0700\4&2AA4AD3D&0
System timer (Standard system devices)	Yes	SYSTEM	5.2.3790.1830	10/1/2002	machine.inf	Not Available	(Standard system ACPI\PNP0100\4&2AA4AD3D&0
System CMOS/real time clock (Standard system devices)	Yes	SYSTEM	5.2.3790.1830	10/1/2002	machine.inf	Not Available	(Standard system ACPI\PNP0B00\4&2AA4AD3D&0
System board (Standard system devices)	Yes	SYSTEM	5.2.3790.1830	10/1/2002	machine.inf	Not Available	(Standard system ACPI\PNP0C01\2
Programmable interrupt controller (Standard system devices)	Yes	SYSTEM	5.2.3790.1830	10/1/2002	machine.inf	Not Available	(Standard system ACPI\PNP0000\4&2AA4AD3D&0
Numeric data processor (Standard system devices)	Yes	SYSTEM	5.2.3790.1830	10/1/2002	machine.inf	Not Available	(Standard ACPI\PNP0C04\4&2AA4AD3D&0
Direct memory access controller (Standard system devices)	Yes	SYSTEM	5.2.3790.1830	10/1/2002	machine.inf	Not Available	(Standard system ACPI\PNP0200\4&2AA4AD3D&0

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PCI standard ISA bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)
machine.inf	Not Available				
PCI\VEN_8086&DEV_2670&SUBSYS_00000000&REV_09\3&61AAA01&0&F8					
Default Monitor	Yes	MONITOR	5.2.3790.1830	10/1/2002	(Standard monitor types)
monitor.inf	Not Available				
DISPLAY\DEFAULT_MONITOR\5&EEED524&0&12345678&10&0D					
Standard VGA Graphics Adapter	Yes	DISPLAY	5.2.3790.1830	10/1/2002	(Standard display types)
display.inf	Not Available				
PCI\VEN_1002&DEV_515E&SUBSYS_01B11028&REV_02\4&2014205D&0&68F0					
Intel(R) 82801 PCI Bridge - 244E	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
Intel machine.inf	Not Available				
PCI\VEN_8086&DEV_244E&SUBSYS_00000000&REV_D9\3&61AAA01&0&F0					
Generic USB Hub	Yes	USB	5.2.3790.1830	10/1/2002	(Generic USB Hub)
usb.inf	Not Available	USB\VID_04B4&PID_6560\5&6F526B7&0&7			
USB Root Hub	Yes	USB	5.2.3790.1830	10/1/2002	(Standard USB Host Controller)
usbport.inf	Not Available	USB\ROOT_HUB20\4&25F3EE70&0			
Standard Enhanced PCI to USB Host Controller	Yes	USB	5.2.3790.1830	10/1/2002	(Standard USB Host Controller)
usbport.inf	Not Available				
PCI\VEN_8086&DEV_268C&SUBSYS_01B11028&REV_09\3&61AAA01&0&EF					
USB Root Hub	Yes	USB	5.2.3790.1830	10/1/2002	(Standard USB Host Controller)
usbport.inf	Not Available	USB\ROOT_HUB\4&1C386FEF&0			
Standard Universal PCI to USB Host Controller	Yes	USB	5.2.3790.1830	10/1/2002	(Standard USB Host Controller)
usbport.inf	Not Available				
PCI\VEN_8086&DEV_268B&SUBSYS_01B11028&REV_09\3&61AAA01&0&EB					
USB Root Hub	Yes	USB	5.2.3790.1830	10/1/2002	(Standard USB Host Controller)
usbport.inf	Not Available	USB\ROOT_HUB\4&2DD355BC&0			
Standard Universal PCI to USB Host Controller	Yes	USB	5.2.3790.1830	10/1/2002	(Standard USB Host Controller)
usbport.inf	Not Available				
PCI\VEN_8086&DEV_268A&SUBSYS_01B11028&REV_09\3&61AAA01&0&EA					
HID-compliant mouse	Yes	MOUSE	5.2.3790.1830	10/1/2002	Microsoft
msmouse.inf	Not Available	HID\VID_09AE&PID_0002&MI_01\7&FDD9F08&0&0000			
USB Human Interface Device	Yes	HIDCLASS	5.2.3790.1830	10/1/2002	(Standard system devices)
input.inf	Not Available				
USB\VID_09AE&PID_0002&MI_01\6&8FA055B&0&0001					
HID Keyboard Device	Yes	KEYBOARD	5.2.3790.1830	10/1/2002	(Standard keyboards)
keyboard.inf	Not Available				
HID\VID_09AE&PID_0002&MI_00\7&38484CD1&0&0000					
USB Human Interface Device	Yes	HIDCLASS	5.2.3790.1830	10/1/2002	(Standard system devices)
input.inf	Not Available				
USB\VID_09AE&PID_0002&MI_00\6&8FA055B&0&0000					
USB Composite Device	Yes	USB	5.2.3790.1830	10/1/2002	(Standard USB Host Controller)
usb.inf	Not Available				
USB\VID_09AE&PID_0002\USB_COMPOSITE_DEVICE					
USB Root Hub	Yes	USB	5.2.3790.1830	10/1/2002	(Standard USB Host Controller)
usbport.inf	Not Available	USB\ROOT_HUB\4&2DC298A6&0			
Standard Universal PCI to USB Host Controller	Yes	USB	5.2.3790.1830	10/1/2002	(Standard USB Host Controller)
usbport.inf	Not Available				
PCI\VEN_8086&DEV_2689&SUBSYS_01B11028&REV_09\3&61AAA01&0&E9					
USB Root Hub	Yes	USB	5.2.3790.1830	10/1/2002	(Standard USB Host Controller)
usbport.inf	Not Available	USB\ROOT_HUB\4&1C492D05&0			
Standard Universal PCI to USB Host Controller	Yes	USB	5.2.3790.1830	10/1/2002	(Standard USB Host Controller)
usbport.inf	Not Available				
PCI\VEN_8086&DEV_2688&SUBSYS_01B11028&REV_09\3&61AAA01&0&E8					
Broadcom BCM5708C NetXtreme II GigE (NDIS VBD Client)	Yes	NET	2.6.14.0		
4/3/2006	Broadcom Corporation	oem3.inf	Not Available		

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B06BDRVL2ND&PCI_164C14E4&SUBSYS_01B11028&REV_12\6&2F68317E&0&20050500					
Broadcom BCM5708C NetXtreme II GigE	Yes	SYSTEM	2.6.22.0		
11/13/2006	Broadcom Corporation	oem5.inf	Not Available		
PCIIVEN_14E4&DEV_164C&SUBSYS_01B11028&REV_12\5&43097C6&0&0000E0					
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available			
PCIIVEN_1166&DEV_0103&SUBSYS_00000000&REV_C3\4&187919FE&0&00E0					
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available			
PCIIVEN_8086&DEV_2690&SUBSYS_00000000&REV_09\3&61AAA01&0&E0					
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available			
PCIIVEN_8086&DEV_25F6&SUBSYS_00000000&REV_12\3&61AAA01&0&B0					
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available			
PCIIVEN_8086&DEV_25F5&SUBSYS_00000000&REV_12\3&61AAA01&0&A8					
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available			
PCIIVEN_8086&DEV_25F3&SUBSYS_00000000&REV_12\3&61AAA01&0&98					
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available			
PCIIVEN_8086&DEV_25F1&SUBSYS_00000000&REV_12\3&61AAA01&0&88					
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available			
PCIIVEN_8086&DEV_25F0&SUBSYS_00000000&REV_12\3&61AAA01&0&82					
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available			
PCIIVEN_8086&DEV_25F0&SUBSYS_00000000&REV_12\3&61AAA01&0&81					
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available			
PCIIVEN_8086&DEV_25F0&SUBSYS_00000000&REV_12\3&61AAA01&0&80					
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available			
PCIIVEN_8086&DEV_25E7&SUBSYS_00000000&REV_12\3&61AAA01&0&38					
LSI Logic MegaRAID Virtual Device	Yes	SYSTEM	2.8.0.64	12/15/2006	
LSI Logic Corp.	oem0.inf	Not Available			
SCSIOTHER&VEN__RAID&PROD__DUMMYDEVICE&REV_0001\5&2AFBCD5B&1&1400					
Disk drive	Yes	DISKDRIVE	5.2.3790.1830	10/1/2002	(Standard disk drives)
disk.inf	Not Available				
SCSIIDISK&VEN_DELL&PROD_PERC_6/E_ADAPTER&REV_1.11\5&2AFBCD5B&1&130					
Disk drive	Yes	DISKDRIVE	5.2.3790.1830	10/1/2002	(Standard disk drives)
disk.inf	Not Available				
SCSIIDISK&VEN_DELL&PROD_PERC_6/E_ADAPTER&REV_1.11\5&2AFBCD5B&1&120					
RAID Controller	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available				
PCIIVEN_1000&DEV_0060&SUBSYS_1F0A1028&REV_04\4&149DD53B&0&0030					
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available			
PCIIVEN_8086&DEV_25F9&SUBSYS_00000000&REV_12\3&61AAA01&0&30					

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PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)		machine.inf	Not Available		
PCI\VEN_8086&DEV_0372&SUBSYS_00000000&REV_00\4&28CEA4F8&0&0228					
LSI Logic MegaRAID Virtual Device	Yes	SYSTEM	2.8.0.64	12/15/2006	
LSI Logic Corp. oem0.inf		Not Available			
SCSI\OTHER&VEN___RAID&PROD__DUMMYDEVICE&REV_0001\6&107D05B&0&1400					
Disk drive	Yes	DISKDRIVE	5.2.3790.1830	10/1/2002	(Standard disk drives)
disk.inf		Not Available			
SCSI\DISK&VEN_DELL&PROD_PERC_5\I&REV_1.00\6&107D05B&0&100					
DELL PERC 5/I Adapter RAID Controller	No	SCSIADAPTER	2.8.0.64		
12/15/2006 LSI Logic Corp., oem1.inf		Not Available			
PCI\VEN_1028&DEV_0015&SUBSYS_1F031028&REV_00\5&22FD9970&0&700028					
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)		machine.inf	Not Available		
PCI\VEN_8086&DEV_0370&SUBSYS_00000000&REV_00\4&28CEA4F8&0&0028					
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)		machine.inf	Not Available		
PCI\VEN_8086&DEV_25E5&SUBSYS_00000000&REV_12\3&61AAA01&0&28					
LSI Logic MegaRAID Virtual Device	Yes	SYSTEM	2.8.0.64	12/15/2006	
LSI Logic Corp. oem0.inf		Not Available			
SCSI\OTHER&VEN___RAID&PROD__DUMMYDEVICE&REV_0001\5&67C9239&1&1400					
Disk drive	Yes	DISKDRIVE	5.2.3790.1830	10/1/2002	(Standard disk drives)
disk.inf		Not Available			
SCSI\DISK&VEN_DELL&PROD_PERC_6\E_ADAPTER&REV_1.11\5&67C9239&1&150					
Disk drive	Yes	DISKDRIVE	5.2.3790.1830	10/1/2002	(Standard disk drives)
disk.inf		Not Available			
SCSI\DISK&VEN_DELL&PROD_PERC_6\E_ADAPTER&REV_1.11\5&67C9239&1&140					
RAID Controller	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available				
PCI\VEN_1000&DEV_0060&SUBSYS_1F0A1028&REV_04\4&201440C3&0&0020					
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)		machine.inf	Not Available		
PCI\VEN_8086&DEV_25E4&SUBSYS_00000000&REV_12\3&61AAA01&0&20					
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)		machine.inf	Not Available		
PCI\VEN_8086&DEV_25E3&SUBSYS_00000000&REV_12\3&61AAA01&0&18					
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)		machine.inf	Not Available		
PCI\VEN_8086&DEV_350C&SUBSYS_00000000&REV_01\4&3667122&0&0310					
LSI Logic MegaRAID Virtual Device	Yes	SYSTEM	2.8.0.64	12/15/2006	
LSI Logic Corp. oem0.inf		Not Available			
SCSI\OTHER&VEN___RAID&PROD__DUMMYDEVICE&REV_0001\7&30B2985A&1&1400					
Disk drive	Yes	DISKDRIVE	5.2.3790.1830	10/1/2002	(Standard disk drives)
disk.inf		Not Available			
SCSI\DISK&VEN_DELL&PROD_PERC_6\E_ADAPTER&REV_1.11\7&30B2985A&1&110					
Disk drive	Yes	DISKDRIVE	5.2.3790.1830	10/1/2002	(Standard disk drives)
disk.inf		Not Available			
SCSI\DISK&VEN_DELL&PROD_PERC_6\E_ADAPTER&REV_1.11\7&30B2985A&1&100					

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RAID Controller	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available				
PCI\VEN_1000&DEV_0060&SUBSYS_1F0A1028&REV_04\6&26D2E9F4&0&00080010					
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available			
PCI\VEN_8086&DEV_3514&SUBSYS_00000000&REV_01\5&2D9FD309&0&080010					
Broadcom BCM5708C NetXtreme II GigE (NDIS VBD Client)	Yes	NET	2.6.14.0		
4/3/2006	Broadcom Corporation	oem3.inf	Not Available		
B06BDRV\12ND&PCI_164C14E4&SUBSYS_01B11028&REV_12\8&126A2D63&0&2005					
0900					
Broadcom BCM5708C NetXtreme II GigE	Yes	SYSTEM	2.6.22.0		
11/13/2006	Broadcom Corporation	oem5.inf	Not Available		
PCI\VEN_14E4&DEV_164C&SUBSYS_01B11028&REV_12\7&2A8A8A3B&0&00000000					
10					
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available			
PCI\VEN_1166&DEV_0103&SUBSYS_00000000&REV_C3\6&6336DE7&0&00000010					
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available			
PCI\VEN_8086&DEV_3510&SUBSYS_00000000&REV_01\5&2D9FD309&0&000010					
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available			
PCI\VEN_8086&DEV_3500&SUBSYS_00000000&REV_01\4&3667122&0&0010					
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available			
PCI\VEN_8086&DEV_25E2&SUBSYS_00000000&REV_12\3&61AAA01&0&10					
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available			
PCI\VEN_8086&DEV_25C0&SUBSYS_00000000&REV_12\3&61AAA01&0&00					
PCI bus	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)
machine.inf	Not Available	ACPI\PNP0A03\2&DABA3FF&0			
System board	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)
machine.inf	Not Available	ACPI\PNP0C33\WHEA			
Intel Processor	Yes	PROCESSOR	5.2.3790.1830	10/1/2002	Intel cpu.inf Not
Available	ACPI\GENUINEINTEL_ -_EM64T_FAMILY_6_MODEL_23_3				
Intel Processor	Yes	PROCESSOR	5.2.3790.1830	10/1/2002	Intel cpu.inf Not
Available	ACPI\GENUINEINTEL_ -_EM64T_FAMILY_6_MODEL_23_2				
Intel Processor	Yes	PROCESSOR	5.2.3790.1830	10/1/2002	Intel cpu.inf Not
Available	ACPI\GENUINEINTEL_ -_EM64T_FAMILY_6_MODEL_23_1				
Intel Processor	Yes	PROCESSOR	5.2.3790.1830	10/1/2002	Intel cpu.inf Not
Available	ACPI\GENUINEINTEL_ -_EM64T_FAMILY_6_MODEL_23_0				
Microsoft ACPI-Compliant System	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
Microsoft	acpi.inf	Not Available	ACPI_HAL\PNP0C08\0		
ACPI Multiprocessor x64-based PC	Yes	COMPUTER	5.2.3790.1830	10/1/2002	
(Standard computers)	hal.inf	Not Available	ROOT\ACPI_HAL\0000		
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available	HTREE\ROOT\0			

[Environment Variables]

Variable	Value	User Name
ClusterLog	C:\WINDOWS\Cluster\cluster.log	<SYSTEM>
ComSpec	%SystemRoot%\system32\cmd.exe	<SYSTEM>
FP_NO_HOST_CHECK	NO	<SYSTEM>
NUMBER_OF_PROCESSORS	4	<SYSTEM>

APPENDIX C - TUNABLE PARAMETERS

```

ORACLE_HOME      c:\app\Administrator\product\11.1.0\DB      <SYSTEM>
ORACLE_SID tpcc   <SYSTEM>
OS      Windows_NT <SYSTEM>
Path
      C:\mksnt\;C:\app\Administrator\product\11.1.0\DB\bin;%SystemRoot%\system32;%SystemRoot%\SystemRoot%\System32\Wbem      <SYSTEM>
PATHEXT      .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH      <SYSTEM>
PROCESSOR_ARCHITECTURE      AMD64 <SYSTEM>
PROCESSOR_IDENTIFIER      EM64T Family 6 Model 23 Stepping 4, GenuineIntel
      <SYSTEM>
PROCESSOR_LEVEL 6      <SYSTEM>
PROCESSOR_REVISION      1704 <SYSTEM>
TEMP %SystemRoot%\TEMP <SYSTEM>
TMP %SystemRoot%\TEMP <SYSTEM>
windir %SystemRoot%      <SYSTEM>
TEMP %USERPROFILE%\Local Settings\Temp      NT AUTHORITY\SYSTEM
TMP %USERPROFILE%\Local Settings\Temp      NT AUTHORITY\SYSTEM
TEMP %USERPROFILE%\Local Settings\Temp      NT AUTHORITY\LOCAL SERVICE
TMP %USERPROFILE%\Local Settings\Temp      NT AUTHORITY\LOCAL SERVICE
TEMP %USERPROFILE%\Local Settings\Temp      NT AUTHORITY\NETWORK SERVICE
TMP %USERPROFILE%\Local Settings\Temp      NT AUTHORITY\NETWORK SERVICE
TEMP %USERPROFILE%\Local Settings\Temp      PE2900_2\Administrator
TMP %USERPROFILE%\Local Settings\Temp      PE2900_2\Administrator

```

[Print Jobs]

Document	Size	Owner	Notify	Status	Time Submitted	Start Time	Until Time
Elapsed Time	Pages Printed	Job ID	Priority	Parameters	Driver	Print Processor	
Host Print Queue	Data Type	Name					

[Network Connections]

Local Name	Remote Name	Type	Status	User Name
Y: \\tpccarm\c\$	Disk	Persistent Connection		PE2900_2\Administrator
Z: \\192.1.1.106\c\$	Disk	Persistent Connection		PE2900_2\Administrator

[Running Tasks]

Name	Path	Process ID	Priority	Min Working Set	Max Working Set	Start Time	Version	Size	File Date
system idle process		Not Available	0	0	Not Available	Not Available	Not Available	Not Available	Not Available
system	Not Available	4	8	0	1413120	Not Available	Not Available	Not Available	Not Available
smss.exe	Not Available	360	11	204800	1413120	5/28/2008 1:41 PM	Not Available	Not Available	Not Available
csrss.exe	Not Available	560	13	Not Available	Not Available	5/28/2008 1:41 PM	Not Available	Not Available	Not Available
winlogon.exe	c:\windows\system32\winlogon.exe	616	13	204800	1413120	5/28/2008 1:41 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	901.00 KB	(922,624 bytes) 3/25/2005 6:00 AM
services.exe	c:\windows\system32\services.exe	676	9	204800	1413120	5/28/2008 1:41 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	216.50 KB	(221,696 bytes) 3/25/2005 6:00 AM

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lsass.exe	c:\windows\system32\lsass.exe	688	9	204800	1413120	
	5/28/2008 1:41 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)		14.00 KB		
(14,336 bytes)	3/25/2005 6:00 AM					
svchost.exe	c:\windows\system32\svchost.exe	856	8	204800	1413120	
	5/28/2008 1:41 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)		24.50 KB		
(25,088 bytes)	3/25/2005 6:00 AM					
svchost.exe	Not Available	964	8	Not Available	Not Available	5/28/2008 1:41 PM
	Not Available	Not Available	Not Available			
svchost.exe	Not Available	144	8	Not Available	Not Available	5/28/2008 1:41 PM
	Not Available	Not Available	Not Available			
svchost.exe	Not Available	236	8	Not Available	Not Available	5/28/2008 1:41 PM
	Not Available	Not Available	Not Available			
svchost.exe	c:\windows\system32\svchost.exe	312	8	204800	1413120	
	5/28/2008 1:41 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)		24.50 KB		
(25,088 bytes)	3/25/2005 6:00 AM					
msdtc.exe	Not Available	876	8	Not Available	Not Available	5/28/2008 1:41 PM
	Not Available	Not Available	Not Available			
svchost.exe	c:\windows\system32\svchost.exe	1144	8	204800	1413120	
	5/28/2008 1:41 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)		24.50 KB		
(25,088 bytes)	3/25/2005 6:00 AM					
tnslsnr.exe	c:\app\administrator\product\11.1.0\db\bin\tnslsnr.exe	1172	8	204800		
	1413120	5/28/2008 1:41 PM	Not Available	541.50 KB (554,496 bytes)		
	4/9/2008 3:41 PM					
oracle.exe	c:\app\administrator\product\11.1.0\db\bin\oracle.exe	1396	8	204800		
	1413120	5/28/2008 1:41 PM	11.1.0.6.0 Production	103.41 MB		
(108,431,872 bytes)	4/9/2008 3:41 PM					
oravssw.exe	c:\app\administrator\product\11.1.0\db\bin\oravssw.exe	1428	8	204800		
	1413120	5/28/2008 1:41 PM	Not Available	230.50 KB (236,032 bytes)		
	4/9/2008 3:42 PM					
svchost.exe	Not Available	1472	8	Not Available	Not Available	5/28/2008 1:41 PM
	Not Available	Not Available	Not Available			
vivaldiframework.exe	c:\program files (x86)\megaraid storage manager\framework\vivaldiframework.exe	1612	8	204800	1413120	
	5/28/2008 1:41 PM	Not Available	52.00 KB (53,248 bytes)			11/29/2006 7:05 PM
cmd.exe	c:\windows\system32\cmd.exe	1684	8	204800	1413120	
	5/28/2008 1:41 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)		538.50 KB		
(551,424 bytes)	3/25/2005 6:00 AM					
javaw.exe	c:\program files (x86)\megaraid storage manager\jre\bin\javaw.exe	1696				
	8	204800	1413120	5/28/2008 1:41 PM	6.0.0.105	132.00 KB
(135,168 bytes)	12/21/2006 4:40 PM					
mrmonitor.exe	c:\program files (x86)\megaraid storage manager\megamonitor\mrmonitor.exe	1760	8	204800	1413120	
				5/28/2008 1:41 PM	Not Available	408.00 KB (417,792 bytes)
	11/15/2006 11:57 AM					
svchost.exe	c:\windows\system32\svchost.exe	1788	8	204800	1413120	
	5/28/2008 1:41 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)		24.50 KB		
(25,088 bytes)	3/25/2005 6:00 AM					
wmiprvse.exe	Not Available	548	8	Not Available	Not Available	5/28/2008 1:41 PM
	Not Available	Not Available	Not Available			
csrss.exe	Not Available	1900	13	Not Available	Not Available	5/28/2008 2:06 PM
	Not Available	Not Available	Not Available			
winlogon.exe	c:\windows\system32\winlogon.exe	1996	13	204800	1413120	
	5/28/2008 2:06 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)		901.00 KB		
(922,624 bytes)	3/25/2005 6:00 AM					

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rdpclip.exe	c:\windows\system32\rdpclip.exe	1216	8	204800	1413120	5/28/2008 2:06 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	99.00 KB (101,376 bytes)	4/2/2008 12:39 AM
explorer.exe	c:\windows\explorer.exe	1656	8	204800	1413120	5/28/2008 2:06 PM	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	1.30 MB (1,364,480 bytes)	3/25/2005 6:00 AM
bacstray.exe	c:\program files\broadcom\bacs\bacstray.exe	2008	8	204800	1413120	5/28/2008 2:06 PM	8, 3, 11, 0	105.00 KB (107,520 bytes)	4/4/2006 10:42 PM
popup.exe	c:\program files (x86)\megaraid storage manager\megapopup\popup.exe	1680	8	204800	1413120	5/28/2008 2:06 PM	1.00-21	76.09 KB (77,920 bytes)	8/15/2006 4:00 PM
wuauclt.exe	c:\windows\system32\wuauclt.exe	484	8	204800	1413120	5/28/2008 2:06 PM	5.7.3790.1830 (srv03_sp1_rtm.050324-1447)	156.00 KB (159,744 bytes)	4/2/2008 12:40 AM
wmiprvse.exe	Not Available	2532	8	Not Available	Not Available	5/28/2008 2:07 PM	Not Available	Not Available	Not Available
helpctr.exe	c:\windows\pchealth\helpctr\binaries\helpctr.exe	2888	8	204800	1413120	5/28/2008 2:07 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.30 MB (1,363,456 bytes)	4/2/2008 12:40 AM
helpsvc.exe	c:\windows\pchealth\helpctr\binaries\helpsvc.exe	2984	8	204800	1413120	5/28/2008 2:07 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.52 MB (1,591,296 bytes)	4/2/2008 12:40 AM

[Loaded Modules]

Name	Version	Size	File Date	Manufacturer	Path
winlogon	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	901.00 KB (922,624 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\winlogon.exe
ntdll	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.20 MB (1,257,472 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\ntdll.dll
kernel32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.43 MB (1,500,160 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\kernel32.dll
advapi32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.00 MB (1,051,136 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\advapi32.dll
rpcrt4	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.63 MB (1,714,176 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\rpcrt4.dll
crypt32	5.131.3790.1830 (srv03_sp1_rtm.050324-1447)	1.36 MB (1,428,992 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\crypt32.dll
msasn1	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	152.50 KB (156,160 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msasn1.dll
msvcrt	7.0.3790.1830 (srv03_sp1_rtm.050324-1447)	508.00 KB (520,192 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msvcrt.dll
user32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.04 MB (1,085,952 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\user32.dll
gdi32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	592.00 KB (606,208 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\gdi32.dll
nddeapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	25.00 KB (25,600 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\nddeapi.dll
profmap	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	36.00 KB (36,864 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\profmap.dll
netapi32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	589.00 KB (603,136 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\netapi32.dll
userenv	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.02 MB (1,069,056 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\userenv.dll

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psapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	29.00 KB (29,696 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\psapi.dll
regapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	108.50 KB (111,104 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\regapi.dll
secur32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	120.00 KB (122,880 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\secur32.dll
setupapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.45 MB (1,523,200 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\setupapi.dll
version	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	28.00 KB (28,672 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\version.dll
winsta	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	89.00 KB (91,136 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\winsta.dll
ws2_32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	176.50 KB (180,736 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\ws2_32.dll
ws2help	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	30.50 KB (31,232 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\ws2help.dll
msgina	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.14 MB (1,193,472 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msgina.dll
shsvcs	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	193.50 KB (198,144 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\shsvcs.dll
shlwapi	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	606.50 KB (621,056 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\shlwapi.dll
sfc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	6.00 KB (6,144 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\sfc.dll
sfc_os	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	183.50 KB (187,904 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\sfc_os.dll
wintrust	5.131.3790.1830 (srv03_sp1_rtm.050324-1447)	297.50 KB (304,640 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\wintrust.dll
imagehlp	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	57.50 KB (58,880 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\imagehlp.dll
ole32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	2.43 MB (2,543,616 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\ole32.dll
comctl32	6.0 (srv03_sp1_rtm.050324-1447)	1.51 MB (1,584,128 bytes)	4/1/2008 6:32 PM	Microsoft Corporation	c:\windows\winsxs\amd64_microsoft.windows.common-controls_6595b64144ccf1df_6.0.3790.1830_x-ww_aced72af\comctl32.dll
winscard	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	230.00 KB (235,520 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\winscard.dll
wtsapi32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	29.00 KB (29,696 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\wtsapi32.dll
winmm	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	303.50 KB (310,784 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\winmm.dll
sxs	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.91 MB (2,003,968 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\sxs.dll
shell32	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	10.01 MB (10,492,416 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\shell32.dll
wldap32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	390.00 KB (399,360 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\wldap32.dll
rsaenh	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	241.96 KB (247,768 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\rsaenh.dll
cscdll	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	151.50 KB (155,136 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\cscdll.dll
dimsntfy	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	28.00 KB (28,672 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\dimsntfy.dll

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wlnotify	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	148.00 KB (151,552 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\wlnotify.dll
mpr	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	115.00 KB (117,760 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\mpr.dll
oleaut32	5.2.3790.1830	1.06 MB (1,116,160 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation		c:\windows\system32\oleaut32.dll
winspool	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	247.00 KB (252,928 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\winspool.drv
comctl32	5.82 (srv03_sp1_rtm.050324-1447)	934.50 KB (956,928 bytes)	
	4/1/2008 6:32 PM	Microsoft Corporation	
	c:\windows\winsxs\amd64_microsoft.windows.common-		
controls_6595b64144ccf1df_5.82.3790.1830_x-ww_4d792d2a\comctl32.dll			
uxtheme	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	494.50 KB (506,368 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\uxtheme.dll
scredir	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	38.50 KB (39,424 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation		c:\windows\system32\scredir.dll
samlib	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	69.00 KB (70,656 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation		c:\windows\system32\samlib.dll
clbcatq	2001.12.4720.1830 (srv03_sp1_rtm.050324-1447)	865.00 KB (885,760 bytes)	
	4/2/2008 12:39 AM	Microsoft Corporation	c:\windows\system32\clbcatq.dll
comres	2001.12.4720.1830 (srv03_sp1_rtm.050324-1447)	779.50 KB (798,208 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\comres.dll
cscui	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	441.00 KB (451,584 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\cscui.dll
rdpsnd	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	25.00 KB (25,600 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation		c:\windows\system32\rdpsnd.dll
msacm32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	31.00 KB (31,744 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msacm32.drv
msacm32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	112.00 KB (114,688 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msacm32.dll
imaadp32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	24.00 KB (24,576 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\imaadp32.acm
msadp32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	23.50 KB (24,064 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msadp32.acm
msg7115	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	13.50 KB (13,824 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation		c:\windows\system32\msg711.acm
msgsm32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	34.50 KB (35,328 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msgsm32.acm
tssoft32	1.01	13.50 KB (13,824 bytes)	3/25/2005 6:00 AM
			DSP GROUP, INC.
	c:\windows\system32\tssoft32.acm		
tsd32	1.03	24.50 KB (25,088 bytes)	3/25/2005 6:00 AM
			DSP GROUP, INC.
	c:\windows\system32\tsd32.dll		
drprov	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	24.00 KB (24,576 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation		c:\windows\system32\drprov.dll
ntlanman	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	71.50 KB (73,216 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\ntlanman.dll
netui0	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	130.00 KB (133,120 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\netui0.dll
netui1	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	338.50 KB (346,624 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\netui1.dll
davclnt	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	38.00 KB (38,912 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation		c:\windows\system32\davclnt.dll
mprui	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	67.50 KB (69,120 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation		c:\windows\system32\mprui.dll

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netui2	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	542.00 KB (555,008 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\netui2.dll
comdlg32	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	446.50 KB (457,216 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\comdlg32.dll
netmsg	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	179.00 KB (183,296 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\netmsg.dll
ntmarta	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	222.50 KB (227,840 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\ntmarta.dll
xpsp2res	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	2.77 MB (2,899,456 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\xpsp2res.dll
services	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	216.50 KB (221,696 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\services.exe
ncobjapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	80.00 KB (81,920 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\ncobjapi.dll
msvcp60	7.0.3790.1830 (srv03_sp1_rtm.050324-1447)	919.50 KB (941,568 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\msvcp60.dll
scesrv	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	594.50 KB (608,768 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\scesrv.dll
authz	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	167.00 KB (171,008 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\authz.dll
umpnpgm	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	205.00 KB (209,920 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\umpnpgm.dll
eventlog	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	127.00 KB (130,048 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\eventlog.dll
cryptnet	5.131.3790.1830 (srv03_sp1_rtm.050324-1447)	108.50 KB (111,104 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\cryptnet.dll
sensapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	10.50 KB (10,752 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\sensapi.dll
cabinet	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	138.50 KB (141,824 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\cabinet.dll
imm32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	208.00 KB (212,992 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\imm32.dll
apphelp	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	241.00 KB (246,784 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\apphelp.dll
lsass	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	14.00 KB (14,336 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\lsass.exe
lsasrv	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.50 MB (1,568,256 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\lsasrv.dll
ntdsapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	127.50 KB (130,560 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\ntdsapi.dll
dnsapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	297.50 KB (304,640 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\dnsapi.dll
samsrv	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.01 MB (1,059,328 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\samsrv.dll
cryptdll	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	47.00 KB (48,128 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\cryptdll.dll
msprivs	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	47.50 KB (48,640 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\msprivs.dll
kerberos	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	698.00 KB (714,752 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\kerberos.dll
msv1_0	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	253.00 KB (259,072 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\msv1_0.dll
iphlpapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	177.00 KB (181,248 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\iphlpapi.dll

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netlogon	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	666.00 KB (681,984 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\netlogon.dll
w32time	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	400.50 KB (410,112 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\w32time.dll
schannel	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	248.00 KB (253,952 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\schannel.dll
wdigest	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	130.50 KB (133,632 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\wdigest.dll
rassfm	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	36.00 KB (36,864 bytes)	3/25/2005 6:00
AM	Microsoft Corporation	c:\windows\system32\rassfm.dll	
kdcsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	409.00 KB (418,816 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\kdcsvc.dll
ntdsa	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	2.81 MB (2,948,096 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\ntdsa.dll
esent	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	2.26 MB (2,366,976 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\esent.dll
ntdsatq	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	51.00 KB (52,224 bytes)	3/25/2005 6:00
AM	Microsoft Corporation	c:\windows\system32\ntdsatq.dll	
mswsock	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	478.00 KB (489,472 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\mswsock.dll
scecli	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	308.00 KB (315,392 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\scecli.dll
ws03res	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	794.00 KB (813,056 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\ws03res.dll
hnetcfg	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	561.00 KB (574,464 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\hnetcfg.dll
wshtcpip	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	29.00 KB (29,696 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\wshtcpip.dll
ipsecsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	358.50 KB (367,104 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\ipsecsvc.dll
oakley	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	372.50 KB (381,440 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\oakley.dll
winipsec	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	52.50 KB (53,760 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\winipsec.dll
pstorsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	36.00 KB (36,864 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\pstorsvc.dll
psbase	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	124.00 KB (126,976 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\psbase.dll
dssenh	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	226.96 KB (232,408 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\dssenh.dll
wlbsctrl	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	137.50 KB (140,800 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\wlbsctrl.dll
svchost	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	24.50 KB (25,088 bytes)	3/25/2005 6:00
AM	Microsoft Corporation	c:\windows\system32\svchost.exe	
rpcss	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	672.00 KB (688,128 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\rpcss.dll
schedsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	308.50 KB (315,904 bytes)	
	4/2/2008 12:40 AM	Microsoft Corporation	c:\windows\system32\schedsvc.dll
msidle	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	9.00 KB (9,216 bytes)	3/25/2005 6:00
AM	Microsoft Corporation	c:\windows\system32\msidle.dll	
wkssvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	221.00 KB (226,304 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\wkssvc.dll
wiarpc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	57.00 KB (58,368 bytes)	3/25/2005 6:00
AM	Microsoft Corporation	c:\windows\system32\wiarpc.dll	

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aelupsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	31.50 KB (32,256 bytes)
	3/25/2005 6:00 AM	Microsoft Corporation c:\windows\system32\aelupsvc.dll
cryptsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	114.00 KB (116,736 bytes)
	3/25/2005 6:00 AM	Microsoft Corporation c:\windows\system32\cryptsvc.dll
certcli	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	372.00 KB (380,928 bytes)
	3/25/2005 6:00 AM	Microsoft Corporation c:\windows\system32\certcli.dll
atl	3.05.2284	96.50 KB (98,816 bytes)3/25/2005 6:00 AM
		Microsoft Corporation c:\windows\system32\atl.dll
vssapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.26 MB (1,320,960 bytes)
	3/25/2005 6:00 AM	Microsoft Corporation c:\windows\system32\vssapi.dll
dmservr	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	36.50 KB (37,376 bytes)
	3/25/2005 6:00 AM	Microsoft Corporation c:\windows\system32\dmservr.dll
es	2001.12.4720.1830 (srv03_sp1_rtm.050324-1447)	357.00 KB (365,568 bytes)
	3/25/2005 6:00 AM	Microsoft Corporation c:\windows\system32\es.dll
pchsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	76.00 KB (77,824 bytes)4/2/2008 12:40
AM	Microsoft Corporation	c:\windows\pchealth\helpctr\binaries\pchsvc.dll
hidserv	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	24.00 KB (24,576 bytes)4/1/2008 6:37
PM	Microsoft Corporation	c:\windows\system32\hidserv.dll
hid	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	33.00 KB (33,792 bytes)3/24/2005
	11:18 AM	Microsoft Corporation c:\windows\system32\hid.dll
srvsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	156.50 KB (160,256 bytes)
	3/25/2005 6:00 AM	Microsoft Corporation c:\windows\system32\srvsvc.dll
comsvcs	2001.12.4720.1830 (srv03_sp1_rtm.050324-1447)	2.06 MB (2,156,544
bytes)	4/2/2008 12:39 AM	Microsoft Corporation c:\windows\system32\comsvcs.dll
seclogon	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	27.50 KB (28,160 bytes)
	3/25/2005 6:00 AM	Microsoft Corporation c:\windows\system32\seclogon.dll
sens	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	63.50 KB (65,024 bytes)3/25/2005 6:00
AM	Microsoft Corporation	c:\windows\system32\sens.dll
trkwks	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	177.50 KB (181,760 bytes)
	3/25/2005 6:00 AM	Microsoft Corporation c:\windows\system32\trkwks.dll
wmisvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	227.00 KB (232,448 bytes)
	4/2/2008 12:39 AM	Microsoft Corporation c:\windows\system32\wbem\wmisvc.dll
wuauerv	5.7.3790.1830 (srv03_sp1_rtm.050324-1447)	12.00 KB (12,288 bytes)
	4/2/2008 12:40 AM	Microsoft Corporation c:\windows\system32\wuauerv.dll
browser	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	125.50 KB (128,512 bytes)
	3/25/2005 6:00 AM	Microsoft Corporation c:\windows\system32\browser.dll
wuaueng	5.7.3790.1830 (srv03_sp1_rtm.050324-1447)	2.17 MB (2,270,720 bytes)
	4/2/2008 12:40 AM	Microsoft Corporation c:\windows\system32\wuaueng.dll
advpack	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	146.00 KB (149,504 bytes)
	3/25/2005 6:00 AM	Microsoft Corporation c:\windows\system32\advpack.dll
mspatcha	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	48.00 KB (49,152 bytes)
	3/25/2005 6:00 AM	Microsoft Corporation c:\windows\system32\mspatcha.dll
shfolder	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	34.00 KB (34,816 bytes)3/25/2005 6:00
AM	Microsoft Corporation	c:\windows\system32\shfolder.dll
winhttp	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	508.50 KB (520,704 bytes)
	4/1/2008 6:32 PM	Microsoft Corporation
		c:\windows\winsxs\amd64_microsoft.windows.winhttp_6595b64144ccf1df_5.1.3790.1830_x-ww_a61ef4db\winhttp.dll
wbemcore	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.24 MB (1,299,968 bytes)
	4/2/2008 12:39 AM	Microsoft Corporation
		c:\windows\system32\wbem\wbemcore.dll
esscli	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	626.50 KB (641,536 bytes)
	4/2/2008 12:39 AM	Microsoft Corporation c:\windows\system32\wbem\esscli.dll

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wbemcomn	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	524.00 KB (536,576 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\wbem\wbemcomn.dll
fastprox	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	866.50 KB (887,296 bytes)
	4/2/2008 12:39 AM Microsoft Corporation	c:\windows\system32\wbem\fastprox.dll
wbemsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	58.00 KB (59,392 bytes)
	4/2/2008 12:39 AM Microsoft Corporation	c:\windows\system32\wbem\wbemsvc.dll
wmiutils	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	171.00 KB (175,104 bytes)
	4/2/2008 12:39 AM Microsoft Corporation	c:\windows\system32\wbem\wmiutils.dll
repdrvfs	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	353.50 KB (361,984 bytes)
	4/2/2008 12:39 AM Microsoft Corporation	c:\windows\system32\wbem\repdrvfs.dll
wmiprvsd	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	743.00 KB (760,832 bytes)
	4/2/2008 12:39 AM Microsoft Corporation	c:\windows\system32\wbem\wmiprvsd.dll
wbemess	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	532.50 KB (545,280 bytes)
	4/2/2008 12:39 AM Microsoft Corporation	c:\windows\system32\wbem\wbemess.dll
ncprov	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	73.00 KB (74,752 bytes)
	4/2/2008 12:39 AM Microsoft Corporation	c:\windows\system32\wbem\ncprov.dll
actxprxy	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	220.50 KB (225,792 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\actxprxy.dll
netman	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	457.00 KB (467,968 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\netman.dll
mprapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	154.50 KB (158,208 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\mprapi.dll
activeds	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	348.50 KB (356,864 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\activeds.dll
adsldpc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	240.50 KB (246,272 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\adsldpc.dll
credui	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	202.00 KB (206,848 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\credui.dll
rtutils	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	66.00 KB (67,584 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\rtutils.dll
netshell	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	2.32 MB (2,437,120 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\netshell.dll
clusapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	127.00 KB (130,048 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\clusapi.dll
rasapi32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	410.00 KB (419,840 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\rasapi32.dll
rasman	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	95.50 KB (97,792 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\rasman.dll
tapi32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	332.50 KB (340,480 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\tapi32.dll
wininet	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	1.13 MB (1,186,304 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\wininet.dll
wzcsapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	49.00 KB (50,176 bytes)
	3/24/2005 11:35 AM Microsoft Corporation	c:\windows\system32\wzcsapi.dll
wzcsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	492.00 KB (503,808 bytes)
	3/24/2005 11:35 AM Microsoft Corporation	c:\windows\system32\wzcsvc.dll
wmi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	5.50 KB (5,632 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\wmi.dll
dhcpcsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	219.00 KB (224,256 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\dhcpcsvc.dll

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wbemcons	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	65.50 KB (67,072 bytes)	
	4/2/2008 12:39 AM	Microsoft Corporation	
	c:\windows\system32\wbem\wbemcons.dll		
netcfgx	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.29 MB (1,354,240 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	
	c:\windows\system32\netcfgx.dll		
wbemprox	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	38.00 KB (38,912 bytes)	
	4/2/2008 12:39 AM	Microsoft Corporation	
	c:\windows\system32\wbem\wbemprox.dll		
wups	5.7.3790.1830 (srv03_sp1_rtm.050324-1447)	37.50 KB (38,400 bytes)	4/2/2008 12:40 AM
	Microsoft Corporation	c:\windows\system32\wups.dll	
rasdlg	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	859.50 KB (880,128 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	
	c:\windows\system32\rasdlg.dll		
rasadhlp	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	12.00 KB (12,288 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	
	c:\windows\system32\rasadhlp.dll		
ersvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	31.00 KB (31,744 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\ersvc.dll	
tnslsnr	Not Available	541.50 KB (554,496 bytes)	4/9/2008 3:41 PM
	Not Available		
	c:\app\administrator\product\11.1.0\db\bin\tnslsnr.exe		
oransgr11	11.1.0.6.0 Production	158.50 KB (162,304 bytes)	4/9/2008 3:42 PM
	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oransgr11.dll	
oran11	11.1.0.6.0 Production	4.59 MB (4,810,240 bytes)	4/9/2008 3:42 PM
	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oran11.dll	
oranl11	11.1.0.6.0 Production	452.00 KB (462,848 bytes)	4/9/2008 3:42 PM
	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oranl11.dll	
orantcp11	11.1.0.6.0 Production	201.50 KB (206,336 bytes)	4/9/2008 3:42 PM
	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\orantcp11.dll	
oracore11	11.1.0.6.0 Production	1.26 MB (1,320,960 bytes)	4/9/2008 3:42 PM
	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oracore11.dll	
oranls11	11.1.0.6.0 Production	992.00 KB (1,015,808 bytes)	4/9/2008 3:41 PM
	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oranls11.dll	
oraunls11	11.1.0.6.0 Production	100.00 KB (102,400 bytes)	4/9/2008 3:41 PM
	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oraunls11.dll	
orauts	11.1.0.6.0 Production	9.50 KB (9,728 bytes)	4/9/2008 3:42 PM
	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\orauts.dll	
orageneric11	11.1.0.6.0 Production	12.45 MB (13,056,512 bytes)	4/9/2008 3:42 PM
	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\orageneric11.dll	
orasnls11	11.1.0.6.0 Production	199.50 KB (204,288 bytes)	4/9/2008 3:41 PM
	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\orasnls11.dll	
oracommon11	11.1.0.6.0 Production	1.82 MB (1,911,296 bytes)	4/9/2008 3:42 PM
	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oracommon11.dll	
oraclient11	11.1.0.6.0 Production	3.87 MB (4,059,136 bytes)	4/9/2008 3:42 PM
	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oraclient11.dll	
oravsn11	11.1.0.6.0 Production	7.00 KB (7,168 bytes)	4/9/2008 3:42 PM
	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oravsn11.dll	
oraldapclnt11	11.1.0.6.0 Production	1.82 MB (1,909,760 bytes)	4/9/2008 3:42 PM
	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oraldapclnt11.dll	
orannzsbb11	11.1.0.6.0 Production	1.83 MB (1,919,488 bytes)	4/9/2008 3:42 PM
	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\orannzsbb11.dll	
orancrypt11	11.1.0.6.0 Production	119.50 KB (122,368 bytes)	4/9/2008 3:42 PM
	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\orancrypt11.dll	
wsock32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	24.50 KB (25,088 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	
	c:\windows\system32\wsock32.dll		
oraxml11	11.1.0.6.0 Production	2.82 MB (2,952,704 bytes)	4/9/2008 3:42 PM
	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oraxml11.dll	

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msvcrt	7.0.3790.1830 (srv03_sp1_rtm.050324-1447)	91.00 KB (93,184 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msvcrt.dll	
oranro11	11.1.0.6.0 Production	340.50 KB (348,672 bytes)	4/9/2008 3:42 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oranro11.dll	
orapls11	11.1.0.6.0 Production	4.89 MB (5,123,072 bytes)	4/9/2008 3:41 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\orapls11.dll	
ORASLAX11	11.0.0.1.0 Production	25.50 KB (26,112 bytes)	4/9/2008 3:41 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oraslax11.dll	
oraplp11	11.1.0.6.0 Production	4.16 MB (4,363,264 bytes)	4/9/2008 3:41 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oraplp11.dll	
orasql11	11.1.0.6.0 Production	393.00 KB (402,432 bytes)	4/9/2008 3:42 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\orasql11.dll	
orahasgen11	11.1.0.6.0 Production	505.50 KB (517,632 bytes)	4/9/2008 3:42 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\orahasgen11.dll	
oraocr11	11.1.0.6.0 Production	549.50 KB (562,688 bytes)	4/9/2008 3:42 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oraocr11.dll	
oraocrb11	11.1.0.6.0 Production	418.50 KB (428,544 bytes)	4/9/2008 3:42 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oraocrb11.dll	
orazt11	11.1.0.6.0 Production	52.50 KB (53,760 bytes)	4/9/2008 3:42 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\orazt11.dll	
oranldap11	11.1.0.6.0 Production	311.50 KB (318,976 bytes)	4/9/2008 3:42 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oranldap11.dll	
oranhst11	11.1.0.6.0 Production	26.00 KB (26,624 bytes)	4/9/2008 3:42 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oranhst11.dll	
orancds11	11.1.0.6.0 Production	5.00 KB (5,120 bytes)	4/9/2008 3:42 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\orancds11.dll	
orantns11	11.1.0.6.0 Production	41.00 KB (41,984 bytes)	4/9/2008 3:42 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\orantns11.dll	
oraztkg11	11.1.0.6.0 Production	686.50 KB (702,976 bytes)	4/9/2008 3:42 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oraztkg11.dll	
onsclnt	Not Available	58.50 KB (59,904 bytes)	4/9/2008 3:42 PM	Not Available	c:\app\administrator\product\11.1.0\db\bin\onsclnt.dll	
winrnr	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	30.00 KB (30,720 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\winrnr.dll	
oranipc11	11.1.0.6.0 Production	89.00 KB (91,136 bytes)	4/9/2008 3:42 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oranipc11.dll	
oraocrutl11	11.1.0.6.0 Production	39.00 KB (39,936 bytes)	4/9/2008 3:42 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oraocrutl11.dll	
oraclsra11	11.1.0.6.0 Production	44.00 KB (45,056 bytes)	4/9/2008 3:41 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oraclsra11.dll	
oradbcfg11	11.1.0.6.0 Production	108.50 KB (111,104 bytes)	4/9/2008 3:41 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oradbcfg11.dll	
oracle	11.1.0.6.0 Production	103.41 MB (108,431,872 bytes)	4/9/2008 3:41 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oracle.exe	
libmmd	8.1.8.2	816.00 KB (835,584 bytes)	4/9/2008 3:41 PM	Intel Corporation	c:\app\administrator\product\11.1.0\db\bin\libmmd.dll	
orawwg	10.1.2.0.0 Production	170.50 KB (174,592 bytes)	4/9/2008 3:41 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\orawwg.dll	
dbghelp	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.22 MB (1,274,368 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\dbghelp.dll	
oraimr11	10, 1, 0, 2	118.50 KB (121,344 bytes)	4/9/2008 3:42 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oraimr11.dll	
oravssw	Not Available	230.50 KB (236,032 bytes)	4/9/2008 3:42 PM	Not Available	c:\app\administrator\product\11.1.0\db\bin\oravssw.exe	

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oci	11.1.0.1.0	635.50 KB (650,752 bytes)	4/9/2008 3:42 PM	Oracle Corporation	c:\app\administrator\product\11.1.0\db\bin\oci.dll
VivaldiFramework	Not Available	52.00 KB (53,248 bytes)	11/29/2006 7:05 PM	Not Available	c:\program files (x86)\megaraid storage manager\framework\vivaldiframework.exe
wow64	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	245.00 KB (250,880 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\wow64.dll
wow64win	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	280.00 KB (286,720 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\wow64win.dll
wow64cpu	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	18.50 KB (18,944 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\wow64cpu.dll
cmd	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	538.50 KB (551,424 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\cmd.exe
javaw	6.0.0.105	132.00 KB (135,168 bytes)	12/21/2006 4:40 PM	Sun Microsystems, Inc.	c:\program files (x86)\megaraid storage manager\jre\bin\javaw.exe
mrmonitor	Not Available	408.00 KB (417,792 bytes)	11/15/2006 11:57 AM	Not Available	c:\program files (x86)\megaraid storage manager\megamonitor\mrmonitor.exe
termsrv	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	354.50 KB (363,008 bytes)	4/2/2008 12:39 AM	Microsoft Corporation	c:\windows\system32\termsrv.dll
icaapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	27.50 KB (28,160 bytes)	4/2/2008 12:39 AM	Microsoft Corporation	c:\windows\system32\icaapi.dll
mstlsapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	187.00 KB (191,488 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\mstlsapi.dll
rdpwsx	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	170.13 KB (174,216 bytes)	4/2/2008 12:39 AM	Microsoft Corporation	c:\windows\system32\rdpwsx.dll
rdpclip	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	99.00 KB (101,376 bytes)	4/2/2008 12:39 AM	Microsoft Corporation	c:\windows\system32\rdpclip.exe
urlmon	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	1.02 MB (1,074,176 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\urlmon.dll
explorer	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	1.30 MB (1,364,480 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\explorer.exe
browseui	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	1.53 MB (1,601,536 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\browseui.dll
shdocvw	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	2.30 MB (2,416,128 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\shdocvw.dll
cryptui	5.131.3790.1830 (srv03_sp1_rtm.050324-1447)	705.50 KB (722,432 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\cryptui.dll
themeui	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	530.50 KB (543,232 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\themeui.dll
msimg32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	6.50 KB (6,656 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msimg32.dll
linkinfo	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	30.00 KB (30,720 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\linkinfo.dll
ntshrui	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	184.00 KB (188,416 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\ntshrui.dll
msi	3.1.4000.1830	4.27 MB (4,476,416 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msi.dll
webcheck	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	439.00 KB (449,536 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\webcheck.dll
stobject	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	142.50 KB (145,920 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\stobject.dll
batmeter	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	41.50 KB (42,496 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\batmeter.dll
powrprof	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	32.50 KB (33,280 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\powrprof.dll

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browsecl	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	63.00 KB (64,512 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\browsecl.dll
shdoclc	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	589.50 KB (603,648 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\shdoclc.dll
bacstray	8, 3, 11, 0	105.00 KB (107,520 bytes)	4/4/2006 10:42 PM
	Broadcom Corporation	c:\program files\broadcom\bacs\bacstray.exe	
mfc42	6.50.9146.0	1.40 MB (1,470,464 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\mfc42.dll	
popup	1.00-21 76.09 KB (77,920 bytes)	8/15/2006 4:00 PM	c:\program files
	(x86)\megaraid storage manager\megapopup\popup.exe		
wuaucit	5.7.3790.1830 (srv03_sp1_rtm.050324-1447)	156.00 KB (159,744 bytes)	
	4/2/2008 12:40 AM	Microsoft Corporation	c:\windows\system32\wuaucit.exe
wuaucl	5.7.3790.1830 (srv03_sp1_rtm.050324-1447)	177.50 KB (181,760 bytes)	
	4/2/2008 12:40 AM	Microsoft Corporation	c:\windows\system32\wuaucl.cpl
helpctr	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.30 MB (1,363,456 bytes)	
	4/2/2008 12:40 AM	Microsoft Corporation	c:\windows\pchealth\helpctr\binaries\helpctr.exe
hcappres	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	7.50 KB (7,680 bytes)	
	4/2/2008 12:40 AM	Microsoft Corporation	c:\windows\pchealth\helpctr\binaries\hcappres.dll
itss	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	208.00 KB (212,992 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\itss.dll
msxml3	8.70.1104.0	2.04 MB (2,141,184 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\msxml3.dll	
pchshell	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	155.00 KB (158,720 bytes)	
	4/2/2008 12:40 AM	Microsoft Corporation	c:\windows\pchealth\helpctr\binaries\pchshell.dll
mlang	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	686.00 KB (702,464 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\mlang.dll
mshtml	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	5.65 MB (5,928,448 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\mshtml.dll
msls31	3.10.349.0	357.00 KB (365,568 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\msls31.dll	
msimtf	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	380.50 KB (389,632 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msimtf.dll
msctf	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	617.50 KB (632,320 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msctf.dll
jscript	5.6.0.8827	974.50 KB (997,888 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\jscript.dll	
mshtml	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	905.50 KB (927,232 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\mshtml.dll
vbscript	5.6.0.8827	646.50 KB (662,016 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\vbscript.dll	
msinfo	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	636.00 KB (651,264 bytes)	
	4/2/2008 12:40 AM	Microsoft Corporation	c:\windows\pchealth\helpctr\binaries\msinfo.dll
mfc42u	6.50.9146.0	1.39 MB (1,462,272 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\mfc42u.dll	
riched32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	7.00 KB (7,168 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\riched32.dll
riched20	5.31.23.1224	1.10 MB (1,157,120 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\riched20.dll	
helpsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.52 MB (1,591,296 bytes)	
	4/2/2008 12:40 AM	Microsoft Corporation	c:\windows\pchealth\helpctr\binaries\helpsvc.exe

[Services]

Display Name	Name	State	Start Mode	Service Type	Path	Error Control	Start
Name	Tag ID						
Application Experience Lookup Service	AeLookupSvc	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0			
Alerter	Alerter	Stopped	Disabled	Share Process			
	c:\windows\system32\svchost.exe -k localservice	Normal	NT				
AUTHORITY\LocalService		0					
Application Layer Gateway Service	ALG	Stopped	Manual	Own Process			
	c:\windows\system32\alg.exe	Normal	NT AUTHORITY\LocalService	0			
Application Management	AppMgmt	Stopped	Manual	Share Process			
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0			
Windows Audio	AudioSrv	Stopped	Manual	Share Process			
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0			
Background Intelligent Transfer Service	BITS	Stopped	Manual	Share Process			
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0			
Computer Browser	Browser	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0			
Indexing Service	CiSvc	Stopped	Disabled	Share Process			
	c:\windows\system32\cisvc.exe	Normal	LocalSystem	0			
ClipBook	ClipSrv	Stopped	Disabled	Own Process			
	c:\windows\system32\clipsrv.exe	Normal	LocalSystem	0			
COM+ System Application	COMSysApp	Stopped	Manual	Own Process			
	c:\windows\system32\dlhhost.exe /processid:{02d4b3f1-fd88-11d1-960d-00805fc79235}	Normal	LocalSystem	0			
Cryptographic Services	CryptSvc	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0			
DCOM Server Process Launcher	DcomLaunch	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k dcomlaunch	Normal	LocalSystem	0			
Distributed File System	Dfs	Stopped	Manual	Own Process			
	c:\windows\system32\dfssvc.exe	Normal	LocalSystem	0			
DHCP Client	Dhcp	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k networkservice	Normal	NT				
AUTHORITY\NetworkService		0					
Logical Disk Manager Administrative Service	dmadmin	Stopped	Manual	Share			
Process	c:\windows\system32\dmadmin.exe /com	Normal	LocalSystem	0			
Logical Disk Manager	dmserver	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0			
DNS Client	Dnscache	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k networkservice	Normal	NT				
AUTHORITY\NetworkService		0					
Error Reporting Service	ERSvc	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k winerr	Ignore	LocalSystem	0			
Event Log	Eventlog	Running	Auto	Share Process			
	c:\windows\system32\services.exe	Normal	LocalSystem	0			
COM+ Event System	EventSystem	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0			
Help and Support	helpsvc	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0			
HID Input Service	HidServ	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0			
HTTP SSL	HTTPFilter	Stopped	Manual	Share Process			
	c:\windows\system32\lsass.exe	Normal	LocalSystem	0			

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IAS Jet Database Access	IASJet	Stopped	Manual	Share Process	
c:\windows\syswow64\svchost.exe -k iasjet			Normal	LocalSystem	0
InstallDriver Table Manager	IDriverT	Stopped	Manual	Own Process	"c:\program files (x86)\common files\installshield\driver\1050\intel 32\idriver.exe"
IMAPI CD-Burning COM Service	ImapiService	Stopped	Disabled	Own	
Process	c:\windows\system32\imapi.exe	Normal	LocalSystem	0	
Intersite Messaging	IsmServ	Stopped	Disabled	Own Process	
c:\windows\system32\ismserv.exe		Normal	LocalSystem	0	
Kerberos Key Distribution Center	kdc	Stopped	Disabled	Share Process	
c:\windows\system32\lsass.exe		Normal	LocalSystem	0	
Server lanmanserver	Running	Auto	Share Process		
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	
Workstation lanmanworkstation	Running	Auto	Share Process		
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	
License Logging	LicenseService	Stopped	Disabled	Own Process	
c:\windows\system32\llssrv.exe		Normal	NT AUTHORITY\NetworkService	0	
TCP/IP NetBIOS Helper LmHosts	Running	Auto	Share Process		
c:\windows\system32\svchost.exe -k localservice		Normal	NT		
AUTHORITY\LocalService		0			
MRMonitor MegaMonitorSrv	Running	Auto	Own Process	"c:\program files (x86)\megaraid storage manager\megamonitor\mrmonitor.exe"	
			Normal	LocalSystem	0
Messenger Messenger	Stopped	Disabled	Share Process		
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	
NetMeeting Remote Desktop Sharing	mnmsrvc	Stopped	Disabled	Own	
Process	c:\windows\system32\mnmsrvc.exe	Normal	LocalSystem	0	
Distributed Transaction Coordinator	MSDTC	Running	Auto	Own Process	
c:\windows\system32\msdtc.exe		Normal	NT AUTHORITY\NetworkService	0	
Windows Installer MSIServer	Stopped	Manual	Share Process		
c:\windows\system32\msiexec.exe /v		Normal	LocalSystem	0	
MSMFramework MSMFramework	Running	Auto	Own Process	"c:\program files (x86)\megaraid storage manager\framework\vivaldiframework.exe"	
			Normal	LocalSystem	0
Network DDE NetDDE	Stopped	Disabled	Share Process		
c:\windows\system32\netdde.exe		Normal	LocalSystem	0	
Network DDE DSDM NetDDEdsdm	Stopped	Disabled	Share Process		
c:\windows\system32\netdde.exe		Normal	LocalSystem	0	
Net Logon Netlogon	Stopped	Manual	Share Process		
c:\windows\system32\lsass.exe		Normal	LocalSystem	0	
Network Connections Netman	Running	Manual	Share Process		
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	
Network Location Awareness (NLA)	Nla	Running	Manual	Share Process	
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	
File Replication NtFrs	Stopped	Manual	Own Process	c:\windows\system32\ntfrs.exe	
Ignore	LocalSystem	0			
NT LM Security Support Provider	NtLmSsp	Stopped	Manual	Share Process	
c:\windows\system32\lsass.exe		Normal	LocalSystem	0	
Removable Storage NtmsSvc	Stopped	Manual	Share Process		
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	
OracleJobScheduler tpcc	OracleJobScheduler tpcc	Stopped	Disabled		
Own Process	c:\app\administrator\product\11.1.0\db\bin\extjob.exe tpcc		Normal		
LocalSystem	0				
OracleOraDb11g_home1TNSListener	OracleOraDb11g_home1TNSListener	Running			
Auto	Own Process	c:\app\administrator\product\11.1.0\db\bin\tnslsnr		Normal	
LocalSystem	0				

APPENDIX C - TUNABLE PARAMETERS

OracleServicetpcc	OracleServicetpcc	Running	Auto	Own Process	
c:\app\administrator\product\11.1.0\db\bin\oracle.exe	tpcc			Normal	LocalSystem
0					
Oracle tpcc VSS Writer Service	OracleVssWritertpcc	Running	Auto	Own Process	
c:\app\administrator\product\11.1.0\db\bin\oravssw.exe	tpcc			Normal	LocalSystem
0					
Plug and Play	PlugPlay	Running	Auto	Share Process	
c:\windows\system32\services.exe				Normal	LocalSystem
0					
IPSEC ServicesPolicyAgent	Running	Auto	Share Process		
c:\windows\system32\lsass.exe	Normal	LocalSystem	0		
Protected Storage	ProtectedStorage	Running	Auto	Share Process	
c:\windows\system32\lsass.exe	Normal	LocalSystem	0		
Remote Access Auto Connection Manager	RasAuto	Stopped	Manual	Share Process	
c:\windows\system32\svchost.exe -k netsvcs				Normal	LocalSystem
0					
Remote Access Connection Manager	RasMan	Stopped	Manual	Share Process	
c:\windows\system32\svchost.exe -k netsvcs				Normal	LocalSystem
0					
Remote Desktop Help Session Manager	RDSessMgr	Stopped	Manual	Own Process	
c:\windows\system32\sessmgr.exe				Normal	LocalSystem
0					
Routing and Remote Access	RemoteAccess	Stopped	Disabled	Share Process	
c:\windows\system32\svchost.exe -k netsvcs				Normal	LocalSystem
0					
Remote Registry	RemoteRegistry	Running	Auto	Share Process	
c:\windows\system32\svchost.exe -k regsvc				Normal	NT AUTHORITY\LocalService
0					
Remote Procedure Call (RPC) Locator	RpcLocator	Stopped	Manual	Own Process	
c:\windows\system32\locator.exe				Normal	NT AUTHORITY\NetworkService
0					
Remote Procedure Call (RPC)	RpcSs	Running	Auto	Share Process	
c:\windows\system32\svchost.exe -k rpcss				Normal	NT AUTHORITY\NetworkService
0					
Resultant Set of Policy Provider	RSOPProv	Stopped	Manual	Share Process	
c:\windows\system32\rsopprov.exe				Normal	LocalSystem
0					
Special Administration Console Helper	sacsvr	Stopped	Manual	Share Process	
c:\windows\system32\svchost.exe -k netsvcs				Normal	LocalSystem
0					
Security Accounts Manager	SamSs	Running	Auto	Share Process	
c:\windows\system32\lsass.exe	Normal	LocalSystem	0		
Smart Card	SCardSvr	Stopped	Manual	Share Process	
c:\windows\system32\scardsvr.exe				Ignore	NT AUTHORITY\LocalService
0					
Task Scheduler Schedule	Running	Auto	Share Process		
c:\windows\system32\svchost.exe -k netsvcs				Normal	LocalSystem
0					
Secondary Logon	seclogon	Running	Auto	Share Process	
c:\windows\system32\svchost.exe -k netsvcs				Ignore	LocalSystem
0					
System Event Notification	SENS	Running	Auto	Share Process	
c:\windows\system32\svchost.exe -k netsvcs				Normal	LocalSystem
0					
Windows Firewall/Internet Connection Sharing (ICS)	SharedAccess	Stopped			
Disabled	Share Process	c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem
0					
Shell Hardware Detection	ShellHWDetection	Running	Auto	Share Process	
c:\windows\system32\svchost.exe -k netsvcs				Ignore	LocalSystem
0					
Print Spooler	Spooler	Stopped	Manual	Own Process	
c:\windows\system32\spoolsv.exe				Normal	LocalSystem
0					
Windows Image Acquisition (WIA)	stisvc	Stopped	Disabled	Share Process	
c:\windows\system32\svchost.exe -k imgsvc				Normal	NT AUTHORITY\LocalService
0					
Microsoft Software Shadow Copy Provider	swprv	Stopped	Manual	Own Process	
c:\windows\system32\svchost.exe -k swprv				Normal	LocalSystem
0					

APPENDIX C - TUNABLE PARAMETERS

Performance Logs and Alerts	SysmonLog	Stopped	Auto	Own Process	
c:\windows\system32\smlogsvc.exe		Normal	NT Authority\NetworkService	0	
Telephony	TapiSrv	Stopped	Manual	Share Process	
c:\windows\system32\svchost.exe -k tapisrv		Normal	LocalSystem	0	
Terminal Services	TermService	Running	Manual	Share Process	
c:\windows\system32\svchost.exe -k termsvcs		Normal	LocalSystem	0	
Themes	Themes	Stopped	Disabled	Share Process	
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	
Telnet	TlntSvr	Stopped	Disabled	Own Process	c:\windows\system32\tlntsvr.exe
		Normal	NT AUTHORITY\LocalService	0	
Distributed Link Tracking Server	TrkSrv	Stopped	Disabled	Share Process	
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	
Distributed Link Tracking Client	TrkWks	Running	Auto	Share Process	
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	
Terminal Services Session Directory	Tssdis	Stopped	Disabled	Own Process	
c:\windows\system32\tssdis.exe		Normal	LocalSystem	0	
Windows User Mode Driver Framework	UMWdf	Stopped	Manual	Own Process	
c:\windows\system32\wdfmgr.exe		Normal	NT AUTHORITY\LocalService	0	
Uninterruptible Power Supply	UPS	Stopped	Manual	Own Process	
c:\windows\system32\ups.exe		Normal	NT AUTHORITY\LocalService	0	
Virtual Disk Service	vds	Stopped	Manual	Own Process	
c:\windows\system32\vds.exe		Normal	LocalSystem	0	
Volume Shadow Copy	VSS	Stopped	Manual	Own Process	
c:\windows\system32\vssvc.exe		Normal	LocalSystem	0	
Windows Time	W32Time	Stopped	Manual	Share Process	
c:\windows\system32\svchost.exe -k localservice		Normal	NT		
AUTHORITY\LocalService		0			
WebClient	WebClient	Stopped	Disabled	Share Process	
c:\windows\system32\svchost.exe -k localservice		Normal	NT		
AUTHORITY\LocalService		0			
WinHTTP Web Proxy Auto-Discovery Service	WinHttpAutoProxySvc	Stopped	Manual		
Share Process	c:\windows\system32\svchost.exe -k localservice	Normal	NT		
AUTHORITY\LocalService		0			
Windows Management Instrumentation	winmgmt	Running	Auto	Share Process	
c:\windows\system32\svchost.exe -k netsvcs		Ignore	LocalSystem	0	
Portable Media Serial Number Service	WmdmPmSN	Stopped	Manual	Share Process	
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	
Windows Management Instrumentation Driver Extensions	Wmi	Stopped	Manual		
Share Process	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem		
0					
WMI Performance Adapter	WmiApSrv	Stopped	Manual	Own Process	
c:\windows\system32\wbem\wmiapsrv.exe		Normal	LocalSystem	0	
Automatic Updates	wuauclt	Running	Auto	Share Process	
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	
Wireless Configuration	WZC	Stopped	Manual	Share Process	
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	
Network Provisioning Service	xmlprov	Stopped	Manual	Share Process	
c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	

[Program Groups]

Group Name	Name	User Name
Accessories	Default User:Accessories	Default User
Accessories\Accessibility	Default User:Accessories\Accessibility	Default User
Accessories\Entertainment	Default User:Accessories\Entertainment	Default User

APPENDIX C - TUNABLE PARAMETERS

Startup	Default User:Startup	Default User	
Accessories	All Users:Accessories	All Users	
Accessories\Accessibility	All Users:Accessories\Accessibility	All Users	
Accessories\Communications	All Users:Accessories\Communications	All Users	
Accessories\Entertainment	All Users:Accessories\Entertainment	All Users	
Accessories\System Tools	All Users:Accessories\System Tools	All Users	
Administrative Tools	All Users:Administrative Tools	All Users	
Broadcom	All Users:Broadcom	All Users	
Cygwin	All Users:Cygwin	All Users	
MegaRAID Storage Manager	All Users:MegaRAID Storage Manager	All Users	
Oracle - OraDb11g_home1	All Users:Oracle - OraDb11g_home1	All Users	
Oracle - OraDb11g_home1\Application Development	All Users:Oracle - OraDb11g_home1\Application Development	All Users	
Oracle - OraDb11g_home1\Configuration and Migration Tools	All Users:Oracle - OraDb11g_home1\Configuration and Migration Tools	All Users	
Oracle - OraDb11g_home1\Integrated Management Tools	All Users:Oracle - OraDb11g_home1\Integrated Management Tools	All Users	
Oracle - OraDb11g_home1\Oracle Installation Products	All Users:Oracle - OraDb11g_home1\Oracle Installation Products	All Users	
Oracle - OraDb11g_home1\Warehouse Builder	All Users:Oracle - OraDb11g_home1\Warehouse Builder	All Users	
Oracle - OraDb11g_home1\Warehouse Builder\Administration	All Users:Oracle - OraDb11g_home1\Warehouse Builder\Administration	All Users	
Startup	All Users:Startup	All Users	
Accessories	NT AUTHORITY\SYSTEM:Accessories	NT AUTHORITY\SYSTEM	
Accessories\Accessibility	NT AUTHORITY\SYSTEM:Accessories\Accessibility	NT AUTHORITY\SYSTEM	
Accessories\Entertainment	NT AUTHORITY\SYSTEM:Accessories\Entertainment	NT AUTHORITY\SYSTEM	
Startup	NT AUTHORITY\SYSTEM:Startup	NT AUTHORITY\SYSTEM	
Accessories	PE2900_2\Administrator:Accessories	PE2900_2\Administrator	
Accessories\Accessibility	PE2900_2\Administrator:Accessories\Accessibility	PE2900_2\Administrator	
Accessories\Entertainment	PE2900_2\Administrator:Accessories\Entertainment	PE2900_2\Administrator	
Startup	PE2900_2\Administrator:Startup	PE2900_2\Administrator	

[Startup Programs]

Program	Command	User Name	Location
desktop\desktop.ini		NT AUTHORITY\SYSTEM	Startup
desktop\desktop.ini		PE2900_2\Administrator	Startup
desktop\desktop.ini	.DEFAULT	Startup	
desktop\desktop.ini		All Users	Common Startup
bacstray	c:\program files\broadcom\bacs\bacstray.exe	All Users	
	HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Run		

[OLE Registration]

Object	Local Server
Sound (OLE2)	sndrec32.exe
Media Clip	mplay32.exe
Video Clip	mplay32.exe /avi
MIDI Sequence	mplay32.exe /mid
Sound	Not Available

APPENDIX C - TUNABLE PARAMETERS

Media Clip Not Available
WordPad Document "%programfiles%\windows nt\accessories\wordpad.exe"
Bitmap Image mspaint.exe

[Windows Error Reporting]

Time Type Details
4/18/2008 8:12 PM Application Error Faulting application tpccacid_iso5.exe, version 0.0.0.0, faulting module OraClient11.Dll, version 11.1.0.6, fault address 0x000000000102b19.

[Internet Settings]

[Internet Explorer]

[Following are sub-categories of this main category]

[Summary]

Item Value
Version 6.0.3790.1830
Build 63790.1830
Application Path C:\Program Files\Internet Explorer
Language English (United States)
Active Printer Not Available

Cipher Strength 128-bit
Content Advisor Disabled
IEAK Install No

[File Versions]

File	Version	Size	Date	Path	Company
actxprxy.dll	6.0.3790.1830	221 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
advpack.dll	6.0.3790.1830	146 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
asctrls.ocx	6.0.3790.1830	147 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
browseic.dll	6.0.3790.1830	63 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
browseui.dll	6.0.3790.1830	1,564 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
cdfview.dll	6.0.3790.1830	216 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
comctl32.dll	5.82.3790.1830	935 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
dxtrans.dll	6.3.3790.1830	320 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
dxtmsft.dll	6.3.3790.1830	549 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
iecont.dll	<File Missing>	Not Available	Not Available	Not Available	Not Available
iecontlc.dll	<File Missing>	Not Available	Not Available	Not Available	Not Available

APPENDIX C - TUNABLE PARAMETERS

iedkcs32.dll	16.0.3790.1830	417 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
iepeers.dll	6.0.3790.1830	361 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
iesetup.dll	6.0.3790.1830	71 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
ieuinit.inf	Not Available	24 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Not Available
ieexplore.exe	6.0.3790.1830	94 KB	3/25/2005 7:00:00 AM	C:\Program Files\Internet Explorer	Microsoft Corporation
imgutil.dll	6.0.3790.1830	61 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
inetctl.cpl	6.0.3790.1830	428 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
inetctl.dll	6.0.3790.1830	110 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
inseng.dll	6.0.3790.1830	147 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
mlang.dll	6.0.3790.1830	686 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
msencode.dll	<File Missing>	Not Available	Not Available	Not Available	Not Available
mshta.exe	6.0.3790.1830	38 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
mshtml.dll	6.0.3790.1830	5,790 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
mshtml.tlb	6.0.3790.1830	1,320 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
mshtml.dll	6.0.3790.1830	906 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
mshtml.dll	6.0.3790.1830	56 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
msident.dll	6.0.3790.1830	69 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
msidntld.dll	6.0.3790.1830	16 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
msieftp.dll	6.0.3790.1830	369 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
msrating.dll	6.0.3790.1830	240 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
mstime.dll	6.0.3790.1830	878 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
occache.dll	6.0.3790.1830	126 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
proctexe.ocx	<File Missing>	Not Available	Not Available	Not Available	Not Available
sendmail.dll	6.0.3790.1830	64 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
shdoclc.dll	6.0.3790.1830	590 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
shdocvw.dll	6.0.3790.1830	2,360 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
shfolder.dll	6.0.3790.1830	34 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
shlwapi.dll	6.0.3790.1830	607 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation

APPENDIX C - TUNABLE PARAMETERS

tdc.ocx	1.3.0.3130	91 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32
	Microsoft Corporation			
url.dll	6.0.3790.1830	40 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32
	Microsoft Corporation			
urlmon.dll	6.0.3790.1830	1,049 KB	3/25/2005 7:00:00 AM	
	C:\WINDOWS\system32	Microsoft Corporation		
webcheck.dll	6.0.3790.1830	439 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32
	Microsoft Corporation			
wininet.dll	6.0.3790.1830	1,159 KB	3/25/2005 7:00:00 AM	
	C:\WINDOWS\system32	Microsoft Corporation		

[Connectivity]

Item	Value
Connection Preference	Never dial

LAN Settings

AutoConfigProxy	wininet.dll
AutoProxyDetectMode	Disabled
AutoConfigURL	
Proxy	Disabled
ProxyServer	
ProxyOverride	

[Cache]

[Following are sub-categories of this main category]

[Summary]

Item	Value
Page Refresh Type	Automatic
Temporary Internet Files Folder	C:\Documents and Settings\Administrator\Local Settings\Temporary Internet Files
Total Disk Space	Not Available
Available Disk Space	Not Available
Maximum Cache Size	Not Available
Available Cache Size	Not Available

[List of Objects]

Program File	Status	CodeBase
No cached object information available		

[Content]

[Following are sub-categories of this main category]

[Summary]

Item	Value
Content Advisor	Disabled

[Personal Certificates]

Issued To	Issued By	Validity	Signature	Algorithm
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No personal certificate information available

[Other People Certificates]

Issued To	Issued By	Validity	Signature Algorithm
No other people certificate information available			

[Publishers]

Name
No publisher information available

[Security]

Zone	Security Level
My Computer	Custom
Local intranet	Custom
Trusted sites	Custom
Internet High	
Restricted sites	Custom

Client msinfo32 export

System Information report written at: 05/28/08 13:42:15

System Name: PE1430

[System Summary]

Item	Value
OS Name	Microsoft(R) Windows(R) Server 2003 Standard x64 Edition
Version	5.2.3790 Service Pack 1 Build 3790
Other OS Description	Not Available
OS Manufacturer	Microsoft Corporation
System Name	PE1430
System Manufacturer	Dell Inc.
System Model	PowerEdge SC1430
System Type	x64-based PC
Processor	EM64T Family 6 Model 15 Stepping 11 GenuineIntel ~1995 Mhz
Processor	EM64T Family 6 Model 15 Stepping 11 GenuineIntel ~1995 Mhz
Processor	EM64T Family 6 Model 15 Stepping 11 GenuineIntel ~1995 Mhz
Processor	EM64T Family 6 Model 15 Stepping 11 GenuineIntel ~1995 Mhz
Processor	EM64T Family 6 Model 15 Stepping 11 GenuineIntel ~1995 Mhz
Processor	EM64T Family 6 Model 15 Stepping 11 GenuineIntel ~1995 Mhz
Processor	EM64T Family 6 Model 15 Stepping 11 GenuineIntel ~1995 Mhz
Processor	EM64T Family 6 Model 15 Stepping 11 GenuineIntel ~1995 Mhz
BIOS Version/Date	Dell Inc. 1.4.0, 8/6/2007
SMBIOS Version	2.4
Windows Directory	C:\WINDOWS
System Directory	C:\WINDOWS\system32
Boot Device	\Device\HarddiskVolume1
Locale	United States
Hardware Abstraction Layer	Version = "5.2.3790.1830 (srv03_sp1_rtm.050324-1447)"
User Name	PE1430\Administrator
Time Zone	Central Daylight Time

APPENDIX C - TUNABLE PARAMETERS

Total Physical Memory 4,094.99 MB
Available Physical Memory 3.45 GB
Total Virtual Memory 5.75 GB
Available Virtual Memory 5.44 GB
Page File Space 2.00 GB
Page File C:\pagefile.sys

[Hardware Resources]

[Conflicts/Sharing]

Resource	Device
I/O Port 0x00000000-0x00000CF7	PCI bus
I/O Port 0x00000000-0x00000CF7	Direct memory access controller

IRQ 20 Standard Universal PCI to USB Host Controller
IRQ 20 Standard Universal PCI to USB Host Controller

IRQ 21 Standard Universal PCI to USB Host Controller
IRQ 21 Standard Universal PCI to USB Host Controller
IRQ 21 Standard Enhanced PCI to USB Host Controller

IRQ 16 PCI standard host CPU bridge
IRQ 16 PCI standard PCI-to-PCI bridge
IRQ 16 PCI standard PCI-to-PCI bridge
IRQ 16 PCI standard PCI-to-PCI bridge
IRQ 16 PCI standard PCI-to-PCI bridge
IRQ 16 PCI standard PCI-to-PCI bridge
IRQ 16 Intel(R) PRO/1000 PT Quad Port Server Adapter
IRQ 16 PCI standard PCI-to-PCI bridge
IRQ 16 Broadcom NetXtreme Gigabit Ethernet

Memory Address 0xE0000000-0xFDFFFFFF	PCI bus
Memory Address 0xE0000000-0xFDFFFFFF	Motherboard resources

Memory Address 0xA0000-0xBFFFF	PCI bus
Memory Address 0xA0000-0xBFFFF	Standard VGA Graphics Adapter

I/O Port 0x0000D000-0x0000EFFF	PCI standard PCI-to-PCI bridge
I/O Port 0x0000D000-0x0000EFFF	PCI standard PCI-to-PCI bridge
I/O Port 0x0000D000-0x0000EFFF	PCI standard PCI-to-PCI bridge

[DMA]

Resource	Device	Status
Channel 4	Direct memory access controller	OK
Channel 2	Standard floppy disk controller	OK

[Forced Hardware]

Device PNP Device ID

APPENDIX C - TUNABLE PARAMETERS

[I/O]

Resource	Device	Status	
0x00000000-0x00000CF7	PCI bus	OK	
0x00000000-0x00000CF7	Direct memory access controller	OK	
0x00000D00-0x0000FFFF	PCI bus	OK	
0x0000D000-0x0000EFFF	PCI standard PCI-to-PCI bridge	OK	
0x0000D000-0x0000EFFF	PCI standard PCI-to-PCI bridge	OK	
0x0000D000-0x0000EFFF	PCI standard PCI-to-PCI bridge	OK	
0x0000E000-0x0000EFFF	PCI standard PCI-to-PCI bridge	OK	
0x0000ECE0-0x0000ECFF	Intel(R) PRO/1000 PT Quad Port Server Adapter	OK	
0x0000DCE0-0x0000DCFF	Intel(R) PRO/1000 PT Quad Port Server Adapter #3	OK	
0x0000BCE0-0x0000BCFF	Standard Universal PCI to USB Host Controller	OK	
0x0000BCC0-0x0000BCDF	Standard Universal PCI to USB Host Controller	OK	
0x0000BCA0-0x0000BCBF	Standard Universal PCI to USB Host Controller	OK	
0x0000BC80-0x0000BC9F	Standard Universal PCI to USB Host Controller	OK	
0x0000CC00-0x0000CCFF	Standard VGA Graphics Adapter	OK	
0x000003B0-0x000003BB	Standard VGA Graphics Adapter	OK	
0x000003C0-0x000003DF	Standard VGA Graphics Adapter	OK	
0x00000080-0x0000009F	Direct memory access controller	OK	
0x000000C0-0x000000DF	Direct memory access controller	OK	
0x000000F0-0x000000FF	Numeric data processor	OK	
0x00000020-0x0000003F	Programmable interrupt controller	OK	
0x000000A0-0x000000BF	Programmable interrupt controller	OK	
0x000004D0-0x000004D1	Programmable interrupt controller	OK	
0x00000061-0x00000061	System board	OK	
0x00000070-0x0000007F	System CMOS/real time clock	OK	
0x00000040-0x0000005F	System timer	OK	
0x000003F8-0x000003FF	Communications Port (COM1)	OK	
0x000003F0-0x000003F5	Standard floppy disk controller	OK	
0x000003F7-0x000003F7	Standard floppy disk controller	OK	
0x00000378-0x0000037F	ECP Printer Port (LPT1)	OK	
0x00000778-0x0000077F	ECP Printer Port (LPT1)	OK	
0x00000800-0x0000087F	System board	OK	
0x00000880-0x000008BF	System board	OK	
0x000008C0-0x000008DF	System board	OK	
0x000008E0-0x000008E3	System board	OK	
0x00000C00-0x00000C7F	System board	OK	
0x00000060-0x00000060	System board	OK	
0x00000064-0x00000064	System board	OK	
0x0000FC00-0x0000FC0F	Standard Dual Channel PCI IDE Controller	OK	
0x000001F0-0x000001F7	Primary IDE Channel	OK	
0x000003F6-0x000003F6	Primary IDE Channel	OK	
0x00000170-0x00000177	Secondary IDE Channel	OK	
0x00000376-0x00000376	Secondary IDE Channel	OK	
0x0000BC78-0x0000BC7F	Standard Dual Channel PCI IDE Controller	OK	
0x0000BC70-0x0000BC73	Standard Dual Channel PCI IDE Controller	OK	
0x0000BC60-0x0000BC67	Standard Dual Channel PCI IDE Controller	OK	
0x0000BC58-0x0000BC5B	Standard Dual Channel PCI IDE Controller	OK	
0x0000BC40-0x0000BC4F	Standard Dual Channel PCI IDE Controller	OK	

[IRQs]

Resource	Device	Status
IRQ 9	Microsoft ACPI-Compliant System	OK

APPENDIX C - TUNABLE PARAMETERS

IRQ 16	PCI standard host CPU bridge	OK
IRQ 16	PCI standard PCI-to-PCI bridge	OK
IRQ 16	PCI standard PCI-to-PCI bridge	OK
IRQ 16	PCI standard PCI-to-PCI bridge	OK
IRQ 16	PCI standard PCI-to-PCI bridge	OK
IRQ 16	PCI standard PCI-to-PCI bridge	OK
IRQ 16	Intel(R) PRO/1000 PT Quad Port Server Adapter	OK
IRQ 16	PCI standard PCI-to-PCI bridge	OK
IRQ 16	Broadcom NetXtreme Gigabit Ethernet	OK
IRQ 17	Intel(R) PRO/1000 PT Quad Port Server Adapter #3	OK
IRQ 21	Standard Universal PCI to USB Host Controller	OK
IRQ 21	Standard Universal PCI to USB Host Controller	OK
IRQ 21	Standard Enhanced PCI to USB Host Controller	OK
IRQ 20	Standard Universal PCI to USB Host Controller	OK
IRQ 20	Standard Universal PCI to USB Host Controller	OK
IRQ 13	Numeric data processor	OK
IRQ 8	System CMOS/real time clock	OK
IRQ 0	System timer	OK
IRQ 4	Communications Port (COM1)	OK
IRQ 6	Standard floppy disk controller	OK
IRQ 14	Primary IDE Channel	OK
IRQ 23	Standard Dual Channel PCI IDE Controller	OK

[Memory]

Resource	Device	Status
0xA0000-0xBFFFF	PCI bus	OK
0xA0000-0xBFFFF	Standard VGA Graphics Adapter	OK
0xE0000000-0xFDFFFFFF	PCI bus	OK
0xE0000000-0xFDFFFFFF	Motherboard resources	OK
0xFDB00000-0xFDCFFFFF	PCI standard PCI-to-PCI bridge	OK
0xFD500000-0xFDAFFFFF	PCI standard PCI-to-PCI bridge	OK
0xFD600000-0xFDAFFFFF	PCI standard PCI-to-PCI bridge	OK
0xFD900000-0xFDAFFFFF	PCI standard PCI-to-PCI bridge	OK
0xFD9E0000-0xFD9FFFFF	Intel(R) PRO/1000 PT Quad Port Server Adapter	OK
0xFD9C0000-0xFD9DFFFF	Intel(R) PRO/1000 PT Quad Port Server Adapter	OK
0xFD700000-0xFD8FFFFF	PCI standard PCI-to-PCI bridge	OK
0xFD7E0000-0xFD7FFFFF	Intel(R) PRO/1000 PT Quad Port Server Adapter #3	OK
0xFD7C0000-0xFD7DFFFF	Intel(R) PRO/1000 PT Quad Port Server Adapter #3	OK
0xFDD00000-0xFDEFFFFF	PCI standard PCI-to-PCI bridge	OK
0xFDDF0000-0xFDDFFFFF	Broadcom NetXtreme Gigabit Ethernet	OK
0xFDF00400-0xFDF007FF	Standard Enhanced PCI to USB Host Controller	OK
0xF0000000-0xF7FFFFFF	Standard VGA Graphics Adapter	OK
0xFD3F0000-0xFD3FFFFF	Standard VGA Graphics Adapter	OK
0xFDF00000-0xFDF003FF	Standard Dual Channel PCI IDE Controller	OK
0xFED00000-0xFED003FF	High precision event timer	OK

[Components]

[Multimedia]

APPENDIX C - TUNABLE PARAMETERS

[Audio Codecs]

CODEC	Manufacturer	Description	Status	File	Version	Size	Creation Date
c:\windows\system32\imaadp32.acm	Microsoft Corporation		OK				
C:\WINDOWS\system32\IMAADP32.ACM				5.2.3790.1830	(srv03_sp1_rtm.050324-1447)	24.00 KB (24,576 bytes)	3/25/2005 6:00 AM
c:\windows\system32\tsssoft32.acm	DSP GROUP, INC.		OK				
C:\WINDOWS\system32\TSSOFT32.ACM				1.01		13.50 KB (13,824 bytes)	3/25/2005 6:00 AM
c:\windows\system32\msg711.acm	Microsoft Corporation		OK				
C:\WINDOWS\system32\MSG711.ACM				5.2.3790.1830	(srv03_sp1_rtm.050324-1447)	13.50 KB (13,824 bytes)	3/25/2005 6:00 AM
c:\windows\system32\msgsm32.acm	Microsoft Corporation		OK				
C:\WINDOWS\system32\MSGSM32.ACM				5.2.3790.1830	(srv03_sp1_rtm.050324-1447)	34.50 KB (35,328 bytes)	3/25/2005 6:00 AM
c:\windows\system32\msadp32.acm	Microsoft Corporation		OK				
C:\WINDOWS\system32\MSADP32.ACM				5.2.3790.1830	(srv03_sp1_rtm.050324-1447)	23.50 KB (24,064 bytes)	3/25/2005 6:00 AM

[Video Codecs]

CODEC	Manufacturer	Description	Status	File	Version	Size	Creation Date
c:\windows\system32\msyuv.dll	Microsoft Corporation		OK				
C:\WINDOWS\system32\MSYUV.DLL				5.2.3790.1830	(srv03_sp1_rtm.050324-1447)	21.00 KB (21,504 bytes)	3/24/2005 11:21 AM
c:\windows\system32\msvidc32.dll	Microsoft Corporation		OK				
C:\WINDOWS\system32\MSVIDC32.DLL				5.2.3790.1830	(srv03_sp1_rtm.050324-1447)	43.00 KB (44,032 bytes)	3/25/2005 6:00 AM
c:\windows\system32\iyuv_32.dll	Microsoft Corporation		OK				
C:\WINDOWS\system32\IYUV_32.DLL				5.2.3790.1830	(srv03_sp1_rtm.050324-1447)	52.50 KB (53,760 bytes)	3/24/2005 11:19 AM
c:\windows\system32\tsbyuv.dll	Microsoft Corporation		OK				
C:\WINDOWS\system32\TSBYUV.DLL				5.2.3790.1830	(srv03_sp1_rtm.050324-1447)	12.50 KB (12,800 bytes)	3/24/2005 11:34 AM
c:\windows\system32\msrle32.dll	Microsoft Corporation		OK				
C:\WINDOWS\system32\MSRLE32.DLL				5.2.3790.1830	(srv03_sp1_rtm.050324-1447)	15.50 KB (15,872 bytes)	3/25/2005 6:00 AM

[CD-ROM]

Item	Value
Drive	D:
Description	CD-ROM Drive
Media Loaded	No
Media Type	CD-ROM
Name	PBDS CD-ROM DH-48N1P
Manufacturer	(Standard CD-ROM drives)
Status	OK
Transfer Rate	Not Available
SCSI Target ID	0
PNP Device ID	IDE\CDROMPBDS_CD-ROM_DH-48N1P\AD11\5&1ADA0B61&0&0.0.0
Driver	c:\windows\system32\drivers\cdrom.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 75.50 KB (77,312 bytes), 3/25/2005 6:00 AM)

APPENDIX C - TUNABLE PARAMETERS

[Sound Device]

Item Value

[Display]

Item Value

Name Standard VGA Graphics Adapter

PNP Device ID

PCI\VEN_1002&DEV_515E&SUBSYS_01B91028&REV_02\4&2014205D&0&48F0

Adapter Type Not Available

Adapter Description (Standard display types)

Adapter RAM Not Available

Installed Drivers Not Available

Driver Version Not Available

INF File 5.2.3790.1830 (display.inf section)

Color Planes vga

Color Table Entries Not Available

Resolution Not Available

Bits/Pixel Not Available

Memory Address 0xF0000000-0xF7FFFFFF

I/O Port 0x0000CC00-0x0000CCFF

Memory Address 0xFD3F0000-0xFD3FFFFF

I/O Port 0x000003B0-0x000003BB

I/O Port 0x000003C0-0x000003DF

Memory Address 0xA0000-0xBFFFF

Driver c:\windows\system32\drivers\vgapnp.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 33.00 KB (33,792 bytes), 3/5/2008 7:23 AM)

[Infrared]

Item Value

[Input]

[Keyboard]

Item Value

Description USB Human Interface Device

Name Enhanced (101- or 102-key)

Layout 00000409

PNP Device ID USB\VID_09AE&PID_0002&MI_00\6&8FA055B&0&0000

Number of Function Keys 12

Driver c:\windows\system32\drivers\hidusb.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 18.50 KB (18,944 bytes), 3/25/2005 6:00 AM)

[Pointing Device]

Item Value

Hardware Type USB Human Interface Device

Number of Buttons 3

Status OK

PNP Device ID USB\VID_09AE&PID_0002&MI_01\6&8FA055B&0&0001

APPENDIX C - TUNABLE PARAMETERS

Power Management Supported No
Double Click Threshold 6
Handedness Right Handed Operation
Driver c:\windows\system32\drivers\hidusb.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447),
18.50 KB (18,944 bytes), 3/25/2005 6:00 AM)

[Modem]

Item Value

[Network]

[Adapter]

Item Value

Name [00000001] RAS Async Adapter

Adapter Type Not Available

Product Type RAS Async Adapter

Installed Yes

PNP Device ID Not Available

Last Reset 5/27/2008 11:50 AM

Index 1

Service Name AsyncMac

IP Address Not Available

IP Subnet Not Available

Default IP Gateway Not Available

DHCP Enabled No

DHCP Server Not Available

DHCP Lease Expires Not Available

DHCP Lease Obtained Not Available

MAC Address Not Available

Name [00000002] WAN Miniport (L2TP)

Adapter Type Not Available

Product Type WAN Miniport (L2TP)

Installed Yes

PNP Device ID ROOT\MS_L2TPMINIPORT\0000

Last Reset 5/27/2008 11:50 AM

Index 2

Service Name Rasl2tp

IP Address Not Available

IP Subnet Not Available

Default IP Gateway Not Available

DHCP Enabled No

DHCP Server Not Available

DHCP Lease Expires Not Available

DHCP Lease Obtained Not Available

MAC Address Not Available

Driver c:\windows\system32\drivers\rasl2tp.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447),
132.00 KB (135,168 bytes), 3/25/2005 6:00 AM)

Name [00000003] WAN Miniport (PPTP)

Adapter Type Wide Area Network (WAN)

APPENDIX C - TUNABLE PARAMETERS

Product Type WAN Miniport (PPTP)
Installed Yes
PNP Device ID ROOT\MS_PPTPMINIPORT\0000
Last Reset 5/27/2008 11:50 AM
Index 3
Service Name PptpMiniport
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 50:50:54:50:30:30
Driver c:\windows\system32\drivers\raspppt.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 117.50 KB (120,320 bytes), 3/25/2005 6:00 AM)

Name [00000004] WAN Miniport (PPPOE)
Adapter Type Wide Area Network (WAN)
Product Type WAN Miniport (PPPOE)
Installed Yes
PNP Device ID ROOT\MS_PPPOEMINIPORT\0000
Last Reset 5/27/2008 11:50 AM
Index 4
Service Name RasPppoe
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 33:50:6F:45:30:30
Driver c:\windows\system32\drivers\raspppoe.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 67.50 KB (69,120 bytes), 3/25/2005 6:00 AM)

Name [00000005] Direct Parallel
Adapter Type Not Available
Product Type Direct Parallel
Installed Yes
PNP Device ID ROOT\MS_PTMINIPORT\0000
Last Reset 5/27/2008 11:50 AM
Index 5
Service Name Raspti
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available
Driver c:\windows\system32\drivers\raspti.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 30.50 KB (31,232 bytes), 3/25/2005 6:00 AM)

APPENDIX C - TUNABLE PARAMETERS

Name [00000006] WAN Miniport (IP)
Adapter Type Not Available
Product Type WAN Miniport (IP)
Installed Yes
PNP Device ID ROOT\MS_NDISWANIP\0000
Last Reset 5/27/2008 11:50 AM
Index 6
Service Name NdisWan
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available
Driver c:\windows\system32\drivers\ndiswan.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 157.50 KB (161,280 bytes), 3/25/2005 6:00 AM)

Name [00000007] Broadcom NetXtreme Gigabit Ethernet
Adapter Type Ethernet 802.3
Product Type Broadcom NetXtreme Gigabit Ethernet
Installed Yes
PNP Device ID
PCI\VEN_14E4&DEV_1677&SUBSYS_01B91028&REV_21\4&187919FE&0&00E0
Last Reset 5/27/2008 11:50 AM
Index 7
Service Name b57nd
IP Address 192.1.1.110
IP Subnet 255.255.255.0
Default IP Gateway 192.1.1.200
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:1E:4F:B0:3B:AB
Memory Address 0xFDDF0000-0xFDDFFFFF
IRQ Channel IRQ 16
Driver c:\windows\system32\drivers\b57amd64.sys (8.48.0.0 built by: WinDDK, 233.50 KB (239,104 bytes), 3/5/2008 7:16 PM)

Name [00000009] Intel(R) PRO/1000 PT Quad Port Server Adapter
Adapter Type Not Available
Product Type Intel(R) PRO/1000 PT Quad Port Server Adapter
Installed Yes
PNP Device ID
PCI\VEN_8086&DEV_10A4&SUBSYS_10A48086&REV_06\6&1A840AB9&0&01000018
Last Reset 5/27/2008 11:50 AM
Index 9
Service Name e1express
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\e1e5132e.sys (9.6.31.0 built by: WinDDK, 369.40 KB
(378,264 bytes), 11/1/2006 12:39 PM)

Name [00000010] Intel(R) PRO/1000 PT Quad Port Server Adapter
Adapter Type Ethernet 802.3
Product Type Intel(R) PRO/1000 PT Quad Port Server Adapter
Installed Yes
PNP Device ID
PCI\VEN_8086&DEV_10A4&SUBSYS_10A48086&REV_06\6&BF71098&0&00080018
Last Reset 5/27/2008 11:50 AM
Index 10
Service Name e1express
IP Address 192.1.4.110
IP Subnet 255.255.255.0
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:15:17:15:B8:9E
Memory Address 0xFD7E0000-0xFD7FFFFF
Memory Address 0xFD7C0000-0xFD7DFFFF
I/O Port 0x0000DCE0-0x0000DCFF
IRQ Channel IRQ 17
Driver c:\windows\system32\drivers\e1e5132e.sys (9.6.31.0 built by: WinDDK, 369.40 KB
(378,264 bytes), 11/1/2006 12:39 PM)

Name [00000011] Intel(R) PRO/1000 PT Quad Port Server Adapter
Adapter Type Not Available
Product Type Intel(R) PRO/1000 PT Quad Port Server Adapter
Installed Yes
PNP Device ID
PCI\VEN_8086&DEV_10A4&SUBSYS_10A48086&REV_06\6&BF71098&0&01080018
Last Reset 5/27/2008 11:50 AM
Index 11
Service Name e1express
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\e1e5132e.sys (9.6.31.0 built by: WinDDK, 369.40 KB
(378,264 bytes), 11/1/2006 12:39 PM)

Name [00000012] Intel(R) PRO/1000 PT Quad Port Server Adapter
Adapter Type Ethernet 802.3
Product Type Intel(R) PRO/1000 PT Quad Port Server Adapter
Installed Yes

APPENDIX C - TUNABLE PARAMETERS

PNP Device ID

PCIIVEN_8086&DEV_10A4&SUBSYS_10A48086&REV_06\6&1A840AB9&0&00000018
Last Reset 5/27/2008 11:50 AM
Index 12
Service Name e1express
IP Address 192.1.2.110
IP Subnet 255.255.255.0
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address 00:15:17:15:B8:9C
Memory Address 0xFD9E0000-0xFD9FFFFF
Memory Address 0xFD9C0000-0xFD9DFFFF
I/O Port 0x0000ECE0-0x0000ECFF
IRQ Channel IRQ 16
Driver c:\windows\system32\drivers\e1e5132e.sys (9.6.31.0 built by: WinDDK, 369.40 KB
(378,264 bytes), 11/1/2006 12:39 PM)

[Protocol]

Item Value

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

APPENDIX C - TUNABLE PARAMETERS

Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting Yes

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

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

[WinSock]

Item Value
File c:\windows\system32\wssock32.dll
Size 24.50 KB (25,088 bytes)
Version 5.2.3790.1830 (srv03_sp1_rtm.050324-1447)

[Ports]

[Serial]

Item Value
Name Communications Port (COM1)

APPENDIX C - TUNABLE PARAMETERS

Status OK
PNP Device ID ACPI\PNP0501\1
Maximum Input Buffer Size 0
Maximum Output Buffer Size No
Settable Baud Rate Yes
Settable Data Bits Yes
Settable Flow Control Yes
Settable Parity Yes
Settable Parity Check Yes
Settable Stop Bits Yes
Settable RLSD Yes
Supports RLSD Yes
Supports 16 Bit Mode No
Supports Special Characters No
Baud Rate 9600
Bits/Byte 8
Stop Bits 1
Parity None
Busy No
Abort Read/Write on Error No
Binary Mode Enabled Yes
Continue XMit on XOff No
CTS Outflow Control No
Discard NULL Bytes No
DSR Outflow Control 0
DSR Sensitivity 0
DTR Flow Control Type Enable
EOF Character 0
Error Replace Character 0
Error Replacement Enabled No
Event Character 0
Parity Check Enabled No
RTS Flow Control Type Enable
XOff Character 19
XOffXMit Threshold 512
XOn Character 17
XOnXMit Threshold 2048
XOnXOff InFlow Control 0
XOnXOff OutFlow Control 0
I/O Port 0x000003F8-0x000003FF
IRQ Channel IRQ 4
Driver c:\windows\system32\drivers\serial.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447),
118.50 KB (121,344 bytes), 3/25/2005 6:00 AM)

[Parallel]

Item Value
Name LPT1
PNP Device ID ACPI\PNP0401\4&2AA4AD3D&0
I/O Port 0x00000378-0x0000037F
I/O Port 0x00000778-0x0000077F
Driver c:\windows\system32\drivers\parport.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447),
131.00 KB (134,144 bytes), 3/24/2005 11:22 AM)

[Storage]

[Drives]

Item Value
Drive C:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 74.50 GB (79,990,812,672 bytes)
Free Space 59.48 GB (63,866,130,432 bytes)
Volume Name
Volume Serial Number 30C3F4E2

Drive D:
Description CD-ROM Disc

[Disks]

Item Value
Description Disk drive
Manufacturer (Standard disk drives)
Model WDC WD800AAJS-18TDA1
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 1
SCSI Target ID 0
Sectors/Track 63
Size 74.50 GB (79,999,073,280 bytes)
Total Cylinders 9,726
Total Sectors 156,248,190
Total Tracks 2,480,130
Tracks/Cylinder 255
Partition Disk #0, Partition #0
Partition Size 74.50 GB (79,990,815,744 bytes)
Partition Starting Offset 32,256 bytes

[SCSI]

Item Value

[IDE]

Item Value
Name Standard Dual Channel PCI IDE Controller
Manufacturer (Standard IDE ATA/ATAPI controllers)
Status OK
PNP Device ID PCI\VEN_8086&DEV_269E&SUBSYS_01B91028&REV_09\3&61AAA01&0&F9
I/O Port 0x0000FC00-0x0000FC0F

APPENDIX C - TUNABLE PARAMETERS

Driver c:\windows\system32\drivers\pciide.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 6.00 KB (6,144 bytes), 3/25/2005 6:00 AM)

Name Primary IDE Channel
Manufacturer (Standard IDE ATA/ATAPI controllers)
Status OK
PNP Device ID PCIIDE\IDECHANNEL\4&18B1FEB&0&0
I/O Port 0x000001F0-0x000001F7
I/O Port 0x000003F6-0x000003F6
IRQ Channel IRQ 14

Driver c:\windows\system32\drivers\atapi.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 145.00 KB (148,480 bytes), 3/25/2005 6:00 AM)

Name Secondary IDE Channel
Manufacturer (Standard IDE ATA/ATAPI controllers)
Status OK
PNP Device ID PCIIDE\IDECHANNEL\4&18B1FEB&0&1
I/O Port 0x00000170-0x00000177
I/O Port 0x00000376-0x00000376

Driver c:\windows\system32\drivers\atapi.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 145.00 KB (148,480 bytes), 3/25/2005 6:00 AM)

Name Standard Dual Channel PCI IDE Controller
Manufacturer (Standard IDE ATA/ATAPI controllers)
Status OK
PNP Device ID PCI\VEN_8086&DEV_2680&SUBSYS_01B91028&REV_09\3&61AAA01&0&FA
I/O Port 0x0000BC78-0x0000BC7F
I/O Port 0x0000BC70-0x0000BC73
I/O Port 0x0000BC60-0x0000BC67
I/O Port 0x0000BC58-0x0000BC5B
I/O Port 0x0000BC40-0x0000BC4F
Memory Address 0xFDF00000-0xFDF003FF
IRQ Channel IRQ 23
Driver c:\windows\system32\drivers\pciide.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 6.00 KB (6,144 bytes), 3/25/2005 6:00 AM)

Name Primary IDE Channel
Manufacturer (Standard IDE ATA/ATAPI controllers)
Status OK
PNP Device ID PCIIDE\IDECHANNEL\4&36B719D8&0&0
Driver c:\windows\system32\drivers\atapi.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 145.00 KB (148,480 bytes), 3/25/2005 6:00 AM)

Name Secondary IDE Channel
Manufacturer (Standard IDE ATA/ATAPI controllers)
Status OK
PNP Device ID PCIIDE\IDECHANNEL\4&36B719D8&0&1
Driver c:\windows\system32\drivers\atapi.sys (5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 145.00 KB (148,480 bytes), 3/25/2005 6:00 AM)

[Printing]

Name	Driver	Port Name	Server Name
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[Problem Devices]

Device PNP Device ID Error Code

Intel(R) PRO/1000 PT Quad Port Server Adapter #2

PCI\VEN_8086&DEV_10A4&SUBSYS_10A48086&REV_06\6&1A840AB9&0&01000018

This device is disabled.

Intel(R) PRO/1000 PT Quad Port Server Adapter #4

PCI\VEN_8086&DEV_10A4&SUBSYS_10A48086&REV_06\6&BF71098&0&01080018

This device is disabled.

[USB]

Device PNP Device ID

Standard Universal PCI to USB Host Controller

PCI\VEN_8086&DEV_2688&SUBSYS_01B91028&REV_09\3&61AAA01&0&E8

Standard Universal PCI to USB Host Controller

PCI\VEN_8086&DEV_2689&SUBSYS_01B91028&REV_09\3&61AAA01&0&E9

Standard Universal PCI to USB Host Controller

PCI\VEN_8086&DEV_268A&SUBSYS_01B91028&REV_09\3&61AAA01&0&EA

Standard Universal PCI to USB Host Controller

PCI\VEN_8086&DEV_268B&SUBSYS_01B91028&REV_09\3&61AAA01&0&EB

Standard Enhanced PCI to USB Host Controller

PCI\VEN_8086&DEV_268C&SUBSYS_01B91028&REV_09\3&61AAA01&0&EF

[Software Environment]

[System Drivers]

Name	Description	File	Type	Started	Start Mode	State	Status	Error Control
	Accept Pause	Accept Stop						
abiosdsk	Abiosdsk	Not Available	Kernel Driver	No	Disabled			
	Stopped	OK	Ignore	No	No			
acpi	Microsoft ACPI Driver	c:\windows\system32\drivers\acpi.sys	Kernel Driver	Yes				
	Boot Running	OK	Normal	No	Yes			
acpiec	ACPIEC	c:\windows\system32\drivers\acpiec.sys	Kernel Driver	No				
	Disabled	Stopped	OK	Normal	No	No		
adpu160m	adpu160m	Not Available	Kernel Driver	No	Disabled			
	Stopped	OK	Normal	No	No			
adpu320	adpu320	Not Available	Kernel Driver	No	Disabled			
	Stopped	OK	Normal	No	No			
afd	AFD	c:\windows\system32\drivers\afd.sys	Kernel Driver	Yes				
	Running	OK	Normal	No	Yes			
aic78u2	aic78u2	Not Available	Kernel Driver	No	Disabled		Stopped	OK
	Normal	No	No					
aic78xx	aic78xx	Not Available	Kernel Driver	No	Disabled		Stopped	OK
	Normal	No	No					
aliide	Aliide	Not Available	Kernel Driver	No	Disabled		Stopped	OK
	Normal	No	No					
amdide	AmdIde	Not Available	Kernel Driver	No	Disabled		Stopped	OK
	Normal	No	No					
arc	arc	Not Available	Kernel Driver	No	Disabled		Stopped	OK
	Normal	No	No					

APPENDIX C - TUNABLE PARAMETERS

asynmac	RAS Asynchronous Media Driver								
	c:\windows\system32\drivers\asynmac.sys				Kernel Driver	No	Manual		
	Stopped	OK	Normal	No	No				
atapi	Standard IDE/ESDI Hard Disk Controller				c:\windows\system32\drivers\atapi.sys	Kernel			
Driver	Yes	Boot	Running	OK	Normal	No	Yes		
atdisk	Atdisk	Not Available		Kernel Driver	No	Disabled		Stopped	OK
	Ignore	No	No						
atmarpc	ATM ARP Client Protocol				c:\windows\system32\drivers\atmarpc.sys				
	Kernel Driver	No	Manual	Stopped	OK	Normal	No	No	
audstub	Audio Stub Driver			c:\windows\system32\drivers\audstub.sys				Kernel Driver	
	Yes	Manual	Running	OK	Normal	No	Yes		
b57nd	Broadcom NetXtreme Gigabit Ethernet				c:\windows\system32\drivers\b57amd64.sys				
	Kernel Driver	Yes	Manual	Running	OK	Normal	No	Yes	
beep	Beep	c:\windows\system32\drivers\beep.sys			Kernel Driver	Yes	System		
	Running	OK	Normal	No	Yes				
blfp	Broadcom Advanced Server Program Driver								
	c:\windows\system32\drivers\basamd64.sys				Kernel Driver	No	Manual		
	Stopped	OK	Normal	No	No				
cdac15ba	CdaC15BA		c:\windows\system32\drivers\cdac15ba.sys			Kernel Driver			
	Yes	Auto	Running	OK	Normal	No	Yes		
cdad10ba	CdaD10BA		c:\windows\system32\drivers\cdad10ba.sys			Kernel Driver			
	Yes	Auto	Running	OK	Normal	No	Yes		
cdfs	Cdfs	c:\windows\system32\drivers\cdfs.sys			File System Driver		Yes		
	Disabled	Running		OK	Normal	No	Yes		
cdrom	CD-ROM Driver		c:\windows\system32\drivers\cdrom.sys			Kernel Driver	Yes	System	
	Running	OK	Normal	No	Yes				
changer	Changer		Not Available		Kernel Driver	No	System Stopped		
	OK	Ignore	No	No					
clusdisk	Cluster Disk Driver		c:\windows\system32\drivers\clusdisk.sys			Kernel Driver			
	No	Disabled	Stopped		OK	Normal	No	No	
cmdide	CmdIde	Not Available		Kernel Driver	No	Disabled		Stopped	OK
	Normal	No	No						
cpqcissm	cpqcissm		Not Available		Kernel Driver	No	Disabled		
	Stopped	OK	Normal	No	No				
crcdisk	CRC Disk Filter Driver		c:\windows\system32\drivers\crcdisk.sys			Kernel Driver	Yes		
	Boot	Running	OK	Normal	No	Yes			
dfsdriver	DfsDriver		c:\windows\system32\drivers\dfs.sys			File System Driver			
	Yes	Boot	Running	OK	Normal	No	Yes		
disk	Disk Driver		c:\windows\system32\drivers\disk.sys			Kernel Driver	Yes	Boot	
	Running	OK	Normal	No	Yes				
dmboot	dmboot	c:\windows\system32\drivers\dmboot.sys			Kernel Driver	No			
	Disabled	Stopped		OK	Normal	No	No		
dmio	Logical Disk Manager Driver			c:\windows\system32\drivers\dmio.sys			Kernel Driver		
	Yes	Boot	Running	OK	Normal	No	Yes		
dmload	dmload	c:\windows\system32\drivers\dmload.sys			Kernel Driver	Yes	Boot		
	Running	OK	Normal	No	Yes				
dpti2o	dpti2o	Not Available		Kernel Driver	No	Disabled		Stopped	OK
	Normal	No	No						
e1express	Intel(R) PRO/1000 PCI Express Network Connection Driver								
	c:\windows\system32\drivers\le1e5132e.sys				Kernel Driver	Yes	Manual		
	Running	OK	Normal	No	Yes				
elxstor	elxstor	Not Available		Kernel Driver	No	Disabled		Stopped	OK
	Normal	No	No						
fastfat	Fastfat	c:\windows\system32\drivers\fastfat.sys			File System Driver		No		
	Disabled	Stopped		OK	Normal	No	No		

APPENDIX C - TUNABLE PARAMETERS

fdc	Floppy Disk Controller Driver	c:\windows\system32\drivers\fdc.sys	Kernel Driver						
	Yes	Manual Running	OK	Normal	No	Yes			
fips	Fips	c:\windows\system32\drivers\fips.sys	Kernel Driver	Yes	System				
	Running	OK	Normal	No	Yes				
flpydisk	Flpydisk	c:\windows\system32\drivers\flpydisk.sys	Kernel Driver	No					
	System Stopped	OK	Ignore	No	No				
fltmgr	FltMgr	c:\windows\system32\drivers\fltmgr.sys	File System Driver	Yes	Boot				
	Running	OK	Normal	No	Yes				
ftdisk	Volume Manager Driver	c:\windows\system32\drivers\ftdisk.sys	Kernel Driver	Yes					
	Boot Running	OK	Normal	No	Yes				
gpc	Generic Packet Classifier	c:\windows\system32\drivers\msgpc.sys	Kernel Driver						
	Yes	Manual Running	OK	Normal	No	Yes			
hidusb	Microsoft HID Class Driver	c:\windows\system32\drivers\hidusb.sys	Kernel Driver						
	Yes	Manual Running	OK	Ignore	No	Yes			
hpciss	hpciss	Not Available	Kernel Driver	No	Disabled	Stopped	OK		
	Normal	No	No						
http	HTTP	c:\windows\system32\drivers\http.sys	Kernel Driver	Yes	Manual				
	Running	OK	Normal	No	Yes				
i2omgmt	i2omgmt	Not Available	Kernel Driver	No	System Stopped				
	OK	Normal	No	No					
i8042prt	i8042prt	c:\windows\system32\drivers\i8042prt.sys	Kernel Driver						
	No	System Stopped	OK	Ignore	No	No			
iirsp	iirsp	Not Available	Kernel Driver	No	Disabled	Stopped	OK		
	Normal	No	No						
imapi	CD-Burning Filter Driver	c:\windows\system32\drivers\imapi.sys	Kernel Driver	No					
	System Stopped	OK	Normal	No	No				
intelide	IntelIde	Not Available	Kernel Driver	No	Disabled	Stopped	OK		
	Normal	No	No						
intelppm	Intel Processor Driver	c:\windows\system32\drivers\intelppm.sys	Kernel						
	Yes	Manual Running	OK	Normal	No	Yes			
ip6fw	IPv6 Windows Firewall Driver	c:\windows\system32\drivers\ip6fw.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			
ipinip	IP in IP Tunnel Driver	c:\windows\system32\drivers\ipinip.sys	Kernel Driver	No					
	Manual Stopped	OK	Normal	No	No				
ipnat	IP Network Address Translator	c:\windows\system32\drivers\ipnat.sys	Kernel Driver						
	No	Manual Stopped	OK	Normal	No	No			
ipsec	IPSEC driver	c:\windows\system32\drivers\ipsec.sys	Kernel Driver	Yes	System				
	Running	OK	Normal	No	Yes				
irenum	IR Enumerator Service	c:\windows\system32\drivers\irenum.sys	Kernel Driver	No					
	Manual Stopped	OK	Normal	No	No				
isapnp	PnP ISA/EISA Bus Driver	c:\windows\system32\drivers\isapnp.sys	Kernel Driver						
	Yes	Boot Running	OK	Critical	No	Yes			
kbdclass	Keyboard Class Driver	c:\windows\system32\drivers\kbdclass.sys	Kernel						
	Yes	System Running	OK	Normal	No	Yes			
kbdhid	Keyboard HID Driver	c:\windows\system32\drivers\kbdhid.sys	Kernel Driver	Yes					
	System Running	OK	Ignore	No	Yes				
ksecdd	KSecDD	c:\windows\system32\drivers\ksecdd.sys	Kernel Driver	Yes	Boot				
	Running	OK	Normal	No	Yes				
ksthunk	Kernel Streaming WOW64 Thunk Service	c:\windows\system32\drivers\ksthunk.sys	Kernel Driver	Yes	Manual				
	Running	OK	Normal	No	Yes				
lp6nds35	lp6nds35	Not Available	Kernel Driver	No	Disabled				
	Stopped	OK	Normal	No	No				

APPENDIX C - TUNABLE PARAMETERS

mnmd	mnmd	c:\windows\system32\drivers\mnmd.sys	Kernel Driver	Yes	System
	Running	OK	Ignore	No	Yes
modem	Modem	c:\windows\system32\drivers\modem.sys	Kernel Driver	No	Manual
	Stopped	OK	Ignore	No	No
mouclass	Mouse Class Driver	c:\windows\system32\drivers\mouclass.sys	Kernel		
Driver	Yes	System Running	OK	Normal	No
				Yes	
mouhid	Mouse HID Driver	c:\windows\system32\drivers\mouhid.sys	Kernel Driver		
	Yes	Manual Running	OK	Ignore	No
				Yes	
mountmgr	Mount Point Manager	c:\windows\system32\drivers\mountmgr.sys	Kernel		
Driver	Yes	Boot Running	OK	Normal	No
				Yes	
mraid35x	mraid35x	Not Available	Kernel Driver	No	Disabled
	Stopped	OK	Normal	No	No
mrxdav	WebDav Client Redirector	c:\windows\system32\drivers\mrxdav.sys	File		
System Driver	No	Manual Stopped	OK	Normal	No
mrxsm	MRXSMB	c:\windows\system32\drivers\mrxsm.sys	File System Driver		
	Yes	System Running	OK	Normal	No
				Yes	
msfs	Msfs	c:\windows\system32\drivers\msfs.sys	File System Driver	Yes	System
	Running	OK	Normal	No	Yes
mssmbios	Microsoft System Management BIOS Driver	c:\windows\system32\drivers\mssmbios.sys	Kernel Driver	Yes	Manual
	Running	OK	Normal	No	Yes
mup	Mup	c:\windows\system32\drivers\mup.sys	File System Driver	Yes	Boot
	Running	OK	Normal	No	Yes
ndis	NDIS System Driver	c:\windows\system32\drivers\ndis.sys	Kernel Driver	Yes	
	Boot Running	OK	Normal	No	Yes
ndistapi	Remote Access NDIS TAPI Driver	c:\windows\system32\drivers\ndistapi.sys			
	Kernel Driver	Yes	Manual Running	OK	Normal
				No	Yes
ndisuio	NDIS Usermode I/O Protocol	c:\windows\system32\drivers\ndisuio.sys	Kernel Driver		
	Yes	Manual Running	OK	Normal	No
				Yes	
ndiswan	Remote Access NDIS WAN Driver	c:\windows\system32\drivers\ndiswan.sys	Kernel Driver	Yes	Manual
	Running	OK	Normal	No	Yes
ndproxy	NDIS Proxy	c:\windows\system32\drivers\ndproxy.sys	Kernel Driver	Yes	
	Manual Running	OK	Normal	No	Yes
netbios	NetBIOS Interface	c:\windows\system32\drivers\netbios.sys	File System		
Driver	Yes	System Running	OK	Normal	No
				Yes	
netbt	NetBios over Tcpip	c:\windows\system32\drivers\netbt.sys	Kernel Driver	Yes	
	System Running	OK	Normal	No	Yes
nfrd960	nfrd960	Not Available	Kernel Driver	No	Disabled
	Normal	No			Stopped
					OK
npfs	Npfs	c:\windows\system32\drivers\npfs.sys	File System Driver	Yes	System
	Running	OK	Normal	No	Yes
ntfs	Ntfs	c:\windows\system32\drivers\ntfs.sys	File System Driver	Yes	
	Disabled	Running	OK	Normal	No
				Yes	
null	Null	c:\windows\system32\drivers\null.sys	Kernel Driver	Yes	System
	Running	OK	Normal	No	Yes
parport	Parallel port driver	c:\windows\system32\drivers\parport.sys	Kernel Driver	Yes	
	Manual Running	OK	Normal	No	Yes
partmgr	Partition Manager	c:\windows\system32\drivers\partmgr.sys	Kernel Driver		
	Yes	Boot Running	OK	Normal	No
				Yes	
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	Normal	No	Yes

APPENDIX C - TUNABLE PARAMETERS

pcmcia	Pcmcia	c:\windows\system32\drivers\pcmcia.sys	Kernel Driver	No	Disabled		
	Stopped	OK	Normal	No	No		
pdcomp	PDCOMP	Not Available	Kernel Driver	No	Manual	Stopped	OK
	Ignore	No	No				
pdframe	PDFFRAME	Not Available	Kernel Driver	No	Manual	Stopped	
	OK	Ignore	No	No			
pdreli	PDRELI	Not Available	Kernel Driver	No	Manual	Stopped	OK
	Ignore	No	No				
pdrframe	PDRFRAME	Not Available	Kernel Driver	No	Manual	Stopped	
	OK	Ignore	No	No			
pptpminiport	WAN Miniport (PPTP)	c:\windows\system32\drivers\rasppptp.sys	Kernel Driver	Yes	Manual	Running	OK
Driver	Yes	Manual	Running	OK	Normal	No	Yes
ptilink	Direct Parallel Link Driver	c:\windows\system32\drivers\ptilink.sys	Kernel Driver	Yes	Manual	Running	OK
	Yes	Manual	Running	OK	Normal	No	Yes
ql2300	ql2300	Not Available	Kernel Driver	No	Disabled	Stopped	OK
	Normal	No	No				
rasacd	Remote Access Auto Connection Driver	c:\windows\system32\drivers\rasacd.sys	Kernel Driver	Yes	System	Running	OK
Driver	Yes	System	Running	OK	Normal	No	Yes
rasl2tp	WAN Miniport (L2TP)	c:\windows\system32\drivers\rasl2tp.sys	Kernel Driver	Yes	Manual	Running	OK
	Manual	Running	OK	Normal	No	Yes	
rasppoe	Remote Access PPPOE Driver	c:\windows\system32\drivers\rasppoe.sys	Kernel Driver	Yes	Manual	Running	OK
	Kernel Driver	Yes	Manual	Running	OK	Normal	No
raspti	Direct Parallel	c:\windows\system32\drivers\raspti.sys	Kernel Driver	Yes	Manual	Running	OK
	Running	OK	Normal	No	Yes		
rdcss	Rdbss	c:\windows\system32\drivers\rdbss.sys	File System Driver	Yes	System	Running	OK
	Running	OK	Normal	No	Yes		
rdpcdd	RDPCDD	c:\windows\system32\drivers\rdpcdd.sys	Kernel Driver	Yes	System	Running	OK
	Running	OK	Ignore	No	Yes		
rdpdr	Terminal Server Device Redirector Driver	c:\windows\system32\drivers\rdpdr.sys	Kernel Driver	Yes	Manual	Running	OK
	Kernel Driver	Yes	Manual	Running	OK	Normal	No
rdpwd	RDPWD	c:\windows\system32\drivers\rdpwd.sys	Kernel Driver	Yes	Manual	Running	OK
	Running	OK	Ignore	No	Yes		
redbook	Digital CD Audio Playback Filter Driver	c:\windows\system32\drivers\redbook.sys	Kernel Driver	Yes	System	Running	OK
	Running	OK	Normal	No	Yes		
secdrv	Security Driver	c:\windows\system32\drivers\secdrv.sys	Kernel Driver	Yes	Auto	Running	OK
	Running	OK	Normal	No	Yes		
serenum	Serenum Filter Driver	c:\windows\system32\drivers\serenum.sys	Kernel Driver	Yes	Manual	Running	OK
Driver	Yes	Manual	Running	OK	Normal	No	Yes
serial	Serial port driver	c:\windows\system32\drivers\serial.sys	Kernel Driver	Yes	System	Running	OK
	System	Running	OK	Ignore	No	Yes	
sfloppy	Sfloppy	c:\windows\system32\drivers\sfloppy.sys	Kernel Driver	No	System	Stopped	OK
	Stopped	OK	Ignore	No	No		
simbad	Simbad	Not Available	Kernel Driver	No	Disabled	Stopped	OK
	Normal	No	No				
srv	Srv	c:\windows\system32\drivers\srv.sys	File System Driver	Yes	Manual	Running	OK
	Running	OK	Normal	No	Yes		
swenum	Software Bus Driver	c:\windows\system32\drivers\swenum.sys	Kernel Driver	Yes	Manual	Running	OK
Driver	Yes	Manual	Running	OK	Normal	No	Yes
symc8xx	symc8xx	Not Available	Kernel Driver	No	Disabled	Stopped	OK
	Stopped	OK	Normal	No	No		
symmpi	symmpi	Not Available	Kernel Driver	No	Disabled	Stopped	OK
	Normal	No	No				
sym_hi	sym_hi	Not Available	Kernel Driver	No	Disabled	Stopped	OK
	Normal	No	No				

APPENDIX C - TUNABLE PARAMETERS

sym_u3	sym_u3	Not Available	Kernel Driver	No	Disabled	Stopped	OK
	Normal	No					
tcpip	TCP/IP Protocol Driver	c:\windows\system32\drivers\tcpip.sys	Kernel Driver	Yes			
	System Running	OK	Normal	No	Yes		
tdpipe	TDPIPE	c:\windows\system32\drivers\tdpipe.sys	Kernel Driver	No	Manual		
	Stopped	OK	Ignore	No	No		
tdtcp	TDTCP	c:\windows\system32\drivers\tdtcp.sys	Kernel Driver	Yes	Manual		
	Running	OK	Ignore	No	Yes		
termdd	Terminal Device Driver	c:\windows\system32\drivers\termdd.sys	Kernel Driver	Yes			
	System Running	OK	Normal	No	Yes		
toside	Toside	Not Available	Kernel Driver	No	Disabled	Stopped	OK
	Normal	No	No				
udfs	Udfs	c:\windows\system32\drivers\udfs.sys	File System Driver	No			
	Disabled	Stopped	OK	Normal	No	No	
ultra	ultra	Not Available	Kernel Driver	No	Disabled	Stopped	OK
	Normal	No	No				
update	Microcode Update Driver	c:\windows\system32\drivers\update.sys	Kernel Driver				
	Yes	Manual Running	OK	Normal	No	Yes	
usbccgp	Microsoft USB Generic Parent Driver	c:\windows\system32\drivers\usbccgp.sys	Kernel Driver	Yes	Manual		
	Running	OK	Normal	No	Yes		
usbehci	Microsoft USB 2.0 Enhanced Host Controller Miniport Driver	c:\windows\system32\drivers\usbehci.sys	Kernel Driver	Yes	Manual		
	Running	OK	Normal	No	Yes		
usbhub	USB2 Enabled Hub	c:\windows\system32\drivers\usbhub.sys	Kernel Driver				
	Yes	Manual Running	OK	Normal	No	Yes	
usbstor	USB Mass Storage Driver	c:\windows\system32\drivers\usbstor.sys	Kernel				
Driver	No	Manual Stopped	OK	Normal	No	No	
usbuhci	Microsoft USB Universal Host Controller Miniport Driver	c:\windows\system32\drivers\usbuhci.sys	Kernel Driver	Yes	Manual		
	Running	OK	Normal	No	Yes		
vga	vga	c:\windows\system32\drivers\vgapnp.sys	Kernel Driver	Yes	Manual		
	Running	OK	Ignore	No	Yes		
vgasave	VGA Display Controller.	c:\windows\system32\drivers\vga.sys	Kernel Driver				
	No	System Stopped	OK	Ignore	No	No	
viaide	Vialde	Not Available	Kernel Driver	No	Disabled	Stopped	OK
	Normal	No	No				
volsnap	Storage volumes	c:\windows\system32\drivers\volsnap.sys	Kernel Driver				
	Yes	Boot Running	OK	Normal	No	Yes	
wanarp	Remote Access IP ARP Driver	c:\windows\system32\drivers\wanarp.sys	Kernel				
Driver	Yes	Manual Running	OK	Normal	No	Yes	
wdica	WDICA	Not Available	Kernel Driver	No	Manual Stopped	OK	Ignore
	No	No					
wlbs	Network Load Balancing	c:\windows\system32\drivers\wlbs.sys	Kernel Driver				
	No	Manual Stopped	OK	Normal	No	No	

[Signed Drivers]

Device Name	Signed	Device Class	Driver Version	Driver Date	Manufacturer	INF
Name	Driver Name	Device ID				
Microsoft System Management BIOS Driver	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)	machine.inf
ROOT\SYSTEM\0002						
Microcode Update Device	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)	machine.inf
			Not Available			ROOT\SYSTEM\0001

APPENDIX C - TUNABLE PARAMETERS

Plug and Play Software Device Enumerator	Yes	SYSTEM	5.2.3790.1830	10/1/2002	machine.inf	Not Available	ROOT\SYSTEM\0000
10/1/2002 (Standard system devices)							
Terminal Server Mouse Driver	Yes	SYSTEM	5.2.3790.1830	10/1/2002	machine.inf	Not Available	ROOT\RDP_MOU\0000
(Standard system devices)							
Terminal Server Keyboard Driver	Yes	SYSTEM	5.2.3790.1830	10/1/2002	machine.inf	Not Available	ROOT\RDP_KBD\0000
(Standard system devices)							
Terminal Server Device Redirector	Yes	SYSTEM	5.2.3790.1830	10/1/2002	machine.inf	Not Available	ROOT\RDPDR\0000
(Standard system devices)							
Direct Parallel	Yes	NET	5.2.3790.1830	10/1/2002	Microsoft	netrasa.inf	ROOT\MS_PTMINIPORT\0000
Not Available							
WAN Miniport (PPTP)	Yes	NET	5.2.3790.1830	10/1/2002	Microsoft	netrasa.inf	ROOT\MS_PPTPMINIPORT\0000
netrasa.inf	Not Available						
WAN Miniport (PPPOE)	Yes	NET	5.2.3790.1830	10/1/2002	Microsoft	netrasa.inf	ROOT\MS_PPPOEMINIPORT\0000
netrasa.inf	Not Available						
WAN Miniport (IP)	Yes	NET	5.2.3790.1830	10/1/2002	Microsoft	netrasa.inf	ROOT\MS_NDISWANIP\0000
netrasa.inf	Not Available						
WAN Miniport (L2TP)	Yes	NET	5.2.3790.1830	10/1/2002	Microsoft	netrasa.inf	ROOT\MS_L2TPMINIPORT\0000
netrasa.inf	Not Available						
Video Codecs	Yes	MEDIA	5.2.3790.1830	10/1/2002	(Standard system devices)	wave.inf	ROOT\MEDIA\MS_MMVID
wave.inf	Not Available						
Legacy Video Capture Devices	Yes	MEDIA	5.2.3790.1830	10/1/2002	(Standard system devices)	wave.inf	ROOT\MEDIA\MS_MMVCD
wave.inf	Not Available						
Media Control Devices	Yes	MEDIA	5.2.3790.1830	10/1/2002	(Standard system devices)	wave.inf	ROOT\MEDIA\MS_MMMCI
wave.inf	Not Available						
Legacy Audio Drivers	Yes	MEDIA	5.2.3790.1830	10/1/2002	(Standard system devices)	wave.inf	ROOT\MEDIA\MS_MMDRV
wave.inf	Not Available						
Audio Codecs	Yes	MEDIA	5.2.3790.1830	10/1/2002	(Standard system devices)	wave.inf	ROOT\MEDIA\MS_MMACM
wave.inf	Not Available						
Remote Access IP ARP Driver	Not Available	LEGACYDRIVER			Not Available	Not Available	ROOT\LEGACY_WANARP\0000
Not Available	Not Available	Not Available	Not Available	Not Available			
volsnap	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available	Not Available	ROOT\LEGACY_VOLSNAP\0000
Not Available	Not Available						
TDTCP	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available	Not Available	ROOT\LEGACY_TDTCP\0000
Not Available	Not Available						
TCP/IP Protocol Driver	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available	Not Available	ROOT\LEGACY_TCPIP\0000
Not Available	Not Available						
Security Driver	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available	Not Available	ROOT\LEGACY_SECDRV\0000
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	
RDPWD	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available	Not Available	ROOT\LEGACY_RDPWD\0000
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	
RDPCDD	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available	Not Available	ROOT\LEGACY_RDPCDD\0000
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	
Remote Access Auto Connection Driver	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available	Not Available	ROOT\LEGACY_RASACD\0000
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	
Partition Manager	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available	Not Available	ROOT\LEGACY_PARTMGR\0000
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	
Null	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available	Not Available	ROOT\LEGACY_NULL\0000
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	
NetBios over Tcpip	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available	Not Available	ROOT\LEGACY_NETBT\0000
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	
NDProxy	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available	Not Available	ROOT\LEGACY_NDPROXY\0000
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	

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NDIS Usermode I/O Protocol	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Available	Not Available	Not Available	Not Available		
ROOT\LEGACY_NDISUIO\0000					
Remote Access NDIS TAPI Driver	Not Available	LEGACYDRIVER	Not Available		
Not Available	Not Available	Not Available	Not Available		
ROOT\LEGACY_NDISTAPI\0000					
NDIS System Driver	Not Available	LEGACYDRIVER	Not Available	Not Available	
Not Available	Not Available	Not Available	ROOT\LEGACY_NDIS\0000		
mountmgr	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Available	Not Available	Not Available	ROOT\LEGACY_MOUNTMGR\0000		
mnmdm	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Not Available	Not Available	ROOT\LEGACY_MNMDD\0000			
ksecdd	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Not Available	Not Available	ROOT\LEGACY_KSECDD\0000			
IPSEC driver	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	ROOT\LEGACY_IPSEC\0000		
IP Network Address Translator	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	ROOT\LEGACY_IPNAT\0000		
HTTP	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Not Available	Not Available	ROOT\LEGACY_HTTP\0000			
Generic Packet Classifier	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	ROOT\LEGACY_GPC\0000		
Fips	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Not Available	Not Available	ROOT\LEGACY_FIPS\0000			
dmload	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Not Available	Not Available	ROOT\LEGACY_DMLOAD\0000			
dmboot	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Not Available	Not Available	ROOT\LEGACY_DMBOOT\0000			
CRC Disk Filter Driver	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	ROOT\LEGACY_CRCDISK\0000		
CdaD10BA	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	ROOT\LEGACY_CDAD10BA\0000		
CdaC15BA	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	ROOT\LEGACY_CDAC15BA\0000		
Beep	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Not Available	Not Available	ROOT\LEGACY_BEEP\0000			
AFD	Not Available	LEGACYDRIVER	Not Available	Not Available	Not Available
Not Available	Not Available	ROOT\LEGACY_AFD\0000			
Generic volume	Yes	VOLUME	5.2.3790.1830	10/1/2002	Microsoft
volume.inf	Not Available				
STORAGE\VOLUME\1&30A96598&0&SIGNATURE80OFFSET7E00LENGTH129FD2FC00					
Volume Manager	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard
system devices)machine.inf	Not Available	ROOT\FTDISK\0000			
Logical Disk Manager	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard
system devices)machine.inf	Not Available	ROOT\DMIO\0000			
ACPI Fixed Feature Button	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available			
ACPI\FIXEDBUTTON\2&DABA3FF&0					
High precision event timer	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)	machine.inf	Not Available	ACPI\PNP0103\0		
Motherboard resources	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard
system devices)machine.inf	Not Available	ACPI\PNP0C02\0			

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Secondary IDE Channel	Yes	HDC	5.2.3790.1830	10/1/2002	(Standard IDE ATA/ATAPI controllers)
	mshdc.inf	Not Available			
	PCIIDE\IDECHANNEL\4&36B719D8&0&1				
Disk drive	Yes	DISKDRIVE	5.2.3790.1830	10/1/2002	(Standard disk drives)
	disk.inf	Not Available			
	IDE\DISKWDC_WD800AAJS-18TDA1				
	01.00A04\5&2A0CF612&0&0.0.0				
Primary IDE Channel	Yes	HDC	5.2.3790.1830	10/1/2002	(Standard IDE ATA/ATAPI controllers)
	mshdc.inf	Not Available			
	PCIIDE\IDECHANNEL\4&36B719D8&0&0				
Standard Dual Channel PCI IDE Controller	Yes	HDC	5.2.3790.1830	10/1/2002	(Standard IDE ATA/ATAPI controllers)
	mshdc.inf	Not Available			
	PCIIVEN_8086&DEV_2680&SUBSYS_01B91028&REV_09\3&61AAA01&0&FA				
Secondary IDE Channel	Yes	HDC	5.2.3790.1830	10/1/2002	(Standard IDE ATA/ATAPI controllers)
	mshdc.inf	Not Available			
	PCIIDE\IDECHANNEL\4&18B1FEB&0&1				
CD-ROM Drive	Yes	CDROM	5.2.3790.1830	10/1/2002	(Standard CD-ROM drives)
	cdrom.inf	Not Available			
	IDE\CDROMPBDS_CD-ROM_DH-48N1P				
	AD11				
	\5&1ADA0B61&0&0.0.0				
Primary IDE Channel	Yes	HDC	5.2.3790.1830	10/1/2002	(Standard IDE ATA/ATAPI controllers)
	mshdc.inf	Not Available			
	PCIIDE\IDECHANNEL\4&18B1FEB&0&0				
Standard Dual Channel PCI IDE Controller	Yes	HDC	5.2.3790.1830	10/1/2002	(Standard IDE ATA/ATAPI controllers)
	mshdc.inf	Not Available			
	PCIIVEN_8086&DEV_269E&SUBSYS_01B91028&REV_09\3&61AAA01&0&F9				
System board	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)
	machine.inf	Not Available			
	ACPI\PNP0C01\0				
Printer Port Logical Interface	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)
	machine.inf	Not Available			
	LPTENUM\MICROSOFT\RAWPORT\5&387F7EE5&0&LPT1				
ECP Printer Port	Yes	PORTS	5.2.3790.1830	10/1/2002	(Standard port types)
	msports.inf	Not Available			
	ACPI\PNP0401\4&2AA4AD3D&0				
Standard floppy disk controller	Yes	FDC	5.2.3790.1830	10/1/2002	(Standard floppy disk controllers)
	fdc.inf	Not Available			
	ACPI\PNP0700\4&2AA4AD3D&0				
Communications Port	Yes	PORTS	5.2.3790.1830	10/1/2002	(Standard port types)
	msports.inf	Not Available			
	ACPI\PNP0501\1				
System timer	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)
	machine.inf	Not Available			
	ACPI\PNP0100\4&2AA4AD3D&0				
System CMOS/real time clock	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)
	machine.inf	Not Available			
	ACPI\PNP0B00\4&2AA4AD3D&0				
System board	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)
	machine.inf	Not Available			
	ACPI\PNP0C01\2				
Programmable interrupt controller	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)
	machine.inf	Not Available			
	ACPI\PNP0000\4&2AA4AD3D&0				
Numeric data processor	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)
	machine.inf	Not Available			
	ACPI\PNP0C04\4&2AA4AD3D&0				
Direct memory access controller	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)
	machine.inf	Not Available			
	ACPI\PNP0200\4&2AA4AD3D&0				
PCI standard ISA bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)
	machine.inf	Not Available			
	PCIIVEN_8086&DEV_2670&SUBSYS_00000000&REV_09\3&61AAA01&0&F8				

APPENDIX C - TUNABLE PARAMETERS

Default Monitor types)	Yes	MONITOR	5.2.3790.1830	10/1/2002	(Standard monitor types)
monitor.inf		Not Available			
DISPLAY\DEFAULT_MONITOR\5&2A694D8A&0&12345678&0B&09					
Standard VGA Graphics Adapter	Yes	DISPLAY	5.2.3790.1830	10/1/2002	
(Standard display types)		display.inf			Not Available
PCI\VEN_1002&DEV_515E&SUBSYS_01B91028&REV_02\4&2014205D&0&48F0					
Intel(R) 82801 PCI Bridge - 244E	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
Intel machine.inf		Not Available			
PCI\VEN_8086&DEV_244E&SUBSYS_00000000&REV_D9\3&61AAA01&0&F0					
USB Root Hub	Yes	USB	5.2.3790.1830	10/1/2002	(Standard USB Host Controller)
usbport.inf		Not Available			USB\ROOT_HUB20\4&658A081&0
Standard Enhanced PCI to USB Host Controller	Yes	USB	5.2.3790.1830	10/1/2002	
(Standard USB Host Controller)		usbport.inf			Not Available
PCI\VEN_8086&DEV_268C&SUBSYS_01B91028&REV_09\3&61AAA01&0&EF					
USB Root Hub	Yes	USB	5.2.3790.1830	10/1/2002	(Standard USB Host Controller)
usbport.inf		Not Available			USB\ROOT_HUB\4&38F3D7&0
Standard Universal PCI to USB Host Controller	Yes	USB	5.2.3790.1830	10/1/2002	
(Standard USB Host Controller)		usbport.inf			Not Available
PCI\VEN_8086&DEV_268B&SUBSYS_01B91028&REV_09\3&61AAA01&0&EB					
USB Root Hub	Yes	USB	5.2.3790.1830	10/1/2002	(Standard USB Host Controller)
usbport.inf		Not Available			USB\ROOT_HUB\4&35CD017&0
Standard Universal PCI to USB Host Controller	Yes	USB	5.2.3790.1830	10/1/2002	
(Standard USB Host Controller)		usbport.inf			Not Available
PCI\VEN_8086&DEV_268A&SUBSYS_01B91028&REV_09\3&61AAA01&0&EA					
HID-compliant mouse	Yes	MOUSE	5.2.3790.1830	10/1/2002	Microsoft
msmouse.inf		Not Available			HID\VID_09AE&PID_0002&MI_01\7&FDD9F08&0&0000
USB Human Interface Device	Yes	HIDCLASS	5.2.3790.1830	10/1/2002	
(Standard system devices)		input.inf			Not Available
USB\VID_09AE&PID_0002&MI_01\6&8FA055B&0&0001					
HID Keyboard Device	Yes	KEYBOARD	5.2.3790.1830	10/1/2002	(Standard keyboards)
keyboard.inf		Not Available			
HID\VID_09AE&PID_0002&MI_00\7&38484CD1&0&0000					
USB Human Interface Device	Yes	HIDCLASS	5.2.3790.1830	10/1/2002	
(Standard system devices)		input.inf			Not Available
USB\VID_09AE&PID_0002&MI_00\6&8FA055B&0&0000					
USB Composite Device	Yes	USB	5.2.3790.1830	10/1/2002	(Standard USB Host Controller)
usb.inf		Not Available			
USB\VID_09AE&PID_0002\USB_COMPOSITE_DEVICE					
USB Root Hub	Yes	USB	5.2.3790.1830	10/1/2002	(Standard USB Host Controller)
usbport.inf		Not Available			USB\ROOT_HUB\4&11C31C8E&0
Standard Universal PCI to USB Host Controller	Yes	USB	5.2.3790.1830	10/1/2002	
(Standard USB Host Controller)		usbport.inf			Not Available
PCI\VEN_8086&DEV_2689&SUBSYS_01B91028&REV_09\3&61AAA01&0&E9					
USB Root Hub	Yes	USB	5.2.3790.1830	10/1/2002	(Standard USB Host Controller)
usbport.inf		Not Available			USB\ROOT_HUB\4&3848A91D&0
Standard Universal PCI to USB Host Controller	Yes	USB	5.2.3790.1830	10/1/2002	
(Standard USB Host Controller)		usbport.inf			Not Available
PCI\VEN_8086&DEV_2688&SUBSYS_01B91028&REV_09\3&61AAA01&0&E8					
Broadcom NetXtreme Gigabit Ethernet	Yes	NET	8.48.0.0	10/31/2005	
Broadcom oem0.inf		Not Available			
PCI\VEN_14E4&DEV_1677&SUBSYS_01B91028&REV_21\4&187919FE&0&00E0					
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002	
(Standard system devices)		machine.inf			Not Available
PCI\VEN_8086&DEV_2690&SUBSYS_00000000&REV_09\3&61AAA01&0&E0					

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PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002
(Standard system devices)		machine.inf	Not Available	
PCI\VEN_8086&DEV_25F6&SUBSYS_00000000&REV_92\3&61AAA01&0&B0				
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002
(Standard system devices)		machine.inf	Not Available	
PCI\VEN_8086&DEV_25F5&SUBSYS_00000000&REV_92\3&61AAA01&0&A8				
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002
(Standard system devices)		machine.inf	Not Available	
PCI\VEN_8086&DEV_25F3&SUBSYS_00000000&REV_92\3&61AAA01&0&98				
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002
(Standard system devices)		machine.inf	Not Available	
PCI\VEN_8086&DEV_25F1&SUBSYS_00000000&REV_92\3&61AAA01&0&88				
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002
(Standard system devices)		machine.inf	Not Available	
PCI\VEN_8086&DEV_25F0&SUBSYS_00000000&REV_92\3&61AAA01&0&82				
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002
(Standard system devices)		machine.inf	Not Available	
PCI\VEN_8086&DEV_25F0&SUBSYS_00000000&REV_92\3&61AAA01&0&81				
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002
(Standard system devices)		machine.inf	Not Available	
PCI\VEN_8086&DEV_25F0&SUBSYS_00000000&REV_92\3&61AAA01&0&80				
Intel(R) PRO/1000 PT Quad Port Server Adapter	Yes	NET	9.6.31.0	
10/31/2006 Intel oem6.inf		Not Available		
PCI\VEN_8086&DEV_10A4&SUBSYS_10A48086&REV_06\6&BF71098&0&01080018				
Intel(R) PRO/1000 PT Quad Port Server Adapter	Yes	NET	9.6.31.0	
10/31/2006 Intel oem6.inf		Not Available		
PCI\VEN_8086&DEV_10A4&SUBSYS_10A48086&REV_06\6&BF71098&0&00080018				
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002
(Standard system devices)		machine.inf	Not Available	
PCI\VEN_111D&DEV_8018&SUBSYS_00000000&REV_04\5&E457461&0&080018				
Intel(R) PRO/1000 PT Quad Port Server Adapter	Yes	NET	9.6.31.0	
10/31/2006 Intel oem6.inf		Not Available		
PCI\VEN_8086&DEV_10A4&SUBSYS_10A48086&REV_06\6&1A840AB9&0&01000018				
Intel(R) PRO/1000 PT Quad Port Server Adapter	Yes	NET	9.6.31.0	
10/31/2006 Intel oem6.inf		Not Available		
PCI\VEN_8086&DEV_10A4&SUBSYS_10A48086&REV_06\6&1A840AB9&0&00000018				
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002
(Standard system devices)		machine.inf	Not Available	
PCI\VEN_111D&DEV_8018&SUBSYS_00000000&REV_04\5&E457461&0&000018				
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002
(Standard system devices)		machine.inf	Not Available	
PCI\VEN_111D&DEV_8018&SUBSYS_00000000&REV_04\4&3382D5D3&0&0018				
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002
(Standard system devices)		machine.inf	Not Available	
PCI\VEN_8086&DEV_25E3&SUBSYS_00000000&REV_92\3&61AAA01&0&18				
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002
(Standard system devices)		machine.inf	Not Available	
PCI\VEN_8086&DEV_350C&SUBSYS_00000000&REV_01\4&A27001&0&0310				
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002
(Standard system devices)		machine.inf	Not Available	
PCI\VEN_8086&DEV_3514&SUBSYS_00000000&REV_01\5&1E0A8BA7&0&080010				
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002
(Standard system devices)		machine.inf	Not Available	
PCI\VEN_8086&DEV_3510&SUBSYS_00000000&REV_01\5&1E0A8BA7&0&000010				

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PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002		
(Standard system devices)		machine.inf	Not Available			
PCI\VEN_8086&DEV_3500&SUBSYS_00000000&REV_01\4&A27001&0&0010						
PCI standard PCI-to-PCI bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002		
(Standard system devices)		machine.inf	Not Available			
PCI\VEN_8086&DEV_25E2&SUBSYS_00000000&REV_92\3&61AAA01&0&10						
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.1830	10/1/2002		
(Standard system devices)		machine.inf	Not Available			
PCI\VEN_8086&DEV_25D4&SUBSYS_00000000&REV_92\3&61AAA01&0&00						
PCI bus	Yes	SYSTEM	5.2.3790.1830	10/1/2002	(Standard system devices)	
machine.inf		Not Available	ACPI\PNP0A03\2&DABA3FF&0			
Intel Processor	Yes	PROCESSOR	5.2.3790.1830	10/1/2002	Intel	cpu.inf Not
Available		ACPI\GENUINEINTEL_ -_EM64T_FAMILY_6_MODEL_15_7				
Intel Processor	Yes	PROCESSOR	5.2.3790.1830	10/1/2002	Intel	cpu.inf Not
Available		ACPI\GENUINEINTEL_ -_EM64T_FAMILY_6_MODEL_15_6				
Intel Processor	Yes	PROCESSOR	5.2.3790.1830	10/1/2002	Intel	cpu.inf Not
Available		ACPI\GENUINEINTEL_ -_EM64T_FAMILY_6_MODEL_15_5				
Intel Processor	Yes	PROCESSOR	5.2.3790.1830	10/1/2002	Intel	cpu.inf Not
Available		ACPI\GENUINEINTEL_ -_EM64T_FAMILY_6_MODEL_15_4				
Intel Processor	Yes	PROCESSOR	5.2.3790.1830	10/1/2002	Intel	cpu.inf Not
Available		ACPI\GENUINEINTEL_ -_EM64T_FAMILY_6_MODEL_15_3				
Intel Processor	Yes	PROCESSOR	5.2.3790.1830	10/1/2002	Intel	cpu.inf Not
Available		ACPI\GENUINEINTEL_ -_EM64T_FAMILY_6_MODEL_15_2				
Intel Processor	Yes	PROCESSOR	5.2.3790.1830	10/1/2002	Intel	cpu.inf Not
Available		ACPI\GENUINEINTEL_ -_EM64T_FAMILY_6_MODEL_15_1				
Intel Processor	Yes	PROCESSOR	5.2.3790.1830	10/1/2002	Intel	cpu.inf Not
Available		ACPI\GENUINEINTEL_ -_EM64T_FAMILY_6_MODEL_15_0				
Microsoft ACPI-Compliant System	Yes	SYSTEM	5.2.3790.1830	10/1/2002		
Microsoft		acpi.inf	Not Available	ACPI_HAL\PNP0C08\0		
ACPI Multiprocessor x64-based PC	Yes	COMPUTER	5.2.3790.1830	10/1/2002		
(Standard computers)		hal.inf	Not Available	ROOT\ACPI_HAL\0000		
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	HTREE\ROOT\0			

[Environment Variables]

Variable	Value	User Name
ClusterLog	C:\WINDOWS\Cluster\cluster.log	<SYSTEM>
ComSpec	%SystemRoot%\system32\cmd.exe	<SYSTEM>
FP_NO_HOST_CHECKNO	<SYSTEM>	
LD_LIBRARY_PATH	%ORACLE_HOME%\oci\lib\msvc;%ORACLE_HOME%\LIB	
	<SYSTEM>	
LOCAL TPCC2	<SYSTEM>	
NUMBER_OF_PROCESSORS	8	<SYSTEM>
ORACLE_HOME	c:\app\Administrator\product\11.1.0\client_1	<SYSTEM>
OS	Windows_NT	<SYSTEM>
Path	%ORACLE_HOME%\BIN;C:\app\Administrator\product\11.1.0\client_1\bin;c:\mksnt;%SystemRoot%\system32;%SystemRoot%;%SystemRoot%\System32\Wbem;C:\Program Files\Intel\DMIX	
	<SYSTEM>	
PATHEXT	.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH	<SYSTEM>
PROCESSOR_ARCHITECTURE	AMD64	<SYSTEM>
PROCESSOR_IDENTIFIER	EM64T Family 6 Model 15 Stepping 11, GenuineIntel	
	<SYSTEM>	
PROCESSOR_LEVEL	6	<SYSTEM>

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PROCESSOR_REVISION    0f0b    <SYSTEM>
TEMP %SystemRoot%\TEMP <SYSTEM>
TMP  %SystemRoot%\TEMP <SYSTEM>
VS90COMNTOOLS        C:\Program Files (x86)\Microsoft Visual Studio 9.0\Common7\Tools\
    <SYSTEM>
windir %SystemRoot%    <SYSTEM>
TEMP %USERPROFILE%\Local Settings\Temp    NT AUTHORITY\SYSTEM
TMP  %USERPROFILE%\Local Settings\Temp    NT AUTHORITY\SYSTEM
TEMP %USERPROFILE%\Local Settings\Temp    NT AUTHORITY\LOCAL SERVICE
TMP  %USERPROFILE%\Local Settings\Temp    NT AUTHORITY\LOCAL SERVICE
TEMP %USERPROFILE%\Local Settings\Temp    NT AUTHORITY\NETWORK SERVICE
TMP  %USERPROFILE%\Local Settings\Temp    NT AUTHORITY\NETWORK SERVICE
TEMP %USERPROFILE%\Local Settings\Temp    PE1430\Administrator
TMP  %USERPROFILE%\Local Settings\Temp    PE1430\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
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[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
system	Not Available	4	8	0	1413120	Not Available	Not Available	Not Available	Not Available
smss.exe	Not Available	588	11	204800	1413120	5/27/2008 11:51 AM	Not Available	Not Available	Not Available
csrss.exe	Not Available	740	13	Not Available	Not Available	5/27/2008 11:51 AM	Not Available	Not Available	Not Available
winlogon.exe	c:\windows\system32\winlogon.exe	964	13	204800	1413120	5/27/2008 11:51 AM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	901.00 KB	(922,624 bytes) 3/25/2005 6:00 AM
services.exe	c:\windows\system32\services.exe	192	9	204800	1413120	5/27/2008 11:51 AM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	216.50 KB	(221,696 bytes) 3/25/2005 6:00 AM
lsass.exe	c:\windows\system32\lsass.exe	188	9	204800	1413120	5/27/2008 11:51 AM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	14.00 KB	(14,336 bytes) 3/25/2005 6:00 AM
svchost.exe	c:\windows\system32\svchost.exe	420	8	204800	1413120	5/27/2008 11:51 AM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	24.50 KB	(25,088 bytes) 3/25/2005 6:00 AM
svchost.exe	Not Available	640	8	Not Available	Not Available	5/27/2008 11:51 AM	Not Available	Not Available	Not Available
svchost.exe	Not Available	772	8	Not Available	Not Available	5/27/2008 11:51 AM	Not Available	Not Available	Not Available
svchost.exe	Not Available	912	8	Not Available	Not Available	5/27/2008 11:51 AM	Not Available	Not Available	Not Available

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svchost.exe	c:\windows\system32\svchost.exe	936	8	204800	1413120	
5/27/2008 11:51 AM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	24.50 KB				
(25,088 bytes)	3/25/2005 6:00 AM					
msdtc.exe	Not Available	1808	8	Not Available	Not Available	5/27/2008
11:51 AM	Not Available	Not Available	Not Available			
svchost.exe	c:\windows\system32\svchost.exe	1980	8	204800	1413120	
5/27/2008 11:51 AM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	24.50 KB				
(25,088 bytes)	3/25/2005 6:00 AM					
svchost.exe	Not Available	580	8	Not Available	Not Available	5/27/2008
11:51 AM	Not Available	Not Available	Not Available			
svchost.exe	c:\windows\system32\svchost.exe	1752	8	204800	1413120	
5/27/2008 11:51 AM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	24.50 KB				
(25,088 bytes)	3/25/2005 6:00 AM					
wmiprvse.exe	Not Available	1172	8	Not Available	Not Available	5/27/2008
11:52 AM	Not Available	Not Available	Not Available			
csrss.exe	Not Available	1608	13	Not Available	Not Available	5/27/2008
12:13 PM	Not Available	Not Available	Not Available			
winlogon.exe	c:\windows\system32\winlogon.exe	1512	13	204800	1413120	
5/27/2008 12:13 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	901.00 KB				
(922,624 bytes)	3/25/2005 6:00 AM					
rdpclip.exe	c:\windows\system32\rdpclip.exe	1880	8	204800	1413120	
5/27/2008 12:13 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	99.00 KB				
(101,376 bytes)	3/5/2008 3:37 PM					
explorer.exe	c:\windows\explorer.exe	980	8	204800	1413120	5/27/2008
12:13 PM	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	1.30 MB (1,364,480 bytes)				
3/25/2005 6:00 AM						
bacstray.exe	c:\program files\broadcom\bacs\bacstray.exe	556	8	204800		
1413120	5/27/2008 12:13 PM	8, 3, 11, 0		105.00 KB (107,520 bytes)		
4/5/2006 12:42 AM						
svchost.exe	c:\windows\system32\svchost.exe	2120	8	204800	1413120	
5/27/2008 12:13 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	24.50 KB				
(25,088 bytes)	3/25/2005 6:00 AM					
mmc.exe	c:\windows\system32\mmc.exe	2404	8	204800	1413120	
5/27/2008 12:13 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.83 MB				
(1,920,512 bytes)	3/25/2005 6:00 AM					
explorer.exe	c:\windows\explorer.exe	2388	8	204800	1413120	5/27/2008
12:15 PM	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	1.30 MB (1,364,480 bytes)				
3/25/2005 6:00 AM						
bacstray.exe	c:\program files\broadcom\bacs\bacstray.exe	2488	8	204800		
1413120	5/27/2008 12:15 PM	8, 3, 11, 0		105.00 KB (107,520 bytes)		
4/5/2006 12:42 AM						
cmd.exe	c:\windows\system32\cmd.exe	3376	8	204800	1413120	
5/27/2008 1:50 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	538.50 KB				
(551,424 bytes)	3/25/2005 6:00 AM					
bash.exe	c:\cygwin\bin\bash.exe	716	8	204800	1413120	5/27/2008 1:50
PM	Not Available	459.50 KB (470,528 bytes)		3/6/2008 3:51 PM		
bash.exe	c:\cygwin\bin\bash.exe	3804	8	204800	1413120	5/27/2008 1:50
PM	Not Available	459.50 KB (470,528 bytes)		3/6/2008 3:51 PM		
csrss.exe	Not Available	2924	13	Not Available	Not Available	5/27/2008 4:41
PM	Not Available	Not Available	Not Available			
winlogon.exe	c:\windows\system32\winlogon.exe	1396	13	204800	1413120	
5/27/2008 4:41 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	901.00 KB				
(922,624 bytes)	3/25/2005 6:00 AM					

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rdpclip.exe	c:\windows\system32\rdpclip.exe	1504	8	204800	1413120	5/27/2008 4:42 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	99.00 KB
(101,376 bytes) 3/5/2008 3:37 PM								
tsadmin.exe	c:\windows\system32\tsadmin.exe	3724	8	204800	1413120	5/27/2008 4:48 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	423.00 KB
(433,152 bytes) 3/5/2008 3:37 PM								
logon.scr	Not Available	2892	4	Not Available	Not Available	5/27/2008 4:52 PM	Not Available	Not Available
inetinfo.exe	c:\windows\system32\inetinfo.exe	2704	8	204800	1413120	5/27/2008 8:52 PM	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	17.50 KB (17,920 bytes) 3/6/2008 4:24 PM
svchost.exe	c:\windows\system32\svchost.exe	608	8	204800	1413120	5/27/2008 8:52 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	24.50 KB
(25,088 bytes) 3/25/2005 6:00 AM								
scrnsave.scr	c:\windows\system32\scrnsave.scr	1124	4	204800	1413120	5/28/2008 2:01 AM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	11.00 KB
(11,264 bytes) 3/25/2005 6:00 AM								
helpctr.exe	c:\windows\pchealth\helpctr\binaries\helpctr.exe	3492	8	204800	1413120	5/28/2008 1:40 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.30 MB (1,363,456 bytes) 3/5/2008 3:40 PM
helpsvc.exe	c:\windows\pchealth\helpctr\binaries\helpsvc.exe	2344	8	204800	1413120	5/28/2008 1:40 PM	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.52 MB (1,591,296 bytes) 3/5/2008 3:40 PM
wmiprvse.exe	Not Available	3028	8	Not Available	Not Available	5/28/2008 1:40 PM	Not Available	Not Available

[Loaded Modules]

Name	Version	Size	File Date	Manufacturer	Path
winlogon	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	901.00 KB (922,624 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\winlogon.exe
ntdll	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.20 MB (1,257,472 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\ntdll.dll
kernel32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.43 MB (1,500,160 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\kernel32.dll
advapi32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.00 MB (1,051,136 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\advapi32.dll
rpcrt4	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.63 MB (1,714,176 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\rpcrt4.dll
crypt32	5.131.3790.1830 (srv03_sp1_rtm.050324-1447)	1.36 MB (1,428,992 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\crypt32.dll
msasn1	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	152.50 KB (156,160 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msasn1.dll
msvcrt	7.0.3790.1830 (srv03_sp1_rtm.050324-1447)	508.00 KB (520,192 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msvcrt.dll
user32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.04 MB (1,085,952 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\user32.dll
gdi32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	592.00 KB (606,208 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\gdi32.dll
nddeapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	25.00 KB (25,600 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\nddeapi.dll
profmap	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	36.00 KB (36,864 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\profmap.dll
netapi32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	589.00 KB (603,136 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\netapi32.dll

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userenv	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.02 MB (1,069,056 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\userenv.dll
psapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	29.00 KB (29,696 bytes)
AM	Microsoft Corporation	c:\windows\system32\psapi.dll
regapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	108.50 KB (111,104 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\regapi.dll
secur32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	120.00 KB (122,880 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\secur32.dll
setupapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.45 MB (1,523,200 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\setupapi.dll
version	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	28.00 KB (28,672 bytes)
AM	Microsoft Corporation	c:\windows\system32\version.dll
winsta	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	89.00 KB (91,136 bytes)
AM	Microsoft Corporation	c:\windows\system32\winsta.dll
ws2_32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	176.50 KB (180,736 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\ws2_32.dll
ws2help	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	30.50 KB (31,232 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\ws2help.dll
msgina	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.14 MB (1,193,472 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\msgina.dll
shsvcs	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	193.50 KB (198,144 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\shsvcs.dll
shlwapi	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	606.50 KB (621,056 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\shlwapi.dll
sfc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	6.00 KB (6,144 bytes)
AM	Microsoft Corporation	c:\windows\system32\sfc.dll
sfc_os	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	183.50 KB (187,904 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\sfc_os.dll
wintrust	5.131.3790.1830 (srv03_sp1_rtm.050324-1447)	297.50 KB (304,640 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\wintrust.dll
imagehlp	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	57.50 KB (58,880 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\imagehlp.dll
ole32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	2.43 MB (2,543,616 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\ole32.dll
comctl32	6.0 (srv03_sp1_rtm.050324-1447)	1.51 MB (1,584,128 bytes)
	3/5/2008 7:19 AM Microsoft Corporation	c:\windows\winsxs\amd64_microsoft.windows.common-
controls_6595b64144ccf1df_6.0.3790.1830_x-ww_aced72af\comctl32.dll		
winscard	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	230.00 KB (235,520 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\winscard.dll
wtsapi32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	29.00 KB (29,696 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\wtsapi32.dll
sxs	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.91 MB (2,003,968 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\sxs.dll
winmm	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	303.50 KB (310,784 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\winmm.dll
shell32	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	10.01 MB (10,492,416 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\shell32.dll
rsaenh	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	241.96 KB (247,768 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\rsaenh.dll
wldap32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	390.00 KB (399,360 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\wldap32.dll
cscdll	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	151.50 KB (155,136 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\cscdll.dll

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dimsntfy	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	28.00 KB (28,672 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\dimsntfy.dll
wlnotify	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	148.00 KB (151,552 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\wlnotify.dll
mpr	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	115.00 KB (117,760 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\mpr.dll
oleaut32	5.2.3790.1830	1.06 MB (1,116,160 bytes) 3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\oleaut32.dll
winspool	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	247.00 KB (252,928 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\winspool.drv
comctl32	5.82 (srv03_sp1_rtm.050324-1447)	934.50 KB (956,928 bytes)
	3/5/2008 7:19 AM Microsoft Corporation	c:\windows\winsxs\amd64_microsoft.windows.common-
controls_6595b64144ccf1df_5.82.3790.1830_x-ww_4d792d2a\comctl32.dll		
uxtheme	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	494.50 KB (506,368 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\uxtheme.dll
samlib	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	69.00 KB (70,656 bytes)3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\samlib.dll
clbcatq	2001.12.4720.1830 (srv03_sp1_rtm.050324-1447)	865.00 KB (885,760 bytes)
	3/5/2008 3:37 PM Microsoft Corporation	c:\windows\system32\clbcatq.dll
comres	2001.12.4720.1830 (srv03_sp1_rtm.050324-1447)	779.50 KB (798,208 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\comres.dll
xpsp2res	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	2.77 MB (2,899,456 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\xpsp2res.dll
cscui	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	441.00 KB (451,584 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\cscui.dll
ntmarta	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	222.50 KB (227,840 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\ntmarta.dll
wbemprox	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	38.00 KB (38,912 bytes)
	3/5/2008 3:37 PM Microsoft Corporation	c:\windows\system32\wbem\wbemprox.dll
wbemcomn	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	524.00 KB (536,576 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\wbem\wbemcomn.dll
wbemsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	58.00 KB (59,392 bytes)
	3/5/2008 3:37 PM Microsoft Corporation	c:\windows\system32\wbem\wbemsvc.dll
fastprox	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	866.50 KB (887,296 bytes)
	3/5/2008 3:37 PM Microsoft Corporation	c:\windows\system32\wbem\fastprox.dll
msvcp60	7.0.3790.1830 (srv03_sp1_rtm.050324-1447)	919.50 KB (941,568 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\msvcp60.dll
ntdsapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	127.50 KB (130,560 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\ntdsapi.dll
dnsapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	297.50 KB (304,640 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\dnsapi.dll
scredir	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	38.50 KB (39,424 bytes)3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\scredir.dll
rdpsnd	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	25.00 KB (25,600 bytes)3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\rdpsnd.dll
drprov	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	24.00 KB (24,576 bytes)3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\drprov.dll
ntlanman	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	71.50 KB (73,216 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\ntlanman.dll
netui0	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	130.00 KB (133,120 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\netui0.dll

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netui1	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	338.50 KB (346,624 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\netui1.dll
davclnt	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	38.00 KB (38,912 bytes)
AM	Microsoft Corporation	c:\windows\system32\davclnt.dll
services	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	216.50 KB (221,696 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\services.exe
ncobjapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	80.00 KB (81,920 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\ncobjapi.dll
scesrv	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	594.50 KB (608,768 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\scesrv.dll
authz	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	167.00 KB (171,008 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\authz.dll
umpnpgmgr	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	205.00 KB (209,920 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\umpnpgmgr.dll
eventlog	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	127.00 KB (130,048 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\eventlog.dll
lsass	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	14.00 KB (14,336 bytes)
AM	Microsoft Corporation	c:\windows\system32\lsass.exe
lsasrv	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.50 MB (1,568,256 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\lsasrv.dll
samsrv	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.01 MB (1,059,328 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\samsrv.dll
cryptdll	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	47.00 KB (48,128 bytes)
AM	Microsoft Corporation	c:\windows\system32\cryptdll.dll
msprivs	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	47.50 KB (48,640 bytes)
AM	Microsoft Corporation	c:\windows\system32\msprivs.dll
kerberos	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	698.00 KB (714,752 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\kerberos.dll
msv1_0	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	253.00 KB (259,072 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\msv1_0.dll
iphlpapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	177.00 KB (181,248 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\iphlpapi.dll
netlogon	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	666.00 KB (681,984 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\netlogon.dll
w32time	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	400.50 KB (410,112 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\w32time.dll
schannel	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	248.00 KB (253,952 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\schannel.dll
wdigest	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	130.50 KB (133,632 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\wdigest.dll
rassfm	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	36.00 KB (36,864 bytes)
AM	Microsoft Corporation	c:\windows\system32\rassfm.dll
kdcsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	409.00 KB (418,816 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\kdcsvc.dll
ntdsa	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	2.81 MB (2,948,096 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\ntdsa.dll
esent	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	2.26 MB (2,366,976 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\esent.dll
ntdsatq	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	51.00 KB (52,224 bytes)
AM	Microsoft Corporation	c:\windows\system32\ntdsatq.dll
mswsock	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	478.00 KB (489,472 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\mswsock.dll
scecli	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	308.00 KB (315,392 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\scecli.dll

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ws03res	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	794.00 KB (813,056 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\ws03res.dll
hnetsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	561.00 KB (574,464 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\hnetsvc.dll
wshtcpip	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	29.00 KB (29,696 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\wshtcpip.dll
ipsecsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	358.50 KB (367,104 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\ipsecsvc.dll
oakley	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	372.50 KB (381,440 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\oakley.dll
winipsec	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	52.50 KB (53,760 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\winipsec.dll
psstorsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	36.00 KB (36,864 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\psstorsvc.dll
psbase	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	124.00 KB (126,976 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\psbase.dll
dssenh	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	226.96 KB (232,408 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\dssenh.dll
wlbsctrl	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	137.50 KB (140,800 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\wlbsctrl.dll
w3ssl	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	21.00 KB (21,504 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\w3ssl.dll	
strmfilt	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	131.50 KB (134,656 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\strmfilt.dll
httpapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	36.50 KB (37,376 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\httpapi.dll	
svchost	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	24.50 KB (25,088 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\svchost.exe	
rpcss	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	672.00 KB (688,128 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\rpcss.dll
wzcsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	492.00 KB (503,808 bytes)	
	3/24/2005 11:35 AM	Microsoft Corporation	c:\windows\system32\wzcsvc.dll
rtutils	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	66.00 KB (67,584 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\rtutils.dll	
wmi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	5.50 KB (5,632 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\wmi.dll	
dhcpcsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	219.00 KB (224,256 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\dhcpcsvc.dll
atl	3.05.2284	96.50 KB (98,816 bytes)	3/25/2005 6:00 AM
		Microsoft Corporation	c:\windows\system32\atl.dll
rastls	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	236.50 KB (242,176 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\rastls.dll
cryptui	5.131.3790.1830 (srv03_sp1_rtm.050324-1447)	705.50 KB (722,432 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\cryptui.dll
mprapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	154.50 KB (158,208 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\mprapi.dll
activeds	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	348.50 KB (356,864 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\activeds.dll
adslidpc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	240.50 KB (246,272 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\adslidpc.dll
credui	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	202.00 KB (206,848 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\credui.dll
rasapi32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	410.00 KB (419,840 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\rasapi32.dll

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rasman	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	95.50 KB (97,792 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\rasman.dll
tapi32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	332.50 KB (340,480 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\tapi32.dll
raschap	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	141.00 KB (144,384 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\raschap.dll
schedsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	308.50 KB (315,904 bytes)	3/5/2008 3:39 PM	Microsoft Corporation	c:\windows\system32\schedsvc.dll
msidle	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	9.00 KB (9,216 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msidle.dll
audiosrv	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	77.00 KB (78,848 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\audiosrv.dll
wiarpc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	57.00 KB (58,368 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\wiarpc.dll
wkssvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	221.00 KB (226,304 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\wkssvc.dll
aelupsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	31.50 KB (32,256 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\aelupsvc.dll
apphelp	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	241.00 KB (246,784 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\apphelp.dll
cryptsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	114.00 KB (116,736 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\cryptsvc.dll
certcli	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	372.00 KB (380,928 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\certcli.dll
vssapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.26 MB (1,320,960 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\vssapi.dll
dmserver	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	36.50 KB (37,376 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\dmserver.dll
es	2001.12.4720.1830 (srv03_sp1_rtm.050324-1447)	357.00 KB (365,568 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\es.dll
pchsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	76.00 KB (77,824 bytes)	3/5/2008 3:40 PM	Microsoft Corporation	c:\windows\pchealth\helpctr\binaries\pchsvc.dll
hidserv	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	24.00 KB (24,576 bytes)	3/5/2008 7:23 AM	Microsoft Corporation	c:\windows\system32\hidserv.dll
hid	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	33.00 KB (33,792 bytes)	3/24/2005 11:18 AM	Microsoft Corporation	c:\windows\system32\hid.dll
srvsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	156.50 KB (160,256 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\srvsvc.dll
seclogon	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	27.50 KB (28,160 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\seclogon.dll
sens	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	63.50 KB (65,024 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\sens.dll
comsvcs	2001.12.4720.1830 (srv03_sp1_rtm.050324-1447)	2.06 MB (2,156,544 bytes)	3/5/2008 3:37 PM	Microsoft Corporation	c:\windows\system32\comsvcs.dll
trkwks	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	177.50 KB (181,760 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\trkwks.dll
wmisvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	227.00 KB (232,448 bytes)	3/5/2008 3:37 PM	Microsoft Corporation	c:\windows\system32\wbem\wmisvc.dll
wuauserv	5.7.3790.1830 (srv03_sp1_rtm.050324-1447)	12.00 KB (12,288 bytes)	3/5/2008 3:40 PM	Microsoft Corporation	c:\windows\system32\wuauserv.dll
wuaueng	5.7.3790.1830 (srv03_sp1_rtm.050324-1447)	2.17 MB (2,270,720 bytes)	3/5/2008 3:40 PM	Microsoft Corporation	c:\windows\system32\wuaueng.dll
advpack	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	146.00 KB (149,504 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\advpack.dll

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cabinet	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	138.50 KB (141,824 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\cabinet.dll
mspatcha	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	48.00 KB (49,152 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\mspachta.dll
shfolder	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	34.00 KB (34,816 bytes)
AM	Microsoft Corporation	c:\windows\system32\shfolder.dll
winhttp	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	508.50 KB (520,704 bytes)
	3/5/2008 7:19 AM Microsoft Corporation	c:\windows\winsxs\amd64_microsoft.windows.winhttp_6595b64144ccf1df_5.1.3790.1830_x-ww_a61ef4db\winhttp.dll
browser	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	125.50 KB (128,512 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\browser.dll
winrnr	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	30.00 KB (30,720 bytes)
AM	Microsoft Corporation	c:\windows\system32\winrnr.dll
rasadhlp	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	12.00 KB (12,288 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\rasadhlp.dll
wbemcore	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.24 MB (1,299,968 bytes)
	3/5/2008 3:37 PM Microsoft Corporation	c:\windows\system32\wbem\wbemcore.dll
esscli	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	626.50 KB (641,536 bytes)
	3/5/2008 3:37 PM Microsoft Corporation	c:\windows\system32\wbem\esscli.dll
wmiutils	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	171.00 KB (175,104 bytes)
	3/5/2008 3:37 PM Microsoft Corporation	c:\windows\system32\wbem\wmiutils.dll
repdrvfs	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	353.50 KB (361,984 bytes)
	3/5/2008 3:37 PM Microsoft Corporation	c:\windows\system32\wbem\repdrvfs.dll
wmiprvsd	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	743.00 KB (760,832 bytes)
	3/5/2008 3:37 PM Microsoft Corporation	c:\windows\system32\wbem\wmiprvsd.dll
wbemess	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	532.50 KB (545,280 bytes)
	3/5/2008 3:37 PM Microsoft Corporation	c:\windows\system32\wbem\wbemess.dll
ncprov	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	73.00 KB (74,752 bytes)
PM	Microsoft Corporation	c:\windows\system32\wbem\ncprov.dll
xactsrv	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	134.50 KB (137,728 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\xactsrv.dll
netrap	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	26.00 KB (26,624 bytes)
AM	Microsoft Corporation	c:\windows\system32\netrap.dll
ntlsapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	11.00 KB (11,264 bytes)
AM	Microsoft Corporation	c:\windows\system32\ntlsapi.dll
netman	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	457.00 KB (467,968 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\netman.dll
netshell	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	2.32 MB (2,437,120 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\netshell.dll
clusapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	127.00 KB (130,048 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\clusapi.dll
wininet	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	1.13 MB (1,186,304 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\wininet.dll
wzcsapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	49.00 KB (50,176 bytes)
11:35 AM	Microsoft Corporation	c:\windows\system32\wzcsapi.dll
netcfgx	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.29 MB (1,354,240 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\netcfgx.dll
rasmans	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	279.50 KB (286,208 bytes)
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\rasmans.dll
rastapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	83.50 KB (85,504 bytes)
AM	Microsoft Corporation	c:\windows\system32\rastapi.dll

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rasppp	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	297.00 KB (304,128 bytes)	
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\rasppp.dll	
ipbootp	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	47.50 KB (48,640 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\ipbootp.dll	
rasdlg	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	859.50 KB (880,128 bytes)	
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\rasdlg.dll	
ersvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	31.00 KB (31,744 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\ersvc.dll	
termsrv	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	354.50 KB (363,008 bytes)	
	3/5/2008 3:37 PM Microsoft Corporation	c:\windows\system32\termsrv.dll	
icaapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	27.50 KB (28,160 bytes)	3/5/2008 3:37 PM
	Microsoft Corporation	c:\windows\system32\icaapi.dll	
mstlsapi	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	187.00 KB (191,488 bytes)	
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\mstlsapi.dll	
rdpwsx	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	170.13 KB (174,216 bytes)	
	3/5/2008 3:37 PM Microsoft Corporation	c:\windows\system32\rdpwsx.dll	
msacm32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	31.00 KB (31,744 bytes)	
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\msacm32.drv	
msacm32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	112.00 KB (114,688 bytes)	
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\msacm32.dll	
imaadp32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	24.00 KB (24,576 bytes)	
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\imaadp32.acm	
msadp32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	23.50 KB (24,064 bytes)	
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\msadp32.acm	
msg7115	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	13.50 KB (13,824 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\msg711.acm	
msgsm32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	34.50 KB (35,328 bytes)	
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\msgsm32.acm	
tssoft32	1.01 13.50 KB (13,824 bytes)	3/25/2005 6:00 AM	DSP GROUP, INC.
	c:\windows\system32\tssoft32.acm		
tsd32	1.03 24.50 KB (25,088 bytes)	3/25/2005 6:00 AM	DSP GROUP, INC.
	c:\windows\system32\tsd32.dll		
rdpclip	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	99.00 KB (101,376 bytes)	
	3/5/2008 3:37 PM Microsoft Corporation	c:\windows\system32\rdpclip.exe	
wsock32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	24.50 KB (25,088 bytes)	
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\wsock32.dll	
urlmon	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	1.02 MB (1,074,176 bytes)	
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\urlmon.dll	
explorer	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	1.30 MB (1,364,480 bytes)	
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\explorer.exe	
browseui	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	1.53 MB (1,601,536 bytes)	
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\browseui.dll	
shdocvw	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	2.30 MB (2,416,128 bytes)	
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\shdocvw.dll	
themeui6	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	530.50 KB (543,232 bytes)	
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\themeui.dll	
msimg32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	6.50 KB (6,656 bytes)	
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\msimg32.dll	
actxprxy	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	220.50 KB (225,792 bytes)	
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\actxprxy.dll	
linkinfo	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	30.00 KB (30,720 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\linkinfo.dll	
ntshrui	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	184.00 KB (188,416 bytes)	
	3/25/2005 6:00 AM Microsoft Corporation	c:\windows\system32\ntshrui.dll	

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msi	3.1.4000.1830	4.27 MB (4,476,416 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msi.dll
browsei	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	63.00 KB (64,512 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\browsei.dll
shdoclc	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	589.50 KB (603,648 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\shdoclc.dll
webcheck	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	439.00 KB (449,536 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\webcheck.dll
stobject	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	142.50 KB (145,920 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\stobject.dll
batmeter	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	41.50 KB (42,496 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\batmeter.dll
powrprof	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	32.50 KB (33,280 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\powrprof.dll
mlang	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	686.00 KB (702,464 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\mlang.dll
mstask	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	411.00 KB (420,864 bytes)	3/5/2008 3:39 PM	Microsoft Corporation	c:\windows\system32\mstask.dll
comdlg32	6.00.3790.1830 (srv03_sp1_rtm.050324-1447)	446.50 KB (457,216 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\comdlg32.dll
bacstray	8, 3, 11, 0	105.00 KB (107,520 bytes)	4/5/2006 12:42 AM	Broadcom Corporation	c:\program files\broadcom\bacs\bacstray.exe
mfc42	6.50.9146.0	1.40 MB (1,470,464 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\mfc42.dll
tapisrv	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	394.50 KB (403,968 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\tapisrv.dll
unimdm	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	302.50 KB (309,760 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\unimdm.tsp
uniplat	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	18.50 KB (18,944 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\uniplat.dll
kmddsp	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	56.50 KB (57,856 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\kmddsp.tsp
ndptsp	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	76.00 KB (77,824 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\ndptsp.tsp
ipconf	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	22.50 KB (23,040 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\ipconf.tsp
h323	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	424.00 KB (434,176 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\h323.tsp
hidphone	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	48.00 KB (49,152 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\hidphone.tsp
mmc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.83 MB (1,920,512 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\mmc.exe
mfc42u	6.50.9146.0	1.39 MB (1,462,272 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\mfc42u.dll
mmcbase	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	106.50 KB (109,056 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\mmcbase.dll
oleacc	4.2.5406.0 (srv03_sp1_rtm.050324-1447)	374.50 KB (383,488 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\oleacc.dll
mmcndmgr	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	2.23 MB (2,336,256 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\mmcndmgr.dll
msxml3	8.70.1104.0	2.04 MB (2,141,184 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msxml3.dll
filegmt	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	610.00 KB (624,640 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\filegmt.dll

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cfgmgr32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	18.00 KB (18,432 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\cfgmgr32.dll
snmpsnp	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	312.50 KB (320,000 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\snmpsnp.dll
servdeps	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	84.00 KB (86,016 bytes)	3/5/2008 3:37 PM	Microsoft Corporation	c:\windows\system32\servdeps.dll
mmfutil	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	19.50 KB (19,968 bytes)	3/5/2008 3:37 PM	Microsoft Corporation	c:\windows\system32\mmfutil.dll
mshtml	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	5.65 MB (5,928,448 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\mshtml.dll
msls31	3.10.349.0	357.00 KB (365,568 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msls31.dll
msimtf	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	380.50 KB (389,632 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msimtf.dll
msctf	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	617.50 KB (632,320 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\msctf.dll
jscript	5.6.0.8827	974.50 KB (997,888 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\jscript.dll
imm32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	208.00 KB (212,992 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\imm32.dll
mshtml	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	905.50 KB (927,232 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\mshtml.dll
zipfldr	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	449.50 KB (460,288 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\zipfldr.dll
sendmail	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	64.00 KB (65,536 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\sendmail.dll
mydocs	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	101.00 KB (103,424 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\mydocs.dll
cmd	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	538.50 KB (551,424 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\cmd.exe
bash	Not Available	459.50 KB (470,528 bytes)	3/6/2008 3:51 PM	Not Available	c:\cygwin\bin\bash.exe
wow64	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	245.00 KB (250,880 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\wow64.dll
wow64win	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	280.00 KB (286,720 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\wow64win.dll
wow64cpu	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	18.50 KB (18,944 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\wow64cpu.dll
tsadmin	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	423.00 KB (433,152 bytes)	3/5/2008 3:37 PM	Microsoft Corporation	c:\windows\system32\tsadmin.exe
util.dll	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	37.00 KB (37,888 bytes)	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\util.dll
rdpcfgex	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	7.00 KB (7,168 bytes)	3/5/2008 3:37 PM	Microsoft Corporation	c:\windows\system32\rdpcfgex.dll
inetinfo	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	17.50 KB (17,920 bytes)	3/6/2008 4:24 PM	Microsoft Corporation	c:\windows\system32\inetinfo.exe
iisutil	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	316.50 KB (324,096 bytes)	3/6/2008 4:24 PM	Microsoft Corporation	c:\windows\system32\inetrv\iisutil.dll
rpcref	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	4.50 KB (4,608 bytes)	3/6/2008 4:24 PM	Microsoft Corporation	c:\windows\system32\inetrv\rpcref.dll
iisrtl	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	225.00 KB (230,400 bytes)	3/6/2008 4:24 PM	Microsoft Corporation	c:\windows\system32\iisrtl.dll
iisadmin	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	30.00 KB (30,720 bytes)	3/6/2008 4:24 PM	Microsoft Corporation	c:\windows\system32\inetrv\iisadmin.dll

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coadmin	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	100.50 KB (102,912 bytes)	
	3/6/2008 4:24 PM	Microsoft Corporation	c:\windows\system32\inetsrv\coadmin.dll
admwprox	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	66.00 KB (67,584 bytes)	
	3/6/2008 4:24 PM	Microsoft Corporation	c:\windows\system32\admwprox.dll
iiscfg	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	1.24 MB (1,298,432 bytes)	
	3/6/2008 4:24 PM	Microsoft Corporation	c:\windows\system32\inetsrv\iiscfg.dll
metadata	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	342.00 KB (350,208 bytes)	
	3/6/2008 4:24 PM	Microsoft Corporation	c:\windows\system32\inetsrv\metadata.dll
svcxext	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	60.50 KB (61,952 bytes)	3/6/2008 4:24 PM
	Microsoft Corporation	c:\windows\system32\inetsrv\svcxext.dll	
security	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	6.00 KB (6,144 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\security.dll	
iismap	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	97.00 KB (99,328 bytes)	3/6/2008 4:24 PM
	Microsoft Corporation	c:\windows\system32\iismap.dll	
wamreg	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	78.50 KB (80,384 bytes)	3/6/2008 4:24 PM
	Microsoft Corporation	c:\windows\system32\inetsrv\wamreg.dll	
iisw3adm	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	305.00 KB (312,320 bytes)	
	3/6/2008 4:24 PM	Microsoft Corporation	c:\windows\system32\inetsrv\iisw3adm.dll
w3cache	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	27.50 KB (28,160 bytes)	
	3/6/2008 4:24 PM	Microsoft Corporation	c:\windows\system32\inetsrv\w3cache.dll
w3tp	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	16.00 KB (16,384 bytes)	3/6/2008 4:24 PM
	Microsoft Corporation	c:\windows\system32\inetsrv\w3tp.dll	
lonsint	6.0.3790.1830 (srv03_sp1_rtm.050324-1447)	17.50 KB (17,920 bytes)	3/6/2008 4:24 PM
	Microsoft Corporation	c:\windows\system32\inetsrv\lonsint.dll	
scrnsave	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	11.00 KB (11,264 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\scrnsave.scr
helpctr	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.30 MB (1,363,456 bytes)	
	3/5/2008 3:40 PM	Microsoft Corporation	c:\windows\pchealth\helpctr\binaries\helpctr.exe
hcappres	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	7.50 KB (7,680 bytes)	
	3/5/2008 3:40 PM	Microsoft Corporation	c:\windows\pchealth\helpctr\binaries\hcappres.dll
itss	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	208.00 KB (212,992 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\itss.dll
pchshell	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	155.00 KB (158,720 bytes)	
	3/5/2008 3:40 PM	Microsoft Corporation	c:\windows\pchealth\helpctr\binaries\pchshell.dll
vbscript	5.6.0.8827	646.50 KB (662,016 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\vbscript.dll	
msinfo	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	636.00 KB (651,264 bytes)	
	3/5/2008 3:40 PM	Microsoft Corporation	c:\windows\pchealth\helpctr\binaries\msinfo.dll
riched32	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	7.00 KB (7,168 bytes)	
	3/25/2005 6:00 AM	Microsoft Corporation	c:\windows\system32\riched32.dll
riched20	5.31.23.1224	1.10 MB (1,157,120 bytes)	3/25/2005 6:00 AM
	Microsoft Corporation	c:\windows\system32\riched20.dll	
helpsvc	5.2.3790.1830 (srv03_sp1_rtm.050324-1447)	1.52 MB (1,591,296 bytes)	
	3/5/2008 3:40 PM	Microsoft Corporation	c:\windows\pchealth\helpctr\binaries\helpsvc.exe

[Services]

APPENDIX C - TUNABLE PARAMETERS

Display Name	Name	State	Start Mode	Service Type	Path	Error Control	Start
Name	Tag ID						
Application Experience Lookup Service	AeLookupSvc	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0			
Alerter	Alerter	Stopped	Disabled	Share Process			
	c:\windows\system32\svchost.exe -k localservice	Normal	NT				
AUTHORITY\LocalService		0					
Application Layer Gateway Service	ALG	Stopped	Manual	Own Process			
	c:\windows\system32\alg.exe	Normal	NT	AUTHORITY\LocalService	0		
Application Management	AppMgmt	Stopped	Manual	Share Process			
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0			
ASP.NET State Service	aspnet_state	Stopped	Manual	Own Process			
	c:\windows\microsoft.net\framework64\v2.0.50727\aspnet_state.exe	Normal	NT				
AUTHORITY\NetworkService		0					
Windows Audio	AudioSrv	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0			
Background Intelligent Transfer Service	BITS	Stopped	Manual	Share Process			
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0			
Computer Browser	Browser	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0			
Indexing Service	CiSvc	Stopped	Disabled	Share Process			
	c:\windows\system32\cisvc.exe	Normal	LocalSystem	0			
ClipBook	ClipSrv	Stopped	Disabled	Own Process			
	c:\windows\system32\clipsrv.exe	Normal	LocalSystem	0			
.NET Runtime Optimization Service v2.0.50727_X86	clr_optimization_v2.0.50727_32	Stopped	Manual	Own Process			
	c:\windows\microsoft.net\framework\v2.0.50727\mscorsvw.exe	Ignore	LocalSystem				
	0						
.NET Runtime Optimization Service v2.0.50727_x64	clr_optimization_v2.0.50727_64	Stopped	Manual	Own Process			
	c:\windows\microsoft.net\framework64\v2.0.50727\mscorsvw.exe	Ignore	LocalSystem				
	0						
COM+ System Application	COMSysApp	Stopped	Manual	Own Process			
	c:\windows\system32\dlhhost.exe /processid:{02d4b3f1-fd88-11d1-960d-00805fc79235}	Normal	LocalSystem	0			
Cryptographic Services	CryptSvc	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0			
DCOM Server Process Launcher	DcomLaunch	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k dcomlaunch	Normal	LocalSystem	0			
Distributed File System	Dfs	Stopped	Manual	Own Process			
	c:\windows\system32\dfsrv.exe	Normal	LocalSystem	0			
DHCP Client	Dhcp	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k networkservice	Normal	NT				
AUTHORITY\NetworkService		0					
Logical Disk Manager Administrative Service	dmadmin	Stopped	Manual	Share			
Process	c:\windows\system32\dmadmin.exe /com	Normal	LocalSystem	0			
Logical Disk Manager	dmserver	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0			
DNS Client	Dnscache	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k networkservice	Normal	NT				
AUTHORITY\NetworkService		0					
Error Reporting Service	ERSvc	Running	Auto	Share Process			
	c:\windows\system32\svchost.exe -k winerr	Ignore	LocalSystem	0			

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Event Log	Eventlog	Running	Auto	Share Process		
	c:\windows\system32\services.exe		Normal	LocalSystem	0	
COM+ Event System	EventSystem	Running	Auto	Share Process		
	c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	
Windows Presentation Foundation Font Cache 3.0.0.0	FontCache3.0.0.0	Stopped				
	Manual Own Process					
	c:\windows\microsoft.net\framework64\v3.0\wpf\presentationfontcache.exe		Normal			
	NT AUTHORITY\LocalService	0				
Help and Support	helpsvc	Running	Auto	Share Process		
	c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	
HID Input Service	HidServ	Running	Auto	Share Process		
	c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	
HTTP SSL	HTTPFilter	Running	Manual	Share Process		
	c:\windows\system32\lsass.exe	Normal	LocalSystem	0		
IAS Jet Database Access	IASJet	Stopped	Manual	Share Process		
	c:\windows\syswow64\svchost.exe -k iasjet		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	
IMAPI CD-Burning COM Service	ImapiService	Stopped	Disabled	Own		
Process	c:\windows\system32\imapi.exe	Normal	LocalSystem	0		
Intersite Messaging	IsmServ	Stopped	Disabled	Own Process		
	c:\windows\system32\ismserv.exe		Normal	LocalSystem	0	
Kerberos Key Distribution Center	kdc	Stopped	Disabled	Share Process		
	c:\windows\system32\lsass.exe	Normal	LocalSystem	0		
Server	lanmanserver	Running	Auto	Share Process		
	c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	
Workstation	lanmanworkstation	Running	Auto	Share Process		
	c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	
License Logging	LicenseService	Stopped	Disabled	Own Process		
	c:\windows\system32\llssrv.exe	Normal	NT AUTHORITY\NetworkService	0		
TCP/IP NetBIOS Helper	LmHosts	Running	Auto	Share Process		
	c:\windows\system32\svchost.exe -k local service		Normal	NT		
AUTHORITY\LocalService	0					
Messenger	Messenger	Stopped	Disabled	Share Process		
	c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	
NetMeeting Remote Desktop Sharing	mnmsrvc	Stopped	Disabled	Own		
Process	c:\windows\system32\mnmsrvc.exe		Normal	LocalSystem	0	
Distributed Transaction Coordinator	MSDTC	Running	Auto	Own Process		
	c:\windows\system32\msdtc.exe	Normal	NT AUTHORITY\NetworkService	0		
Windows Installer	MSIServer	Stopped	Manual	Share Process		
	c:\windows\system32\msiexec.exe /v		Normal	LocalSystem	0	
Visual Studio 2008 Remote Debugger	msvsmon90	Stopped	Disabled	Own		
Process	"c:\program files\microsoft visual studio 9.0\common7\ide\remote debugger\x64\msvsmon.exe" /service msvsmon90		Ignore	LocalSystem	0	
Network DDE	NetDDE	Stopped	Disabled	Share Process		
	c:\windows\system32\netdde.exe		Normal	LocalSystem	0	
Network DDE DSDM	NetDDEdsdm	Stopped	Disabled	Share Process		
	c:\windows\system32\netdde.exe		Normal	LocalSystem	0	
Net Logon	Netlogon	Stopped	Manual	Share Process		
	c:\windows\system32\lsass.exe	Normal	LocalSystem	0		
Network Connections	Netman	Running	Manual	Share Process		
	c:\windows\system32\svchost.exe -k netsvcs		Normal	LocalSystem	0	

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Net.Tcp Port Sharing Service	NetTcpPortSharing	Stopped	Disabled	Share Process
"c:\windows\microsoft.net\framework64\v3.0\windows foundation\smshost.exe"	Normal NT AUTHORITY\LocalService	0		
Network Location Awareness (NLA)	Nla	Running	Manual	Share Process
c:\windows\system32\svchost.exe -k netsvcs	Normal LocalSystem	0		
File Replication NtFrs	Stopped	Manual Own Process		c:\windows\system32\ntfrs.exe
Ignore	LocalSystem	0		
NT LM Security Support Provider	NtLmSsp	Stopped	Manual	Share Process
c:\windows\system32\lsass.exe	Normal LocalSystem	0		
Removable Storage	NtmsSvc	Stopped	Manual	Share Process
c:\windows\system32\svchost.exe -k netsvcs	Normal LocalSystem	0		
Office Source Engine ose	Stopped	Manual Own Process		"c:\program files (x86)\common files\microsoft shared\source engine\ose.exe"
	Normal LocalSystem	0		
Plug and Play PlugPlay	Running	Auto	Share Process	
c:\windows\system32\services.exe	Normal LocalSystem	0		
IPSEC ServicesPolicyAgent	Running	Auto	Share Process	
c:\windows\system32\lsass.exe	Normal LocalSystem	0		
Protected Storage	ProtectedStorage	Running	Auto	Share Process
c:\windows\system32\lsass.exe	Normal LocalSystem	0		
Remote Access Auto Connection Manager	RasAuto	Stopped	Manual	Share Process
c:\windows\system32\svchost.exe -k netsvcs	Normal LocalSystem	0		
Remote Access Connection Manager	RasMan	Running	Manual	Share Process
c:\windows\system32\svchost.exe -k netsvcs	Normal LocalSystem	0		
Remote Desktop Help Session Manager RDSessMgr	Stopped	Manual Own Process		
c:\windows\system32\sessmgr.exe	Normal LocalSystem	0		
Routing and Remote Access	RemoteAccess	Stopped	Disabled	Share Process
c:\windows\system32\svchost.exe -k netsvcs	Normal LocalSystem	0		
Remote Registry	RemoteRegistryRunning	Auto	Share Process	
c:\windows\system32\svchost.exe -k regsvc	Normal NT AUTHORITY\LocalService	0		
Remote Procedure Call (RPC) Locator	RpcLocator	Stopped	Manual	Own Process
c:\windows\system32\locator.exe	Normal NT AUTHORITY\NetworkService	0		
Remote Procedure Call (RPC)	RpcSs	Running	Auto	Share Process
c:\windows\system32\svchost.exe -k rpcss	Normal NT AUTHORITY\NetworkService	0		
Resultant Set of Policy Provider RSoPProv	Stopped	Manual	Share Process	
c:\windows\system32\rsopprov.exe	Normal LocalSystem	0		
Special Administration Console Helper sacsvr	Stopped	Manual	Share Process	
c:\windows\system32\svchost.exe -k netsvcs	Normal LocalSystem	0		
Security Accounts Manager	SamSs	Running	Auto	Share Process
c:\windows\system32\lsass.exe	Normal LocalSystem	0		
Smart Card SCardSvr	Stopped	Manual	Share Process	
c:\windows\system32\scardsvr.exe	Ignore NT AUTHORITY\LocalService	0		
Task Scheduler Schedule	Running	Auto	Share Process	
c:\windows\system32\svchost.exe -k netsvcs	Normal LocalSystem	0		
Secondary Logon	seclogon	Running	Auto	Share Process
c:\windows\system32\svchost.exe -k netsvcs	Ignore LocalSystem	0		
System Event Notification	SENS	Running	Auto	Share Process
c:\windows\system32\svchost.exe -k netsvcs	Normal LocalSystem	0		
Windows Firewall/Internet Connection Sharing (ICS)	SharedAccess	Stopped		
Disabled	Share Process	c:\windows\system32\svchost.exe -k netsvcs	Normal	
LocalSystem	0			
Shell Hardware Detection	ShellHWDetection	Running	Auto	Share Process
c:\windows\system32\svchost.exe -k netsvcs	Ignore LocalSystem	0		

APPENDIX C - TUNABLE PARAMETERS

Print Spooler	Spooler Stopped	Manual	Own Process		
	c:\windows\system32\spoolsv.exe	Normal	LocalSystem	0	
Windows Image Acquisition (WIA)	stisvc	Stopped	Disabled	Share Process	
	c:\windows\system32\svchost.exe -k imgsvc	Normal	NT AUTHORITY\LocalService	0	
Microsoft Software Shadow Copy Provider	swprv	Stopped	Manual	Own Process	
	c:\windows\system32\svchost.exe -k swprv	Normal	LocalSystem	0	
Performance Logs and Alerts	SysmonLog	Stopped	Auto	Own Process	
	c:\windows\system32\smlogsvc.exe	Normal	NT Authority\NetworkService	0	
Telephony	TapiSrv	Running	Manual	Share Process	
	c:\windows\system32\svchost.exe -k tapisrv	Normal	LocalSystem	0	
Terminal Services	TermService	Running	Manual	Share Process	
	c:\windows\system32\svchost.exe -k termsvcs	Normal	LocalSystem	0	
Themes	Themes	Stopped	Disabled	Share Process	
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
Telnet	TlntSvr	Stopped	Disabled	Own Process	c:\windows\system32\tlntsvr.exe
		Normal	NT AUTHORITY\LocalService	0	
Distributed Link Tracking Server	TrkSvr	Stopped	Disabled	Share Process	
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
Distributed Link Tracking Client	TrkWks	Running	Auto	Share Process	
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
Terminal Services Session Directory	Tssdis	Stopped	Disabled	Own Process	
	c:\windows\system32\tssdis.exe	Normal	LocalSystem	0	
Windows User Mode Driver Framework	UMWdf	Stopped	Manual	Own Process	
	c:\windows\system32\wdfmgr.exe	Normal	NT AUTHORITY\LocalService	0	
Uninterruptible Power Supply	UPS	Stopped	Manual	Own Process	
	c:\windows\system32\ups.exe	Normal	NT AUTHORITY\LocalService	0	
Virtual Disk Service	vds	Stopped	Manual	Own Process	
	c:\windows\system32\vds.exe	Normal	LocalSystem	0	
Volume Shadow Copy	VSS	Stopped	Manual	Own Process	
	c:\windows\system32\vssvc.exe	Normal	LocalSystem	0	
Windows Time	W32Time	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	
WebClient	WebClient	Stopped	Disabled	Share Process	
	c:\windows\system32\svchost.exe -k localservice	Normal	NT		
AUTHORITY\LocalService		0			
WinHTTP Web Proxy Auto-Discovery Service	WinHttpAutoProxySvc	Stopped	Manual		
	Share Process c:\windows\system32\svchost.exe -k localservice	Normal	NT		
AUTHORITY\LocalService		0			
Windows Management Instrumentation	winmgmt	Running	Auto	Share Process	
	c:\windows\system32\svchost.exe -k netsvcs	Ignore	LocalSystem	0	
Portable Media Serial Number Service	WmdmPmSN	Stopped	Manual	Share Process	
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
Windows Management Instrumentation Driver Extensions	Wmi	Stopped	Manual		
	Share Process c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
WMI Performance Adapter	WmiApSrv	Stopped	Manual	Own Process	
	c:\windows\system32\wbem\wmiapshr.exe	Normal	LocalSystem	0	
Automatic Updates	wuauclt	Running	Auto	Share Process	
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
Wireless Configuration	WZCSVC	Running	Auto	Share Process	
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	

APPENDIX C - TUNABLE PARAMETERS

Network Provisioning Service	xmlprovStopped	Manual Share Process
c:\windows\system32\svchost.exe -k netsvcs		Normal LocalSystem 0

[Program Groups]

Group Name	Name	User Name
Accessories	Default User:Accessories	Default User
Accessories\Accessibility	Default User:Accessories\Accessibility	Default User
Accessories\Entertainment	Default User:Accessories\Entertainment	Default User
Startup	Default User:Startup	Default User
Accessories	All Users:Accessories	All Users
Accessories\Accessibility	All Users:Accessories\Accessibility	All Users
Accessories\Communications	All Users:Accessories\Communications	All Users
Accessories\Entertainment	All Users:Accessories\Entertainment	All Users
Accessories\System Tools	All Users:Accessories\System Tools	All Users
Administrative Tools	All Users:Administrative Tools	All Users
Broadcom	All Users:Broadcom	All Users
Cygwin	All Users:Cygwin	All Users
Microsoft Visual Studio 2008	All Users:Microsoft Visual Studio 2008	All Users
Microsoft Visual Studio 2008\Visual Studio Remote Tools	All Users:Microsoft Visual Studio 2008\Visual Studio Remote Tools	All Users
Microsoft Visual Studio 2008\Visual Studio Tools	All Users:Microsoft Visual Studio 2008\Visual Studio Tools	All Users
Microsoft Windows SDK v6.0A	All Users:Microsoft Windows SDK v6.0A	All Users
Microsoft Windows SDK v6.0A\Tools	All Users:Microsoft Windows SDK v6.0A\Tools	All Users
Oracle - OraClient11g_home1	All Users:Oracle - OraClient11g_home1	All Users
Oracle - OraClient11g_home1\Application Development	All Users:Oracle - OraClient11g_home1\Application Development	All Users
Oracle - OraClient11g_home1\Configuration and Migration Tools	All Users:Oracle - OraClient11g_home1\Configuration and Migration Tools	All Users
Oracle - OraClient11g_home1\Integrated Management Tools	All Users:Oracle - OraClient11g_home1\Integrated Management Tools	All Users
Oracle - OraClient11g_home1\Oracle Installation Products	All Users:Oracle - OraClient11g_home1\Oracle Installation Products	All Users
Startup	All Users:Startup	All Users
Accessories	NT AUTHORITY\SYSTEM:Accessories	NT AUTHORITY\SYSTEM
Accessories\Accessibility	NT AUTHORITY\SYSTEM:Accessories\Accessibility	NT AUTHORITY\SYSTEM
Accessories\Entertainment	NT AUTHORITY\SYSTEM:Accessories\Entertainment	NT AUTHORITY\SYSTEM
Startup	NT AUTHORITY\SYSTEM:Startup	NT AUTHORITY\SYSTEM
Accessories	PE1430\Administrator:Accessories	PE1430\Administrator
Accessories\Accessibility	PE1430\Administrator:Accessories\Accessibility	PE1430\Administrator
Accessories\Entertainment	PE1430\Administrator:Accessories\Entertainment	PE1430\Administrator
Startup	PE1430\Administrator:Startup	PE1430\Administrator

[Startup Programs]

Program	Command	User Name	Location
desktop\desktop.ini		NT AUTHORITY\SYSTEM	Startup
desktop\desktop.ini		PE1430\Administrator	Startup
desktop\desktop.ini	.DEFAULT		Startup

APPENDIX C - TUNABLE PARAMETERS

desktop\desktop.ini	All Users	Common Startup
bacstray	c:\program files\broadcom\bacs\bacstray.exe	All Users
HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Run		

[OLE Registration]

Object	Local Server
Sound (OLE2)	sndrec32.exe
Media Clip	mplay32.exe
Video Clip	mplay32.exe /avi
MIDI Sequence	mplay32.exe /mid
Microsoft Equation 3.0	c:\progra~2\common~1\micros~1\equation\eqnedt32.exe
Sound	Not Available
Media Clip	Not Available

[Windows Error Reporting]

Time	Type	Details
4/10/2008 6:33 PM	Application Hang	Hanging application devenv.exe, version 9.0.21022.8, hang module hungapp, version 0.0.0.0, hang address 0x00000000.

[Internet Settings]

[Internet Explorer]

[Following are sub-categories of this main category]
[Summary]

Item	Value
Version	6.0.3790.1830
Build	63790.1830
Application Path	C:\Program Files\Internet Explorer
Language	English (United States)
Active Printer	Not Available

Cipher Strength	128-bit
Content Advisor	Disabled
IEAK Install	No

[File Versions]

File	Version	Size	Date	Path	Company
actxprxy.dll	6.0.3790.1830	221 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
advpack.dll	6.0.3790.1830	146 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
asctrls.ocx	6.0.3790.1830	147 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
browsei.c.dll	6.0.3790.1830	63 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
browseui.dll	6.0.3790.1830	1,564 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation

APPENDIX C - TUNABLE PARAMETERS

cdfview.dll	6.0.3790.1830	216 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
comctl32.dll	5.82.3790.1830	935 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
dxtrans.dll	6.3.3790.1830	320 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
dxtmsft.dll	6.3.3790.1830	549 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
iecont.dll	<File Missing>	Not Available	Not Available	Not Available	Not Available	
iecontlc.dll	<File Missing>	Not Available	Not Available	Not Available	Not Available	
iedkcs32.dll	16.0.3790.1830	417 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
iepeers.dll	6.0.3790.1830	361 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
iesetup.dll	6.0.3790.1830	71 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
ieuinit.inf	Not Available	24 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Not Available						
ieexplore.exe	6.0.3790.1830	94 KB	3/25/2005 7:00:00 AM	C:\Program Files\Internet Explorer		
Microsoft Corporation						
imgutil.dll	6.0.3790.1830	61 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
inetcp.cpl	6.0.3790.1830	428 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
inetcp.cpl	6.0.3790.1830	110 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
inseng.dll	6.0.3790.1830	147 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
mlang.dll	6.0.3790.1830	686 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
msencode.dll	<File Missing>	Not Available	Not Available	Not Available	Not Available	
mshta.exe	6.0.3790.1830	38 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
mshtml.dll	6.0.3790.1830	5,790 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
mshtml.tlb	6.0.3790.1830	1,320 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
mshtmlmled.dll	6.0.3790.1830	906 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
mshtmlmled.dll	6.0.3790.1830	56 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
msident.dll	6.0.3790.1830	69 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
msidentld.dll	6.0.3790.1830	16 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
msieft.dll	6.0.3790.1830	369 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
msrating.dll	6.0.3790.1830	240 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
mstime.dll	6.0.3790.1830	878 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
occache.dll	6.0.3790.1830	126 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32		
Microsoft Corporation						
proctexe.ocx	<File Missing>	Not Available	Not Available	Not Available	Not Available	

APPENDIX C - TUNABLE PARAMETERS

sendmail.dll	6.0.3790.1830	64 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32
Microsoft Corporation				
shdoclc.dll	6.0.3790.1830	590 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32
Microsoft Corporation				
shdocvw.dll	6.0.3790.1830	2,360 KB	3/25/2005 7:00:00 AM	
		C:\WINDOWS\system32	Microsoft Corporation	
shfolder.dll	6.0.3790.1830	34 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32
Microsoft Corporation				
shlwapi.dll	6.0.3790.1830	607 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32
Microsoft Corporation				
tdc.ocx	1.3.0.3130	91 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32
Microsoft Corporation				
url.dll	6.0.3790.1830	40 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32
Microsoft Corporation				
urlmon.dll	6.0.3790.1830	1,049 KB	3/25/2005 7:00:00 AM	
		C:\WINDOWS\system32	Microsoft Corporation	
webcheck.dll	6.0.3790.1830	439 KB	3/25/2005 7:00:00 AM	C:\WINDOWS\system32
Microsoft Corporation				
wininet.dll	6.0.3790.1830	1,159 KB	3/25/2005 7:00:00 AM	
		C:\WINDOWS\system32	Microsoft Corporation	

[Connectivity]

Item	Value
Connection Preference	Never dial

LAN Settings

AutoConfigProxy	wininet.dll
AutoProxyDetectMode	Disabled
AutoConfigURL	
Proxy	Disabled
ProxyServer	
ProxyOverride	

[Cache]

[Following are sub-categories of this main category]

[Summary]

Item	Value
Page Refresh Type	Automatic
Temporary Internet Files Folder	C:\Documents and Settings\Administrator\Local Settings\Temporary Internet Files
Total Disk Space	Not Available
Available Disk Space	Not Available
Maximum Cache Size	Not Available
Available Cache Size	Not Available

[List of Objects]

Program File	Status	CodeBase
No cached object information available		

[Content]

[Following are sub-categories of this main category]

[Summary]

Item	Value
Content Advisor	Disabled

[Personal Certificates]

Issued To	Issued By	Validity	Signature Algorithm
No personal certificate information available			

[Other People Certificates]

Issued To	Issued By	Validity	Signature Algorithm
No other people certificate information available			

[Publishers]

Name
No publisher information available

[Security]

Zone	Security Level
My Computer	Custom
Local intranet	Custom
Trusted sites	Custom
Internet High	
Restricted sites	Custom

Appendix D – Disk Storage

SEGMENT	BLOCKS	BLOCK_SIZE	REQUIRED	STATIC	DYNAMIC	OVERSIZE
-----	-----	-----	-----	-----	-----	-----
CUSTCLUSTER	118456320	2048	94949631	94949631	0	23506689
DB_STAT	1048576	2048	1048576	1048576	0	0
DISTCLUSTER	97280	2048	97159	97159	0	121
HIST	13189120	2048	9346147	0	7824960	3842973
ICUST1	389760	16384	357445	357445	0	32315
ICUST2	7905280	2048	7231459	7231459	0	673821
IDIST	25600	2048	23113	23113	0	2487
IITEM	10240	2048	5914	5914	0	4326
IORDR2	7618560	2048	5249503	5249503	0	2369057
ISTOK	1149440	16384	1093094	1093094	0	56346
ITEMCLUSTER	10240	2048	8868	8868	0	1372
IWARE	10240	2048	6181	6181	0	4059
NORDCLUSTER_QUEUE	1541120	2048	1131011	1131011	0	410109
ORDRCLUSTER_QUEUE	23516160	16384	15431672	0	12920000	8084488
STOKCLUSTER	132874240	2048	129167497	129167497	0	3706743
SYSAUX	61440	2048	61440	61440	0	0
SYSTEM	204800	2048	204800	204800	0	0
SYS_IQ0000012002\$\$	23516160	16384	40698	40698	0	23475462
SYS_IQ0000012006\$\$	1541120	2048	161573	161573	0	1379547
WARECLUSTER	15360	2048	10200	10200	0	5160

	Static	Daily Growth	Daily Growth *60	60 Day Space Requirement
In KB	502,573,642	43,229,126	2,593,747,560	3,096,321,202
In MB	490,795	42,216	2,532,957	3,023,751
In GB	479	41	2,474	2,953

Disk Capacity	Quantity	Total
135.5	6	813
67.75	25	1,694
33.38	71	2,370
Total		4,877

Log size (MB)	15747
Checkpoint Interval (min)	28.04

	Space Required	Space Configured
Data	2,953	4,877
Log	263.24	372.37

Appendix E - Price Quotations

BregTech.com - Cat5e CrossOver Cable 5ft. Grey - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address: <http://www.bregtech.com/shop.html?act=viewitem;id=134>

BREGTECH

HOME FAQ MY ACCOUNT SPECIALS

Bregtech - Your #1 source for cables and connectivity solutions

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CATEGORIES

- A/V Cables**
 - 3.5mm Audio
 - DVI Cables
 - HDMI Cables
 - Plenum Rated VGA Cables
 - RCA Cables
 - S-Video
 - VGA Monitor Cables
- A/V Hardware**
 - Splitters
 - Switches
- Adapters**
 - USB
 - Video
- Computer Cables**
 - DB9 & DB25 Cables
 - IDE Cables
 - Infiniband Cables
 - Power Cables
 - Printer Cables
 - SATA
 - USB Cables

Home / Networking Cables / Cross X Over CAT5e / DCAT5E05GYX

Cat5e CrossOver Cable 5ft. Grey

Part Number: DCAT5E05GYX
Mfg Part Number: -None-

Price: \$1.20

Free Ground Shipping Over \$60.00*

ADD TO CART **QTY**

[View More Photos](#)

Cable Connectors

RJ 45 Male RJ 45 Male **RoHS COMPLIANT**

Features

Ethernet networks are the most common type of networks in existence today. Most of them currently run over twisted pair (UTP) cable. In this network, cross connections between walls and computers, patch panels and equipment, or between two pieces of equipment use patch cables. This patch cable is designed for connecting two pieces of equipment together, and is called a **crossover patch cable**. This patch cable is compliant with EIA/TIA 568 B-2 standard at a Enhanced Category 5 Level (commonly called Cat 5e). Cat 5e will support the following speed and protocols: 10 Megabit per second

SUBSCRIBE

Email Address:

Submit

TOP TEN

- USB 2.0 Cable A/B 6ft. (Rev 2.0)480Mbps
- Serial ATA (SATA) Cable 1.5ft.
- 6ft. HDMI 19 Pin to HDMI 19 pin
- 3.5mm Extension Cable Stereo Male to Female 12ft.
- S-Video SVHS Cable Gold Plated 6ft.
- Cat5 350 mghz snagless 1ft Red
- Cat5 350 mghz snagless 10ft. Blue

start | Inbox - Microsoft ... | Internet Explorer | Oracle_TPC | Feb09 | Dell_2900_022009... | 10:33 AM

Product	Price	Quantity	Extended Price
Oracle Database 11g Standard Edition One, Per Processor, Unlimited Users, 3 years	\$2900	1*	\$2900
Oracle Premium Support for 3 years	\$1276	3	\$3828
Oracle TOTAL			\$6728

*When licensing Oracle programs with Standard Edition One or Standard Edition in the product name, a processors is counted equivalent to an occupied socket.

Oracle pricing contact: MaryBeth Pierantoni, mary.beth.pierantoni@oracle.com, 916-315-5081

APPENDIX E – PRICE QUOTATIONS

Microsoft Corporation
One Microsoft Way
Redmond, WA 98052-6399

Tel 425 882 8080
Fax 425 936 7329
<http://www.microsoft.com/>

Microsoft

February 19, 2009

Dell
Gene Purdy
1 Dell Way
Round Rock, TX 78664

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
P73-03883	Windows Server 2008 Standard Edition (x64) <i>Server License with 5 CALs No Discounts Applied</i>	\$999	2	\$1,998
127-00012	Visual Studio Standard 2005 <i>Full License No Discount Applied</i>	\$250	1	\$250

A list of Microsoft's resellers can be found at
<http://www.microsoft.com/products/info/render.aspx?view=22&type=mnpe&content=22/licensing>

All products listed above are currently orderable and available.

This quote is valid for the next 90 days.

Reference ID: PCgepu0902190000001125.