Hewlett-Packard Company

TPC Benchmark™ C
Full Disclosure Report
for
HP ProLiant DL585-G1/2.4GHzDC
using
IBM DB2 UDB v8.2
and
Windows Server 2003, Enterprise Edition x64 SP1

First Edition
December 2005

First Edition –December 2005

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

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

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Preface

The TPC Benchmark C was developed by the Transaction Processing Performance Council (TPC). The TPC was founded to define transaction processing benchmarks and to disseminate objective, verifiable performance data to the industry. This full disclosure report is based on the TPC Benchmark C Standard Specifications Version 5.5.

TPC Benchmark C Overview

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

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

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

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

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

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

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

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

Abstract

Overview

This report documents the methodology and results of the TPC Benchmark C test conducted on the HP ProLiant DL585-G1. The operating system used for the benchmark was Windows Server 2003, Enterprise Edition x64 SP1. The DBMS used was IBM DB2 UDB v8.2.

TPC Benchmark C Metrics

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

236,054 tpmC
USD $2.02 per tpmC

The availability date is December 5, 2005.

Standard and Executive Summary Statements

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

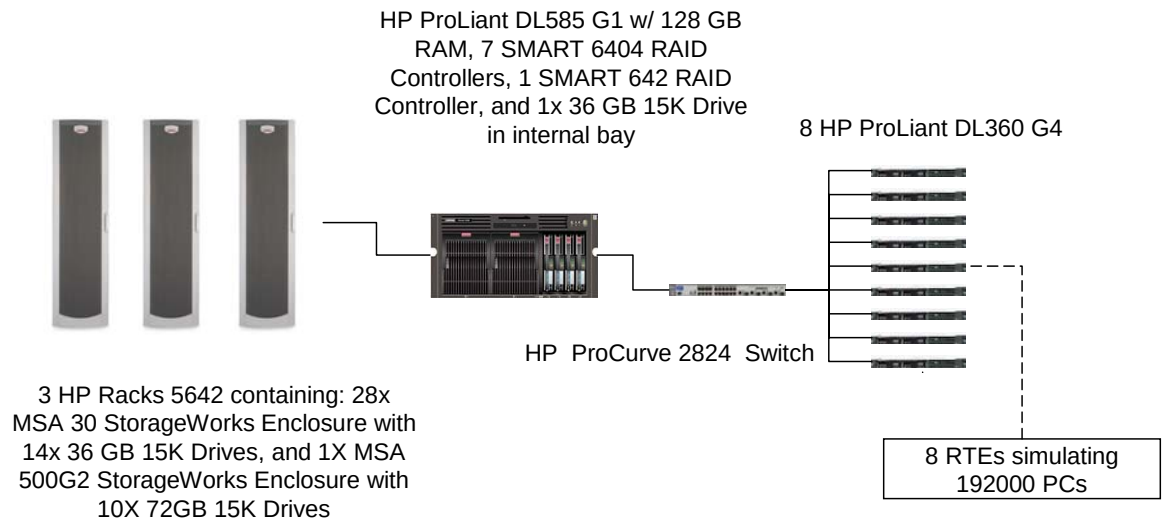
Auditor

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

Hewlett Packard Company	HP ProLiant DL585-G1 2.4GHz DC 4P C/S 8 HP ProLiant DL360 G4	TPC-C Rev. 5.5 Report Date: Dec 5, 2005

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
$476,378 USD	**236,054 tpmC**	**$2.02 USD/tpmC**	**December 5, 2005**

Database Server Processors /Cores/Threads	Database Manager	Operating System	Other Software	Number of Users
4/8/8 AMD Opteron 2.4DC GHz	IBM DB2 UDB v8.2	Microsoft Windows 2003 Enterprise x64	Microsoft Visual C++ Microsoft COM+	**192000**



	Server		Each Client	
System Components	Quantity	Description	Quantity	Description
Processors/Cores/Threads	4/8/8	2.4GHz DC AMD Opteron w/ 1M Cache / core	2/2/4	3.6 GHz Intel Xeon w/ 1MB cache
Memory	32	4GB DDR PC2700	2	512MB DDR
Disk Controllers	1	Integrated Smart 5i Controller	1	Integrated SMART 6i Controller
	1	SMART 642 Array Controller		
	7	SMART 6404 Array Controllers		
Disk Drives	393	36 GB SCSI Drives	2	36 GB SCSI Drive
	10	72 GB SCSI Drives		
Total Storage		13984 GB		36 GB

Hewlett-Packard Company	HP ProLiant DL585 2.4DC Client/Server				TPC-C Rev. 5.5 Report Date:	5-Dec-05
Description	**Part Number**	**Third Party Brand**	**Pricing**	**Unit Price**	**Qty**	**Extended Price**	**3 yr. Maint. Price**
Server Hardware							
ProLiant DL585 O880 2.4GHzDC (1 MB) 2P	397841-001		1	14,129	1	14,129	
- 2 GB PC2700 DDR, Integrated Smart Array Controller 5i,							
- Dual Port NC7782 embedded NIC							
DL585 2.4GHzDC/PC2700 processor option kit	397843-B21		1	5,199	2	10,398	
8GB PC2700 DDR SDRAM DIMM 2x4096 WW	395409-B21		1	7,499	16	119,984	
MSA30 SB storage enclosure	302969-B21		1	2,829	28	79,212	
HP Modular Smart Array 500 G2 Storage	335880-B21		1	4,499	1	4,499	
- 1 MSA500 G2 controller w/ 256 MB cache, 2 SA642 controllers							
HP Modular Smart Array 500 G2 Controller	335881-B21		1	2,499	1	2,499	
HP T500 Uninterruptible Power System	361475-001		1	99	1	99	
HP Smart Array 6404/256MB Controller	273914-B21		1	1,899	7	13,293	
HP s7540 17in. CRT Monitor	PF997AA#ABA		1	149	1	149	
HP PS/2 Scroll Mouse carbonite	DG169AV		1	5	1	5	
HP Enhanced Keyboard	DG170AV#ABA		1	10	1	10	
HP 5642 Unassembled Rack	358254-B21		1	689	3	2,067	
36GB 15K U320 Pluggable Hard Drive	286776-B22		1	299	392	117,208	
36GB 15K U320 Pluggable Hard Drive (OS)	286776-B22		1	299	1	299	
72GB 15K U320 Pluggable Hard Drive (Log)	286778-B22		1	479	10	4,790	
HP 3y 4h 24x7 ProLiant DL585 HW Support	U4608E		1	1,575	1		1,575
MSA30 SB storage enclosure (10% spare)	302969-B21		1	2,829	3		8,487
36GB 15K U320 Pluggable Hard Drive (10% spare)	286776-B22		1	299	40		11,960
HP CP 3Y 4H 24x7 MSA500	U6456A/E		1	1,950	1		1,950
					Subtotal	**368,641**	**23,972**
Server Software							
DB2 UDB ESE 8.2 for Windows Operating Systems on 64-Bit		IBM	2	22,608	4	90,432	
DB2 SW Maintenance Renewal - 1 Year		IBM	2	1,077	8	8,616	
Microsoft Visual C++ Professional 6.0	254-00170	Microsoft	3	109	1	109	
Microsoft Windows 2003 Server, x64 Enterprise Edition	P72-00264	Microsoft	3	3,999	1	3,999	Incl Below
Microsoft Professional Support - 1 incident		Microsoft	3	245	1		245
					Subtotal	**103,156**	**245**
Client Hardware							
DL360 G4 X3.6GHz 1GB 1P RCK US	360528-001		1	2,799	8	22,392	
- Dual Integrated Gigabit NIC, Integrated Smart Array Controller 6i							
Intel Xeon 3.6GHz 1MB DL360G4 Processor	354583-B21		1	999	8	7,992	
HP s7540 17in. CRT Monitor	PF997AA#ABA		1	149	8	1,192	
HP PS/2 Scroll Mouse carbonite	DG169AV		1	5	8	40	
HP Enhanced Keyboard	DG170AV#ABA		1	10	8	80	
36GB 15K U320 Pluggable Hard Drive	286776-B22		1	299	16	4,784	
HP 3y 4h 24x7 ProLiant DL360 HW Suppor	U4497E		1	550	8		4,400
					Subtotal	**36,480**	**4,400**
Client Software							
Microsoft Windows 2000 Server	C11-00821	Microsoft	3	738	8	5,904	Incl. Above
					Subtotal	**5,904**	**0**
User Connectivity							
HP Procurve 2824 switch	J4903A		1	2499	1	2,499	
HP 3y 4h 24x7 Procurve 2824 HW Support	U2856E		1	1000	1		1,000
					Subtotal	**2,499**	**1,000**
Large Purchase and Cash discount (See Note 1)	16.0%		1			**($65,219)**	**($4,700)**
					Total	**$451,461**	**$24,917**

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

Three-Year Cost of Ownership: **USD 476,378**

tpmC Rating: **236,054**

$ / tpmC: **USD 2.02**

Pricing: 1=HP Direct 2= IBM 3=Microsoft

Note 1 = Discount based on HP Direct guidence with large purchase and Net 30 discount.Applies to all lines with 1 in pricing column.

Note:The benchmark results and test methodology were audited by Lorna Livingtree of Performance Metrics, Inc.

Numerical Quantities Summary

MQTH, Computed Maximum Qualified Throughput **236,054 tpmC**

Response Times (in seconds)	**Average**	**90%**	**Maximum**
New-Order	0.79	1.41	3.50
Payment	0.76	1.39	2.79
Order-Status	0.78	1.40	2.76
Delivery (interactive portion)	0.17	0.39	1.20
Delivery (deferred portion)	0.18	0.23	2.11
Stock-Level	0.78	1.41	2.69
Menu	0.17	0.39	1.20
Transaction Mix, in percent of total transaction			
New-Order			44.92%
Payment			43.02%
Order-Status			4.02%
Delivery			4.02%
Stock-Level			4.02%
Emulation Delay (in seconds)		**Resp.Time**	**Menu**
New-Order		0.10	0.10
Payment		0.10	0.10
Order-Status		0.10	0.10
Delivery (interactive)		0.10	0.10
Stock-Level		0.10	0.10
Keying/Think Times (in seconds)	**Min.**	**Average**	**Max.**
New-Order	18.01/0.00	18.01/12.01	18.03/120.10
Payment	3.01/0.00	3.01/12.01	3.04/120.09
Order-Status	2.01/0.00	2.01/10.01	2.04/100.05
Delivery (interactive)	2.01/0.00	2.01/5.02	2.03/50.20
Stock-Level	2.01/0.00	2.01/5.01	2.03/50.09
Test Duration			
Ramp-up time			63 minutes
Measurement interval			120 minutes
Transactions (all types) completed during measurement interval			63,066,834
Ramp down time			71 minutes
Checkpointing			
Number of checkpoints			N/A
Checkpoint interval			N/A

General Items

Test Sponsor

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

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

Application Code and Definition Statements

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

Appendix A contains all source code implemented in this benchmark.

Parameter Settings

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

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

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

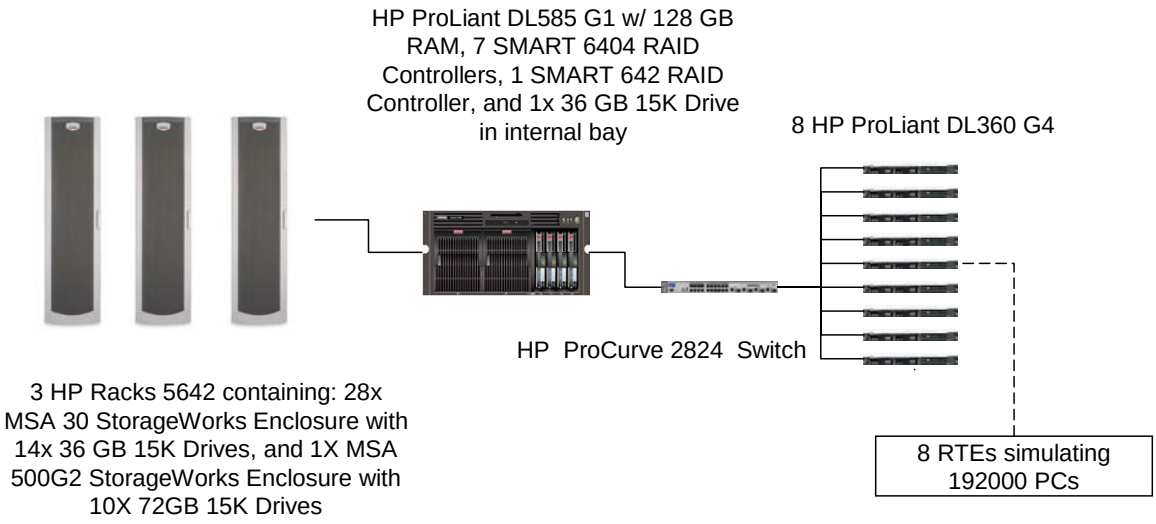
Appendix C contains the tunable parameters to for the database, the operating system, and the transaction monitor.

Configuration Items

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

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

Figure 1. Priced and Benchmarked Configuration



Clause 1 Related Items

Table Definitions

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

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

Physical Organization of Database

The physical organization of tables and indices within the database must be disclosed.
The tested configuration consisted of 392 drives at 36GB for database data, one 36GB drive for the operating system, and 10 drives at 72GB for database log. There were 392x 36GB drives for database data on seven SMART 6404 controllers, 10x 72GB drives for the SMART 642 controller connected to an MSA 500G2, and 1x 36GB drives for the integrated Smart 5i controller.

Benchmarked Configuration:

Integrated Smart 5i Controller, Array A
LOGICAL DRIVE C: Total Capacity = 33.91 GB
Microsoft Windows Server 2003, Enterprise x64 Edition SP1

SMART-642 Controller, Slot 3, Array A
LOGICAL DRIVE Y: Total Capacity = 347319 MB RAID 0+1
Log

SMART-6404 Controller, Slot 1A, Array A
LOGICAL DRIVE c:\dev\stock_1 Total Capacity = 60000 MB RAID 0
Stock
LOGICAL DRIVE c:\dev\customer_1 Total Capacity = 40000 MB RAID 0
Customer
LOGICAL DRIVE Z\: Total Capacity = 400000 MB RAID 0+1
Backup

SMART-6404 Controller, Slot 1B, Array A
LOGICAL DRIVE c:\dev\stock_2 Total Capacity = 60000 MB RAID 0
Stock
LOGICAL DRIVE c:\dev\customer_2 Total Capacity = 40000 MB RAID 0
Customer
LOGICAL DRIVE Z\: Total Capacity = 400000 MB RAID 0+1
Backup

SMART-6404 Controller, Slot 4A, Array A
LOGICAL DRIVE c:\dev\stock_3 Total Capacity = 60000 MB RAID 0
Stock
LOGICAL DRIVE c:\dev\customer_3 Total Capacity = 40000 MB RAID 0
Customer
LOGICAL DRIVE Z\: Total Capacity = 400000 MB RAID 0+1
Backup

SMART-6404 Controller, Slot 4B, Array A
LOGICAL DRIVE c:\dev\stock_4 Total Capacity = 60000 MB RAID 0

Stock
LOGICAL DRIVE c:\dev\customer_4 Total Capacity = 40000 MB RAID 0
Customer
LOGICAL DRIVE Z\: Total Capacity = 400000 MB RAID 0+1
Backup

SMART-6404 Controller, Slot 7A, Array A
LOGICAL DRIVE c:\dev\stock_5 Total Capacity = 60000 MB RAID 0
Stock
LOGICAL DRIVE c:\dev\customer_5 Total Capacity = 40000 MB RAID 0
Customer
LOGICAL DRIVE Z\: Total Capacity = 400000 MB RAID 0+1
Backup

SMART-6404 Controller, Slot 7B, Array A
LOGICAL DRIVE c:\dev\stock_6 Total Capacity = 60000 MB RAID 0
Stock
LOGICAL DRIVE c:\dev\customer_6 Total Capacity = 40000 MB RAID 0
Customer
LOGICAL DRIVE Z\: Total Capacity = 400000 MB RAID 0+1
Backup

SMART-6404 Controller, Slot 8A, Array A
LOGICAL DRIVE c:\dev\stock_7 Total Capacity = 60000 MB RAID 0
Stock
LOGICAL DRIVE c:\dev\customer_7 Total Capacity = 40000 MB RAID 0
Customer
LOGICAL DRIVE Z\: Total Capacity = 400000 MB RAID 0+1
Backup

SMART-6404 Controller, Slot 8A, Array A
LOGICAL DRIVE c:\dev\stock_8 Total Capacity = 60000 MB RAID 0
Stock
LOGICAL DRIVE c:\dev\customer_8 Total Capacity = 40000 MB RAID 0
Customer
LOGICAL DRIVE Z\: Total Capacity = 400000 MB RAID 0+1
Backup

SMART-6404 Controller, Slot 5A, Array A
LOGICAL DRIVE c:\dev\stock_9 Total Capacity = 60000 MB RAID 0
Stock
LOGICAL DRIVE c:\dev\customer_9 Total Capacity = 40000 MB RAID 0
Customer
LOGICAL DRIVE Z\: Total Capacity = 400000 MB RAID 0+1
Backup

SMART-6404 Controller, Slot 5B, Array A
LOGICAL DRIVE c:\dev\stock_10 Total Capacity = 60000 MB RAID 0
Stock
LOGICAL DRIVE c:\dev\customer_10 Total Capacity = 40000 MB RAID 0
Customer
LOGICAL DRIVE Z\: Total Capacity = 400000 MB RAID 0+1
Backup

SMART-6404 Controller, Slot 6A, Array A
LOGICAL DRIVE c:\dev\stock_11 Total Capacity = 60000 MB RAID 0

Stock
LOGICAL DRIVE c:\dev\customer_11 Total Capacity = 40000 MB RAID 0
Customer
LOGICAL DRIVE Z\: Total Capacity = 400000 MB RAID 0+1
Backup

SMART-6404 Controller, Slot 6B, Array A
LOGICAL DRIVE c:\dev\stock_12 Total Capacity = 60000 MB RAID 0
Stock
LOGICAL DRIVE c:\dev\customer_12 Total Capacity = 40000 MB RAID 0
Customer
LOGICAL DRIVE Z\: Total Capacity = 400000 MB RAID 0+1
Backup

SMART-6404 Controller, Slot 2A, Array A
LOGICAL DRIVE 1: Total Capacity = 16000 MB RAID 0
C:\dev\idx_customer_1 & C:\dev\idx_customer_2
LOGICAL DRIVE 2: Total Capacity = 4000 MB RAID 0
C:\dev\newordera_1 & c:\dev\newordera_2
LOGICAL DRIVE 3: Total Capacity = 14000 MB RAID 0
C:\dev\order_1 & c:\dev\order_2
LOGICAL DRIVE 4: Total Capacity = 12000 MB RAID 0
C:\dev\idx_order_1 & c:\dev\idx_order_2
LOGICAL DRIVE 5: Total Capacity = 26000 MB RAID 0
C:\dev\\history_1 & c:\dev\history_2
LOGICAL DRIVE 6: Total Capacity = 120 MB RAID 0
C:\dev\Warehouse, district, item 1&2
LOGICAL DRIVE 7: Total Capacity = 360000 MB RAID 0
C:\dev\orderline_1 & 2 & 3 & 4
LOGICAL DRIVE 8: Total Capacity = 4400 MB RAID 0
C:\dev\ neworderb_1 & c:\dev\neworderb_2

SMART-6404 Controller, Slot 2B, Array A
LOGICAL DRIVE 1: Total Capacity = 16000 MB RAID 0
C:\dev\idx_customer_3 & C:\dev\idx_customer_4
LOGICAL DRIVE 2: Total Capacity = 4000 MB RAID 0
C:\dev\newordera_3 & c:\dev\newordera_4
LOGICAL DRIVE 3: Total Capacity = 14000 MB RAID 0
C:\dev\order_3 & c:\dev\order_4
LOGICAL DRIVE 4: Total Capacity = 12000 MB RAID 0
C:\dev\idx_order_3 & c:\dev\idx_order_4
LOGICAL DRIVE 5: Total Capacity = 26000 MB RAID 0
C:\dev\\history_3 & c:\dev\history_4
LOGICAL DRIVE 6: Total Capacity = 120 MB RAID 0
C:\dev\Warehouse, district, item 3&4
LOGICAL DRIVE 7: Total Capacity = 360000 MB RAID 0
C:\dev\orderline_5 & 6 & 7 & 8
LOGICAL DRIVE 8: Total Capacity = 4400 MB RAID 0
C:\dev\ neworderb_3 & c:\dev\neworderb_4

Priced Configuration vs. Measured Configuration:

The measured configuration is identical compared to the priced configuration.

Insert and Delete Operations

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

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

Partitioning

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

No partitioning was used in this benchmark.

Replication, Duplication or Additions

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

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

Clause 2 Related Items

Random Number Generation

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

The srandom(), getpid() and gettimeofday() functions are used to produce unique random seeds for each driver. The drivers use these seeds to seed the srand(), srandom() and srand48() functions. Random numbers are produced using wrappers around the standard system random number generators.
The negative exponential distribution uses the following function to generate the distribution. This function has the property of producing a negative exponential curve with a specified average and a maximum value 4 times the average.

```
const double RANDOM_4_Z = 0.89837799236185
const double RANDOM_4_K = 0.97249842407114
double neg_exp_4(double average {
return – average * (1/RANDOM_4_Z * log (1 – RANDOM_4_K * drand48()))};
}
```

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

Input/Output Screen Layout

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

All screen layouts followed the specifications exactly.

Priced Terminal Feature Verification

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

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

Presentation Manager or Intelligent Terminal

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

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

Transaction Statistics

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

Table 2.1 Transaction Statistics

Statistic		Value
New Order	Home warehouse order lines	99.00%
	Remote warehouse order lines	1.00%
	Rolled back transactions	1.00%

Statistic		Value
	Average items per order	10.00
Payment	Home warehouse payments Remote warehouse payments	84.99% 15.01%
	Accessed by last name	59.99%
Order Status	Accessed by last name	59.97%
Transaction Mix	New Order	44.92%
	Payment	43.02%
	Order status	4.02%
	Delivery	4.02%
	Stock level	4.02%

Queuing Mechanism

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

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

The source code is listed in Appendix A.

Clause 3 Related Items

Transaction System Properties (ACID)

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

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

Atomicity

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

Completed Transactions

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

Aborted Transactions

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

Consistency

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

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

A run was executed under full load lasting over two hours.

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

Isolation

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

Isolation tests one through nine were executed using shell scripts to issue queries to the database. Each script included timestamps to demonstrate the concurrency of operations. The results of the queries were captured to files. The captured files were verified by the auditor to demonstrate the required isolation had been met.

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

For Isolation test seven, case A was followed.

Durability

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

Durable Media Failure

Loss of Data and Log

To demonstrate recovery from a permanent failure of durable medium containing DBMS logs and TPC-C tables, the following steps were executed. This test was executed on a fully scaled database of 19200 warehouses under a load of 20000 users.:

- The total number of New Orders was determined by the sum of D_NEXT_O_ID of all rows in the DISTRICT table giving the beginning count.
- The RTEs were started with 20000 users.
- The test was allowed to run for a minimum of 5 minutes.
- One log disk was removed from the MSA 500 drive cabinet.
- Since the disk was mirrored, processing was not interrupted. This was verified by checking the users status on the RTE.
- One of the data disks was removed from one MSA 30 drive cabinet.
- When IBM DB2 UDB recorded errors about not being able to access the database, the RTE was shut down..
- IBM DB2 UDB was shutdown, and the system rebooted after replacing the pulled drives with new drives.
- After the RAID recovery process finished IBM DB2 UDB was started.
- The database was restored from backup and the transaction log was rolled forward.
- Consistency condition #3 was executed and verified.
- Step 2 was repeated and the difference between the first and second counts was noted.
- An RTE report was generated for the entire run time giving the number of NEW-ORDERS successfully returned to the RTE.
- The counts in steps 12 and 13 were compared and the results verified that all committed transactions had been successfully recovered.
- Samples were taken from the RTE files and used to query the database to demonstrate successful transactions had corresponding rows in the ORDER table.

Instantaneous Interruption and Loss of Memory

Because loss of power erases the contents of memory, the instantaneous interruption and the loss of memory tests were combined into a single test. This test was executed on a fully scaled database of 19200 warehouses under a full load of 192000 users. The following steps were executed:

- The total number of New Orders was determined by the sum of D_NEXT_O_ID of all rows in the DISTRICT table giving the beginning count.
- The RTE was started with 192000 users.
- The test was allowed to run for a minimum of 5 minutes.
- Pulling the power cords from the SUT induced system crash and loss of memory. No battery backup or Uninterruptible Power Supply (UPS) were used to preserve the contents of memory.
- The RTE was paused then stopped.
- Power was restored and the system restarted.
- IBM DB2 UDB was started and performed an automatic recovery.
- Consistency condition #3 was executed and verified.
- Step 1 was repeated and the difference between the first and second counts was noted.
- An RTE report was generated for the entire run time giving the number of NEW-ORDERS successfully returned to the RTE.
- The counts in step 9 and 10 were compared and the results verified that all committed transactions had been successfully recovered.
- Samples were taken from the RTE files and used to query the database to demonstrate successful transactions had corresponding rows in the ORDER table.

Clause 4 Related Items

Initial Cardinality of Tables

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

Table 4.1 Number of Rows for Server

Table	Cardinality as built
Warehouse	19,200
District	192,000
Customer	576,000,000
History	576,000,000
Orders	576,000,000
New Order	172,800,000
Order Line	5,760,185,535
Stock	1,920,000,000
Item	100,000
Deleted Warehouses	0

Database Layout

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

The benchmarked configuration used 7 SMART-6404 Array controllers with 4 SCSI channels each. Each controller is capable of accessing up to 14 disk drives per channel and supports RAID 0, RAID 0+1, and RAID 5 per each logical volume configured. The data tables were stored on 14 RAID arrays of (28) 36GB 15K drives each. Each array was configured as several RAID 0 volumes for database data. All data controllers (except slot 2) also housed a RAID 0+1 volume used for backup of the database. The SMART-642 Array controller was connected to an MSA 500G2 which had one array consisting of (10) 72GB 15K drives, and housed a RAID 0+1 logical volume for the database log. The operating system was housed internally on the integrated Smart 5i controller on one 36GB 15K drives. The Array Accelerators on the data controllers were configured as 100% write cache and were enabled for all logical drives. The SMART 642 controller had no physical cache module installed, but the redundant controllers in the MSA 500G2 had cache enabled for the transaction log. All RAID volumes used hardware RAID.

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

Type of Database

A statement must be provided that describes:

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

The database manager used for this testing was DB2 UDB 8.2. DB2 UDB is a relational DBMS. DB2 remote stored procedures and embedded SQL statements were used. The DB2 stored procedures were invoked via SQL CALL statements. Both the client application and stored procedures were written in embedded C code.

Database Mapping

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

The database was not replicated.

60 Day Space

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

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

- During steady state DB2 monitoring counters were reset
- 30 minutes later "Log pages written" DB2 counter was recorded
- The space used was divided by the number of NEW-ORDERS giving a space used per NEW-ORDER transaction.
- The space used per transaction was multiplied by the measured tpmC rate times 480 minutes.

The details of both the 8-hour transaction log space requirement and the 60-day space requirement is shown in Appendix D.

Clause 5 Related Items

Throughput

Measured tpmC must be reported

Measured tpmC 236,054 tpmC
Price per tpmC USD $2.02

Response Times

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

Table 5.2: Response Times

Type	Average	90th %	Maximum
New-Order	0.79	1.41	3.50
Payment	0.76	1.39	2.79
Order-Status	0.78	1.40	2.76
Interactive Delivery	0.17	0.39	1.20
Deferred Delivery	0.18	0.23	2.11
Stock-Level	0.78	1.41	2.69
Menu	0.17	0.39	1.20

Keying and Think Times

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

Table 5.3: Keying Times

Type	Minimum	Average	Maximum
New-Order	18.01	18.01	18.03
Payment	3.01	3.01	3.04
Order-Status	2.01	2.01	2.04
Interactive Delivery	2.01	2.01	2.03
Stock-Level	2.01	2.01	2.03

Table 5.4: Think Times

Type	Minimum	Average	Maximum
New-Order	0.00	12.01	120.10
Payment	0.00	12.01	120.09
Order-Status	0.00	10.01	100.05
Interactive Delivery	0.00	5.02	50.20
Stock-Level	0.00	5.01	50.09

Response Time Frequency Distribution Curves and Other Graphs

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

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

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

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

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

Figure 2. New Order Response Time Distribution

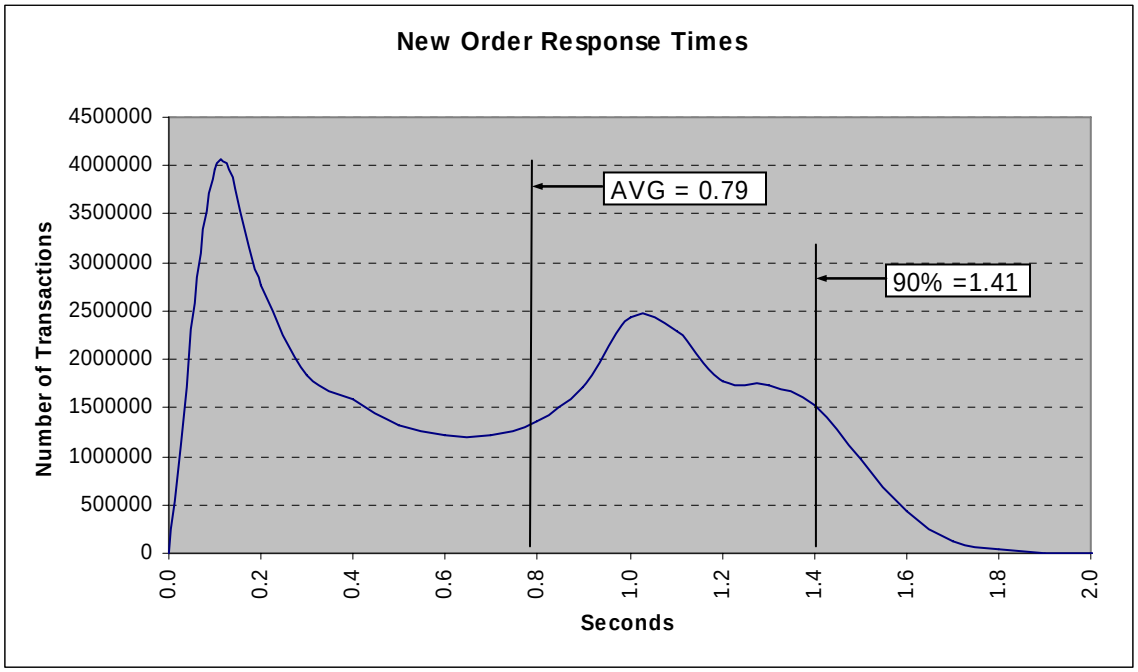


Figure 3. Payment Response Time Distribution

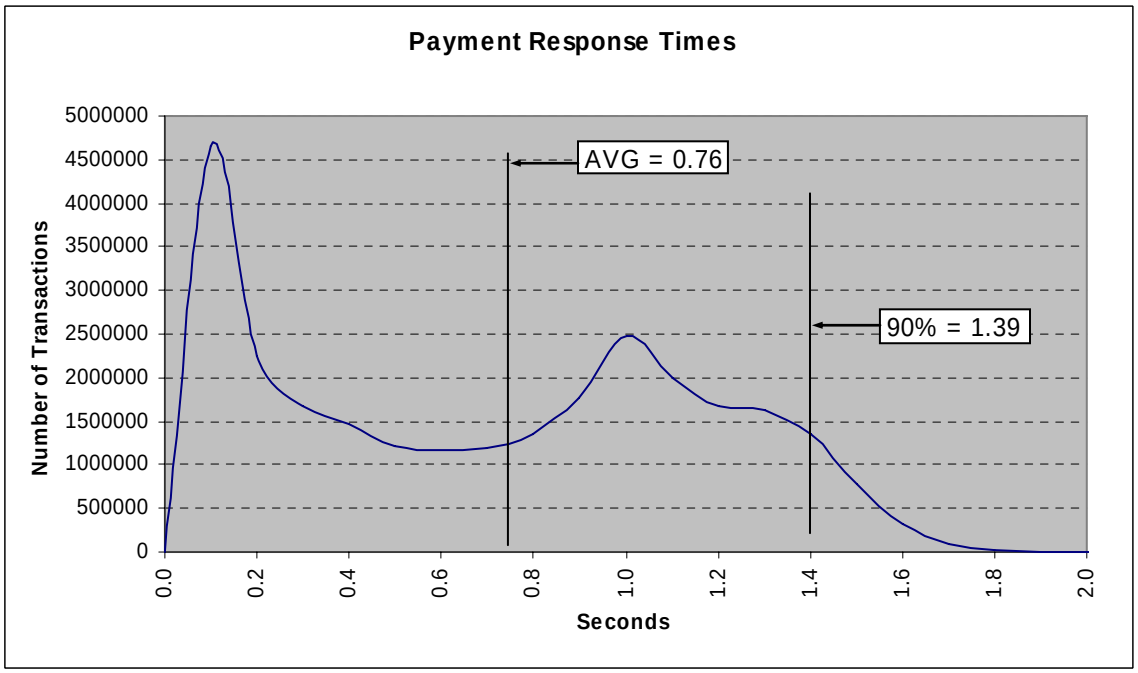


Figure 4. Order Status Response Time Distribution

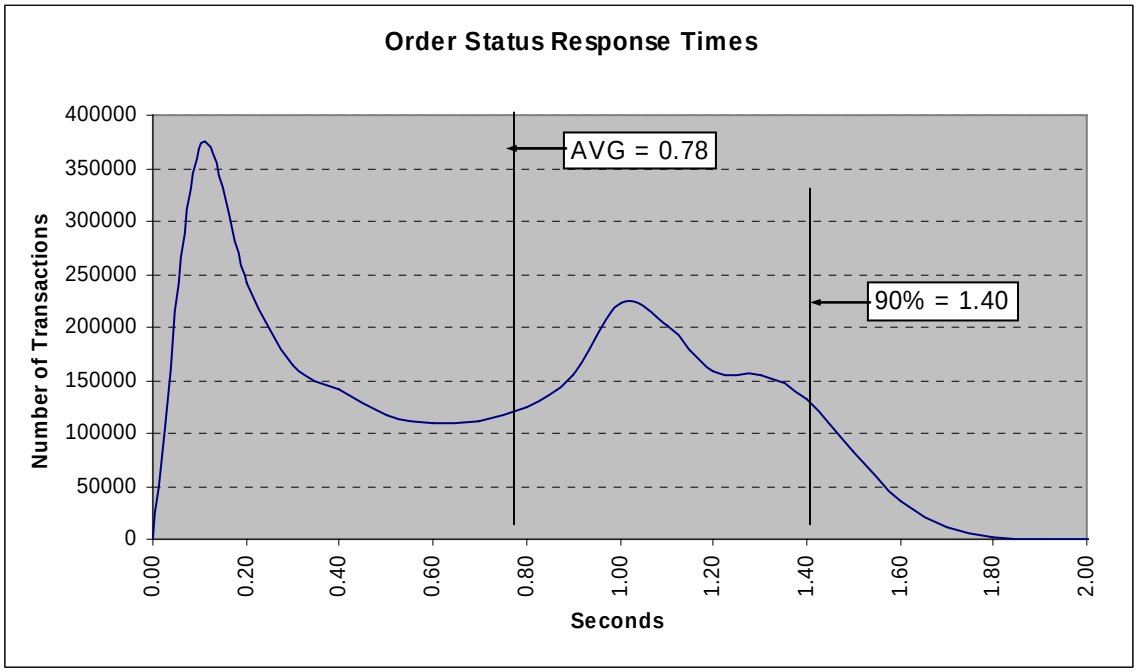


Figure 5. Delivery Response Time Distribution

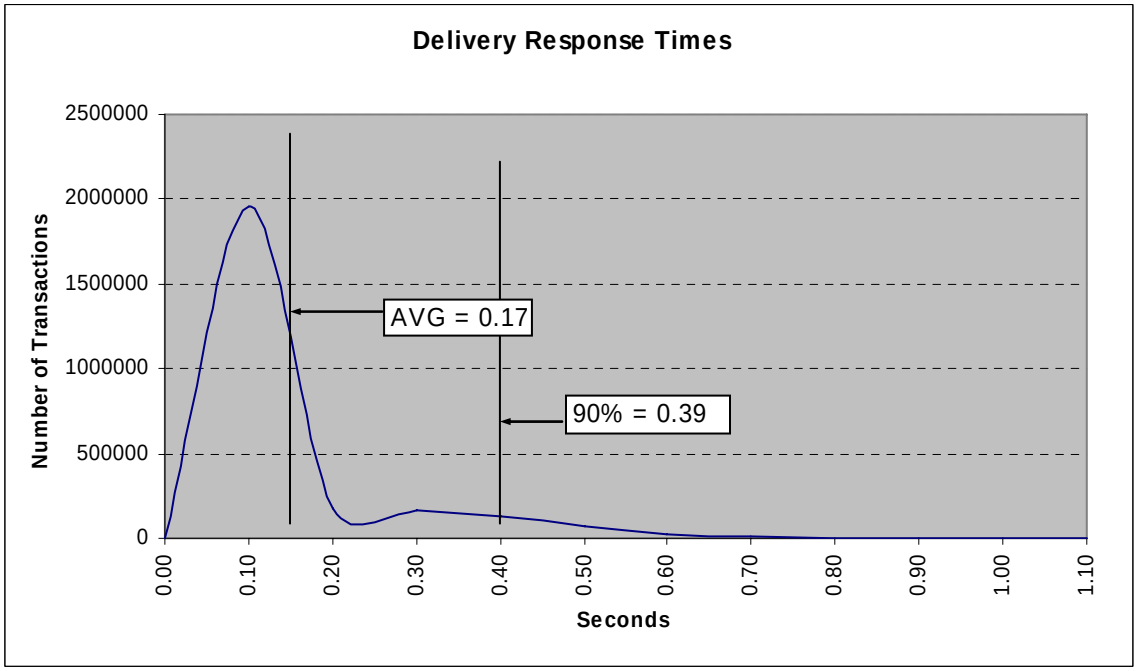


Figure 6. Stock Level Response Time Distribution

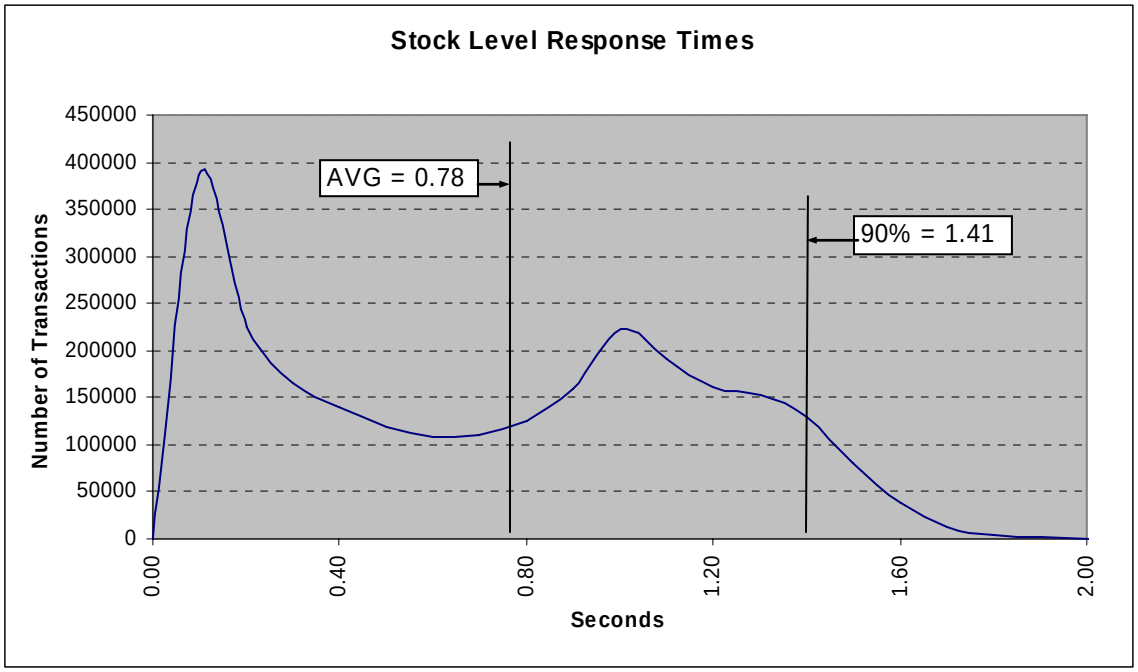


Figure 7. Response Time vs. Throughput

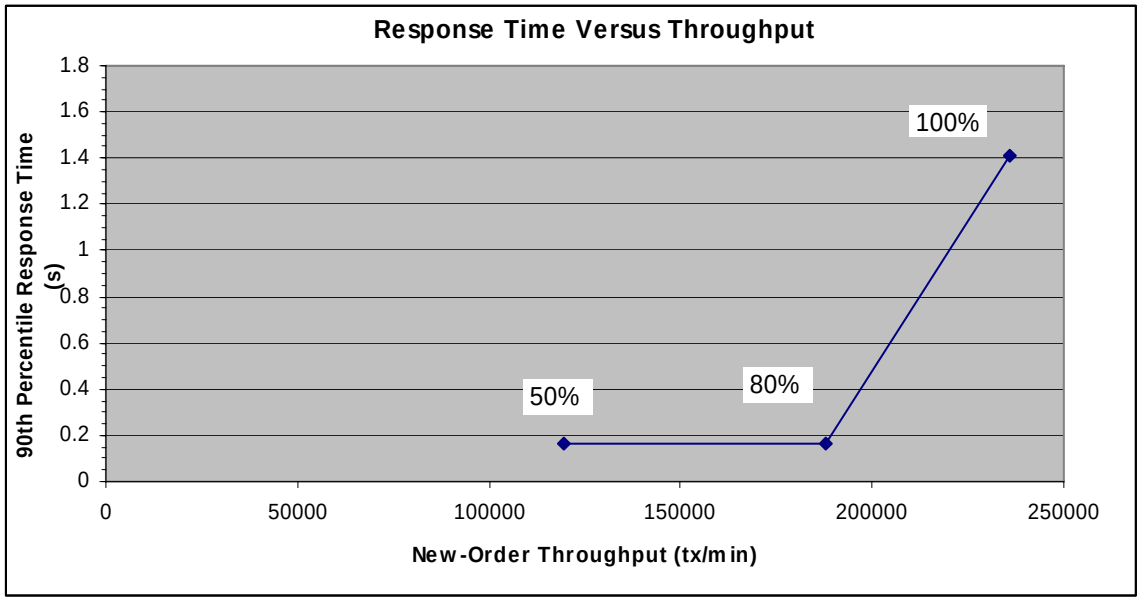


Figure 8. New Order Think Time Distribution

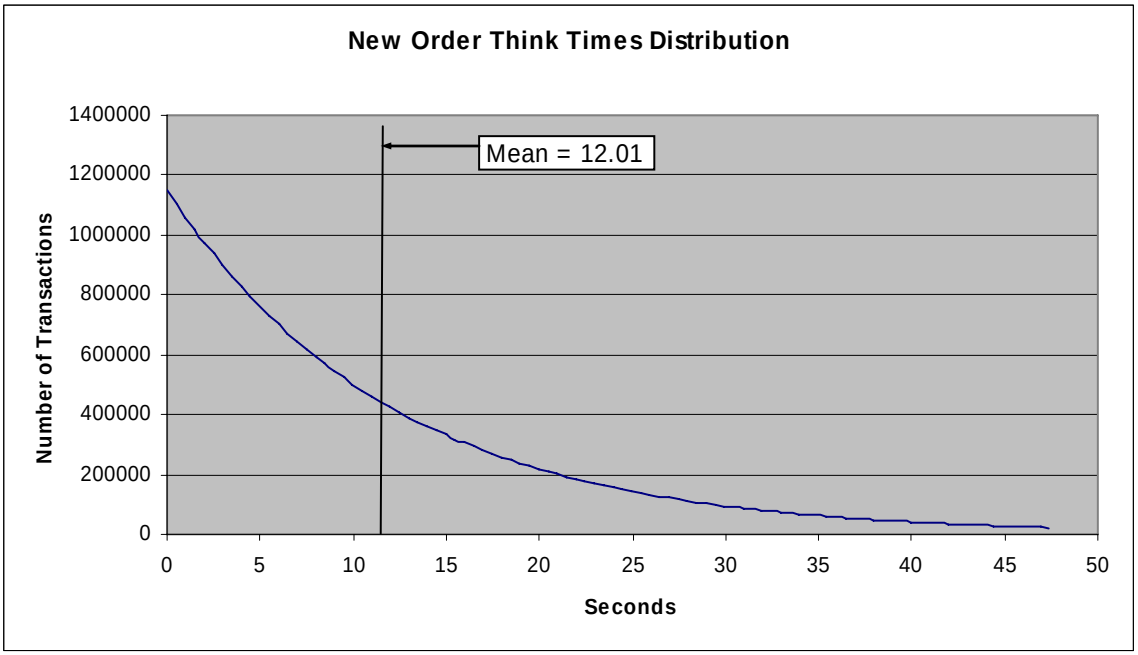
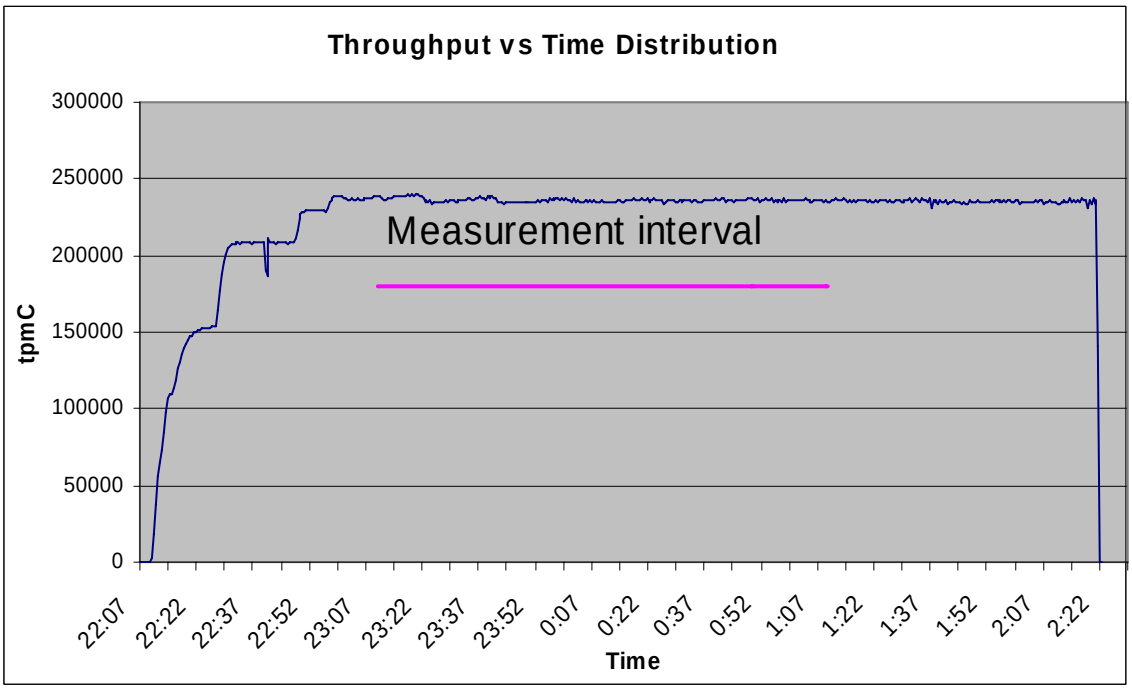


Figure 9. Throughput vs. Time Distribution



Steady State Determination

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

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

Work Performed During Steady State

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

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

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

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

The RTE transmissions were sent to application processes running on the client machines through Ethernet LANs. These client application processes handled all screen I/O as well as all requests to the database on the server. The applications communicated with the database server over Ethernet LANs using DBLIB and RPC calls.

Measurement Period Duration

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

The reported measured interval was exactly 120 minutes long.

Regulation of Transaction Mix

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

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

Transaction Statistics

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

Table 5.5: Transaction Statistics

Statistic		Value
New Order	Home warehouse order lines	99.00%
	Remote warehouse order lines	1.00%
	Rolled back transactions	1.00%
	Average items per order	10.00
Payment	Home warehouse payments	84.99%
	Remote warehouse payments	15.01%
	Accessed by last name	59.99%
Delivery	Skipped transactions (interactive)	0
	Skipped transactions (deferred)	0
Order Status	Accessed by last name	59.97%
Transaction Mix	New Order	44.92%
	Payment	43.02%
	Order status	4.02%
	Delivery	4.02%
	Stock level	4.02%

Checkpoint Count and Location

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

DB2 UDB uses a write-ahead-logging protocol to guarantee recovery. This protocol uses "Soft" checkpoint to write least-recently-used database pages to disk independent of transaction commit. However, enough log information to redo/undo the change to a database pages is committed to disk before the database page itself is written. This protocol therefore renders checkpoint unnecessary for DB2 UDB. For a more detailed description of the general principles of the write-ahead-logging protocol, see the IBM research paper, "ARIES: A Transaction Recovery Method Supporting Fine Granularity Locking and Partial Rollbacks Using Write-Ahead Logging," by C. Mohan, Database Technology Institute, IBM Almaden Research Center.
(http://portal.acm.org/citation.cfm?id=128770&coll=portal&dl=ACM&CFID=10343790&CFTOKEN=42047146)

Clause 6 Related Items

RTE Descriptions

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

PRTE Software was used to simulate terminal users, generate random data and record response times. This package ran on systems that are distinct from the system under test. PRTE command file used is included in Appendix A.

Emulated Components

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

The driver system consisted of 8 HP ProLiant servers. These driver machines emulated the users' web browsers.

Functional Diagrams

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

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

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

Networks

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

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

In the tested configuration, 8 driver (RTE) machines were connected through a gigabit Ethernet switch to the client machines at 1Gbs, thus providing the path from the RTEs to the clients. The server (SUT) was connected to the clients through a gigabit Ethernet switch on a separate LAN.

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

Operator Intervention

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

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

Clause 7 Related Items

System Pricing

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

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

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

Availability, Throughput, and Price Performance

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

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

- **Maximum Qualified Throughput** **236,054 tpmC**
- **Price per tpmC** **USD $2.02 per tpmC**
- **Availability** **December 5, 2005**

Country Specific Pricing

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

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

Usage Pricing

For any usage pricing, the sponsor must disclose:

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

The component pricing based on usage is shown below:

- 8 Microsoft Windows Server 2000 Standard Edition
- 1 Microsoft Windows Server 2003, Enterprise Edition x64 SP1
- 1 IBM DB2 UDB v8.2 (per processor)
- 1 Microsoft Visual C++
- HP Servers include 3 years of support.

Clause 9 Related Items

Auditor's Report

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

This implementation of the TPC Benchmark C was audited by Lorna Livingtree of Performance Metrics, Inc.

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

Availability of the Full Disclosure Report

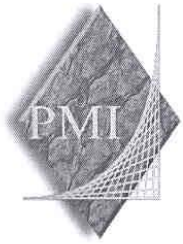
The Full Disclosure Report must be readily available to the public at a reasonable charge, similar to the charges for similar documents by the test sponsor. The report must be made available when results are made public. In order to use the phrase "TPC Benchmark™ C", the Full Disclosure Report must have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

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

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

or

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



PERFORMANCE METRICS INC.
TPC Certified Auditors

December 1, 2005

Mr. Daniel Pol
Hewlett-Packard Company
20555 SH 249
Houston, TX 77070

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

Platform: HP ProLiant DL585 G1 4P
Database Manager: IBM DB2 v8.2
Operating System: Microsoft Windows 2003 Server Enterprise Edition x64
Transaction Monitor: COM+

System Under Test: HP ProLiant DL585 G1with:				
CPU's	Memory	Disks (total)	90% Response	TpmC
4 AMD Opteron dual core @2.4GHz	Main: 128 GB	392 @36GB 10 @ 72GB 1 @ 36GB (OS)	1.41	236,054
8 clients: DL360G4 each with:				
2 Intel Xeon @3.6 GHz	Main: 1 GB	2 @ 36GB	Na	Na

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

- The transactions were correctly implemented.
- The database files were properly sized.
- The database was properly scaled with 19,200 warehouses, all of which were active during the measured interval.
- The ACID properties were successfully demonstrated.

PO Box 984, Klamath, CA 95548
(707) 482-0523 fax: (707) 482-0575 email: LornaL@PerfMetrics.com

- Data loss durability was demonstrated on a subset of the SUT configured with a database properly populated for 2,000 warehouses.
- Input data was generated according to the specified percentages.
- Eight hours of mirrored log space was present on the tested system.
- Eight hours of growth space for the dynamic tables was present on the tested system.
- The data for the 60 days space calculation was verified.
- The controller cache for the log disks was enabled and mirrored.
- The steady state portion of the test was 120 minutes.
- The system pricing was checked for major components and maintenance.
- Third party quotes were verified for compliance.

Auditor Notes:

None.

Sincerely,

Lorna Livingtree

Lorna Livingtree
Auditor

PO Box 984, Klamath, CA 95548
(707) 482-0523 fax: (707) 482-0575 email: LornaL@PerfMetrics.com

Appendix A: Source Code

The client source code is listed below.

tpccenv.bat

```
@REM
**************************************************
*********************
@REM  Licensed Materials - Property of IBM
@REM
@REM  Governed under the terms of the International
@REM  License Agreement for Non-Warranted Sample
Code.
@REM
@REM  (C) COPYRIGHT International Business Machines
Corp. 1996 - 2004
@REM  All Rights Reserved.
@REM
@REM  US Government Users Restricted Rights - Use,
duplication or
@REM  disclosure restricted by GSA ADP Schedule
Contract with IBM Corp.
@REM
**************************************************
*********************
@REM
@REM tpccenv.bat - Windows Environment Setup
@REM

set TPCC_VERSION=CK040324

set DB2INSTANCE=db2admin

set PLATFORM=WINDOWS

set SLASH=\
set MAKE=nmake

set TPCC_SPTYPE=SPGENERAL

set DB2VERSION=v8

set TPCC_SCHEMA=%USERNAME%

set DB2EDITION=EE
set DB2NODE=0
set DB2NODES=1

set HOME=C:
set TPCC_DBNAME=TPCC
set TPCC_ROOT=c:\tpc-c.ibm

set TPCC_SQLLIB=C:\Progra~1\IBM\SQLLIB
set TPCC_RUNDATA=%HOME%\TPC-C.IBM\RUNS

set TPCC_SPDIR=%TPCC_SQLLIB%\function
set TPCC_FENCED=NO
rem setenv /AMD64 /RETAIL
```

makefile.config

```
########################################################
########################
## Licensed Materials - Property of IBM
##
## Governed under the terms of the International
## License Agreement for Non-Warranted Sample Code.
##
## (C) COPYRIGHT International Business Machines
Corp. 1996-2005
## All Rights Reserved.
##
## US Government Users Restricted Rights - Use,
duplication or
## disclosure restricted by GSA ADP Schedule Contract
with IBM Corp.
########################################################
########################

#
# Makefile.config - NT/Winx64 Makefile Configuration
#
# Change Activity:
# defect Date        Who Description
# ====== ========== ===
================================================
# 225200 2002/04/05  mte Initial Code Drop
# 238967 2002/06/10  mte Fix optimization CFLAG
# 271551 2003/02/27  mte Remove REG_KIT_METHOD
# 277615 2003/04/10  jva Change COPTS_OS
# 286944 2003/07/29  mte Add AR, ARFLAGS
# 287481 2003/08/06  mte Fix quoting in LDFLAGS_LIB
# 288568 2003/08/19  mte Add ARFLAGS_LIB and
ARFLAGS_OUT
# 300040 2003/11/18  mte Fix structure sizing
problems(use -Zp8 instead of -Zp4)
# 358229 2005/01/27  nob Add -GS- and -DWIN64 for 64
bit NT environments

# Make Configuration (MSVC)
MAKE=nmake.exe

# Compiler Configuration (MSVC).
# CFLAGS_DEBUG may be set to "-Zi -Od", "-DDEBUGIT"
"-Zi -Od -DDEBUGIT" or left blank
CC=cl.exe
CFLAGS_OS=-DSQLWINT -MD -GS- -DWIN64 -J -Zp8 -
DREG_KIT_METHOD
CFLAGS_OUT=/Fo
CFLAGS_DEBUG=

# Linker Configuration (MSVC)
LD_EXEC=link.exe
LD_STORP=link.exe
LDFLAGS_EXEC=
LDFLAGS_SHLIB=/DLL
LDFLAGS_STORP=$(LDFLAGS_SHLIB) /DEF:rpctpcc.def
LDFLAGS_LIB=/LIBPATH:$(TPCC_SQLLIB)\lib
/LIBPATH:"C:\Program Files\Microsoft Visual
Studio\VC98\Lib" db2api.lib winmm.lib
LDFLAGS_OUT=/OUT:

# Library Configuration
AR=lib.exe
ARFLAGS=
ARFLAGS_LIB=
ARFLAGS_OUT=/OUT:

# OS Commands
ERASE=del /F
ERASEDIR=rmdir /S
MOVE=MOVE
COPY=COPY

# OS File Extensions & Path Separator
OBJEXT=.obj
LIBEXT=.lib
SHLIBEXT=.dll
BINEXT=.exe
SLASH=\\
CMDSEP=&
```

include/tpccapp.h

```
/**************************************************
**********************
** Licensed Materials - Property of IBM
**
** Governed under the terms of the International
** License Agreement for Non-Warranted Sample Code.
**
** (C) COPYRIGHT International Business Machines
Corp. 1996 - 2005
** All Rights Reserved.
**
** US Government Users Restricted Rights - Use,
duplication or
** disclosure restricted by GSA ADP Schedule Contract
with IBM Corp.
**************************************************
**********************/

/*
 * tpccapp.h - Application Macros
 *
 * Change Activity:
 * defect Date        Who Description
 * ====== ========== ===
================================================
 * xxxxxx 2003/02/04  mte Split from db2tpcc.h
 * 298994 2003/11/05  cch Add Byte Swap code for
cross platform comm
 *
```

```
 */

#ifndef __TPCCAPP_H
#define __TPCCAPP_H

#include <stdio.h>
#include <stdlib.h>
#ifdef SQLUNIX
#include <unistd.h>
#endif
#include <string.h>
#include <time.h>

#ifdef SQLWINT
#include "sqlenv.h"
#define daricall __stdcall
#else
#define daricall
#endif

#include "sqlca.h"
#include "sqlcodes.h"

#ifdef SWAP_ENDIAN
#define SWAP_BYTE(Var)  SwapEndian((void*)&Var,
sizeof(Var))

/*************************************************
************************
  FUNCTION: SwapEndian
  PURPOSE: Swap the byte order of a structure
  EXAMPLE: int I=0x12345678; SWAP_BYTE(I); I =>
0x78563412;
  IMPLEMENTATION: Fold Addr in half, swap header &
tail by XOR op
            e.g.: *a = 0x12 [ Addr + 0];
                  *b = 0x78 [ Add + 4 - 0 - 1 =
Addr+3];
                  *a ^= *b;          // sets *a to
0x6A
                  *b ^= *a;          // sets *b to
0x12
                  *a ^= *b;          // sets *a to
0x78

             Now *a => 0x78 && *b => 0x12
*************************************************
************************/

void SwapEndian(void *Addr, int nb)
{
  int i;
  for (i=0; i<nb/2; i++)
  {
    char *a = (char*)Addr+i;
    char *b = (char*)Addr+(nb-i-1);

    *a ^= *b;
    *b ^= *a;
    *a ^= *b;
  }
}
#endif   //SWAP_ENDIAN

/*************************************************
************************/
/* SQLCODE Macros
*/
/*************************************************
************************/

#define DLCHK(a) \
  if (sqlca.sqlcode == SQL_RC_E911) { goto a; }

/*
*************************************************
***************** */
/* In NOT ATOMIC COMPOUND SQL, all statements will be
executed, but not    */
/* all will neccessarily complete successfully.  We
can use sqlerrd(4) to  */
/* determine how many statements succeeded, but this
won't tell us what    */
/* statements failed.  In order to determine this, we
need to look at      */
/* sqlerrmc, which has the following structure:
HHHXNNNSSSSSXNNNSSSSS...  */
/* (See the docs for more details.)  Since we're
interested in the first   */
/* failing statement, we can look at elements 5 and
6, which will contain  */
/* the first two digits of NNN (which is right-padded
with spaces).  We    */
/* need to look at the first two digits since some of
our compound blocks  */
/* have > 9 statements.  We convert these digits from
ASCII to an int and  */
/* set 'last' to this value.
*/
/*
*************************************************
***************** */

#define NACOMPCHK(last) \
  if (sqlca.sqlcode != SQL_RC_E1339) { last = -1; } \
  else { int a = ((sqlca.sqlerrmc[4] == 0x20) ? 0 :
sqlca.sqlerrmc[4]-0x30); \
         int b = ((sqlca.sqlerrmc[5] == 0x20) ? 0 :
sqlca.sqlerrmc[5]-0x30); \
         if (b == 0) { last = a; } else { last = a *
10 + b; } \
       }

#endif // __TPCCAPP_H
```

include/tpccdbg.h

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

/*
 * tpccdbg.h - Debugging Macros
 *
 * Change Activity:
 * defect Date        Who Description
 * ====== ========== ===
=============================================
 * 266954 2003/01/20  mte Split from db2tpcc.h
 * 268652 2003/02/04  mte Move DB2OUT from db2tpcc.h
 * 232832 2003/03/24  jnh Removed DB2OUT
 * 299968 2003/11/13  mte Add C++ declarations
 * 355218 2004/12/02  mte Add sqlerror() declaration
 *
 */

#ifndef __TPCCDBG_H
#define __TPCCDBG_H

#ifdef __cplusplus
extern "C" {
#endif

extern void sqlerror (int tranType, char *msg, char
*file, int line,
                      SQL_STRUCTURE sqlca *psqlca);

extern void new_debug (struct out_neword_struct
*neword_ptr,
                       struct in_neword_struct
*in_neword_ptr,
                       char *msg);
extern void pay_debug (struct out_payment_struct
*payment_ptr,
                       struct in_payment_struct
*in_payment_ptr,
                       char *msg);
extern void ord_debug (struct out_ordstat_struct
*ordstat_ptr,
                       struct in_ordstat_struct
*in_ordstat_ptr,
                       char *msg);
extern void del_debug (struct out_delivery_struct
*delivery_ptr,
                       struct in_delivery_struct
*in_delivery_ptr,
                       char *msg);
extern void stk_debug (struct out_stocklev_struct
*stocklev_ptr,
```

```
                        struct in_stocklev_struct
*in_stocklev_ptr,
                        char *msg);

extern void new_print (struct out_neword_struct
*neword_ptr,
                        struct in_neword_struct
*in_neword_ptr,
                        char *filename,
                        char *msg);
extern void pay_print (struct out_payment_struct
*payment_ptr,
                        struct in_payment_struct
*in_payment_ptr,
                        char *filename,
                        char *msg);
extern void ord_print (struct out_ordstat_struct
*ordstat_ptr,
                        struct in_ordstat_struct
*in_ordstat_ptr,
                        char *filename,
                        char *msg);
extern void del_print (struct out_delivery_struct
*delivery_ptr,
                        struct in_delivery_struct
*in_delivery_ptr,
                        char *filename,
                        char *msg);
extern void stk_print (struct out_stocklev_struct
*stocklev_ptr,
                        struct in_stocklev_struct
*in_stocklev_ptr,
                        char *filename,
                        char *msg);

#ifdef __cplusplus
}
#endif

#endif // __TPCCDBG_H
```

include/db2tpcc.h

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

/*
 * db2tpcc.h - Macros and Miscellany
 *
 * Change Activity:
 * defect Date        Who Description
 * ====== ========== === 
==============================================
 * 225200 2002/04/05  mte Initial Code Drop
 * 228237 2002/05/31  mte Remove DLCHK_COMPOUND
 * 226824 2002/06/18  mte FOR BIT DATA support (-
DSPGENERAL)
 * 240328 2002/06/21  mte Generate timestamps in
client stubs
 * 251704 2002/08/20  mte Renumber transactions
 * 261193 2002/11/19  mte Fix NOT ATOMIC COMPOUND
error handling
 * 261133 2002/11/25  mte Add NURand A and C
constants
 * 262542 2002/11/27  dje Introduce constants for
unused and invalid items
 * 262643 2002/11/28  mte Add header guards
 * 265265 2003/01/14  mte New schema to avoid type
conversions
 * 268652 2003/02/03  mte Header file cleanup
 * 269614 2003/02/10  mte Header file cleanup
 * 270212 2003/02/14  mte Merge SQL changes (see
defect notes)
 * 272753 2003/03/05  mte Align input/output
structures for 32/64-bit
 * 273565 2003/03/11  mte Error handing cleanup
 * 273748 2003/03/12  mte Fix H_AMOUNT scaling
problem in PAY
 * 274273 2003/03/17  jnh avoid duplicate symbols
with some compilers
 * 283859 2003/06/23  mte Use Austin RTE values for
C_OL_I_ID and C_ID
 * 299531 2003/11/11  mte Support authentication
during connect
 * 299530 2003/11/11  mte Better error-handling
during connect/disconnect
 * 301364 2003/11/24  mte Add context routine hooks
 *
 */

#ifndef __DB2TPCC_H
#define __DB2TPCC_H

#include <sys/types.h>
#ifdef SQLWINT
typedef __int16 int16_t;
typedef __int32 int32_t;
typedef __int64 int64_t;
#endif /* SQLWINT */

#include "lval.h"

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

/* Transaction Return Codes (s_transtatus)
*/
/*
*************************************************
***************** */

#define INVALID_ITEM            100
#define TRAN_OK                 0
#define FATAL_SQLERROR          -1

/*
*************************************************
***************** */
/* Definition of Unused and Bad Items
*/
/*
*************************************************
***************** */
/* Define unused item ID to be 0. This allows the SUT
to determine the     */
/* number of items in the order as required by
2.4.1.3 and 2.4.2.2 since   */
/* the assumption that any item with OL_I_ID = 0 is
unused will be true.   */
/* This in turn requires that the value used for an
invalid item is        */
/* equal to ITEMS + 1.
*/
/*
*************************************************
***************** */

#define INVALID_ITEM_ID (2 * ITEMS) + 1
#define UNUSED_ITEM_ID 0

#define MIN_WAREHOUSE 1
#define MAX_WAREHOUSE WAREHOUSES

/*************************************************
**********************/
/* NURand Constants
*/
/* C_C_LAST_RUN and C_C_LAST_LOAD must adhere to
clause 2.1.6.             */
/* Analysis indicates that a C_LAST delta of 85 is
optimal.                  */
/*************************************************
**********************/
#define C_C_LAST_RUN          88
#define C_C_LAST_LOAD         173
#define C_C_ID                319
#define C_OL_I_ID   3849
#define A_C_LAST    255
#define A_C_ID                1023
#define A_OL_I_ID   8191

/*************************************************
**********************/
/* Transaction Type Identifiers
*/
/*************************************************
**********************/
```

```
#define CLIENT_SQL   0
#define NEWORD_SQL   1
#define PAYMENT_SQL  2
#define ORDSTAT_SQL  3
#define DELIVERY_SQL 4
#define STOCKLEV_SQL 5

/*
**************************************************
***************** */
/* Defect 226824 - varchar host variables to support
FOR BIT DATA          */
/*
**************************************************
***************** */
/* Whenever changing these structures, you MUST
update the char[] array    */
/* size in the varchar hostvars, the xx->len values
in Src.Cli/???c.sqc    */
/* and the utils/cat.ddl and utils/uncat.ddl scripts.
*/
/*
*/
/* In all cases, the proper value to use is:
*/
/*
*/
/*              sizeof(struct xxx) - SPGENERAL_ADJUST
*/
/*
*/
/* SPGENERAL_PAD is the number of int16_ts required
to pad the structures  */
/* so that the data is aligned the same as if the
len/pad elements were    */
/* not present.
*/
/*
*/
/* NOTE:  It is almost guaranteed that this will
break when using clients  */
/*        that use a different byte ordering and/or
compiler padding.      */
/*
**************************************************
***************** */

#define SPGENERAL_PAD 3
#define SPGENERAL_ADJUST sizeof(int16_t)

struct in_neword_struct {
#ifdef SPGENERAL
  int16_t  len;
  int16_t  pad[SPGENERAL_PAD];
#endif // SPGENERAL
  struct   in_items_struct {
    int32_t  s_OL_I_ID;
    int32_t  s_OL_SUPPLY_W_ID;
    int16_t  s_OL_QUANTITY;
    int16_t  pad1[3];
  } in_item[15];
  int64_t  s_O_ENTRY_D_time;  /* init by SUT */
  int32_t  s_C_ID;
  int32_t  s_W_ID;
  int16_t  s_D_ID;
  int16_t  s_O_OL_CNT;                  /* init by
SUT */
  int16_t  s_all_local;
  int16_t  duplicate_items;
};

struct out_neword_struct {
#ifdef SPGENERAL
  int16_t  len;
  int16_t  pad[SPGENERAL_PAD];
#endif // SPGENERAL
  struct   items_struct {
    int32_t  s_I_PRICE;
    int32_t  s_OL_AMOUNT;
    int16_t  s_S_QUANTITY;
    int16_t  pad2;
    char     s_I_NAME[25];
    char     s_brand_generic;
  } item[15];
  int64_t  s_O_ENTRY_D_time;
  int32_t  s_W_TAX;
  int32_t  s_D_TAX;
  int32_t  s_C_DISCOUNT;
  int32_t  s_total_amount;
  int32_t  s_O_ID;
  int16_t  s_O_OL_CNT;
  int16_t  s_transtatus;
  int16_t  deadlocks;
  char     s_C_LAST[17];
  char     s_C_CREDIT[3];
};

struct in_payment_struct {
#ifdef SPGENERAL
  int16_t  len;
  int16_t  pad[SPGENERAL_PAD];
#endif // SPGENERAL
  int64_t  s_H_DATE_time;     /* init by SUT */
  int64_t  s_H_AMOUNT;
  int32_t  s_W_ID;
  int32_t  s_C_W_ID;
  int32_t  s_C_ID;
  int16_t  s_C_D_ID;
  int16_t  s_D_ID;
  char     s_C_LAST[17];
};

struct out_payment_struct {
#ifdef SPGENERAL
  int16_t  len;
  int16_t  pad[SPGENERAL_PAD];
#endif // SPGENERAL
  int64_t  s_H_DATE_time;
  int64_t  s_C_SINCE_time;
  int64_t  s_C_CREDIT_LIM;
  int64_t  s_C_BALANCE;
  int32_t  s_C_DISCOUNT;
  int32_t  s_C_ID;
  int16_t  s_transtatus;
  int16_t  deadlocks;
  char     s_W_STREET_1[21];
  char     s_W_STREET_2[21];
  char     s_W_CITY[21];
  char     s_W_STATE[3];
  char     s_W_ZIP[10];
  char     s_D_STREET_1[21];
  char     s_D_STREET_2[21];
  char     s_D_CITY[21];
  char     s_D_STATE[3];
  char     s_D_ZIP[10];
  char     s_C_FIRST[17];
  char     s_C_MIDDLE[3];
  char     s_C_LAST[17];
  char     s_C_STREET_1[21];
  char     s_C_STREET_2[21];
  char     s_C_CITY[21];
  char     s_C_STATE[3];
  char     s_C_ZIP[10];
  char     s_C_PHONE[17];
  char     s_C_CREDIT[3];
  char     s_C_DATA[201];
};

struct in_ordstat_struct {
#ifdef SPGENERAL
  int16_t  len;
  int16_t  pad[SPGENERAL_PAD];
#endif // SPGENERAL
  int32_t  s_C_ID;
  int32_t  s_W_ID;
  int16_t  s_D_ID;
  int16_t  pad1[3];
  char     s_C_LAST[17];
};

struct out_ordstat_struct {
#ifdef SPGENERAL
  int16_t  len;
  int16_t  pad[SPGENERAL_PAD];
#endif // SPGENERAL
  int64_t  s_C_BALANCE;
  int64_t  s_O_ENTRY_D_time;
  int32_t  s_C_ID;
  int32_t  s_O_ID;
  int16_t  s_O_CARRIER_ID;
  int16_t  s_ol_cnt;
  int16_t  pad1[2];
  struct   oitems_struct {
    int64_t  s_OL_DELIVERY_D_time;
    int32_t  s_OL_AMOUNT;
    int32_t  s_OL_I_ID;
    int32_t  s_OL_SUPPLY_W_ID;
    int16_t  s_OL_QUANTITY;
    int16_t  pad2;
  } item[15];
  int16_t  s_transtatus;
  int16_t  deadlocks;
  char     s_C_FIRST[17];
  char     s_C_MIDDLE[3];
  char     s_C_LAST[17];
};

struct in_delivery_struct {
#ifdef SPGENERAL
```

```
  int16_t  len;
  int16_t  pad[SPGENERAL_PAD];
#endif // SPGENERAL
  int64_t  s_O_DELIVERY_D_time;         /* init by
SUT */
  int32_t  s_W_ID;
  int16_t  s_O_CARRIER_ID;
};

struct out_delivery_struct {
#ifdef SPGENERAL
  int16_t  len;
  int16_t  pad[SPGENERAL_PAD];
#endif // SPGENERAL
  int32_t  s_O_ID[10];
  int16_t  s_transtatus;
  int16_t  deadlocks;
};

struct in_stocklev_struct {
#ifdef SPGENERAL
  int16_t  len;
  int16_t  pad[SPGENERAL_PAD];
#endif // SPGENERAL
  int32_t  s_threshold;
  int32_t  s_W_ID;
  int16_t  s_D_ID;
};

struct out_stocklev_struct {
#ifdef SPGENERAL
  int16_t  len;
  int16_t  pad[SPGENERAL_PAD];
#endif // SPGENERAL
  int32_t  s_low_stock;
  int16_t  s_transtatus;
  int16_t  deadlocks;
};

/*
*****************************************************
***************** */
/* Transaction Prototypes
*/
/*
*****************************************************
***************** */

#ifdef __cplusplus
extern "C" {
#endif

extern int neword_sql(struct in_neword_struct*,
struct out_neword_struct*);
extern int payment_sql(struct in_payment_struct*,
struct out_payment_struct*);
extern int ordstat_sql(struct in_ordstat_struct*,
struct out_ordstat_struct*);
extern int delivery_sql(struct in_delivery_struct*,
struct out_delivery_struct*);
extern int stocklev_sql(struct in_stocklev_struct*,
struct out_stocklev_struct*);

#ifdef __cplusplus
}
#endif

/*
*****************************************************
***************** */
/* DB2 Connect/Disconnect & Thread Context Wrappers
*/
/*
*****************************************************
***************** */

#ifdef __cplusplus
extern "C" {
#endif

extern int connect_to_TM(char*);
extern int connect_to_TM_auth(char*, char*, char*);
extern int disconnect_from_TM(void);

#ifdef SQLWINT
extern int create_context(void);
extern int destroy_context(void);
extern int get_context(void**);
extern int attach_context(void*);
extern int detach_context(void*);
#endif // SQLWINT

#ifdef __cplusplus
}
#endif

#endif // __DB2TPCC_H
```

include/lval.h

```
/* lval.h - generated automatically at 20050711.2034
*/

#ifndef __LVAL_H
#define __LVAL_H
#define WAREHOUSES 12880
#define DISTRICTS_PER_WAREHOUSE 10
#define CUSTOMERS_PER_DISTRICT 3000
#define ITEMS 100000
#define STOCK_PER_WAREHOUSE 100000
#define MIN_OL_PER_ORDER 5
#define MAX_OL_PER_ORDER 15
#define NU_ORDERS_PER_DISTRICT 900
#endif // __LVAL_H
```

Src.Common/Makefile

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

#
# Makefile - Makefile for Src.Common
#
# Change Activity:
# defect Date         Who Description
# ====== ========== ===
=============================================
# 225200 2002/04/05  mte Initial Code Drop
# 239017 2002/06/11  mte Move INCLUDE before CFLAGS
# 238709 2002/06/13  mte Reduce DB2 CONNECT commands
# 226824 2002/06/18  mte FOR BIT DATA (-DSPGENERAL)
support
# 256386 2002/09/23  mte Remove tpcclwh.c during
clean
# 264386 2002/12/18  mte Various Makefile changes
# 267881 2003/01/27  mte Wrap all local-warehouse
code with #ifdef EEE
# 277607 2003/04/10  mte Add rebind target
# 280183 2003/05/08  mte Ignore prep failures
# 280703 2003/05/15  jnh change INCLUDE to INCLUDES
# 306888 2004/01/15  mte Ensure package consistency
#

!include $(TPCC_ROOT)/Makefile.config

#
##########################################################
###################
# Preprocessor, Compiler and LInker Flags
#
##########################################################
###################

BND_OPTS =          GRANT PUBLIC \
                    MESSAGES $*.bnd.msg
PRP_OPTS =          BINDFILE \
                    OPTLEVEL 1 \
                    ISOLATION RR \
                    MESSAGES $*.prep.msg \
                    LEVEL $(TPCC_VERSION) \
                    NOLINEMACRO

INCLUDES =          -I$(TPCC_SQLLIB)$(SLASH)include -
I$(TPCC_ROOT)$(SLASH)include

CFLAGS =  $(CFLAGS_OS) $(CFLAGS_DEBUG) $(INCLUDES) \
                    -DSQLA_NOLINES -D$(DB2EDITION) -
D$(DB2VERSION) \
                    -D$(TPCC_SPTYPE)
```

```
UTIL_OBJ =          tpccmisc$(OBJEXT)
tpccdbg$(OBJEXT) tpccctx$(OBJEXT)

#
########################################################
###################
# User Targets
#
########################################################
###################

all:      connect $(UTIL_OBJ) disconnect

clean:
          - $(ERASE) *$(OBJEXT) *.bnd *.msg tpccctx.c

#
########################################################
###################
# Helper Targets
#
########################################################
###################

connect:
          - db2 connect to $(TPCC_DBNAME)

disconnect:
          - db2 connect reset
          - db2 terminate

rebind:
          db2 bind tpccctx.bnd $(BND_OPTS)

#
########################################################
###################
# Build Rules
#
########################################################
###################

.SUFFIXES:
.SUFFIXES: $(OBJEXT) .c .sqc

.sqc.c:
          @echo "Prepping $*.sqc"
          -db2 prep $*.sqc $(PRP_OPTS)
          @echo "Binding $*.bnd"
          db2 bind $*.bnd $(BND_OPTS)

#
########################################################
###################
# Dependencies
#
########################################################
###################

# Source
tpccdbg$(OBJEXT):   tpccdbg.c
tpccctx$(OBJEXT):   tpccctx.c
tpccmisc$(OBJEXT):  tpccmisc.c

# Headers
tpccdbg.c:          $(TPCC_ROOT)/include/db2tpcc.h
```

Src.Common/tpccctx.sqc

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

/*
 *
 * tpccctx.sqc - TPCC context code
 *
 * Change Activity:
 * defect Date        Who Description
 * ====== ========== ===
=============================================
 * 225200 2002/04/05  mte Initial Code Drop
 * 253110 2002/08/28  mte Remove unneccessary extern
 * 271939 2003/02/26  mte Allow room for NULL
terminator in dbname[]
 * 273565 2003/03/11  mte Return sqlcodes for
connect/disconnect
 * 299531 2003/11/11  mte Support authentication
during connect
 * 299530 2003/11/11  mte Destroy thread context on
failed connect
 * 301364 2003/11/24  mte Add wrappers around DB2
context APIs
 * 314005 2004/02/26  mte Add filename argument to
sqlerror
 * 333827 2004/05/27  mte Fix missing NULL on 8-
character dbname
 * 355218 2004/12/02  mte Include debugging header
 */

#include <string.h>
//@d355218mte
#include <sqlutil.h>
#include "db2tpcc.h"
//@d299530mte
#include "tpccdbg.h"
//@d355218mte

int connect_to_TM(char *in_dbname);
//@d273565mte
int connect_to_TM_auth(char *in_dbname, char
*in_username, char *in_password); //@d299531mte
int disconnect_from_TM(void);
//@d273565mte
int create_context();
//@bd301364mte
int destroy_context();
int attach_context(void*);
int detach_context(void*);
int get_context(void**);
//@ed301364mte

int connect_to_TM(char *in_dbname)
//@bd299531mte
{
  return connect_to_TM_auth(in_dbname, "", "");
}
//@ed299531mte

int connect_to_TM_auth(char *in_dbname, char
*in_username, char *in_password) //@d299531mte
{
   SQL_STRUCTURE sqlca  sqlca;
   int ConnectSQLCODE = 0;
//@d299530mte

   EXEC SQL BEGIN DECLARE SECTION;
   char dbname[9];
//@d271939mte
   char username[129];
//@d299531mte
   char password[15];
//@d299531mte
   EXEC SQL END DECLARE SECTION;

   SQLCODE = create_context();
//@d301364mte
   if (SQLCODE != 0) { return SQLCODE; }
//@d273565mte

   /* Copy 9 characters - 8 for dbname, 1 for NULL */
   strncpy(dbname,in_dbname,9);
//@d333827mte
   if (strcmp(in_username,"") == 0)
//@bd299531mte
   {
      EXEC SQL CONNECT TO :dbname IN SHARE MODE;
   } else {
      strncpy(username,in_username,128);
      strncpy(password,in_password,14);
      EXEC SQL CONNECT TO :dbname IN SHARE MODE USER
:username USING :password;
   }
//@ed299531mte

   ConnectSQLCODE = SQLCODE;
//@bd299530mte
   if (ConnectSQLCODE != 0)
   {
```

```
      sqlerror( CLIENT_SQL, "CONNECT", __FILE__,
__LINE__, &sqlca); //@d314005mte

      SQLCODE = destroy_context();
//@d301364mte
      if (SQLCODE != 0) { return SQLCODE; }
//@d273565mte

      return ConnectSQLCODE;
   }
//@ed299530mte

   return 0;
//@d273565mte
}

int disconnect_from_TM(void)
//@d273565mte
{
   SQL_STRUCTURE sqlca  sqlca;
   int DisconnectSQLCODE = 0;

   EXEC SQL CONNECT RESET;

   DisconnectSQLCODE = SQLCODE;
//@bd299530mte
   if (DisconnectSQLCODE != 0) {
      sqlerror( CLIENT_SQL, "DISCONNECT", __FILE__,
__LINE__, &sqlca); //@d314005mte
   }
//@ed299530mte

   SQLCODE = destroy_context();
//@d301364mte
   if (SQLCODE != 0) { return SQLCODE; }
//@d273565mte

   if (DisconnectSQLCODE) {
//@bd299530mte
      return DisconnectSQLCODE;
   }
//@ed299530mte
   return 0;
//@d273565mte
}

int create_context(void)
//@bd299530mte //@d301364mte
{
   SQL_STRUCTURE sqlca sqlca;
   void *ctx;

   sqleSetTypeCtx(SQL_CTX_MULTI_MANUAL);
   sqleBeginCtx(&ctx, SQL_CTX_BEGIN_ALL, NULL,
&sqlca);

   if (SQLCODE != 0) {
      sqlerror( CLIENT_SQL, "CREATE", __FILE__,
__LINE__, &sqlca); //@d314005mte
      return SQLCODE;
//@d273565mte
   }

   return 0;
}

int attach_context(void *ctx)
//@bd301364mte
{
   SQL_STRUCTURE sqlca sqlca;

   sqleAttachToCtx(ctx, NULL, &sqlca);

   if (SQLCODE != 0) {
      sqlerror( CLIENT_SQL, "ATTACH", __FILE__,
__LINE__, &sqlca); //@d314005mte
      return SQLCODE;
   }

   return 0;
}
//@ed301364mte

int detach_context(void *ctx)
//@bd301364mte
{
   SQL_STRUCTURE sqlca sqlca;

   sqleDetachFromCtx(ctx, NULL, &sqlca);

   if (SQLCODE != 0) {
      sqlerror( CLIENT_SQL, "DETACH", __FILE__,
__LINE__, &sqlca); //@d314005mte
      return SQLCODE;
   }

   return 0;
}
//@ed301364mte

int destroy_context(void)
{
   SQL_STRUCTURE sqlca sqlca;
   void *ctx;

   SQLCODE = get_context(&ctx);
//@d301364mte
   if (SQLCODE) { return SQLCODE; }
//@d301364mte

   sqleEndCtx(&ctx, SQL_CTX_END_ALL, NULL, &sqlca);

   if (SQLCODE != 0) {
      sqlerror( CLIENT_SQL, "DESTROY", __FILE__,
__LINE__, &sqlca); //@d314005mte
      return SQLCODE;
//@d273565mte
   }

   return 0;
}
//@ed299530mte

int get_context(void **ctx)
//@bd301364mte
{
   SQL_STRUCTURE sqlca sqlca;

   sqleGetCurrentCtx(ctx, NULL, &sqlca);

   if (SQLCODE != 0) {
      sqlerror( CLIENT_SQL, "GETCTX", __FILE__,
__LINE__, &sqlca); //@d314005mte
      return SQLCODE;
   }

   return 0;
}
//@ed301364mte
```

Src.Common/tpccdbg.c

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

/*
 * tccdbg.c - Debugging Routines
 *
 * Change Activity:
 * defect Date        Who Description
 * ====== ========== ===
==============================================
 * 225200 2002/04/05  mte Initial Code Drop
 * 240328 2002/06/21  mte Generate timestamps in
client stubs
 * 263277 2002/12/05  mte Fix numerous bugs in debug
code
 * 265265 2003/01/14  mte New schema to avoid type
conversions
 * 266954 2003/01/20  mte Cleanup for audit
 * 267999 2003/01/28  mte Cleanup for audit
 * 268652 2003/02/04  mte Header cleanup, add
timestamps to output structs
 * 273565 2003/03/11  mte Copy time from static
buffer
 * 232832 2003/03/24  jnh Replaced DB2OUT macro with
InitializeDebug routines
 * 277773 2003/04/11  mte Add formatted error message
string
```

```
 * 291887 2003/09/18  mte Replace %hd/%hX, %ld/%lX
with %d/%X
 * 299530 2003/11/11  mte Handle sqlerrors in client
connect/disconnect
 * 314005 2004/02/26  mte Add filename argument to
sqlerror
 * 325053 2004/04/26  mte Check for errors opening
file in sqlerror
 *
 */

#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <ctype.h>
#include <time.h>

#include "sqlca.h"
#include "sql.h"
#include "db2tpcc.h"
#include "tpccdbg.h"

#define DEBUG_FILENAME_SZ 128
#define DEBUG_PATH_SIZE 128

void      del_print();
void      new_print();
void      ord_print();
void      pay_print();
void      stk_print();

void current_tmstmp(char *buf);

static int debugInit = 0;
static char debugPath[DEBUG_PATH_SIZE] = "";

/*-------------------------------------------------
-----------*/
/*        InitializeDebug
*/
/*-------------------------------------------------
-----------*/
__inline void InitializeDebug(void) {
   if (debugInit == 0) {
      char *p = getenv("TPCC_DEBUGDIR");
      if (p) {
         strncpy(debugPath, p, DEBUG_PATH_SIZE);
      } else {
#ifdef SQLUNIX
         strcpy(debugPath, "/tmp");
#else
         strcpy(debugPath, "C:\\temp");
#endif
      }
#ifdef SQLWINT
      strcat(debugPath, "\\");
#else
      strcat(debugPath, "/");
#endif
   }
   debugInit = 1;
}

/*-------------------------------------------------
-----------*/
/*        sqlerror
*/
/*-------------------------------------------------
-----------*/
void sqlerror(int tranType, char *msg, char *file,
int line, SQL_STRUCTURE sqlca *psqlca)
{
   FILE *err_fp = NULL;
   char  err_fn[DEBUG_PATH_SIZE + DEBUG_FILENAME_SZ];
   char  tranName[16];
   int j,k;
   char  timeStamp[27];
   char  errStr[512] = "";

   InitializeDebug();
   strncpy(err_fn, debugPath, DEBUG_PATH_SIZE);
   current_tmstmp(&timeStamp[0]);
   timeStamp[19] = (char)NULL;

   switch(tranType)
   {
      case NEWORD_SQL:
         // sprintf(err_fn, "%d.err.out", getpid());
         strcat(err_fn, "new.err.out");
         strcpy(tranName, "NEW_ORDER");
         break;

      case DELIVERY_SQL:
         // sprintf(err_fn, "%d.err.out", getpid());
         strcat(err_fn, "del.err.out");
         strcpy(tranName, "DELIVERY");
         break;

      case PAYMENT_SQL:
         // sprintf(err_fn, "%d.err.out", getpid());
         strcat(err_fn, "pay.err.out");
         strcpy(tranName, "PAYMENT");
         break;

      case ORDSTAT_SQL:
         // sprintf(err_fn, "%d.err.out", getpid());
         strcat(err_fn, "ord.err.out");
         strcpy(tranName, "ORDER_STAT");
         break;

      case STOCKLEV_SQL:
         //sprintf(err_fn, "%d.err.out", getpid());
         strcat(err_fn, "stk.err.out");
         strcpy(tranName, "STOCK_LVL");
         break;

      case 0:
         strcat(err_fn, "cli.err.out");
         strcpy(tranName, "CLIENT");
         break;

      default:
         return;

   }

   /* Generate Formatted Error Message */
   sqlaintp(errStr, 512, 78, psqlca);

   if ((err_fp = fopen(err_fn, "a+")) == NULL)
   {
      return;
   }

   fprintf(err_fp, "-----------------------------------
-------\n");
   fprintf(err_fp, "Transaction: %s (%s)\n",
tranName, msg);
   fprintf(err_fp, "FILE %s (%u)\n", file, line);
   fprintf(err_fp, "SQLCODE %d ", psqlca->sqlcode);
#ifdef SQLUNIX
   fprintf(err_fp, "PID %d ", getpid());
#endif // SQLUNIX
   fprintf(err_fp, "TIME %s\n", timeStamp);
   fprintf(err_fp, "-----------------------------------
-------\n");
   fprintf(err_fp, "%s", errStr);
   fprintf(err_fp, "-----------------------------------
-------\n");

   if (psqlca->sqlerrmc[0] != ' ' || psqlca-
>sqlerrmc[1] != ' ')
   {
      fprintf(err_fp, "slerrmc:  ");

      for(j = 0; j < 5; j++)
      {
         for(k = 0; k < 16; k++) {
            int pos = j * 16 + k;
            if (pos < 70) fprintf(err_fp, "%02x ",
psqlca->sqlerrmc[pos]);
            else fprintf(err_fp, "   ");
         }
         fprintf(err_fp,"   |");
         for(k = 0; k < 16; k++) {
            int pos = j * 16 + k;
            char c = ' ';
            if (pos < 70) {
               c = psqlca->sqlerrmc[pos];
               if (!isprint(c)) c = ' ';
            }
            fprintf(err_fp,"%c", c);
         }
         fprintf(err_fp,"|\n");
         if (j < 4) fprintf(err_fp,"          ");
      }
   }

   fprintf(err_fp, "sqlerrp:  ");
   for(j = 0; j < 8; j++)
      fprintf(err_fp, "%c", psqlca->sqlerrp[j]);
   fprintf(err_fp,"\n");

   fprintf(err_fp, "sqlerrd: ");
   for(j = 0; j < 6; j++)
      fprintf(err_fp, " %d", psqlca->sqlerrd[j]);
   fprintf(err_fp,"\n");

   if (psqlca->sqlwarn[0] != ' ')
```

```
   {
      fprintf(err_fp, "sqlwarn: ");
      for(j = 0; j < 8; j++)
         fprintf(err_fp, "%c ", psqlca->sqlwarn[j]);
      fprintf(err_fp,"\n");
   }

   fprintf(err_fp, "\n");

   fclose(err_fp);
}


/*-------------------------------------------------
-----------*/
/* del_debug
*/
/*-------------------------------------------------
-----------*/
void del_debug (struct out_delivery_struct
*delivery_ptr,
                struct in_delivery_struct
*in_delivery,
                char *msg)
{
   char debug_fn[DEBUG_PATH_SIZE +
DEBUG_FILENAME_SZ];

   InitializeDebug();
   strncpy(debug_fn, debugPath, DEBUG_PATH_SIZE);
   strcat(debug_fn, "del.debug.out");
   del_print(delivery_ptr, in_delivery, debug_fn,
msg);
}

/*-------------------------------------------------
-----------*/
/* del_print
*/
/*-------------------------------------------------
-----------*/
void del_print (struct out_delivery_struct
*delivery_ptr,
                struct in_delivery_struct
*in_delivery,
                char *filename,
                char *msg)
{
   FILE *debug_fp;
   char  timeStamp[27];
   int   j;

   current_tmstmp(&timeStamp[0]);
   timeStamp[19] = (char)NULL;

   if ((debug_fp = fopen(filename, "a+")) == NULL)
   {
      return;
   }

   fprintf(debug_fp,"Delivery debug information
follows %s (%s)\n", timeStamp, msg);
#ifdef SQLUNIX
   fprintf(debug_fp, " PID %d ", getpid());
#endif // SQLUNIX

fprintf(debug_fp,"\n================================
================\n");

   fprintf(debug_fp,"in_delivery_struct {\n");
   fprintf(debug_fp,"\ts_W_ID         = %d (%X)\n",
           in_delivery->s_W_ID, in_delivery->s_W_ID);
   fprintf(debug_fp,"\ts_O_CARRIER_ID = %d (%X)\n",
           in_delivery->s_O_CARRIER_ID, in_delivery-
>s_O_CARRIER_ID);
   fprintf(debug_fp,"\ts_O_DELIVERY_D = %lld
(%llX)\n",
           in_delivery->s_O_DELIVERY_D_time,
in_delivery->s_O_DELIVERY_D_time);
   fprintf(debug_fp,"}\n\n");

   fprintf(debug_fp,"out_delivery_struct {\n");
   fprintf(debug_fp,"\ts_transtatus   = %d (%X)\n",
           delivery_ptr->s_transtatus,delivery_ptr-
>s_transtatus);
   fprintf(debug_fp,"\tdeadlocks      = %d (%X)\n",
           delivery_ptr->deadlocks,delivery_ptr-
>deadlocks);

   for (j = 0; j < 10; j++) {
      fprintf(debug_fp,"\t\ts_O_ID[%d]         =
%d\n",
              j, delivery_ptr->s_O_ID[j]);
   }
   fprintf(debug_fp,"\t}\n}\n\n");
   fclose(debug_fp);
}


/*-------------------------------------------------
-----------*/
/* new_debug
*/
/*-------------------------------------------------
-----------*/
void new_debug (struct out_neword_struct *neword_ptr,
                struct in_neword_struct *in_neword,
                char *msg)
{
   char debug_fn[DEBUG_PATH_SIZE +
DEBUG_FILENAME_SZ];

   InitializeDebug();
   strncpy(debug_fn, debugPath, DEBUG_PATH_SIZE);
   strcat(debug_fn, "new.debug.out");
   new_print(neword_ptr, in_neword, debug_fn, msg);
}

/*-------------------------------------------------
-----------*/
/* new_print
*/
/*-------------------------------------------------
-----------*/
void new_print (struct out_neword_struct *neword_ptr,
                struct in_neword_struct *in_neword,
                char *filename,
                char *msg)
{
   FILE *debug_fp;
   char  timeStamp[27];
   int   j, items;

   current_tmstmp(&timeStamp[0]);
   timeStamp[19] = (char)NULL;

   if ((debug_fp = fopen(filename, "a+")) == NULL)
   {
      return;
   }

   fprintf(debug_fp,"New order debug information
follows %s (%s)\n", timeStamp, msg);
#ifdef SQLUNIX
   fprintf(debug_fp, " PID %d ", getpid());
#endif // SQLUNIX

fprintf(debug_fp,"\n================================
================\n");

   fprintf(debug_fp,"in_neword_struct {\n");

   fprintf(debug_fp,"\ts_C_ID         = %d (%X)\n",
           in_neword->s_C_ID, in_neword->s_C_ID);
   fprintf(debug_fp,"\ts_W_ID         = %d (%X)\n",
           in_neword->s_W_ID, in_neword->s_W_ID);
   fprintf(debug_fp,"\ts_D_ID         = %d (%X)\n",
           in_neword->s_D_ID, in_neword->s_D_ID);
   fprintf(debug_fp,"\ts_O_OL_CNT     = %d (%X)\n",
           in_neword->s_O_OL_CNT, in_neword-
>s_O_OL_CNT);
   fprintf(debug_fp,"\ts_all_local    = %d (%X)\n",
           in_neword->s_all_local, in_neword-
>s_all_local);
   fprintf(debug_fp,"\ts_O_ENTRY_D    = %lld
(%llX)\n",
           in_neword->s_O_ENTRY_D_time, in_neword-
>s_O_ENTRY_D_time);
// fprintf(debug_fp,"\ts_transtatus   = %d (%X)\n",
//         in_neword->s_transtatus, in_neword-
>s_transtatus);
// fprintf(debug_fp,"\tduplicate_items= %d (%X)\n",
//         in_neword->duplicate_items, in_neword-
>duplicate_items);

   fprintf(debug_fp,"\titems {\n");
   items = in_neword->s_O_OL_CNT;
   for (j=0; j<items; j++) {
      if(j != 0)
         fprintf(debug_fp,"\n");
      fprintf(debug_fp,"\t\ts_OL_I_ID[%d]        = %d
(%X)\n",
              j, in_neword->in_item[j].s_OL_I_ID,
in_neword->in_item[j].s_OL_I_ID);
      fprintf(debug_fp,"\t\ts_OL_SUPPLY_W_ID[%d] = %d
(%X)\n",
              j, in_neword-
>in_item[j].s_OL_SUPPLY_W_ID, in_neword-
>in_item[j].s_OL_SUPPLY_W_ID);
```

```
      fprintf(debug_fp,"\t\ts_OL_QUANTITY[%d]    = %d
(%X)\n",
              j, in_neword->in_item[j].s_OL_QUANTITY,
in_neword->in_item[j].s_OL_QUANTITY);
   }
   fprintf(debug_fp,"\t}\n}\n\n");

   fprintf(debug_fp,"out_neword_struct {\n");
   fprintf(debug_fp,"\ts_C_LAST       = %s\n",
           neword_ptr->s_C_LAST);
   fprintf(debug_fp,"\ts_C_CREDIT     = %s\n",
           neword_ptr->s_C_CREDIT);
   fprintf(debug_fp,"\ts_W_TAX        = %d\n",
           neword_ptr->s_W_TAX);
   fprintf(debug_fp,"\ts_D_TAX        = %d\n",
           neword_ptr->s_D_TAX);
   fprintf(debug_fp,"\ts_C_DISCOUNT   = %d\n",
           neword_ptr->s_C_DISCOUNT);
   fprintf(debug_fp,"\ts_O_ID         = %d (%X)\n",
           neword_ptr->s_O_ID, neword_ptr->s_O_ID);
   fprintf(debug_fp,"\ts_O_OL_CNT     = %d (%X)\n",
           neword_ptr->s_O_OL_CNT, neword_ptr-
>s_O_OL_CNT);
   fprintf(debug_fp,"\ts_O_ENTRY_D    = %lld
(%llX)\n",
           neword_ptr->s_O_ENTRY_D_time, neword_ptr-
>s_O_ENTRY_D_time);
   fprintf(debug_fp,"\ts_total_amount = %d\n",
           neword_ptr->s_total_amount);
   fprintf(debug_fp,"\ts_transtatus   = %d (%X)\n",
           neword_ptr->s_transtatus, neword_ptr-
>s_transtatus);
   fprintf(debug_fp,"\tdeadlocks      = %d (%X)\n",
           neword_ptr->deadlocks, neword_ptr-
>deadlocks);

// fprintf(debug_fp,"\ts_W_ID         = %d (%X)\n",
//         neword_ptr->s_W_ID, neword_ptr->s_W_ID);
// fprintf(debug_fp,"\ts_D_ID         = %d (%X)\n",
//         neword_ptr->s_D_ID, neword_ptr->s_D_ID);
// fprintf(debug_fp,"\ts_all_local    = %d (%X)\n",
//         neword_ptr->s_all_local, neword_ptr-
>s_all_local);
// fprintf(debug_fp,"\tduplicate_items= %d (%X)\n",
//         neword_ptr->duplicate_items, neword_ptr-
>duplicate_items);

   fprintf(debug_fp,"\titems {\n");
   items = neword_ptr->s_O_OL_CNT;
   for (j=0; j<items; j++) {
      if(j != 0)
         fprintf(debug_fp,"\n");
      fprintf(debug_fp,"\t\ts_I_NAME[%d]         =
%s\n",
              j, neword_ptr->item[j].s_I_NAME);
      fprintf(debug_fp,"\t\ts_I_PRICE[%d]        =
%d\n",
              j, neword_ptr->item[j].s_I_PRICE);
      fprintf(debug_fp,"\t\ts_OL_AMOUNT[%d]      =
%d\n",
              j, neword_ptr->item[j].s_OL_AMOUNT);
      fprintf(debug_fp,"\t\ts_S_QUANTITY[%d]     = %d
(%X)\n",
              j, neword_ptr->item[j].s_S_QUANTITY,
neword_ptr->item[j].s_S_QUANTITY);
      fprintf(debug_fp,"\t\ts_brand_generic[%d]  =
%c\n",
              j, neword_ptr-
>item[j].s_brand_generic);
   }
   fprintf(debug_fp,"\t}\n}\n\n");
   fclose(debug_fp);
}




/*----------------------------------------------------
-----------*/
/* ord_debug
*/
/*----------------------------------------------------
-----------*/
void ord_debug (struct out_ordstat_struct
*ordstat_ptr,
                struct in_ordstat_struct
*in_ordstat,
                char *msg)
{
   char debug_fn[DEBUG_PATH_SIZE +
DEBUG_FILENAME_SZ];

   InitializeDebug();
   strncpy(debug_fn, debugPath, DEBUG_PATH_SIZE);
   strcat(debug_fn, "ord.debug.out");
   ord_print(ordstat_ptr, in_ordstat, debug_fn, msg);
}

/*----------------------------------------------------
-----------*/
/* ord_print
*/
/*----------------------------------------------------
-----------*/
void ord_print (struct out_ordstat_struct
*ordstat_ptr,
                struct in_ordstat_struct
*in_ordstat,
                char *filename,
                char *msg)
{
   FILE *debug_fp;
   char  timeStamp[27];
   int   j, items;

   current_tmstmp(&timeStamp[0]);
   timeStamp[19] = (char)NULL;

   if ((debug_fp = fopen(filename, "a+")) == NULL)
   {
      return;
   }

   fprintf(debug_fp,"Order status debug information
follows %s (%s)\n", timeStamp, msg);
#ifdef SQLUNIX
   fprintf(debug_fp, " PID %d ", getpid());
#endif // SQLUNIX

fprintf(debug_fp,"\n================================
===============\n");

   fprintf(debug_fp,"in_ordstat_struct {\n");
   fprintf(debug_fp,"\ts_W_ID         = %d (%X)\n",
           in_ordstat->s_W_ID, in_ordstat->s_W_ID);
   fprintf(debug_fp,"\ts_D_ID         = %d (%X)\n",
           in_ordstat->s_D_ID, in_ordstat->s_D_ID);
   fprintf(debug_fp,"\ts_C_ID         = %d (%X)\n",
           in_ordstat->s_C_ID, in_ordstat->s_C_ID);
   fprintf(debug_fp,"\ts_C_LAST       = %s\n",
           in_ordstat->s_C_LAST);
   fprintf(debug_fp,"}\n\n");

   fprintf(debug_fp,"out_ordstat_struct {\n");
   fprintf(debug_fp,"\ts_C_ID         = %d (%X)\n",
           ordstat_ptr->s_C_ID, ordstat_ptr->s_C_ID);
   fprintf(debug_fp,"\ts_C_FIRST      = %s\n",
           ordstat_ptr->s_C_FIRST);
   fprintf(debug_fp,"\ts_C_MIDDLE     = %s\n",
           ordstat_ptr->s_C_MIDDLE);
   fprintf(debug_fp,"\ts_C_LAST       = %s\n",
           ordstat_ptr->s_C_LAST);
   fprintf(debug_fp,"\ts_C_BALANCE    = %lld\n",
           ordstat_ptr->s_C_BALANCE);
   fprintf(debug_fp,"\ts_O_ID         = %d (%X)\n",
           ordstat_ptr->s_O_ID, ordstat_ptr->s_O_ID);
   fprintf(debug_fp,"\ts_O_ENTRY_D    = %lld
(%llX)\n",
           ordstat_ptr->s_O_ENTRY_D_time,
ordstat_ptr->s_O_ENTRY_D_time);
   fprintf(debug_fp,"\ts_O_CARRIER_ID = %d (%X)\n",
           ordstat_ptr->s_O_CARRIER_ID, ordstat_ptr-
>s_O_CARRIER_ID);
   fprintf(debug_fp,"\ts_ol_cnt       = %d (%X)\n",
           ordstat_ptr->s_ol_cnt, ordstat_ptr-
>s_ol_cnt);
   fprintf(debug_fp,"\ts_transtatus   = %d (%X)\n",
           ordstat_ptr->s_transtatus, ordstat_ptr-
>s_transtatus);
   fprintf(debug_fp,"\tdeadlocks      = %d (%X)\n",
           ordstat_ptr->deadlocks, ordstat_ptr-
>deadlocks);

   fprintf(debug_fp,"\titems {\n");
   items = ordstat_ptr->s_ol_cnt;
   for (j = 0; j < items; j++) {
      if(j != 0)
         fprintf(debug_fp,"\n");
      fprintf(debug_fp,"\t\ts_OL_SUPPLY_W_ID[%d] = %d
(%X)\n",
              j, ordstat_ptr-
>item[j].s_OL_SUPPLY_W_ID, ordstat_ptr-
>item[j].s_OL_SUPPLY_W_ID);
      fprintf(debug_fp,"\t\ts_OL_I_ID[%d]        = %d
(%X)\n",
              j, ordstat_ptr->item[j].s_OL_I_ID,
ordstat_ptr->item[j].s_OL_I_ID);
      fprintf(debug_fp,"\t\ts_OL_QUANTITY[%d]    = %d
(%X)\n",
```

```
            j, ordstat_ptr->item[j].s_OL_QUANTITY,
ordstat_ptr->item[j].s_OL_QUANTITY);
      fprintf(debug_fp,"\t\ts_OL_AMOUNT[%d]      =
%d\n",
            j, ordstat_ptr->item[j].s_OL_AMOUNT);
      fprintf(debug_fp,"\t\ts_OL_DELIVERY_D[%d]  =
%lld (%llX)\n",
            j,ordstat_ptr-
>item[j].s_OL_DELIVERY_D_time,
            ordstat_ptr-
>item[j].s_OL_DELIVERY_D_time);
   }
   fprintf(debug_fp,"\t}\n}\n\n");
   fclose(debug_fp);
}


/*-------------------------------------------------
-----------*/
/* pay_debug
*/
/*-------------------------------------------------
-----------*/
void pay_debug (struct out_payment_struct
*payment_ptr,
                struct in_payment_struct
*in_payment,
                char *msg)
{
   char debug_fn[DEBUG_PATH_SIZE +
DEBUG_FILENAME_SZ];

   InitializeDebug();
   strncpy(debug_fn, debugPath, DEBUG_PATH_SIZE);
   strcat(debug_fn, "pay.debug.out");
   pay_print(payment_ptr, in_payment, debug_fn, msg);
}

/*-------------------------------------------------
-----------*/
/* pay_print
*/
/*-------------------------------------------------
-----------*/
void pay_print (struct out_payment_struct
*payment_ptr,
                struct in_payment_struct
*in_payment,
                char *filename,
                char *msg)
{
   FILE *debug_fp;
   char  timeStamp[27];

   current_tmstmp(&timeStamp[0]);
   timeStamp[19] = (char)NULL;

   if ((debug_fp = fopen(filename, "a+")) == NULL)
   {
      return;
   }
   fprintf(debug_fp,"Payment debug information
follows %s (%s)\n", timeStamp, msg);
#ifdef SQLUNIX
   fprintf(debug_fp, " PID %d ", getpid());
#endif // SQLUNIX

fprintf(debug_fp,"\n================================
===============\n");

   fprintf(debug_fp,"in_payment_struct {\n");
   fprintf(debug_fp,"\ts_H_AMOUNT     = %lld
(%llX)\n",
           in_payment->s_H_AMOUNT, in_payment-
>s_H_AMOUNT);
   fprintf(debug_fp,"\ts_C_ID         = %d (%X)\n",
           in_payment->s_C_ID, in_payment->s_C_ID);
   fprintf(debug_fp,"\ts_W_ID         = %d (%X)\n",
           in_payment->s_W_ID, in_payment->s_W_ID);
   fprintf(debug_fp,"\ts_D_ID         = %d (%X)\n",
           in_payment->s_D_ID, in_payment->s_D_ID);
   fprintf(debug_fp,"\ts_C_D_ID       = %d (%X)\n",
           in_payment->s_C_D_ID, in_payment-
>s_C_D_ID);
   fprintf(debug_fp,"\ts_C_W_ID       = %d (%X)\n",
           in_payment->s_C_W_ID, in_payment-
>s_C_W_ID);
   fprintf(debug_fp,"\ts_C_LAST       = %s\n",
           in_payment->s_C_LAST);
   fprintf(debug_fp,"\ts_H_DATE       = %lld
(%llX)\n",
           in_payment->s_H_DATE_time, in_payment-
>s_H_DATE_time);
   fprintf(debug_fp,"\n}\n\n");

   fprintf(debug_fp,"out_payment_struct {\n");
   fprintf(debug_fp,"\ts_H_DATE       = %lld
(%llX)\n",
           in_payment->s_H_DATE_time, in_payment-
>s_H_DATE_time);
   fprintf(debug_fp,"\ts_C_CREDIT_LIM = %lld\n",
           payment_ptr->s_C_CREDIT_LIM);
   fprintf(debug_fp,"\ts_C_DISCOUNT   = %d\n",
           payment_ptr->s_C_DISCOUNT);
   fprintf(debug_fp,"\ts_C_BALANCE    = %lld\n",
           payment_ptr->s_C_BALANCE);
   fprintf(debug_fp,"\ts_C_ID         = %d (%X)\n",
           payment_ptr->s_C_ID, payment_ptr->s_C_ID);
   fprintf(debug_fp,"\ts_W_STREET_1   = %s\n",
           payment_ptr->s_W_STREET_1);
   fprintf(debug_fp,"\ts_W_STREET_2   = %s\n",
           payment_ptr->s_W_STREET_2);
   fprintf(debug_fp,"\ts_W_CITY       = %s\n",
           payment_ptr->s_W_CITY);
   fprintf(debug_fp,"\ts_W_STATE      = %s\n",
           payment_ptr->s_W_STATE);
   fprintf(debug_fp,"\ts_W_ZIP        = %s\n",
           payment_ptr->s_W_ZIP);
   fprintf(debug_fp,"\ts_D_STREET_1   = %s\n",
           payment_ptr->s_D_STREET_1);
   fprintf(debug_fp,"\ts_D_STREET_2   = %s\n",
           payment_ptr->s_D_STREET_2);
   fprintf(debug_fp,"\ts_D_CITY       = %s\n",
           payment_ptr->s_D_CITY);
   fprintf(debug_fp,"\ts_D_STATE      = %s\n",
           payment_ptr->s_D_STATE);
   fprintf(debug_fp,"\ts_D_ZIP        = %s\n",
           payment_ptr->s_D_ZIP);
   fprintf(debug_fp,"\ts_C_FIRST      = %s\n",
           payment_ptr->s_C_FIRST);
   fprintf(debug_fp,"\ts_C_MIDDLE     = %s\n",
           payment_ptr->s_C_MIDDLE);
   fprintf(debug_fp,"\ts_C_LAST       = %s\n",
           payment_ptr->s_C_LAST);
   fprintf(debug_fp,"\ts_C_STREET_1   = %s\n",
           payment_ptr->s_C_STREET_1);
   fprintf(debug_fp,"\ts_C_STREET_2   = %s\n",
           payment_ptr->s_C_STREET_2);
   fprintf(debug_fp,"\ts_C_CITY       = %s\n",
           payment_ptr->s_C_CITY);
   fprintf(debug_fp,"\ts_C_STATE      = %s\n",
           payment_ptr->s_C_STATE);
   fprintf(debug_fp,"\ts_C_ZIP        = %s\n",
           payment_ptr->s_C_ZIP);
   fprintf(debug_fp,"\ts_C_PHONE      = %s\n",
           payment_ptr->s_C_PHONE);
   fprintf(debug_fp,"\ts_C_SINCE      = %lld
(%llX)\n",
           payment_ptr->s_C_SINCE_time, payment_ptr-
>s_C_SINCE_time);
   fprintf(debug_fp,"\ts_C_CREDIT     = %s\n",
           payment_ptr->s_C_CREDIT);
   fprintf(debug_fp,"\ts_C_DATA       = %s\n",
           payment_ptr->s_C_DATA);
   fprintf(debug_fp,"\ts_transtatus   = %d (%X)\n",
           payment_ptr->s_transtatus,payment_ptr-
>s_transtatus);
   fprintf(debug_fp,"\tdeadlocks      = %d (%X)\n",
           payment_ptr->deadlocks,payment_ptr-
>deadlocks);
   fprintf(debug_fp,"\n}\n\n");
   fclose(debug_fp);
}


/*-------------------------------------------------
-----------*/
/* stk_debug
*/
/*-------------------------------------------------
-----------*/
void stk_debug (struct out_stocklev_struct *stocklev,
                struct in_stocklev_struct
*in_stocklev,
                char *msg)
{
   char debug_fn[DEBUG_PATH_SIZE +
DEBUG_FILENAME_SZ];

   InitializeDebug();
   strncpy(debug_fn, debugPath, DEBUG_PATH_SIZE);
   strcat(debug_fn, "stk.debug.out");
   stk_print(stocklev, in_stocklev, debug_fn, msg);
}

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

```
/* stk_print
*/
/*-------------------------------------------------
-----------*/
void stk_print (struct out_stocklev_struct *stocklev,
                struct in_stocklev_struct
*in_stocklev,
                char *filename,
                char *msg)
{
   FILE *debug_fp;
   char  timeStamp[27];

   current_tmstmp(&timeStamp[0]);
   timeStamp[19] = (char)NULL;

   if ((debug_fp = fopen(filename, "a+")) == NULL)
   {
      return;
   }

   fprintf(debug_fp,"Stock level debug information
follows %s (%s)\n", timeStamp, msg);
#ifdef SQLUNIX
   fprintf(debug_fp, " PID %d ", getpid());
#endif // SQLUNIX

fprintf(debug_fp,"\n================================
===============\n");

   fprintf(debug_fp,"in_stocklev_struct {\n");
   fprintf(debug_fp,"\ts_W_ID         = %d (%X)\n",
           in_stocklev->s_W_ID, in_stocklev->s_W_ID);
   fprintf(debug_fp,"\ts_D_ID         = %d (%X)\n",
           in_stocklev->s_D_ID, in_stocklev->s_D_ID);
   fprintf(debug_fp,"\ts_threshold    = %d (%X)\n",
           in_stocklev->s_threshold, in_stocklev-
>s_threshold);
   fprintf(debug_fp,"}\n\n");

   fprintf(debug_fp,"out_stocklev_struct {\n");
   fprintf(debug_fp,"\ts_transtatus   = %d (%X)\n",
           stocklev->s_transtatus, stocklev-
>s_transtatus);
   fprintf(debug_fp,"\tdeadlocks      = %d (%X)\n",
           stocklev->deadlocks, stocklev->deadlocks);
   fprintf(debug_fp,"\ts_low_stock    = %d (%X)\n",
           stocklev->s_low_stock, stocklev-
>s_low_stock);
   fprintf(debug_fp,"}\n\n");
   fclose(debug_fp);
}

void current_tmstmp(char *buf)
{
  time_t t = time(NULL);
  strncpy(buf,ctime(&t),19);
}
```

Src.Common/tpccmisc.c

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

/*
 *
 * tpccmisc.c - Miscellaneous routines
 *
 * Change Activity:
 * defect Date        Who Description
 * ====== ========== ===
=============================================
 * 225200 2002/04/05  mte Initial Code Drop
 * 267951 2003/01/28  mte Cleanup random number
functions
 * 281975 2003/06/02  mte Style/compiler cleanup
 * 286902 2003/07/29  mte Fix bogus comment
 * 297456 2003/10/28  mte current_time() redesign
 * 309888 2004/02/03  mte Fix 297456 on Windows
 */

#ifdef SQLWINT
#include <windows.h>
#else
#include <stdlib.h>
#include <sys/types.h>
#include <sys/time.h>
#endif

#ifdef SQLWINT
#define RAND_A  16807
#define RAND_M  2147483647
#define RAND_M1 2147483646
#define RAND_MD 2147483647.0
#define RAND_Q  127773
#define RAND_R  2836

static int seed = 1;
static int seedflag = 0;

void srandom(int);
int random(void);
#endif
double current_time_ms(void);
double current_time(void);

#ifdef SQLWINT
void srandom (int initial_seed)
{
  seed = initial_seed;
  if ((seed < 1) || (seed > RAND_M1)) seed = 1;
}

int random (void)
{
  int lo;
  int hi;
  int test;

  hi = seed / RAND_Q;
  lo = seed % RAND_Q;
  test = RAND_A * lo - RAND_R * hi;
  if (test > 0) seed = test;
  else seed = test + RAND_M;

  return (seed);
}
#endif

/* Current time in SECONDS, precision SECONDS */
double current_time(void)
{
#ifdef SQLWINT
  /* truncate fractional seconds -> seconds */
  return (double)((int)(current_time_ms()));
#else
  /* use time() to get seconds */
  return(time(NULL));
#endif
}

/* Current time in SECONDS, precision MILLISECONDS */
double current_time_ms(void)
{
#ifdef SQLWINT
  /* GetCurrentTime() returns ms */
  /* convert to fractional seconds */
  return (GetCurrentTime() / 1000);
#else
   /* gettimeofday() returns seconds and microseconds
*/
   /* convert to fractional seconds */
  struct timeval t;
  gettimeofday(&t,NULL);
  return (t.tv_sec + (double)t.tv_usec/(1000*1000));
#endif
}
```

Src.Cli/Makefile

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

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

#
# Makefile - Makefile for Src.Cli (RTE/Driver
Interface)
#
# Change Activity:
# defect Date        Who Description
# ====== =========== ===
=============================================
# 289958 2003/10/28  mte Split driver and client
interface
# 306888 2004/01/15  mte Ensure package consistency
# 309406 2004/01/29  mte Add QUERYOPT 7 to rebind
#

!include $(TPCC_ROOT)/Makefile.config

#
#####################################################
###################
# Preprocessor, Compiler and Linker Flags
#
#####################################################
###################

BND_OPTS =          GRANT PUBLIC \
                    MESSAGES $*.bnd.msg
PRP_OPTS =          BINDFILE \
                    ISOLATION RR \
                    EXPLAIN ALL \
                    MESSAGES $*.prep.msg \
                    LEVEL $(TPCC_VERSION) \
                    NOLINEMACRO

INCLUDES =          -I$(TPCC_SQLLIB)/include -
I$(TPCC_ROOT)/include

CFLAGS =  $(CFLAGS_OS) $(INCLUDES) $(CFLAGS_DEBUG) \
                    $(UOPTS) -D$(DB2EDITION) -
D$(DB2VERSION) -D$(TPCC_SPTYPE)

OBJS =
          $(TPCC_ROOT)/Src.Common/tpccmisc$(OBJEXT) \

          $(TPCC_ROOT)/Src.Common/tpccdbg$(OBJEXT) \

          $(TPCC_ROOT)/Src.Common/tpccctx$(OBJEXT) \
                    tpcccli$(OBJEXT)

LIBS =              tpcccli$(LIBEXT)

#
#####################################################
###################
# User Targets
#
#####################################################
###################

all:      connect $(OBJS) plan $(LIBS) disconnect
          $(AR) $(ARFLAGS)
$(ARFLAGS_OUT)tpcccli$(LIBEXT) $(OBJS) $(ARFLAGS_LIB)
          @echo "-----------------------------------
--------------------"
          @echo "Please copy lval.h, db2tpcc.h, and
tpcccli$(LIBEXT) to"
          @echo "a place where they can be #included
and linked with the"
          @echo "RTE/driver code."
          @echo "-----------------------------------
--------------------"

clean:
          - $(ERASE) *.msg *.bnd *.plan *$(OBJEXT)
*$(LIBEXT) tpcccli.c

#
#####################################################
###################
# Helper Targets
#
#####################################################
###################

connect:
          - db2 connect to $(TPCC_DBNAME)

disconnect:
          - db2 connect reset
          - db2 terminate

plan:
          - db2exfmt -d $(TPCC_DBNAME) -e
$(TPCC_SCHEMA) -s $(TPCC_SCHEMA) -w -1 -n TPCCCLI -g
-# 0 -o TPCCCLI.exfmt.plan
          - db2expln -d $(TPCC_DBNAME) -c
$(TPCC_SCHEMA) -p TPCCCLI -s 0 -g -o
TPCCCLI.expln.plan

rebind:   connect
          db2 bind tpcccli.bnd $(BND_OPTS) QUERYOPT 7

#
#####################################################
###################
# Build Rules
#
#####################################################
###################

.SUFFIXES:
.SUFFIXES: $(OBJEXT) .c .sqc

tpcccli.c:
          @echo "Prepping $*.sqc"
          -db2 prep $*.sqc $(PRP_OPTS) ISOLATION RR
          @echo "Binding $*.bnd"
          db2 bind $*.bnd $(BND_OPTS) QUERYOPT 7

#
#####################################################
###################
# Dependencies
#
#####################################################
###################

# Client Library:
tpcccli$(LIBEXT):   $(OBJS)

# Source
tpcc_all_sql$(OBJEXT):
          tpcc_all_sql.c

# Headers
tpcc_all_sql.c:
          $(TPCC_ROOT)/include/db2tpcc.h
$(TPCC_ROOT)/include/lval.h
```

Src.Cli/tpcccli.sqc

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

/*
 * tpcccli.sqc - Client/Server code for TPCC
 */

#include <stdlib.h>
#include <errno.h>
#include "db2tpcc.h"
#include "tpccapp.h"
#include "tpccdbg.h"

#include "sqlca.h"
#include "sql.h"
```

```
// ------------------------------------------------
--------------
// New Order CLIENT
// ------------------------------------------------
--------------

static int itemComparison ( const void * a , const
void * b )
{
   struct in_items_struct * one = (struct
in_items_struct *) a ;
   struct in_items_struct * two = (struct
in_items_struct *) b ;

   // If diff item id then sort on that.
   // If real/quasi dup, then sort on warehouse id.

   if ( one->s_OL_I_ID != two->s_OL_I_ID )
   {
      return (  one->s_OL_I_ID - two->s_OL_I_ID  ) ;
   }
   else
   {
      return (  one->s_OL_SUPPLY_W_ID - two-
>s_OL_SUPPLY_W_ID  ) ;
   }
}

int neword_sql (  struct in_neword_struct  *
in_neword
               , struct out_neword_struct * neword
)
{
   struct sqlca sqlca ;

   EXEC SQL BEGIN DECLARE SECTION;

      struct vc_new_in
      {
         short len;
         char data[ 270 ] ;
      } * pHostvarInput ;

      struct vc_new_out
      {
         short len;
         char data[ 662 ] ;
      } * pHostvarOutput ;

   EXEC SQL END DECLARE SECTION;

   int clientRc = TRAN_OK ;

   int itemIndex = 0 ;
   int actualItemIndex = 0 ;

   /* Create Timestamp */
   in_neword->s_O_ENTRY_D_time = time(NULL) ;

   // Sort the item list

   in_neword->s_all_local  = 1 ;

   for ( itemIndex = 0 ;
         itemIndex < 15 && in_neword->in_item[
itemIndex ].s_OL_I_ID != UNUSED_ITEM_ID ;
         itemIndex++
       )
   {
      if ( in_neword->in_item[ itemIndex
].s_OL_SUPPLY_W_ID != in_neword->s_W_ID )
      {
         in_neword->s_all_local = 0 ;
      }
   }

   in_neword->s_O_OL_CNT = itemIndex ;

   // Sort the original array

   qsort( in_neword->in_item, in_neword->s_O_OL_CNT
          ,  sizeof ( in_neword->in_item[ 0 ] )
          , itemComparison
        ) ;

   actualItemIndex = -1 ;

   for ( itemIndex = 0
         ; itemIndex < in_neword->s_O_OL_CNT
         ; itemIndex++ )
   {
         actualItemIndex ++ ;
         in_neword->in_item[ actualItemIndex
].s_OL_I_ID        = in_neword->in_item[ itemIndex
].s_OL_I_ID ;
         in_neword->in_item[ actualItemIndex
].s_OL_SUPPLY_W_ID = in_neword->in_item[ itemIndex
].s_OL_SUPPLY_W_ID ;
         in_neword->in_item[ actualItemIndex
].s_OL_QUANTITY    = in_neword->in_item[ itemIndex
].s_OL_QUANTITY ;
   }

   in_neword->s_O_OL_CNT = actualItemIndex + 1 ;

   pHostvarInput      = (struct vc_new_in *)
in_neword ;
   pHostvarInput->len = sizeof(struct
in_neword_struct) - SPGENERAL_ADJUST ;

   pHostvarOutput      = (struct vc_new_out *)
neword;
   pHostvarOutput->len = sizeof(struct
out_neword_struct) - SPGENERAL_ADJUST ;

#ifdef DEBUGIT
   new_debug(neword, in_neword, "Client before SP
call");
#endif /* DEBUGIT */

#ifdef SWAP_ENDIAN
   for (itemIndex=0; itemIndex<in_neword->s_O_OL_CNT;
itemIndex++)
   {
      SWAP_BYTE(in_neword->in_item[ itemIndex
].s_OL_I_ID);
      SWAP_BYTE(in_neword->in_item[ itemIndex
].s_OL_SUPPLY_W_ID);
      SWAP_BYTE(in_neword->in_item[ itemIndex
].s_OL_QUANTITY);
   }
   SWAP_BYTE(in_neword->s_O_ENTRY_D_time);
   SWAP_BYTE(in_neword->s_C_ID);
   SWAP_BYTE(in_neword->s_W_ID);
   SWAP_BYTE(in_neword->s_D_ID);
   SWAP_BYTE(in_neword->s_O_OL_CNT);
   SWAP_BYTE(in_neword->s_all_local);
   SWAP_BYTE(in_neword->duplicate_items);
#endif  //SWAP_ENDIAN

   EXEC SQL CALL news ( :*pHostvarInput,
:*pHostvarOutput );

#ifdef SWAP_ENDIAN
   SWAP_BYTE(in_neword->s_O_ENTRY_D_time);
   SWAP_BYTE(in_neword->s_C_ID);
   SWAP_BYTE(in_neword->s_W_ID);
   SWAP_BYTE(in_neword->s_D_ID);
   SWAP_BYTE(in_neword->s_O_OL_CNT);
   SWAP_BYTE(in_neword->s_all_local);
   SWAP_BYTE(in_neword->duplicate_items);
   for (itemIndex=0; itemIndex<in_neword->s_O_OL_CNT;
itemIndex++)
   {
      SWAP_BYTE(in_neword->in_item[ itemIndex
].s_OL_I_ID);
      SWAP_BYTE(in_neword->in_item[ itemIndex
].s_OL_SUPPLY_W_ID);
      SWAP_BYTE(in_neword->in_item[ itemIndex
].s_OL_QUANTITY);
   }
   SWAP_BYTE(neword->s_O_ENTRY_D_time);
   SWAP_BYTE(neword->s_W_TAX);
   SWAP_BYTE(neword->s_D_TAX);
   SWAP_BYTE(neword->s_C_DISCOUNT);
   SWAP_BYTE(neword->s_total_amount);
   SWAP_BYTE(neword->s_O_ID);
   SWAP_BYTE(neword->s_O_OL_CNT);
   SWAP_BYTE(neword->s_transtatus);
   SWAP_BYTE(neword->deadlocks);
   for (itemIndex=0; itemIndex<in_neword->s_O_OL_CNT;
itemIndex++)
   {
      SWAP_BYTE(neword->item[ itemIndex ].s_I_PRICE);
      SWAP_BYTE(neword->item[ itemIndex
].s_OL_AMOUNT);
      SWAP_BYTE(neword->item[ itemIndex
].s_S_QUANTITY);
   }
#endif  //SWAP_ENDIAN

   if ( sqlca.sqlcode == 0 )
   {
      double wtax = neword->s_W_TAX / 10000.0 ;
      double dtax = neword->s_D_TAX / 10000.0 ;
      double cdisc = neword->s_C_DISCOUNT / 10000.0 ;
      double factor = (1.0 - cdisc) * (1.0 + wtax +
dtax) ;
```

```
      // Post process the item set, detecting any bad
items , and set or count from that.
      // Anything that could be deferered from the SP
to the client has been.

      neword->s_total_amount = 0 ;

      for ( itemIndex = 0 ;
            itemIndex < in_neword->s_O_OL_CNT ; //
from input , not output
            itemIndex++
          )
      {
         if ( neword->item[ itemIndex ].s_I_PRICE > 0
)  // A zero price signifies a bad item
         {
            neword->item[ itemIndex ].s_OL_AMOUNT =
neword->item[ itemIndex ].s_I_PRICE *

in_neword->in_item[ itemIndex ].s_OL_QUANTITY ;  //
reference input value

            neword->s_total_amount += neword->item[
itemIndex ].s_OL_AMOUNT ;

         }
      }

      // s_total_amount gets cast implicitly to a
double to do the arithmetic,
      // and then cast back to a sqlint32.
      neword->s_total_amount *= factor;
   }
   else
   {
      sqlerror( NEWORD_SQL, "NEW", __FILE__,
__LINE__, &sqlca) ;
      neword->s_transtatus = FATAL_SQLERROR ;
      clientRc = FATAL_SQLERROR ;
   }

   /* Update Output Structure with Timestamp */
   neword->s_O_ENTRY_D_time = in_neword-
>s_O_ENTRY_D_time ;

#ifdef DEBUGIT
   new_debug(neword, in_neword, "Client after SP
call");
#endif /* DEBUGIT */

   if (neword->s_transtatus <= FATAL_SQLERROR)
   {
      new_debug(neword, in_neword, "NEW failed");
      clientRc = FATAL_SQLERROR ;
   }

   if (neword->s_transtatus == INVALID_ITEM)
   {
      clientRc = INVALID_ITEM ;
   }

   return ( clientRc ) ;
}
```

```
// ------------------------------------------------
-------------
// Payment CLIENT
// ------------------------------------------------
-------------

int payment_sql  (   struct in_payment_struct *
in_payment
                   , struct out_payment_struct *
payment    )
{
   struct sqlca sqlca ;

   int clientRc = TRAN_OK ;

   EXEC SQL BEGIN DECLARE SECTION;

      // Inputs

      sqlint64 h_amount ;
      sqlint32 in_c_id ;

      struct s_data_type { short len ; char data[ 16
] ; } c_last_input ;

      sqlint32 w_id ;
      sqlint32 c_w_id ;
      short    d_id ;
      short    c_d_id ;
      sqlint64 h_date;

      // Outputs

      sqlint32 c_id ;

      sqlint64  c_credit_lim ;
      sqlint32  c_discount ;
      sqlint64  c_balance ;

      char    w_street_1 [ 20 ] , w_street_2 [ 20 ] ;
      char    w_city [ 20 ] ,     w_state [ 2 ] ,
w_zip [ 9 ] ;

      char    d_street_1 [ 20 ] , d_street_2 [ 20 ] ,
d_city [ 20 ] ;
      char    d_state [ 2 ] ,     d_zip [ 9 ] ,
c_first [ 16 ] ;

      char    c_last [ 16 ] ;

      char    c_middle [ 2 ]    , c_street_1 [ 20 ] ;
      char    c_street_2 [ 20 ] , c_city [ 20 ] ,
c_state [ 2 ] ;
      char    c_zip [ 9 ] ,      c_phone [ 16 ] ;

      char    c_credit [ 2 ] ;

      sqlint64    c_since ;

      char    c_data [ 200 ] ;
      short   c_data_indicator = 0 ;
```

```
      struct c_data_prefix_c_last_type { short len ;
char data[ 28 ] ; } c_data_prefix_c_last ;
      struct c_data_prefix_c_id_type   { short len ;
char data[ 34 ] ; } c_data_prefix_c_id ;


   EXEC SQL END DECLARE SECTION;


   // Input redirects

   #define h_amount           in_payment->s_H_AMOUNT
   #define in_c_id            in_payment->s_C_ID

   #define w_id               in_payment->s_W_ID
   #define d_id               in_payment->s_D_ID

   #define c_d_id             in_payment->s_C_D_ID
   #define c_w_id             in_payment->s_C_W_ID
   #define h_date             in_payment-
>s_H_DATE_time

   // Output redirects

   #define c_credit_lim       payment->s_C_CREDIT_LIM
   #define c_discount         payment->s_C_DISCOUNT
   #define c_balance          payment->s_C_BALANCE

   #define c_id               payment->s_C_ID
   #define c_last             payment->s_C_LAST

   #define c_first            payment->s_C_FIRST
   #define c_middle           payment->s_C_MIDDLE
   #define c_street_1         payment->s_C_STREET_1
   #define c_street_2         payment->s_C_STREET_2
   #define c_city             payment->s_C_CITY
   #define c_state            payment->s_C_STATE
   #define c_zip              payment->s_C_ZIP
   #define c_phone            payment->s_C_PHONE
   #define c_credit           payment->s_C_CREDIT
   #define c_since            payment->s_C_SINCE_time
   #define c_data             payment->s_C_DATA

   #define w_street_1         payment->s_W_STREET_1
   #define w_street_2         payment->s_W_STREET_2
   #define w_city             payment->s_W_CITY
   #define w_state            payment->s_W_STATE
   #define w_zip              payment->s_W_ZIP

   #define d_street_1         payment->s_D_STREET_1
   #define d_street_2         payment->s_D_STREET_2
   #define d_city             payment->s_D_CITY
   #define d_state            payment->s_D_STATE
   #define d_zip              payment->s_D_ZIP

   /* Create Timestamp */
   in_payment->s_H_DATE_time = (sqlint64) time( NULL
) ;

   payment->deadlocks = -1 ;
   payment->s_transtatus = TRAN_OK ;

   if (c_w_id == 0) { c_w_id = w_id; }
```

```
   if (c_d_id == 0) { c_d_id = d_id; }

#ifdef DEBUGIT
   pay_debug(payment, in_payment, "Client before SQL
call");
#endif /* DEBUGIT */

   // Create c_data_prefix strings and copy some
elements from
   // in -> out struct outside of retry_tran loop
   // (defect 273748)

   if ( in_c_id == 0 )
   {
      c_data_prefix_c_last.len = sprintf(
c_data_prefix_c_last.data, " %2.2d %6.6d %2.2d %6.6d
%04.4d.%02.2d",  c_d_id , c_w_id , d_id , w_id ,
(int)(h_amount / 100) , (int)(h_amount % 100) ) ;
//@d273748mte

      // Setup the input c_last varchar
      c_last_input.len = strlen( in_payment->s_C_LAST
) ;
      memcpy( c_last_input.data , in_payment-
>s_C_LAST , c_last_input.len ) ;

      // Copy to the output structure
      memcpy( payment->s_C_LAST , in_payment-
>s_C_LAST, sizeof( payment->s_C_LAST ) ) ;
   } else {

      // Copy c_id to the output structure
      c_id = in_c_id ;

      c_data_prefix_c_id.len = sprintf(
c_data_prefix_c_id.data, " %5.5d %2.2d %6.6d %2.2d
%6.6d %04.4d.%02.2d", c_id , c_d_id , c_w_id , d_id ,
w_id , (int)(h_amount / 100), (int)(h_amount % 100) )
;  //@d273748mte

   }

retry_tran:

   payment->deadlocks ++ ;

   if ( in_c_id == 0 )
   {
         EXEC SQL BEGIN COMPOUND NOT ATOMIC STATIC

            SELECT   W_STREET_1, W_STREET_2, W_CITY,
W_STATE,  W_ZIP
                  , D_STREET_1, D_STREET_2, D_CITY,
D_STATE, D_ZIP
                  , C_ID, C_FIRST, C_MIDDLE,
C_STREET_1, C_STREET_2
                  , C_CITY, C_STATE, C_ZIP, C_PHONE,
C_SINCE, C_CREDIT, C_CREDIT_LIM
                  , C_DISCOUNT, C_BALANCE, C_DATA

              INTO   :w_street_1 , :w_street_2 ,
:w_city , :w_state , :w_zip
                  , :d_street_1 , :d_street_2 ,
:d_city , :d_state , :d_zip
                  , :c_id , :c_first , :c_middle ,
:c_street_1 , :c_street_2 , :c_city , :c_state
                  , :c_zip , :c_phone , :c_since ,
:c_credit , :c_credit_lim
                  , :c_discount , :c_balance,
:c_data :c_data_indicator

               FROM TABLE ( PAY_C_LAST(   :w_id
                                        , :d_id
                                        , :c_w_id
                                        , :c_d_id
                                        ,
:c_last_input
                                        , :h_date
                                        , :h_amount
                                        ,
:c_data_prefix_c_last
                                       )

                           ) AS T (   W_STREET_1,
W_STREET_2, W_CITY, W_STATE,  W_ZIP
                                    , D_STREET_1,
D_STREET_2, D_CITY, D_STATE, D_ZIP
                                    , C_ID, C_FIRST,
C_MIDDLE, C_STREET_1, C_STREET_2
                                    , C_CITY, C_STATE,
C_ZIP, C_PHONE, C_SINCE, C_CREDIT, C_CREDIT_LIM
                                    , C_DISCOUNT,
C_BALANCE, C_DATA
                                  )
            ;

            COMMIT ;

         END COMPOUND ;

   }
   else
   {
         EXEC SQL BEGIN COMPOUND NOT ATOMIC STATIC

            SELECT   W_STREET_1, W_STREET_2, W_CITY,
W_STATE,  W_ZIP
                  , D_STREET_1, D_STREET_2, D_CITY,
D_STATE, D_ZIP
                  , C_LAST, C_FIRST, C_MIDDLE,
C_STREET_1, C_STREET_2
                  , C_CITY, C_STATE, C_ZIP, C_PHONE,
C_SINCE, C_CREDIT, C_CREDIT_LIM
                  , C_DISCOUNT, C_BALANCE, C_DATA

              INTO   :w_street_1 , :w_street_2 ,
:w_city , :w_state , :w_zip
                  , :d_street_1 , :d_street_2 ,
:d_city , :d_state , :d_zip
                  , :c_last, :c_first , :c_middle ,
:c_street_1 , :c_street_2 , :c_city , :c_state
                  , :c_zip , :c_phone , :c_since ,
:c_credit , :c_credit_lim
                  , :c_discount , :c_balance,
:c_data :c_data_indicator

               FROM TABLE ( PAY_C_ID(   :w_id
                                      , :d_id
                                      , :c_w_id
                                      , :c_d_id
                                      , :in_c_id
                                      , :h_date
                                      , :h_amount
                                      ,
:c_data_prefix_c_id
                                    )

                           ) AS T(   W_STREET_1,
W_STREET_2, W_CITY, W_STATE,  W_ZIP
                                   , D_STREET_1,
D_STREET_2, D_CITY, D_STATE, D_ZIP
                                   , C_LAST, C_FIRST,
C_MIDDLE, C_STREET_1, C_STREET_2
                                   , C_CITY, C_STATE,
C_ZIP, C_PHONE, C_SINCE, C_CREDIT, C_CREDIT_LIM
                                   , C_DISCOUNT,
C_BALANCE, C_DATA
                                 )
            ;

            COMMIT ;

         END COMPOUND ;

   }

   /* Update Output Structure with Timestamp */
   payment->s_H_DATE_time = in_payment->s_H_DATE_time
;

#ifdef DEBUGIT
   pay_debug(payment, in_payment, "Client after SQL
call");
#endif /* DEBUGIT */

   if ( sqlca.sqlcode != 0 )
   {
      DLCHK( retry_tran ) ;

      sqlerror( PAYMENT_SQL , "PAY" , __FILE__,
__LINE__ , &sqlca) ;
      payment->s_transtatus = FATAL_SQLERROR ;
      clientRc = FATAL_SQLERROR ;

      pay_debug( payment, in_payment, "PAY failed" )
;

      EXEC SQL ROLLBACK WORK ;

      if ( sqlca.sqlcode != 0 )
      {
         sqlerror( PAYMENT_SQL, "ROLLBACK FAILED",
__FILE__, __LINE__, &sqlca ) ;
      }
   }

   return ( clientRc ) ;
}
```

```
// ------------------------------------------------
-------------
// Order Status CLIENT
// ------------------------------------------------
-------------


int ordstat_sql  (  struct in_ordstat_struct *
in_ordstat
                 , struct out_ordstat_struct *
ordstat)
{
   struct sqlca sqlca ;

   EXEC SQL BEGIN DECLARE SECTION;

      struct vc_ord_in
      {
         short len ;
         char data[ 42 ] ;
      } * in_ord ;

      struct vc_ord_out
      {
         short len ;
         char data[ 446 ] ;
      } * out_ord ;

   EXEC SQL END DECLARE SECTION;

   int clientRc = TRAN_OK ;
   int itemIndex = 0 ;

   in_ord      = (struct vc_ord_in *) in_ordstat ;
   in_ord->len = sizeof(struct in_ordstat_struct) -
SPGENERAL_ADJUST ;

   out_ord      = (struct vc_ord_out *) ordstat ;
   out_ord->len = sizeof(struct out_ordstat_struct) -
SPGENERAL_ADJUST ;

#ifdef DEBUGIT
   ord_debug(ordstat, in_ordstat, "Client before SP
call");
#endif /* DEBUGIT */

#ifdef SWAP_ENDIAN
   SWAP_BYTE(in_ordstat->s_C_ID);
   SWAP_BYTE(in_ordstat->s_W_ID);
   SWAP_BYTE(in_ordstat->s_D_ID);
#endif  //SWAP_ENDIAN

   EXEC SQL CALL ords ( :*in_ord, :*out_ord ) ;

#ifdef SWAP_ENDIAN
   SWAP_BYTE(in_ordstat->s_C_ID);
   SWAP_BYTE(in_ordstat->s_W_ID);
   SWAP_BYTE(in_ordstat->s_D_ID);

   SWAP_BYTE(ordstat->s_C_BALANCE);
   SWAP_BYTE(ordstat->s_O_ENTRY_D_time);
   SWAP_BYTE(ordstat->s_C_ID);
   SWAP_BYTE(ordstat->s_O_ID);
   SWAP_BYTE(ordstat->s_O_CARRIER_ID);
   SWAP_BYTE(ordstat->s_ol_cnt);
   SWAP_BYTE(ordstat->s_transtatus);
   SWAP_BYTE(ordstat->deadlocks);
   for (itemIndex=0; itemIndex<ordstat->s_ol_cnt;
itemIndex++)
   {
      SWAP_BYTE(ordstat->item[ itemIndex
].s_OL_DELIVERY_D_time);
      SWAP_BYTE(ordstat->item[ itemIndex
].s_OL_AMOUNT);
      SWAP_BYTE(ordstat->item[ itemIndex
].s_OL_I_ID);
      SWAP_BYTE(ordstat->item[ itemIndex
].s_OL_SUPPLY_W_ID);
      SWAP_BYTE(ordstat->item[ itemIndex
].s_OL_QUANTITY);
   }
#endif  //SWAP_ENDIAN

   if ( sqlca.sqlcode == 0 )
   {
      // Propogate the field we already knew into the
output structure
      // 60% of the time, we already new c_last
(input c_id is 0)

      if ( in_ordstat->s_C_ID == 0 )
      {
         memcpy( ordstat->s_C_LAST , in_ordstat-
>s_C_LAST, sizeof( ordstat->s_C_LAST ) ) ;
      }
      else
      {
         ordstat->s_C_ID = in_ordstat->s_C_ID ;
      }
   }
   else
   {
      sqlerror( ORDSTAT_SQL, "ORD", __FILE__,
__LINE__, &sqlca) ;
      ordstat->s_transtatus = FATAL_SQLERROR ;
      clientRc = FATAL_SQLERROR ;
   }

#ifdef DEBUGIT
   ord_debug(ordstat, in_ordstat, "Client after SP
call");
#endif /* DEBUGIT */

   if ( ordstat->s_transtatus <= FATAL_SQLERROR )
   {
      ord_debug(ordstat, in_ordstat, "ORD failed");
      clientRc = FATAL_SQLERROR ;
   }

   return ( clientRc ) ;
}

// ------------------------------------------------
-------------
// Delivery CLIENT
// ------------------------------------------------
-------------

int delivery_sql (   struct in_delivery_struct  *
in_delivery
                  , struct out_delivery_struct *
delivery      )
{
   struct sqlca sqlca ;

   EXEC SQL BEGIN DECLARE SECTION;

      struct vc_del_in
      {
         short len ;
         char data[ 22 ] ;
      } * in_del ;

      struct vc_del_out
      {
         short len;
         char data[ 50 ] ;
      } * out_del ;

   EXEC SQL END DECLARE SECTION;

   int clientRc = TRAN_OK ;
   int orderIndex = 0 ;

   /* Create Timestamp */

   in_delivery->s_O_DELIVERY_D_time = (sqlint64)
time( NULL ) ;

   in_del      = (struct vc_del_in *) in_delivery ;
   in_del->len = sizeof(struct in_delivery_struct) -
SPGENERAL_ADJUST;

   out_del      = (struct vc_del_out *) delivery ;
   out_del->len = sizeof(struct out_delivery_struct)
- SPGENERAL_ADJUST;

#ifdef DEBUGIT
   del_debug(delivery, in_delivery, "Client before SP
call");
#endif /* DEBUGIT */

#ifdef SWAP_ENDIAN
   SWAP_BYTE(in_delivery->s_O_DELIVERY_D_time);
   SWAP_BYTE(in_delivery->s_W_ID);
   SWAP_BYTE(in_delivery->s_O_CARRIER_ID);
#endif  //SWAP_ENDIAN

   EXEC SQL CALL dels ( :*in_del, :*out_del ) ;

#ifdef SWAP_ENDIAN
   SWAP_BYTE(in_delivery->s_O_DELIVERY_D_time);
   SWAP_BYTE(in_delivery->s_W_ID);
   SWAP_BYTE(in_delivery->s_O_CARRIER_ID);

   for (orderIndex=0; orderIndex<10; orderIndex++) {
     SWAP_BYTE(delivery->s_O_ID[ orderIndex ]);
   }
```

```
   SWAP_BYTE(delivery->s_transtatus);
   SWAP_BYTE(delivery->deadlocks);
#endif  //SWAP_ENDIAN

#ifdef DEBUGIT
   del_debug(delivery, in_delivery, "Client after SP
call");
#endif /* DEBUGIT */

   if ( sqlca.sqlcode != 0 )
   {
      sqlerror( DELIVERY_SQL, "DEL", __FILE__,
__LINE__, &sqlca) ;
      delivery->s_transtatus = FATAL_SQLERROR ;
      clientRc = FATAL_SQLERROR ;
   }

   if ( delivery->s_transtatus <= FATAL_SQLERROR )
   {
      del_debug(delivery, in_delivery, "DEL failed");
      clientRc = FATAL_SQLERROR ;
   }

   return ( clientRc ) ;
}

// ------------------------------------------------
--------------
// Stock CLIENT
// ------------------------------------------------
--------------

#undef w_id
#undef d_id

int stocklev_sql  (   struct in_stocklev_struct  *
in_stocklev
                  , struct out_stocklev_struct *
stocklev     )
{
   struct sqlca sqlca ;

   int clientRc = TRAN_OK ;

   EXEC SQL BEGIN DECLARE SECTION;

      // input

      sqlint32       threshold ;

      // output

      sqlint32    low_stock ;

   EXEC SQL END DECLARE SECTION;

   #define w_id      in_stocklev->s_W_ID
   #define d_id      in_stocklev->s_D_ID
   #define threshold in_stocklev->s_threshold
   #define low_stock stocklev->s_low_stock

   stocklev->deadlocks = -1 ;
   stocklev->s_transtatus = TRAN_OK ;

#ifdef DEBUGIT
   stk_debug(stocklev, in_stocklev, "Client before
SQL call");
#endif /* DEBUGIT */

retry_tran:

   stocklev->deadlocks ++ ;

   EXEC SQL BEGIN COMPOUND NOT ATOMIC STATIC

      SELECT COUNT( S_I_ID ) INTO :low_stock

         FROM ( SELECT DISTINCT S_I_ID

                  FROM ORDER_LINE , STOCK , DISTRICT

                 WHERE D_W_ID = :w_id
                   AND D_ID = :d_id
                   AND OL_O_ID < d_next_o_id
                   AND OL_O_ID >= ( d_next_o_id - 20
)
                   AND OL_W_ID = D_W_ID
                   AND OL_D_ID = D_ID
                   AND S_I_ID = OL_I_ID
                   AND S_W_ID = OL_W_ID
                   AND S_QUANTITY < :threshold

              ) OLS

         WITH CS
      ;

      COMMIT ;

   END COMPOUND ;

#ifdef DEBUGIT
   stk_debug(stocklev, in_stocklev, "Client after SQL
call");
#endif /* DEBUGIT */

   if ( sqlca.sqlcode != 0 )
   {
      DLCHK( retry_tran ) ;

      sqlerror( STOCKLEV_SQL , "STK" , __FILE__,
__LINE__ , &sqlca);
      stocklev->s_transtatus = FATAL_SQLERROR ;
      clientRc = FATAL_SQLERROR ;

      stk_debug( stocklev, in_stocklev, "STK failed"
) ;

      EXEC SQL ROLLBACK WORK ;

      if ( sqlca.sqlcode != 0 )
      {
         sqlerror( STOCKLEV_SQL, "ROLLBACK FAILED",
__FILE__, __LINE__, &sqlca ) ;
      }
   }

   return ( clientRc ) ;
}
```

Src.Srv/Makefile

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

#
# Makefile - Makefile for Src.Srv
#
# Change Activity:
# defect Date        Who Description
# ====== ========== ===
============================================
# 262565 2002/11/27  mte Initial Drop (based on
Src.Srv.baseline/Makefile)
# 264386 2002/12/18  mte Various Makefile changes
# 267999 2003/01/28  mte Clean up SP catalog scripts
# 268701 2003/02/03  mte Add explain targets
# 268869 2003/02/04  mte Add plans target
# 270212 2003/02/14  mte Fix db2expln
# 275355 2003/03/25  mte Move STK to client
# 274429 2003/04/09  jnh Use genproc.pl to catalog
procedures
# 277607 2003/04/10  mte Add rebind target
# 280183 2003/05/08  mte Ignore prep and genproc.pl
failures
# 280703 2003/05/15  jnh change INCLUDE to INCLUDES
# 297500 2003/10/28  mte Update stored proc flags
# 301360 2003/12/02  mte Redirect CLP output to file
# 304024 2003/12/11  mte Add script to patch
EXPLAIN.DDL
# 309406 2004/01/29  mte Add QUERYOPT 7 to rebind
#

!include $(TPCC_ROOT)/Makefile.config

#
##########################################################
###################
# Preprocessor, Compiler and Linker Flags
```

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

BND_OPTS =          GRANT PUBLIC \
                    MESSAGES $*.bnd.msg
PRP_OPTS =          BINDFILE \
                    EXPLAIN ALL \
                    MESSAGES $*.prep.msg

INCLUDES =       -I$(TPCC_SQLLIB)$(SLASH)include -
I$(TPCC_ROOT)$(SLASH)include

CFLAGS =  $(CFLAGS_OS) $(INCLUDES) $(CFLAGS_DEBUG) \
                    -D$(DB2EDITION) -D$(DB2VERSION) \
                    -DSQLA_NOLINES -DLINT_ARGS

LDFLAGS = $(LDFLAGS_STORP) $(LDFLAGS_LIB)

#
######################################################
##################
# File Collections
#
######################################################
##################

STORED_PROCS = new ord del

UTIL_OBJ =
          $(TPCC_ROOT)/Src.Common/tpccmisc$(OBJEXT) \

          $(TPCC_ROOT)/Src.Common/tpccdbg$(OBJEXT)

DLL =               rpctpcc$(SHLIBEXT)

#
######################################################
##################
# User Targets
#
######################################################
##################

all:      connect explain catalog $(DLL) install plan
disconnect

clean:    connect uncatalog unexplain disconnect
          - $(ERASE)
$(TPCC_SPDIR)$(SLASH)rpctpcc$(SHLIBEXT)
          - $(ERASE) *.bnd *.msg *.out *$(OBJEXT)
$(DLL) tpcc_all_sql.c
          - $(ERASE) TPCC_ALL.*.plan

#
######################################################
##################
# Helper Targets
#
######################################################
##################

catalog:  uncatalog
          - perl
$(TPCC_ROOT)$(SLASH)utils$(SLASH)genproc.pl
$(STORED_PROCS)
          - db2 -tvf cat-proc.ddl +o -z cat-proc.out
          - db2 -td$$ -vf cat-func.ddl +o -z cat-
func.out

uncatalog:
          - perl
$(TPCC_ROOT)$(SLASH)utils$(SLASH)genproc.pl
$(STORED_PROCS)
          - db2 -td$$ -vf uncat-func.ddl +o -z uncat-
func.out
          - db2 -tvf uncat-proc.ddl +o -z uncat-
proc.out

explain:
          - perl
$(TPCC_ROOT)$(SLASH)utils$(SLASH)fixup_explain.pl
          - db2 -tvf
$(TPCC_ROOT)$(SLASH)utils$(SLASH)EXPLAIN.DDL +o -z
EXPLAIN.out

unexplain:
          - db2 -tvf
$(TPCC_ROOT)$(SLASH)utils$(SLASH)UNEXPLAIN.DDL +o -z
UNEXPLAIN.out

connect:
          - db2 connect to $(TPCC_DBNAME)

disconnect:
          - db2 connect reset
          - db2 terminate

# This (environment) variable is used by db2expln
DB2EXPLN_BUFFER=3000000

plan:
          - db2exfmt -d $(TPCC_DBNAME) -e
$(TPCC_SCHEMA) -s $(TPCC_SCHEMA) -w -1 -n TPCC_ALL -g
-# 0 -o TPCC_ALL.exfmt.plan
          - db2expln -d $(TPCC_DBNAME) -c
$(TPCC_SCHEMA) -p TPCC_ALL -s 0 -g -o
TPCC_ALL.expln.plan

rebind:   connect catalog
          db2 bind tpcc_all_sql.bnd $(BND_OPTS)
QUERYOPT 7

#
######################################################
##################
# Install Targets
#
######################################################
##################

install:  $(DLL)
          - mkdir $(TPCC_SPDIR)
          $(COPY) $(DLL) $(TPCC_SPDIR)

#
######################################################
##################
# Build Rules
#
######################################################
##################

.SUFFIXES: $(OBJEXT) .c .sqc

# d230437mte: QUERYOPT 7 required for UNION ALL
# Only stock needs CS , and that can be specified on
the SELECT statement
tpcc_all_sql.c:
          @echo "Prepping $*.sqc"
          -db2 prep $*.sqc $(PRP_OPTS) ISOLATION RR
          @echo "Binding $*.bnd"
          db2 bind $*.bnd $(BND_OPTS) QUERYOPT 7

# Stored procedures are built in a special way

tpcc_all_sql$(OBJEXT):
          $(CC) -c tpcc_all_sql.c $(CFLAGS) -
D$(TPCC_SPTYPE) $(CFLAGS_OUT)$@

$(DLL): $(UTIL_OBJ) tpcc_all_sql$(OBJEXT)
          $(LD_STORP) $(LDFLAGS) $(UTIL_OBJ)
tpcc_all_sql$(OBJEXT) $(LDFLAGS_OUT)$@

#
######################################################
##################
# Dependencies
#
######################################################
##################

# Executables (Stored Procedures)
$(DLL): $(UTIL_OBJ) tpcc_all_sql$(OBJEXT)

# Source
tpcc_all_sql$(OBJEXT): tpcc_all_sql.c

# Headers
tpcc_all_sql.c:     $(TPCC_ROOT)/include/db2tpcc.h
```

Src.Srv/cat-func.ddl

```
------------------------------------------------------
-----------------------
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```

```
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--
-- cat-func.ddl - Create table functions
--
-- Change Activity:
-- defect Date        Who Description
-- ====== =========== ===
================================================
-- 262565 2002/11/27  mte Initial Drop
-- 265265 2003/01/14  mte Merge SQL changes, type
conversions for new schema
-- 265265 2003/01/16  dje Deadlock fix for DEL
-- 267180 2003/01/21  mte Fix bug in PAY transaction,
back out 265265
-- 267940 2003/01/27  mte Remove NEW_OL_ALL2 and
NEW_OL_REMOTE
-- 269478 2003/02/07  mte Use OLD TABLE unless NEW
TABLE is neccessary
-- 270212 2003/02/14  mte Merge SQL changes (see
defect notes)
-- 273748 2003/03/12  mte Fix H_AMOUNT scaling
problem in PAY
-- 274719 2003/03/20  mte Column reordering to
improve log, d-cache perf
-- 275913 2003/03/28  mte Integrate group logging SQL
-- 275919 2003/03/28  mte Combine two statements in
DEL
-- 276081 2003/03/28  mte Use new SQL syntax for
OLD/NEW TABLE
-- 276900 2003/04/04  mte Fix old/new schema
migration issues
-- 310772 2004/02/06  mte Use READS SQL DATA for
ORD_C_ID/ORD_C_LAST
-- 314029 2004/02/26  mte Remove OL_NUMBER from
NEW_OL_ALL and NEW_OL_LOCAL
--

--
-- DELIVERY
--

CREATE FUNCTION DEL(   W_ID           INTEGER
                     , D_ID           SMALLINT
                     , CARRIER_ID     SMALLINT
                     , DELIVERY_D     BIGINT
                   )

RETURNS TABLE ( O_ID INTEGER )

SPECIFIC DELIVERY

MODIFIES SQL DATA DETERMINISTIC NO EXTERNAL ACTION
LANGUAGE SQL

VAR: BEGIN ATOMIC

  DECLARE O_ID   INTEGER ;
  DECLARE C_ID   INTEGER ;
  DECLARE AMOUNT INTEGER ;

  /* Delete the order from new order table */

  SET VAR.O_ID = ( SELECT NO_O_ID

                     FROM OLD TABLE ( DELETE

                                          FROM ( SELECT
NO_O_ID

                                                   FROM
NEW_ORDER

                                                  WHERE
NO_W_ID = DEL.W_ID
                                                    AND
NO_D_ID = DEL.D_ID

                                                  ORDER
BY NO_O_ID ASC

                                                  FETCH
FIRST 1 ROW ONLY
                                                ) AS
NEW_ORDER
                                      ) AS D
                 )
  ;

  /* Update the order as delivered and retrieve the
customer id */

  SET VAR.C_ID = ( SELECT O_C_ID

                     FROM OLD TABLE ( UPDATE ORDERS

                                        SET
O_CARRIER_ID = DEL.CARRIER_ID

                                      WHERE O_W_ID =
DEL.W_ID
                                        AND O_D_ID =
DEL.D_ID
                                        AND O_ID   =
VAR.O_ID
                                      ) AS U
                 )
  ;

  SET VAR.AMOUNT = ( SELECT SUM( OL_AMOUNT )

                       FROM OLD TABLE ( UPDATE
ORDER_LINE

                                          SET
OL_DELIVERY_D = DEL.DELIVERY_D

                                        WHERE
OL_W_ID = DEL.W_ID
                                          AND
OL_D_ID = DEL.D_ID
                                          AND
OL_O_ID = VAR.O_ID
                                      ) AS U
                   )
  ;

  /* Charge the customer */

  UPDATE CUSTOMER

     SET   C_BALANCE      = C_BALANCE + VAR.AMOUNT
         , C_DELIVERY_CNT = C_DELIVERY_CNT +
SMALLINT( 1 )

    WHERE C_W_ID = DEL.W_ID
      AND C_D_ID = DEL.D_ID
      AND C_ID   = VAR.C_ID
  ;

  /* Return the order id to the caller (or NULL) */

  RETURN VALUES VAR.O_ID ;

END
$


--
-- ORDER STATUS
--

CREATE FUNCTION ORD_C_LAST(   W_ID INTEGER
                            , D_ID SMALLINT
                            , C_LAST VARCHAR(16)
                          )

RETURNS TABLE(   O_ID         INTEGER
               , O_CARRIER_ID SMALLINT
               , O_ENTRY_D    BIGINT
               , C_BALANCE    BIGINT
               , C_FIRST      VARCHAR(16)
               , C_MIDDLE     CHAR(2)
               , C_ID         INTEGER
             )

SPECIFIC ORD_C_LAST

READS SQL DATA NO EXTERNAL ACTION DETERMINISTIC
LANGUAGE SQL

VAR: BEGIN ATOMIC

  DECLARE C_BALANCE    BIGINT ;
  DECLARE C_FIRST      VARCHAR(16) ;
  DECLARE C_MIDDLE     CHAR(2) ;
  DECLARE C_ID         INTEGER ;
  DECLARE O_ID         INTEGER;
  DECLARE O_CARRIER_ID SMALLINT;
  DECLARE O_ENTRY_D    BIGINT;

  /* Retrieve the Customer information */

  SET ( C_BALANCE, C_FIRST, C_MIDDLE, C_ID )
```

```
    = ( SELECT  C_BALANCE, C_FIRST, C_MIDDLE , C_ID

          FROM ( SELECT   C_ID
                        , C_BALANCE
                        , C_FIRST
                        , C_MIDDLE
                        , COUNT(*) OVER() AS COUNT
                        , ROWNUMBER() OR (ORDER BY
C_FIRST) AS NUM

                  FROM CUSTOMER
                 WHERE C_W_ID = ORD_C_LAST.W_ID
                   AND C_D_ID = ORD_C_LAST.D_ID
                   AND C_LAST = ORD_C_LAST.C_LAST

               ) AS V1

         WHERE NUM = (COUNT + BIGINT( 1 ) ) / BIGINT(
2 )
      )
  ;

/* Take advantage of the index to fetch the first row
(and hence max(o_id) ) */

  SET ( O_ID , O_CARRIER_ID , O_ENTRY_D )
    =    ( SELECT   O_ID
                  , O_CARRIER_ID
                  , O_ENTRY_D

             FROM ORDERS

            WHERE O_W_ID = ORD_C_LAST.W_ID
              AND O_D_ID = ORD_C_LAST.D_ID
              AND O_C_ID = VAR.C_ID

            ORDER BY O_ID DESC
            FETCH FIRST 1 ROW ONLY

         )
  ;


  RETURN VALUES (   VAR.O_ID
                  , VAR.O_CARRIER_ID
                  , VAR.O_ENTRY_D
                  , VAR.C_BALANCE
                  , VAR.C_FIRST
                  , VAR.C_MIDDLE
                  , VAR.C_ID
                )
  ;


END $

CREATE FUNCTION ORD_C_ID(   W_ID INTEGER
                          , D_ID SMALLINT
                          , C_ID INTEGER
                        )

RETURNS TABLE(   O_ID         INTEGER
               , O_CARRIER_ID SMALLINT
               , O_ENTRY_D    BIGINT
               , C_BALANCE    BIGINT
               , C_FIRST      VARCHAR(16)
               , C_MIDDLE     CHAR(2)
               , C_LAST       VARCHAR(16)
             )

SPECIFIC ORD_C_ID

READS SQL DATA NO EXTERNAL ACTION DETERMINISTIC
LANGUAGE SQL

VAR: BEGIN ATOMIC

  DECLARE C_BALANCE    BIGINT ;
  DECLARE C_FIRST      VARCHAR(16) ;
  DECLARE C_MIDDLE     CHAR(2) ;
  DECLARE C_LAST       VARCHAR(16) ;
  DECLARE O_ID         INTEGER;
  DECLARE O_CARRIER_ID SMALLINT;
  DECLARE O_ENTRY_D    BIGINT;

  /* Retrieve the Customer information */

  SET ( C_BALANCE, C_FIRST, C_MIDDLE, C_LAST )

    = ( SELECT  C_BALANCE, C_FIRST, C_MIDDLE, C_LAST

          FROM CUSTOMER

         WHERE C_ID   = ORD_C_ID.C_ID
           AND C_W_ID = ORD_C_ID.W_ID
           AND C_D_ID = ORD_C_ID.D_ID
      )
  ;

  SET (O_ID, O_CARRIER_ID, O_ENTRY_D)

    =    ( SELECT   O_ID
                  , O_CARRIER_ID
                  , O_ENTRY_D

             FROM ORDERS

                  WHERE O_W_ID = ORD_C_ID.W_ID
                    AND O_D_ID = ORD_C_ID.D_ID
                    AND O_C_ID = ORD_C_ID.C_ID

            ORDER BY O_ID DESC
            FETCH FIRST 1 ROW ONLY
         )
  ;

  RETURN VALUES (   VAR.O_ID
                  , VAR.O_CARRIER_ID
                  , VAR.O_ENTRY_D
                  , VAR.C_BALANCE
                  , VAR.C_FIRST
                  , VAR.C_MIDDLE
                  , VAR.C_LAST
                ) ;

END $


--
-- PAYMENT
--

CREATE FUNCTION PAY_C_LAST(  W_ID INTEGER
                           , D_ID SMALLINT
                           , C_W_ID INTEGER
                           , C_D_ID SMALLINT
                           , C_LAST VARCHAR(16)
                           , H_DATE BIGINT
                           , H_AMOUNT BIGINT
                           , BAD_CREDIT_PREFIX
VARCHAR(28)
                          )

RETURNS TABLE(   W_STREET_1 CHAR(20)
               , W_STREET_2 CHAR(20)
               , W_CITY CHAR(20)
               , W_STATE CHAR(2)
               , W_ZIP CHAR(9)
               , D_STREET_1 CHAR(20)
               , D_STREET_2 CHAR(20)
               , D_CITY CHAR(20)
               , D_STATE CHAR(2)
               , D_ZIP CHAR(9)
               , C_ID INTEGER
               , C_FIRST VARCHAR(16)
               , C_MIDDLE CHAR(2)
               , C_STREET_1 VARCHAR(20)
               , C_STREET_2 VARCHAR(20)
               , C_CITY VARCHAR(20)
               , C_STATE CHAR(2)
               , C_ZIP CHAR(9)
               , C_PHONE CHAR(16)
               , C_SINCE BIGINT
               , C_CREDIT CHAR(2)
               , C_CREDIT_LIM BIGINT
               , C_DISCOUNT INTEGER
               , C_BALANCE BIGINT
               , C_DATA CHAR(200)
             )

SPECIFIC PAY_C_LAST

MODIFIES SQL DATA DETERMINISTIC NO EXTERNAL ACTION
LANGUAGE SQL

VAR: BEGIN ATOMIC

  DECLARE  W_NAME CHAR(10) ;
  DECLARE  D_NAME CHAR(10) ;

  DECLARE  W_STREET_1 CHAR(20) ;
  DECLARE  W_STREET_2 CHAR(20) ;
  DECLARE  W_CITY CHAR(20) ;
  DECLARE  W_STATE CHAR(2) ;
  DECLARE  W_ZIP CHAR(9) ;

  DECLARE  D_STREET_1 CHAR(20) ;
```

```
  DECLARE  D_STREET_2 CHAR(20) ;
  DECLARE  D_CITY CHAR(20) ;
  DECLARE  D_STATE CHAR(2) ;
  DECLARE  D_ZIP CHAR(9) ;

  DECLARE  C_ID INTEGER ;

  DECLARE  C_FIRST VARCHAR(16) ;
  DECLARE  C_MIDDLE CHAR(2) ;
  DECLARE  C_STREET_1 VARCHAR(20) ;
  DECLARE  C_STREET_2 VARCHAR(20) ;
  DECLARE  C_CITY VARCHAR(20) ;
  DECLARE  C_STATE CHAR(2) ;
  DECLARE  C_ZIP CHAR(9) ;
  DECLARE  C_PHONE CHAR(16) ;
  DECLARE  C_SINCE BIGINT ;
  DECLARE  C_CREDIT CHAR(2) ;
  DECLARE  C_CREDIT_LIM BIGINT ;
  DECLARE  C_DISCOUNT INTEGER ;
  DECLARE  C_BALANCE BIGINT ;
  DECLARE  C_DATA CHAR(200) ;

  /* Update District and retieve its data */

  SET ( D_NAME, D_STREET_1, D_STREET_2, D_CITY,
D_STATE, D_ZIP)

    =  ( SELECT   D_NAME, D_STREET_1, D_STREET_2,
D_CITY, D_STATE, D_ZIP

           FROM OLD TABLE ( UPDATE DISTRICT

                              SET D_YTD = D_YTD +
PAY_C_LAST.H_AMOUNT

                            WHERE D_W_ID =
PAY_C_LAST.W_ID
                              AND D_ID   =
PAY_C_LAST.D_ID
                          ) AS U
       )
  ;

  /* Determine the C_ID */

  SET ( C_ID )

    = ( SELECT C_ID
          FROM ( SELECT   C_ID
                        , COUNT(*) OVER() AS COUNT
                        , ROWNUMBER() OVER (ORDER BY
C_FIRST) AS NUM

                   FROM CUSTOMER
                   WHERE C_LAST = PAY_C_LAST.C_LAST
                     AND C_W_ID = PAY_C_LAST.C_W_ID
                     AND C_D_ID = PAY_C_LAST.C_D_ID
               ) AS T

        WHERE NUM = (COUNT + BIGINT( 1 ) ) / BIGINT(
2 )
      )
  ;
```

```
  /* Update the middle customer */

  SET (   C_ID, C_FIRST, C_MIDDLE, C_STREET_1,
C_STREET_2
        , C_CITY, C_STATE, C_ZIP, C_PHONE, C_SINCE,
C_CREDIT, C_CREDIT_LIM
        , C_DISCOUNT, C_BALANCE, C_DATA )

    = ( SELECT   C_ID, C_FIRST, C_MIDDLE, C_STREET_1,
C_STREET_2
              , C_CITY, C_STATE, C_ZIP, C_PHONE,
C_SINCE, C_CREDIT, C_CREDIT_LIM
              , C_DISCOUNT, C_BALANCE
              , CASE WHEN C_CREDIT = 'BC' THEN
SUBSTR(C_DATA, 1, 200) ELSE NULL END AS C_DATA

          FROM NEW TABLE ( UPDATE CUSTOMER

                             SET   C_BALANCE     =
C_BALANCE - PAY_C_LAST.H_AMOUNT
                                 , C_YTD_PAYMENT =
C_YTD_PAYMENT + PAY_C_LAST.H_AMOUNT
                                 , C_PAYMENT_CNT =
C_PAYMENT_CNT + SMALLINT( 1 )

                                 , C_DATA = CASE
WHEN C_CREDIT = 'BC'

THEN    CHAR( C_ID )             -- 11 bytes long

|| BAD_CREDIT_PREFIX        -- 28 bytes long

|| SUBSTR( C_DATA, 1, 461 ) -- 461 + 39 = 500

ELSE C_DATA
                                             END

                           WHERE C_W_ID =
PAY_C_LAST.C_W_ID
                             AND C_D_ID =
PAY_C_LAST.C_D_ID
                             AND C_ID   = VAR.C_ID
                         ) AS U
      )
  ;

  /* Update the warehouse */

  SET ( W_NAME, W_STREET_1, W_STREET_2, W_CITY,
W_STATE,  W_ZIP )

   = ( SELECT W_NAME, W_STREET_1, W_STREET_2, W_CITY,
W_STATE,  W_ZIP

         FROM OLD TABLE ( UPDATE WAREHOUSE

                            SET W_YTD = W_YTD +
PAY_C_LAST.H_AMOUNT

                          WHERE W_ID =
PAY_C_LAST.W_ID
```

```
                        ) AS U
     )
  ;

  /* Finally insert into the warehouse */

  INSERT

    INTO HISTORY ( H_C_ID, H_C_D_ID, H_C_W_ID,
H_D_ID, H_W_ID, H_DATA, H_DATE, H_AMOUNT )

    VALUES (   VAR.C_ID
             , PAY_C_LAST.C_D_ID
             , PAY_C_LAST.C_W_ID
             , PAY_C_LAST.D_ID
             , PAY_C_LAST.W_ID
             , VAR.W_NAME || CHAR( '    ', 4 )  ||
VAR.D_NAME
             , PAY_C_LAST.H_DATE
             , PAY_C_LAST.H_AMOUNT
           )
  ;

  /* Done - return the collected data */

  RETURN VALUES (   W_STREET_1, W_STREET_2, W_CITY,
W_STATE,  W_ZIP
                  , D_STREET_1, D_STREET_2, D_CITY,
D_STATE, D_ZIP
                  , C_ID, C_FIRST, C_MIDDLE,
C_STREET_1, C_STREET_2
                  , C_CITY, C_STATE, C_ZIP, C_PHONE,
C_SINCE, C_CREDIT, C_CREDIT_LIM
                  , C_DISCOUNT, C_BALANCE, C_DATA
                )
  ;

END
$

CREATE FUNCTION PAY_C_ID(  W_ID INTEGER
                         , D_ID SMALLINT
                         , C_W_ID INTEGER
                         , C_D_ID SMALLINT
                         , C_ID INTEGER
                         , H_DATE BIGINT
                         , H_AMOUNT BIGINT
                         , BAD_CREDIT_PREFIX VARCHAR(34)
                         )

RETURNS TABLE(   W_STREET_1 CHAR(20)
               , W_STREET_2 CHAR(20)
               , W_CITY CHAR(20)
               , W_STATE CHAR(2)
               , W_ZIP CHAR(9)
               , D_STREET_1 CHAR(20)
               , D_STREET_2 CHAR(20)
               , D_CITY CHAR(20)
               , D_STATE CHAR(2)
               , D_ZIP CHAR(9)
               , C_LAST VARCHAR(16)
               , C_FIRST VARCHAR(16)
               , C_MIDDLE CHAR(2)
```

```
              , C_STREET_1 VARCHAR(20)
              , C_STREET_2 VARCHAR(20)
              , C_CITY VARCHAR(20)
              , C_STATE CHAR(2)
              , C_ZIP CHAR(9)
              , C_PHONE CHAR(16)
              , C_SINCE BIGINT
              , C_CREDIT CHAR(2)
              , C_CREDIT_LIM BIGINT
              , C_DISCOUNT INTEGER
              , C_BALANCE BIGINT
              , C_DATA CHAR(200)
            )
SPECIFIC PAY_C_ID

MODIFIES SQL DATA DETERMINISTIC NO EXTERNAL ACTION
LANGUAGE SQL

VAR: BEGIN ATOMIC

  DECLARE  W_NAME CHAR(10) ;
  DECLARE  D_NAME CHAR(10) ;

  DECLARE  W_STREET_1 CHAR(20) ;
  DECLARE  W_STREET_2 CHAR(20) ;
  DECLARE  W_CITY CHAR(20) ;
  DECLARE  W_STATE CHAR(2) ;
  DECLARE  W_ZIP CHAR(9) ;

  DECLARE  D_STREET_1 CHAR(20) ;
  DECLARE  D_STREET_2 CHAR(20) ;
  DECLARE  D_CITY CHAR(20) ;
  DECLARE  D_STATE CHAR(2) ;
  DECLARE  D_ZIP CHAR(9) ;

  DECLARE  C_LAST VARCHAR(16) ;

  DECLARE  C_FIRST VARCHAR(16) ;
  DECLARE  C_MIDDLE CHAR(2) ;
  DECLARE  C_STREET_1 VARCHAR(20) ;
  DECLARE  C_STREET_2 VARCHAR(20) ;
  DECLARE  C_CITY VARCHAR(20) ;
  DECLARE  C_STATE CHAR(2) ;
  DECLARE  C_ZIP CHAR(9) ;
  DECLARE  C_PHONE CHAR(16) ;
  DECLARE  C_SINCE BIGINT ;
  DECLARE  C_CREDIT CHAR(2) ;
  DECLARE  C_CREDIT_LIM BIGINT ;
  DECLARE  C_DISCOUNT INTEGER ;
  DECLARE  C_BALANCE BIGINT ;
  DECLARE  C_DATA CHAR(200) ;


  /* Update District and retieve its data */

  SET ( D_NAME, D_STREET_1, D_STREET_2, D_CITY,
D_STATE, D_ZIP )

    =  ( SELECT   D_NAME, D_STREET_1, D_STREET_2,
D_CITY, D_STATE, D_ZIP

           FROM OLD TABLE ( UPDATE DISTRICT

                                SET D_YTD = D_YTD +
PAY_C_ID.H_AMOUNT

                              WHERE D_W_ID =
PAY_C_ID.W_ID
                                AND D_ID   =
PAY_C_ID.D_ID
                             ) AS U
       )
  ;

  /* Update the middle customer */

  SET (   C_LAST, C_FIRST, C_MIDDLE, C_STREET_1,
C_STREET_2
        , C_CITY, C_STATE, C_ZIP, C_PHONE, C_SINCE,
C_CREDIT, C_CREDIT_LIM
        , C_DISCOUNT, C_BALANCE, C_DATA )

    = ( SELECT   C_LAST, C_FIRST, C_MIDDLE,
C_STREET_1, C_STREET_2
              , C_CITY, C_STATE, C_ZIP, C_PHONE,
C_SINCE, C_CREDIT, C_CREDIT_LIM
              , C_DISCOUNT, C_BALANCE
              , CASE WHEN C_CREDIT = 'BC' THEN
SUBSTR(C_DATA, 1, 200) ELSE NULL END AS C_DATA

          FROM NEW TABLE ( UPDATE CUSTOMER

                               SET   C_BALANCE     =
C_BALANCE - PAY_C_ID.H_AMOUNT
                                   , C_YTD_PAYMENT =
C_YTD_PAYMENT + PAY_C_ID.H_AMOUNT
                                   , C_PAYMENT_CNT =
C_PAYMENT_CNT + SMALLINT( 1 )

                                   , C_DATA = CASE
WHEN C_CREDIT = 'BC'

THEN    BAD_CREDIT_PREFIX        -- 34 bytes long

|| SUBSTR( C_DATA, 1, 466 ) -- 466 + 34 = 500 bytes

ELSE C_DATA
                                                END

                             WHERE C_W_ID =
PAY_C_ID.C_W_ID
                               AND C_D_ID =
PAY_C_ID.C_D_ID
                               AND C_ID   =
PAY_C_ID.C_ID
                            ) AS U
      )
  ;

  /* Update the warehouse */

  SET ( W_NAME, W_STREET_1, W_STREET_2, W_CITY,
W_STATE,  W_ZIP )

   = ( SELECT W_NAME, W_STREET_1, W_STREET_2, W_CITY,
W_STATE,  W_ZIP

         FROM OLD TABLE ( UPDATE WAREHOUSE

                                SET W_YTD = W_YTD +
PAY_C_ID.H_AMOUNT

                              WHERE W_ID = PAY_C_ID.W_ID
                            ) AS U
     )
  ;

  /* Finally insert into the warehouse */

  INSERT

    INTO HISTORY ( H_C_ID, H_C_D_ID, H_C_W_ID,
H_D_ID, H_W_ID, H_DATA, H_DATE, H_AMOUNT )

    VALUES (   PAY_C_ID.C_ID
             , PAY_C_ID.C_D_ID
             , PAY_C_ID.C_W_ID
             , PAY_C_ID.D_ID
             , PAY_C_ID.W_ID
             , VAR.W_NAME || CHAR( '    ', 4 ) ||
VAR.D_NAME
             , PAY_C_ID.H_DATE
             , PAY_C_ID.H_AMOUNT
           )
  ;

  /* Done - return the collected data */

  RETURN VALUES (   W_STREET_1, W_STREET_2, W_CITY,
W_STATE,  W_ZIP
                  , D_STREET_1, D_STREET_2, D_CITY,
D_STATE, D_ZIP
                  , C_LAST, C_FIRST, C_MIDDLE,
C_STREET_1, C_STREET_2
                  , C_CITY, C_STATE, C_ZIP, C_PHONE,
C_SINCE, C_CREDIT, C_CREDIT_LIM
                  , C_DISCOUNT, C_BALANCE, C_DATA
                )
  ;

END
$

--
-- NEW ORDER
--

CREATE FUNCTION NEW_OL_ALL(   I_ID      INT
                            , I_QTY     SMALLINT
                            , W_ID      INT
                            , SUPP_W_ID INT
                            , O_ID      INT
                            , D_ID      SMALLINT
                          )

RETURNS TABLE(   I_PRICE       INTEGER
               , I_NAME        CHAR(24)
               , I_DATA        VARCHAR(50)
               , OL_DIST_INFO  CHAR(24)
```

```
             , S_DATA        VARCHAR(50)
             , S_QUANTITY    SMALLINT
           )

SPECIFIC NEW_OL_ALL

MODIFIES SQL DATA DETERMINISTIC NO EXTERNAL ACTION
LANGUAGE SQL

VAR: BEGIN ATOMIC

  DECLARE I_PRICE       INTEGER  ;
  DECLARE I_NAME        CHAR(24)  ;
  DECLARE I_DATA        VARCHAR(50)  ;
  DECLARE OL_DIST_INFO  CHAR(24)  ;
  DECLARE S_DATA        VARCHAR(50)  ;
  DECLARE S_QUANTITY    SMALLINT  ;


  SET   ( I_PRICE , I_NAME , I_DATA )

    =  ( SELECT
                 I_PRICE
               , I_NAME
               , I_DATA

          FROM ITEM

         WHERE ITEM.I_ID = NEW_OL_ALL.I_ID
       ) ;

    SET ( OL_DIST_INFO , S_DATA , S_QUANTITY )

      = ( SELECT   OL_DIST_INFO
                 , S_DATA
                 , S_QUANTITY

           FROM NEW TABLE (    UPDATE STOCK

                              INCLUDE (
OL_DIST_INFO CHAR( 24 )  )

                                 SET S_QUANTITY =
CASE WHEN S_QUANTITY - NEW_OL_ALL.I_QTY >= 10

THEN S_QUANTITY - NEW_OL_ALL.I_QTY

ELSE S_QUANTITY - NEW_OL_ALL.I_QTY + 91

END

                                                    ,
S_ORDER_CNT = S_ORDER_CNT + SMALLINT( 1 )

                                                    ,
S_YTD = S_YTD + NEW_OL_ALL.I_QTY

                                                    ,
S_REMOTE_CNT = CASE WHEN NEW_OL_ALL.SUPP_W_ID =
NEW_OL_ALL.W_ID

THEN S_REMOTE_CNT

ELSE S_REMOTE_CNT + SMALLINT( 1 )

END


                                                        ,
OL_DIST_INFO = CASE D_ID WHEN SMALLINT(  1 )  THEN
S_DIST_01

WHEN SMALLINT(  2 )  THEN S_DIST_02

WHEN SMALLINT(  3 )  THEN S_DIST_03

WHEN SMALLINT(  4 )  THEN S_DIST_04

WHEN SMALLINT(  5 )  THEN S_DIST_05

WHEN SMALLINT(  6 )  THEN S_DIST_06

WHEN SMALLINT(  7 )  THEN S_DIST_07

WHEN SMALLINT(  8 )  THEN S_DIST_08

WHEN SMALLINT(  9 )  THEN S_DIST_09

WHEN SMALLINT( 10 )  THEN S_DIST_10

END                                    WHERE S_I_ID =
NEW_OL_ALL.I_ID
                                         AND S_W_ID =
NEW_OL_ALL.SUPP_W_ID
                                ) AS U
        )
    ;

    RETURN VALUES(   VAR.I_PRICE
                   , VAR.I_NAME
                   , VAR.I_DATA
                   , VAR.OL_DIST_INFO
                   , VAR.S_DATA
                   , VAR.S_QUANTITY
                 )
    ;

END
$

CREATE FUNCTION NEW_OL_LOCAL(   I_ID      INT
                              , I_QTY     SMALLINT
                              , W_ID      INT
                              , O_ID      INT
                              , D_ID      SMALLINT
                            )

RETURNS TABLE(   I_PRICE       INTEGER
               , I_NAME        CHAR(24)
               , I_DATA        VARCHAR(50)
               , OL_DIST_INFO  CHAR(24)
               , S_DATA        VARCHAR(50)
               , S_QUANTITY    SMALLINT
             )

SPECIFIC NEW_OL_LOCAL

MODIFIES SQL DATA DETERMINISTIC NO EXTERNAL ACTION
LANGUAGE SQL

VAR: BEGIN ATOMIC

  DECLARE I_PRICE       INTEGER  ;
  DECLARE I_NAME        CHAR(24)  ;
  DECLARE I_DATA        VARCHAR(50)  ;
  DECLARE OL_DIST_INFO  CHAR(24)  ;
  DECLARE S_DATA        VARCHAR(50)  ;
  DECLARE S_QUANTITY    SMALLINT  ;


  SET   ( I_PRICE , I_NAME , I_DATA )

    =  ( SELECT
                 I_PRICE
               , I_NAME
               , I_DATA

          FROM ITEM

         WHERE ITEM.I_ID = NEW_OL_LOCAL.I_ID
       ) ;

    SET ( OL_DIST_INFO , S_DATA , S_QUANTITY )

      = ( SELECT   OL_DIST_INFO
                 , S_DATA
                 , S_QUANTITY

           FROM NEW TABLE (    UPDATE STOCK

                              INCLUDE (
OL_DIST_INFO CHAR( 24 )  )

                                 SET S_QUANTITY =
CASE WHEN S_QUANTITY - NEW_OL_LOCAL.I_QTY >= 10

THEN S_QUANTITY - NEW_OL_LOCAL.I_QTY

ELSE S_QUANTITY - NEW_OL_LOCAL.I_QTY + 91

END

                                                    ,
S_ORDER_CNT = S_ORDER_CNT + SMALLINT( 1 )

                                                    ,
S_YTD = S_YTD + NEW_OL_LOCAL.I_QTY

                                                    ,
OL_DIST_INFO = CASE D_ID WHEN SMALLINT(  1 )  THEN
S_DIST_01

WHEN SMALLINT(  2 )  THEN S_DIST_02

WHEN SMALLINT(  3 )  THEN S_DIST_03

WHEN SMALLINT(  4 )  THEN S_DIST_04
```

```
WHEN SMALLINT(  5 )  THEN S_DIST_05

WHEN SMALLINT(  6 )  THEN S_DIST_06

WHEN SMALLINT(  7 )  THEN S_DIST_07

WHEN SMALLINT(  8 )  THEN S_DIST_08

WHEN SMALLINT(  9 )  THEN S_DIST_09

WHEN SMALLINT( 10 )  THEN S_DIST_10

END
                                WHERE S_I_ID =
NEW_OL_LOCAL.I_ID
                                  AND S_W_ID =
NEW_OL_LOCAL.W_ID
                           ) AS U
        )
    ;

    RETURN VALUES(   VAR.I_PRICE
                   , VAR.I_NAME
                   , VAR.I_DATA
                   , VAR.OL_DIST_INFO
                   , VAR.S_DATA
                   , VAR.S_QUANTITY
                 )
    ;

END
$

CREATE FUNCTION NEW_WH (   O_ID        INTEGER
                         , W_ID        INTEGER
                         , D_ID        SMALLINT
                         , C_ID        INTEGER
                         , O_ENTRY_D   BIGINT
                         , O_OL_CNT    SMALLINT
                         , O_ALL_LOCAL SMALLINT
                       )

RETURNS TABLE (   W_TAX       INTEGER
                , C_DISCOUNT  INTEGER
                , C_LAST      VARCHAR(16)
                , C_CREDIT    CHAR(2)
              )

SPECIFIC NEW_WH

MODIFIES SQL DATA DETERMINISTIC NO EXTERNAL ACTION
LANGUAGE SQL

VAR: BEGIN ATOMIC

  DECLARE C_DISCOUNT  INTEGER ;
  DECLARE C_LAST      VARCHAR(16) ;
  DECLARE C_CREDIT    CHAR(2) ;
  DECLARE W_TAX       INTEGER ;

  INSERT
    INTO NEW_ORDER ( NO_O_ID, NO_D_ID, NO_W_ID )

           VALUES (   O_ID
                    , D_ID
                    , W_ID
                  )
  ;


  INSERT

    INTO ORDERS ( O_C_ID, O_ENTRY_D, O_CARRIER_ID,
O_OL_CNT, O_ALL_LOCAL, O_ID, O_W_ID, O_D_ID )

         VALUES (   C_ID
                  , O_ENTRY_D
                  , 0
                  , O_OL_CNT
                  , O_ALL_LOCAL
                  , O_ID
                  , W_ID
                  , D_ID
                )
  ;

  SET ( C_DISCOUNT, C_LAST, C_CREDIT )

   =  ( SELECT  C_DISCOUNT, C_LAST, C_CREDIT

          FROM  CUSTOMER

         WHERE  C_ID = NEW_WH.C_ID
           AND  C_W_ID = W_ID
           AND  C_D_ID = D_ID
      )
  ;


  SET W_TAX
    =    ( SELECT W_TAX

             FROM WAREHOUSE

            WHERE W_ID = NEW_WH.W_ID
         )
  ;

  RETURN VALUES ( W_TAX , C_DISCOUNT , C_LAST ,
C_CREDIT ) ;

END
$
```

Src.Srv/cat-proc.ddl

```
CREATE PROCEDURE news
                        (in new_in   varchar(270) FOR
BIT DATA,
                         out new_out varchar(662) FOR
BIT DATA)
                        LANGUAGE C
                        PARAMETER STYLE GENERAL
                        EXTERNAL NAME
'C:\Progra~1\IBM\SQLLIB\function\\rpctpcc!news'
                        not fenced;

CREATE PROCEDURE ords
                        (in ord_in   varchar(42) FOR
BIT DATA,
                         out ord_out varchar(446) FOR
BIT DATA)
                        LANGUAGE C
                        PARAMETER STYLE GENERAL
                        EXTERNAL NAME
'C:\Progra~1\IBM\SQLLIB\function\\rpctpcc!ords'
                        not fenced;

CREATE PROCEDURE dels
                        (in del_in   varchar(22) FOR
BIT DATA,
                         out del_out varchar(50) FOR
BIT DATA)
                        LANGUAGE C
                        PARAMETER STYLE GENERAL
                        EXTERNAL NAME
'C:\Progra~1\IBM\SQLLIB\function\\rpctpcc!dels'
                        not fenced;
```

Src.Srv/tpcc_all_sql.sqc

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

/*
 * tpcc_all_sql.sqc - Client/Server code for TPCC
 *
 * Change Activity:
 * defect Date        Who Description
 * ====== =========== ===
=============================================
 * 262565 2002/11/27  mte Initial Drop
```

```
 *        2002/11/14  dje Fixup datatypes
 *        2002/11/20  dje Backfit improvements made
for REMOTE CURSOR into this version
 *        2002/11/26  dje Changed table function
names to match specific names
 * 265265 2003/01/14  mte Merge SQL changes, type
conversions for new schema
 * 267999 2003/01/28  mte Merge SP stubs from
tpcc_sp.c
 * 268652 2003/02/03  mte Include debugging header
file
 * 268652 2003/02/04  mte Copy timestamps into output
structure
 * 269478 2003/02/07  mte FIx s_total_amount
computation bug
 * 270212 2003/02/14  mte Merge SQL changes (see
defect notes)
 * 272753 2003/03/05  mte Align input/output
structures for 32/64-bit
 * 273565 2003/03/11  mte Clean up error handling
code
 * 273748 2003/03/12  mte Fix H_AMOUNT scaling
problem in PAY
 * 273748 2003/03/14  mte Build C_DATA prefix outside
of retry loop
 * 273748 2003/03/14  mte Fix for Austin RTE
integration
 * 275355 2003/03/28  mte Move STK to client
 * 275913 2003/03/28  mte Integrate group logging SQL
 * 276081 2003/03/28  mte Use new SQL syntax for
OLD/NEW TABLE
 * 277884 2003/04/13  mte Change cursor SQL to work
properly with LI1042
 * 279303 2003/05/27  mte Fix up error handling
 * 287033 2003/07/30  mte Use WITH expressions in
cursors (req by FP4)
 * 279768 2003/07/31  mte Improve error-handling code
 * 289958 2003/10/29  mte Split client and server
code
 * 299968 2003/11/13  mte Add debugging hooks
 * 300514 2003/11/18  mte Fix incorrect type on
c_balance hostvar
 * 301360 2003/11/24  mte Explicitly set TRAN_OK for
NEW tx
 * 305946 2004/01/08  mte Fix deadlock handling in
DEL
 * 314005 2004/02/26  mte Add filename argument to
sqlerror
 * 314029 2004/02/26  mte Remove OL_NUMBER from
NEW_OL_ALL and NEW_OL_LOCAL
 *
 */

#include <stdlib.h>
#include <errno.h>
#include "db2tpcc.h"
#include "tpccapp.h"
#include "tpccdbg.h"
//@d268652mte

#include "sqlca.h"
#include "sql.h"
#include "lval.h"

// ------------------------------------------------
--------------
// New Order  SERVER
// ------------------------------------------------
--------------

int  static is_ORIGINAL( char *string, short length )
;

SQL_API_RC new_order_internal( char *pin, char *pout
)
{

   struct out_neword_struct *neword;

   struct in_neword_struct  *in_neword;

   struct sqlca sqlca ;

   int     fbadItemDetected = 0 ;

   EXEC SQL BEGIN DECLARE SECTION;

      char    c_last [ 16 ] ;
      char    c_credit [ 2 ] ;
      sqlint32  c_discount ;
      sqlint32  dist_tax ;
      sqlint32  ware_tax ;

      sqlint32   w_id ;
      short      d_id ;
      sqlint32   c_id ;

      sqlint32   next_o_id ;

      short      s_quantity ;

      sqlint32   supply_w_id ;

      short   inputItemCount ;

      char    stockDistrictInformation [ 24 ];
      char    item_name[ 24 ] ;

      sqlint64 o_entry_d ;

      short   allLocal ;

      sqlint32    item_price ;

      struct i_data_type { short len ; char data[ 50
] ; } i_data ;
      struct s_data_type { short len ; char data[ 50
] ; } s_data ;

      sqlint32    id0, id1, id2,  id3,  id4,  id5,
id6,  id7;
      sqlint32    id8, id9, id10, id11, id12, id13,
id14;

      sqlint32   supply_w_id0,  supply_w_id1,
supply_w_id2,  supply_w_id3;
      sqlint32   supply_w_id4,  supply_w_id5,
supply_w_id6,  supply_w_id7;
      sqlint32   supply_w_id8,  supply_w_id9,
supply_w_id10,  supply_w_id11;
      sqlint32   supply_w_id12,  supply_w_id13,
supply_w_id14;

      short   ol_quantity0,  ol_quantity1,
ol_quantity2,  ol_quantity3;
      short   ol_quantity4,  ol_quantity5,
ol_quantity6,  ol_quantity7;
      short   ol_quantity8,  ol_quantity9,
ol_quantity10,  ol_quantity11;
      short   ol_quantity12,  ol_quantity13,
ol_quantity14;


   EXEC SQL END DECLARE SECTION;

   int      storedProcRc ;
//@d279768mte
   int      inputItemArrayIndex ;

   char    stockDistrictInformationArray [15][25];

   #define stockDistrictInformation
stockDistrictInformationArray[ inputItemArrayIndex ]

   // Redirected input fields

   #define w_id in_neword->s_W_ID
   #define d_id in_neword->s_D_ID
   #define c_id in_neword->s_C_ID
   #define o_entry_d in_neword->s_O_ENTRY_D_time

   #define inputItemCount in_neword->s_O_OL_CNT

   #define allLocal in_neword->s_all_local

   // Redirected output fields

   #define  c_last       neword->s_C_LAST
   #define  c_credit     neword->s_C_CREDIT
   #define  c_discount   neword->s_C_DISCOUNT
   #define  ware_tax     neword->s_W_TAX
   #define  dist_tax     neword->s_D_TAX
   #define  s_quantity   neword->item[
inputItemArrayIndex ].s_S_QUANTITY

   // This output field becomes an input field to
order_line

   #define next_o_id neword->s_O_ID


   #define  item_name    neword->item[
inputItemArrayIndex ].s_I_NAME

   // item_price holds the integer version of this
value. If the return structure was
   // an integer this would not be necessary.
```

```
   sqlint32    i_priceArray[ 15 ] ;

   #define  item_price   i_priceArray[
inputItemArrayIndex ]

   // Handle the generic/brand distinction

   struct  i_data_type i_dataArray[ 15 ] ;
   struct  s_data_type s_dataArray[ 15 ] ;

   #define  i_data       i_dataArray[
inputItemArrayIndex ]
   #define  s_data       s_dataArray[
inputItemArrayIndex ]


   // Redirect hostvars to input structure

   #define  id0  in_neword->in_item[0].s_OL_I_ID
   #define  id1  in_neword->in_item[1].s_OL_I_ID
   #define  id2  in_neword->in_item[2].s_OL_I_ID
   #define  id3  in_neword->in_item[3].s_OL_I_ID
   #define  id4  in_neword->in_item[4].s_OL_I_ID
   #define  id5  in_neword->in_item[5].s_OL_I_ID
   #define  id6  in_neword->in_item[6].s_OL_I_ID
   #define  id7  in_neword->in_item[7].s_OL_I_ID
   #define  id8  in_neword->in_item[8].s_OL_I_ID
   #define  id9  in_neword->in_item[9].s_OL_I_ID
   #define  id10 in_neword->in_item[10].s_OL_I_ID
   #define  id11 in_neword->in_item[11].s_OL_I_ID
   #define  id12 in_neword->in_item[12].s_OL_I_ID
   #define  id13 in_neword->in_item[13].s_OL_I_ID
   #define  id14 in_neword->in_item[14].s_OL_I_ID

   #define ol_quantity0  in_neword->in_item[  0
].s_OL_QUANTITY
   #define ol_quantity1  in_neword->in_item[  1
].s_OL_QUANTITY
   #define ol_quantity2  in_neword->in_item[  2
].s_OL_QUANTITY
   #define ol_quantity3  in_neword->in_item[  3
].s_OL_QUANTITY
   #define ol_quantity4  in_neword->in_item[  4
].s_OL_QUANTITY
   #define ol_quantity5  in_neword->in_item[  5
].s_OL_QUANTITY
   #define ol_quantity6  in_neword->in_item[  6
].s_OL_QUANTITY
   #define ol_quantity7  in_neword->in_item[  7
].s_OL_QUANTITY
   #define ol_quantity8  in_neword->in_item[  8
].s_OL_QUANTITY
   #define ol_quantity9  in_neword->in_item[  9
].s_OL_QUANTITY
   #define ol_quantity10 in_neword->in_item[ 10
].s_OL_QUANTITY
   #define ol_quantity11 in_neword->in_item[ 11
].s_OL_QUANTITY
   #define ol_quantity12 in_neword->in_item[ 12
].s_OL_QUANTITY
   #define ol_quantity13 in_neword->in_item[ 13
].s_OL_QUANTITY
   #define ol_quantity14 in_neword->in_item[ 14
].s_OL_QUANTITY

   #define supply_w_id0  in_neword->in_item[  0
].s_OL_SUPPLY_W_ID
   #define supply_w_id1  in_neword->in_item[  1
].s_OL_SUPPLY_W_ID
   #define supply_w_id2  in_neword->in_item[  2
].s_OL_SUPPLY_W_ID
   #define supply_w_id3  in_neword->in_item[  3
].s_OL_SUPPLY_W_ID
   #define supply_w_id4  in_neword->in_item[  4
].s_OL_SUPPLY_W_ID
   #define supply_w_id5  in_neword->in_item[  5
].s_OL_SUPPLY_W_ID
   #define supply_w_id6  in_neword->in_item[  6
].s_OL_SUPPLY_W_ID
   #define supply_w_id7  in_neword->in_item[  7
].s_OL_SUPPLY_W_ID
   #define supply_w_id8  in_neword->in_item[  8
].s_OL_SUPPLY_W_ID
   #define supply_w_id9  in_neword->in_item[  9
].s_OL_SUPPLY_W_ID
   #define supply_w_id10 in_neword->in_item[ 10
].s_OL_SUPPLY_W_ID
   #define supply_w_id11 in_neword->in_item[ 11
].s_OL_SUPPLY_W_ID
   #define supply_w_id12 in_neword->in_item[ 12
].s_OL_SUPPLY_W_ID
   #define supply_w_id13 in_neword->in_item[ 13
].s_OL_SUPPLY_W_ID
   #define supply_w_id14 in_neword->in_item[ 14
].s_OL_SUPPLY_W_ID

   EXEC SQL DECLARE ISOL_Remote_1 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY
                                        FROM ( SELECT
:next_o_id as O_ID
                                                    ,
:w_id AS W_ID
                                                    ,
:d_id as D_ID
                                                    ,
OL_NUMBER
                                                    ,
I_ID
                                                    ,
I_SUPPLY_W_ID
                                                    ,
I_QTY
                                        FROM
Table( VALUES

(  SMALLINT( 1 )         , :id0  , :ol_quantity0  ,
:supply_w_id0  )

) AS X ( OL_NUMBER , I_ID  , I_QTY          ,
I_SUPPLY_W_ID  )
                                    ) AS ITEMLIST

                                  , TABLE(
NEW_OL_ALL(   I_ID

, I_QTY

, W_ID

, I_SUPPLY_W_ID

, O_ID

, D_ID

)
                                    ) AS
NEW_OL_ALL

                                WHERE
NEW_OL_ALL.I_PRICE IS NOT NULL
                  )


      SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                        (   OL_O_ID
                          , OL_D_ID
                          , OL_W_ID
                          , OL_NUMBER
                          , OL_I_ID
                          , OL_SUPPLY_W_ID
                          , OL_DELIVERY_D
                          , OL_QUANTITY
                          , OL_AMOUNT
                          , OL_DIST_INFO
                        )

                        INCLUDE (   I_PRICE
INTEGER
                                  , I_NAME
CHAR(24)
                                  , I_DATA
VARCHAR(50)
                                  , S_DATA
VARCHAR(50)
```

```
                                , S_QUANTITY
SMALLINT )

                               SELECT   O_ID
                                      , D_ID
                                      , W_ID
                                      , OL_NUMBER
                                      , I_ID
                                      ,
I_SUPPLY_W_ID                         ,
OL_DELIVERY_D
                                      , I_QTY
                                      , TOTAL_PRICE
                                      ,
OL_DIST_INFO
                                      , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                               FROM DATA

                     ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Remote_2 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                FROM ( SELECT
:next_o_id as O_ID
                                             ,
:w_id AS W_ID
                                             ,
:d_id as D_ID
                                             ,
OL_NUMBER
                                             ,
I_ID
                                             ,
I_SUPPLY_W_ID
                                             ,
I_QTY

                                          FROM
Table( VALUES


(  SMALLINT( 1 )         , :id0  , :ol_quantity0  ,
:supply_w_id0  )

, (  SMALLINT( 2 )         , :id1  , :ol_quantity1  ,
:supply_w_id1  )


) AS X ( OL_NUMBER , I_ID  , I_QTY          ,
I_SUPPLY_W_ID  )
                                             ) AS ITEMLIST

                                          , TABLE(
NEW_OL_ALL(   I_ID

, I_QTY

, W_ID

, I_SUPPLY_W_ID

, O_ID

, D_ID

)
                                             ) AS
NEW_OL_ALL

                                       WHERE
NEW_OL_ALL.I_PRICE IS NOT NULL
                                    )


      SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                         (   OL_O_ID
                           , OL_D_ID
                           , OL_W_ID
                           , OL_NUMBER
                           , OL_I_ID
                           , OL_SUPPLY_W_ID
                           , OL_DELIVERY_D
                           , OL_QUANTITY
                           , OL_AMOUNT
                           , OL_DIST_INFO
                         )

                         INCLUDE (   I_PRICE
INTEGER
                                   , I_NAME
CHAR(24)
                                   , I_DATA
VARCHAR(50)
                                   , S_DATA
VARCHAR(50)
                                   , S_QUANTITY
SMALLINT )

                                SELECT   O_ID
                                       , D_ID
                                       , W_ID
                                       , OL_NUMBER
                                       , I_ID
                                       ,
I_SUPPLY_W_ID
                                       ,
OL_DELIVERY_D
                                       , I_QTY
                                       , TOTAL_PRICE
                                       ,
OL_DIST_INFO
                                       , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                    FROM DATA

                          ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Remote_3 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                   FROM ( SELECT
:next_o_id as O_ID
                                                ,
:w_id AS W_ID
                                                ,
:d_id as D_ID
                                                ,
OL_NUMBER
                                                ,
I_ID
                                                ,
I_SUPPLY_W_ID
                                                ,
I_QTY

                                             FROM
Table( VALUES


(  SMALLINT( 1 )         , :id0  , :ol_quantity0  ,
:supply_w_id0  )

, (  SMALLINT( 2 )         , :id1  , :ol_quantity1  ,
:supply_w_id1  )

, (  SMALLINT( 3 )         , :id2  , :ol_quantity2  ,
:supply_w_id2  )
```

```
) AS X ( OL_NUMBER , I_ID  , I_QTY          ,
I_SUPPLY_W_ID  )
                                        ) AS ITEMLIST

                                      , TABLE(
NEW_OL_ALL(   I_ID

, I_QTY

, W_ID

, I_SUPPLY_W_ID

, O_ID

, D_ID

)
                                              ) AS
NEW_OL_ALL

                                  WHERE
NEW_OL_ALL.I_PRICE IS NOT NULL
                    )


     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                        (   OL_O_ID
                          , OL_D_ID
                          , OL_W_ID
                          , OL_NUMBER
                          , OL_I_ID
                          , OL_SUPPLY_W_ID
                          , OL_DELIVERY_D
                          , OL_QUANTITY
                          , OL_AMOUNT
                          , OL_DIST_INFO
                        )

                        INCLUDE (   I_PRICE
INTEGER                                   , I_NAME
CHAR(24)
                                          , I_DATA
VARCHAR(50)
                                          , S_DATA
VARCHAR(50)
                                          , S_QUANTITY
SMALLINT )


                                       SELECT   O_ID
                                              , D_ID
                                              , W_ID
                                              , OL_NUMBER
                                              , I_ID
                                              ,
I_SUPPLY_W_ID
                                              ,
OL_DELIVERY_D
                                              , I_QTY
                                              , TOTAL_PRICE
                                              ,
OL_DIST_INFO
                                              , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                         FROM DATA

                                ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Remote_4 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                   FROM ( SELECT

:next_o_id as O_ID
                                                ,
:w_id AS W_ID
                                                ,
:d_id as D_ID
                                                ,
OL_NUMBER
                                                ,
I_ID
                                                ,
I_SUPPLY_W_ID
                                                ,
I_QTY

                                            FROM
Table( VALUES


(  SMALLINT( 1 )         , :id0  , :ol_quantity0  ,
:supply_w_id0  )

, (  SMALLINT( 2 )         , :id1  , :ol_quantity1  ,
:supply_w_id1  )

, (  SMALLINT( 3 )         , :id2  , :ol_quantity2  ,
:supply_w_id2  )

, (  SMALLINT( 4 )         , :id3  , :ol_quantity3  ,
:supply_w_id3  )
```

```
) AS X ( OL_NUMBER , I_ID  , I_QTY          ,
I_SUPPLY_W_ID  )
                                        ) AS ITEMLIST

                                      , TABLE(
NEW_OL_ALL(   I_ID

, I_QTY

, W_ID

, I_SUPPLY_W_ID

, O_ID

, D_ID

)
                                              ) AS
NEW_OL_ALL

                                  WHERE
NEW_OL_ALL.I_PRICE IS NOT NULL
                    )


     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                        (   OL_O_ID
                          , OL_D_ID
                          , OL_W_ID
                          , OL_NUMBER
                          , OL_I_ID
                          , OL_SUPPLY_W_ID
                          , OL_DELIVERY_D
                          , OL_QUANTITY
                          , OL_AMOUNT
                          , OL_DIST_INFO
                        )

                        INCLUDE (   I_PRICE
INTEGER                                   , I_NAME
CHAR(24)
                                          , I_DATA
VARCHAR(50)
                                          , S_DATA
VARCHAR(50)
                                          , S_QUANTITY
SMALLINT )


                                       SELECT   O_ID
                                              , D_ID
                                              , W_ID
                                              , OL_NUMBER
                                              , I_ID
                                              ,
I_SUPPLY_W_ID
```

```
                                        ,
OL_DELIVERY_D
                                        , I_QTY
                                        , TOTAL_PRICE
                                        ,
OL_DIST_INFO
                                        , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                  FROM DATA

                        ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Remote_5 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                  FROM ( SELECT
:next_o_id as O_ID
                                                ,
:w_id AS W_ID
                                                ,
:d_id as D_ID
                                                ,
OL_NUMBER
                                                ,
I_ID
                                                ,
I_SUPPLY_W_ID
                                                ,
I_QTY

                                           FROM
Table( VALUES


(  SMALLINT( 1 )         , :id0  , :ol_quantity0  ,
:supply_w_id0  )

, (  SMALLINT( 2 )         , :id1  , :ol_quantity1  ,
:supply_w_id1  )

, (  SMALLINT( 3 )         , :id2  , :ol_quantity2  ,
:supply_w_id2  )

, (  SMALLINT( 4 )         , :id3  , :ol_quantity3  ,
:supply_w_id3  )

, (  SMALLINT( 5 )         , :id4  , :ol_quantity4  ,
:supply_w_id4  )
```

```
) AS X ( OL_NUMBER , I_ID  , I_QTY          ,
I_SUPPLY_W_ID  )
                                           ) AS ITEMLIST

                                        , TABLE(
NEW_OL_ALL(   I_ID

, I_QTY

, W_ID

, I_SUPPLY_W_ID

, O_ID

, D_ID

)
                                           ) AS
NEW_OL_ALL

                                     WHERE
NEW_OL_ALL.I_PRICE IS NOT NULL
                   )


      SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                         (   OL_O_ID
                           , OL_D_ID
                           , OL_W_ID
                           , OL_NUMBER
                           , OL_I_ID
                           , OL_SUPPLY_W_ID
                           , OL_DELIVERY_D
                           , OL_QUANTITY
                           , OL_AMOUNT
                           , OL_DIST_INFO
                         )

                         INCLUDE (   I_PRICE
INTEGER
                                   , I_NAME
CHAR(24)
                                   , I_DATA
VARCHAR(50)
                                   , S_DATA
VARCHAR(50)
                                   , S_QUANTITY
SMALLINT )

                                SELECT   O_ID
                                       , D_ID
                                       , W_ID
                                       , OL_NUMBER
                                       , I_ID
                                       ,
I_SUPPLY_W_ID
```

```
                                        ,
OL_DELIVERY_D
                                        , I_QTY
                                        , TOTAL_PRICE
                                        ,
OL_DIST_INFO
                                        , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                  FROM DATA

                        ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Remote_6 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                  FROM ( SELECT
:next_o_id as O_ID
                                                ,
:w_id AS W_ID
                                                ,
:d_id as D_ID
                                                ,
OL_NUMBER
                                                ,
I_ID
                                                ,
I_SUPPLY_W_ID
                                                ,
I_QTY

                                           FROM
Table( VALUES


(  SMALLINT( 1 )         , :id0  , :ol_quantity0  ,
:supply_w_id0  )

, (  SMALLINT( 2 )         , :id1  , :ol_quantity1  ,
:supply_w_id1  )

, (  SMALLINT( 3 )         , :id2  , :ol_quantity2  ,
:supply_w_id2  )

, (  SMALLINT( 4 )         , :id3  , :ol_quantity3  ,
:supply_w_id3  )

, (  SMALLINT( 5 )         , :id4  , :ol_quantity4  ,
:supply_w_id4  )
```

```
, (  SMALLINT( 6 )         , :id5  , :ol_quantity5  ,
:supply_w_id5  )


) AS X ( OL_NUMBER , I_ID  , I_QTY          ,
I_SUPPLY_W_ID  )
                                        ) AS ITEMLIST

                                      , TABLE(
NEW_OL_ALL(   I_ID

, I_QTY

, W_ID

, I_SUPPLY_W_ID

, O_ID

, D_ID

)                                             ) AS
NEW_OL_ALL

                                  WHERE
NEW_OL_ALL.I_PRICE IS NOT NULL
                  )


      SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                         (   OL_O_ID
                           , OL_D_ID
                           , OL_W_ID
                           , OL_NUMBER
                           , OL_I_ID
                           , OL_SUPPLY_W_ID
                           , OL_DELIVERY_D
                           , OL_QUANTITY
                           , OL_AMOUNT
                           , OL_DIST_INFO
                         )

                         INCLUDE (   I_PRICE
INTEGER
                                   , I_NAME
CHAR(24)
                                   , I_DATA
VARCHAR(50)
                                   , S_DATA
VARCHAR(50)
                                   , S_QUANTITY
SMALLINT )

                                  SELECT   O_ID
                                         , D_ID
                                         , W_ID
                                         , OL_NUMBER
                                         , I_ID
                                         ,
I_SUPPLY_W_ID
                                         ,
OL_DELIVERY_D
                                         , I_QTY
                                         , TOTAL_PRICE
                                         ,
OL_DIST_INFO
                                         , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                      FROM DATA

                          ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Remote_7 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                        FROM ( SELECT
:next_o_id as O_ID
                                                 ,
:w_id AS W_ID
                                                 ,
:d_id as D_ID
                                                 ,
OL_NUMBER
                                                 ,
I_ID
                                                 ,
I_SUPPLY_W_ID
                                                 ,
I_QTY

                                           FROM
Table( VALUES


(  SMALLINT( 1 )         , :id0  , :ol_quantity0  ,
:supply_w_id0  )

, (  SMALLINT( 2 )         , :id1  , :ol_quantity1  ,
:supply_w_id1  )

, (  SMALLINT( 3 )         , :id2  , :ol_quantity2  ,
:supply_w_id2  )

, (  SMALLINT( 4 )         , :id3  , :ol_quantity3  ,
:supply_w_id3  )

, (  SMALLINT( 5 )         , :id4  , :ol_quantity4  ,
:supply_w_id4  )

, (  SMALLINT( 6 )         , :id5  , :ol_quantity5  ,
:supply_w_id5  )

, (  SMALLINT( 7 )         , :id6  , :ol_quantity6  ,
:supply_w_id6  )


) AS X ( OL_NUMBER , I_ID  , I_QTY          ,
I_SUPPLY_W_ID  )
                                        ) AS ITEMLIST

                                      , TABLE(
NEW_OL_ALL(   I_ID

, I_QTY

, W_ID

, I_SUPPLY_W_ID

, O_ID

, D_ID

)                                             ) AS
NEW_OL_ALL

                                  WHERE
NEW_OL_ALL.I_PRICE IS NOT NULL
                  )


      SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                         (   OL_O_ID
                           , OL_D_ID
                           , OL_W_ID
                           , OL_NUMBER
                           , OL_I_ID
                           , OL_SUPPLY_W_ID
                           , OL_DELIVERY_D
                           , OL_QUANTITY
                           , OL_AMOUNT
                           , OL_DIST_INFO
                         )

                         INCLUDE (   I_PRICE
INTEGER
                                   , I_NAME
CHAR(24)
                                   , I_DATA
VARCHAR(50)
                                   , S_DATA
VARCHAR(50)
```

```
                                , S_QUANTITY
SMALLINT )

                               SELECT   O_ID
                                      , D_ID
                                      , W_ID
                                      , OL_NUMBER
                                      , I_ID
                                      ,
I_SUPPLY_W_ID
                                      ,
OL_DELIVERY_D
                                      , I_QTY
                                      , TOTAL_PRICE
                                      ,
OL_DIST_INFO
                                      , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                               FROM DATA

                     ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Remote_8 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                FROM ( SELECT
:next_o_id as O_ID
                                                    ,
:w_id AS W_ID
                                                    ,
:d_id as D_ID
                                                    ,
OL_NUMBER
                                                    ,
I_ID
                                                    ,
I_SUPPLY_W_ID
                                                    ,
I_QTY

                                             FROM
Table( VALUES


(  SMALLINT( 1 )         , :id0  , :ol_quantity0  ,
:supply_w_id0  )

, (  SMALLINT( 2 )         , :id1  , :ol_quantity1  ,
:supply_w_id1  )

, (  SMALLINT( 3 )         , :id2  , :ol_quantity2  ,
:supply_w_id2  )

, (  SMALLINT( 4 )         , :id3  , :ol_quantity3  ,
:supply_w_id3  )

, (  SMALLINT( 5 )         , :id4  , :ol_quantity4  ,
:supply_w_id4  )

, (  SMALLINT( 6 )         , :id5  , :ol_quantity5  ,
:supply_w_id5  )

, (  SMALLINT( 7 )         , :id6  , :ol_quantity6  ,
:supply_w_id6  )

, (  SMALLINT( 8 )         , :id7  , :ol_quantity7  ,
:supply_w_id7  )


) AS X ( OL_NUMBER , I_ID  , I_QTY          ,
I_SUPPLY_W_ID  )
                                                ) AS ITEMLIST

                                             , TABLE(
NEW_OL_ALL(   I_ID

, I_QTY

, W_ID

, I_SUPPLY_W_ID

, O_ID

, D_ID

)                                                ) AS
NEW_OL_ALL

                                          WHERE
NEW_OL_ALL.I_PRICE IS NOT NULL
                    )


     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

       FROM NEW TABLE ( INSERT INTO ORDER_LINE

                        (   OL_O_ID
                          , OL_D_ID
                          , OL_W_ID
                          , OL_NUMBER
                          , OL_I_ID
                          , OL_SUPPLY_W_ID
                          , OL_DELIVERY_D
                          , OL_QUANTITY
                          , OL_AMOUNT
                          , OL_DIST_INFO
                        )

                        INCLUDE (   I_PRICE
INTEGER
                                  , I_NAME
CHAR(24)
                                  , I_DATA
VARCHAR(50)
                                  , S_DATA
VARCHAR(50)
                                  , S_QUANTITY
SMALLINT )

                               SELECT   O_ID
                                      , D_ID
                                      , W_ID
                                      , OL_NUMBER
                                      , I_ID
                                      ,
I_SUPPLY_W_ID
                                      ,
OL_DELIVERY_D
                                      , I_QTY
                                      , TOTAL_PRICE
                                      ,
OL_DIST_INFO
                                      , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                               FROM DATA

                     ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Remote_9 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                FROM ( SELECT
:next_o_id as O_ID
                                                    ,
:w_id AS W_ID
                                                    ,
:d_id as D_ID
                                                    ,
OL_NUMBER
                                                    ,
I_ID
                                                    ,
I_SUPPLY_W_ID
```

```
                                                ,
I_QTY

                                            FROM
Table( VALUES


(  SMALLINT( 1 )         , :id0  , :ol_quantity0  ,
:supply_w_id0  )

, (  SMALLINT( 2 )         , :id1  , :ol_quantity1  ,
:supply_w_id1  )

, (  SMALLINT( 3 )         , :id2  , :ol_quantity2  ,
:supply_w_id2  )

, (  SMALLINT( 4 )         , :id3  , :ol_quantity3  ,
:supply_w_id3  )

, (  SMALLINT( 5 )         , :id4  , :ol_quantity4  ,
:supply_w_id4  )

, (  SMALLINT( 6 )         , :id5  , :ol_quantity5  ,
:supply_w_id5  )

, (  SMALLINT( 7 )         , :id6  , :ol_quantity6  ,
:supply_w_id6  )

, (  SMALLINT( 8 )         , :id7  , :ol_quantity7  ,
:supply_w_id7  )

, (  SMALLINT( 9 )         , :id8  , :ol_quantity8  ,
:supply_w_id8  )


) AS X ( OL_NUMBER , I_ID  , I_QTY          ,
I_SUPPLY_W_ID  )
                                        ) AS ITEMLIST

                                      , TABLE(
NEW_OL_ALL(   I_ID

, I_QTY

, W_ID

, I_SUPPLY_W_ID

, O_ID

, D_ID

)
                                                ) AS
NEW_OL_ALL

                                    WHERE
NEW_OL_ALL.I_PRICE IS NOT NULL
                   )


     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                         (   OL_O_ID
                           , OL_D_ID
                           , OL_W_ID
                           , OL_NUMBER
                           , OL_I_ID
                           , OL_SUPPLY_W_ID
                           , OL_DELIVERY_D
                           , OL_QUANTITY
                           , OL_AMOUNT
                           , OL_DIST_INFO
                         )

                         INCLUDE (   I_PRICE
INTEGER
                                   , I_NAME

CHAR(24)
                                   , I_DATA

VARCHAR(50)
                                   , S_DATA

VARCHAR(50)
                                   , S_QUANTITY

SMALLINT )

                                SELECT   O_ID
                                       , D_ID
                                       , W_ID
                                       , OL_NUMBER
                                       , I_ID
                                       ,
I_SUPPLY_W_ID
                                       ,
OL_DELIVERY_D
                                       , I_QTY
                                       , TOTAL_PRICE
                                       ,
OL_DIST_INFO
                                       , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                   FROM DATA

                        ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Remote_10 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                        FROM ( SELECT
:next_o_id as O_ID
                                                ,
:w_id AS W_ID
                                                ,
:d_id as D_ID
                                                ,
OL_NUMBER
                                                ,
I_ID
                                                ,
I_SUPPLY_W_ID
                                                ,
I_QTY

                                            FROM
Table( VALUES


(  SMALLINT( 1 )         , :id0  , :ol_quantity0  ,
:supply_w_id0  )

, (  SMALLINT( 2 )         , :id1  , :ol_quantity1  ,
:supply_w_id1  )

, (  SMALLINT( 3 )         , :id2  , :ol_quantity2  ,
:supply_w_id2  )

, (  SMALLINT( 4 )         , :id3  , :ol_quantity3  ,
:supply_w_id3  )

, (  SMALLINT( 5 )         , :id4  , :ol_quantity4  ,
:supply_w_id4  )

, (  SMALLINT( 6 )         , :id5  , :ol_quantity5  ,
:supply_w_id5  )

, (  SMALLINT( 7 )         , :id6  , :ol_quantity6  ,
:supply_w_id6  )

, (  SMALLINT( 8 )         , :id7  , :ol_quantity7  ,
:supply_w_id7  )

, (  SMALLINT( 9 )         , :id8  , :ol_quantity8  ,
:supply_w_id8  )

, (  SMALLINT( 10 )        , :id9  , :ol_quantity9  ,
:supply_w_id9   )


) AS X ( OL_NUMBER , I_ID  , I_QTY          ,
I_SUPPLY_W_ID  )
                                        ) AS ITEMLIST

                                      , TABLE(
NEW_OL_ALL(   I_ID

, I_QTY

, W_ID

, I_SUPPLY_W_ID
```

```
, O_ID

, D_ID

)
                                        ) AS
NEW_OL_ALL

                                WHERE
NEW_OL_ALL.I_PRICE IS NOT NULL
                    )


      SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                        (   OL_O_ID
                          , OL_D_ID
                          , OL_W_ID
                          , OL_NUMBER
                          , OL_I_ID
                          , OL_SUPPLY_W_ID
                          , OL_DELIVERY_D
                          , OL_QUANTITY
                          , OL_AMOUNT
                          , OL_DIST_INFO
                        )

                        INCLUDE (   I_PRICE
INTEGER
                                  , I_NAME
CHAR(24)
                                  , I_DATA
VARCHAR(50)
                                  , S_DATA
VARCHAR(50)
                                  , S_QUANTITY
SMALLINT )

                                SELECT   O_ID
                                       , D_ID
                                       , W_ID
                                       , OL_NUMBER
                                       , I_ID
                                       ,
I_SUPPLY_W_ID
                                       ,
OL_DELIVERY_D
                                       , I_QTY
                                       , TOTAL_PRICE
                                       ,
OL_DIST_INFO
                                       , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                FROM DATA

                      ) AS INS
   ;
```

```
   EXEC SQL DECLARE ISOL_Remote_11 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                        FROM ( SELECT
:next_o_id as O_ID
                                                ,
:w_id AS W_ID
                                                ,
:d_id as D_ID
                                                ,
OL_NUMBER
                                                ,
I_ID
                                                ,
I_SUPPLY_W_ID
                                                ,
I_QTY

                                             FROM
Table( VALUES


(  SMALLINT( 1 )        , :id0  , :ol_quantity0  ,
:supply_w_id0  )

, (  SMALLINT( 2 )        , :id1  , :ol_quantity1  ,
:supply_w_id1  )

, (  SMALLINT( 3 )        , :id2  , :ol_quantity2  ,
:supply_w_id2  )

, (  SMALLINT( 4 )        , :id3  , :ol_quantity3  ,
:supply_w_id3  )

, (  SMALLINT( 5 )        , :id4  , :ol_quantity4  ,
:supply_w_id4  )

, (  SMALLINT( 6 )        , :id5  , :ol_quantity5  ,
:supply_w_id5  )

, (  SMALLINT( 7 )        , :id6  , :ol_quantity6  ,
:supply_w_id6  )

, (  SMALLINT( 8 )        , :id7  , :ol_quantity7  ,
:supply_w_id7  )

, (  SMALLINT( 9 )        , :id8  , :ol_quantity8  ,
:supply_w_id8  )
```

```
, (  SMALLINT( 10 )       , :id9  , :ol_quantity9  ,
:supply_w_id9   )

, (  SMALLINT( 11 )       , :id10 , :ol_quantity10 ,
:supply_w_id10  )


) AS X ( OL_NUMBER , I_ID  , I_QTY          ,
I_SUPPLY_W_ID  )
                                        ) AS ITEMLIST

                                      , TABLE(
NEW_OL_ALL(   I_ID

, I_QTY

, W_ID

, I_SUPPLY_W_ID

, O_ID

, D_ID

)
                                                ) AS
NEW_OL_ALL

                                    WHERE
NEW_OL_ALL.I_PRICE IS NOT NULL
                    )


      SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                        (   OL_O_ID
                          , OL_D_ID
                          , OL_W_ID
                          , OL_NUMBER
                          , OL_I_ID
                          , OL_SUPPLY_W_ID
                          , OL_DELIVERY_D
                          , OL_QUANTITY
                          , OL_AMOUNT
                          , OL_DIST_INFO
                        )

                        INCLUDE (   I_PRICE
INTEGER
                                  , I_NAME
CHAR(24)
                                  , I_DATA
VARCHAR(50)
                                  , S_DATA
VARCHAR(50)
                                  , S_QUANTITY
SMALLINT )

                                SELECT   O_ID
```

```
                                    , D_ID
                                    , W_ID
                                    , OL_NUMBER
                                    , I_ID
                                    ,
I_SUPPLY_W_ID
                                    ,
OL_DELIVERY_D
                                    , I_QTY
                                    , TOTAL_PRICE
                                    ,
OL_DIST_INFO
                                    , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                FROM DATA

                        ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Remote_12 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                FROM ( SELECT
:next_o_id as O_ID
                                                ,
:w_id AS W_ID
                                                ,
:d_id as D_ID
                                                ,
OL_NUMBER
                                                ,
I_ID
                                                ,
I_SUPPLY_W_ID
                                                ,
I_QTY

                                        FROM
Table( VALUES


(  SMALLINT( 1 )         , :id0  , :ol_quantity0  ,
:supply_w_id0  )

, (  SMALLINT( 2 )         , :id1  , :ol_quantity1  ,
:supply_w_id1  )

, (  SMALLINT( 3 )         , :id2  , :ol_quantity2  ,
:supply_w_id2  )

, (  SMALLINT( 4 )         , :id3  , :ol_quantity3  ,
:supply_w_id3  )

, (  SMALLINT( 5 )         , :id4  , :ol_quantity4  ,
:supply_w_id4  )

, (  SMALLINT( 6 )         , :id5  , :ol_quantity5  ,
:supply_w_id5  )

, (  SMALLINT( 7 )         , :id6  , :ol_quantity6  ,
:supply_w_id6  )

, (  SMALLINT( 8 )         , :id7  , :ol_quantity7  ,
:supply_w_id7  )

, (  SMALLINT( 9 )         , :id8  , :ol_quantity8  ,
:supply_w_id8  )

, (  SMALLINT( 10 )        , :id9  , :ol_quantity9  ,
:supply_w_id9   )

, (  SMALLINT( 11 )        , :id10 , :ol_quantity10 ,
:supply_w_id10  )

, (  SMALLINT( 12 )        , :id11 , :ol_quantity11 ,
:supply_w_id11  )


) AS X ( OL_NUMBER , I_ID  , I_QTY          ,
I_SUPPLY_W_ID  )
                                        ) AS ITEMLIST

                                    , TABLE(
NEW_OL_ALL(   I_ID

, I_QTY

, W_ID

, I_SUPPLY_W_ID

, O_ID

, D_ID

)
                                                ) AS
NEW_OL_ALL

                                    WHERE
NEW_OL_ALL.I_PRICE IS NOT NULL
                    )


      SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                        (   OL_O_ID
                          , OL_D_ID
                          , OL_W_ID
                          , OL_NUMBER
                          , OL_I_ID
                          , OL_SUPPLY_W_ID
                          , OL_DELIVERY_D
                          , OL_QUANTITY
                          , OL_AMOUNT
                          , OL_DIST_INFO
                        )

                        INCLUDE (   I_PRICE
INTEGER
                                  , I_NAME
CHAR(24)
                                  , I_DATA
VARCHAR(50)
                                  , S_DATA
VARCHAR(50)
                                  , S_QUANTITY
SMALLINT )

                                SELECT   O_ID
                                       , D_ID
                                       , W_ID
                                       , OL_NUMBER
                                       , I_ID
                                       ,
I_SUPPLY_W_ID
                                       ,
OL_DELIVERY_D
                                       , I_QTY
                                       , TOTAL_PRICE
                                       ,
OL_DIST_INFO
                                       , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                    FROM DATA

                            ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Remote_13 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                    FROM ( SELECT
:next_o_id as O_ID
                                                    ,
:w_id AS W_ID
                                                    ,
:d_id as D_ID
```

```
                                                ,
OL_NUMBER                                       ,
I_ID                                            ,
I_SUPPLY_W_ID                                   ,
I_QTY
                                          FROM
Table( VALUES

(  SMALLINT( 1 )         , :id0  , :ol_quantity0  ,
:supply_w_id0  )
, (  SMALLINT( 2 )         , :id1  , :ol_quantity1  ,
:supply_w_id1  )
, (  SMALLINT( 3 )         , :id2  , :ol_quantity2  ,
:supply_w_id2  )
, (  SMALLINT( 4 )         , :id3  , :ol_quantity3  ,
:supply_w_id3  )
, (  SMALLINT( 5 )         , :id4  , :ol_quantity4  ,
:supply_w_id4  )
, (  SMALLINT( 6 )         , :id5  , :ol_quantity5  ,
:supply_w_id5  )
, (  SMALLINT( 7 )         , :id6  , :ol_quantity6  ,
:supply_w_id6  )
, (  SMALLINT( 8 )         , :id7  , :ol_quantity7  ,
:supply_w_id7  )
, (  SMALLINT( 9 )         , :id8  , :ol_quantity8  ,
:supply_w_id8  )
, (  SMALLINT( 10 )        , :id9  , :ol_quantity9  ,
:supply_w_id9   )
, (  SMALLINT( 11 )        , :id10 , :ol_quantity10 ,
:supply_w_id10  )
, (  SMALLINT( 12 )        , :id11 , :ol_quantity11 ,
:supply_w_id11  )
, (  SMALLINT( 13 )        , :id12 , :ol_quantity12 ,
:supply_w_id12  )

) AS X ( OL_NUMBER , I_ID  , I_QTY          ,
I_SUPPLY_W_ID  )
                                       ) AS ITEMLIST

                                    , TABLE(
NEW_OL_ALL(   I_ID
, I_QTY
, W_ID
, I_SUPPLY_W_ID
, O_ID
, D_ID
)
                                                ) AS
NEW_OL_ALL
                                      WHERE
NEW_OL_ALL.I_PRICE IS NOT NULL
                    )

     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

       FROM NEW TABLE ( INSERT INTO ORDER_LINE

                        (   OL_O_ID
                          , OL_D_ID
                          , OL_W_ID
                          , OL_NUMBER
                          , OL_I_ID
                          , OL_SUPPLY_W_ID
                          , OL_DELIVERY_D
                          , OL_QUANTITY
                          , OL_AMOUNT
                          , OL_DIST_INFO
                        )

                        INCLUDE (   I_PRICE
INTEGER
                                  , I_NAME
CHAR(24)
                                  , I_DATA
VARCHAR(50)
                                  , S_DATA
VARCHAR(50)
                                  , S_QUANTITY
SMALLINT )

                                SELECT   O_ID
                                       , D_ID
                                       , W_ID
                                       , OL_NUMBER
                                       , I_ID
                                       ,
I_SUPPLY_W_ID
                                       ,
OL_DELIVERY_D
                                       , I_QTY
                                       , TOTAL_PRICE
                                       ,
OL_DIST_INFO
                                       , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY
                                  FROM DATA
                      ) AS INS
   ;
   EXEC SQL DECLARE ISOL_Remote_14 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                  FROM ( SELECT
:next_o_id as O_ID
                                                ,
:w_id AS W_ID
                                                ,
:d_id as D_ID
                                                ,
OL_NUMBER
                                                ,
I_ID
                                                ,
I_SUPPLY_W_ID
                                                ,
I_QTY
                                          FROM
Table( VALUES

(  SMALLINT( 1 )         , :id0  , :ol_quantity0  ,
:supply_w_id0  )
, (  SMALLINT( 2 )         , :id1  , :ol_quantity1  ,
:supply_w_id1  )
, (  SMALLINT( 3 )         , :id2  , :ol_quantity2  ,
:supply_w_id2  )
, (  SMALLINT( 4 )         , :id3  , :ol_quantity3  ,
:supply_w_id3  )
, (  SMALLINT( 5 )         , :id4  , :ol_quantity4  ,
:supply_w_id4  )
, (  SMALLINT( 6 )         , :id5  , :ol_quantity5  ,
:supply_w_id5  )
, (  SMALLINT( 7 )         , :id6  , :ol_quantity6  ,
:supply_w_id6  )
, (  SMALLINT( 8 )         , :id7  , :ol_quantity7  ,
:supply_w_id7  )
, (  SMALLINT( 9 )         , :id8  , :ol_quantity8  ,
:supply_w_id8  )
```

```
, (  SMALLINT( 10 )        , :id9  , :ol_quantity9  ,
:supply_w_id9   )

, (  SMALLINT( 11 )        , :id10 , :ol_quantity10 ,
:supply_w_id10  )

, (  SMALLINT( 12 )        , :id11 , :ol_quantity11 ,
:supply_w_id11  )

, (  SMALLINT( 13 )        , :id12 , :ol_quantity12 ,
:supply_w_id12  )

, (  SMALLINT( 14 )        , :id13 , :ol_quantity13 ,
:supply_w_id13  )


) AS X ( OL_NUMBER , I_ID  , I_QTY          ,
I_SUPPLY_W_ID  )
                                        ) AS ITEMLIST

                                    , TABLE(
NEW_OL_ALL(   I_ID

, I_QTY

, W_ID

, I_SUPPLY_W_ID

, O_ID

, D_ID

)
                                              ) AS
NEW_OL_ALL

                                 WHERE
NEW_OL_ALL.I_PRICE IS NOT NULL
                  )


     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

       FROM NEW TABLE ( INSERT INTO ORDER_LINE

                        (   OL_O_ID
                          , OL_D_ID
                          , OL_W_ID
                          , OL_NUMBER
                          , OL_I_ID
                          , OL_SUPPLY_W_ID
                          , OL_DELIVERY_D
                          , OL_QUANTITY
                          , OL_AMOUNT
                          , OL_DIST_INFO
                        )

                        INCLUDE (   I_PRICE
INTEGER                                 , I_NAME
CHAR(24)
                                        , I_DATA
VARCHAR(50)
                                        , S_DATA
VARCHAR(50)
                                        , S_QUANTITY
SMALLINT )

                                    SELECT   O_ID
                                           , D_ID
                                           , W_ID
                                           , OL_NUMBER
                                           , I_ID
                                           ,
I_SUPPLY_W_ID
                                           ,
OL_DELIVERY_D
                                           , I_QTY
                                           , TOTAL_PRICE
                                           ,
OL_DIST_INFO
                                           , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY
                                      FROM DATA

                              ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Remote_15 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                      FROM ( SELECT
:next_o_id as O_ID
                                                   ,
:w_id AS W_ID
                                                   ,
:d_id as D_ID
                                                   ,
OL_NUMBER
                                                   ,
I_ID
                                                   ,
I_SUPPLY_W_ID
                                                   ,
I_QTY
                                                FROM
Table( VALUES


( SMALLINT( 1 )         , :id0  , :ol_quantity0  ,
:supply_w_id0  )

, (  SMALLINT( 2 )         , :id1  , :ol_quantity1  ,
:supply_w_id1  )

, (  SMALLINT( 3 )         , :id2  , :ol_quantity2  ,
:supply_w_id2  )

, (  SMALLINT( 4 )         , :id3  , :ol_quantity3  ,
:supply_w_id3  )

, (  SMALLINT( 5 )         , :id4  , :ol_quantity4  ,
:supply_w_id4  )

, (  SMALLINT( 6 )         , :id5  , :ol_quantity5  ,
:supply_w_id5  )

, (  SMALLINT( 7 )         , :id6  , :ol_quantity6  ,
:supply_w_id6  )

, (  SMALLINT( 8 )         , :id7  , :ol_quantity7  ,
:supply_w_id7  )

, (  SMALLINT( 9 )         , :id8  , :ol_quantity8  ,
:supply_w_id8  )

, (  SMALLINT( 10 )        , :id9  , :ol_quantity9  ,
:supply_w_id9   )

, (  SMALLINT( 11 )        , :id10 , :ol_quantity10 ,
:supply_w_id10  )

, (  SMALLINT( 12 )        , :id11 , :ol_quantity11 ,
:supply_w_id11  )

, (  SMALLINT( 13 )        , :id12 , :ol_quantity12 ,
:supply_w_id12  )

, (  SMALLINT( 14 )        , :id13 , :ol_quantity13 ,
:supply_w_id13  )

, (  SMALLINT( 15 )        , :id14 , :ol_quantity14 ,
:supply_w_id14  )


) AS X ( OL_NUMBER , I_ID  , I_QTY          ,
I_SUPPLY_W_ID  )
                                        ) AS ITEMLIST

                                    , TABLE(
NEW_OL_ALL(   I_ID

, I_QTY

, W_ID

, I_SUPPLY_W_ID

, O_ID
```

```
, D_ID

)
                                        ) AS
NEW_OL_ALL

                                WHERE
NEW_OL_ALL.I_PRICE IS NOT NULL
                    )


      SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                        (   OL_O_ID
                          , OL_D_ID
                          , OL_W_ID
                          , OL_NUMBER
                          , OL_I_ID
                          , OL_SUPPLY_W_ID
                          , OL_DELIVERY_D
                          , OL_QUANTITY
                          , OL_AMOUNT
                          , OL_DIST_INFO
                        )

                        INCLUDE (   I_PRICE
INTEGER
                                  , I_NAME
CHAR(24)
                                  , I_DATA
VARCHAR(50)
                                  , S_DATA
VARCHAR(50)
                                  , S_QUANTITY
SMALLINT )

                                SELECT   O_ID
                                       , D_ID
                                       , W_ID
                                       , OL_NUMBER
                                       , I_ID
                                       ,
I_SUPPLY_W_ID
                                       ,
OL_DELIVERY_D
                                       , I_QTY
                                       , TOTAL_PRICE
                                       ,
OL_DIST_INFO
                                       , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                FROM DATA

                      ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Local_1 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , W_ID AS I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                    FROM ( SELECT
:next_o_id as O_ID
                                                 ,
:w_id AS W_ID
                                                 ,
:d_id as D_ID
                                                 ,
OL_NUMBER
                                                 ,
I_ID
                                                 ,
I_QTY

                                               FROM
Table( VALUES

(  SMALLINT( 1 )  , :id0  , :ol_quantity0  )

) AS X ( OL_NUMBER , I_ID  , I_QTY           )
                                            ) AS ITEMLIST

                                          , TABLE(
NEW_OL_LOCAL(   I_ID

, I_QTY

, W_ID

, O_ID

, D_ID

)
                                               ) AS
NEW_OL_LOCAL

                                       WHERE
NEW_OL_LOCAL.I_PRICE IS NOT NULL
                    )


      SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                        (   OL_O_ID
                          , OL_D_ID
                          , OL_W_ID
                          , OL_NUMBER
                          , OL_I_ID
                          , OL_SUPPLY_W_ID
                          , OL_DELIVERY_D
                          , OL_QUANTITY
                          , OL_AMOUNT
                          , OL_DIST_INFO
                        )

                        INCLUDE (   I_PRICE
INTEGER
                                  , I_NAME
CHAR(24)
                                  , I_DATA
VARCHAR(50)
                                  , S_DATA
VARCHAR(50)
                                  , S_QUANTITY
SMALLINT )

                                SELECT   O_ID
                                       , D_ID
                                       , W_ID
                                       , OL_NUMBER
                                       , I_ID
                                       ,
I_SUPPLY_W_ID
                                       ,
OL_DELIVERY_D
                                       , I_QTY
                                       , TOTAL_PRICE
                                       ,
OL_DIST_INFO
                                       , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                FROM DATA

                      ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Local_2 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , W_ID AS I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                    FROM ( SELECT
:next_o_id as O_ID
                                                 ,
:w_id AS W_ID
```

```
                                                ,
:d_id as D_ID
                                                ,
OL_NUMBER
                                                ,
I_ID
                                                ,
I_QTY

                                          FROM
Table( VALUES

(  SMALLINT( 1 )  , :id0  , :ol_quantity0  )
, (  SMALLINT( 2 )  , :id1  , :ol_quantity1  )

) AS X ( OL_NUMBER , I_ID  , I_QTY           )
                                       ) AS ITEMLIST
                                    , TABLE(
NEW_OL_LOCAL(   I_ID
, I_QTY
, W_ID
, O_ID
, D_ID
)
                                             ) AS
NEW_OL_LOCAL
                                  WHERE
NEW_OL_LOCAL.I_PRICE IS NOT NULL
                    )

     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY
        FROM NEW TABLE ( INSERT INTO ORDER_LINE
                         (   OL_O_ID
                           , OL_D_ID
                           , OL_W_ID
                           , OL_NUMBER
                           , OL_I_ID
                           , OL_SUPPLY_W_ID
                           , OL_DELIVERY_D
                           , OL_QUANTITY
                           , OL_AMOUNT
                           , OL_DIST_INFO
                         )
                         INCLUDE (   I_PRICE
INTEGER
                                   , I_NAME
CHAR(24)
                                   , I_DATA
VARCHAR(50)
                                   , S_DATA
VARCHAR(50)
                                   , S_QUANTITY
SMALLINT )

                                 SELECT   O_ID
                                        , D_ID
                                        , W_ID
                                        , OL_NUMBER
                                        , I_ID
                                        ,
I_SUPPLY_W_ID
                                        ,
OL_DELIVERY_D
                                        , I_QTY
                                        , TOTAL_PRICE
                                        ,
OL_DIST_INFO
                                        , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY
                                     FROM DATA

                          ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Local_3 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                     , D_ID
                     , W_ID
                     , OL_NUMBER
                     , I_ID
                     , W_ID AS I_SUPPLY_W_ID
                     , 0 AS OL_DELIVERY_D
                     , I_QTY
                     , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                     , OL_DIST_INFO
                     , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY
                       FROM ( SELECT
:next_o_id as O_ID
                                                ,
:w_id AS W_ID
                                                ,
:d_id as D_ID
                                                ,
OL_NUMBER
                                                ,
I_ID
                                                ,
I_QTY

                                              FROM
Table( VALUES

(  SMALLINT( 1 )  , :id0  , :ol_quantity0  )
, (  SMALLINT( 2 )  , :id1  , :ol_quantity1  )
, (  SMALLINT( 3 )  , :id2  , :ol_quantity2  )

) AS X ( OL_NUMBER , I_ID  , I_QTY           )
                                       ) AS ITEMLIST
                                    , TABLE(
NEW_OL_LOCAL(   I_ID
, I_QTY
, W_ID
, O_ID
, D_ID
)
                                             ) AS
NEW_OL_LOCAL
                                  WHERE
NEW_OL_LOCAL.I_PRICE IS NOT NULL
                    )

     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY
        FROM NEW TABLE ( INSERT INTO ORDER_LINE
                         (   OL_O_ID
                           , OL_D_ID
                           , OL_W_ID
                           , OL_NUMBER
                           , OL_I_ID
                           , OL_SUPPLY_W_ID
                           , OL_DELIVERY_D
                           , OL_QUANTITY
                           , OL_AMOUNT
                           , OL_DIST_INFO
                         )
                         INCLUDE (   I_PRICE
INTEGER
                                   , I_NAME
CHAR(24)
                                   , I_DATA
VARCHAR(50)
                                   , S_DATA
VARCHAR(50)
                                   , S_QUANTITY
SMALLINT )

                                 SELECT   O_ID
                                        , D_ID
                                        , W_ID
                                        , OL_NUMBER
                                        , I_ID
```

```
                                    ,
I_SUPPLY_W_ID
                                    ,
OL_DELIVERY_D
                                    , I_QTY
                                    , TOTAL_PRICE
                                    ,
OL_DIST_INFO
                                    , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                              FROM DATA

                        ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Local_4 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , W_ID AS I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                 FROM ( SELECT
:next_o_id as O_ID
                                                  ,
:w_id AS W_ID
                                                  ,
:d_id as D_ID
                                                  ,
OL_NUMBER
                                                  ,
I_ID
                                                  ,
I_QTY

                                              FROM
Table( VALUES


(  SMALLINT( 1 )  , :id0  , :ol_quantity0  )

, (  SMALLINT( 2 )  , :id1  , :ol_quantity1  )

, (  SMALLINT( 3 )  , :id2  , :ol_quantity2  )

, (  SMALLINT( 4 )  , :id3  , :ol_quantity3  )


) AS X ( OL_NUMBER , I_ID  , I_QTY           )
                                       ) AS ITEMLIST

                                    , TABLE(
NEW_OL_LOCAL(   I_ID
, I_QTY

, W_ID

, O_ID

, D_ID

)
                                                 ) AS
NEW_OL_LOCAL

                                      WHERE
NEW_OL_LOCAL.I_PRICE IS NOT NULL
                    )


     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                         (   OL_O_ID
                           , OL_D_ID
                           , OL_W_ID
                           , OL_NUMBER
                           , OL_I_ID
                           , OL_SUPPLY_W_ID
                           , OL_DELIVERY_D
                           , OL_QUANTITY
                           , OL_AMOUNT
                           , OL_DIST_INFO
                         )

                         INCLUDE (   I_PRICE
INTEGER
                                   , I_NAME
CHAR(24)
                                   , I_DATA
VARCHAR(50)
                                   , S_DATA
VARCHAR(50)
                                   , S_QUANTITY
SMALLINT )

                                SELECT   O_ID
                                       , D_ID
                                       , W_ID
                                       , OL_NUMBER
                                       , I_ID
                                       ,
I_SUPPLY_W_ID
                                       ,
OL_DELIVERY_D
                                       , I_QTY
                                       , TOTAL_PRICE
                                       ,
OL_DIST_INFO
                                       , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                  FROM DATA

                        ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Local_5 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , W_ID AS I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                 FROM ( SELECT
:next_o_id as O_ID
                                                  ,
:w_id AS W_ID
                                                  ,
:d_id as D_ID
                                                  ,
OL_NUMBER
                                                  ,
I_ID
                                                  ,
I_QTY

                                              FROM
Table( VALUES


(  SMALLINT( 1 )  , :id0  , :ol_quantity0  )

, (  SMALLINT( 2 )  , :id1  , :ol_quantity1  )

, (  SMALLINT( 3 )  , :id2  , :ol_quantity2  )

, (  SMALLINT( 4 )  , :id3  , :ol_quantity3  )

, (  SMALLINT( 5 )  , :id4  , :ol_quantity4  )


) AS X ( OL_NUMBER , I_ID  , I_QTY           )
                                       ) AS ITEMLIST

                                  , TABLE(
NEW_OL_LOCAL(   I_ID
, I_QTY

, W_ID

, O_ID

, D_ID

)
```

```
                                        ) AS
NEW_OL_LOCAL

                                WHERE
NEW_OL_LOCAL.I_PRICE IS NOT NULL
                    )


     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                        (   OL_O_ID
                          , OL_D_ID
                          , OL_W_ID
                          , OL_NUMBER
                          , OL_I_ID
                          , OL_SUPPLY_W_ID
                          , OL_DELIVERY_D
                          , OL_QUANTITY
                          , OL_AMOUNT
                          , OL_DIST_INFO
                        )

                        INCLUDE (   I_PRICE
INTEGER
                                  , I_NAME
CHAR(24)
                                  , I_DATA
VARCHAR(50)
                                  , S_DATA
VARCHAR(50)
                                  , S_QUANTITY
SMALLINT )

                                SELECT   O_ID
                                       , D_ID
                                       , W_ID
                                       , OL_NUMBER
                                       , I_ID
                                       ,
I_SUPPLY_W_ID
                                       ,
OL_DELIVERY_D
                                       , I_QTY
                                       , TOTAL_PRICE
                                       ,
OL_DIST_INFO
                                       , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                FROM DATA

                      ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Local_6 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , W_ID AS I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                    FROM ( SELECT
:next_o_id as O_ID
                                                 ,
:w_id AS W_ID
                                                 ,
:d_id as D_ID
                                                 ,
OL_NUMBER
                                                 ,
I_ID
                                                 ,
I_QTY
                                             FROM
Table( VALUES

(  SMALLINT( 1 )  , :id0  , :ol_quantity0  )

, (  SMALLINT( 2 )  , :id1  , :ol_quantity1  )

, (  SMALLINT( 3 )  , :id2  , :ol_quantity2  )

, (  SMALLINT( 4 )  , :id3  , :ol_quantity3  )

, (  SMALLINT( 5 )  , :id4  , :ol_quantity4  )

, (  SMALLINT( 6 )  , :id5  , :ol_quantity5  )


) AS X ( OL_NUMBER , I_ID  , I_QTY           )
                                          ) AS ITEMLIST

                                       , TABLE(
NEW_OL_LOCAL(   I_ID

, I_QTY

, W_ID

, O_ID

, D_ID

)                                            ) AS
NEW_OL_LOCAL

                                    WHERE
NEW_OL_LOCAL.I_PRICE IS NOT NULL
                     )

     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                        (   OL_O_ID
                          , OL_D_ID
                          , OL_W_ID
                          , OL_NUMBER
                          , OL_I_ID
                          , OL_SUPPLY_W_ID
                          , OL_DELIVERY_D
                          , OL_QUANTITY
                          , OL_AMOUNT
                          , OL_DIST_INFO
                        )

                        INCLUDE (   I_PRICE
INTEGER
                                  , I_NAME
CHAR(24)
                                  , I_DATA
VARCHAR(50)
                                  , S_DATA
VARCHAR(50)
                                  , S_QUANTITY
SMALLINT )

                                SELECT   O_ID
                                       , D_ID
                                       , W_ID
                                       , OL_NUMBER
                                       , I_ID
                                       ,
I_SUPPLY_W_ID
                                       ,
OL_DELIVERY_D
                                       , I_QTY
                                       , TOTAL_PRICE
                                       ,
OL_DIST_INFO
                                       , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                FROM DATA

                      ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Local_7 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , W_ID AS I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
```

```
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY
                                  FROM ( SELECT
:next_o_id as O_ID
                                               ,
:w_id AS W_ID
                                               ,
:d_id as D_ID
                                               ,
OL_NUMBER
                                               ,
I_ID
                                               ,
I_QTY
                                          FROM
Table( VALUES

(  SMALLINT( 1 )  , :id0  , :ol_quantity0  )
, (  SMALLINT( 2 )  , :id1  , :ol_quantity1  )
, (  SMALLINT( 3 )  , :id2  , :ol_quantity2  )
, (  SMALLINT( 4 )  , :id3  , :ol_quantity3  )
, (  SMALLINT( 5 )  , :id4  , :ol_quantity4  )
, (  SMALLINT( 6 )  , :id5  , :ol_quantity5  )
, (  SMALLINT( 7 )  , :id6  , :ol_quantity6  )

) AS X ( OL_NUMBER , I_ID  , I_QTY           )
                                       ) AS ITEMLIST
                                    , TABLE(
NEW_OL_LOCAL(   I_ID
, I_QTY
, W_ID
, O_ID
, D_ID
)
                                             ) AS
NEW_OL_LOCAL
                                  WHERE
NEW_OL_LOCAL.I_PRICE IS NOT NULL
                   )

     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY
       FROM NEW TABLE ( INSERT INTO ORDER_LINE
                        (   OL_O_ID
                          , OL_D_ID
                          , OL_W_ID
                          , OL_NUMBER
                          , OL_I_ID
                          , OL_SUPPLY_W_ID
                          , OL_DELIVERY_D
                          , OL_QUANTITY
                          , OL_AMOUNT
                          , OL_DIST_INFO
                        )
                        INCLUDE (   I_PRICE
INTEGER
                                  , I_NAME
CHAR(24)
                                  , I_DATA
VARCHAR(50)
                                  , S_DATA
VARCHAR(50)
                                  , S_QUANTITY
SMALLINT )
                                SELECT   O_ID
                                       , D_ID
                                       , W_ID
                                       , OL_NUMBER
                                       , I_ID
                                       ,
I_SUPPLY_W_ID
                                       ,
OL_DELIVERY_D
                                       , I_QTY
                                       , TOTAL_PRICE
                                       ,
OL_DIST_INFO
                                       , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY
                                  FROM DATA

                             ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Local_8 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , W_ID AS I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY
                                    FROM ( SELECT
:next_o_id as O_ID
                                                 ,
:w_id AS W_ID
                                                 ,
:d_id as D_ID
                                                 ,
OL_NUMBER
                                                 ,
I_ID
                                                 ,
I_QTY
                                            FROM
Table( VALUES

(  SMALLINT( 1 )  , :id0  , :ol_quantity0  )
, (  SMALLINT( 2 )  , :id1  , :ol_quantity1  )
, (  SMALLINT( 3 )  , :id2  , :ol_quantity2  )
, (  SMALLINT( 4 )  , :id3  , :ol_quantity3  )
, (  SMALLINT( 5 )  , :id4  , :ol_quantity4  )
, (  SMALLINT( 6 )  , :id5  , :ol_quantity5  )
, (  SMALLINT( 7 )  , :id6  , :ol_quantity6  )
, (  SMALLINT( 8 )  , :id7  , :ol_quantity7  )

) AS X ( OL_NUMBER , I_ID  , I_QTY           )
                                         ) AS ITEMLIST
                                      , TABLE(
NEW_OL_LOCAL(   I_ID
, I_QTY
, W_ID
, O_ID
, D_ID
)
                                               ) AS
NEW_OL_LOCAL
                                    WHERE
NEW_OL_LOCAL.I_PRICE IS NOT NULL
                   )

     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY
       FROM NEW TABLE ( INSERT INTO ORDER_LINE
                        (   OL_O_ID
                          , OL_D_ID
                          , OL_W_ID
```

```
                        , OL_NUMBER
                        , OL_I_ID
                        , OL_SUPPLY_W_ID
                        , OL_DELIVERY_D
                        , OL_QUANTITY
                        , OL_AMOUNT
                        , OL_DIST_INFO
                      )

                      INCLUDE (   I_PRICE
INTEGER
                                , I_NAME
CHAR(24)
                                , I_DATA
VARCHAR(50)
                                , S_DATA
VARCHAR(50)
                                , S_QUANTITY
SMALLINT )

                              SELECT   O_ID
                                     , D_ID
                                     , W_ID
                                     , OL_NUMBER
                                     , I_ID
                                     ,
I_SUPPLY_W_ID
                                     ,
OL_DELIVERY_D
                                     , I_QTY
                                     , TOTAL_PRICE
                                     ,
OL_DIST_INFO
                                     , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                FROM DATA

                    ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Local_9 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , W_ID AS I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                 FROM ( SELECT
:next_o_id as O_ID                                    ,
:w_id AS W_ID                                         ,
:d_id as D_ID                                         ,
OL_NUMBER                                             ,
I_ID                                                  ,
I_QTY

                                                   FROM
Table( VALUES

(  SMALLINT( 1 )  , :id0  , :ol_quantity0  )
, (  SMALLINT( 2 )  , :id1  , :ol_quantity1  )
, (  SMALLINT( 3 )  , :id2  , :ol_quantity2  )
, (  SMALLINT( 4 )  , :id3  , :ol_quantity3  )
, (  SMALLINT( 5 )  , :id4  , :ol_quantity4  )
, (  SMALLINT( 6 )  , :id5  , :ol_quantity5  )
, (  SMALLINT( 7 )  , :id6  , :ol_quantity6  )
, (  SMALLINT( 8 )  , :id7  , :ol_quantity7  )
, (  SMALLINT( 9 )  , :id8  , :ol_quantity8  )

) AS X ( OL_NUMBER , I_ID  , I_QTY           )
                                                ) AS ITEMLIST
                                              , TABLE(
NEW_OL_LOCAL(   I_ID
, I_QTY
, W_ID
, O_ID
, D_ID
)
                                                   ) AS
NEW_OL_LOCAL

                                          WHERE
NEW_OL_LOCAL.I_PRICE IS NOT NULL
                             )

      SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                         (   OL_O_ID
                           , OL_D_ID
                           , OL_W_ID
                           , OL_NUMBER
                           , OL_I_ID
                           , OL_SUPPLY_W_ID
                           , OL_DELIVERY_D
                           , OL_QUANTITY
                           , OL_AMOUNT
                           , OL_DIST_INFO
                         )

                         INCLUDE (   I_PRICE
INTEGER
                                   , I_NAME
CHAR(24)
                                   , I_DATA
VARCHAR(50)
                                   , S_DATA
VARCHAR(50)
                                   , S_QUANTITY
SMALLINT )

                                SELECT   O_ID
                                       , D_ID
                                       , W_ID
                                       , OL_NUMBER
                                       , I_ID
                                       ,
I_SUPPLY_W_ID
                                       ,
OL_DELIVERY_D
                                       , I_QTY
                                       , TOTAL_PRICE
                                       ,
OL_DIST_INFO
                                       , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                   FROM DATA

                        ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Local_10 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , W_ID AS I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                 FROM ( SELECT
:next_o_id as O_ID                                    ,
:w_id AS W_ID                                         ,
:d_id as D_ID                                         ,
OL_NUMBER
```

```
                                                ,
I_ID
                                                ,
I_QTY
                                          FROM
Table( VALUES

(  SMALLINT( 1 )  , :id0  , :ol_quantity0  )
, (  SMALLINT( 2 )  , :id1  , :ol_quantity1  )
, (  SMALLINT( 3 )  , :id2  , :ol_quantity2  )
, (  SMALLINT( 4 )  , :id3  , :ol_quantity3  )
, (  SMALLINT( 5 )  , :id4  , :ol_quantity4  )
, (  SMALLINT( 6 )  , :id5  , :ol_quantity5  )
, (  SMALLINT( 7 )  , :id6  , :ol_quantity6  )
, (  SMALLINT( 8 )  , :id7  , :ol_quantity7  )
, (  SMALLINT( 9 )  , :id8  , :ol_quantity8  )
, (  SMALLINT( 10 ) , :id9  , :ol_quantity9  )

) AS X ( OL_NUMBER , I_ID  , I_QTY          )
                                       ) AS ITEMLIST
                                    , TABLE(
NEW_OL_LOCAL(   I_ID
, I_QTY
, W_ID
, O_ID
, D_ID
)
                                             ) AS
NEW_OL_LOCAL
                                  WHERE
NEW_OL_LOCAL.I_PRICE IS NOT NULL
                  )

     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY
       FROM NEW TABLE ( INSERT INTO ORDER_LINE
                        (   OL_O_ID
                          , OL_D_ID
                          , OL_W_ID
                          , OL_NUMBER
                          , OL_I_ID
                          , OL_SUPPLY_W_ID
                          , OL_DELIVERY_D
                          , OL_QUANTITY
                          , OL_AMOUNT
                          , OL_DIST_INFO
                        )
                        INCLUDE (   I_PRICE
INTEGER
                                  , I_NAME
CHAR(24)
                                  , I_DATA
VARCHAR(50)
                                  , S_DATA
VARCHAR(50)
                                  , S_QUANTITY
SMALLINT )
                                SELECT   O_ID
                                       , D_ID
                                       , W_ID
                                       , OL_NUMBER
                                       , I_ID
                                       ,
I_SUPPLY_W_ID
                                       ,
OL_DELIVERY_D
                                       , I_QTY
                                       , TOTAL_PRICE
                                       ,
OL_DIST_INFO
                                       , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY
                                  FROM DATA
                        ) AS INS
   ;
   EXEC SQL DECLARE ISOL_Local_11 CURSOR FOR
      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , W_ID AS I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY
                                 FROM ( SELECT
:next_o_id as O_ID
                                                ,
:w_id AS W_ID                                   ,
:d_id as D_ID                                   ,
OL_NUMBER                                       ,
                                                ,
I_ID
                                                ,
I_QTY
                                          FROM
Table( VALUES

(  SMALLINT( 1 )  , :id0  , :ol_quantity0  )
, (  SMALLINT( 2 )  , :id1  , :ol_quantity1  )
, (  SMALLINT( 3 )  , :id2  , :ol_quantity2  )
, (  SMALLINT( 4 )  , :id3  , :ol_quantity3  )
, (  SMALLINT( 5 )  , :id4  , :ol_quantity4  )
, (  SMALLINT( 6 )  , :id5  , :ol_quantity5  )
, (  SMALLINT( 7 )  , :id6  , :ol_quantity6  )
, (  SMALLINT( 8 )  , :id7  , :ol_quantity7  )
, (  SMALLINT( 9 )  , :id8  , :ol_quantity8  )
, (  SMALLINT( 10 ) , :id9  , :ol_quantity9  )
, (  SMALLINT( 11 ) , :id10 , :ol_quantity10 )

) AS X ( OL_NUMBER , I_ID  , I_QTY          )
                                       ) AS ITEMLIST
                                    , TABLE(
NEW_OL_LOCAL(   I_ID
, I_QTY
, W_ID
, O_ID
, D_ID
)
                                             ) AS
NEW_OL_LOCAL
                                  WHERE
NEW_OL_LOCAL.I_PRICE IS NOT NULL
                  )

     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY
       FROM NEW TABLE ( INSERT INTO ORDER_LINE
                        (   OL_O_ID
                          , OL_D_ID
                          , OL_W_ID
```

```
                        , OL_NUMBER
                        , OL_I_ID
                        , OL_SUPPLY_W_ID
                        , OL_DELIVERY_D
                        , OL_QUANTITY
                        , OL_AMOUNT
                        , OL_DIST_INFO
                       )

                       INCLUDE (   I_PRICE
INTEGER
                                 , I_NAME
CHAR(24)
                                 , I_DATA
VARCHAR(50)
                                 , S_DATA
VARCHAR(50)
                                 , S_QUANTITY
SMALLINT )

                                SELECT   O_ID
                                       , D_ID
                                       , W_ID
                                       , OL_NUMBER
                                       , I_ID
                                       ,
I_SUPPLY_W_ID
                                       ,
OL_DELIVERY_D
                                       , I_QTY
                                       , TOTAL_PRICE
                                       ,
OL_DIST_INFO
                                       , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                FROM DATA

                      ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Local_12 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , W_ID AS I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                 FROM ( SELECT
:next_o_id as O_ID
                                                ,
:w_id AS W_ID
                                                ,
:d_id as D_ID
                                                ,
OL_NUMBER
                                                ,
I_ID
                                                ,
I_QTY

                                             FROM
Table( VALUES

(  SMALLINT( 1 )  , :id0  , :ol_quantity0  )

, (  SMALLINT( 2 )  , :id1  , :ol_quantity1  )

, (  SMALLINT( 3 )  , :id2  , :ol_quantity2  )

, (  SMALLINT( 4 )  , :id3  , :ol_quantity3  )

, (  SMALLINT( 5 )  , :id4  , :ol_quantity4  )

, (  SMALLINT( 6 )  , :id5  , :ol_quantity5  )

, (  SMALLINT( 7 )  , :id6  , :ol_quantity6  )

, (  SMALLINT( 8 )  , :id7  , :ol_quantity7  )

, (  SMALLINT( 9 )  , :id8  , :ol_quantity8  )

, (  SMALLINT( 10 ) , :id9  , :ol_quantity9  )

, (  SMALLINT( 11 ) , :id10 , :ol_quantity10 )

, (  SMALLINT( 12 ) , :id11 , :ol_quantity11 )

) AS X ( OL_NUMBER , I_ID  , I_QTY           )
                                             ) AS ITEMLIST

                                          , TABLE(
NEW_OL_LOCAL(   I_ID

, I_QTY

, W_ID

, O_ID

, D_ID

)                                            ) AS
NEW_OL_LOCAL

                                       WHERE
NEW_OL_LOCAL.I_PRICE IS NOT NULL
                                    )

     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

       FROM NEW TABLE ( INSERT INTO ORDER_LINE
                       (   OL_O_ID
                         , OL_D_ID
                         , OL_W_ID
                         , OL_NUMBER
                         , OL_I_ID
                         , OL_SUPPLY_W_ID
                         , OL_DELIVERY_D
                         , OL_QUANTITY
                         , OL_AMOUNT
                         , OL_DIST_INFO
                       )

                       INCLUDE (   I_PRICE
INTEGER
                                 , I_NAME
CHAR(24)
                                 , I_DATA
VARCHAR(50)
                                 , S_DATA
VARCHAR(50)
                                 , S_QUANTITY
SMALLINT )

                                SELECT   O_ID
                                       , D_ID
                                       , W_ID
                                       , OL_NUMBER
                                       , I_ID
                                       ,
I_SUPPLY_W_ID
                                       ,
OL_DELIVERY_D
                                       , I_QTY
                                       , TOTAL_PRICE
                                       ,
OL_DIST_INFO
                                       , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                FROM DATA

                      ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Local_13 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , W_ID AS I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                 FROM ( SELECT
:next_o_id as O_ID
```

```
                                                ,
:w_id AS W_ID                                   ,
:d_id as D_ID                                   ,
OL_NUMBER                                       ,
I_ID                                            ,
I_QTY
                                        FROM
Table( VALUES

(  SMALLINT( 1 )  , :id0  , :ol_quantity0  )
, (  SMALLINT( 2 )  , :id1  , :ol_quantity1  )
, (  SMALLINT( 3 )  , :id2  , :ol_quantity2  )
, (  SMALLINT( 4 )  , :id3  , :ol_quantity3  )
, (  SMALLINT( 5 )  , :id4  , :ol_quantity4  )
, (  SMALLINT( 6 )  , :id5  , :ol_quantity5  )
, (  SMALLINT( 7 )  , :id6  , :ol_quantity6  )
, (  SMALLINT( 8 )  , :id7  , :ol_quantity7  )
, (  SMALLINT( 9 )  , :id8  , :ol_quantity8  )
, (  SMALLINT( 10 ) , :id9  , :ol_quantity9  )
, (  SMALLINT( 11 ) , :id10 , :ol_quantity10 )
, (  SMALLINT( 12 ) , :id11 , :ol_quantity11 )
, (  SMALLINT( 13 ) , :id12 , :ol_quantity12 )

) AS X ( OL_NUMBER , I_ID  , I_QTY           )
                                      ) AS ITEMLIST
                                   , TABLE(
NEW_OL_LOCAL(   I_ID
, I_QTY
, W_ID
, O_ID
, D_ID
)
                                           ) AS
NEW_OL_LOCAL
                                WHERE
NEW_OL_LOCAL.I_PRICE IS NOT NULL
                  )
```

```
     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY
       FROM NEW TABLE ( INSERT INTO ORDER_LINE
                        (   OL_O_ID
                          , OL_D_ID
                          , OL_W_ID
                          , OL_NUMBER
                          , OL_I_ID
                          , OL_SUPPLY_W_ID
                          , OL_DELIVERY_D
                          , OL_QUANTITY
                          , OL_AMOUNT
                          , OL_DIST_INFO
                        )
                        INCLUDE (   I_PRICE
INTEGER
                                  , I_NAME
CHAR(24)
                                  , I_DATA
VARCHAR(50)
                                  , S_DATA
VARCHAR(50)
                                  , S_QUANTITY
SMALLINT )
                                SELECT   O_ID
                                       , D_ID
                                       , W_ID
                                       , OL_NUMBER
                                       , I_ID
                                       ,
I_SUPPLY_W_ID
                                       ,
OL_DELIVERY_D
                                       , I_QTY
                                       , TOTAL_PRICE
                                       ,
OL_DIST_INFO
                                       , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY
                                  FROM DATA
                      ) AS INS
   ;
   EXEC SQL DECLARE ISOL_Local_14 CURSOR FOR
      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , W_ID AS I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
```

```
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY
                                  FROM ( SELECT
:next_o_id as O_ID                                ,
:w_id AS W_ID                                     ,
:d_id as D_ID                                     ,
OL_NUMBER                                         ,
I_ID                                              ,
I_QTY
                                                FROM
Table( VALUES

(  SMALLINT( 1 )  , :id0  , :ol_quantity0  )
, (  SMALLINT( 2 )  , :id1  , :ol_quantity1  )
, (  SMALLINT( 3 )  , :id2  , :ol_quantity2  )
, (  SMALLINT( 4 )  , :id3  , :ol_quantity3  )
, (  SMALLINT( 5 )  , :id4  , :ol_quantity4  )
, (  SMALLINT( 6 )  , :id5  , :ol_quantity5  )
, (  SMALLINT( 7 )  , :id6  , :ol_quantity6  )
, (  SMALLINT( 8 )  , :id7  , :ol_quantity7  )
, (  SMALLINT( 9 )  , :id8  , :ol_quantity8  )
, (  SMALLINT( 10 ) , :id9  , :ol_quantity9  )
, (  SMALLINT( 11 ) , :id10 , :ol_quantity10 )
, (  SMALLINT( 12 ) , :id11 , :ol_quantity11 )
, (  SMALLINT( 13 ) , :id12 , :ol_quantity12 )
, (  SMALLINT( 14 ) , :id13 , :ol_quantity13 )

) AS X ( OL_NUMBER , I_ID  , I_QTY           )
                                           ) AS ITEMLIST
                                        , TABLE(
NEW_OL_LOCAL(   I_ID
, I_QTY
, W_ID
, O_ID
, D_ID
```

```
)                                                    ) AS
NEW_OL_LOCAL

                                  WHERE
NEW_OL_LOCAL.I_PRICE IS NOT NULL
                   )


     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                         (   OL_O_ID
                           , OL_D_ID
                           , OL_W_ID
                           , OL_NUMBER
                           , OL_I_ID
                           , OL_SUPPLY_W_ID
                           , OL_DELIVERY_D
                           , OL_QUANTITY
                           , OL_AMOUNT
                           , OL_DIST_INFO
                         )

                         INCLUDE (   I_PRICE
INTEGER
                                   , I_NAME
CHAR(24)
                                   , I_DATA
VARCHAR(50)
                                   , S_DATA
VARCHAR(50)
                                   , S_QUANTITY
SMALLINT )

                                  SELECT   O_ID
                                         , D_ID
                                         , W_ID
                                         , OL_NUMBER
                                         , I_ID
                                         ,
I_SUPPLY_W_ID
                                         ,
OL_DELIVERY_D
                                         , I_QTY
                                         , TOTAL_PRICE
                                         ,
OL_DIST_INFO
                                         , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                  FROM DATA

                       ) AS INS
   ;

   EXEC SQL DECLARE ISOL_Local_15 CURSOR FOR

      WITH DATA AS (  SELECT  O_ID
                    , D_ID
                    , W_ID
                    , OL_NUMBER
                    , I_ID
                    , W_ID AS I_SUPPLY_W_ID
                    , 0 AS OL_DELIVERY_D
                    , I_QTY
                    , ( I_PRICE * I_QTY ) AS
TOTAL_PRICE
                    , OL_DIST_INFO
                    , I_PRICE, I_NAME, I_DATA,
S_DATA, S_QUANTITY

                                    FROM ( SELECT
:next_o_id as O_ID
                                                 ,
:w_id AS W_ID                                    ,
:d_id as D_ID                                    ,
OL_NUMBER                                        ,
I_ID                                             ,
I_QTY

                                           FROM
Table( VALUES

(  SMALLINT( 1 )  , :id0  , :ol_quantity0  )
, (  SMALLINT( 2 )  , :id1  , :ol_quantity1  )
, (  SMALLINT( 3 )  , :id2  , :ol_quantity2  )
, (  SMALLINT( 4 )  , :id3  , :ol_quantity3  )
, (  SMALLINT( 5 )  , :id4  , :ol_quantity4  )
, (  SMALLINT( 6 )  , :id5  , :ol_quantity5  )
, (  SMALLINT( 7 )  , :id6  , :ol_quantity6  )
, (  SMALLINT( 8 )  , :id7  , :ol_quantity7  )
, (  SMALLINT( 9 )  , :id8  , :ol_quantity8  )
, (  SMALLINT( 10 ) , :id9  , :ol_quantity9  )
, (  SMALLINT( 11 ) , :id10 , :ol_quantity10 )
, (  SMALLINT( 12 ) , :id11 , :ol_quantity11 )
, (  SMALLINT( 13 ) , :id12 , :ol_quantity12 )
, (  SMALLINT( 14 ) , :id13 , :ol_quantity13 )
, (  SMALLINT( 15 ) , :id14 , :ol_quantity14 )

) AS X ( OL_NUMBER , I_ID  , I_QTY          )
                                        ) AS ITEMLIST
                                  , TABLE(
NEW_OL_LOCAL(   I_ID

, I_QTY

, W_ID

, O_ID

, D_ID

)                                                    ) AS
NEW_OL_LOCAL

                                  WHERE
NEW_OL_LOCAL.I_PRICE IS NOT NULL
                   )


     SELECT I_PRICE , I_NAME , I_DATA , OL_DIST_INFO
, S_DATA , S_QUANTITY

        FROM NEW TABLE ( INSERT INTO ORDER_LINE

                         (   OL_O_ID
                           , OL_D_ID
                           , OL_W_ID
                           , OL_NUMBER
                           , OL_I_ID
                           , OL_SUPPLY_W_ID
                           , OL_DELIVERY_D
                           , OL_QUANTITY
                           , OL_AMOUNT
                           , OL_DIST_INFO
                         )

                         INCLUDE (   I_PRICE
INTEGER
                                   , I_NAME
CHAR(24)
                                   , I_DATA
VARCHAR(50)
                                   , S_DATA
VARCHAR(50)
                                   , S_QUANTITY
SMALLINT )

                                  SELECT   O_ID
                                         , D_ID
                                         , W_ID
                                         , OL_NUMBER
                                         , I_ID
                                         ,
I_SUPPLY_W_ID
                                         ,
OL_DELIVERY_D
                                         , I_QTY
                                         , TOTAL_PRICE
                                         ,
OL_DIST_INFO
```

```
                                    , I_PRICE,
I_NAME, I_DATA, S_DATA, S_QUANTITY

                                FROM DATA

                        ) AS INS
   ;

   // Start processing

   in_neword = (struct in_neword_struct *)  pin ;
   neword    = (struct out_neword_struct *) pout ;

#ifdef DEBUGIT
   new_debug( neword, in_neword, "SP upon entry");
//@d299968mte
#endif

   // Using I_PRICE == 0 as a flag to the client that
the ITEM was not fetched (hence bad).

   for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < in_neword->s_O_OL_CNT ;
inputItemArrayIndex++ )
   {
      i_priceArray[ inputItemArrayIndex ] = 0 ;
   }

   neword->deadlocks = -1 ;

 retry_tran:

   neword->deadlocks++ ;

   EXEC SQL

      SELECT D_TAX, D_NEXT_O_ID  INTO :dist_tax ,
:next_o_id

        FROM OLD TABLE ( UPDATE DISTRICT

                                  SET  D_NEXT_O_ID
= D_NEXT_O_ID + 1

                                WHERE D_W_ID =
:w_id
                                  AND D_ID = :d_id
                        ) AS OT
   ;

   if ( sqlca.sqlcode != 0 )
   {
     DLCHK( retry_tran );
     sqlerror( NEWORD_SQL, "DISTRICT", __FILE__,
__LINE__, &sqlca ) ; //@d314005mte
     goto ferror;
   }

   // Invalid I_ID will give a +100, now that we've
changed the cursor definitions
   // to include a 'WHERE I_PRICE NOT NULL' clause.

   #define NEW_CURSOR_OPEN_ERROR
\
   {
\
      if( sqlca.sqlcode != 0    )
\
      {
\
         goto sql_error ;
\
      }
\
   }

   #define NEW_CURSOR_ERROR
\
   {
\
      if( sqlca.sqlcode == 0    )
\
      {
\
         neword->s_O_OL_CNT ++ ;
\
      }
\
      else
\
      if( sqlca.sqlcode == +100 )
\
      {
\
         break ;
\
      }
\
      else
\
         goto sql_error ;
\
   }

   if ( allLocal )
   {
      switch( inputItemCount )
      {
         case 1:
            EXEC SQL OPEN ISOL_Local_1 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Local_1  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;
         case 2:
            EXEC SQL OPEN ISOL_Local_2 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Local_2  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;
         case 3:
            EXEC SQL OPEN ISOL_Local_3 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Local_3  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;
         case 4:
            EXEC SQL OPEN ISOL_Local_4 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Local_4  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;
         case 5:
            EXEC SQL OPEN ISOL_Local_5 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Local_5  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;
         case 6:
            EXEC SQL OPEN ISOL_Local_6 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Local_6  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;
         case 7:
```

```
            EXEC SQL OPEN ISOL_Local_7 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Local_7  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;
         case 8:
            EXEC SQL OPEN ISOL_Local_8 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Local_8  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;
         case 9:
            EXEC SQL OPEN ISOL_Local_9 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Local_9  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;
         case 10:
            EXEC SQL OPEN ISOL_Local_10 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Local_10  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;
         case 11:
            EXEC SQL OPEN ISOL_Local_11 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Local_11  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;
         case 12:
            EXEC SQL OPEN ISOL_Local_12 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Local_12  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;
         case 13:
            EXEC SQL OPEN ISOL_Local_13 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Local_13  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;
         case 14:
            EXEC SQL OPEN ISOL_Local_14 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Local_14  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;
         case 15:
            EXEC SQL OPEN ISOL_Local_15 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Local_15  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;

         default:
            sqlerror(NEWORD_SQL, "Default switch on
local  orderline/stock/index", __FILE__, __LINE__,
&sqlca );  //@d314005mte
            goto ferror;
      }
   }
   else
   {
      switch( inputItemCount )
      {
         case 1:
            EXEC SQL OPEN ISOL_Remote_1 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Remote_1  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;
         case 2:
            EXEC SQL OPEN ISOL_Remote_2 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Remote_2  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;
         case 3:
            EXEC SQL OPEN ISOL_Remote_3 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Remote_3  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;
         case 4:
            EXEC SQL OPEN ISOL_Remote_4 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
               EXEC SQL FETCH ISOL_Remote_4  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
               NEW_CURSOR_ERROR
            }
            break ;
         case 5:
            EXEC SQL OPEN ISOL_Remote_5 ;
            NEW_CURSOR_OPEN_ERROR
            for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
            {
```

```
            EXEC SQL FETCH ISOL_Remote_5  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
            NEW_CURSOR_ERROR
         }
         break ;
      case 6:
         EXEC SQL OPEN ISOL_Remote_6 ;
         NEW_CURSOR_OPEN_ERROR
         for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
         {
            EXEC SQL FETCH ISOL_Remote_6  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
            NEW_CURSOR_ERROR
         }
         break ;
      case 7:
         EXEC SQL OPEN ISOL_Remote_7 ;
         NEW_CURSOR_OPEN_ERROR
         for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
         {
            EXEC SQL FETCH ISOL_Remote_7  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
            NEW_CURSOR_ERROR
         }
         break ;
      case 8:
         EXEC SQL OPEN ISOL_Remote_8 ;
         NEW_CURSOR_OPEN_ERROR
         for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
         {
            EXEC SQL FETCH ISOL_Remote_8  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
            NEW_CURSOR_ERROR
         }
         break ;
      case 9:
         EXEC SQL OPEN ISOL_Remote_9 ;
         NEW_CURSOR_OPEN_ERROR
         for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
         {
            EXEC SQL FETCH ISOL_Remote_9  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
            NEW_CURSOR_ERROR
         }
         break ;
      case 10:
         EXEC SQL OPEN ISOL_Remote_10 ;
         NEW_CURSOR_OPEN_ERROR
         for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
         {
            EXEC SQL FETCH ISOL_Remote_10  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
            NEW_CURSOR_ERROR
         }
         break ;
      case 11:
         EXEC SQL OPEN ISOL_Remote_11 ;
         NEW_CURSOR_OPEN_ERROR
         for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
         {
            EXEC SQL FETCH ISOL_Remote_11  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
            NEW_CURSOR_ERROR
         }
         break ;
      case 12:
         EXEC SQL OPEN ISOL_Remote_12 ;
         NEW_CURSOR_OPEN_ERROR
         for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
         {
            EXEC SQL FETCH ISOL_Remote_12  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
            NEW_CURSOR_ERROR
         }
         break ;
      case 13:
         EXEC SQL OPEN ISOL_Remote_13 ;
         NEW_CURSOR_OPEN_ERROR
         for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
         {
            EXEC SQL FETCH ISOL_Remote_13  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
            NEW_CURSOR_ERROR
         }
         break ;
      case 14:
         EXEC SQL OPEN ISOL_Remote_14 ;
         NEW_CURSOR_OPEN_ERROR
         for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
         {
            EXEC SQL FETCH ISOL_Remote_14  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
            NEW_CURSOR_ERROR
         }
         break ;
      case 15:
         EXEC SQL OPEN ISOL_Remote_15 ;
         NEW_CURSOR_OPEN_ERROR
         for ( inputItemArrayIndex = 0 ;
inputItemArrayIndex < inputItemCount ;
inputItemArrayIndex++ )
         {
            EXEC SQL FETCH ISOL_Remote_15  INTO
:item_price, :item_name, :i_data,
:stockDistrictInformation , :s_data , :s_quantity ;
            NEW_CURSOR_ERROR
         }
         break ;

      default:
         sqlerror(NEWORD_SQL, "Default switch on
remote orderline/stock/index", __FILE__, __LINE__,
&sqlca); //@d314005mte
         goto ferror;
   }
}

for ( inputItemArrayIndex = 0 ;
         inputItemArrayIndex < in_neword-
>s_O_OL_CNT  // from input
      && i_priceArray[ inputItemArrayIndex ] != 0
;
      inputItemArrayIndex++ )
{
   // s_I_NAME, and s_S_QUANTITY already set as
output host variables

   neword->item[ inputItemArrayIndex ].s_I_PRICE =
i_priceArray[ inputItemArrayIndex ] ;

   if (    is_ORIGINAL( s_dataArray[
inputItemArrayIndex ].data, s_dataArray[
inputItemArrayIndex ].len )
        && is_ORIGINAL( i_dataArray[
inputItemArrayIndex ].data, i_dataArray[
inputItemArrayIndex ].len )    )
   {
      neword->item[ inputItemArrayIndex
].s_brand_generic = 'B';
   }
   else
   {
      neword->item[ inputItemArrayIndex
].s_brand_generic = 'G';
   }
}

EXEC SQL

   SELECT W_TAX, C_DISCOUNT, C_LAST, C_CREDIT

     INTO :ware_tax, :c_discount, :c_last,
:c_credit

     FROM TABLE ( NEW_WH (   :next_o_id
                           , :w_id
                           , :d_id
                           , :c_id
                           , :o_entry_d
```

```
                            , :inputItemCount
                            , :allLocal
                           )
                  ) AS NEW_WH_TABLE
   ;

   if ( sqlca.sqlcode == 0 )
   {
      if ( neword->s_O_OL_CNT == in_neword-
>s_O_OL_CNT  )
      {
         neword->s_transtatus = TRAN_OK ;
//@d301360mte

         EXEC SQL COMMIT;

         if( sqlca.sqlcode != 0 )
         {
            sqlerror(NEWORD_SQL, "COMMIT", __FILE__,
__LINE__ , &sqlca ) ; //@d314005mte
            goto ferror;
         }
      }
      else
      {
         neword->s_transtatus = INVALID_ITEM ;

         EXEC SQL ROLLBACK WORK ;

         if ( sqlca.sqlcode != 0 )
         {
            neword->s_transtatus = FATAL_SQLERROR;

            sqlerror(NEWORD_SQL, "ROLLBACK FAILED
(INVALID ITEM)", __FILE__, __LINE__ , &sqlca);
//@d314005mte
            // no point in ferror
         }
      }
   }
   else
   {
      DLCHK( retry_tran );

      sqlerror( NEWORD_SQL, "NEW_WH", __FILE__,
__LINE__ , &sqlca); //@d314005mte
      goto ferror;
   }

   /*---------------------------------------------*/
   /*  Return to client                           */
   /*---------------------------------------------*/

mexit:

   if ( sqlca.sqlcode >= 0 )
   {
      storedProcRc = SQLZ_HOLD_PROC ;
//@d279768mte
   }
   else
   {
      storedProcRc = SQLZ_DISCONNECT_PROC ;
//@d279768mte
   }

#ifdef DEBUGIT
   new_debug( neword, in_neword, "SP prior to
return");           //@d299968mte
#endif

   return ( storedProcRc ) ;
//@d279768mte

sql_error:

   {
      char tempstr[ 4096 ] ;

      DLCHK( retry_tran ) ;

      sprintf( tempstr, "inputItemCount=%d,
:next_o_id=%d, :d_id=%d, :w_id=%d", inputItemCount,
next_o_id, d_id, w_id ) ;
      sqlerror( NEWORD_SQL, tempstr , __FILE__,
__LINE__, &sqlca ) ; //@d314005mte
   }

ferror:

   neword->s_transtatus = FATAL_SQLERROR;

   EXEC SQL ROLLBACK WORK;

   if ( sqlca.sqlcode != 0 )
   {
      sqlerror( NEWORD_SQL, "ROLLBACK FAILED",
__FILE__, __LINE__ , &sqlca ) ; //@d314005mte
   }


   goto mexit ;
}

/*
** A little function to search for the string
"ORIGINAL" given a string and
** it's length
*/
static unsigned char  skip[256] =
{8,8,8,8,8,8,8,8,8,8,  /*0-9*/
                              8,8,8,8,8,8,8,8,8,8,
/*10-19*/
                              8,8,8,8,8,8,8,8,8,8,
/*20-29*/
                              8,8,8,8,8,8,8,8,8,8,
/*30-39*/
                              8,8,8,8,8,8,8,8,8,8,
/*40-49*/
                              8,8,8,8,8,8,8,8,8,8,
/*50-59*/
                              8,8,8,8,8,1,8,8,8,8,
/*60-69*/
                              8,4,8,3,8,8,0,8,2,7,
/*70-79*/
                              8,8,6,8,8,8,8,8,8,8,
/*80-89*/
                              8,8,8,8,8,8,8,8,8,8,
/*90-99*/
                              8,8,8,8,8,8,8,8,8,8,
/*100-109*/
                              8,8,8,8,8,8,8,8,8,8,
/*110-119*/
                              8,8,8,8,8,8,8,8,8,8,
/*120-129*/
                              8,8,8,8,8,8,8,8,8,8,
/*130-139*/
                              8,8,8,8,8,8,8,8,8,8,
/*140-149*/
                              8,8,8,8,8,8,8,8,8,8,
/*150-159*/
                              8,8,8,8,8,8,8,8,8,8,
/*160-169*/
                              8,8,8,8,8,8,8,8,8,8,
/*170-179*/
                              8,8,8,8,8,8,8,8,8,8,
/*180-189*/
                              8,8,8,8,8,8,8,8,8,8,
/*190-199*/
                              8,8,8,8,8,8,8,8,8,8,
/*200-209*/
                              8,8,8,8,8,8,8,8,8,8,
/*210-219*/
                              8,8,8,8,8,8,8,8,8,8,
/*220-229*/
                              8,8,8,8,8,8,8,8,8,8,
/*230-239*/
                              8,8,8,8,8,8,8,8,8,8,
/*240-249*/
                              8,8,8,8,8};
/*250-254*/

static int is_ORIGINAL( char *string, short length )
{
  char            *cur_string;
  char            *end_string;
  unsigned char   *skips;
  int              skip_dist;
  int              result = 0;

  cur_string = string+7;
  end_string = string + length;
  skips = skip;

  while (cur_string < end_string)
    {
      skip_dist = skips[*cur_string];
      while ( (skip_dist > 0) && (cur_string <
end_string) )
        {
          skip_dist = skips[*(cur_string +=
skip_dist)];
        }

      if (cur_string >= end_string)
        goto exit;

      if ( cur_string[-4] != 'G' )
```

```
        goto noMatch;

      if ( memcmp( cur_string-7, "ORIGINAL", 8 ) == 0
)
        {
          result = 1;
          goto exit;
        }
noMatch:
      cur_string += 8;
    } /* end while */

exit:
  return ( result ) ;
}

// ------------------------------------------------
--------------
// Order Status SERVER
// ------------------------------------------------
--------------

#undef w_id
#undef d_id
#undef c_id_input
#undef o_id
#undef o_entry_d
#undef o_carrier_d
#undef c_id
#undef c_first
#undef c_middle
#undef c_last
#undef c_balance

SQL_API_RC order_status_internal( char *pin, char
*pout )
{
   struct in_ordstat_struct  * in_ordstat = (struct
in_ordstat_struct *) pin ;
   struct out_ordstat_struct * ordstat = (struct
out_ordstat_struct *) pout ;

   struct sqlca sqlca ;

   EXEC SQL BEGIN DECLARE SECTION;

     // From input values

     //##sqlint32   w_id ;
     //##short      d_id;
     sqlint32   c_id_input ;

     struct s_data_type { short len ; char data[ 16 ]
; } c_last_input ;

     // From queries

     // From initial query

     sqlint32   o_id ;
     //##sqlint32   c_id ;
     short      o_carrier_id ;
     //##sqlint64   o_entry_d ;
     char   c_first[ 16 ] ;
     char   c_middle[ 2 ] ;
     //##char   c_last[ 16 ] ;
     sqlint64 c_balance ;
//@d300514mte

     // From cursor

     sqlint32   ol_i_id ;
     sqlint32   ol_supply_w_id ;
     short      ol_quantity ;
     sqlint32   ol_amount ;
     sqlint64   ol_delivery_d ;

   EXEC SQL END DECLARE SECTION;

   // NOTE: this varchar would normally live inside
the declare section
   // but this package already delcared the same
field higher up.  Need the field
   // within this scope though.

   //##struct s_data_type { short len ; char data[ 16
] ; } c_last_input ;

   int     storedProcRc ;
//@d279768mte
   int     itemArrayIndex = 0 ;

   #define w_id                 in_ordstat->s_W_ID ;
   #define d_id                 in_ordstat->s_D_ID ;
   #define c_id_input           in_ordstat->s_C_ID
   #define o_id                 ordstat->s_O_ID
   #define o_entry_d            ordstat-
>s_O_ENTRY_D_time
   #define o_carrier_id         ordstat-
>s_O_CARRIER_ID
   #define c_id                 ordstat->s_C_ID
   #define c_first              ordstat->s_C_FIRST
   #define c_middle             ordstat->s_C_MIDDLE
   #define c_last               ordstat->s_C_LAST
   #define c_balance            ordstat->s_C_BALANCE

   EXEC SQL DECLARE read_orderline_cur CURSOR FOR

      SELECT OL_I_ID, OL_SUPPLY_W_ID, OL_QUANTITY,
OL_AMOUNT, OL_DELIVERY_D

        FROM ORDER_LINE

        WHERE OL_W_ID = :w_id
          AND OL_D_ID = :d_id
          AND OL_O_ID = :o_id

        FOR FETCH ONLY ;

   ordstat->deadlocks = -1 ;

#ifdef DEBUGIT
   ord_debug(ordstat, in_ordstat, "SP upon entry");
//@d299968mte
#endif

retry_tran:

   ordstat->deadlocks ++ ;

   if ( c_id_input == 0 )
   {
      c_last_input.len = strlen( in_ordstat->s_C_LAST
) ;
      memcpy( c_last_input.data , in_ordstat-
>s_C_LAST , c_last_input.len ) ;

      EXEC SQL

         SELECT O_ID, O_CARRIER_ID, O_ENTRY_D,
C_BALANCE, C_FIRST, C_MIDDLE, C_ID

           INTO :o_id, :o_carrier_id , :o_entry_d ,
:c_balance, :c_first, :c_middle, :c_id

           FROM TABLE ( ORD_C_LAST(   :w_id
                                    , :d_id
                                    , :c_last_input
                                  )
                      ) AS ORD_C_LAST
      ;
   }
   else
   {
      EXEC SQL

         SELECT O_ID, O_CARRIER_ID, O_ENTRY_D ,
C_BALANCE, C_FIRST, C_MIDDLE ,C_LAST

           INTO :o_id, :o_carrier_id , :o_entry_d ,
:c_balance, :c_first, :c_middle, :c_last

           FROM TABLE ( ORD_C_ID(   :w_id
                                  , :d_id
                                  , :c_id_input
                                )
                      ) AS ORD_C_ID
      ;
   }

   if ( sqlca.sqlcode != 0 )
   {
      DLCHK( retry_tran );
      sqlerror( ORDSTAT_SQL, "READ CUST and ORDERS",
__FILE__, __LINE__ ,  &sqlca ) ; //@d314005mte
      goto ferror;
   }

   /*---------------------------------------------*/
   /*  Read ORDER_LINEs                           */
   /*---------------------------------------------*/

   EXEC SQL OPEN read_orderline_cur ;

   if ( sqlca.sqlcode != 0 )
   {
      DLCHK( retry_tran );
```

```
      sqlerror(ORDSTAT_SQL, "OPEN CURSOR
read_orderline_cur", __FILE__, __LINE__ , &sqlca ) ;
//@d314005mte
      goto ferror;
   }

   itemArrayIndex = 0 ;
   {
      do
      {
         EXEC SQL FETCH read_orderline_cur

                  INTO :ol_i_id , :ol_supply_w_id ,
:ol_quantity , :ol_amount , :ol_delivery_d ;

         if ( sqlca.sqlcode == 0 )
         {
            ordstat->item[ itemArrayIndex ].s_OL_I_ID
= ol_i_id ;
            ordstat->item[ itemArrayIndex
].s_OL_SUPPLY_W_ID     = ol_supply_w_id ;
            ordstat->item[ itemArrayIndex
].s_OL_QUANTITY        = ol_quantity ;
            ordstat->item[ itemArrayIndex
].s_OL_AMOUNT          = ol_amount ;
            ordstat->item[ itemArrayIndex
].s_OL_DELIVERY_D_time = ol_delivery_d ;

            itemArrayIndex++;
         }
         else
         if (sqlca.sqlcode < 0 )
         {
            DLCHK( retry_tran ) ;
            sqlerror( ORDSTAT_SQL, "FETCH CURSOR
read_orderline_cur" , __FILE__, __LINE__ , &sqlca ) ;
//@d314005mte
            goto ferror ;
         }
      }
      while ( sqlca.sqlcode == 0 ) ;
   }

   ordstat->s_ol_cnt = itemArrayIndex ;

   EXEC SQL COMMIT ;

   if ( sqlca.sqlcode == 0 )
   {
      ordstat->s_transtatus = TRAN_OK ;
   }
   else
   {
      DLCHK( retry_tran );
      sqlerror(ORDSTAT_SQL, "COMMIT", __FILE__,
__LINE__ , &sqlca); //@d314005mte
      goto ferror ;
   }

mexit:

   if ( sqlca.sqlcode >= 0 )
   {
      storedProcRc = SQLZ_HOLD_PROC ;
//@d279768mte
   }
   else
   {
      storedProcRc = SQLZ_DISCONNECT_PROC ;
//@d279768mte
   }

#ifdef DEBUGIT
   ord_debug(ordstat, in_ordstat, "SP prior to
return");          //@d299968mte
#endif

   return ( storedProcRc ) ;
//@d279768mte

ferror:

   ordstat->s_transtatus = FATAL_SQLERROR ;

   EXEC SQL ROLLBACK WORK ;

   if ( sqlca.sqlcode != 0 )
   {
      sqlerror(ORDSTAT_SQL, "ROLLBACK FAILED",
__FILE__, __LINE__, &sqlca); //@d314005mte
   }

   goto mexit;
}

// ------------------------------------------------
--------------
// Delivery SERVER
// ------------------------------------------------
--------------

#undef d_id
#undef c_id
#undef w_id
#undef o_carrier_id
#undef ol_delivery_d

SQL_API_RC delivery_internal ( char * pin, char *
pout )
{
   struct in_delivery_struct * in_delivery = (struct
in_delivery_struct *)  pin ;
   struct out_delivery_struct * delivery   = (struct
out_delivery_struct *) pout ;

   struct sqlca sqlca ;

   int storedProcRc ;
//@d279768mte

   short district_id ;
   sqlint32  customer_id ;

   EXEC SQL BEGIN DECLARE SECTION;

      // input
      //##sqlint32   w_id ;
      //##short      d_id ;
      //##sqlint32   c_id ;
      //##short      o_carrier_id ;
      //##sqlint64   ol_delivery_d ;

      // output

      short      no_o_id_indicator = 0 ;
      sqlint32   no_o_id ;

   EXEC SQL END DECLARE SECTION;

   #define d_id          district_id
   #define c_id          customer_id

   #define w_id          in_delivery->s_W_ID
   #define o_carrier_id  in_delivery->s_O_CARRIER_ID
   #define ol_delivery_d in_delivery-
>s_O_DELIVERY_D_time

   delivery->deadlocks = -1 ;

#ifdef DEBUGIT
   del_debug( delivery, in_delivery, "SP upon
entry");            //@d299968mte
#endif

   // Deadlock Handling
   // -----------------
   // Since we COMMIT inside the for() loop, we must
take special
   // care while handling deadlocks.  This is best
explained by
   // an example.
   //
   // Assume we deadlock on d_id=6.  This means that
an order from the
   // first 5 districts have already been delivered.
We will then
   // restart the loop (retry_tran).  However, the
loop will restart
   // at d_id = 1!  This means that the second (and
all subsequent)
   // time through the loop, we will deliver orders
for districts that
   // have already been delivered, with the net
result being more than
   // 10 orders being delivered.
   //
   // The solution to this problem is to initialize
the starting point
   // of the loop *before* the retry_tran label.
This will ensure that
   // if we deadlock, we will restart the loop with
the same district
   // that we deadlocked on, and we won't deliver any
extra orders.
   //
   // NOTE: If we ever change this back to one COMMIT
per transaction
```

```
   // (instead of one COMMIT per iteration), then the
initialization
   // of d_id must be moved back into the for loop.
(A rollback due
   // to deadlock in this case would rollback all
delivered orders so
   // far, so we'd need to re-deliver them all on the
next iteration.)

   d_id = 1;
//@d305946mte

retry_tran:

   delivery->deadlocks++;

   for ( ;  d_id <= DISTRICTS_PER_WAREHOUSE ; d_id++
)            //@d305946mte
   {
      no_o_id = 0 ;
      no_o_id_indicator = 0 ;

         EXEC SQL BEGIN COMPOUND NOT ATOMIC STATIC

            SELECT O_ID

                INTO :no_o_id :no_o_id_indicator

              FROM TABLE (  DEL( :w_id , :d_id ,
:o_carrier_id , :ol_delivery_d ) ) AS T ;

            COMMIT ;

         END COMPOUND ;

      if ( sqlca.sqlcode == 0 )
      {
         /* Refer to clause 2.7.4.2, bullet 3 in
spec.*/
         /* Need to report if more than 1 or 1% of
*/
         /* no_o_id will remain 0 if null returned,
so just treat the same way */

         delivery->s_O_ID[ d_id - 1 ] = no_o_id ;
      }
      else
      {
         DLCHK( retry_tran );

         sqlerror( DELIVERY_SQL , "DELIVERY",
__FILE__, __LINE__ , &sqlca); //@d314005mte
         goto ferror ;
      }
   }

   delivery->s_transtatus = TRAN_OK ;

mexit:

   if ( sqlca.sqlcode >= 0 )
   {
      storedProcRc = SQLZ_HOLD_PROC ;
//@d279768mte
   }
   else
   {
      storedProcRc = SQLZ_DISCONNECT_PROC ;
//@d279768mte
   }

#ifdef DEBUGIT
   del_debug( delivery, in_delivery, "SP prior to
return");       //@d299968mte
#endif

   return ( storedProcRc ) ;
//@d279768mte

ferror:

   delivery->s_transtatus = FATAL_SQLERROR ;

   EXEC SQL ROLLBACK WORK ;

   if ( sqlca.sqlcode != 0 )
   {
     sqlerror( DELIVERY_SQL, "ROLLBACK FAILED",
__FILE__, __LINE__ , &sqlca ) ; //@d314005mte
   }


   goto mexit ;
}

// ------------------------------------------------
--------------
// Stored Procedure Stubs
// ------------------------------------------------
--------------

//@bd267999mte
SQL_API_RC SQL_API_FN news( char *pin, char *pout )
{
   return new_order_internal( pin, pout ) ;
}

SQL_API_RC SQL_API_FN ords( char *pin, char *pout )
{
   return order_status_internal( pin, pout ) ;
}

SQL_API_RC SQL_API_FN dels ( char * pin, char * pout
)
{
   return delivery_internal( pin, pout ) ;
}
//@ed267999mte
```

Src.Srv/uncat_func.ddl

Src.Srv/uncat_proc.ddl

Src.Srv/rpctpcc.def

```
LIBRARY rpctpcc
DESCRIPTION "Library of TPC-C Transactions (Stored
Procedures)"
EXPORTS
news
ords
dels
```

utils/EXPLAIN.ddl

```
-- -*- sql -*-
--
-- Sample DDL to create Explain tables for Version
5.0
--
--   -> assumes db2start issued
--   -> assumes connection to a database exists
--   -> assumes called by "db2 -tf EXPLAIN.DDL"
--

--
-- To remind users how to use this file!
--
ECHO                              ;
ECHO ******* IMPORTANT ********** ;
ECHO                              ;
ECHO USAGE: db2 -tf EXPLAIN.DDL   ;
ECHO                              ;
ECHO ******* IMPORTANT ********** ;
ECHO                              ;
ECHO                              ;
--
--
-- Set autocommit off
--
UPDATE COMMAND OPTIONS USING C OFF;
--
--  EXPLAIN INSTANCE
--
--  (must be defined first due to referential
integrity definitions)
--
CREATE TABLE EXPLAIN_INSTANCE ( EXPLAIN_REQUESTER
VARCHAR(128) NOT NULL,
                                EXPLAIN_TIME
TIMESTAMP    NOT NULL,
```

```
                                SOURCE_NAME
VARCHAR(128) NOT NULL,
                                SOURCE_SCHEMA
VARCHAR(128) NOT NULL,
                                SOURCE_VERSION
VARCHAR(64)  NOT NULL,
                                EXPLAIN_OPTION
CHAR(1)      NOT NULL,
                                SNAPSHOT_TAKEN
CHAR(1)   NOT NULL,
                                DB2_VERSION
CHAR(7)   NOT NULL,
                                SQL_TYPE
CHAR(1)   NOT NULL,
                                QUERYOPT
INTEGER   NOT NULL,
                                BLOCK
CHAR(1)   NOT NULL,
                                ISOLATION
CHAR(2)   NOT NULL,
                                BUFFPAGE
INTEGER   NOT NULL,
                                AVG_APPLS
INTEGER   NOT NULL,
                                SORTHEAP
INTEGER   NOT NULL,
                                LOCKLIST
INTEGER   NOT NULL,
                                MAXLOCKS
SMALLINT  NOT NULL,
                                LOCKS_AVAIL
INTEGER   NOT NULL,
                                CPU_SPEED
DOUBLE    NOT NULL,
                                REMARKS
VARCHAR(254),
                                DBHEAP
INTEGER   NOT NULL,
                                COMM_SPEED
DOUBLE    NOT NULL,
                                PARALLELISM
CHAR(2)   NOT NULL,
                                DATAJOINER
CHAR(1)   NOT NULL,
                                    PRIMARY KEY
(EXPLAIN_REQUESTER,
EXPLAIN_TIME,
SOURCE_NAME,
SOURCE_SCHEMA,
SOURCE_VERSION))
IN USERSPACE1
INDEX IN USERSPACE1;
--
-- EXPLAIN_STATEMENT
--
CREATE TABLE EXPLAIN_STATEMENT ( EXPLAIN_REQUESTER
VARCHAR(128) NOT NULL,
                                 EXPLAIN_TIME
TIMESTAMP    NOT NULL,
                                SOURCE_NAME
VARCHAR(128) NOT NULL,
                                SOURCE_SCHEMA
VARCHAR(128) NOT NULL,
                                SOURCE_VERSION
VARCHAR(64)  NOT NULL,
                                EXPLAIN_LEVEL
CHAR(1)      NOT NULL,
                                STMTNO
INTEGER      NOT NULL,
                                SECTNO
INTEGER      NOT NULL,
                                QUERYNO
INTEGER      NOT NULL,
                                QUERYTAG
CHAR(20)     NOT NULL,
                                STATEMENT_TYPE
CHAR(2)      NOT NULL,
                                UPDATABLE
CHAR(1)      NOT NULL,
                                DELETABLE
CHAR(1)      NOT NULL,
                                TOTAL_COST
DOUBLE       NOT NULL,
                                STATEMENT_TEXT
CLOB(2M)     NOT NULL NOT LOGGED,
                                SNAPSHOT
BLOB(10M)    NOT LOGGED,
                                QUERY_DEGREE
INTEGER      NOT NULL,
                                   PRIMARY KEY
(EXPLAIN_REQUESTER,
EXPLAIN_TIME,
SOURCE_NAME,
SOURCE_SCHEMA,
SOURCE_VERSION,
EXPLAIN_LEVEL,
STMTNO,
SECTNO),
                                    FOREIGN KEY
(EXPLAIN_REQUESTER,
EXPLAIN_TIME,
SOURCE_NAME,
SOURCE_SCHEMA,
SOURCE_VERSION)
                                    REFERENCES
EXPLAIN_INSTANCE
                                    ON DELETE
CASCADE)
IN USERSPACE1
INDEX IN USERSPACE1;
--
-- EXPLAIN_ARGUMENTS
--
CREATE TABLE EXPLAIN_ARGUMENT ( EXPLAIN_REQUESTER
VARCHAR(128)  NOT NULL,
                                EXPLAIN_TIME
TIMESTAMP     NOT NULL,
                                SOURCE_NAME
VARCHAR(128)  NOT NULL,
                                SOURCE_SCHEMA
VARCHAR(128)  NOT NULL,
                                SOURCE_VERSION
VARCHAR(64)   NOT NULL,
                                EXPLAIN_LEVEL
CHAR(1)       NOT NULL,
                                STMTNO
INTEGER       NOT NULL,
                                SECTNO
INTEGER       NOT NULL,
                                OPERATOR_ID
INTEGER       NOT NULL,
                                ARGUMENT_TYPE
CHAR(8)       NOT NULL,
                                ARGUMENT_VALUE
VARCHAR(1024),
                                LONG_ARGUMENT_VALUE
CLOB(2M)      NOT LOGGED,
                                   FOREIGN KEY
(EXPLAIN_REQUESTER,
EXPLAIN_TIME,
SOURCE_NAME,
SOURCE_SCHEMA,
SOURCE_VERSION,
EXPLAIN_LEVEL,
STMTNO,
SECTNO)
                                   REFERENCES
EXPLAIN_STATEMENT
                                   ON DELETE CASCADE)
IN USERSPACE1
INDEX IN USERSPACE1;
--
-- EXPLAIN_OBJECT
--
CREATE TABLE EXPLAIN_OBJECT ( EXPLAIN_REQUESTER
VARCHAR(128) NOT NULL,
                              EXPLAIN_TIME
TIMESTAMP    NOT NULL,
                              SOURCE_NAME
VARCHAR(128) NOT NULL,
                              SOURCE_SCHEMA
VARCHAR(128) NOT NULL,
                              SOURCE_VERSION
VARCHAR(64)  NOT NULL,
                              EXPLAIN_LEVEL
CHAR(1)      NOT NULL,
```

```
                                STMTNO
INTEGER      NOT NULL,
                                SECTNO
INTEGER      NOT NULL,
                                OBJECT_SCHEMA
VARCHAR(128) NOT NULL,
                                OBJECT_NAME
VARCHAR(128) NOT NULL,
                                OBJECT_TYPE
CHAR(2)      NOT NULL,
                                CREATE_TIME
TIMESTAMP,
                                STATISTICS_TIME
TIMESTAMP,
                                COLUMN_COUNT
SMALLINT     NOT NULL,
                                ROW_COUNT
BIGINT       NOT NULL,
                                WIDTH
INTEGER      NOT NULL,
                                PAGES
INTEGER      NOT NULL,
                                DISTINCT
CHAR(1)      NOT NULL,
                                TABLESPACE_NAME
VARCHAR(128),
                                OVERHEAD
DOUBLE       NOT NULL,
                                TRANSFER_RATE
DOUBLE       NOT NULL,
                                PREFETCHSIZE
INTEGER      NOT NULL,
                                EXTENTSIZE
INTEGER      NOT NULL,
                                CLUSTER
DOUBLE       NOT NULL,
                                NLEAF
INTEGER      NOT NULL,
                                NLEVELS
INTEGER      NOT NULL,
                                FULLKEYCARD
BIGINT       NOT NULL,
                                OVERFLOW
INTEGER      NOT NULL,
                                FIRSTKEYCARD
BIGINT       NOT NULL,
                                FIRST2KEYCARD
BIGINT       NOT NULL,
                                FIRST3KEYCARD
BIGINT       NOT NULL,
                                FIRST4KEYCARD
INTEGER      NOT NULL,
                                SEQUENTIAL_PAGES
INTEGER      NOT NULL,
                                DENSITY
CHAR(1)      NOT NULL,
                                STATS_SRC
DOUBLE  NOT NULL,
                                AVERAGE_SEQUENCE_GAP
AVERAGE_SEQUENCE_FETCH_GAP   DOUBLE  NOT NULL,
                                AVERAGE_SEQUENCE_PAGES
DOUBLE  NOT NULL,
AVERAGE_SEQUENCE_FETCH_PAGES DOUBLE  NOT NULL,
                                AVERAGE_RANDOM_PAGES
DOUBLE  NOT NULL,
AVERAGE_RANDOM_FETCH_PAGES   DOUBLE  NOT NULL,
                                NUMRIDS
BIGINT  NOT NULL,
                                NUMRIDS_DELETED
BIGINT  NOT NULL,
                                NUM_EMPTY_LEAFS
BIGINT  NOT NULL,
                                ACTIVE_BLOCKS
BIGINT  NOT NULL,
                                     FOREIGN KEY
(EXPLAIN_REQUESTER,
EXPLAIN_TIME,
SOURCE_NAME,
SOURCE_SCHEMA,
SOURCE_VERSION,
EXPLAIN_LEVEL,
STMTNO,
SECTNO)
                                     REFERENCES
EXPLAIN_STATEMENT
                                     ON DELETE CASCADE)
IN USERSPACE1
INDEX IN USERSPACE1;
--
-- EXPLAIN_OPERATOR
--
CREATE TABLE EXPLAIN_OPERATOR ( EXPLAIN_REQUESTER
VARCHAR(128) NOT NULL,
                                EXPLAIN_TIME
TIMESTAMP    NOT NULL,
                                SOURCE_NAME
VARCHAR(128) NOT NULL,
                                SOURCE_SCHEMA
VARCHAR(128) NOT NULL,
                                SOURCE_VERSION
VARCHAR(64)  NOT NULL,
                                EXPLAIN_LEVEL
CHAR(1)      NOT NULL,
                                STMTNO
INTEGER      NOT NULL,
                                SECTNO
INTEGER      NOT NULL,
                                OPERATOR_ID
INTEGER      NOT NULL,
                                OPERATOR_TYPE
CHAR(6)      NOT NULL,
                                TOTAL_COST
DOUBLE       NOT NULL,
                                IO_COST
DOUBLE       NOT NULL,
                                CPU_COST
DOUBLE       NOT NULL,
                                FIRST_ROW_COST
DOUBLE       NOT NULL,
                                RE_TOTAL_COST
DOUBLE       NOT NULL,
                                RE_IO_COST
DOUBLE       NOT NULL,
                                RE_CPU_COST
DOUBLE       NOT NULL,
                                COMM_COST
DOUBLE       NOT NULL,
                                FIRST_COMM_COST
DOUBLE       NOT NULL,
                                BUFFERS
DOUBLE       NOT NULL,
                                REMOTE_TOTAL_COST
DOUBLE       NOT NULL,
                                REMOTE_COMM_COST
DOUBLE       NOT NULL,
                                   FOREIGN KEY
(EXPLAIN_REQUESTER,
EXPLAIN_TIME,
SOURCE_NAME,
SOURCE_SCHEMA,
SOURCE_VERSION,
EXPLAIN_LEVEL,
STMTNO,
SECTNO)
                                   REFERENCES
EXPLAIN_STATEMENT
                                   ON DELETE CASCADE)
IN USERSPACE1
INDEX IN USERSPACE1;
--
-- EXPLAIN_PREDICATE
--
CREATE TABLE EXPLAIN_PREDICATE ( EXPLAIN_REQUESTER
VARCHAR(128) NOT NULL,
                                EXPLAIN_TIME
TIMESTAMP    NOT NULL,
                                SOURCE_NAME
VARCHAR(128) NOT NULL,
                                SOURCE_SCHEMA
VARCHAR(128) NOT NULL,
                                SOURCE_VERSION
VARCHAR(64)  NOT NULL,
                                EXPLAIN_LEVEL
CHAR(1)      NOT NULL,
                                STMTNO
INTEGER      NOT NULL,
                                SECTNO
INTEGER      NOT NULL,
```

```
                                        OPERATOR_ID
INTEGER      NOT NULL,                  PREDICATE_ID
INTEGER      NOT NULL,                  HOW_APPLIED
CHAR(5)      NOT NULL,                  WHEN_EVALUATED
CHAR(3)      NOT NULL,                  RELOP_TYPE
CHAR(2)      NOT NULL,                  SUBQUERY
CHAR(1)      NOT NULL,                  FILTER_FACTOR
DOUBLE       NOT NULL,                  PREDICATE_TEXT
CLOB(2M)     NOT LOGGED,                  FOREIGN KEY
(EXPLAIN_REQUESTER,
EXPLAIN_TIME,
SOURCE_NAME,
SOURCE_SCHEMA,
SOURCE_VERSION,
EXPLAIN_LEVEL,
STMTNO,
SECTNO)                                   REFERENCES
EXPLAIN_STATEMENT                         ON DELETE CASCADE)
IN USERSPACE1
INDEX IN USERSPACE1;
--
-- EXPLAIN_STREAM
--
CREATE TABLE EXPLAIN_STREAM ( EXPLAIN_REQUESTER
VARCHAR(128) NOT NULL,
                              EXPLAIN_TIME
TIMESTAMP    NOT NULL,
                              SOURCE_NAME
VARCHAR(128) NOT NULL,
                              SOURCE_SCHEMA
VARCHAR(128) NOT NULL,
                              SOURCE_VERSION
VARCHAR(64)  NOT NULL,
                              EXPLAIN_LEVEL
CHAR(1)      NOT NULL,
                              STMTNO
INTEGER      NOT NULL,
                              SECTNO
INTEGER      NOT NULL,
                              STREAM_ID
INTEGER      NOT NULL,
                              SOURCE_TYPE
CHAR(1)      NOT NULL,
                              SOURCE_ID
INTEGER      NOT NULL,
```

```
                                        TARGET_TYPE
CHAR(1)      NOT NULL,                  TARGET_ID
INTEGER      NOT NULL,                  OBJECT_SCHEMA
VARCHAR(128),                           OBJECT_NAME
VARCHAR(128),                           STREAM_COUNT
DOUBLE       NOT NULL,                  COLUMN_COUNT
SMALLINT     NOT NULL,                  PREDICATE_ID
INTEGER      NOT NULL,                  COLUMN_NAMES
CLOB(2M)     NOT LOGGED,                PMID
SMALLINT     NOT NULL,                  SINGLE_NODE
CHAR(5),                                PARTITION_COLUMNS
CLOB(2M)     NOT LOGGED,                     FOREIGN KEY
(EXPLAIN_REQUESTER,
EXPLAIN_TIME,
SOURCE_NAME,
SOURCE_SCHEMA,
SOURCE_VERSION,
EXPLAIN_LEVEL,
STMTNO,
SECTNO)                                   REFERENCES
EXPLAIN_STATEMENT                         ON DELETE CASCADE)
IN USERSPACE1
INDEX IN USERSPACE1;

--
-- EXPLAIN_DIAGNOSTIC
--
CREATE TABLE EXPLAIN_DIAGNOSTIC ( EXPLAIN_REQUESTER
VARCHAR(128) NOT NULL,
                                  EXPLAIN_TIME
TIMESTAMP    NOT NULL,
                                  SOURCE_NAME
VARCHAR(128) NOT NULL,
                                  SOURCE_SCHEMA
VARCHAR(128) NOT NULL,
                                  SOURCE_VERSION
VARCHAR(64)  NOT NULL,
                                  EXPLAIN_LEVEL
CHAR(1)      NOT NULL,
                                  STMTNO
INTEGER      NOT NULL,
                                  SECTNO
INTEGER      NOT NULL,
```

```
                                        DIAGNOSTIC_ID
INTEGER      NOT NULL,                  CODE
INTEGER      NOT NULL,                   PRIMARY KEY
(EXPLAIN_REQUESTER,
EXPLAIN_TIME,
SOURCE_NAME,
SOURCE_SCHEMA,
SOURCE_VERSION,
EXPLAIN_LEVEL,
STMTNO,
SECTNO,
DIAGNOSTIC_ID),                           FOREIGN KEY
(EXPLAIN_REQUESTER,
EXPLAIN_TIME,
SOURCE_NAME,
SOURCE_SCHEMA,
SOURCE_VERSION,
EXPLAIN_LEVEL,
STMTNO,
SECTNO)                                   REFERENCES
EXPLAIN_STATEMENT                         ON DELETE CASCADE)
IN USERSPACE1
INDEX IN USERSPACE1;

--
-- EXPLAIN_DIAGNOSTIC_TOKEN
--
CREATE TABLE EXPLAIN_DIAGNOSTIC_DATA (
EXPLAIN_REQUESTER VARCHAR(128) NOT NULL,
                                  EXPLAIN_TIME
TIMESTAMP    NOT NULL,            SOURCE_NAME
VARCHAR(128) NOT NULL,            SOURCE_SCHEMA
VARCHAR(128) NOT NULL,            SOURCE_VERSION
VARCHAR(64)  NOT NULL,            EXPLAIN_LEVEL
CHAR(1)      NOT NULL,            STMTNO
INTEGER      NOT NULL,            SECTNO
INTEGER      NOT NULL,
```

```
                                        DIAGNOSTIC_ID
INTEGER      NOT NULL,
                                        ORDINAL
INTEGER      NOT NULL,
                                        TOKEN
VARCHAR(1000),
                                        TOKEN_LONG
BLOB(3M)     NOT LOGGED,
                                           FOREIGN KEY
(EXPLAIN_REQUESTER,

EXPLAIN_TIME,

SOURCE_NAME,

SOURCE_SCHEMA,

SOURCE_VERSION,

EXPLAIN_LEVEL,

STMTNO,

SECTNO,

DIAGNOSTIC_ID)
                                           REFERENCES
EXPLAIN_DIAGNOSTIC
                                           ON DELETE
CASCADE)
IN USERSPACE1
INDEX IN USERSPACE1;

--
-- ADVISE TABLES
--

--
-- ADVISE_INSTANCE
--
--  (must be defined first due to referential
integrity definitions)
--
CREATE TABLE ADVISE_INSTANCE (
        START_TIME        TIMESTAMP     NOT NULL WITH
DEFAULT CURRENT TIMESTAMP,
        END_TIME          TIMESTAMP     NOT NULL WITH
DEFAULT CURRENT TIMESTAMP,
        MODE              VARCHAR(4)    NOT NULL WITH
DEFAULT '',
        WKLD_COMPRESSION  CHAR(4)       NOT NULL WITH
DEFAULT 'NONE',
        STATUS            CHAR(9)       NOT NULL WITH
DEFAULT '',
                                     PRIMARY KEY
(START_TIME))
IN USERSPACE1
INDEX IN USERSPACE1;


--
-- ADVISE_INDEX
--
CREATE TABLE ADVISE_INDEX(
        EXPLAIN_REQUESTER VARCHAR(128)  NOT NULL WITH
DEFAULT '',
        EXPLAIN_TIME      TIMESTAMP     NOT NULL WITH
DEFAULT CURRENT TIMESTAMP,
        SOURCE_NAME       VARCHAR(128)  NOT NULL WITH
DEFAULT '',
        SOURCE_SCHEMA     VARCHAR(128)  NOT NULL WITH
DEFAULT '',
        SOURCE_VERSION    VARCHAR(64)   NOT NULL WITH
DEFAULT '',
        EXPLAIN_LEVEL     CHAR(1)       NOT NULL WITH
DEFAULT '',
        STMTNO            INTEGER       NOT NULL WITH
DEFAULT 0,
        SECTNO            INTEGER       NOT NULL WITH
DEFAULT 0,
        QUERYNO           INTEGER       NOT NULL WITH
DEFAULT 0,
        QUERYTAG          CHAR(20)      NOT NULL WITH
DEFAULT '',
        NAME              VARCHAR(128)  NOT NULL,
        CREATOR           VARCHAR(128)  NOT NULL WITH
DEFAULT '',
        TBNAME            VARCHAR(128)  NOT NULL,
        TBCREATOR         VARCHAR(128)  NOT NULL WITH
DEFAULT '',
        COLNAMES          CLOB(2M)      NOT NULL,
        UNIQUERULE        CHAR(1)       NOT NULL WITH
DEFAULT '',
        COLCOUNT          SMALLINT      NOT NULL WITH
DEFAULT 0,
        IID               SMALLINT      NOT NULL WITH
DEFAULT 0,
        NLEAF             INTEGER       NOT NULL WITH
DEFAULT 0,
        NLEVELS           SMALLINT      NOT NULL WITH
DEFAULT 0,
        FIRSTKEYCARD      BIGINT        NOT NULL WITH
DEFAULT 0,
        FULLKEYCARD       BIGINT        NOT NULL WITH
DEFAULT 0,
        CLUSTERRATIO      SMALLINT      NOT NULL WITH
DEFAULT 0,
        CLUSTERFACTOR     DOUBLE        NOT NULL WITH
DEFAULT 0,
        USERDEFINED       SMALLINT      NOT NULL WITH
DEFAULT 0,
        SYSTEM_REQUIRED   SMALLINT      NOT NULL WITH
DEFAULT 0,
        CREATE_TIME       TIMESTAMP     NOT NULL WITH
DEFAULT CURRENT TIMESTAMP,
        STATS_TIME        TIMESTAMP             WITH
DEFAULT CURRENT TIMESTAMP,
        PAGE_FETCH_PAIRS  VARCHAR(254)  NOT NULL WITH
DEFAULT '',
        REMARKS           VARCHAR(254)          WITH
DEFAULT '',
        DEFINER           VARCHAR(128)  NOT NULL WITH
DEFAULT '',
        CONVERTED         CHAR(1)       NOT NULL WITH
DEFAULT '',
        SEQUENTIAL_PAGES  INTEGER       NOT NULL WITH
DEFAULT 0,
        DENSITY           INTEGER       NOT NULL WITH
DEFAULT 0,
        FIRST2KEYCARD     BIGINT        NOT NULL WITH
DEFAULT 0,
        FIRST3KEYCARD     BIGINT        NOT NULL WITH
DEFAULT 0,
        FIRST4KEYCARD     BIGINT        NOT NULL WITH
DEFAULT 0,
        PCTFREE           SMALLINT      NOT NULL WITH
DEFAULT -1,
        UNIQUE_COLCOUNT   SMALLINT      NOT NULL WITH
DEFAULT -1,
        MINPCTUSED        SMALLINT      NOT NULL WITH
DEFAULT 0,
        REVERSE_SCANS     CHAR(1)       NOT NULL WITH
DEFAULT 'N',
        USE_INDEX         CHAR(1),
        CREATION_TEXT     CLOB(2M)      NOT NULL NOT
LOGGED WITH DEFAULT '',
        PACKED_DESC       BLOB(1M)              NOT
LOGGED,
        RUN_ID            TIMESTAMP,
        INDEXTYPE         VARCHAR(4)    NOT NULL WITH
DEFAULT '',
        EXISTS            CHAR(1)       NOT NULL WITH
DEFAULT 'N',
        RIDTOBLOCK        CHAR(1)       NOT NULL WITH
DEFAULT 'N',
                                     FOREIGN KEY
(RUN_ID)
                                     REFERENCES
ADVISE_INSTANCE (START_TIME)
                                     ON DELETE
CASCADE)
IN USERSPACE1
INDEX IN USERSPACE1;
--
-- ADVISE_WORKLOAD
--
CREATE TABLE ADVISE_WORKLOAD (
        WORKLOAD_NAME     CHAR(128)    NOT NULL WITH
DEFAULT 'WK0',
        STATEMENT_NO      INTEGER      NOT NULL WITH
DEFAULT 1,
        STATEMENT_TEXT    CLOB(2M)     NOT NULL NOT
LOGGED,
        STATEMENT_TAG     VARCHAR(256) NOT NULL WITH
DEFAULT '' ,
        FREQUENCY         INTEGER      NOT NULL WITH
DEFAULT 1,
        IMPORTANCE        DOUBLE       NOT NULL WITH
DEFAULT 1,
        WEIGHT            DOUBLE       NOT NULL WITH
DEFAULT 1,
        COST_BEFORE       DOUBLE,
        COST_AFTER        DOUBLE,
        COMPILABLE        CHAR(17))
IN USERSPACE1
INDEX IN USERSPACE1;

--
```

```
-- ADVISE_MQT
--
CREATE TABLE ADVISE_MQT (
       EXPLAIN_REQUESTER VARCHAR(128)  NOT NULL WITH
DEFAULT '',
       EXPLAIN_TIME      TIMESTAMP     NOT NULL WITH
DEFAULT CURRENT TIMESTAMP,
       SOURCE_NAME       VARCHAR(128)  NOT NULL WITH
DEFAULT '',
       SOURCE_SCHEMA     VARCHAR(128)  NOT NULL WITH
DEFAULT '',
       SOURCE_VERSION    VARCHAR(64)   NOT NULL WITH
DEFAULT '',
       EXPLAIN_LEVEL     CHAR(1)       NOT NULL WITH
DEFAULT '',
       STMTNO            INTEGER       NOT NULL WITH
DEFAULT 0,
       SECTNO            INTEGER       NOT NULL WITH
DEFAULT 0,
       NAME              VARCHAR(128)  NOT NULL,
       CREATOR           VARCHAR(128)  NOT NULL WITH
DEFAULT '',
       IID               SMALLINT      NOT NULL WITH
DEFAULT 0,
       CREATE_TIME       TIMESTAMP     NOT NULL WITH
DEFAULT CURRENT TIMESTAMP,
       STATS_TIME        TIMESTAMP              WITH
DEFAULT CURRENT TIMESTAMP,
       NUMROWS           DOUBLE        NOT NULL WITH
DEFAULT 0,
       NUMCOLS           SMALLINT      NOT NULL WITH
DEFAULT 0,
       ROWSIZE           DOUBLE        NOT NULL WITH
DEFAULT 0,
       BENEFIT           FLOAT         NOT NULL WITH
DEFAULT 0.0,
       USE_MQT           CHAR(1),
       MQT_SOURCE        CHAR(1),
       QUERY_TEXT        CLOB(2M)      NOT NULL NOT
LOGGED WITH DEFAULT '',
       CREATION_TEXT     CLOB(2M)      NOT NULL NOT
LOGGED WITH DEFAULT '',
       SAMPLE_TEXT       CLOB(2M)      NOT NULL NOT
LOGGED WITH DEFAULT '',
       COLSTATS          CLOB(2M)      NOT NULL NOT
LOGGED WITH DEFAULT '',
       EXTRA_INFO        BLOB(2M)      NOT NULL NOT
LOGGED with default BLOB(''),
       TBSPACE           VARCHAR(128)  NOT NULL WITH
DEFAULT '',
       RUN_ID            TIMESTAMP,
       REFRESH_TYPE      CHAR(1)       NOT NULL WITH
DEFAULT '',
       EXISTS            CHAR(1)       NOT NULL WITH
DEFAULT 'N',
                                 FOREIGN KEY
(RUN_ID)
                                 REFERENCES
ADVISE_INSTANCE (START_TIME)
                                 ON DELETE
CASCADE)
IN USERSPACE1
INDEX IN USERSPACE1;

--
-- ADVISE_PARTITION
--
CREATE TABLE ADVISE_PARTITION (
       EXPLAIN_REQUESTER VARCHAR(128)  NOT NULL WITH
DEFAULT '',
       EXPLAIN_TIME      TIMESTAMP     NOT NULL WITH
DEFAULT CURRENT TIMESTAMP,
       SOURCE_NAME       VARCHAR(128)  NOT NULL WITH
DEFAULT '',
       SOURCE_SCHEMA     VARCHAR(128)  NOT NULL WITH
DEFAULT '',
       SOURCE_VERSION    VARCHAR(64)   NOT NULL WITH
DEFAULT '',
       EXPLAIN_LEVEL     CHAR(1)       NOT NULL WITH
DEFAULT '',
       STMTNO            INTEGER       NOT NULL WITH
DEFAULT 0,
       SECTNO            INTEGER       NOT NULL WITH
DEFAULT 0,
       QUERYNO           INTEGER       NOT NULL WITH
DEFAULT 0,
       QUERYTAG          CHAR(20)      NOT NULL WITH
DEFAULT '',
       TBNAME            VARCHAR(128)  NOT NULL,
       TBCREATOR         VARCHAR(128)  NOT NULL WITH
DEFAULT '',
       PMID              SMALLINT      NOT NULL,
       TBSPACE           VARCHAR(128)  NOT NULL WITH
DEFAULT '',
       COLNAMES          CLOB(2M)      NOT NULL NOT
LOGGED WITH DEFAULT '',
       COLCOUNT          SMALLINT      NOT NULL WITH
DEFAULT 0,
       REPLICATE         CHAR(1)       NOT NULL WITH
DEFAULT 'N',
       COST              DOUBLE        NOT NULL,
       USEIT             CHAR(1),
       RUN_ID            TIMESTAMP,
                                 FOREIGN
KEY(RUN_ID)
                                 REFERENCES
ADVISE_INSTANCE (START_TIME)
                                 ON DELETE
CASCADE)
IN USERSPACE1
INDEX IN USERSPACE1;

--
-- ADVISE_TABLE
--
CREATE TABLE ADVISE_TABLE (
       RUN_ID            TIMESTAMP,
       TABLE_NAME        VARCHAR(128)  NOT NULL,
       TABLE_SCHEMA      VARCHAR(128)  NOT NULL WITH
DEFAULT '',
       TABLESPACE        VARCHAR(128)  NOT NULL WITH
DEFAULT '',
       SELECTION_FLAG    VARCHAR(8)    NOT NULL WITH
DEFAULT '',
       TABLE_EXISTS      CHAR(1)       NOT NULL WITH
DEFAULT '',
       USE_TABLE         CHAR(1)       NOT NULL WITH
DEFAULT '',
       GEN_COLUMNS       CLOB(2M)      NOT NULL NOT
LOGGED WITH DEFAULT '',
       ORGANIZE_BY       CLOB(2M)      NOT NULL NOT
LOGGED WITH DEFAULT '',
       CREATION_TEXT     CLOB(2M)      NOT NULL NOT
LOGGED WITH DEFAULT '',
       ALTER_COMMAND     CLOB(2M)      NOT NULL NOT
LOGGED WITH DEFAULT '',
       DISKUSE           DOUBLE        NOT NULL WITH
DEFAULT 0 ,
                                 FOREIGN KEY
(RUN_ID)
                                 REFERENCES
ADVISE_INSTANCE (START_TIME)
                                 ON DELETE
CASCADE)
IN USERSPACE1
INDEX IN USERSPACE1;


--
-- Commit work
--
COMMIT WORK;

--
-- Optional Indexes: The following indexes are
recommended for improved performance
-- of explain-related utilities. These create index
statements can be deleted, or
-- the indexes dropped if space is a problem.
--
CREATE INDEX STMT_I1 on
   EXPLAIN_STATEMENT(EXPLAIN_TIME, EXPLAIN_LEVEL,
STMTNO, SECTNO);
CREATE INDEX ARG_I1 on
   EXPLAIN_ARGUMENT(EXPLAIN_TIME, EXPLAIN_LEVEL,
STMTNO, SECTNO, OPERATOR_ID);
CREATE INDEX PRD_I1 on
   EXPLAIN_PREDICATE(EXPLAIN_TIME, EXPLAIN_LEVEL,
STMTNO, SECTNO, OPERATOR_ID);
CREATE INDEX OPR_I1 on
   EXPLAIN_OPERATOR(EXPLAIN_TIME, EXPLAIN_LEVEL,
STMTNO, SECTNO, OPERATOR_ID);
CREATE INDEX STM_I1 on
   EXPLAIN_STREAM(EXPLAIN_TIME, EXPLAIN_LEVEL,
STMTNO, SECTNO);
CREATE INDEX OBJ_I1 on
   EXPLAIN_OBJECT(EXPLAIN_TIME, EXPLAIN_LEVEL,
STMTNO, SECTNO);
CREATE INDEX EXP_DIAG_DAT_I1 on
   EXPLAIN_DIAGNOSTIC_DATA(EXPLAIN_TIME,
EXPLAIN_LEVEL, STMTNO, SECTNO, DIAGNOSTIC_ID,
ORDINAL);

CREATE INDEX IDX_I1 on
   ADVISE_INDEX (EXPLAIN_TIME);
CREATE INDEX IDX_I2 on
   ADVISE_INDEX (NAME, EXPLAIN_TIME);
CREATE INDEX MQT_I1 on
   ADVISE_MQT (EXPLAIN_TIME);
```

```
CREATE INDEX MQT_I2 on
   ADVISE_MQT (NAME,EXPLAIN_TIME);
CREATE INDEX PRT_I1 on
   ADVISE_PARTITION (EXPLAIN_TIME);

--
-- Commit work
--
COMMIT WORK;

--
-- The following function formats the explain
diagnostic table messages
--
CREATE FUNCTION EXPLAIN_GET_MSGS( EXPLAIN_REQUESTER
VARCHAR(128),
                                  EXPLAIN_TIME
TIMESTAMP,
                                  SOURCE_NAME
VARCHAR(128),
                                  SOURCE_SCHEMA
VARCHAR(128),
                                  SOURCE_VERSION
VARCHAR(64),
                                  EXPLAIN_LEVEL
CHAR(1),
                                  STMTNO
INTEGER,
                                  SECTNO
INTEGER,
                                  LOCALE
VARCHAR(33) )
  RETURNS TABLE ( EXPLAIN_REQUESTER VARCHAR(128),
                  EXPLAIN_TIME      TIMESTAMP,
                  SOURCE_NAME       VARCHAR(128),
                  SOURCE_SCHEMA     VARCHAR(128),
                  SOURCE_VERSION    VARCHAR(64),
                  EXPLAIN_LEVEL     CHAR(1),
                  STMTNO            INTEGER,
                  SECTNO            INTEGER,
                  DIAGNOSTIC_ID     INTEGER,
                  LOCALE            VARCHAR(33),
                  MSG               VARCHAR(4096) )
  SPECIFIC EXPLAIN_GET_MSGS
  LANGUAGE SQL
  DETERMINISTIC
  NO EXTERNAL ACTION
  READS SQL DATA
  RETURN SELECT A.A_EXPLAIN_REQUESTER,
                A.A_EXPLAIN_TIME,
                A.A_SOURCE_NAME,
                A.A_SOURCE_SCHEMA,
                A.A_SOURCE_VERSION,
                A.A_EXPLAIN_LEVEL,
                A.A_STMTNO,
                A.A_SECTNO,
                A.A_DIAGNOSTIC_ID,
                F.LOCALE,
                F.MSG
         FROM EXPLAIN_DIAGNOSTIC A(
A_EXPLAIN_REQUESTER,
                                   A_EXPLAIN_TIME,
                                   A_SOURCE_NAME,
                                   A_SOURCE_SCHEMA,
                                   A_SOURCE_VERSION,
                                   A_EXPLAIN_LEVEL,
                                   A_STMTNO,
                                   A_SECTNO,
                                   A_DIAGNOSTIC_ID,
                                   A_CODE ),
              TABLE( SYSPROC.EXPLAIN_GET_MSG(
                       CAST( NULL AS VARCHAR(33) ),
                       A.A_CODE,
                       ( SELECT TOKEN FROM
EXPLAIN_DIAGNOSTIC_DATA B
                          WHERE A.A_EXPLAIN_REQUESTER
= B.EXPLAIN_REQUESTER
                            AND A.A_EXPLAIN_TIME
= B.EXPLAIN_TIME
                            AND A.A_SOURCE_NAME
= B.SOURCE_NAME
                            AND A.A_SOURCE_SCHEMA
= B.SOURCE_SCHEMA
                            AND A.A_SOURCE_VERSION
= B.SOURCE_VERSION
                            AND A.A_EXPLAIN_LEVEL
= B.EXPLAIN_LEVEL
                            AND A.A_STMTNO
= B.STMTNO
                            AND A.A_SECTNO
= B.SECTNO
                            AND A.A_DIAGNOSTIC_ID
= B.DIAGNOSTIC_ID
                            AND B.ORDINAL=1 ),
                         ( SELECT TOKEN FROM
EXPLAIN_DIAGNOSTIC_DATA B
                          WHERE A.A_EXPLAIN_REQUESTER
= B.EXPLAIN_REQUESTER
                            AND A.A_EXPLAIN_TIME
= B.EXPLAIN_TIME
                            AND A.A_SOURCE_NAME
= B.SOURCE_NAME
                            AND A.A_SOURCE_SCHEMA
= B.SOURCE_SCHEMA
                            AND A.A_SOURCE_VERSION
= B.SOURCE_VERSION
                            AND A.A_EXPLAIN_LEVEL
= B.EXPLAIN_LEVEL
                            AND A.A_STMTNO
= B.STMTNO
                            AND A.A_SECTNO
= B.SECTNO
                            AND A.A_DIAGNOSTIC_ID
= B.DIAGNOSTIC_ID
                            AND B.ORDINAL=2 ),
                         ( SELECT TOKEN FROM
EXPLAIN_DIAGNOSTIC_DATA B
                          WHERE A.A_EXPLAIN_REQUESTER
= B.EXPLAIN_REQUESTER
                            AND A.A_EXPLAIN_TIME
= B.EXPLAIN_TIME
                            AND A.A_SOURCE_NAME
= B.SOURCE_NAME
                            AND A.A_SOURCE_SCHEMA
= B.SOURCE_SCHEMA
                            AND A.A_SOURCE_VERSION
= B.SOURCE_VERSION
                            AND A.A_EXPLAIN_LEVEL
= B.EXPLAIN_LEVEL
                            AND A.A_STMTNO
= B.STMTNO
                            AND A.A_SECTNO
= B.SECTNO
                            AND A.A_DIAGNOSTIC_ID
= B.DIAGNOSTIC_ID
                            AND B.ORDINAL=3 ) ) F
          WHERE ( EXPLAIN_REQUESTER IS NULL OR
                  EXPLAIN_REQUESTER =
A.A_EXPLAIN_REQUESTER )
            AND ( EXPLAIN_TIME      IS NULL OR
                  EXPLAIN_TIME      = A.A_EXPLAIN_TIME
)
            AND ( SOURCE_NAME       IS NULL OR
                  SOURCE_NAME       = A.A_SOURCE_NAME
)
            AND ( SOURCE_SCHEMA     IS NULL OR
                  SOURCE_SCHEMA     =
A.A_SOURCE_SCHEMA     )
            AND ( SOURCE_VERSION    IS NULL OR
                  SOURCE_VERSION    =
A.A_SOURCE_VERSION    )
            AND ( EXPLAIN_LEVEL     IS NULL OR
                  EXPLAIN_LEVEL     =
A.A_EXPLAIN_LEVEL     )
            AND ( STMTNO            IS NULL OR
                  STMTNO            = A.A_STMTNO
)
            AND ( SECTNO            IS NULL OR
                  SECTNO            = A.A_SECTNO
);

--
-- Commit work
--
COMMIT WORK;
```

utils/UNEXPLAIN.ddl

```
-------------------------------------------------------
------------------------
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```

```
-----------------------------------------------------
-------------------------

DROP INDEX STMT_I1;
DROP INDEX ARG_I1;
DROP INDEX PRD_I1;
DROP INDEX OPR_I1;
DROP INDEX STM_I1;
DROP INDEX OBJ_I1;
DROP TABLE EXPLAIN_INSTANCE;
DROP TABLE EXPLAIN_STATEMENT;
DROP TABLE EXPLAIN_ARGUMENT;
DROP TABLE EXPLAIN_OBJECT;
DROP TABLE EXPLAIN_OPERATOR;
DROP TABLE EXPLAIN_PREDICATE;
DROP TABLE EXPLAIN_STREAM;
DROP TABLE ADVISE_INDEX;
DROP TABLE ADVISE_WORKLOAD;
```

nullDB/nullDB.h

```
// The following ifdef block is the standard way of
creating macros which make exporting
// from a DLL simpler. All files within this DLL are
compiled with the NULLDB_EXPORTS
// symbol defined on the command line. this symbol
should not be defined on any project
// that uses this DLL. This way any other project
whose source files include this file see
// NULLDB_API functions as being imported from a DLL,
whereas this DLL sees symbols
// defined with this macro as being exported.
#ifdef NULLDB_EXPORTS
#define NULLDB_API __declspec(dllexport)
#else
#define NULLDB_API __declspec(dllimport)
#endif

extern NULLDB_API int dataSet;

extern "C" NULLDB_API int do_nord(struct nord_wrapper
*nord,void *ctx);
extern "C" NULLDB_API int do_pymt(struct paym_wrapper
*pymt,void *ctx);
extern "C" NULLDB_API int do_ords(struct ords_wrapper
*ords,void *ctx);
extern "C" NULLDB_API int do_dlvy(struct dlvy_wrapper
*dlvy,void *ctx);
extern "C" NULLDB_API int do_stok(struct stok_wrapper
*stok,void *ctx);

extern "C" NULLDB_API int connect_db(char
*dbName,void **ctx);
extern "C" NULLDB_API int disconnect_db(void *ctx);
```

nullDB/nullDB.cpp

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

#include "stdafx.h"
#include "nullDB.h"
#include "..\tpccIsapi\tpcc.h"

BOOL APIENTRY DllMain( HANDLE hModule,
                       DWORD  ul_reason_for_call,
                       LPVOID lpReserved
                                                    )
{
          switch (ul_reason_for_call)
          {
          case DLL_PROCESS_ATTACH:
          case DLL_THREAD_ATTACH:
          case DLL_THREAD_DETACH:
          case DLL_PROCESS_DETACH:
                    break;
          }
    return TRUE;
}

// This is an example of an exported variable

NULLDB_API int dataSet = 0;

extern "C" NULLDB_API int connect_db(char
*dbName,void **ctx)
{
          return OK;
}

extern "C" NULLDB_API int disconnect_db(void *ctx)
{
          return OK;
}

extern "C" NULLDB_API int do_nord(struct
nord_wrapper *nord,void *ctx)
{
          nord->out_nord.s_transtatus = 0;

          if (dataSet == 0)
          {
                    strcpy(nord-
>out_nord.s_C_LAST,"NOYOLA");
                    strcpy(nord-
>out_nord.s_C_CREDIT,"GC");
                    nord->out_nord.s_W_TAX = 1694;
                    nord->out_nord.s_D_TAX = 967;
                    nord->out_nord.s_C_DISCOUNT =
1024;
                    nord->out_nord.s_O_ID = 3013;
                    nord->out_nord.s_O_OL_CNT = 4;
                    nord->out_nord.s_total_amount =
32345;
                    nord->out_nord.s_O_ENTRY_D_time =
1234567890;

                    strcpy(nord-
>out_nord.item[0].s_I_NAME,"98 Toyota Supra Turbo");
                    nord-
>in_nord.in_item[0].s_OL_I_ID = 1;
                    nord-
>in_nord.in_item[0].s_OL_QUANTITY = 1;
                    nord-
>in_nord.in_item[0].s_OL_SUPPLY_W_ID = 1;
                    nord->out_nord.item[0].s_I_PRICE
= 42000;
                    nord-
>out_nord.item[0].s_OL_AMOUNT = 554000;
                    nord-
>out_nord.item[0].s_S_QUANTITY = 31;
                    nord-
>out_nord.item[0].s_brand_generic = 'G';

                    strcpy(nord-
>out_nord.item[1].s_I_NAME,"HKS Turbo Timer");
                    nord-
>in_nord.in_item[1].s_OL_I_ID = 1;
                    nord-
>in_nord.in_item[1].s_OL_QUANTITY = 1;
                    nord-
>in_nord.in_item[1].s_OL_SUPPLY_W_ID = 1;
                    nord->out_nord.item[1].s_I_PRICE
= 4500;
                    nord-
>out_nord.item[1].s_OL_AMOUNT = 438100;
                    nord-
>out_nord.item[1].s_S_QUANTITY = 57;
                    nord-
>out_nord.item[1].s_brand_generic = 'G';

                    strcpy(nord-
>out_nord.item[2].s_I_NAME,"TRD GEN2 Exhaust");
                    nord-
>in_nord.in_item[2].s_OL_I_ID = 1;
                    nord-
>in_nord.in_item[2].s_OL_QUANTITY = 1;
                    nord-
>in_nord.in_item[2].s_OL_SUPPLY_W_ID = 1;
                    nord->out_nord.item[2].s_I_PRICE
= 6734;
                    nord-
>out_nord.item[2].s_OL_AMOUNT = 47173;
                    nord-
>out_nord.item[2].s_S_QUANTITY = 42;
                    nord-
>out_nord.item[2].s_brand_generic = 'G';

                    strcpy(nord-
>out_nord.item[3].s_I_NAME,"BLITZ DUAL-SOLENOID");
                    nord-
>in_nord.in_item[3].s_OL_I_ID = 1;
                    nord-
>in_nord.in_item[3].s_OL_QUANTITY = 1;
```

```
                    nord-
>in_nord.in_item[3].s_OL_SUPPLY_W_ID = 1;
                    nord->out_nord.item[3].s_I_PRICE
= 35000;
                    nord-
>out_nord.item[3].s_OL_AMOUNT = 12096;
                    nord-
>out_nord.item[3].s_S_QUANTITY = 84;
                    nord-
>out_nord.item[3].s_brand_generic = 'G';

                    dataSet = 1;
          }
          else
          {
                    strcpy(nord-
>out_nord.s_C_LAST,"SIMPSON");
                    strcpy(nord-
>out_nord.s_C_CREDIT,"GC");
                    nord->out_nord.s_W_TAX = 913;
                    nord->out_nord.s_D_TAX = 1519;
                    nord->out_nord.s_C_DISCOUNT =
958;
                    nord->out_nord.s_O_ID = 1410;
                    nord->out_nord.s_O_OL_CNT = 9;
                    nord->out_nord.s_total_amount =
12345;
                    nord->out_nord.s_O_ENTRY_D_time =
1234567890;

                    strcpy(nord-
>out_nord.item[0].s_I_NAME,"97 Toyota Supra NA");
                    nord-
>in_nord.in_item[0].s_OL_I_ID = 1;
                    nord-
>in_nord.in_item[0].s_OL_QUANTITY = 1;
                    nord-
>in_nord.in_item[0].s_OL_SUPPLY_W_ID = 1;
                    nord->out_nord.item[0].s_I_PRICE
= 30000;
                    nord-
>out_nord.item[0].s_OL_AMOUNT = 769600;
                    nord-
>out_nord.item[0].s_S_QUANTITY = 97;
                    nord-
>out_nord.item[0].s_brand_generic = 'G';

                    strcpy(nord-
>out_nord.item[1].s_I_NAME,"98 Turbo Stereo");
                    nord-
>in_nord.in_item[1].s_OL_I_ID = 1;
                    nord-
>in_nord.in_item[1].s_OL_QUANTITY = 1;
                    nord-
>in_nord.in_item[1].s_OL_SUPPLY_W_ID = 1;
                    nord->out_nord.item[1].s_I_PRICE
= 10001;
                    nord-
>out_nord.item[1].s_OL_AMOUNT = 192999;
                    nord-
>out_nord.item[1].s_S_QUANTITY = 51;
                    nord-
>out_nord.item[1].s_brand_generic = 'G';

                    strcpy(nord-
>out_nord.item[2].s_I_NAME,"XERD Exhaust Header");
                    nord-
>in_nord.in_item[2].s_OL_I_ID = 1;
                    nord-
>in_nord.in_item[2].s_OL_QUANTITY = 1;
                    nord-
>in_nord.in_item[2].s_OL_SUPPLY_W_ID = 1;
                    nord->out_nord.item[2].s_I_PRICE
= 4000;
                    nord-
>out_nord.item[2].s_OL_AMOUNT = 41670;
                    nord-
>out_nord.item[2].s_S_QUANTITY = 14;
                    nord-
>out_nord.item[2].s_brand_generic = 'G';

                    strcpy(nord-
>out_nord.item[3].s_I_NAME,"LEXOL Conditioner");
                    nord-
>in_nord.in_item[3].s_OL_I_ID = 1;
                    nord-
>in_nord.in_item[3].s_OL_QUANTITY = 1;
                    nord-
>in_nord.in_item[3].s_OL_SUPPLY_W_ID = 1;
                    nord->out_nord.item[3].s_I_PRICE
= 1400;
                    nord-
>out_nord.item[3].s_OL_AMOUNT = 17213;
                    nord-
>out_nord.item[3].s_S_QUANTITY = 90;
                    nord-
>out_nord.item[3].s_brand_generic = 'G';

                    strcpy(nord-
>out_nord.item[4].s_I_NAME,"TRD Sticker 1");
                    nord-
>in_nord.in_item[4].s_OL_I_ID = 1;
                    nord-
>in_nord.in_item[4].s_OL_QUANTITY = 1;
                    nord-
>in_nord.in_item[4].s_OL_SUPPLY_W_ID = 1;
                    nord->out_nord.item[4].s_I_PRICE
= 1400;
                    nord-
>out_nord.item[4].s_OL_AMOUNT = 27232;
                    nord-
>out_nord.item[4].s_S_QUANTITY = 75;
                    nord-
>out_nord.item[4].s_brand_generic = 'G';

                    strcpy(nord-
>out_nord.item[5].s_I_NAME,"TRD Sticker 2");
                    nord-
>in_nord.in_item[5].s_OL_I_ID = 1;
                    nord-
>in_nord.in_item[5].s_OL_QUANTITY = 1;
                    nord-
>in_nord.in_item[5].s_OL_SUPPLY_W_ID = 1;
                    nord->out_nord.item[5].s_I_PRICE
= 4400;
                    nord-
>out_nord.item[5].s_OL_AMOUNT = 35808;
                    nord-
>out_nord.item[5].s_S_QUANTITY = 22;
                    nord-
>out_nord.item[5].s_brand_generic = 'G';

                    strcpy(nord-
>out_nord.item[6].s_I_NAME,"TRD Sticker 3");
                    nord-
>in_nord.in_item[6].s_OL_I_ID = 1;
                    nord-
>in_nord.in_item[6].s_OL_QUANTITY = 1;
                    nord-
>in_nord.in_item[6].s_OL_SUPPLY_W_ID = 1;
                    nord->out_nord.item[6].s_I_PRICE
= 5500;
                    nord-
>out_nord.item[6].s_OL_AMOUNT = 44392;
                    nord-
>out_nord.item[6].s_S_QUANTITY = 21;
                    nord-
>out_nord.item[6].s_brand_generic = 'G';

                    strcpy(nord-
>out_nord.item[7].s_I_NAME,"TRD Sticker 4");
                    nord-
>in_nord.in_item[7].s_OL_I_ID = 1;
                    nord-
>in_nord.in_item[7].s_OL_QUANTITY = 1;
                    nord-
>in_nord.in_item[7].s_OL_SUPPLY_W_ID = 1;
                    nord->out_nord.item[7].s_I_PRICE
= 8300;
                    nord-
>out_nord.item[7].s_OL_AMOUNT = 83410;
                    nord-
>out_nord.item[7].s_S_QUANTITY = 35;
                    nord-
>out_nord.item[7].s_brand_generic = 'G';

                    strcpy(nord-
>out_nord.item[8].s_I_NAME,"98 Toyota OEM Bra");
                    nord-
>in_nord.in_item[8].s_OL_I_ID = 1;
                    nord-
>in_nord.in_item[8].s_OL_QUANTITY = 1;
                    nord-
>in_nord.in_item[8].s_OL_SUPPLY_W_ID = 1;
                    nord->out_nord.item[8].s_I_PRICE
= 10000;
                    nord-
>out_nord.item[8].s_OL_AMOUNT = 43160;
                    nord-
>out_nord.item[8].s_S_QUANTITY = 73;
                    nord-
>out_nord.item[8].s_brand_generic = 'G';

                    dataSet = 0;
          }

          return OK;
```

```
}

extern "C"  NULLDB_API int do_pymt(struct
paym_wrapper *pymt,void *ctx)
{
          pymt->out_paym.s_transtatus = 0;

          if (dataSet == 0)
          {
                    pymt->out_paym.s_C_CREDIT_LIM =
5000000;
                    pymt->out_paym.s_C_DISCOUNT =
1024;
                    pymt->out_paym.s_C_BALANCE =
17815;
                    pymt->out_paym.s_C_ID = 89;
                    pymt->out_paym.s_H_DATE_time =
1234567890;

                    strcpy(pymt-
>out_paym.s_W_STREET_1,"11501 Burnet Rd");
                    strcpy(pymt-
>out_paym.s_W_STREET_2,"BLD 905");
                    strcpy(pymt-
>out_paym.s_W_CITY,"Austin");
                    strcpy(pymt-
>out_paym.s_W_STATE,"TX");
                    strcpy(pymt-
>out_paym.s_W_ZIP,"78758");
                    strcpy(pymt-
>out_paym.s_D_STREET_1,"11900 Hobby Horse");
                    strcpy(pymt-
>out_paym.s_D_STREET_2,"Apt. 525");
                    strcpy(pymt-
>out_paym.s_D_CITY,"Valley");
                    strcpy(pymt-
>out_paym.s_D_STATE,"TX");
                    strcpy(pymt-
>out_paym.s_D_ZIP,"78559");
                    strcpy(pymt-
>out_paym.s_C_FIRST,"Jim");
                    strcpy(pymt-
>out_paym.s_C_MIDDLE,"F");
                    strcpy(pymt-
>out_paym.s_C_LAST,"Truck");
                    strcpy(pymt-
>out_paym.s_C_STREET_1,"100 N Solis");
                    strcpy(pymt-
>out_paym.s_C_STREET_2,"Flat 343");
                    strcpy(pymt-
>out_paym.s_C_CITY,"Cambridge");
                    strcpy(pymt-
>out_paym.s_C_STATE,"NY");
                    strcpy(pymt-
>out_paym.s_C_ZIP,"785585432");
                    strcpy(pymt-
>out_paym.s_C_PHONE,"1234567890123456");
                    pymt->out_paym.s_C_SINCE_time =
0;
                    strcpy(pymt-
>out_paym.s_C_CREDIT,"BC");
                    strcpy(pymt-
>out_paym.s_C_DATA,"XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXX");
                    dataSet = 1;
          }
          else
          {
                    pymt->out_paym.s_C_CREDIT_LIM =
4000000;
                    pymt->out_paym.s_C_DISCOUNT =
52400;
                    pymt->out_paym.s_C_BALANCE =
14080;
                    pymt->out_paym.s_C_ID = 3180;
                    pymt->out_paym.s_H_DATE_time =
1234567890;

                    strcpy(pymt-
>out_paym.s_W_STREET_1,"1201 Park Ave.");
                    strcpy(pymt-
>out_paym.s_W_STREET_2,"Suite 432");
                    strcpy(pymt-
>out_paym.s_W_CITY,"Denver");
                    strcpy(pymt-
>out_paym.s_W_STATE,"CO");
                    strcpy(pymt-
>out_paym.s_W_ZIP,"787562356");
                    strcpy(pymt-
>out_paym.s_D_STREET_1,"3404 Garth Rd");
                    strcpy(pymt-
>out_paym.s_D_STREET_2,"Suite 320");
                    strcpy(pymt-
>out_paym.s_D_CITY,"Austin");
                    strcpy(pymt-
>out_paym.s_D_STATE,"TX");
                    strcpy(pymt-
>out_paym.s_D_ZIP,"785598767");
                    strcpy(pymt-
>out_paym.s_C_FIRST,"John");
                    strcpy(pymt-
>out_paym.s_C_MIDDLE,"P");
                    strcpy(pymt-
>out_paym.s_C_LAST,"Williams");
                    strcpy(pymt-
>out_paym.s_C_STREET_1,"North Rab Road");
                    strcpy(pymt-
>out_paym.s_C_STREET_2,"Apt 343");
                    strcpy(pymt-
>out_paym.s_C_CITY,"La Fiera");
                    strcpy(pymt-
>out_paym.s_C_STATE,"TX");
                    strcpy(pymt-
>out_paym.s_C_ZIP,"785585432");
                    strcpy(pymt-
>out_paym.s_C_PHONE,"1234567890123456");
                    pymt->out_paym.s_C_SINCE_time =
0;
                    strcpy(pymt-
>out_paym.s_C_CREDIT,"GC");
                    strcpy(pymt-
>out_paym.s_C_DATA,"Great Ebaye");
                    dataSet = 0;
          }
          return OK;
}

extern "C"  NULLDB_API int do_ords(struct
ords_wrapper *ords,void *ctx)
{
          ords->out_ords.s_transtatus = 0;

          if (dataSet == 0)
          {
                    ords->out_ords.s_C_BALANCE =
100000;
                    ords->out_ords.s_C_ID = 3;
                    ords->out_ords.s_O_ID = 1696;
                    ords->out_ords.s_O_CARRIER_ID =
9;
                    ords->out_ords.s_ol_cnt = 6;
                    ords->out_ords.s_O_ENTRY_D_time =
1234567890;

                    strcpy(ords-
>out_ords.s_C_FIRST,"Homer");
                    strcpy(ords-
>out_ords.s_C_MIDDLE,"J");
                    strcpy(ords-
>out_ords.s_C_LAST,"Simpson");

                    ords-
>out_ords.item[0].s_OL_AMOUNT = 30000;
                    ords->out_ords.item[0].s_OL_I_ID
= 23492;
                    ords-
>out_ords.item[0].s_OL_SUPPLY_W_ID = 9;
                    ords-
>out_ords.item[0].s_OL_QUANTITY = 5;
                    ords-
>out_ords.item[0].s_OL_DELIVERY_D_time = 1234567890;

                    ords-
>out_ords.item[1].s_OL_AMOUNT = 12300;
                    ords->out_ords.item[1].s_OL_I_ID
= 18860;
                    ords-
>out_ords.item[1].s_OL_SUPPLY_W_ID = 9;
                    ords-
>out_ords.item[1].s_OL_QUANTITY = 5;
                    ords-
>out_ords.item[1].s_OL_DELIVERY_D_time = 1234567890;

                    ords-
>out_ords.item[2].s_OL_AMOUNT = 15000;
                    ords->out_ords.item[2].s_OL_I_ID
= 90488;
                    ords-
>out_ords.item[2].s_OL_SUPPLY_W_ID = 9;
                    ords-
>out_ords.item[2].s_OL_QUANTITY = 5;
                    ords-
>out_ords.item[2].s_OL_DELIVERY_D_time = 1234567890;
```

```
                    ords-
>out_ords.item[3].s_OL_AMOUNT = 25000;
                    ords->out_ords.item[3].s_OL_I_ID
= 22741;
                    ords-
>out_ords.item[3].s_OL_SUPPLY_W_ID = 9;
                    ords-
>out_ords.item[3].s_OL_QUANTITY = 5;
                    ords-
>out_ords.item[3].s_OL_DELIVERY_D_time = 1234567890;

                    ords-
>out_ords.item[4].s_OL_AMOUNT = 20000;
                    ords->out_ords.item[4].s_OL_I_ID
= 92952;
                    ords-
>out_ords.item[4].s_OL_SUPPLY_W_ID = 9;
                    ords-
>out_ords.item[4].s_OL_QUANTITY = 5;
                    ords-
>out_ords.item[4].s_OL_DELIVERY_D_time = 1234567890;

                    ords-
>out_ords.item[5].s_OL_AMOUNT = 2345;
                    ords->out_ords.item[5].s_OL_I_ID
= 29956;
                    ords-
>out_ords.item[5].s_OL_SUPPLY_W_ID = 9;
                    ords-
>out_ords.item[5].s_OL_QUANTITY = 5;
                    ords-
>out_ords.item[5].s_OL_DELIVERY_D_time = 1234567890;

                    dataSet = 1;
          }
          else
          {
                    ords->out_ords.s_C_BALANCE =
123000;
                    ords->out_ords.s_C_ID = 856;
                    ords->out_ords.s_O_ID = 418;
                    ords->out_ords.s_O_CARRIER_ID =
10;
                    ords->out_ords.s_ol_cnt = 5;
                    strcpy(ords-
>out_ords.s_C_FIRST,"Erick");
                    strcpy(ords-
>out_ords.s_C_MIDDLE,"J");
                    strcpy(ords-
>out_ords.s_C_LAST,"Forman");
                    ords->out_ords.s_O_ENTRY_D_time =
1234567890;

                    ords-
>out_ords.item[0].s_OL_AMOUNT = 12000;
                    ords->out_ords.item[0].s_OL_I_ID
= 54602;
                    ords-
>out_ords.item[0].s_OL_SUPPLY_W_ID = 10;
                    ords-
>out_ords.item[0].s_OL_QUANTITY = 5;
                    ords-
>out_ords.item[0].s_OL_DELIVERY_D_time = 1234567890;

                    ords-
>out_ords.item[1].s_OL_AMOUNT = 2300;
                    ords->out_ords.item[1].s_OL_I_ID
= 18860;
                    ords-
>out_ords.item[1].s_OL_SUPPLY_W_ID = 10;
                    ords-
>out_ords.item[1].s_OL_QUANTITY = 5;
                    ords-
>out_ords.item[1].s_OL_DELIVERY_D_time = 1234567890;

                    ords-
>out_ords.item[2].s_OL_AMOUNT = 56009;
                    ords->out_ords.item[2].s_OL_I_ID
= 90488;
                    ords-
>out_ords.item[2].s_OL_SUPPLY_W_ID = 10;
                    ords-
>out_ords.item[2].s_OL_QUANTITY = 5;
                    ords-
>out_ords.item[2].s_OL_DELIVERY_D_time = 1234567890;

                    ords-
>out_ords.item[3].s_OL_AMOUNT = 98000;
                    ords->out_ords.item[3].s_OL_I_ID
= 22741;
                    ords-
>out_ords.item[3].s_OL_SUPPLY_W_ID = 10;
                    ords-
>out_ords.item[3].s_OL_QUANTITY = 5;
                    ords-
>out_ords.item[3].s_OL_DELIVERY_D_time = 1234567890;

                    ords-
>out_ords.item[4].s_OL_AMOUNT = 25000;
                    ords->out_ords.item[4].s_OL_I_ID
= 92952;
                    ords-
>out_ords.item[4].s_OL_SUPPLY_W_ID = 10;
                    ords-
>out_ords.item[4].s_OL_QUANTITY = 5;
                    ords-
>out_ords.item[4].s_OL_DELIVERY_D_time = 1234567890;

                    dataSet = 0;
          }

          return OK;
}

extern "C"  NULLDB_API int do_dlvy(struct
dlvy_wrapper *dlvy,void *ctx)
{
          dlvy->out_dlvy.s_transtatus = 0;

          if (dataSet == 0)
          {
                    dataSet = 1;

                    for(int
districtIndex=0;districtIndex <
DISTRICTS_PER_WAREHOUSE;districtIndex++)
                              dlvy-
>out_dlvy.s_O_ID[districtIndex]= 2055;
          }
          else
          {
                    for(int
districtIndex=0;districtIndex <
DISTRICTS_PER_WAREHOUSE;districtIndex++)
                              dlvy-
>out_dlvy.s_O_ID[districtIndex]= 2056;

                    dataSet = 0;
          }
          return OK;
}


extern "C"  NULLDB_API int do_stok(struct
stok_wrapper *stok,void *ctx)
{
          stok->out_stok.s_transtatus = 0;

          if (dataSet == 0)
          {
                    stok->out_stok.s_low_stock = 100;

                    dataSet = 1;
          }
          else
          {
                    stok->out_stok.s_low_stock = 40;

                    dataSet = 0;
          }
          return OK;
}
```

nullDB/stdafx.h

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

#pragma once

#define WIN32_LEAN_AND_MEAN             // Exclude
rarely-used stuff from Windows headers

#define _ATL_CSTRING_EXPLICIT_CONSTRUCTORS        //
some CString constructors will be explicit

// turns off ATL's hiding of some common and often
safely ignored warning messages
#define _ATL_ALL_WARNINGS
```

```
// critical error descriptions will only be shown to
the user
// in debug builds. they will always be logged to the
event log
#ifndef _DEBUG
#define ATL_CRITICAL_ISAPI_ERROR_LOGONLY
#endif


#ifndef _WIN32_WINNT
#define _WIN32_WINNT 0x0403
#endif

// TODO: this disables support for registering COM
objects
// exported by this project since the project
contains no
// COM objects or typelib. If you wish to export COM
objects
// from this project, add a typelib and remove this
line
#define _ATL_NO_COM_SUPPORT

#include "resource.h"
#include <atlsrvres.h>
#include <atlisapi.h>
#include <atlstencil.h>

// TODO: reference additional headers your program
requires here
```

nullDB/stdafx.cpp

```
// stdafx.cpp : source file that includes just the
standard includes
//        tpccIsapi.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
```

tpccIsapi/htmlPhraser.h

```
////////////////////////////////////////////////////
/////////////////
// htmlPharaser.h
////////////////////////////////////////////////////
/////////////////
// Class to decode a html query string

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

#pragma once

#include <memory.h>

////////////////////////////////////////////////////
/////////////////
// Definitions
////////////////////////////////////////////////////
/////////////////

#define NULL
                    0

#define COMMAND_ID
          0
#define   TERM_ID
                    1
#define   W_ID
                    2
#define   D_ID
                    3
#define C_ID
                    4
#define C_NAME
                    5

#define C_W_ID
                    6
#define C_D_ID
                    7
#define AMT_PAID
          8

#define STK_THRESHOLD
          9
#define CARRIER_NUM
          10

#define ITEM_LIST_START
          11
#define ITEM_LIST_FINISH                          55

#define MAX_QUERY_ID
          55
#define MAX_FIELD_LEN
          256
#define MAX_FIELD_NUM
          56

////////////////////////////////////////////////////
/////////////////
// Command Codes
////////////////////////////////////////////////////
/////////////////

#define NEW_ORDER_CODE
                    'n'
#define PAYMENT_CODE
                   'p'

#define ORDER_STATUS_CODE
            'o'
#define DELIVERY_CODE
                    'd'
#define STOCK_CODE
                    's'
#define EXIT_CODE
                    'e'
#define MENU_CODE
                    'm'

#define   COMMAND_LOGIN
                    0
#define   COMMAND_NEW_ORDER
          1
#define   COMMAND_PAYMENT
                    2
#define   COMMAND_ORDER_STATUS
          3
#define   COMMAND_DELIVERY
          4
#define   COMMAND_STOCK
                    5
#define   COMMAND_EXIT
                    6

#define   COMMAND_LOGIN_RESULTS
                    7
#define   COMMAND_NEW_ORDER_RESULTS
          8
#define   COMMAND_PAYMENT_RESULTS
                    9
#define   COMMAND_ORDER_STATUS_RESULTS            10
#define   COMMAND_DELIVERY_RESULTS
          11
#define   COMMAND_STOCK_RESULTS
                    12

////////////////////////////////////////////////////
/////////////////
// Class htmlPhraser
////////////////////////////////////////////////////
/////////////////

class htmlPhraser
{
          // Constructors / Destructor
          public:
                    htmlPhraser(char *queryString);
                    ~htmlPhraser()
                    {return;}

           // geters
           public:
                    int       getCommandId();
                    int validate(int txnType);

                    char *    get_TERM_ID()
                    {return iQueryValues[TERM_ID];}
                    char *    get_W_ID()
                              {return
iQueryValues[W_ID];}
```

```
                    char *    get_D_ID()
                              {return
iQueryValues[D_ID];}
                    char *    get_C_ID()
                              {return
iQueryValues[C_ID];}
                    char *    get_C_NAME()
                    {return iQueryValues[C_NAME];}
                    char *    get_C_W_ID()
                    {return iQueryValues[C_W_ID];}
                    char *    get_C_D_ID()
                    {return iQueryValues[C_D_ID];}
                    char *    get_AMT_PAID()
                    {return iQueryValues[AMT_PAID];}
                    char *    get_STK_THRESHOLD()
          {return iQueryValues[STK_THRESHOLD];}
                    char *    get_CARRIER_NUM()
          {return iQueryValues[CARRIER_NUM];}

                    char *    get_ITEM_SUPP_W(int
item)     {return iQueryValues[(ITEM_LIST_START + 0)
+ (item * 3)];}
                    char *    get_ITEM_ITEM_NUM(int
item)     {return iQueryValues[(ITEM_LIST_START + 1)
+ (item * 3)];}
                    char *    get_ITEM_QTY(int item)
                    {return
iQueryValues[(ITEM_LIST_START + 2) + (item * 3)];}

           // Class Functions
           private:
                    char convertQueryToken(char
**queryString);

           // Class Attributes
           private:
                    int       iCustomerIdFlag;
                    int       iCarrierNumFlag;
                    int       iStockThresholdFlag;

                    char
          iQueryValues[MAX_FIELD_NUM][MAX_FIELD_LEN];
};

//////////////////////////////////////////////////
//////////////////
```

tpcclsapi/resource.h

```
//{{NO_DEPENDENCIES}}
// Microsoft Visual C++ generated include file.
// Used by tpccIsapi.rc
//
#define IDS_PROJNAME 100



// Next default values for new objects
//
#ifdef APSTUDIO_INVOKED
#ifndef APSTUDIO_READONLY_SYMBOLS
#define _APS_NEXT_RESOURCE_VALUE        201
#define _APS_NEXT_COMMAND_VALUE         32768
#define _APS_NEXT_CONTROL_VALUE         201
#define _APS_NEXT_SYMED_VALUE           101
#endif
#endif
```

tpcclsapi/StdAfx.h

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

#pragma once

#define WIN32_LEAN_AND_MEAN             // Exclude
rarely-used stuff from Windows headers

#define _ATL_CSTRING_EXPLICIT_CONSTRUCTORS        //
some CString constructors will be explicit

// turns off ATL's hiding of some common and often
safely ignored warning messages
#define _ATL_ALL_WARNINGS

// critical error descriptions will only be shown to
the user
// in debug builds. they will always be logged to the
event log
#ifndef _DEBUG
#define ATL_CRITICAL_ISAPI_ERROR_LOGONLY
#endif


#ifndef _WIN32_WINNT
#define _WIN32_WINNT 0x0403
#endif

// TODO: this disables support for registering COM
objects
// exported by this project since the project
contains no
// COM objects or typelib. If you wish to export COM
objects
// from this project, add a typelib and remove this
line
#define _ATL_NO_COM_SUPPORT

#include "resource.h"
#include <atlsrvres.h>
#include <atlisapi.h>
#include <atlstencil.h>
// TODO: reference additional headers your program
requires here
```

tpcclsapi/tpcc.h

```
// Common defines and structures use internally by
client code
// Not to be confused with structures actually passed
in transaxtions
//

// standard includes

#ifndef _COMMON_TPCC
#define _COMMON_TPCC
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <sys/timeb.h>
#include <time.h>

#include <db2tpcc.h>
#include <iostream>
#include <fstream>
#include <process.h>
#include <ios>

//////////////////////////////////////////////////
//////////
// Defines
//////////////////////////////////////////////////
//////////

#define             OK
                              0
#define             INVALID_STATUS
          -1
#define             ERR
                              -1
#define             INVALID_COM_STATUS            -2


#define   TXN_MAX_COMMANDS                        55
#define MAX_TRANSACTIONS                          14
#define MAX_CMD_LENGTH
          100
#define   INPUT_ITEMS
                    3
#define MAX_INT_BUFFER
          15
#define NORD_ITEMS
          15
#define ITEM_START
          11
#define   ITEM_END
          55
#define MAX_ITEMS
          15
```

```
#define   MAX_STRING_LEN
          256
#define MAX_HTML_PAGE_LEN
          4096
#define MAX_HTML_HEADER_LEN                       512

#define DELIVERY_THREADS_NUM            100

#define DISTRICTS_PER_WAREHOUSE                   10
//////////////////////////////////////////////////
///////////
// Transaction Codes
//////////////////////////////////////////////////
///////////

#define             TXN_LOGIN
                    0
#define             TXN_NEW_ORDER
                    1
#define             TXN_PAYMENT
                              2
#define             TXN_ORDER_STATUS
          3
#define             TXN_DELIVERY
                    4
#define             TXN_STOCK
                    5
#define             TXN_EXIT
                    6
#define             TXN_LOGIN_RESULTS
          7
#define             TXN_NEW_ORDER_RESULTS
          8
#define             TXN_PAYMENT_RESULTS
          9
#define             TXN_ORDER_STATUS_RESULTS      10
#define             TXN_DELIVERY_RESULTS
          11
#define             TXN_STOCK_RESULTS
          12

#define             CMD_NORD
                    "nord"
#define             CMD_PYMT
                    "pymt"
#define             CMD_ORDS
                    "ords"
#define             CMD_DLVY
                    "dlvy"
#define             CMD_STOK
                    "stok"
#define             CMD_EXIT
                    "exit"
#define             CMD_MENU
                    "menu"

#define             APP_NAME
                    "tpcc.html"
#define             HEADER
                              "Content-
Type:text/html\r\nContent-Length: %d\r\nConnection:
Keep-Alive\r\n\r\n"
```

```
//////////////////////////////////////////////////
///////////
// URL Commands
//////////////////////////////////////////////////
///////////

#define             CMD_TXN_ID
                    "00"

#define             CMD_TERM_ID
                    "01"
#define             CMD_W_ID
          "02"
#define             CMD_D_ID
          "03"
#define             CMD_C_ID
          "04"
#define             CMD_C_NAME
                    "05"
#define             CMD_C_W_ID
                    "06"
#define             CMD_C_D_ID
                    "07"
#define             CMD_AMT_PAID
          "08"
#define             CMD_STK_THRESHOLD
          "09"
#define             CMD_CARRIER_NUM
          "10"

#define             ITEM01_SUPP_W
          "11"
#define             ITEM01_ITEM_NUM
          "12"
#define             ITEM01_OTY
                    "13"


#define CHAR_FILL
                    ' '
#define NUMERIC_FILL
                    ' '
#define NEGITIVE_SYMBOL
                    '-'
#define MONEY_SYMBOL
                    '$'
#define DECIMAL_SYMBOL
                    '.'
#define ZERO_SYMBOL
                    '0'
#define ZIP_DELIMITER
                    '-'
#define PHONE_DELIMITER
                    '-'
#define DATE_DELIMITER
                    '-'
#define TIME_DELIMITER
                    ':'


#define DEFAULT_MONEY64_LEN                       15
#define DEFAULT_MONEY32_LEN                       9
#define DEFAULT_MONEY16_LEN                       9
```

```
#define DEFAULT_NUMERIC64_LEN           15
#define DEFAULT_NUMERIC32_LEN           9
#define DEFAULT_NUMERIC16_LEN           9

#define DEFAULT_DECIMAL64_LEN           5
#define DEFAULT_DECIMAL32_LEN           5
#define DEFAULT_DECIMAL16_LEN           5

#define DEFAULT_DATETIME_LEN            19
#define DEFAULT_DATE_LEN                          11
#define DEFAULT_TIME_LEN                          8

#define DEFAULT_STRING_LEN                        25
#define DEFAULT_ZIP_LEN
          17
#define DEFAULT_PHONE_LEN                         18

//////////////////////////////////////////////////
/////////////////
// String Field Lengths
//////////////////////////////////////////////////
/////////////////

#define NAME_LEN                        24
#define LAST_NAME_LEN                   16
#define FIRST_NAME_LEN                  16
#define INITIALS_LEN                    2

#define CREDIT_LEN                      2

#define STREET_LEN                      20
#define CITY_LEN                        20
#define STATE_LEN                       2
#define ZIP_LEN                                   9

#define PHONE_LEN                       16
#define DATA_LEN                        200

#define ITEM_LIST                       15
#define ORDER_LIST                      10

//////////////////////////////////////////////////
/////////////////
// Type definitions
//////////////////////////////////////////////////
/////////////////

typedef __int8
          INT8b;
typedef __int16
          INT16b;
typedef __int32
          INT32b;
typedef __int64
          INT64b;

typedef unsigned __int8                   UINT8b;
typedef unsigned __int16      UINT16b;
typedef unsigned __int32      UINT32b;
typedef unsigned __int64      UINT64b;

typedef INT16b
          sqlint16;
```

```
typedef INT32b
          sqlint32;
typedef INT64b
          sqlint64;

typedef INT16b
          int16_t;
typedef INT32b
          int32_t;
typedef INT64b
          int64_t;

typedef char
          BYTE8b;
typedef double
          DOUBLE;
typedef unsigned long                   NATURAL;

////////////////////////////////////////////////
/////////////////
// Date and time values
////////////////////////////////////////////////
/////////////////

#define SECONDS_IN_DAY                  86400
#define SECONDS_IN_HOUR                 3600
#define SECONDS_IN_MINUTE     60
#define GMT_OFFSET                      5

#define DAYS_IN_YEAR                    365
#define YEARS_IN_LEAP                   4
#define START_YEAR                      1970
#define MONTHS_IN_YEAR                  12

////////////////////////////////////////////////
/////////////////
// Error codes
////////////////////////////////////////////////
/////////////////
#define ERR_INVALID_TXN_TYPE                        -1

#define ERR_MISSING_W_ID
          -2
#define ERR_NON_NUMERIC_W_ID                        -3
#define ERR_MISSING_D_ID
          -4
#define   ERR_NON_NUMERIC_D_ID
          -5
#define ERR_MISSING_C_ID
          -6
#define ERR_NON_NUMERIC_C_ID                        -7

#define ERR_MISSING_SUPP_W
          -8
#define ERR_NON_NUMERIC_SUPP_W
          -9
#define ERR_MISSING_ITEM_NUM                        -10
#define ERR_NON_NUMERIC_ITEM_NUM                    -11
#define ERR_MISSING_ITEM_OTY                        -12
#define ERR_NON_NUMERIC_ITEM_QTY                    -13

#define ERR_MISSING_CLAST_NAME
          -14
#define ERR_NON_NUMERIC_CUST_W_ID                   -15
#define ERR_NON_NUMERIC_CUST_D_ID                   -16
#define ERR_MISSING_AMOUNT_PAID
          -17
#define ERR_NON_NUMERIC_AMOUNT_PAID                 -18

#define   ERR_INVALID_D_ID
          "ERROR: Invalid District ID. Try Again."
#define   ERR_INVALID_W_ID
          "ERROR: Invalid Warehouse ID. Try Again."
#define ERR_INVALID_C_ID
          "ERROR: Invalid Customer ID. Try Again."
#define ERR_INVALID_SUPPLY_W_ID
          "ERROR: Invalid Item Supply Warehouse. Try
Again."
#define ERR_INVALID_ITEM_NUM            "ERROR:
Invalid Item Number. Try Again."
#define ERR_INVALID_ITEM_OTY            "ERROR:
Invalid Item Qty. Try Again."
#define ERR_MISSING_C_ID_OR_CLAST       "ERROR: Must
Enter Customer Id or Customer Last Name. Try Again."
#define ERR_INVALID_PAYMENT_AMOUNT      "ERROR:
Invalid Payment Amount. Try Again."
#define ERR_INVALID_CARRIER
          "ERROR: Invalid Carrier Number. Try Again."
#define ERR_INVALID_THRESHOLD           "ERROR:
Invalid Threshold. Try Again."
#define ERR_INVALID_C_D_ID
          "ERROR: Invalid Customer District Id. Try
Again."
#define ERR_INVALID_C_W_ID
          "ERROR: Invalid Customer Warehouse Id. Try
Again."
#define   ERR_TERMINAL_FULL
          "ERROR: Terminal can not support user.
Terminal full."
#define ERR_C_ID_OR_CLAST_ONLY
          "ERROR: Either customer id or customer last
name can be specified."

#define   ERR_UNABLE_TO_OPEN_REG
          -50
#define   ERR_DLVY_THREAD_FAILED
          -51
#define   ERR_DLVY_SEMAPHORE_INIT_FAILED            -52
#define   ERR_DLVY_EVENT_INIT_FAILED                -53
#define ERR_DLVY_QUEUE_EATING_TAIL                  -54

#define   ERR_INVALID_USERNAME
          -70
#define ERR_INVALID_PASSWORD                        -71
#define ERR_INVALID_DB_NAME
          -72
#define ERR_INVALID_REGISTERY_KEY                   -73
#define ERR_DB2_DLL_NOT_LOADED
          -74
#define ERR_ORACLE_DLL_NOT_LOADED                   -75
#define ERR_CONNECT_ADDRESS_NOT_FOUND   -76
#define ERR_NORD_ADDRESS_NOT_FOUND                  -77
#define ERR_PYMT_ADDRESS_NOT_FOUND                  -78
#define ERR_ORDS_ADDRESS_NOT_FOUND                  -79
#define ERR_DLVY_ADDRESS_NOT_FOUND                  -80
#define ERR_STOK_ADDRESS_NOT_FOUND                  -81
#define   ERR_NULL_DLL_NOT_LOADED
          -82
#define   ERR_UNKNOWN_DB
                    -83
#define ERR_DISCONNECT_ADDRESS_NOT_FOUND -84

#define   ERR_SAVING_CONTEXT
          -90
#define   ERR_DETACHING_CONTEXT
          -91
#define   ERR_ATTACHING_CONTEXT
          -92
#define ERR_HANDLE_IN_USE
          -93

#define ERR_CONNECT_TO_TM_FAILED                    -99
#define   ERR_DLVY_LOG_OPEN_FAILED                  -
100
#define   ERR_DLVY_QUEUE_FULL
          -101

////////////////////////////////////////////////
/////////////////
// Registery Definitions
////////////////////////////////////////////////
/////////////////
#define             REGISTERY_SUB_KEY
          "SOFTWARE\\TPCC"

#define             DELIVERY_THREADS
          "dlvyThreads"
#define             DELIVERY_QUEUE_LEN
          "dlvyQueueLen"
#define             DELIVERY_LOG_PATH
          "dlvyLogPath"
#define             ERROR_LOG_FILE
          "errorLogFile"
#define             HTML_TRACE_LOG_FILE
          "htmlTraceLogFile"
#define             DB_NAME
                    "dbName"
#define             NULL_DB
                    "nullDB"
#define             COM_NULL_DB
                    "comnullDB"
#define             CLIENT_NULL_DB
          "clientNullDB"

#define             NUM_USERS
          "numUsers"
#define             DB_TYPE
                    "dbType"

#define             TXN_MONITOR
                    "txn_server"
#define             COMM_POOL
          "comm_pool"
#define             HTML_TRACE
                    "htmlTrace"
#define             ISAPI_TRACE
                    "isapi_trace"
```

```
#define             DEFAULT_DLVY_THREADS
        1
#define             DEFAULT_DLVY_QUEUE_LEN
        10
#define             DEFAULT_DLVY_LOG_PATH
        "c:\\inetpub\\wwwroot\\tpcc\\dlvy"
#define             DEFAULT_ERROR_LOG_FILE
        "c:\\inetpub\\wwwroot\\tpcc\\errorLog.txt"
#define             DEFAULT_HTML_TRACE_LOG_FILE
        "c:\\inetpub\\wwwroot\\tpcc\\htmlTrace.txt"
#define             DEFAULT_NUM_USERS
        10000

#define             DEFAULT_DB_NAME
        "tpcc"

////////////////////////////////////////////////
/////////////////
// Structure defines
////////////////////////////////////////////////
/////////////////

struct nord_wrapper {
          struct in_neword_struct in_nord;
          struct out_neword_struct out_nord;
};

struct paym_wrapper {
          struct in_payment_struct in_paym;
          struct out_payment_struct out_paym;
};

struct ords_wrapper {
          struct in_ordstat_struct in_ords;
          struct out_ordstat_struct out_ords;
};

struct dlvy_wrapper {
          struct in_delivery_struct in_dlvy;
          struct out_delivery_struct out_dlvy;
};

struct stok_wrapper {
          struct in_stocklev_struct in_stok;
          struct out_stocklev_struct out_stok;
};

typedef   struct
{
          int       year;
          int       month;
          int       day;

          int       hour;
          int       minute;
          int       second;
} datetime;

struct NEWORDERDATA
{
          struct   in_items_struct {
                    int  s_OL_I_ID;
                    int  s_OL_SUPPLY_W_ID;
                    short  s_OL_QUANTITY;
          } in_item[15];

          long long in_s_O_ENTRY_D_time;          /*
init by SUT */
          int                in_s_C_ID;
          int                in_s_W_ID;
          short     in_s_D_ID;
          short     in_s_O_OL_CNT;                /*
init by SUT */
          short     in_s_all_local;
          short     in_duplicate_items;

          struct   out_items_struct {
                    double    s_I_PRICE;
                    double  s_OL_AMOUNT;
                    short     s_S_QUANTITY;
                    char    s_I_NAME[25];
                    char    s_brand_generic;
          } out_item[15];

          long long out_s_O_ENTRY_D_time;
          double  out_s_W_TAX;
          double  out_s_D_TAX;
          double  out_s_C_DISCOUNT;
          double  out_s_total_amount;
          int                out_s_O_ID;
          short     out_s_O_OL_CNT;
          short     out_s_transtatus;
          short     out_deadlocks;
          char    out_s_C_LAST[17];
          char    out_s_C_CREDIT[3];

};

struct PAYMENTDATA
{
          long long in_s_H_DATE_time;
          double  in_s_H_AMOUNT;
          int                in_s_W_ID;
          int                in_s_C_W_ID;
          int                in_s_C_ID;
          short     in_s_C_D_ID;
          short     in_s_D_ID;
          char      in_s_C_LAST[17];

          long long out_s_H_DATE_time;
          long long out_s_C_SINCE_time;
          double    out_s_C_CREDIT_LIM;
          double    out_s_C_BALANCE;
          double    out_s_C_DISCOUNT;
          int                out_s_C_ID;
          short     out_s_transtatus;
          short     out_deadlocks;
          char  out_s_W_STREET_1[21];
          char  out_s_W_STREET_2[21];
          char  out_s_W_CITY[21];
          char  out_s_W_STATE[3];
          char  out_s_W_ZIP[10];
          char  out_s_D_STREET_1[21];
          char  out_s_D_STREET_2[21];
          char  out_s_D_CITY[21];
          char  out_s_D_STATE[3];
          char  out_s_D_ZIP[10];
          char  out_s_C_FIRST[17];
          char  out_s_C_MIDDLE[3];
          char  out_s_C_LAST[17];
          char  out_s_C_STREET_1[21];
          char  out_s_C_STREET_2[21];
          char  out_s_C_CITY[21];
          char  out_s_C_STATE[3];
          char  out_s_C_ZIP[10];
          char  out_s_C_PHONE[17];
          char  out_s_C_CREDIT[3];
          char  out_s_C_DATA[201];
};

struct ORDERSTATUSDATA
{
          int   in_s_C_ID;
          int   in_s_W_ID;
          short in_s_D_ID;
          char  in_s_C_LAST[17];

          double out_s_C_BALANCE;
          long long  out_s_O_ENTRY_D_time;
          int    out_s_C_ID;
          int    out_s_O_ID;
          short  out_s_O_CARRIER_ID;
          short  out_s_ol_cnt;
          struct out_oitems_struct {
                    long long  s_OL_DELIVERY_D_time;
                    double   s_OL_AMOUNT;
                    int   s_OL_I_ID;
                    int   s_OL_SUPPLY_W_ID;
                    short s_OL_QUANTITY;
          } out_item[15];
          short  out_s_transtatus;
          short  out_deadlocks;
          char   out_s_C_FIRST[17];
          char   out_s_C_MIDDLE[3];
          char   out_s_C_LAST[17];

};

struct DELIVERYDATA
{
          long long  in_s_O_DELIVERY_D_time;
          int   in_s_W_ID;
          short in_s_O_CARRIER_ID;
          int   out_s_O_ID[10];
          short out_s_transtatus;
          short outdeadlocks;
};

struct STOCKLEVELDATA
{
          int   in_s_threshold;
          int   in_s_W_ID;
          short in_s_D_ID;

          int   out_s_low_stock;
          short out_s_transtatus;
          short out_deadlocks;
};
```

```
//                MISCELLANEOUS HELPER FUNCTIONS
inline void appendText(char **string,char *text);
inline void appendText(char **string,char *text,int
length,int justify);
inline void appendChar(char **string,char byte);
inline void DEBUGMSG(FILE * debugFile, char *
message);
inline void appendSpaces(char **string,int spaces);

inline void calcOutDateTime(const INT64b
value,datetime *timestamp);
inline int copyOutPhone(char *buffer,char *value,int
len);
inline bool copyInMoney64(const char * value,INT64
*number);
inline int copyInMoney(const char *value);
inline void copyOutMoney64(char *buffer,INT64b
value,unsigned int len);
inline int copyOutDateTime(char
         *buffer,INT64b value);
inline int copyOutDate(char *buffer,INT64b value);
inline int copyOutTime(char *buffer,INT64b value);
inline int copyOutDecimal64(char *buffer,INT64b
value,unsigned int len);

inline UINT16b changeOrder16(UINT16b value);
inline UINT32b changeOrder32(UINT32b value);
inline UINT64b changeOrder64(UINT64b value);

inline INT16b changeOrder16(INT16b value);
inline INT32b changeOrder32(INT32b value);
inline INT64b changeOrder64(INT64b value);

//
// Name         : appendText
// Description  :
//                Append text to string
// Parameters   :
//                char ** - string point to append to
//                char * - text to append
// Returns      :
//                None
// Comments     :
//

inline void appendText(char **string,char *text)
{
          while(*text)
          {
                    *(*string)++ = *text++;
          }

          **string='\0';
          return;
}

//
// Name         : appendText
// Description  :
//                Append text to string
// Parameters   :
//                char ** - string point to append to
//                char * - text to append
//                                          int - total
field length including blank spaces
//                                          int -
justify flag
// Returns      :
//                None
// Comments     :
//                                          right
justify
//                                          left
justify


inline void appendText(char **string,char *text,int
length,int justify)
{
          int byteCount = 0;

          if(justify)
          {
                    while(*text)
                    {
                              *(*string)++ = *text++;
                              byteCount++;
                    }

                    //append blank spaces if text is
less than length at end
                    for(byteCount;byteCount <
length;byteCount++)
                              *(*string)++ = ' ';
          }
          else
          {
                    long long textLen = strlen(text);
                    for(textLen;textLen <
length;textLen++)
                              *(*string)++ = ' ';

                    while(*text)
                              *(*string)++ = *text++;


          }
          **string='\0';
}


// Name                : appendChar
// Description  :
//                                          Append text
to string
// Parameters   :
//                                          char ** -
string point to append to
//                                          char * -
text to append
// Returns             :
//                                          None
// Comments            :
//

inline void appendChar(char **string,char byte)
{
          *(*string)++ = byte;
          **string='\0';

          return;
}


//
// Name                      : appendSpaces
// Description      :
//                                                    appends
buffer spaces to result page
// Parameters       :
//
**htmlPage
//
// Returns                   :
//
amount of characters the function appened
//
to the html page
// Comments                  :
//

inline void appendSpaces(char **string,int spaces)
{
          for(int index=0;index<spaces;index++)
          {
                    *(*string)++ = ' ';
          }

          **string='\0';
}

//
// Name                      : appendCustData
// Description      :
//                                                    appends
cust data buffer to result page
// Parameters       :
//
**htmlPage
//
// Returns                   :
//
//
Adds a newline character every 50 characters
displayed.
// Comments                  :
//

inline void appendCustData(char **string,char *text)
{
          short byteCount = 0;
          while(*text)
          {
                    *(*string)++ = *text++;
                    byteCount++;
                    if((byteCount % 50) == 0)
                    {
```

```
                                *(*string)++ = '\n';
                                *(*string)++ = ' ';
                *(*string)++ = ' '; *(*string)++ = ' ';
                *(*string)++ = ' ';
                                *(*string)++ = ' ';
                *(*string)++ = ' '; *(*string)++ = ' ';
                *(*string)++ = ' ';
                                *(*string)++ = ' ';
                *(*string)++ = ' '; *(*string)++ = ' ';
                        }
                }
                **string='\0';
}



//
// calcOutDateTime
//
// Title            : Calculate date & time data out
of class array
// Parameters       : INT64b - date & time expressed
in seconds
//                                          datetime *
- timestamp
// Return Value     : None
// Comments                 :
//

inline void calcOutDateTime(const INT64b
value,datetime *timestamp)
{
        // fixed days in each month (FEB 29 is
special case)
        static int daysInMonth[12]    =
{31,28,31,30,31,30,31,31,30,31,30,31};

        // mask out EPOC seconds
        int dateValue       = ((int) (value &
0xffffffff)) +

(SECONDS_IN_DAY - (GMT_OFFSET * SECONDS_IN_HOUR));

        int offset          = (int) (value >> 32);

        // break out the seconds
        int hms             = dateValue %
SECONDS_IN_DAY;
        int days  = dateValue / SECONDS_IN_DAY;

        int years = (days - 1) / DAYS_IN_YEAR;
        int leaps = years / YEARS_IN_LEAP;

        int daysUsed        = (years *
DAYS_IN_YEAR) + leaps;

        // adjust the number of days to account for
calculated years
        days = days - daysUsed;

        // set the starting year, month, and day
        timestamp->day              = 1;
        timestamp->month    = 1;
        timestamp->year             = START_YEAR
+ years;

        // is the current year a leap year
        int leap = !(timestamp->year %
YEARS_IN_LEAP);

                // apply remaining days based on
days in months
                int daysInCurrentMonth;

                while(days)
                {
                        // get days in current
month
                        daysInCurrentMonth =
daysInMonth[timestamp->month - 1];
                        if(timestamp->month ==
2 && leap)

        daysInCurrentMonth = daysInCurrentMonth +
1;

                        // days > days in
current month
                        if(days >
daysInCurrentMonth)
                        {
                                // increment
month
                                timestamp-
>month += 1;
                                days = days -
daysInCurrentMonth;

                                // month
exceeds months in year
                                if(timestamp-
>month > MONTHS_IN_YEAR)
                                {
                                        //
increment year and reset month

        timestamp->year += 1; timestamp->month = 1;

                                        //
are we now on a leap year

        leap = !(timestamp->year % YEARS_IN_LEAP);
                                }
                        }
                        else
                        {
                                // set day of
month to remaioning days
                                timestamp-
>day = days; days = 0;
                        }
                }

                // set time values to remaining
seconds
                timestamp->hour = hms /
SECONDS_IN_HOUR;
                hms = hms % SECONDS_IN_HOUR;

                timestamp->minute = hms /
SECONDS_IN_MINUTE;
                timestamp->second = hms %
SECONDS_IN_MINUTE;
                return;
        }

//
// copyOutZip
//
// Title            : Copy zip data out of class
array
// Parameters       : char * - buffer to copy zip
string into
//
// Return Value     : int - Length of copy
// Comments                 :
//

inline int copyOutZip(char *buffer,char *value,int
len = DEFAULT_ZIP_LEN)
{
        int index           = 0;
        int bufferPos       = 0;

        // add each digit of zip number to buffer
inserting delimiter at 5
        while(value[index] && bufferPos < len)
        {
                if(index == 5)
                        buffer[bufferPos++] =
ZIP_DELIMITER;

                buffer[bufferPos++] =
value[index++];
        }

        // space fill to the required length
        while(bufferPos < len)
                buffer[bufferPos++] = CHAR_FILL;

        buffer[bufferPos] = NULL;
        return len;
}

//
// copyOutPhone
//
// Title            : Copy phone data out of class
array
// Parameters       : char * - buffer to copy phone
string into
//
// Return Value     : int - Length of copy
// Comments                 :
//

inline int copyOutPhone(char *buffer,char *value,int
len = DEFAULT_PHONE_LEN)
```

```
{
        int index           = 0;
        int bufferPos       = 0;

        // add each digit of phone number to buffer
inserting delimiter before 6, 9, and 12
        while(value[index] && index < len)
        {
                switch(index)
                {
                case  6:
                case  9:
                case 12:
                        // insert delimiter
                        buffer[bufferPos++] =
PHONE_DELIMITER;
                default:
                        // add phone digit to
buffer
                        buffer[bufferPos++] =
value[index++];
                }
        }

        // space fill to the required length
        while(bufferPos < len)
                buffer[bufferPos++] = CHAR_FILL;

        buffer[bufferPos] = '\0';

        return len;
}

//
// copyInMoney64
//
// Title            : Copy money data into class
array
// Parameters       : const char * - value string
// Return Value     : INT64b integer value
// Comments                 :
//

inline bool copyInMoney64(const char * value,INT64b
*number)
{
        //INT64b  number                        =
0;
        int                 index
        = 0;
        int                 decimal
        = 0;
        int                 decimals            =
0;
        int                 digitsAfterDec      =
0;

        bool      negitiveFlag        = false;

        // convert each digit to a numeric portion
        while(value[index])
        {
                // handle $ . - All the rest
assumed numeric
                switch(value[index])
                {
                case MONEY_SYMBOL:
                        // ignore $ sign
                        break;
                case NEGITIVE_SYMBOL:
                        // set negitive flag
                        negitiveFlag = true;
                        break;

                case DECIMAL_SYMBOL:
                        // set decimal
                        decimal=1;
                        decimals++;
                        if(decimals >1)
                                //more than 1
decimal point found
                                return false;
                        break;

                default:
                        // adjust decimal
places
                        decimal = decimal * 10;

                        // add digit to running
total
                        if(value[index] >= '0'
&& value[index] <= '9')
                        {
                                if(decimal)

          if(++digitsAfterDec > 2)

          return false;

                                *number =
(*number * 10) + (value[index] - '0');
                        }
                        else
                        {
                                //non-numeric
field inserted
                                return false;
                        }
                }
                index++;
        }


        // apply decimal where decimal not found
        if(decimal < 100)
        {
                if(decimal)
                {
                        *number *= (100 /
decimal);
                }
                else
                {
                        *number *= 100;
                }
        }

        // make negitive
        if(negitiveFlag)
                *number = *number * (-1);

        return true;
}

//
// copyInMoney
//
// Title            : Convert char string money field
to double
// Parameters       : const char * - value string
// Return Value     : double integer value
// Comments                 :
//

inline int copyInMoney(const char *value)
{
        char buf[20];
        int i,j,decimalFound,digitsAfterDecimal=0;

        int decimal=0;

        //walk past $ if present in char string
        if(*value == '$')
                *value++;

        int len=(int)strlen(value);
        for (i=0;i<len;i++)
        {
                if(value[i] == '.')
                {
                        decimalFound++;
                        if(decimalFound > 1)
                                return -1;
                }
                if(value[i] == '-')


                if (value[i] != '.')
                {
                        if(decimal)
                        {

        if(digitsAfterDecimal<2)

        digitsAfterDecimal++;
                                        else

        return -1;
                        }
                        buf[j++] = value[i];
                }
        }
        int amount = atoi(buf);

        return amount;
}
```

```
//
// copyOutMoney64
//
// Title            : Copy money data out of class
array
// Parameters       : char * - buffer to copy string
64 bit money into
//                                      INT64b -
value
//                                      unsigned
len - max number of bytes to copy
// Return Value     : int - Length of copy
// Comments                 :
//

inline void copyOutMoney64(char *buffer,INT64b
value,unsigned int len = DEFAULT_MONEY64_LEN)
{
         unsigned int        index
         = len;

         int
         places                         = 0;

         bool                           negitiveFlag
         = false;
         bool                           moneyFlag
         = true;

         // NULL terminate string
         buffer[index] = NULL;

         // check length > 0
//       if(!index) return len;

         // handle negitive value
         if(value < 0)
         {
                  negitiveFlag = true;
                  value = value * (-1);
         }

         // break off each digit from value, fill if
needed
         do
         {
                  if(value)
                  {
                           // get next digit and
add to buffer
                           buffer[--index] =
(char) (value % 10 + '0');
                           value /= 10; places++;

                           if(places == 2 &&
index)
                           {
                                    places++;
                                    buffer[--
index] = DECIMAL_SYMBOL;
                           }
                  }
                  else
                  {
                           // add zeros to first
place before decimal point on (i.e. 0.00)
                           if(places < 2 || places
== 3)
                           {
                                    buffer[--
index] = ZERO_SYMBOL;
                           }
                           else
                           {
                                    // add the
decimal point
                                    if(places ==
2)
                                    {

         buffer[--index] = DECIMAL_SYMBOL;
                                    }
                                    else
                                    {
                                             //
add the negitive indicator

         if(negitiveFlag)
                                             {

         negitiveFlag = false;

         buffer[--index] = NEGITIVE_SYMBOL;
                                             }

         else
                                             {

         // add the money indicator

         if(moneyFlag)

         {

                  moneyFlag = false;

                  buffer[--index] = MONEY_SYMBOL;

         }

         else buffer[--index] = NUMERIC_FILL;
                                             }
                                    }
                           }
                           // need to trace place
for decimal point and zero fill
                           places++;
                  }
         } while(index);

         //return len;
}

//
// copyOutDateTime
//
// Title            : Copy date & time data out of
class array
// Parameters       : char * - buffer to copy date &
time string into
//                                      INT64b -
value
// Return Value     : int - Length of copy
// Comments                 : Fixed length
//

inline int copyOutDateTime(char
         *buffer,INT64b value)
{
         datetime timestamp;

         // break value into time/date components
         calcOutDateTime(value,&timestamp);

         // put month into buffer
         *buffer++ =         (char)
((timestamp.month / 10) + '0');
         *buffer++ =         (char)
((timestamp.month % 10) + '0');
         *buffer++ =         DATE_DELIMITER;

         // put day into     buffer
         *buffer++ =         (char) ((timestamp.day
/ 10) + '0');
         *buffer++ =         (char) ((timestamp.day
% 10) + '0');
         *buffer++ =         DATE_DELIMITER;

         // put year         into buffer
         int       year = timestamp.year;
         *buffer++ =         (char) ((year /
         1000) +   '0');     year = year         %
1000;
         *buffer++ =         (char) ((year /
         100) + '0');        year = year         %
100;
         *buffer++ =         (char) ((year /     10)
         + '0');
         *buffer++ =         (char) ((year %     10)
         + '0');
         *buffer++ =         CHAR_FILL;

         // put hour         into buffer
         *buffer++ =         (char) ((timestamp.hour
         / 10) +   '0');
         *buffer++ =         (char) ((timestamp.hour
         % 10) +   '0');
         *buffer++ =         TIME_DELIMITER;

         // put minute into buffer
         *buffer++ =         (char)
((timestamp.minute /         10)       + '0');
         *buffer++ =         (char)
((timestamp.minute %         10)       + '0');
         *buffer++ =         TIME_DELIMITER;

         // put second into buffer
```

```
        *buffer++ =         (char)
((timestamp.second /        10)      + '0');
        *buffer++ =         (char)
((timestamp.second %        10)      + '0');

        *buffer   = NULL;   return
DEFAULT_DATETIME_LEN;
}
//
// copyOutTime
//
// Title            : Copy date data out of class
array
// Parameters       : char * - buffer to copy date
string into
//                                     INT64b -
value
// Return Value     : int - Length of copy
// Comments                 : Fixed length
//

inline int copyOutDate(char *buffer,INT64b value)
{
        datetime timestamp;

        // break value into time/date components
        calcOutDateTime(value,&timestamp);

        // put month into buffer
        *buffer++ = (char) ((timestamp.month / 10)
+ '0');
        *buffer++ = (char) ((timestamp.month % 10)
+ '0');
        *buffer++ = DATE_DELIMITER;

        // put day into buffer
        *buffer++ = (char) ((timestamp.day / 10) +
'0');
        *buffer++ = (char) ((timestamp.day % 10) +
'0');
        *buffer++ = DATE_DELIMITER;

        // put year into buffer
        int year = timestamp.year;
        *buffer++ = (char) ((year / 1000) + '0');
        year = year % 1000;
        *buffer++ = (char) ((year / 100) + '0');
        year = year % 100;
        *buffer++ = (char) ((year / 10) + '0');
        *buffer++ = (char) ((year % 10) + '0');
        *buffer++ = CHAR_FILL;

        *buffer = NULL;

        return DEFAULT_DATE_LEN;
}

//
// copyOutTime
//
// Title            : Copy time data out of class
array
// Parameters       : char * - buffer to copy time
string into
//                                     INT64b -
value
// Return Value     : int - Length of copy
// Comments                 : Fixed length TBD
//

inline int copyOutTime(char *buffer,INT64b value)
{
        datetime timestamp;

        // break value into time/date components
        calcOutDateTime(value,&timestamp);

        // put hour into buffer
        *buffer++ = (char) ((timestamp.hour / 10) +
'0');
        *buffer++ = (char) ((timestamp.hour % 10) +
'0');
        *buffer++ = TIME_DELIMITER;

        // put minute into buffer
        *buffer++ = (char) ((timestamp.minute / 10)
+ '0');
        *buffer++ = (char) ((timestamp.minute % 10)
+ '0');
        *buffer++ = TIME_DELIMITER;

        // put second into buffer
        *buffer++ = (char) ((timestamp.second / 10)
+ '0');
        *buffer++ = (char) ((timestamp.second % 10)
+ '0');

        *buffer = NULL; return DEFAULT_TIME_LEN;
}

//
// copyOutDecimal64
//
// Title            : Copy decimal data out of class
array
// Parameters       : char * - buffer to copy string
64 bit money into
//                                     INT64b -
value
//                                     unsigned
len - max number of bytes to copy
// Return Value     : int - Length of copy
// Comments                 :
//

inline int copyOutDecimal64(char *buffer,INT64b
value,unsigned int len = DEFAULT_DECIMAL64_LEN)
{
        unsigned int        index
        = len;

        int
        places                      = 0;
        bool                        negitiveFlag
        = false;

        // NULL terminate string
        buffer[index] = NULL;

        // check length > 0
        if(!index) return len;

        // handle negitive value
        if(value < 0)
        {
                negitiveFlag = true;
                value = value * (-1);
        }

        // break off each digit from value, fill if
needed
        do
        {
                if(value)
                {
                        // get next digit and
add to buffer
                        buffer[--index] =
(char) (value % 10 + '0');
                        value /= 10; places++;

                        if(places == 2 &&
index)
                        {
                                places++;
                                buffer[--
index] = DECIMAL_SYMBOL;
                        }
                }
                else
                {
                        // add zeros to first
place before decimal point on (i.e. 0.00)
                        if(places < 2 || places
== 3)
                        {
                                buffer[--
index] = ZERO_SYMBOL;
                        }
                        else
                        {
                                // add the
decimal point
                                if(places ==
2)
                                {

        buffer[--index] = DECIMAL_SYMBOL;
                                }
                                else
                                {
                                        //
add the negitive indicator

        if(negitiveFlag)
                                        {
```

```
          negitiveFlag = false;

          buffer[--index] = NEGITIVE_SYMBOL;
                                                  }
          else buffer[--index] = NUMERIC_FILL;
                                                }
                              }

                              // need to trace place
for decimal point and zero fill
                              places++;
                    }
          } while(index);

          return len;
}

////////////////////////////////////////////////////
////////////////////////
//  Macros
////////////////////////////////////////////////////
////////////////////////
using namespace std;

#ifdef _DEBUG
          int debugFlag = 1;
#else
          int debugFlag = 0;
#endif

inline BYTE8b *debugFileName(BYTE8b *filePath)
{
          BYTE8b *fileName = filePath +
strlen(filePath);

    while(fileName != filePath)
    {
                    if(*fileName == '/' || *fileName
== '\\' && *(fileName + 1))
                              return (fileName + 1);

        fileName--;
    }

    return filePath;
}

#define DEBUGADDRESS(POINTER) hex << (void *) POINTER
<< dec

#define ERRORMSG(TEXT)


          \

          EnterCriticalSection(&errorMutex);
                                        \



                                        \
```

```
          errorStream << debugFileName(__FILE__)
                                  \

          << "|" << __TIMESTAMP__ << "|" << __LINE__
<< "|"    \

          << _getpid() << "|" << GetCurrentThreadId()
<< "|"    \

          << TEXT;

                    \

          errorStream.flush();

          \

          LeaveCriticalSection(&errorMutex);


#ifdef _DEBUG

          #define DEBUGMSG(TEXT)


          \

          EnterCriticalSection(&debugMutex);
                                        \



                                        \

          debugStream << debugFileName(__FILE__)
                                  \

          << "|" << __TIMESTAMP__ << "|" << __LINE__
<< "|"    \

          << _getpid() << "|" << GetCurrentThreadId()
<< "|"    \

          << TEXT ;

                                  \

          debugStream.flush();

          \

          LeaveCriticalSection(&debugMutex);


          #define DEBUGSTRING(TEXT,LENGTH)

                                        \

          debugVarString(TEXT,LENGTH)
```

```
#else
        #define DEBUGMSG(TEXT) ;
        #define DEBUGSTRING(TEXT,LENGTH) ;

#endif
#endif /* _COMMON_TPCC */
```

tpccIsapi/tpccIsapi.def

```
; tpccIsapi.def : declares the module parameters for
the DLL.

LIBRARY        "tpccIsapi"

EXPORTS
          HttpExtensionProc
          GetExtensionVersion
          TerminateExtension
```

tpccIsapi/tpccIsapi.hpp

```
/*
**************************************************
**********
** Project                    : AIX
** Component        : Performance/TPC-W Benchmark
** Name                       : tpccIsapi.hpp
** Title            : ISAPI interface for tpcc
**************************************************
**********
** Copyright (c) 2001,2002 IBM Corporation
** All rights reserved
**************************************************
**********
** History        :
**                  Developed at IBM Austin by the
AIX RS/6000
**                  performance group.
**
** Comments       :
**
**************************************************
**********
*/

#ifndef __tpccISAPI_hpp__
#define __tpccISAPI_hpp__

#include <windows.h>
#include <httpext.h>

#include <tpcc.h>
```

```
#include <htmlPhraser.h>
#include <iomanip>

#include <db2tpcc.h>
#include <comsvcs.h>

////////////////////////////////////////////////
/////////////////
// Terminal struct
////////////////////////////////////////////////
/////////////////
struct TERM_ENTRY
{
        int                terminalID;
        bool      terminalInUse;
        int                w_id;
        short     d_id;
};

////////////////////////////////////////////////
/////////////////
// COM interface
////////////////////////////////////////////////
/////////////////
struct COM_HANDLE
{
        Itpcc_com *comHandle;
        char               *txnBuffer;
        int                        size;
};

////////////////////////////////////////////////
/////////////////
// TXN handle
////////////////////////////////////////////////
/////////////////
struct    TXN_HANDLE
{
        char      htmlPage[MAX_HTML_PAGE_LEN];
        char      htmlHeader[MAX_HTML_HEADER_LEN];
        char      *urlString;

        //user data
        int                w_id;
        int                d_id;
        int                sync_id;
        int                term_id;
        int                conn_id;

        COM_HANDLE          comInterface;
};

struct DLVYQUEUEDATA
{
        int                warehouse;
        short     in_s_0_CARRIER_ID;
        struct _timeb enqueueTime;
};

////////////////////////////////////////////////
/////////////////
// Definitions
////////////////////////////////////////////////
/////////////////
#define             INVALID_ITEM                100
#define             HEADER
        "Content-Type:text/html\r\nContent-Length:
%d\r\nConnection: Keep-Alive\r\n\r\n"
#define             TLS_NULL
        0xFFFFFFFF
#define             ACCESS_TIMEOUT
        3600000
                                        //One hour in
milli seconds

#define             DELIVERY_LOG_SUCCESS_STR      "--
Tran %d Queue %d.%03d Start %d.%03d\nW_ID: %d
CARRIER_ID: %d %s\nend-time: %d.%03d\n"

////////////////////////////////////////////////
/////////////////
// Function Prototypes
////////////////////////////////////////////////
/////////////////

int initDlvy();
int initTxnHandle(TXN_HANDLE **txnHandle);
int closeTxnHandle(TXN_HANDLE *txnHandle);
int readRegisteryValues();
int getTerminal(int terminal,TXN_HANDLE *txnHandle);
int assignTerminal(TXN_HANDLE *txnHandle);
int getDBInstance();

void doHtml(TXN_HANDLE *txnHandle);
int doLoginForm(htmlPhraser *commandBlock,TXN_HANDLE
*txnHandle);
int doLoginResults(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle);
int doNewOrderForm(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle);
int doNewOrderResults(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle);
int doPaymentForm(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle);
int doPaymentResults(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle);
int doOrderStatusForm(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle);
int doOrderStatusResults(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle);
int doDeliveryForm(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle);
int doDeliveryResults(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle);
int doStockForm(htmlPhraser *commandBlock,TXN_HANDLE
*txnHandle);
int doStockResults(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle);
int doExit(htmlPhraser *commandBlock,TXN_HANDLE
*txnHandle);

int doLoginErrorPage(char *htmlPage,char *message);
int doNewOrderErrorPage(char *htmlPage,char
*message,htmlPhraser *commandBlock,TXN_HANDLE
*txnHandle);
int doPaymentErrorPage(char *htmlPage,char
*message,htmlPhraser *commandBlock,TXN_HANDLE
*txnHandle);
int doOrderStatusErrorPage(char *htmlPage,char
*message,htmlPhraser *commandBlock,TXN_HANDLE
*txnHandle);
int doDeliveryErrorPage(char *htmlPage,char
*message,htmlPhraser *commandBlock,TXN_HANDLE
*txnHandle);
int doStockErrorPage(char *htmlPage,char
*message,htmlPhraser *commandBlock,TXN_HANDLE
*txnHandle);

void dlvyThreadEntry(void *);
int  queueDlvyTxn(int warehouse, short carrier_id);

int appendButtons(char *htmlPage);
int appendItems(char *htmlPage,short itemCount,short
cmdIDStart);
int appendHiddenFields(char *htmlPage,TXN_HANDLE
*txnHandle);

int displayStatus(char *htmlPage,int rc);

#endif
```

tpcclsapi/htmlPhraser.cpp

```
////////////////////////////////////////////////////
/////////////////
// htmlPhraser.cpp
////////////////////////////////////////////////////
/////////////////
// Class implmentation of htmlPhraser.
// This class will take a query string and break it
into a series
// of consituant parts
////////////////////////////////////////////////////
/////////////////

#include "htmlPhraser.h"

////////////////////////////////////////////////////
/////////////////
// htmlPhraser::htmlPhraser
////////////////////////////////////////////////////
/////////////////
// Title  : Constructor
// Parameters       : char * query string
// Return Value     : None
// Comments         :
////////////////////////////////////////////////////
/////////////////

htmlPhraser::htmlPhraser(char *queryString)
{
          // initilize query values
          iCustomerIdFlag = iCarrierNumFlag =
iStockThresholdFlag = false;
```

```
	// this initilizes the query list to
NULL's. This means that
	// characters being added are overwriting
null characters and
	// therfore the string will be null
terminated implicitly.

	memset(iQueryValues,NULL,(MAX_FIELD_NUM *
MAX_FIELD_LEN));

	// controls
	char		queryChar	=
NULL;

	int		queryIndex
	= -1;
	int		valueIndex
	= -1;

	// process each characeter of query string
	while(*queryString)
	{
		// check for special case
characters
		if(queryChar)
		{
			// a percentage sign
would indicate a token
			if(*queryString != '%')
			{
				// a plus
sign repersents a space

	if(*queryString == '+')
				{

	queryChar = ' ';

	*queryString++;
				}
				else
queryChar = *queryString++;
			}
			else queryChar =
convertQueryToken(&queryString);
		}
		else queryChar = '&';

		// handle query reference (&)
		if(queryChar == '&')
		{
			// reset value index
			valueIndex = -1;

			// do we have a numeric
query reference
			if(*queryString >= '0'
&& *queryString <= '9')
			{
				// numeric
query id
				queryIndex =
	((*queryString - '0') * 10) +
(*(queryString + 1) - '0');

				// walk past
the two command characters
				queryString
+= 2;

				// validate
query value
				if(queryIndex
> MAX_QUERY_ID)
				   queryIndex
= -1;
			}
			else queryIndex = -1;

			// finished processing
for query reference
			continue;
		}

		// we have a query reference but
need to wait until we see '='
		// before accepting value

		if(valueIndex == -1)
		{
			// we are waiting for
'='
			if(queryChar == '=')
			{
				valueIndex =
0;

				// set query
string flags

	switch(queryIndex)
				{
				case C_ID:

	iCustomerIdFlag = true; break;
				case
CARRIER_NUM:

	iCarrierNumFlag = true; break;
				case
STK_THRESHOLD:

	iStockThresholdFlag = true; break;
				default:
break;
				}
			}

			// finishes looging for
'='
			continue;
		}

		// add each character to the
query value
		if(queryIndex > -1 && valueIndex
> -1)
		{
			// we are processing a
query value
			if(valueIndex <
MAX_FIELD_LEN)
			{
				// we have
not exceeded max line len

	iQueryValues[queryIndex][valueIndex++] =
queryChar;
			}
			continue;
		}
	}

	return;
}

////////////////////////////////////////////////////
/////////////////
// htmlPhraser::getCommandId
////////////////////////////////////////////////////
/////////////////
// Title  : Returns the page command
// Parameters	: None
// Return Value	: int - page command
// Comments	:
////////////////////////////////////////////////////
/////////////////

int htmlPhraser::getCommandId()
{
	// return command numeric code
	switch(*iQueryValues[COMMAND_ID])
	{
	case NEW_ORDER_CODE:
		if(iCustomerIdFlag)
			return
COMMAND_NEW_ORDER_RESULTS;
		else return COMMAND_NEW_ORDER;
	case PAYMENT_CODE:
		if(iCustomerIdFlag)
			return
COMMAND_PAYMENT_RESULTS;
		else return COMMAND_PAYMENT;
	case ORDER_STATUS_CODE:
		if(iCustomerIdFlag)
			return
COMMAND_ORDER_STATUS_RESULTS;
		else return COMMAND_ORDER_STATUS;
	case DELIVERY_CODE:
		if(iCarrierNumFlag)
			return
COMMAND_DELIVERY_RESULTS;
		else return COMMAND_DELIVERY;
	case STOCK_CODE:
		if(iStockThresholdFlag)
```

```
                        return
COMMAND_STOCK_RESULTS;
                else return COMMAND_STOCK;
        case MENU_CODE:
                return COMMAND_LOGIN_RESULTS;
        case EXIT_CODE:
                return COMMAND_EXIT;
        default:
                return COMMAND_LOGIN;
        };


        // should not get here
        return COMMAND_LOGIN;
}

////////////////////////////////////////////////////
/////////////////
// htmlPhraser::validate
////////////////////////////////////////////////////
/////////////////
// Title  : validate url parameter list for all txn
types
// Parameters       : int - txn type
// Return Value     : int - error code
// Comments         :
////////////////////////////////////////////////////
/////////////////


int validate(int txnType)
{
        return 0;
}

////////////////////////////////////////////////////
/////////////////
// htmlPhraser::convertQueryToken
////////////////////////////////////////////////////
/////////////////
// Title  : Returns the page command
// Parameters       : None
// Return Value     : int - page command
// Comments         :
////////////////////////////////////////////////////
/////////////////

char htmlPhraser::convertQueryToken(char
**queryString)
{
        char queryChar      = NULL;

        // skip over %
        (*queryString)++;

        // look at first character
        switch(**queryString)
        {
        case '2':
                {
                        // what follows?
                        (*queryString)++;
                        switch(**queryString)
                        {
                        case '1':
                                queryChar =
'!';
                                break;
                        case '3':
                                queryChar =
'#';
                                break;
                        case '4':
                                queryChar =
'$';
                                break;
                        case '5':
                                queryChar =
'%';
                                break;
                        case '6':
                                queryChar =
'&';
                                break;
                        case '8':
                                queryChar =
'(';
                                break;
                        case '9':
                                queryChar =
')';
                                break;
                        case 'B':
                                queryChar =
'+';
                                break;
                        case 'C':
                                queryChar =
',';
                                break;
                        case 'F':
                                queryChar =
'/';
                                break;
                        case ' ':
                                queryChar = '
';
                                break;
                        }
                }

                break;
        case '3':
                {
                        // what follows?
                        (*queryString)++;

                        switch(**queryString)
                        {
                        case 'A':
                                queryChar =
':';
                                break;
                        case 'B':
                                queryChar =
';';
                                break;
                        case 'D':
                                queryChar =
'=';
                                break;
                        case 'F':
                                queryChar =
'?';
                                break;
                        case ' ':
                                queryChar = '
';
                                break;
                        }
                }

                break;
        case '4':
                {
                        // what follows?
                        (*queryString)++;

                        switch(**queryString)
                        {
                        case '0':
                                queryChar =
'@';
                                break;
                        case ' ':
                                queryChar = '
';
                                break;
                        }
                }

                break;
        case '5':
                {
                        // what follows?
                        (*queryString)++;

                        switch(**queryString)
                        {
                        case 'B':
                                queryChar =
'[';
                                break;
                        case 'D':
                                queryChar =
']';
                                break;
                        case 'E':
                                queryChar =
'^';
                                break;
                        case ' ':
                                queryChar = '
';
                                break;
                        }
                }
```

```
                break;
        case '7':
                {
                        // what follows?
                        (*queryString)++;

                        switch(**queryString)
                        {
                        case 'B':
                                queryChar =
'{';
                                break;
                        case 'C':
                                queryChar =
'|';
                                break;
                        case 'D':
                                queryChar =
'}';
                                break;
                        case 'E':
                                queryChar =
'~';
                                break;
                        case ' ':
                                queryChar = '
';
                                break;
                        }
                }

                break;
        case '+':
                queryChar = '+';
                break;
        }

        // advance pointer and return
        (*queryString)++; return queryChar;
}

////////////////////////////////////////////////////
//////////////////
```

tpccIsapi/StdAfx.cpp

```
// stdafx.cpp : source file that includes just the
standard includes
//        tpccIsapi.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
```

tpccIsapi/tpccIsapi.cpp

```
/*
**************************************************
**********
** Project                    : AIX
** Component        : Performance/TPC-C Benchmark
** Name                       : tpccIsapi.cpp
** Title            : TPCC html processing
**************************************************
**********
** Copyright (c) 2003 IBM Corporation
** All rights reserved
**************************************************
**********
** History        :
**                  Developed at IBM Austin by the
AIX RS/6000
**                  performance group.
**
** Comments                              :
**
**************************************************
**********
*/

#include "stdafx.h"

#include "..\tpccCom\tpccCom.h"
#include "..\tpccCom\tpccCom_i.c"
#include <tpccIsapi.hpp>

// For custom assert and trace handling with
WebDbg.exe
[ module(name="tpccIsapi", type="dll") ];
[ emitidl(restricted) ];

#define _WIN32_DCOM

////////////////////////////////////////////////////
///////////
// Globals
////////////////////////////////////////////////////
///////////

int                maxDataSize;
                   //max struct size of all txn(s)
int                numUsers;
                   //number of users that client
will service.
int                dlvyQueueLen;
                   //static length of dlvy queue
int                dlvyThreads;
                   //number of dlvy threads to
create
int                dlvyBufferFreeSlots;
         //length of dlvy txn queue
int                dlvyBufferSlotIndex;
         //index into next avaliable slot in dlvy
txn queue
int                dlvyBufferThreadIndex;
         //thread index into dlvy txn queue
int                nullDB;
                           //null db on
client(bypass com call).

int                trace;

static DWORD
         threadLSIndex;
         //isapi thread local storage index
CRITICAL_SECTION           isapiLock;
                           //isapi lock

CRITICAL_SECTION           errorLock;
                           //error log file lock.
CRITICAL_SECTION           termLock;
                  //terminal array lock.
CRITICAL_SECTION           dlvyQueueLock;
                  //dlvy queue critical section
lock
HANDLE
         dlvyThreadDone = INVALID_HANDLE_VALUE;
         //dlvy thread exit event
HANDLE
         dlvyThreadSemaphore = INVALID_HANDLE_VALUE;
         //dlvy thread wrk to do semaphore
int
         dlvyThreadID = 0;

struct DLVYQUEUEDATA       *dlvyQueue;
                           //dlvy queue
HANDLE
         *dlvyThreadHandles;           //ptr to
array of thread handles

TERM_ENTRY         *termArray;

         //array of terminal entries to store each
users info.
int                        termNextFree;

         //next available slot in terminal array

FILE     *htmlDebug                    =
         NULL;
         //html debug file
FILE     *errorLog         =         NULL;
                           //error file
FILE     *htmlTrace                    =
         NULL;

ofstream debugStream;
ofstream errorStream;
CRITICAL_SECTION debugMutex;
CRITICAL_SECTION errorMutex;

char     dlvyLogPath[128]              = {NULL};
char     errorLogFile[128]             = {NULL};
char     htmlTraceLogFile[128]         = {NULL};
```

```
char      dbName[64]
          = {NULL};
char      dbType[16]
          = {NULL};

typedef INT (*CONNECT_PTR)(char *dbName,void
**connectHandle);
typedef INT         (*DISCONNECT_PTR)(void
*connectHandle);
typedef INT (*DLVY_FUNC_PTR)(dlvy_wrapper *dlvy,void
*connectHandle);
typedef INT (*NORD_FUNC_PTR)(nord_wrapper *nord,void
*connectHandle);
typedef INT (*PYMT_FUNC_PTR)(paym_wrapper *pymt,void
*connnectHandle);
typedef INT (*ORDS_FUNC_PTR)(ords_wrapper *ords,void
*connectHandle);
typedef INT (*STOK_FUNC_PTR)(stok_wrapper *stok,void
*connectHandle);

HINSTANCE           dbInstance;
CONNECT_PTR                 db_connect;
DISCONNECT_PTR      db_disconnect;
DLVY_FUNC_PTR       dlvyCall;


////////////////////////////////////////////////
//////////
// Page functions arrays
////////////////////////////////////////////////
//////////

typedef int         (*pageFuncPtr) (htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle);

pageFuncPtr htmlPageFunctions[MAX_TRANSACTIONS] =
                            {

          {doLoginForm},

          {doNewOrderForm},

          {doPaymentForm},

          {doOrderStatusForm},

          {doDeliveryForm},

          {doStockForm},
                                    {doExit},

          {doLoginResults},

          {doNewOrderResults},

          {doPaymentResults},

          {doOrderStatusResults},

          {doDeliveryResults},

          {doStockResults}
                            };
```

```
extern "C" DWORD WINAPI
HttpExtensionProc(LPEXTENSION_CONTROL_BLOCK lpECB)
{
          struct TXN_HANDLE   *txnHandle = NULL;

          txnHandle = (TXN_HANDLE *)
TlsGetValue(threadLSIndex);

          if(txnHandle == NULL)
          {
                    int rc =
initTxnHandle(&txnHandle);
                    if (rc != OK)
                    {
                              char response[256];
          char htmlHeader[256];

          sprintf(response,"ERROR: Init txnHandle
function failed.\n");

                              size_t htmlPageLen =
strlen(response);

                              //add content length
and keep alive header

          sprintf(htmlHeader,HEADER,htmlPageLen);
                              lpECB-
>ServerSupportFunction(lpECB-
>ConnID,HSE_REQ_SEND_RESPONSE_HEADER,"200
OK",NULL,(DWORD*)htmlHeader);
                              lpECB-
>WriteClient(lpECB-
>ConnID,response,(LPDWORD)&htmlPageLen,0);

                              return
HSE_STATUS_SUCCESS_AND_KEEP_CONN;
                    }

                    txnHandle = (TXN_HANDLE *)
TlsGetValue(threadLSIndex);
                    if (txnHandle == NULL)
                    {
                              char response[256];
          char htmlHeader[256];

          sprintf(response,"ERROR: Unable to retrieve
txnHandle from TLS.\n");

                              size_t htmlPageLen =
strlen(response);

                              //add content length
and keep alive header

          sprintf(htmlHeader,HEADER,htmlPageLen);
                              lpECB-
>ServerSupportFunction(lpECB-
>ConnID,HSE_REQ_SEND_RESPONSE_HEADER,"200
OK",NULL,(DWORD*)htmlHeader);
```

```
                              lpECB-
>WriteClient(lpECB-
>ConnID,response,(LPDWORD)&htmlPageLen,0);

                              return
HSE_STATUS_SUCCESS_AND_KEEP_CONN;
                    }
          }

          try
          {
                    txnHandle->urlString  =
(char*)lpECB->lpszQueryString;

                    DEBUGMSG("calling doHtml() w/
query string:" << txnHandle->urlString << endl);
                    doHtml(txnHandle);

                    size_t htmlPageLen;
                    htmlPageLen = strlen(txnHandle-
>htmlPage);
                    if(htmlPageLen >= 4096)
                    {
                              ERRORMSG("WARNING:
HTML PAGE IS >= 4096!, page
size:"<<htmlPageLen<<endl);
                    }
                    //add content length and keep
alive header
                    sprintf(txnHandle-
>htmlHeader,HEADER,htmlPageLen);
                    size_t headerLen =
strlen(txnHandle->htmlHeader);
                    if(headerLen >= 256)
                    {
                              ERRORMSG("WARNING:
HTML HEADER IS >= 256!, header
size:"<<headerLen<<endl);
                    }

                    //write response to user
                    lpECB-
>ServerSupportFunction(lpECB-
>ConnID,HSE_REQ_SEND_RESPONSE_HEADER,"200
OK",NULL,(DWORD*)txnHandle->htmlHeader);
                    lpECB->WriteClient(lpECB-
>ConnID,txnHandle->htmlPage,(LPDWORD)&htmlPageLen,0);


                    DEBUGMSG("HTML PAGE--
>"<<endl<<txnHandle->htmlHeader<<txnHandle-
>htmlPage<<endl);

          }
          catch (...)
          {
                    char response[256];
                    ZeroMemory(response,256);
                    char *ptr = response;

                    appendText(&ptr,"<HTML><BODY>
Error : Unhandled Exception </BODY></HTML>");
```

```
                    DWORD   cbResponse =
sizeof(response)-1 ;

                    //write response to user
                    lpECB-
>ServerSupportFunction(lpECB-
>ConnID,HSE_REQ_SEND_RESPONSE_HEADER,"200
OK",NULL,(DWORD*)response);
                    lpECB->WriteClient(lpECB-
>ConnID,response,&cbResponse,0);
          }

    return HSE_STATUS_SUCCESS_AND_KEEP_CONN;
}

extern "C" BOOL WINAPI
GetExtensionVersion(HSE_VERSION_INFO* pVer)
{
          // Create the extension version string, and
copy string to HSE_VERSION_INFO structure.
          pVer->dwExtensionVersion =
MAKELONG(HSE_VERSION_MINOR, HSE_VERSION_MAJOR);

          // Copy description string into
HSE_VERSION_INFO structure.
          strcpy(pVer->lpszExtensionDesc, "TPCC ISAPI
Extension");

          // Initialze isapi critcal section
          InitializeCriticalSection(&isapiLock);

          // Initailize error log critcal section
          InitializeCriticalSection(&errorLock);

          // Initialze terminal critcal section
          InitializeCriticalSection(&termLock);

          // Initialize debug/error critcal sections
          if(debugFlag)

          InitializeCriticalSection(&debugMutex);
          InitializeCriticalSection(&errorMutex);

          // Read registery values
          if(readRegisteryValues() != OK)
                    return(FALSE);

          // Initialize terminal array
          termArray = (TERM_ENTRY*)
calloc(numUsers,sizeof(TERM_ENTRY));
          termNextFree = 1;

          //open up error/debug streams
          errorStream.rdbuf( )-
>open(errorLogFile,ios::out);
          if(debugFlag)
                    debugStream.rdbuf( )-
>open(htmlTraceLogFile,ios::out);

          ERRORMSG("Error log file open."<<endl);

          DEBUGMSG("Loading library for dlvy
txn."<<endl);

          int rc = getDBInstance();
          if (rc != OK)
          {
                    ERRORMSG("Error, unable to load
database dll, rc:"<<rc);
                    DEBUGMSG("Error, unable to load
database dll, rc:"<<rc);

                    return FALSE;
          }
          DEBUGMSG("Library loaded for dlvy
txn."<<endl);

          DEBUGMSG("Calling initDlvy." <<endl);

          if(initDlvy() != OK)
                    return (FALSE);

          DEBUGMSG("Initializing TLS." << endl);

          // Initialize thread local storage index
          threadLSIndex = TlsAlloc();
          if (threadLSIndex == TLS_NULL)
          {
                    ERRORMSG("Isapi error: unable to
initialize thread local storage(TLS), rc:" <<
GetLastError()<<endl);
                    return(FALSE);
          }

          DEBUGMSG("sizeof out_neword_struct:
"<<sizeof(struct out_neword_struct)<<endl);
          DEBUGMSG("sizeof  in_neword_struct:
"<<sizeof(struct in_neword_struct)<<endl);
          DEBUGMSG("sizeof out_payment_struct:
"<<sizeof(struct out_payment_struct)<<endl);
          DEBUGMSG("sizeof  in_payment_struct:
"<<sizeof(struct in_payment_struct)<<endl);
          DEBUGMSG("sizeof out_ordstat_struct:
"<<sizeof(struct out_ordstat_struct)<<endl);
          DEBUGMSG("sizeof  in_ordstat_struct:
"<<sizeof(struct in_ordstat_struct)<<endl);
          DEBUGMSG("sizeof out_delivery_struct:
"<<sizeof(struct out_delivery_struct)<<endl);
          DEBUGMSG("sizeof  in_delivery_struct:
"<<sizeof(struct in_delivery_struct)<<endl);
          DEBUGMSG("sizeof out_stocklev_struct:
"<<sizeof(struct out_stocklev_struct)<<endl);
          DEBUGMSG("sizeof  in_stocklev_struct:
"<<sizeof(struct in_stocklev_struct)<<endl);

          //compute the max struct size for com data
construct
          maxDataSize =
max(maxDataSize,sizeof(nord_wrapper));
          maxDataSize =
max(maxDataSize,sizeof(paym_wrapper));
          maxDataSize =
max(maxDataSize,sizeof(ords_wrapper));
          maxDataSize =
max(maxDataSize,sizeof(dlvy_wrapper));
          maxDataSize =
max(maxDataSize,sizeof(stok_wrapper));
          maxDataSize += 10;

          DEBUGMSG("max data struct
size:"<<maxDataSize <<endl);

          return true;
}

extern "C" BOOL WINAPI TerminateExtension(DWORD
dwFlags)
{
          return true;
}


/*
**************************************************
**********
** Name                     :         initTxnHandle
** Description      :
**
          Isapi thread initializes its own com
interface
**
          structure.
** Parameters       :
**
          TXN_HANDLE**                    isapi txn
handle
** Returns                  :
**                                                  int
- return code
** Comments                 :
**
**************************************************
**********
*/
int initTxnHandle(TXN_HANDLE **txnHandle)
{
          DEBUGMSG("Inside init txn handle, getting
isapiLock." << endl);
          EnterCriticalSection(&isapiLock);

          HRESULT hres = NULL;
          try
          {
                    DEBUGMSG("Got ispaiLock,
initializing txnHandle: "<<DEBUGADDRESS(*txnHandle)<<
endl);
                    *txnHandle = (TXN_HANDLE *)
calloc(1,sizeof(TXN_HANDLE));
                    if (*txnHandle == NULL)
                    {
                              ERRORMSG("Unable to
allocated TXN_HANDLE, rc:"<<GetLastError()<<endl);
                              return ERR;
                    };

                    (*txnHandle)-
>comInterface.comHandle = NULL;
                    DEBUGMSG("Initializing txnHandle
com data buffer to "<<maxDataSize<<"bytes"<<endl);
```

```
                    (*txnHandle)-
>comInterface.txnBuffer = (char *)
CoTaskMemAlloc(maxDataSize);
                    if (!((*txnHandle)-
>comInterface.txnBuffer))
                    {

          ERRORMSG("CoTaskMemAlloc() failed of size
"<<maxDataSize<<", rc: "<<hres<<endl);
                              return(ERR);
                    };
                    DEBUGMSG("txnHandle com data
buffer initialized to " << maxDataSize << "bytes"
<<endl);

                    DEBUGMSG("Calling CoInitialize
with txnHandle: "<<DEBUGADDRESS(*txnHandle)<<endl);
                    hres =
CoInitializeEx(NULL,COINIT_MULTITHREADED);
                    if (FAILED(hres))
                    {

          ERRORMSG("CoInitializeEx() failed, rc :
"<<hres<<endl);
                              return(ERR);
                    };

                    struct  _timeb
                    startTime;
                    struct  _timeb
                    endTime;

                    DEBUGMSG("Calling
CoCreateInstance with
txnHandle:"<<DEBUGADDRESS(*txnHandle)<< endl);
                    _ftime(&startTime);
                    hres =
CoCreateInstance(CLSID_tpcc_com,NULL,CLSCTX_SERVER,II
D_Itpcc_com,(void **)&(*txnHandle)-
>comInterface.comHandle);
                    if (FAILED(hres))
                    {
                              _ftime(&endTime);
                              //store error code in
txnHandle

          ERRORMSG("CoCreateInstance() failed,
code:"<<HRESULT_CODE(hres)<<"
facility:"<<HRESULT_FACILITY(hres)<<
                                        "
hres:"<<hres<< " time waiting:"<<

          ((((endTime.time - startTime.time)*1000)+

(endTime.millitm -
startTime.millitm))/1000.0)<<endl);


          DEBUGMSG("CoCreateInstance() failed,
code:"<<HRESULT_CODE(hres)<<"
facility:"<<HRESULT_FACILITY(hres)<<
                                        "
hres:"<<hres<< " time waiting:"<<

          ((((endTime.time - startTime.time)*1000)+

(endTime.millitm -
startTime.millitm))/1000.0)<<endl);

                              return(ERR);
                    };

                    _ftime(&endTime);
                    DEBUGMSG("CoCreateInstance
successful.txnHande com initialized, time waiting for
object to be activated:" <<
                                        ((((endTime.time -
startTime.time)*1000)+

(endTime.millitm -
startTime.millitm))/1000.0)<<endl);

                    //call set complete to return
object to pool.
                    (*txnHandle)-
>comInterface.comHandle->doSetComplete();

                    //set the com buffers size
                    DEBUGMSG("Setting txnHandle: " <<
DEBUGADDRESS(*txnHandle) << "com buffer size to " <<
maxDataSize<< endl)
                    (*txnHandle)->comInterface.size =
maxDataSize;

                    DEBUGMSG("txnHandle:
"<<DEBUGADDRESS(*txnHandle) <<"set to " <<
maxDataSize << endl);


          TlsSetValue(threadLSIndex,*txnHandle);

                    DEBUGMSG("txnHandle:
"<<DEBUGADDRESS(*txnHandle) << "stored in TLS" <<
endl);

                    ZeroMemory((*txnHandle)-
>htmlPage,MAX_HTML_PAGE_LEN);
                    ZeroMemory((*txnHandle)-
>htmlHeader,MAX_HTML_HEADER_LEN);

                    LeaveCriticalSection(&isapiLock);
                    return(OK);
          }
          catch(...)
          {
                    DEBUGMSG("Unhandled exeception in
initTxnHandle, unlocking isapi lock" <<endl);
                    ERRORMSG("Unhandled exeception in
initTxnHandle, unlocking isapi lock" <<endl);
                    LeaveCriticalSection(&isapiLock);
          };

          return ERR;
}

/*
**************************************************
**********
** Name                    :         getDBInstance
** Description      :
**
          load db specific lib based on dbType
registery
**
          value.
** Parameters       :
**
** Returns                 :
**                                                  int
- return code
** Comments                :
**
          This function only exists for the dlvy
threads
**
          Dlvy threads hold direct connections to the
database
**                                                  and
therefore need to know what db interface to talk to.
**************************************************
**********
*/
int getDBInstance()
{
          if(nullDB)
          {
                    dbInstance =
LoadLibrary("c:\\inetpub\\wwwroot\\tpcc\\nullDB.dll")
;
                    if(dbInstance == NULL)
                    {
                              return
ERR_NULL_DLL_NOT_LOADED;
                    }
          }
          else if( (strcmp(dbType,"DB2") == 0) )
          {
                    dbInstance =
LoadLibrary("c:\\inetpub\\wwwroot\\tpcc\\tpccDB2glue.
dll");
                    if(dbInstance == NULL)
                    {
                              return
ERR_DB2_DLL_NOT_LOADED;
                    }
          }
          else if( (strcmp(dbType,"ORACLE") == 0) )
          {
                    return ERR_ORACLE_DLL_NOT_LOADED;
          }
          else
          {
                    return ERR_UNKNOWN_DB;
          }

          db_connect =
(CONNECT_PTR)GetProcAddress(dbInstance,"connect_db");
          if(db_connect == NULL)
          {
```

```
                    return
ERR_CONNECT_ADDRESS_NOT_FOUND;
          }
          dlvyCall =
(DLVY_FUNC_PTR)GetProcAddress(dbInstance,"do_dlvy");
          if(dlvyCall == NULL)
          {
                    return
ERR_DLVY_ADDRESS_NOT_FOUND;
          }

          return OK;
}

/*
**************************************************
***********
** Name                        :         initDlvy
** Description      :
**
          initialize dlvy threads/dlvy queueu
** Parameters       :
**
** Returns                     :
**                                                 int
- return code
** Comments                    :
**
**************************************************
***********
*/

int initDlvy()
{
          // Initialze critcal section
          InitializeCriticalSection(&dlvyQueueLock);

          //create dlvy queue
          dlvyQueue = (DLVYQUEUEDATA *)
calloc(dlvyQueueLen,sizeof(DLVYQUEUEDATA));

          dlvyThreadDone = CreateEvent(NULL,

                              TRUE,
          //manual reset

                              FALSE,  //initially
not signalled.

                              NULL);
          if(dlvyThreadDone == NULL)
          {
                    DEBUGMSG("Error: dlvyThreadDone
handled init failed,
GetLastError:"<<GetLastError()<<endl);

                    ERRORMSG("Error : dlvyThreadDone
handled init failed,
GetLastError:"<<GetLastError()<<endl);

                    return
ERR_DLVY_EVENT_INIT_FAILED;
          }

          //create dlvy semaphore
          dlvyThreadSemaphore =
CreateSemaphore(NULL,0,dlvyQueueLen,NULL);
          if(dlvyThreadSemaphore == NULL)
          {
                    DEBUGMSG("Error:
dlvyThreadSemaphore semaphore init failed,
GetLastError:"<<GetLastError()<<endl);
                    ERRORMSG("Error:
dlvyThreadSemaphore semaphore init failed,
GetLastError:"<<GetLastError()<<endl);
                    return
ERR_DLVY_SEMAPHORE_INIT_FAILED;

          }

          //set number of free slots available in
queue
          dlvyBufferFreeSlots = dlvyQueueLen;


          //index into next avaliable slot in dlvy
txn queue
          dlvyBufferSlotIndex = 0;


          //thread index into dlvy txn queue
          dlvyBufferThreadIndex = 0;

          dlvyThreadHandles = new
HANDLE[dlvyThreads];
          //create threads
          for(int threadCount = 0;threadCount <
dlvyThreads;threadCount++)
          {
                    dlvyThreadHandles[threadCount] =
(HANDLE)_beginthread(dlvyThreadEntry,0,NULL);
                    if(dlvyThreadHandles[threadCount]
== INVALID_HANDLE_VALUE)
                              return
ERR_DLVY_THREAD_FAILED;
          }

          return OK;
}


/*
**************************************************
***********
** Name                        :
          readRegisteryValues
** Description      :
**
          initialize isapi global variables from
registery
** Parameters       :
**
** Returns                     :
**                                                 int
- return code
** Comments                    :
**
**************************************************
***********
*/
int readRegisteryValues()
{
          HKEY      registeryKey;
          char      value[MAX_STRING_LEN];
          DWORD     regType;
          DWORD     regValue;
          DWORD     regValueSize = MAX_STRING_LEN;

          //open up registery key
          if(RegOpenKeyEx(HKEY_LOCAL_MACHINE,REGISTER
Y_SUB_KEY,0,KEY_READ,&registeryKey) != ERROR_SUCCESS)

                    return ERR_UNABLE_TO_OPEN_REG;

          //get null db flag
          regValueSize = sizeof(regValue);
          if(RegQueryValueEx(registeryKey,NULL_DB,0,&
regType,(BYTE *)&regValue,&regValueSize) ==
ERROR_SUCCESS)
                              nullDB = regValue;
          else
                              nullDB = 0;

          //get num dlvy threads
          regValueSize = sizeof(regValue);
          if(RegQueryValueEx(registeryKey,DELIVERY_TH
READS,0,&regType,(BYTE *)&regValue,&regValueSize) ==
ERROR_SUCCESS)
                              dlvyThreads = regValue;
          else
                              dlvyThreads =
DEFAULT_DLVY_THREADS;

          //get dlvy queue len
          regValueSize = sizeof(regValue);
          if(RegQueryValueEx(registeryKey,DELIVERY_QU
EUE_LEN,0,&regType,(BYTE *)&regValue,&regValueSize)
== ERROR_SUCCESS)
                              dlvyQueueLen =
regValue;
          else
                              dlvyQueueLen =
DEFAULT_DLVY_QUEUE_LEN;

          //get the htmlTrace flag
          regValueSize = sizeof(regValue);
          if(RegQueryValueEx(registeryKey,HTML_TRACE,
0,&regType,(BYTE *)&regValue,&regValueSize) ==
ERROR_SUCCESS)
                              trace = regValue;
          else
                              trace = 0;

          //get the client null db flag
          regValueSize = sizeof(regValue);
          if(RegQueryValueEx(registeryKey,NULL_DB,0,&
regType,(BYTE *)&regValue,&regValueSize) ==
ERROR_SUCCESS)
                              nullDB = regValue;
```

```
        else
                        nullDB = 0;

        //get the num of users
        regValueSize = sizeof(regValue);
        if(RegQueryValueEx(registeryKey,NUM_USERS,0
,&regType,(BYTE *)&regValue,&regValueSize) ==
ERROR_SUCCESS)
                        numUsers = regValue;
        else
                        numUsers =
DEFAULT_NUM_USERS;

        //get dlvy log file path
        regValueSize = sizeof(value);
        if
(RegQueryValueEx(registeryKey,DELIVERY_LOG_PATH,0,&re
gType,(BYTE *) &value,&regValueSize)== ERROR_SUCCESS
)
                strcpy(dlvyLogPath,value);
        else

        strcpy(dlvyLogPath,DEFAULT_DLVY_LOG_PATH);

        //get global error log file path/name
        regValueSize = sizeof(value);
        if
(RegQueryValueEx(registeryKey,ERROR_LOG_FILE,0,&regTy
pe,(BYTE *) &value,&regValueSize)== ERROR_SUCCESS )
                strcpy(errorLogFile,value);
        else

        strcpy(errorLogFile,DEFAULT_ERROR_LOG_FILE)
;

        //get global error log file path/name
        regValueSize = sizeof(value);
        if
(RegQueryValueEx(registeryKey,HTML_TRACE_LOG_FILE,0,&
regType,(BYTE *) &value,&regValueSize)==
ERROR_SUCCESS )
                strcpy(htmlTraceLogFile,value);
        else

        strcpy(htmlTraceLogFile,DEFAULT_HTML_TRACE_
LOG_FILE);

        //get db name
        regValueSize = sizeof(value);
        if
(RegQueryValueEx(registeryKey,DB_NAME,0,&regType,(BYT
E *) &value,&regValueSize)== ERROR_SUCCESS )
                strcpy(dbName,value);
        else
                strcpy(dbName,DEFAULT_DB_NAME);

        //get db type
        regValueSize = sizeof(value);
        if
(RegQueryValueEx(registeryKey,DB_TYPE,0,&regType,(BYT
E *) &value,&regValueSize)== ERROR_SUCCESS )
                strcpy(dbType,value);
        RegCloseKey(registeryKey);

        return OK;
}

/*
*************************************************
**********
** Name                    : doLoginForm
** Description      :
**                                      HTML Login
page entry point
** Parameters       :
**
htmlPhraser*        command block
**                                      TXN_HANDLE*
        txn handle struct
** Returns                 :
**                                      int -
return code
** Comments                :
**
*************************************************
**********
*/

int doLoginForm(htmlPhraser *commandBlock,TXN_HANDLE
*txnHandle)
{
        DEBUGMSG("Entering doLoginForm()."<<endl);
        char *html=txnHandle->htmlPage;

        DEBUGMSG("Creating html login page"<<endl);
        //begin html page
        appendText(&html,"<HTML><HEAD><TITLE>TPC-C
Client Home Page</TITLE></HEAD>"

"<FORM ACTION=\""

APP_NAME

"\" METHOD=\"GET\">"

"<H2>Please Login.</H2>"

"<INPUT TYPE=\"hidden\" NAME=\""

CMD_TXN_ID

"\" VALUE=\""

CMD_MENU

"\">"

"<H3>Warehouse <INPUT NAME=\""

CMD_W_ID

"\" SIZE=6>"
                                                "
District <INPUT NAME=\""

CMD_D_ID

"\" SIZE=2></H3>"

"<INPUT TYPE=\"submit\" VALUE=\"Submit\">"

"</FORM>");


html+=sprintf(html,"dlvy Queue Length:%d <BR> num
dlvy threads:%d <BR> dlvy queue free slots:%d <BR>
isapi queue index:%d <BR> thread queue index:%d <BR>
</BODY></HTML>\n",
                                dlvyQueueLen,
                                dlvyThreads,
                                dlvyBufferFreeSlots,
                                dlvyBufferSlotIndex,

dlvyBufferThreadIndex);

DEBUGMSG("Html login page done"<<endl);

return OK;
}

/*
*************************************************
**********
** Name                    : doLoginResults
** Description      :
**                                      HTML Login
results page entry point
** Parameters       :
**
htmlPhraser*        command block
**                                      TXN_HANDLE*
        txn handle struct
** Returns                 :
**                                      int -
return code
** Comments                :
**
*************************************************
**********
*/

int doLoginResults(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle)
{
        char *html=txnHandle->htmlPage;

        //validate parameters
        if( (txnHandle->w_id = atoi(commandBlock-
>get_W_ID())) == 0 )
        {

        doLoginErrorPage(html,ERR_INVALID_W_ID);
                return OK;
        }
        if( (txnHandle->d_id = atoi(commandBlock-
>get_D_ID())) == 0 )
        {
```

```
          doLoginErrorPage(html,ERR_INVALID_D_ID);
                    return OK;
          }

          //store user into terminal array,
          //function will ERR if the terminal array
is full
          if( assignTerminal(txnHandle) != OK)
          {

          doLoginErrorPage(html,ERR_TERMINAL_FULL);
                    return OK;
          };

          appendText(&html,"<HTML><HEAD><TITLE>TPC-C
Main Menu</TITLE></HEAD>\r\n"

"<BODY><FORM ACTION=\""

APP_NAME

"\" METHOD=\"GET\">\r\n"

"<H3>Please Select Transaction.</H3>\r\n");
          html+=appendButtons(html);
          html+=appendHiddenFields(html,txnHandle);
          appendText(&html,"</FORM></BODY></HTML>");

          return OK;
}

/*
**************************************************
***********
** Name                      : doLoginErrorPage
** Description      :
**                                        HTML Login
page entry point
** Parameters       :
**                                        char *
          html page buffer
**                                        char *
          error message
** Returns                   :
**                                        int -
return code
** Comments                  :
**
**************************************************
***********
*/

int doLoginErrorPage(char *htmlPage,char
*errorMessage)
{
          char *html=htmlPage;

          //begin html page
          appendText(&html,"<HTML><HEAD><TITLE>TPC-C
Client Home Page</TITLE></HEAD>"

"<FORM ACTION=\""

APP_NAME

"\" METHOD=\"GET\">");
          appendText(&html,"<H2>Please Login.</H2>"

"<INPUT TYPE=\"hidden\" NAME=\""

CMD_TXN_ID

"\" VALUE=\""

CMD_MENU

"\">"

"<H3>Warehouse <INPUT NAME=\""

CMD_W_ID

"\" SIZE=6>"
                                                  "
District <INPUT NAME=\""

CMD_D_ID

"\" SIZE=2></H3>"

"<INPUT TYPE=\"submit\" VALUE=\"Submit\">"

"</FORM>");
          appendText(&html,errorMessage);
          appendText(&html,"<BODY></HTML>");

          return OK;
}


/*
**************************************************
***********
** Name                      : doNewOrderForm
** Description      :
**                                        HTML
neworder page entry point
** Parameters       :
**
htmlPhraser*        command block
**                                        TXN_HANDLE*
          txn handle struct
** Returns                   :
**                                        int -
return code
** Comments                  :
**
**************************************************
***********
*/

int doNewOrderForm(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle)
{
          char *html=txnHandle->htmlPage;

          appendText(&html,"<HTML><HEAD><TITLE>TPC-C
New Order</TITLE></HEAD>\r\n"

"<BODY><FORM ACTION=\""

APP_NAME

"\" METHOD=\"GET\">\r\n"

"<CENTER><H3>Please Fill In New Order
Form.</H3></CENTER>\r\n" //check if not needed

"Submit Transaction <INPUT TYPE=\"submit\" NAME=\""

CMD_TXN_ID

"\" VALUE=\""

CMD_NORD

"\">");

          //append the hidden
          html+=appendHiddenFields(html,txnHandle);

          //int buffer for warehouse
          char buffer[15];
          appendText(&html," <PRE>"
//                                                  "
1         2         3         4         5         6
7         8         9\r\n"
//
"12345678901234567890123456789012345678901234567890123
345678901234567890123456789012345678901234567890\r\n"

"Warehouse: ");
          appendText(&html,itoa(txnHandle-
>w_id,buffer,10),7,1);
          appendText(&html,"District: <INPUT NAME=\""

CMD_D_ID

"\" SIZE=1>                                Date:<BR>"
                    "Customer <INPUT NAME=\""

CMD_C_ID

"\" SIZE=6>  Name:                    Credit:
%Disc.:<BR>"

"Order Number:           Number of Lines:
W_tax:         D_tax:<BR> <BR>"
//                                                  "
1         2         3         4         5         6
7         8         9\r\n"
//
"12345678901234567890123456789012345678901234567890123
345678901234567890123456789012345678901234567890\r\n"
                                                  "
Supp_W  Item_Num  Item_Name                 Qty Stock
B/G  Price    Amount <BR> ");
```

```
        //append the 15 items commands
        html+=appendItems(html,NORD_ITEMS,ITEM_STAR
T);

        //seal up html page
        appendText(&html,"</PRE></BODY></HTML>");

        return OK;
}

/*
**************************************************
***********
** Name                    : doNewOrderResults
** Description     :
**                                      HTML
neworder page entry point
** Parameters      :
**
htmlPhraser*        command block
**                                      TXN_HANDLE*
        txn handle struct
** Returns                 :
**                                      int -
return code
** Comments                :
**
**************************************************
***********
*/


int doNewOrderResults(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle)
{
        DEBUGMSG("Entered doNewOrderResults" <<
endl);

        char *html=txnHandle->htmlPage;
        struct nord_wrapper *nord = NULL;

        DEBUGMSG("Casting COM txnBuffer to nord
struct" <<endl);
        nord = (nord_wrapper*)txnHandle-
>comInterface.txnBuffer;
        ZeroMemory(nord,maxDataSize);

        DEBUGMSG("COM txnBuffer initialized,
validating input parameters" << endl);

        //set warehouse,district and customer id
from command block
        nord->in_nord.s_W_ID = txnHandle->w_id;
        DEBUGMSG("nord w_id:" <<  nord-
>in_nord.s_W_ID << endl);

        if( (nord->in_nord.s_D_ID =
atoi(commandBlock->get_D_ID()) ) == 0)
        {

        doNewOrderErrorPage(html,ERR_INVALID_D_ID,c
ommandBlock,txnHandle);
                return OK;
        }
        DEBUGMSG("nord d_id:" <<  nord-
>in_nord.s_D_ID << endl);

        if((nord->in_nord.s_C_ID =
atoi(commandBlock->get_C_ID()) ) == 0)
        {

        doNewOrderErrorPage(html,ERR_INVALID_C_ID,c
ommandBlock,txnHandle);
                return OK;
        }
        DEBUGMSG("nord c_id:" <<  nord-
>in_nord.s_C_ID << endl);

        int itemCmd                             =
ITEM_START;
        short itemComplete = 0;
        char field[256] ={NULL};

        for (int
itemIndex=0;itemIndex<NORD_ITEMS;itemIndex++)
        {
                //supply warehouse
                if( *(commandBlock-
>get_ITEM_SUPP_W(itemIndex)) )
                                if ( (nord-
>in_nord.in_item[nord-
>in_nord.s_O_OL_CNT].s_OL_SUPPLY_W_ID =
atoi(commandBlock->get_ITEM_SUPP_W(itemIndex))) == 0)
                                {

        doNewOrderErrorPage(html,ERR_INVALID_SUPPLY
_W_ID,commandBlock,txnHandle);
                                        return OK;
                                }
                                else

        itemComplete++;

                //item number
                if( *(commandBlock-
>get_ITEM_ITEM_NUM(itemIndex)) )
                {
                        if(itemComplete==1)
                        {
                                        if ( (nord-
>in_nord.in_item[nord->in_nord.s_O_OL_CNT].s_OL_I_ID
= atoi(commandBlock->get_ITEM_ITEM_NUM(itemIndex)))
== 0)
                                        {

        doNewOrderErrorPage(html,ERR_INVALID_ITEM_N
UM,commandBlock,txnHandle);

        return OK;
                                        }
                                        else

        itemComplete++;
                                }
                                //missing previous
value of item supp warehouse, flag error
                                else
                                {

        doNewOrderErrorPage(html,ERR_INVALID_SUPPLY
_W_ID,commandBlock,txnHandle);
                                        return OK;
                                }
                        }
                        else if( (itemComplete==1) )
//nothing in the command block, check to see if the
previous item value is present
                        {

        doNewOrderErrorPage(html,ERR_INVALID_ITEM_N
UM,commandBlock,txnHandle);
                                return OK;
                        }

                        //item qty
                        if(*(commandBlock-
>get_ITEM_QTY(itemIndex)))
                        {
                                if(itemComplete==2)
                                {
                                        if( (nord-
>in_nord.in_item[nord-
>in_nord.s_O_OL_CNT].s_OL_QUANTITY =
atoi(commandBlock->get_ITEM_QTY(itemIndex))) == 0)
                                        {

        doNewOrderErrorPage(html,ERR_INVALID_ITEM_O
TY,commandBlock,txnHandle);

        return OK;
                                        }
                                        else

        itemComplete++;
                                }
                                //missing previous
value of item number
                                else if (itemComplete
==1)
                                {

        doNewOrderErrorPage(html,ERR_INVALID_ITEM_N
UM,commandBlock,txnHandle);
                                        return OK;
                                }
                                //missing 1st value of
supp warehouse
                                else
                                {

        doNewOrderErrorPage(html,ERR_INVALID_SUPPLY
_W_ID,commandBlock,txnHandle);
                                        return OK;
                                }
                        }
                        else if(itemComplete==2)
                //nothing in the command block, check to
see if the previous item values are present
                        {
```

```
        doNewOrderErrorPage(html,ERR_INVALID_ITEM_N
UM,commandBlock,txnHandle);
                        return OK;
                }

                DEBUGMSG("nord item:" << nord-
>in_nord.s_O_OL_CNT << "SUPPLY_W_ID:" << nord-
>in_nord.in_item[nord-
>in_nord.s_O_OL_CNT].s_OL_SUPPLY_W_ID <<
                        " OL_I_ID:" << nord-
>in_nord.in_item[nord->in_nord.s_O_OL_CNT].s_OL_I_ID
<< " OL_QUANTITY:" << nord->in_nord.in_item[nord-
>in_nord.s_O_OL_CNT].s_OL_QUANTITY <<endl);

                if(itemComplete == 3)
                        nord-
>in_nord.s_O_OL_CNT++;

                itemComplete=0;
        }

        DEBUGMSG("complete nord items:"<<nord-
>in_nord.s_O_OL_CNT<<" initializing remaing unused
items " << NORD_ITEMS - nord->in_nord.s_O_OL_CNT  <<
" to 0" <<endl);
        for(int itemIndex=nord-
>in_nord.s_O_OL_CNT;itemIndex<NORD_ITEMS;itemIndex++)
        {
                nord-
>in_nord.in_item[itemIndex].s_OL_SUPPLY_W_ID=0;
                nord-
>in_nord.in_item[itemIndex].s_OL_I_ID = 0;
                nord-
>in_nord.in_item[itemIndex].s_OL_QUANTITY =0;
        }

        DEBUGMSG("nord creating new order results
html title page" <<endl);

        appendText(&html,"<HTML><HEAD><TITLE>TPC-C
New Order Results</TITLE></HEAD>\r\n"

"<BODY><FORM ACTION=\""

APP_NAME

"\" METHOD=\"GET\">\r\n");
        //append menu buttons
        html+=appendButtons(html);
        html+=appendHiddenFields(html,txnHandle);

        appendText(&html,"</FORM><CENTER><H3>New
Order</H3> <BR></CENTER>"
                                                "<PRE>"
//                                                      "
1       2       3       4       5       6
7       8       9\r\n"
//
"12345678901234567890123456789012345678901234567890123456789012
34567890123456789012345678901234567890\r\n

"");
```

```
        //assume failure
        nord->out_nord.s_transtatus = -1;

        DEBUGMSG("nord executing COM interface
function" << endl);
        HRESULT   hres;
        try
        {
                hres = txnHandle-
>comInterface.comHandle->doNewOrder(&txnHandle-
>comInterface.size,(UCHAR**)&txnHandle-
>comInterface.txnBuffer);
        }
        catch(...)
        {
                html+=sprintf(html,"ERROR: nord
com call caused exeception to
occur.</PRE></BODY></HTML>");
                ERRORMSG("ERROR : nord com call
cause exeception to occur,"<<endl);
                return OK;
        }

        if(FAILED(hres))
        {
                ERRORMSG("ERROR : nord com call
failed, rc:" << hex  << hres);
                DEBUGMSG("ERROR : nord com call
failed, rc:" << hex  << hres);
                return OK;
        }

        //com call successful, return object back
to pool.
        hres = txnHandle->comInterface.comHandle-
>doSetComplete();
        if(FAILED(hres))
        {
                ERRORMSG("ERROR : nord
setcomplete call failed, rc:" << hex  << hres);
                DEBUGMSG("ERROR : nord
setcomplete call failed, rc:" << hex  << hres);
        }

        nord = (nord_wrapper *)txnHandle-
>comInterface.txnBuffer;
        if(FAILED(hres))
        {
                html+=sprintf(html,"ERROR: nord
com doSetComplete failed,
rc:%ld</PRE></BODY></HTML>",hres);
                ERRORMSG("ERROR : nord com
doSetComplete failed,
rc:"<<DEBUGADDRESS(hres)<<endl);
                return OK;
        }

        DEBUGMSG("nord COM interface function
successful, s_transtatus:" << nord-
>out_nord.s_transtatus << endl);

        int rc = nord->out_nord.s_transtatus;
```

```
        char buffer[10];
        appendText(&html,"Warehouse:  ");
        appendText(&html,itoa(nord-
>in_nord.s_W_ID,buffer,10),6,1);

        appendText(&html,"District: ");
        appendText(&html,itoa(nord-
>in_nord.s_D_ID,buffer,10),26,1);

        appendText(&html,"Date: ");
        if(rc == OK)
        {
                char dateTimeBuffer[50];

        copyOutDateTime(dateTimeBuffer,nord-
>out_nord.s_O_ENTRY_D_time);
                appendText(&html,dateTimeBuffer);
        }
        appendText(&html," <BR>"
                                "Customer: ");
        appendText(&html,itoa(nord-
>in_nord.s_C_ID,buffer,10),8,1);

        appendText(&html,"Name: ");
        appendText(&html,nord-
>out_nord.s_C_LAST,LAST_NAME_LEN+3,1);

        appendText(&html,"Credit: ");
        appendText(&html,nord-
>out_nord.s_C_CREDIT,5,1);

        appendText(&html,"%Disc.: ");
        if(rc == OK)
        {
                html+=sprintf(html,"%2.2lf",nord-
>out_nord.s_C_DISCOUNT/100.0);
        }
        appendText(&html," <BR>"
                        "Order Number: ");
        if(rc != INVALID_STATUS)
                appendText(&html,itoa(nord-
>out_nord.s_O_ID,buffer,10),10,1);

        appendText(&html,"Number of Lines: ");

        if(rc != INVALID_STATUS)
                appendText(&html,itoa(nord-
>out_nord.s_O_OL_CNT,buffer,10),10,1);

        appendText(&html,"W_Tax: ");
        if(rc == OK)
        {
                html+=sprintf(html,"%5.2lf",nord-
>out_nord.s_W_TAX/100.0);
        }

        appendText(&html,"   D_Tax: ");
        if(rc == OK)
        {
                html+=sprintf(html,"%5.2lf",nord-
>out_nord.s_D_TAX/100.0);
        }
        appendText(&html," <BR> <BR>"
```

```
//                              "         1
2         3         4         5         6         7
8         9\r\n"
//
"12345678901234567890123456789012345678901234567890123
34567890123456789012345678901234567890\r\n"
                              " Supp_W  Item_Id
Item_Name                 Qty Stock  B/G  Price
Amount <BR> ");

          //display items
          if (rc == OK)
          {
                    //display valid items
                    for(int itemCount=0;itemCount <
nord->out_nord.s_O_OL_CNT;itemCount++)
                    {

          appendText(&html,itoa(nord-
>in_nord.in_item[itemCount].s_OL_SUPPLY_W_ID,buffer,1
0),8,1);

          appendText(&html,itoa(nord-
>in_nord.in_item[itemCount].s_OL_I_ID,buffer,10),10,1
);
                              appendText(&html,nord-
>out_nord.item[itemCount].s_I_NAME,DEFAULT_STRING_LEN
+1,1);

          appendText(&html,itoa(nord-
>in_nord.in_item[itemCount].s_OL_QUANTITY,buffer,10),
5,1);

          appendText(&html,itoa(nord-
>out_nord.item[itemCount].s_S_QUANTITY,buffer,10),7,1
);
                              html+=sprintf(html,"%c
$%-7.2lf $%-7.2lf <BR> ",nord-
>out_nord.item[itemCount].s_brand_generic,


                               nord-
>out_nord.item[itemCount].s_I_PRICE/100.0,


                               nord-
>out_nord.item[itemCount].s_OL_AMOUNT/100.0);
                    }
                    //display blank line for
remaining empty items in the order
                    for(int lineBreaks=0;lineBreaks <
(NORD_ITEMS-nord->out_nord.s_O_OL_CNT);lineBreaks++)
                              appendText(&html,"
<BR>");
          }
          else
                    appendText(&html," <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR>");

          appendText(&html,"\r\n <BR> ");

          html+=displayStatus(html,rc);

          if(rc == OK)
                    html+=sprintf(html,"      Total:
$%.2lf",nord->out_nord.s_total_amount/100.0);
          else
                    appendText(&html,"      Total:
<BR>");

          appendText(&html,"</PRE></BODY> </HTML>");

          DEBUGMSG("nord html page complete.
returing to calling function" << endl);

          return OK;
}

/*
**************************************************
***********
** Name                      : doNewOrderErrorPage
** Description      :
**                                        HTML
neworder page entry point
** Parameters       :
**                                        char *
          html result page
**                                        char *
          error message
**
htmlPhraser*  command block
**                                        TXN_HANDLE*
          txn handle struct
** Returns                   :
**                                        int -
return code
** Comments                  :
**
**************************************************
***********
*/


int doNewOrderErrorPage(char *htmlPage,char
*message,htmlPhraser *commandBlock,TXN_HANDLE
*txnHandle)
{
          char *html=htmlPage;

          appendText(&html,"<HTML><HEAD><TITLE>TPC-C
New Order</TITLE></HEAD>\r\n"

"<BODY><FORM ACTION=\""

APP_NAME

"\" METHOD=\"GET\">\r\n"

"<CENTER><H3>Please Fill In New Order
Form.</H3></CENTER>\r\n"

"Submit Transaction <INPUT TYPE=\"submit\" NAME=\""

CMD_TXN_ID

"\" VALUE=\""

CMD_NORD

"\">");

          //append the hidden warehouse and district
fields
          html+=appendHiddenFields(html,txnHandle);

          //int buffer for warehouse
          char buffer[15];
          /*appendText(&html,"<PRE>         1
2         3         4         5         6         7
8         9\r\n"

"12345678901234567890123456789012345678901234567890123
34567890123456789012345678901234567890\r\n"

"Warehouse: ");*/
          appendText(&html,"<PRE>Warehouse: ");
          appendText(&html,itoa(txnHandle-
>w_id,buffer,10),7,1);
          appendText(&html,"District: <INPUT NAME=\""

CMD_D_ID

"\" SIZE=1>                              Date:<BR>"
                    "Customer <INPUT NAME=\""


CMD_C_ID

"\" SIZE=6>  Name:                    Credit:
%Disc.:<BR>"

"Order Number:           Number of Lines:
W_tax:         D_tax:<BR> <BR>"

//"         1         2         3         4         5
6         7         8         9\r\n"

//"12345678901234567890123456789012345678901234567890
12345678901234567890123456789012345678901234567890\r\n"
                                                  "
Supp_W  Item_Num  Item_Name                 Qty Stock
B/G  Price    Amount <BR> ");

          //append the 15 items commands
          html+=appendItems(html,NORD_ITEMS,ITEM_STAR
T);
          appendText(&html,message);

          //seal up html page
          appendText(&html,"</PRE></BODY></HTML>");

          return OK;
}


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

```
** Name                        : doPaymentForm
** Description      :
**                                      HTML
payment page entry point
** Parameters       :
**
htmlPhraser*        command block
**                                      TXN_HANDLE*
          txn handle struct
** Returns                     :
**                                      int -
return code
** Comments                    :
**
**************************************************
**********
*/

int doPaymentForm(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle)
{
          char *html=txnHandle->htmlPage;
          appendText(&html,"<HTML><HEAD><TITLE>TPC-C
Payment</TITLE></HEAD>\r\n"

"<BODY><FORM ACTION=\""

APP_NAME

"\" METHOD=\"GET\">\r\n"

"<CENTER><H3>Please Fill In Payment
Form.</H3></CENTER> <BR>\r\n"

"Submit Transaction <INPUT TYPE=\"submit\" NAME=\""

CMD_TXN_ID

"\" VALUE=\""

CMD_PYMT

"\">");
          html+=appendHiddenFields(html,txnHandle);
          appendText(&html,"<BR><PRE>\r\n"

"Date:<BR>"

"Warehouse: ");
          char buffer[15];
          appendText(&html,itoa(txnHandle-
>w_id,buffer,10));

          appendSpaces(&html,10);
          appendText(&html,"District: <INPUT NAME=\""

CMD_D_ID

"\" SIZE=1>\r\n<BR>"

"<BR> <BR> <BR>"

"Customer: "

"<INPUT NAME=\""

CMD_C_ID

"\" SIZE=5>"
                                                  "
"

"Cust-Warehouse: "

"<INPUT NAME=\""

CMD_C_W_ID

"\" SIZE=5>"
                                                  "
"

"Cust-District: "

"<INPUT NAME=\""

CMD_C_D_ID

"\" SIZE=1><BR>"

"Name:  <INPUT NAME=\""

CMD_C_NAME

"\" SIZE=20>");
          appendText(&html,"
Since: <BR>"
                                                  "
"
                                                  "
Credit: <BR>"
                                                  "
"
                                                  "
%Disc: <BR>"

"Amount Paid:            "

"<INPUT NAME=\""

CMD_AMT_PAID

"\" SIZE=10>"
                                                  "
"

"New Cust-Balance:<BR>"

"Credit Limit:<BR> <BR>Cust-Data:<BR> <BR> <BR> <BR>
</PRE></BODY></HTML>");

          return OK;
}

/*

**************************************************
**********
** Name                        : doPaymentResults
** Description      :
**                                      HTML
neworder page entry point
** Parameters       :
**
htmlPhraser*        command block
**                                      TXN_HANDLE*
          txn handle struct
** Returns                     :
**                                      int - return code
** Comments                    :
**
**************************************************
**********
*/

int doPaymentResults(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle)
{
          char *html=txnHandle->htmlPage;
          char buffer[50];

          struct paym_wrapper *pymt = NULL;
          pymt = (paym_wrapper*)txnHandle-
>comInterface.txnBuffer;
          ZeroMemory(pymt,maxDataSize);

          //set login warehouse id from command block

          pymt->in_paym.s_W_ID = txnHandle->w_id;

          //set district from command block
          if( (pymt->in_paym.s_D_ID =
atoi(commandBlock->get_D_ID())) == 0)
          {

          doPaymentErrorPage(html,ERR_INVALID_D_ID,co
mmandBlock,txnHandle);
                    return OK;
          }

          //set customer id from command block
          if( (pymt->in_paym.s_C_ID =
atoi(commandBlock->get_C_ID())) == 0)
          {
                    if(*(commandBlock->get_C_NAME())
== NULL)
                    {
                              //no customer id nor
customer last name specified.

          doPaymentErrorPage(html,ERR_MISSING_C_ID_OR
_CLAST,commandBlock,txnHandle);
                              return OK;
                    }
                    else
                              strcpy(pymt-
>in_paym.s_C_LAST,commandBlock->get_C_NAME());
          }
          else
```

```
        {
                //make sure that the user only
inserted just c_id
                if(*(commandBlock->get_C_NAME())
!= NULL)
                {

        doPaymentErrorPage(html,ERR_C_ID_OR_CLAST_O
NLY,commandBlock,txnHandle);
                        return OK;
                }
        }

        //get customer warehose id field
        if( (pymt->in_paym.s_C_W_ID =
atoi(commandBlock->get_C_W_ID())) == 0)
        {

        doPaymentErrorPage(html,ERR_INVALID_C_W_ID,
commandBlock,txnHandle);
                return OK;
        }

        //get customer district id field
        if ( (pymt->in_paym.s_C_D_ID =
atoi(commandBlock->get_C_D_ID())) == 0)
        {

        doPaymentErrorPage(html,ERR_INVALID_C_D_ID,
commandBlock,txnHandle);
                return OK;
        }

        if(!copyInMoney64(commandBlock-
>get_AMT_PAID(),&pymt->in_paym.s_H_AMOUNT))
        {

        doPaymentErrorPage(html,ERR_INVALID_PAYMENT
_AMOUNT,commandBlock,txnHandle);
                return OK;
        }

        appendText(&html,"<HTML><HEAD><TITLE>TPC-C
Payment Results</TITLE></HEAD>\r\n"

"<BODY><FORM ACTION=\""

APP_NAME

"\" METHOD=\"GET\">\r\n");
        html+=appendButtons(html);

        html+=appendHiddenFields(html,txnHandle);

        appendText(&html,"</FORM><CENTER><H3>Paymen
t</H3></CENTER>");

        DEBUGMSG("Calling com entry api payment,
w_id:"<<pymt->in_paym.s_W_ID<<" d_id:"<<pymt-
>in_paym.s_D_ID<<endl);

        //assume failure
        pymt->out_paym.s_transtatus = -1;

        HRESULT   hres;
        try
        {
                hres = txnHandle-
>comInterface.comHandle->doPayment(&txnHandle-
>comInterface.size,(UCHAR**)&txnHandle-
>comInterface.txnBuffer);
        }
        catch(...)
        {
                html+=sprintf(html,"ERROR: Com
Payment call caused exeception to
occur.</PRE></BODY></HTML>");
                ERRORMSG("ERROR : Com Payment
call caused exeception to occur."<<endl);
                return OK;
        }

        if(FAILED(hres))
        {
                html+=sprintf(html,"ERROR: pymt
com call failed, rc:%x</PRE></BODY></HTML>",hres);
                ERRORMSG("ERROR : pymt com call
failed, rc:"<<hres<<endl);
                return OK;
        }

        hres = txnHandle->comInterface.comHandle-
>doSetComplete();
        if(FAILED(hres))
        {
                html+=sprintf(html,"ERROR: pymt
com doSetComplete failed,
rc:%ld</PRE></BODY></HTML>",hres);
                ERRORMSG("ERROR : pymt com
doSetComplete failed,
rc:"<<DEBUGADDRESS(hres)<<endl);
                return OK;
        }
        pymt = (paym_wrapper *)txnHandle-
>comInterface.txnBuffer;
        //get return code
        int rc = pymt->out_paym.s_transtatus;
        if( rc != OK)
        {
                html+=displayStatus(html,rc);

        appendText(&html,"</PRE></BODY></HTML>");
                ERRORMSG("Payment TXN
ERROR"<<endl
                <<"pymt-
>in_paym.s_C_D_ID:"<<pymt->in_paym.s_C_D_ID<<endl
                <<"pymt->in_paym.s_C_ID:"<<pymt-
>in_paym.s_C_ID<<endl
                <<"pymt-
>in_paym.s_C_LAST:"<<pymt->in_paym.s_C_LAST<<endl
                <<"pymt-
>in_paym.s_C_W_ID:"<<pymt->in_paym.s_C_W_ID<<endl
                <<"pymt->in_paym.s_D_ID:"<<pymt-
>in_paym.s_D_ID<<endl
                <<"pymt-
>in_paym.s_H_AMOUNT:"<<pymt->in_paym.s_H_AMOUNT<<endl
                <<"pymt-
>in_paym.s_H_DATE_time:"<<pymt-
>in_paym.s_H_DATE_time<<endl
                <<"pymt->in_paym.s_W_ID:"<<pymt-
>in_paym.s_W_ID<<endl
                <<"pymt-
>out_paym.deadlocks:"<<pymt->out_paym.deadlocks<<endl
                <<"pymt-
>out_paym.s_C_BALANCE:"<<pymt-
>out_paym.s_C_BALANCE<<endl
                <<"pymt-
>out_paym.s_C_CITY:"<<pymt->out_paym.s_C_CITY<<endl
                <<"pymt-
>out_paym.s_C_CREDIT:"<<pymt-
>out_paym.s_C_CREDIT<<endl
                <<"pymt-
>out_paym.s_C_CREDIT_LIM:"<<pymt-
>out_paym.s_C_CREDIT_LIM<<endl
                <<"pymt-
>out_paym.s_C_DATA:"<<pymt->out_paym.s_C_DATA<<endl
                <<"pymt-
>out_paym.s_C_DISCOUNT:"<<pymt-
>out_paym.s_C_DISCOUNT<<endl
                <<"pymt-
>out_paym.s_C_FIRST:"<<pymt->out_paym.s_C_FIRST<<endl
                <<"pymt->out_paym.s_C_ID:"<<pymt-
>out_paym.s_C_ID<<endl
                <<"pymt-
>out_paym.s_C_LAST:"<<pymt->out_paym.s_C_LAST<<endl
                <<"pymt-
>out_paym.s_C_MIDDLE:"<<pymt-
>out_paym.s_C_MIDDLE<<endl
                <<"pymt-
>out_paym.s_C_PHONE:"<<pymt->out_paym.s_C_PHONE<<endl
                <<"pymt-
>out_paym.s_C_SINCE_time:"<<pymt-
>out_paym.s_C_SINCE_time<<endl
                <<"pymt-
>out_paym.s_C_STATE:"<<pymt->out_paym.s_C_STATE<<endl
                <<"pymt-
>out_paym.s_C_STREET_1:"<<pymt-
>out_paym.s_C_STREET_1<<endl
                <<"pymt-
>out_paym.s_C_STREET_2:"<<pymt-
>out_paym.s_C_STREET_2<<endl
                <<"pymt-
>out_paym.s_C_ZIP:"<<pymt->out_paym.s_C_ZIP<<endl
                <<"pymt-
>out_paym.s_D_CITY:"<<pymt->out_paym.s_D_CITY<<endl
                <<"pymt-
>out_paym.s_D_STATE:"<<pymt->out_paym.s_D_STATE<<endl
                <<"pymt-
>out_paym.s_D_STREET_1:"<<pymt-
>out_paym.s_D_STREET_1<<endl
                <<"pymt-
>out_paym.s_D_STREET_2:"<<pymt-
>out_paym.s_D_STREET_2<<endl
                <<"pymt-
>out_paym.s_D_ZIP:"<<pymt->out_paym.s_D_ZIP<<endl
                <<"pymt-
>out_paym.s_H_DATE_time:"<<pymt-
>out_paym.s_H_DATE_time<<endl
```

```
                    <<"pymt-
>out_paym.s_transtatus:"<<pymt-
>out_paym.s_transtatus<<endl
                    <<"pymt-
>out_paym.s_W_CITY:"<<pymt->out_paym.s_W_CITY<<endl
                    <<"pymt-
>out_paym.s_W_STATE:"<<pymt->out_paym.s_W_STATE<<endl
                    <<"pymt-
>out_paym.s_W_STREET_1:"<<pymt-
>out_paym.s_W_STREET_1<<endl
                    <<"pymt-
>out_paym.s_W_STREET_2:"<<pymt-
>out_paym.s_W_STREET_2<<endl
                    <<"pymt-
>out_paym.s_W_ZIP:"<<pymt->out_paym.s_W_ZIP<<endl);

                    return OK;
          }
//        appendText(&html, "<BR><PRE>\r\n");
//        appendText(&html,"         1         2
3         4         5         6         7
8<BR>");
//
          appendText(&html,"12345678901234567890123456
78901234567890123456789012345678901234567890123456789012345678
90<BR>");

          //start creating result body
          appendText(&html, "<BR><PRE>\r\n"

"Date: ");

          copyOutDateTime(buffer,pymt-
>out_paym.s_H_DATE_time);
          appendText(&html,buffer);

          appendText(&html, "<BR>"
                     "Warehouse: ");
          appendText(&html,itoa(pymt-
>in_paym.s_W_ID,buffer,10),6+24,1);
          appendText(&html,"District: ");
          appendText(&html,itoa(pymt-
>in_paym.s_D_ID,buffer,10),2,1);
          appendText(&html,"<BR>");

          //print out warehouse and district
information
          appendText(&html,pymt-
>out_paym.s_W_STREET_1,STREET_LEN+21,1);
          appendText(&html,pymt-
>out_paym.s_D_STREET_1,STREET_LEN,1);
          appendText(&html,"<BR>");

          appendText(&html,pymt-
>out_paym.s_W_STREET_2,STREET_LEN+21,1);
          appendText(&html,pymt-
>out_paym.s_D_STREET_2,STREET_LEN,1);
          appendText(&html,"<BR>");

          appendText(&html,pymt-
>out_paym.s_W_CITY,CITY_LEN+1,1);
          appendText(&html,pymt-
>out_paym.s_W_STATE,STATE_LEN+1,1);
          copyOutZip(buffer,pymt->out_paym.s_W_ZIP);
          appendText(&html,buffer);

          appendText(&html,pymt-
>out_paym.s_D_CITY,CITY_LEN+1,1);
          appendText(&html,pymt-
>out_paym.s_D_STATE,STATE_LEN+1,1);
          copyOutZip(buffer,pymt->out_paym.s_D_ZIP);
          appendText(&html,buffer);

          //print out customer information
          appendText(&html,"<BR> <BR>Customer: ");
          appendText(&html,itoa(pymt-
>out_paym.s_C_ID,buffer,10),5+1,1);

          appendText(&html,"Cust-Warehouse: ");
          appendText(&html,itoa(pymt-
>in_paym.s_C_W_ID,buffer,10),6+1,1);

          appendText(&html,"Cust-District: ");
          appendText(&html,itoa(pymt-
>in_paym.s_C_D_ID,buffer,10));

          //add customer information
          appendText(&html,"<BR>Name:   ");
          appendText(&html,pymt-
>out_paym.s_C_FIRST,FIRST_NAME_LEN+1,1);
          appendText(&html,pymt-
>out_paym.s_C_MIDDLE,INITIALS_LEN+1,1);
          DEBUGMSG("Last name:"<<pymt-
>out_paym.s_C_LAST<<endl);
          appendText(&html,pymt-
>out_paym.s_C_LAST,LAST_NAME_LEN+5,1);

          appendText(&html,"Since: ");
          copyOutDateTime(buffer,pymt-
>out_paym.s_C_SINCE_time);
          appendText(&html,buffer);

          appendText(&html,"<BR>");
          appendSpaces(&html,8);

          appendText(&html,pymt-
>out_paym.s_C_STREET_1,STREET_LEN+20,1);
          appendText(&html," Credit: ");
          appendText(&html,pymt-
>out_paym.s_C_CREDIT);

          appendText(&html,"<BR>");
          appendSpaces(&html,8);

          appendText(&html,pymt-
>out_paym.s_C_STREET_2,STREET_LEN+21,1);
          appendText(&html,"%Disc: ");
          html+=sprintf(html,"%2.2lf",pymt-
>out_paym.s_C_DISCOUNT/100.0);

          appendText(&html,"<BR>");
          appendSpaces(&html,8);

          appendText(&html,pymt-
>out_paym.s_C_CITY,CITY_LEN+1,1);
          appendText(&html,pymt-
>out_paym.s_C_STATE,STATE_LEN+1,1);

          copyOutZip(buffer,pymt->out_paym.s_C_ZIP);
          appendText(&html,buffer,15,1);

          appendText(&html,"Phone: ");
          copyOutPhone(buffer,pymt-
>out_paym.s_C_PHONE);
          appendText(&html,buffer);

          appendText(&html," <BR> <BR>Amount Paid:
$");
          html+=sprintf(html,"%-9.2lf",pymt-
>in_paym.s_H_AMOUNT/100.0);

          appendText(&html," New Cust-Balance: $");
          html+=sprintf(html,"%-9.2lf",pymt-
>out_paym.s_C_BALANCE/100.0);

          appendText(&html,"<BR>Credit Limit: $");
          html+=sprintf(html,"%-9.2lf",pymt-
>out_paym.s_C_CREDIT_LIM/100.0);

          appendText(&html," <BR> <BR>Cust-Data: ");
          if(pymt->out_paym.s_C_CREDIT[0] == 'B' &&
pymt->out_paym.s_C_CREDIT[1] == 'C')
          {
                    appendCustData(&html,pymt-
>out_paym.s_C_DATA);
                    appendText(&html," <BR>");
          }
          else
                    appendText(&html," <BR> <BR>
<BR>");

          html+=displayStatus(html,rc);
          appendText(&html,"</PRE></BODY></HTML>");

          return OK;
}
/*
************************************************
***********
** Name                     : doPaymentErrorPage
** Description      :
**                                        append
payment error body
** Parameters       :
**                                        char *
          html page result
**                                        char *
          error message
**                                        htmlPhraser
* command block
**                                        TXN_HANDLE*
          txn handle struct
** Returns                  :
**                                        int -
return code
** Comments                 :
**
```

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

int doPaymentErrorPage(char *htmlPage,char
*message,htmlPhraser *commandBlock,TXN_HANDLE
*txnHandle)
{
          char *html=htmlPage;
          appendText(&html,"<HTML><HEAD><TITLE>TPC-C
Payment</TITLE></HEAD>\r\n"

"<BODY><FORM ACTION=\""

APP_NAME

"\" METHOD=\"GET\">\r\n"

"<CENTER><H3>Please Fill In Payment
Form.</H3></CENTER> <BR>\r\n"

"Submit Transaction <INPUT TYPE=\"submit\" NAME=\""

CMD_TXN_ID

"\" VALUE=\""

CMD_PYMT

"\">");
          html+=appendHiddenFields(html,txnHandle);
          appendText(&html,"<BR><PRE>\r\n"

"Date:<BR>"

"Warehouse: ");
          char buffer[15];
          appendText(&html,itoa(txnHandle-
>w_id,buffer,10));

          appendSpaces(&html,10);
          appendText(&html,"District: <INPUT NAME=\""

CMD_D_ID

"\" SIZE=1>\r\n<BR>"

"<BR> <BR> <BR> <BR>"

"Customer: "

"<INPUT NAME=\""

CMD_C_ID

"\" SIZE=5>"
                                                  "
"

"Cust-Warehouse: "

"<INPUT NAME=\""

CMD_C_W_ID

"\" SIZE=6>"
                                                  "
"

"Cust-District: "

"<INPUT NAME=\""

CMD_C_D_ID

"\" SIZE=1><BR>"

"Name:  <INPUT NAME=\""

CMD_C_NAME

"\" SIZE=20>");
          appendText(&html,"
Since: <BR>"
                                                  "
"
                                                  "
Credit: <BR>"
                                                  "
"
                                                  "
%Disc: <BR>"

"Amount Paid:            "

"<INPUT NAME=\""

CMD_AMT_PAID

"\" SIZE=10>"
                                                  "
"

"New Cust-Balance:<BR>"

"Credit Limit:<BR> <BR> <BR> Cust-Data:<BR> <BR> <BR>
<BR> ");
          appendText(&html,message);
          appendText(&html,"</PRE></BODY></HTML>");

          return OK;
}

/*
************************************************
**********
** Name                       : doOrderStatusForm
** Description      :
**                                    HTML
orderStatus page entry point
** Parameters       :
**
htmlPhraser*        command block
**                                    TXN_HANDLE*
          txn handle struct
** Returns                    :
**                                         int -
return code
** Comments                   :
**
************************************************
**********
*/

int doOrderStatusForm(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle)
{
          char *html=txnHandle->htmlPage;

          appendText(&html,"<HTML><HEAD><TITLE>TPC-C
Order Status</TITLE></HEAD>\r\n"

"<BODY><FORM ACTION=\""

APP_NAME

"\" METHOD=\"GET\">\r\n"

"<CENTER><H3>Please Fill In Order Status
Form.</H3></CENTER> <BR>\r\n"

"Submit Transaction <INPUT TYPE=\"submit\" NAME=\""

CMD_TXN_ID

"\" VALUE=\""

CMD_ORDS

"\">"

"<BR> ");
          html+=appendHiddenFields(html,txnHandle);

          appendText(&html,"<PRE>\r\n"

"Warehouse: ");
          char buffer[15];
          appendText(&html,itoa(txnHandle-
>w_id,buffer,10));

          appendText(&html,"
District: <INPUT NAME=\""

CMD_D_ID

"\" SIZE=1>\r\n<BR>"

"Customer: "

"<INPUT NAME=\""

CMD_C_ID

"\" SIZE=5>"
                                                  "
"
```

```
"Name: "

"<INPUT NAME=\""

CMD_C_NAME

"\" SIZE=20><BR>"

"Cust-Balance: <BR>"

"Order-Number:          Entry-Date:
Carrier-Number<BR>"

"Supply-W     Item-Num     Oty          Amount
Delivery<BR></PRE>");

          appendText(&html,"</BODY></HTML>");

          return OK;
}

/*
**************************************************
***********
** Name                       : doOrderStatusResults
** Description      :
**                                    HTML
orderStatus page entry point
** Parameters       :
**
htmlPhraser*        command block
**                                    char *
          html result page
** Returns                    :
**                                    int -
return code
** Comments                   :
**
**************************************************
***********
*/

int doOrderStatusResults(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle)
{
          char *html=txnHandle->htmlPage;
          struct ords_wrapper *ords = NULL;
          ords = (ords_wrapper *) txnHandle-
>comInterface.txnBuffer;
          ZeroMemory(ords,maxDataSize);

          //set warehouse login id from command blk
          ords->in_ords.s_W_ID = txnHandle->w_id;

          //set district login id from command blk
          if( (ords->in_ords.s_D_ID =
atoi(commandBlock->get_D_ID())) == 0)
          {

          doOrderStatusErrorPage(html,ERR_INVALID_D_I
D,commandBlock,txnHandle);
                    return OK;
          }

          if( (ords->in_ords.s_C_ID =
atoi(commandBlock->get_C_ID())) == 0)
          {
                    if(*(commandBlock->get_C_NAME())
== NULL)
                    {
                              //no customer id nor
customer last name specified.

          doOrderStatusErrorPage(html,ERR_MISSING_C_I
D_OR_CLAST,commandBlock,txnHandle);
                              return OK;
                    }
                    else
                              strcpy(ords-
>in_ords.s_C_LAST,commandBlock->get_C_NAME());
          }
          else
          {
                    //make sure that the user only
inserted just c_id
                    if(*(commandBlock->get_C_NAME())
!= NULL)
                    {

          doOrderStatusErrorPage(html,ERR_C_ID_OR_CLA
ST_ONLY,commandBlock,txnHandle);
                              return OK;
                    }
          }

          appendText(&html,"<HTML><HEAD><TITLE>TPC-C
Order Status Results</TITLE></HEAD>\r\n"

"<BODY><FORM ACTION=\""

APP_NAME

"\" METHOD=\"GET\">\r\n");
          html+=appendButtons(html);

          html+=appendHiddenFields(html,txnHandle);

          appendText(&html,"</FORM>");

          ords->out_ords.s_transtatus = -1;

          HRESULT   hres;
          try
          {
                    hres = txnHandle-
>comInterface.comHandle->doOrderStatus(&txnHandle-
>comInterface.size,(UCHAR**)&txnHandle-
>comInterface.txnBuffer);
          }
          catch(...)
          {
                    html+=sprintf(html,"ERROR: ords
com call caused exeception.</PRE></BODY></HTML>");
                    return OK;
          }

          if(FAILED(hres))
          {
                    html+=sprintf(html,"ERROR: ords
com call failed, rc:%x</PRE></BODY></HTML>",hres);
                    ERRORMSG("ERROR : ords com call
failed, rc:"<<DEBUGADDRESS(hres));
                    return OK;
          }

          hres = txnHandle->comInterface.comHandle-
>doSetComplete();
          if(FAILED(hres))
          {
                    html+=sprintf(html,"ERROR: ords
com doSetComplete failed,
rc:%ld</PRE></BODY></HTML>",hres);
                    ERRORMSG("ERROR : ords com
doSetComplete failed,
rc:"<<DEBUGADDRESS(hres)<<endl);
                    return OK;
          }

          ords = (ords_wrapper *)txnHandle-
>comInterface.txnBuffer;
          int rc = ords->out_ords.s_transtatus;
          if( rc != OK)
          {
                    html+=displayStatus(html,rc);

          appendText(&html,"</PRE></BODY></HTML>");
                    ERRORMSG("ERROR order
status"<<endl
                    <<"ords->in_ords.s_C_ID:"<<ords-
>in_ords.s_C_ID<<endl
                    <<"ords-
>in_ords.s_C_LAST:"<<ords->in_ords.s_C_LAST<<endl
                    <<"ords->in_ords.s_D_ID:"<<ords-
>in_ords.s_D_ID<<endl
                    <<"ords->in_ords.s_W_ID:"<<ords-
>in_ords.s_W_ID<<endl
                    <<"ords-
>out_ords.deadlocks:"<<ords->out_ords.deadlocks<<endl
                    <<"ords-
>out_ords.s_C_BALANCE:"<<ords-
>out_ords.s_C_BALANCE<<endl
                    <<"ords-
>out_ords.s_C_FIRST:"<<ords->out_ords.s_C_FIRST<<endl
                    <<"ords->out_ords.s_C_ID:"<<ords-
>out_ords.s_C_ID<<endl
                    <<"ords->out_ords.s_C_ID:"<<ords-
>out_ords.s_C_ID<<endl
                    <<"ords-
>out_ords.s_C_MIDDLE:"<<ords-
>out_ords.s_C_MIDDLE<<endl
                    <<"ords-
>out_ords.s_O_CARRIER_ID:"<<ords-
>out_ords.s_O_CARRIER_ID<<endl
                    <<"ords-
>out_ords.s_O_ENTRY_D_time:"<<ords-
>out_ords.s_O_ENTRY_D_time<<endl
                    <<"ords->out_ords.s_O_ID:"<<ords-
>out_ords.s_O_ID<<endl
```

```
                    <<"ords-
>out_ords.s_ol_cnt:"<<ords->out_ords.s_ol_cnt<<endl);

                    return OK;
          }

          //start creating result body
          appendText(&html,"</FORM><CENTER><H3>Order-
Status</H3></CENTER>");
          appendText(&html, "<BR><PRE>\r\nWarehouse:
");
          char buffer[50];

          appendText(&html,itoa(ords-
>in_ords.s_W_ID,buffer,10),6+1,1);
          appendText(&html,"District: ");
          appendText(&html,itoa(ords-
>in_ords.s_D_ID,buffer,10));
          appendText(&html,"<BR>"

"Customer: ");
          //get customer id
          appendText(&html,itoa(ords-
>in_ords.s_C_ID,buffer,10),6+1,1);
          appendText(&html,"Name: ");
          //get first, middle, and last from wrapper
          appendText(&html,ords-
>out_ords.s_C_FIRST,FIRST_NAME_LEN+1,1);
          appendText(&html,ords-
>out_ords.s_C_MIDDLE,INITIALS_LEN+1,1);
          appendText(&html,ords-
>out_ords.s_C_LAST,LAST_NAME_LEN+5,1);

          //get customer balance from wrapper
          appendText(&html,"\r\nCust-Balance: $");
          html+=sprintf(html,"%.2lf",ords-
>out_ords.s_C_BALANCE/100.0);

          //display order number, entry date, and
carrier number
          appendText(&html,"<BR> <BR>"

          "Order-Number ");
          appendText(&html,itoa(ords-
>out_ords.s_O_ID,buffer,10),12,1);
          appendText(&html,"Entry-Date: ");
          copyOutDateTime(buffer,ords-
>out_ords.s_O_ENTRY_D_time);
          appendText(&html,buffer,22,1);

          appendText(&html,"Carrier-Number: ");
          appendText(&html,itoa(ords-
>out_ords.s_O_CARRIER_ID,buffer,10));

          //add item title columns
          appendText(&html,"<BR>"

"Supply-W     "

"Item-Id    "

"Qty    "

"Amount      "

"Delivery-Date<BR>  ");

          //display items
          for (int itemCount=0;itemCount<ords-
>out_ords.s_ol_cnt;itemCount++)
          {
//appendSpaces(&html,2);

                    //get supp w
                    appendText(&html,itoa(ords-
>out_ords.item[itemCount].s_OL_SUPPLY_W_ID,buffer,10)
,11,1);

                    //get item num
                    appendText(&html,itoa(ords-
>out_ords.item[itemCount].s_OL_I_ID,buffer,10),11,1);

                    //get item oty
                    appendText(&html,itoa(ords-
>out_ords.item[itemCount].s_OL_QUANTITY,buffer,10),6,
1);

                    //get item dollor amount
                    html+=sprintf(html,"$%-
14.2lf",ords-
>out_ords.item[itemCount].s_OL_AMOUNT/100.0);

                    //get delivery date
                    copyOutDate(buffer,ords-
>out_ords.item[itemCount].s_OL_DELIVERY_D_time);
                    appendText(&html,buffer);
                    appendText(&html," <BR>  ");

          }

          //append line breaks if item count is less
than 15
          for (int itemCount=0;itemCount < (15-ords-
>out_ords.s_ol_cnt);itemCount++)
                    appendText(&html,"<BR> ");

          html+=displayStatus(html,rc);

          appendText(&html,"</PRE></BODY></HTML>");

          return OK;
}

/*
**************************************************
***********
** Name                        :
doOrderStatusErrorPage
** Description      :
**                                        HTML
orderStatus error page
** Parameters       :
**                                        char *
          html page result
**                                        char *
          error message
**
htmlPhraser*        command block
**                                        TXN_HANDLE*
          txn handle
** Returns                    :
**                                        int -
return code
** Comments                   :
**
**************************************************
***********
*/

int doOrderStatusErrorPage(char *htmlPage,char
*message,htmlPhraser *commandBlock,TXN_HANDLE
*txnHandle)
{
          char *html=htmlPage;

          appendText(&html,"<HTML><HEAD><TITLE>TPC-C
Order Status</TITLE></HEAD>\r\n"

"<BODY><FORM ACTION=\""

APP_NAME

"\" METHOD=\"GET\">\r\n"

"<CENTER><H3>Please Fill In Order Status
Form.</H3></CENTER> <BR>\r\n"

"Submit Transaction <INPUT TYPE=\"submit\" NAME=\""

CMD_TXN_ID

"\" VALUE=\""

CMD_ORDS

"\">"

"<BR> ");
          html+=appendHiddenFields(html,txnHandle);

          appendText(&html,"<PRE>\r\n"

"Warehouse: ");
          char buffer[15];
          appendText(&html,itoa(txnHandle-
>w_id,buffer,10));

          appendText(&html,"
District: <INPUT NAME=\""

CMD_D_ID

"\" SIZE=1>\r\n<BR>"

"Customer: "

"<INPUT NAME=\""
```

```
CMD_C_ID

"\" SIZE=5>"
                                                        "
"

"Name: "

"<INPUT NAME=\""

CMD_C_NAME

"\" SIZE=20><BR>"

"Cust-Balance: <BR>"

"Order-Number:          Entry-Date:
Carrier-Number<BR>"

"Supply-W     Item-Num     Oty          Amount
Delivery <BR>");

          appendText(&html,message);
          appendText(&html,"</PRE></BODY></HTML>");

          return OK;
}

/*
************************************************
***********
** Name                     : doDeliveryForm
** Description      :
**                                    HTML
payment page entry point
** Parameters       :
**
htmlPhraser*        command block
**                                    TXN_HANDLE*
          txn handle struct
** Returns                  :
**                                    int -
return code
** Comments                 :
**
************************************************
***********
*/
int doDeliveryForm(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle)
{
          char *html=txnHandle->htmlPage;

          appendText(&html,"<HTML><HEAD><TITLE>TPC-C
Delivery</TITLE></HEAD>\r\n"

"<BODY><FORM ACTION=\""

APP_NAME

"\" METHOD=\"GET\">\r\n"

"<CENTER><H3>Delivery.</H3></CENTER>\r\n"

"Submit Transaction <INPUT TYPE=\"submit\" NAME=\""

CMD_TXN_ID

"\" VALUE=\""

CMD_DLVY

"\">");
          html+=appendHiddenFields(html,txnHandle);

          appendText(&html,"<BR> <PRE>"

"Warehouse: ");
          char buffer[10];
          appendText(&html,itoa(txnHandle-
>w_id,buffer,10));

          appendText(&html," <BR> <BR>"

"Carrier Number: "

"<INPUT NAME=\""

CMD_CARRIER_NUM

"\" SIZE=1>"

"</FORM></PRE>");

          appendText(&html,"</BODY></HTML>");

          return OK;
}

/*
************************************************
***********
** Name                     : doDeliveryResults
** Description      :
**                                    HTML
payment page entry point
** Parameters       :
**
htmlPhraser*        command block
**                                    TXN_HANDLE*
          txn handle
** Returns                  :
**                                    int -
return code
** Comments                 :
**
************************************************
***********
*/

int doDeliveryResults(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle)
{
          char *html = txnHandle->htmlPage;

          //declare delivery structure
          struct dlvy_wrapper
          dlvy;

          //set warehouse login id from command blk
          dlvy.in_dlvy.s_W_ID = txnHandle->w_id;

          //set the carrier id from command blk
          if( (dlvy.in_dlvy.s_O_CARRIER_ID =
atoi(commandBlock->get_CARRIER_NUM())) == 0)
          {

          doDeliveryErrorPage(html,ERR_INVALID_CARRIE
R,commandBlock,txnHandle);
                    return OK;
          }

          //print title, add hidden fields , txn
buttons
          appendText(&html,"<HTML><HEAD><TITLE>TPC-C
Delivery Results</TITLE></HEAD>\r\n<BODY><FORM
ACTION=\""

APP_NAME

"\" METHOD=\"GET\">\r\n");

          html+=appendButtons(html);

          html+=appendHiddenFields(html,txnHandle);

          appendText(&html,
"<FORM><CENTER><H3>Delivery</H3></CENTER>");

          int rc =
queueDlvyTxn(dlvy.in_dlvy.s_W_ID,dlvy.in_dlvy.s_O_CAR
RIER_ID);
          if( rc != OK)
          {
                    html+=displayStatus(html,rc);

          appendText(&html,"</PRE></BODY></HTML>\r\n"
);

                    ERRORMSG("ERROR: Unable to queue
dlvy txn, rc:"<<rc<<endl);
                    return OK;
          }

          //start creating result body
          appendText(&html,"Warehouse: ");

          //get w_id from wrapper
          char buffer[15];
          appendText(&html,itoa(dlvy.in_dlvy.s_W_ID,b
uffer,10));
          appendText(&html,"<BR> <BR>Carrier Number:
");

          //get carrier_id from wrapper
          appendText(&html,itoa(dlvy.in_dlvy.s_O_CARR
IER_ID,buffer,10));
```

```
        appendText(&html,"<BR> <BR>Execution
Status: Delivery has been queued
</PRE></BODY></HTML>");

        return OK;
}

/*
************************************************
***********
** Name                      : doDeliveryErrorPage
** Description      :
**                                   HTML
payment error page entry point
** Parameters       :
**                                   char *
        html result page
**                                   char *
        error message
**                                   htmlPhraser
        command block
**                                   TXN_HANDLE*
        txn handle
**
** Returns                   :
**                                   int -
return code
** Comments                  :
**
************************************************
***********
*/
int doDeliveryErrorPage(char *htmlPage,char
*message,htmlPhraser *commandBlock,TXN_HANDLE
*txnHandle)
{
        char *html=htmlPage;

        appendText(&html,"<HTML><HEAD><TITLE>TPC-C
Delivery</TITLE></HEAD>\r\n"

"<BODY><FORM ACTION=\""

APP_NAME

"\" METHOD=\"GET\">\r\n"

"<CENTER><H3>Delivery.</H3></CENTER>\r\n"

"Submit Transaction <INPUT TYPE=\"submit\" NAME=\""

CMD_TXN_ID

"\" VALUE=\""

CMD_DLVY

"\">");
        html+=appendHiddenFields(html,txnHandle);

        appendText(&html,"<BR> <PRE>"

"Warehouse: ");
        char buffer[15];
        appendText(&html,itoa(txnHandle-
>w_id,buffer,10));

        appendText(&html," <BR> <BR>"

"Carrier Number: "

"<INPUT NAME=\""

CMD_CARRIER_NUM

"\" SIZE=1> <BR>");

        appendText(&html,message);
        appendText(&html,"</PRE></BODY></HTML>");

        return OK;
}



/*
************************************************
***********
** Name                      : doStockForm
** Description      :
**                                   HTML stock
page entry point
** Parameters       :
**                                   htmlPhraser
        command block
**                                   TXN_HANDLE*
        txn handle
** Returns                   :
**                                   int -
return code
** Comments                  :
**
************************************************
***********
*/

int doStockForm(htmlPhraser *commandBlock,TXN_HANDLE
*txnHandle)
{
        char *html=txnHandle->htmlPage;
        appendText(&html,"<HTML><HEAD><TITLE>TPC-C
Stock Level</TITLE></HEAD>\r\n"

"<BODY><FORM ACTION=\""

APP_NAME

"\" METHOD=\"GET\">\r\n"

"<CENTER><H3>Please Fill In Stock Form.</H3></CENTER>
<BR>\r\n"

"Submit Transaction <INPUT TYPE=\"submit\" NAME=\""

CMD_TXN_ID

"\" VALUE=\""

CMD_STOK

"\">");
        html+=appendHiddenFields(html,txnHandle);

        appendText(&html,"<PRE>"

"Warehouse: ");
        char buffer[15];
        appendText(&html,itoa(txnHandle-
>w_id,buffer,10),6+1,1);
        appendText(&html,"District: ");

        appendText(&html,itoa(txnHandle-
>d_id,buffer,10));
        appendText(&html," <BR> <BR>"

"Stock Level Threshold: "

"<INPUT NAME=\""

CMD_STK_THRESHOLD

"\" SIZE=1> <BR> <BR>"

"Low Stock: <BR>"

"</PRE>");

        appendText(&html,"</FORM></BODY></HTML>");

        return OK;
}

/*
************************************************
***********
** Name                      : doStockResults
** Description      :
**                                   HTML stock
page entry point
** Parameters       :
**
htmlPhraser*        command block
**                                   TXN_HANDLE*
        txn handle struct
** Returns                   :
**                                   int -
return code
** Comments                  :
**
************************************************
***********
*/

int doStockResults(htmlPhraser
*commandBlock,TXN_HANDLE *txnHandle)
{
        char *html = txnHandle->htmlPage;
```

```
	struct stok_wrapper *stok;
	stok = (stok_wrapper*)txnHandle-
>comInterface.txnBuffer;
	ZeroMemory(stok,maxDataSize);

	//set warehouse login id from command blk
	stok->in_stok.s_W_ID = txnHandle->w_id;

	//set district login id from command blk
	stok->in_stok.s_D_ID = txnHandle->d_id;

	//set stock level threshold id from command
blk
	if( (stok->in_stok.s_threshold =
atoi(commandBlock->get_STK_THRESHOLD())) == 0)
	{

	doStockErrorPage(html,ERR_INVALID_THRESHOLD
,commandBlock,txnHandle);
		return OK;
	}
	//assume failure, set s_transtatus to err
	stok->out_stok.s_transtatus =
INVALID_STATUS;

	//print title, add hidden fields , txn
buttons
	appendText(&html,"<HTML><HEAD><TITLE>TPC-C
Stock Level Results</TITLE></HEAD>\r\n"

"<BODY><FORM ACTION=\""

APP_NAME

"\" METHOD=\"GET\">\r\n");

	html+=appendButtons(html);

	html+=appendHiddenFields(html,txnHandle);

	appendText(&html,"</FORM>");

	stok->out_stok.s_transtatus = -1;

	DEBUGMSG("Calling com entry api for stock
call, w_id:"<<stok->in_stok.s_W_ID<<" d_id:"<<stok-
>in_stok.s_D_ID<<
		" threshold:"<<stok-
>in_stok.s_threshold<<endl);

	HRESULT   hres;
	try
	{
		hres = txnHandle-
>comInterface.comHandle->doStockLevel(&txnHandle-
>comInterface.size,(UCHAR**)&txnHandle-
>comInterface.txnBuffer);
	}
	catch(...)
	{
		html+=sprintf(html,"ERROR: Com
Stock call caused exeception to
occur.</PRE></BODY></HTML>");
		ERRORMSG("ERROR : Com Stock call
caused exeception to occur."<<endl;)
		return OK;
	}

	if(FAILED(hres))
	{
		html+=sprintf(html,"ERROR: stok
com call failed, rc:%ld</PRE></BODY></HTML>",hres);
		ERRORMSG("ERROR : stok com call
failed, rc:"<<DEBUGADDRESS(hres)<<endl);
		return OK;
	}

	hres = txnHandle->comInterface.comHandle-
>doSetComplete();
	if(FAILED(hres))
	{
		html+=sprintf(html,"ERROR: stok
com doSetComplete failed,
rc:%ld</PRE></BODY></HTML>",hres);
		ERRORMSG("ERROR : stok com
doSetComplete failed,
rc:"<<DEBUGADDRESS(hres)<<endl);
		return OK;
	}
	stok = (stok_wrapper *)txnHandle-
>comInterface.txnBuffer;
	int rc = stok->out_stok.s_transtatus;
	if(rc != OK)
	{
		html+=displayStatus(html,rc);

	appendText(&html,"</PRE></BODY></HTML>");
		ERRORMSG("ERROR stok txn
failed"<<endl
			<<"stok-
>in_stok.s_D_ID:"<<stok->in_stok.s_D_ID<<endl
			<<"stok-
>in_stok.s_threshold:"<<stok-
>in_stok.s_threshold<<endl
			<<"stok-
>in_stok.s_W_ID:"<<stok->in_stok.s_W_ID<<endl
			<<"stok-
>out_stok.deadlocks:"<<stok->out_stok.deadlocks<<endl
			<<"stok-
>out_stok.s_low_stock:"<<stok-
>out_stok.s_low_stock<<endl
			<<"stok-
>out_stok.s_transtatus:"<<stok-
>out_stok.s_transtatus<<endl);
		return OK;
	}

	//start creating result body
	appendText(&html,"<FORM><CENTER><H3>Stock-
Level</H3></CENTER>");
	appendText(&html, "<BR><PRE>\r\n"
		"Warehouse: ");

	//get w_id from wrapper
	char buffer[10];
	appendText(&html,itoa(stok-
>in_stok.s_W_ID,buffer,10),6+1,1);

	appendText(&html,"District: ");
	appendText(&html,itoa(stok-
>in_stok.s_D_ID,buffer,10));

	appendText(&html," <BR> <BR>"

"Stock Level Threshold: ");
	appendText(&html,itoa(stok-
>in_stok.s_threshold,buffer,10));

	appendText(&html," <BR> <BR>"

"Low Stock: ");
	appendText(&html,itoa(stok-
>out_stok.s_low_stock,buffer,10));
	appendText(&html," <BR> <BR>");

	html+=displayStatus(html,rc);
	appendText(&html,"</PRE></BODY></HTML>");

	return OK;
}

/*
*****************************************************
***********
** Name                     : doStockErrorPage
** Description      :
**                                      HTML stock
page entry point
** Parameters       :
**                                      char *
	html result page
**                                      char *
	query string
**                                      htmlPhraser
	command block
**                                      TXN_HANDLE
*	handle for this transaction
** Returns                  :
**                                      int -
return code
** Comments                 :
**
*****************************************************
***********
*/

int doStockErrorPage(char *htmlPage,char
*message,htmlPhraser *commandBlock,TXN_HANDLE
*txnHandle)
{
	char *html=htmlPage;

	appendText(&html,"<HTML><HEAD><TITLE>TPC-C
Stock Level</TITLE></HEAD>\r\n"

"<BODY><FORM ACTION=\""

APP_NAME
```

```
"\" METHOD=\"GET\">\r\n"

"<CENTER><H3>Please Fill In Stock Form.</H3></CENTER>
<BR>\r\n"

"Submit Transaction <INPUT TYPE=\"submit\" NAME=\""

CMD_TXN_ID

"\" VALUE=\""

CMD_STOK

"\">");
          html+=appendHiddenFields(html,txnHandle);

          appendText(&html,"<PRE>"

"Warehouse:  ");
          char buffer[15];
          appendText(&html,itoa(txnHandle-
>w_id,buffer,10));
          appendSpaces(&html,2);
          appendText(&html,"District: ");
          appendText(&html,commandBlock->get_D_ID());
          appendText(&html," <BR> <BR>"

"Stock Level Threshold: "

"<INPUT NAME=\""

CMD_STK_THRESHOLD

"\" SIZE=1> <BR> <BR>"

"Low Stock: <BR>");

          appendText(&html,message);


          appendText(&html,"</PRE></FORM></BODY></HTM
L>");

          return OK;
}



/*
**************************************************
**********
** Name                        : doExit
** Description      :
**                                        HTML exit
page entry point
** Parameters       :
**
htmlPhraser*        command block
**                                        TXN_HANDLE*
          txn handle struct
** Returns                     :
**                                        int -
return code
** Comments                    :
**
**************************************************
**********
*/
int doExit(htmlPhraser *commandBlock,TXN_HANDLE
*txnHandle)
{
          return
(doLoginForm(commandBlock,txnHandle));
}

/*
**************************************************
**********
** Name                        : displayStatus
** Description      :
**                                        appends
status string to the html page
** Parameters       :
**                                        char*
          html page
**                                        int
          rc
** Returns                     :
**                                        amount of
characters the function appened
**                                        to the html
page
** Comments                    :
**
**************************************************
**********
*/
int displayStatus(char *htmlPage,int rc)
{
          char *html = htmlPage;

          appendText(&html,"");

          switch (rc)
          {
          case OK:
                    appendText(&html,"Execution
Status: Transaction Committed",50,1);
                    break;
          case INVALID_ITEM:
                    appendText(&html,"Execution
Status: Item number is not valid",50,1);
                    break;
          case INVALID_STATUS:
                    appendText(&html,"Execution
Status: ERROR: Rollback INVALID_STATUS",50,1);
                    break;
          case INVALID_COM_STATUS:
                    appendText(&html,"Execution
Status: ERROR: Rollback COM FAILURE",50,1);
                    break;
          case ERR_DLVY_QUEUE_FULL:
                    appendText(&html,"Execution
Status: ERROR: Rollback DLVY QUEUE FULL",50,1);
                    break;
          default:
                    appendText(&html,"Execution
Status: ERROR: Rollback",50,1);

          };

          appendText(&html,"     ");

          return (int)(html - htmlPage);
}
/*
**************************************************
**********
** Name                        : appendButtons
** Description      :
**                                        append
hidden field to recognize user after login
**
** Parameters       :
**                                        *htmlPage
                                html result page
**                                        *TXN_HANDLE
                    txn handle
** Returns                     :
**                                        int
                                amount of characters
the function appened
**
                                        to the html
page
** Comments                    :
**
**************************************************
**********
*/
int appendHiddenFields(char *htmlPage,TXN_HANDLE
*txnHandle)
{
          char *html = htmlPage;
          char buffer[15];

          appendText(&html,"<INPUT TYPE=\"hidden\"
NAME=\""

CMD_TERM_ID

"\" VALUE=\"");
          appendText(&html,itoa(txnHandle-
>term_id,buffer,10));
          appendText(&html,"\">\r\n");

          return (int)(html-htmlPage);

}
/*
**************************************************
**********
** Name                        : appendButtons
** Description      :
**                                        appends
buttons transaction buttons to result page
** Parameters       :
```

```
**                                      *htmlPage
**
** Returns                    :
**                                      amount of
characters the function appened
**                                      to the html
page
** Comments                   :
**
************************************************
***********
*/
int appendButtons(char *htmlPage)
{
          char *html = htmlPage;

          appendText(&html,"<INPUT TYPE=\"submit\"
NAME=\""

          CMD_TXN_ID                                    "\"
VALUE=\""

          CMD_NORD

          "\">\r\n"

          "<INPUT TYPE=\"submit\" NAME=\""

          CMD_TXN_ID                                    "\"
VALUE=\""

          CMD_PYMT

          "\">\r\n"

          "<INPUT TYPE=\"submit\" NAME=\""

          CMD_TXN_ID                                    "\"
VALUE=\""

          CMD_ORDS

          "\">\r\n"

          "<INPUT TYPE=\"submit\" NAME=\""

          CMD_TXN_ID                                    "\"
VALUE=\""

          CMD_DLVY

          "\">\r\n"

          "<INPUT TYPE=\"submit\" NAME=\""

          CMD_TXN_ID                                    "\"
VALUE=\""

          CMD_STOK

          "\">\r\n"

          "<INPUT TYPE=\"submit\" NAME=\""

          CMD_TXN_ID                                    "\"
VALUE=\""

          CMD_EXIT                                  "\">\r\n
<BR>");

          return (int)(html - htmlPage);
}

/*
************************************************
***********
** Name                       : appendItems
** Description      :
**                                      appends
items to new order and order status page
** Parameters       :
**                                      *htmlPage
                                       html result
page
**                                      short
                                       items to
append
**                                      short
                                       item CMD id
start
**
** Returns                    :
**                                      amount of
characters the function appened
**                                      to the html
page
** Comments                   :
**
************************************************
***********
*/
int appendItems(char *htmlPage,short itemCount,short
cmdIDStart)
{
          char *html = htmlPage;
          char numBuffer[MAX_INT_BUFFER];

          for(int item=0;item < itemCount;item++)
          {
                    appendText(&html,"<BR> <INPUT
NAME=\"");

          appendText(&html,itoa(cmdIDStart++,numBuffe
r,10));
                    appendText(&html,"\" SIZE=6>
<INPUT NAME=\"");

          appendText(&html,itoa(cmdIDStart++,numBuffe
r,10));
                    appendText(&html,"\"
SIZE=2>\r\n");
          }

          return (int)(html - htmlPage);
}

/*
************************************************
***********
** Name                       : dlvyThreadEntry
** Description      :
**                                      dlvy thread
worker entry point
** Parameters       :
**
** Returns                    :
**
** Comments                   :
**                                      All dlvy
threads created by initDly enter at
**                                      this point.
They must first make a connection
**                                      to the
database, then go to sleep.
**
**                                      Main isapi
threads control dlvy worker semaphore
**                                      and signal
when a dlvy txn is queued.
**
************************************************
***********
*/

void dlvyThreadEntry(void *)
{
          int                 rc = 0;

          DEBUGMSG("dlvyThread " <<
GetCurrentThreadId() << " entered dlvyThreadEntry,
calling db_connect to db:" << dbName << endl);

          void *connectHandle;
          //connect to database.
          DEBUGMSG("ptr created. calling db_connect
to db:" << dbName << endl);
          rc = db_connect(dbName,&connectHandle);

          if(rc != OK)
          {
                    ERRORMSG("dlvyThread " <<
GetCurrentThreadId() <<" unable to connect to
database, rc:" << rc << endl);
```

```
                    DEBUGMSG("dlvyThread " <<
GetCurrentThreadId() <<" unable to connect to
database, rc:" << rc << endl);
                    return;
          }

          DEBUGMSG("dlvyThread " <<
GetCurrentThreadId() << " connect to db:" << dbName
<< " successful" << endl);

          FILE *dlvyLog = NULL;
          char logFileName[MAX_STRING_LEN] = {NULL};

          EnterCriticalSection(&isapiLock);
          //open dlvy log file for this thread
          sprintf(logFileName,"%s\\del_%d.txt",dlvyLo
gPath,dlvyThreadID);
          dlvyLog = fopen(logFileName,"w");
          if(!dlvyLog)
          {
                    ERRORMSG("dlvyThread " <<
GetCurrentThreadId() << " unable to open dlvy log "
                                        << dlvyLogPath <<
"\\del_" << dlvyThreadID << endl);
                    DEBUGMSG("dlvyThread " <<
GetCurrentThreadId() << " unable toopen dlvy log "
                                        << dlvyLogPath <<
"\\del_" << dlvyThreadID << endl);
                    return;
          }

          //increment the global dlvy thread id
          dlvyThreadID++;

          LeaveCriticalSection(&isapiLock);

          DEBUGMSG("dlvyThread " <<
GetCurrentThreadId() <<" dlvy log file name: " <<
logFileName << " open." << endl);

          HANDLE    workerHandles[2];

          //handle array to store event to wait on

          struct  DLVYQUEUEDATA
          dlvyQueueData;
          //dlvy queue struct to store queued txn
          struct    dlvy_wrapper
          dlvyTxn;
          //dlvy wrapper of db2 structs

          struct  _timeb
          endQueueTime;
          //time stamp to queue removal time
          struct  _timeb
          endProcessTime;
          //time stamp for end process time

          char      orderIDs[MAX_STRING_LEN] =
{NULL};                   //string to store oids
for each district
          int                 bytesWritten =      0;
          int                 dlvyCount  =        0;

          DEBUGMSG("dlvyThread entering work loop" <<
endl);

          //successful, while true
          while(true)
          {
                    try
                    {
                                        DEBUGMSG("dlvyThread
initializing wait handles" << endl);

                                        //wait for both program
exit AND if there is work to do
                                        workerHandles[0] =
dlvyThreadDone;
                                        workerHandles[1] =
dlvyThreadSemaphore;

                                        DEBUGMSG("dlvyThread
going to sleep waiting for wrk" << endl);

                                        rc =
WaitForMultipleObjects(2,&workerHandles[0],FALSE,INFI
NITE);

                                        DEBUGMSG("dlvyThread
awake, checking wake condition" << endl);

                                        if(rc == WAIT_OBJECT_0)
                                                  break;
                                        else if(rc ==
(WAIT_OBJECT_0+1) )
                                        {

                    DEBUGMSG("dlvyThread awake, wake condition
of dlvyThreadSemaphore" << endl);
                                        }

                                        DEBUGMSG("dlvyThread
trying to enter critical section" << endl);


                    EnterCriticalSection(&dlvyQueueLock);

                                        DEBUGMSG("dlvyThread
entered critical section" << endl);

                                        //remove queued dlvy
txn

                    dlvyQueueData.enqueueTime.time
                    =
                    dlvyQueue[dlvyBufferThreadIndex].enqueueTim
e.time;

                    dlvyQueueData.enqueueTime.millitm       =
                    dlvyQueue[dlvyBufferThreadIndex].enqueueTim
e.millitm;

                    dlvyQueueData.in_s_0_CARRIER_ID
                    =
                    dlvyQueue[dlvyBufferThreadIndex].in_s_0_CAR
RIER_ID;
                                        dlvyQueueData.warehouse
                                                  =
                    dlvyQueue[dlvyBufferThreadIndex].warehouse;

                                        DEBUGMSG("dlvyThread
removed dlvy:" << dlvyCount << ",w_id:" <<
dlvyQueueData.warehouse

                                  << " carrier_id:" <<
dlvyQueueData.in_s_0_CARRIER_ID << endl);

                                        DEBUGMSG("dlvyThread
removed dlvy in queue index: "
<<dlvyBufferThreadIndex<< " w_id: " <<
dlvyQueueData.warehouse

                                          << " carrier_id: "
<< dlvyQueueData.in_s_0_CARRIER_ID << endl);

                                        //increment the number
of free slots
                                        dlvyBufferFreeSlots++;

                                        //increment the thread
index to next slot in dlvy queue

                    dlvyBufferThreadIndex++;

                                        DEBUGMSG("dlvyThread
incremented amount of free slots:" <<
dlvyBufferFreeSlots << " and thread index:" <<


                    dlvyBufferThreadIndex << endl);
                                        //check if we reached
the end of dlvy queue, if so, reset back index back
to 0

                    if(dlvyBufferThreadIndex == dlvyQueueLen)
                                        {

                    DEBUGMSG("dlvyThread  reset
dlvyBufferThreadIndex to 0, current
dlvyBufferThreadIndex:" << dlvyBufferThreadIndex

                    << " free
slots:"<<dlvyBufferFreeSlots<<endl);

                    dlvyBufferThreadIndex=0;

                                        }
                                        DEBUGMSG("dlvyThread
releasing critical section" << endl);


                    LeaveCriticalSection(&dlvyQueueLock);

                                        //take enqueue time
                                        _ftime(&endQueueTime);
```

```
                            DEBUGMSG("dlvyThread
executing txn w_id:" << dlvyQueueData.warehouse
                                                    <<
" carrier_id:" << dlvyQueueData.in_s_0_CARRIER_ID <<
endl);

                            //prepare to call
database

          dlvyTxn.in_dlvy.s_O_CARRIER_ID          =
          dlvyQueueData.in_s_0_CARRIER_ID;
                            dlvyTxn.in_dlvy.s_W_ID
                            =
          dlvyQueueData.warehouse;

          dlvyTxn.out_dlvy.s_transtatus =  -1;

                            //increment dlvy count
                            dlvyCount++;

                            DEBUGMSG("dlvyThread %d
calling dlvy txn" << rc << endl);

                            //call dvly txn
                            rc =
dlvyCall(&dlvyTxn,connectHandle);


          _ftime(&endProcessTime);

                            rc =
dlvyTxn.out_dlvy.s_transtatus;

                            DEBUGMSG("dlvy txn
response time:"<<

(((endProcessTime.time - endQueueTime.time)*1000)+

(endProcessTime.millitm -
endQueueTime.millitm))/1000.0)<<
                                                    "
w_id:"<<dlvyTxn.in_dlvy.s_W_ID<<" carrier:"
<<dlvyTxn.in_dlvy.s_O_CARRIER_ID<<
                                                    "
deadLocks:"<<dlvyTxn.out_dlvy.deadlocks<<" rc: "<< rc
<<endl);

                            DEBUGMSG("dlvyThread
dlvy s_transtatus:" << rc << endl);

                            if(rc == OK)
                            {

          bytesWritten=0;
                                        char *buffer
= orderIDs;

                                        for(int
districtIndex=0;districtIndex <
DISTRICTS_PER_WAREHOUSE;districtIndex++)
                                        {

          if(dlvyTxn.out_dlvy.s_O_ID[districtIndex]
== 0)

          bytesWritten = sprintf(buffer,"\nD_ID %d
had no new orders",districtIndex);

          else

          bytesWritten = sprintf(buffer,"%d
",dlvyTxn.out_dlvy.s_O_ID[districtIndex]);



          buffer+=bytesWritten;
                                        }
                                }
                                else

          sprintf(orderIDs,"\nDelivery transaction
failed");



          fprintf(dlvyLog,DELIVERY_LOG_SUCCESS_STR,

                    dlvyCount,

                    dlvyQueueData.enqueueTime.time,


          dlvyQueueData.enqueueTime.millitm,

                    endQueueTime.time,

                    endQueueTime.millitm,

                    dlvyQueueData.warehouse,

                    dlvyQueueData.in_s_0_CARRIER_ID,

                    orderIDs,

                    endProcessTime.time,

                    endProcessTime.millitm);

                              fflush(dlvyLog);
                    }
                    catch(...)
                    {
                              ERRORMSG("ERROR:
Unhandled exeception in dlvy thread. Thread
exiting"<<endl);
                              fprintf(dlvyLog,"ERROR:
Unhandled exeception in dlvy thread %ld. Thread
exiting.\n",GetCurrentThreadId());
                              fflush(dlvyLog);


          LeaveCriticalSection(&dlvyQueueLock);
                    }
          }//end while true
}

/*
**************************************************
***********
** Name                     : queueDlvyTxn
** Description      :
**                                        function
queues dlvy txn in dlvy queue
** Parameters       :
**                                        int
          warehouse
**                                        short
          carrier
** Returns                  :
**                                        int
          error code
** Comments                 :
**
          Function will queue dlvy txn if 2 points
are true
**                                                  1)
We have room in our dlvy buffer
**                                                  2)
We writing over the end of the queue
**
**************************************************
***********
*/

int queueDlvyTxn(int warehouse, short carrier_id)
{
          DEBUGMSG("Taking lock to queue dlvy txn.");

          EnterCriticalSection(&dlvyQueueLock);

          DEBUGMSG("Lock aquired to queue dlvy txn");

          if(dlvyBufferFreeSlots)
          {
                    DEBUGMSG("Checking if we are
inserting at tail of dlvy queue."<<endl);
                    if( dlvyBufferSlotIndex ==
(dlvyBufferThreadIndex-1))
                    {
                              ERRORMSG("Error dlvy
queue inserting over unserviced queued dlvy
txn."<<endl);
                              DEBUGMSG("Error dlvy
queue inserting over unserviced queued dlvy
txn."<<endl);

          LeaveCriticalSection(&dlvyQueueLock);
                              return
ERR_DLVY_QUEUE_EATING_TAIL;
                    }
                    DEBUGMSG("free slots dlvy
queue:"<<dlvyBufferFreeSlots<<" inserting txn in
slot: " <<dlvyBufferSlotIndex<<
                              "w_id: "<<warehouse<<"
carrier: "<<carrier_id<<endl);
```

```
        dlvyQueue[dlvyBufferSlotIndex].warehouse =
warehouse;

        dlvyQueue[dlvyBufferSlotIndex].in_s_0_CARRI
ER_ID = carrier_id;


        _ftime(&dlvyQueue[dlvyBufferSlotIndex].enqu
eueTime);

                //decrement the number of free
slots in the buffer
                dlvyBufferFreeSlots--;



                //increment the index to the next
dlvy queue slot.
                dlvyBufferSlotIndex++;



                DEBUGMSG("dlvy txn queued, slots
available in queue:"<<dlvyBufferFreeSlots<<" queue
slot index:"<<dlvyBufferSlotIndex

<<"w_id:"<<warehouse<<" carrier:"<<carrier_id<<endl);

                DEBUGMSG("dlvy txn queued, slots
available in queue: "<<dlvyBufferFreeSlots<<" queue
slot index: "<<dlvyBufferSlotIndex
                                        <<" w_id:
"<<warehouse<<" carrier: "<<carrier_id<<endl);

                if(dlvyBufferSlotIndex ==
dlvyQueueLen)
                {
                        DEBUGMSG("queue slot
index hit end of queue, reset to 0, current
index:"<<dlvyBufferSlotIndex<<" free
slots:"<<dlvyBufferFreeSlots<<endl);
                        dlvyBufferSlotIndex=0;
                }
        }
        else
        {
                //no slots available in dlvy
buffer, release critcal section and return an nord-
>in_nord.in_item

        LeaveCriticalSection(&dlvyQueueLock);
                ERRORMSG("dlvy queue buffer full,
increase the dlvy queue length."<<endl);
                return ERR_DLVY_QUEUE_FULL;
        }

        LeaveCriticalSection(&dlvyQueueLock);

        //release semaphore to wake thread that
there is work
        ReleaseSemaphore(dlvyThreadSemaphore,1,NULL
);
        return OK;
}


/*
**************************************************
**********
** Name                        : doHtml
** Description      :
**                                      HTML
processing page entry point
** Parameters       :
**                                      txn handle

** Returns                     :
**                                      int -
return code
** Comments                    :
**
**************************************************
**********
*/

void doHtml(TXN_HANDLE *txnHandle)
{
        DEBUGMSG("Entered doHtml(), parsing query
string:"<< txnHandle->urlString << " into command
block"<< endl);
        htmlPhraser         commandBlock(txnHandle-
>urlString);
        DEBUGMSG("Query string parsed.  command:"<<
commandBlock.getCommandId() << " user's terminal id:"
<< commandBlock.get_TERM_ID() << endl);

        int terminalID =
atoi(commandBlock.get_TERM_ID());
        int commandID =
commandBlock.getCommandId();

        DEBUGMSG("User sent in a terimal
id:"<<terminalID<<", checking to see if user has
logged in before"<<endl);
        if(terminalID > 0)
        {
                DEBUGMSG("Terminal id > 0, user
has logged in already, terminalID:"<<terminalID<<"
retrieving warehouse district pair"<<endl);

        if(getTerminal(terminalID,txnHandle) != OK)
                        return;
                DEBUGMSG("User had valid terminal
id, user's login warehouse:"<<txnHandle->w_id<<"
district:"<<txnHandle->d_id<<endl);
        }
        else
        {
                DEBUGMSG("User did not submit a
terminal id or valid terminal id, ensure that the
user is trying to log in."<<endl);
                if( (commandID != TXN_LOGIN) &&
(commandID != TXN_LOGIN_RESULTS) )
                {
                        DEBUGMSG("ERROR : User
has not logged in."<<endl);
                        ERRORMSG("ERROR : User
has not logged in."<<endl);
                        sprintf(txnHandle-
>htmlPage,"ERROR: User has not logged in or did not
submit a valid terminal.");
                        return;
                }
                DEBUGMSG("User is in process of
logging in, commandID:"<<commandID<<endl);
        }

        DEBUGMSG("Calling html page
function:"<<commandBlock.getCommandId()<<endl);
        int rc =
htmlPageFunctions[commandBlock.getCommandId()](&comma
ndBlock,txnHandle);
        DEBUGMSG("Return from html page
function:"<<commandBlock.getCommandId()<<endl);

        return;
}

/*
**************************************************
**********
** Name                        : getTerminal
** Description      :
**                                      retrieves
terminal information based on terminal id
** Parameters       :
**                                      int
                terminal id
**
TERM_HANDLE*        txn handle
** Returns                     :
**                                      int -
return code
** Comments                    :
**
**************************************************
**********
*/
int getTerminal(int terminal,TXN_HANDLE *txnHandle)
{
        //check to see if terminal id is out of
range
        if(terminal >= numUsers)
        {
                //terminal id not valid.
                sprintf(txnHandle-
>htmlPage,"ERROR: Client does not support more than
%d users, terminal id:%d",numUsers,terminal);
                ERRORMSG("ERROR : Client does not
support more than "<<numUsers<<" users, terminal
id:"<<terminal<<endl);
                return ERR;
        }

        //check if terminal id is points to a not
in use terminal
        if(!(termArray+terminal)->terminalInUse)
```

```
		{
			sprintf(txnHandle->htmlPage,"ERROR: Terminal id given points to a not in use terminal.");
			ERRORMSG("ERROR :  Terminal id given points to a not in use terminal."<<endl);
			return ERR;
		}

		DEBUGMSG("Storing terminal warehouse, district , and initial term id for user:"<<terminal<<endl);

		//assign terminal values to txn_handle
		txnHandle->d_id = termArray[terminal].d_id;
		txnHandle->w_id = termArray[terminal].w_id;
		txnHandle->term_id = termArray[terminal].terminalID;

		DEBUGMSG("Users terminal:"<<terminal<<", stored warehouse:"<<txnHandle->w_id<<
					"
district:"<<txnHandle->d_id<<" termialID stored:"<<txnHandle->term_id<<endl);

		return OK;
}

/*
*****************************************************************
** Name			: assignTerminal
** Description	:
**				assigns terminal index to user
** Parameters	:
**			TERM_HANDLE*		txn handle
** Returns		:
**				int - return code
** Comments		:
**
*****************************************************************
*/
int assignTerminal(TXN_HANDLE *txnHandle)
{
		EnterCriticalSection(&termLock);

		//check if terminal array is full.
		if(termNextFree == numUsers)
		{
			LeaveCriticalSection(&termLock);
			return ERR;
		}

		DEBUGMSG("Storing user warehouse:"<<txnHandle->w_id<<" district:"<< txnHandle->d_id<<
					" in terminal slot:"<<termNextFree<<endl);

		//store users w_id and d_id
		termArray[termNextFree].d_id = txnHandle->d_id;
		termArray[termNextFree].w_id = txnHandle->w_id;

		//set terminal slot to be in use
		termArray[termNextFree].terminalInUse = true;
		termArray[termNextFree].terminalID = termNextFree;
		//in txn handle, set the terminal id
		txnHandle->term_id = termNextFree;

		//increment to next free terminal.
		termNextFree++;

		DEBUGMSG("User warehouse:"<<txnHandle->w_id<<" district:"<< txnHandle->d_id <<
					" stored in terminal slot:"<<txnHandle->term_id<<" next terminal free:"<<termNextFree<<endl);

		LeaveCriticalSection(&termLock);

		return OK;
}
```

tpccCom/compreg.h

```
// compreg.h : Declaration of the CCompReg

#pragma once

#include "resource.h"		// main symbols
#include "tpccCom.h"


// CCompReg
class ATL_NO_VTABLE CCompReg :
		public CComObjectRootEx<CComSingleThreadModel>,
		public CComCoClass<CCompReg, &CLSID_CompReg>,
		public IDispatchImpl<IComponentRegistrar, &IID_IComponentRegistrar, &LIBID_tpccComLib, /*wMajor =*/ 1, /*wMinor =*/ 0>
{
public:
		CCompReg()
		{
		}

DECLARE_NO_REGISTRY()

BEGIN_COM_MAP(CCompReg)
		COM_INTERFACE_ENTRY(IComponentRegistrar)
		COM_INTERFACE_ENTRY(IDispatch)
END_COM_MAP()

// IComponentRegistrar
public:
    STDMETHOD(Attach)(BSTR bstrPath)
		{
			return S_OK;
		}
		STDMETHOD(RegisterAll)()
		{
			return _AtlComModule.RegisterServer(TRUE);
		}
		STDMETHOD(UnregisterAll)()
		{
		_AtlComModule.UnregisterServer(TRUE);
			return S_OK;
		}
		STDMETHOD(GetComponents)(SAFEARRAY **ppCLSIDs, SAFEARRAY **ppDescriptions)
		{
			if( ppCLSIDs == NULL || ppDescriptions == NULL )
				return E_POINTER;
			int nComponents = 0;
			for (_ATL_OBJMAP_ENTRY** ppEntry = _AtlComModule.m_ppAutoObjMapFirst; ppEntry < _AtlComModule.m_ppAutoObjMapLast; ppEntry++)
			{
				if (*ppEntry != NULL)
				{
		_ATL_OBJMAP_ENTRY* pEntry = *ppEntry;
					if (pEntry->pclsid != NULL)
					{
		LPCTSTR pszDescription = pEntry->pfnGetObjectDescription();
						if (pszDescription)
		nComponents++;
					}
				}
			}
			SAFEARRAYBOUND rgBound[1];
			rgBound[0].lLbound = 0;
			rgBound[0].cElements = nComponents;
			*ppCLSIDs = SafeArrayCreate(VT_BSTR, 1, rgBound);
			if( *ppCLSIDs == NULL )
				return AtlHresultFromLastError();
			*ppDescriptions = SafeArrayCreate(VT_BSTR, 1, rgBound);
			if( *ppDescriptions == NULL )
				return AtlHresultFromLastError();
			LONG i = 0;
```

```
                    for (_ATL_OBJMAP_ENTRY** ppEntry
= _AtlComModule.m_ppAutoObjMapFirst; ppEntry <
_AtlComModule.m_ppAutoObjMapLast; ppEntry++)
                    {
                              if (*ppEntry != NULL)
                              {

          _ATL_OBJMAP_ENTRY* pEntry = *ppEntry;
                                        if (pEntry-
>pclsid != NULL)
                                        {

          LPCTSTR pszDescription = pEntry-
>pfnGetObjectDescription();
                                                  if
(pszDescription)
                                                  {

          LPOLESTR pszCLSID;

          StringFromCLSID(*pEntry->pclsid,
&pszCLSID);

          BSTR pBSTR = OLE2BSTR(pszCLSID);

          if( pBSTR == NULL )

          {

                    CoTaskMemFree(pszCLSID);

                    return E_OUTOFMEMORY;

          }

          HRESULT hResult =
SafeArrayPutElement(*ppCLSIDs, &i, pBSTR);

          CoTaskMemFree(pszCLSID);

          if( FAILED(hResult) )

                    return hResult;

          pBSTR = T2BSTR_EX(pszDescription);

          if( pBSTR == NULL )

          {

                    return E_OUTOFMEMORY;

          }

          hResult =
SafeArrayPutElement(*ppDescriptions, &i, pBSTR);

          if( FAILED(hResult) )

                    return hResult;

          i++;
                                                  }
                                        }
                              }

                              return S_OK;
                    }
                    STDMETHOD(RegisterComponent)(BSTR
bstrCLSID)
                    {
                              CLSID clsid;
                              CLSIDFromString(bstrCLSID,
&clsid);

                    _AtlComModule.RegisterServer(TRUE, &clsid);
                              return S_OK;
                    }
                    STDMETHOD(UnregisterComponent)(BSTR
bstrCLSID)
                    {
                              CLSID clsid;
                              CLSIDFromString(bstrCLSID,
&clsid);

                    _AtlComModule.UnregisterServer(FALSE,
&clsid);
                              return S_OK;
                    }
};

OBJECT_ENTRY_AUTO(CLSID_CompReg, CCompReg)
```

tpccCom/dlldatax.h

```
#pragma once

#ifdef _MERGE_PROXYSTUB

extern "C"
{
BOOL WINAPI PrxDllMain(HINSTANCE hInstance, DWORD
dwReason,
          LPVOID lpReserved);
STDAPI PrxDllCanUnloadNow(void);
STDAPI PrxDllGetClassObject(REFCLSID rclsid, REFIID
riid, LPVOID* ppv);
STDAPI PrxDllRegisterServer(void);
STDAPI PrxDllUnregisterServer(void);
}

#endif
```

tpccCom/Resource.h

```
//{{NO_DEPENDENCIES}}
// Microsoft Visual C++ generated include file.
// Used by tpccCom.rc
//
#define IDS_PROJNAME                    100
#define IDR_TPCCCOM                     101
#define IDR_TPCC_COM                    102

// Next default values for new objects
//
#ifdef APSTUDIO_INVOKED
#ifndef APSTUDIO_READONLY_SYMBOLS
#define _APS_NEXT_RESOURCE_VALUE        201
#define _APS_NEXT_COMMAND_VALUE         32768
#define _APS_NEXT_CONTROL_VALUE         201
#define _APS_NEXT_SYMED_VALUE           103
#endif
#endif
```

tpccCom/stdafx.h

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

#pragma once

#ifndef STRICT
#define STRICT
#endif

// Modify the following defines if you have to target
a platform prior to the ones specified below.
// Refer to MSDN for the latest info on corresponding
values for different platforms.
#ifndef WINVER                                  //
Allow use of features specific to Windows 95 and
Windows NT 4 or later.
#define WINVER 0x0400                   // Change
this to the appropriate value to target Windows 98
and Windows 2000 or later.
#endif

#ifndef _WIN32_WINNT                    // Allow use
of features specific to Windows NT 4 or later.
#define _WIN32_WINNT 0x0400   // Change this to the
appropriate value to target Windows 2000 or later.
#endif


#ifndef _WIN32_WINDOWS                  // Allow use
of features specific to Windows 98 or later.
#define _WIN32_WINDOWS 0x0410 // Change this to the
appropriate value to target Windows Me or later.
#endif

#ifndef _WIN32_IE                       // Allow use
of features specific to IE 4.0 or later.
```

```
#define _WIN32_IE 0x0400      // Change this to the
appropriate value to target IE 5.0 or later.
#endif

#define _ATL_APARTMENT_THREADED
#define _ATL_NO_AUTOMATIC_NAMESPACE

#define _ATL_CSTRING_EXPLICIT_CONSTRUCTORS        //
some CString constructors will be explicit

// turns off ATL's hiding of some common and often
safely ignored warning messages
#define _ATL_ALL_WARNINGS


#include <comsvcs.h>

#include "resource.h"
#include <atlbase.h>
#include <atlcom.h>

using namespace ATL;
```

tpccCom/tpccCom.h

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


 /* File created by MIDL compiler version 6.00.0361
*/
/* at Mon Jun 06 13:40:36 2005
 */
/* Compiler settings for .\tpccCom.idl:
    Oicf, W1, Zp8, env=Win32 (32b run)
    protocol : dce , ms_ext, c_ext, robust
    error checks: allocation ref bounds_check enum
stub_data
    VC __declspec() decoration level:
         __declspec(uuid()), __declspec(selectany),
__declspec(novtable)
         DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

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


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

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

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

#ifndef COM_NO_WINDOWS_H
#include "windows.h"
#include "ole2.h"
#endif /*COM_NO_WINDOWS_H*/

#ifndef __tpccCom_h__
#define __tpccCom_h__

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

/* Forward Declarations */

#ifndef __IComponentRegistrar_FWD_DEFINED__
#define __IComponentRegistrar_FWD_DEFINED__
typedef interface IComponentRegistrar
IComponentRegistrar;
#endif    /* __IComponentRegistrar_FWD_DEFINED__ */


#ifndef __Itpcc_com_FWD_DEFINED__
#define __Itpcc_com_FWD_DEFINED__
typedef interface Itpcc_com Itpcc_com;
#endif    /* __Itpcc_com_FWD_DEFINED__ */


#ifndef __CompReg_FWD_DEFINED__
#define __CompReg_FWD_DEFINED__

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

#endif    /* __CompReg_FWD_DEFINED__ */


#ifndef __tpcc_com_FWD_DEFINED__
#define __tpcc_com_FWD_DEFINED__

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

#endif    /* __tpcc_com_FWD_DEFINED__ */


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

#ifdef __cplusplus
extern "C"{
#endif

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

#ifndef __IComponentRegistrar_INTERFACE_DEFINED__
#define __IComponentRegistrar_INTERFACE_DEFINED__

/* interface IComponentRegistrar */
/* [unique][helpstring][dual][uuid][object] */


EXTERN_C const IID IID_IComponentRegistrar;

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

    MIDL_INTERFACE("a817e7a2-43fa-11d0-9e44-
00aa00b6770a")
    IComponentRegistrar : public IDispatch
    {
    public:
        virtual /* [id] */ HRESULT STDMETHODCALLTYPE
Attach(
            /* [in] */ BSTR bstrPath) = 0;

        virtual /* [id] */ HRESULT STDMETHODCALLTYPE
RegisterAll( void) = 0;

        virtual /* [id] */ HRESULT STDMETHODCALLTYPE
UnregisterAll( void) = 0;

        virtual /* [id] */ HRESULT STDMETHODCALLTYPE
GetComponents(
            /* [out] */ SAFEARRAY * *pbstrCLSIDs,
            /* [out] */ SAFEARRAY *
*pbstrDescriptions) = 0;

        virtual /* [id] */ HRESULT STDMETHODCALLTYPE
RegisterComponent(
            /* [in] */ BSTR bstrCLSID) = 0;

        virtual /* [id] */ HRESULT STDMETHODCALLTYPE
UnregisterComponent(
            /* [in] */ BSTR bstrCLSID) = 0;

    };

#else     /* C style interface */

    typedef struct IComponentRegistrarVtbl
    {
        BEGIN_INTERFACE

        HRESULT ( STDMETHODCALLTYPE *QueryInterface
)(
            IComponentRegistrar * This,
            /* [in] */ REFIID riid,
            /* [iid_is][out] */ void **ppvObject);

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

        ULONG ( STDMETHODCALLTYPE *Release )(
```

```
            IComponentRegistrar * This);

        HRESULT ( STDMETHODCALLTYPE *GetTypeInfoCount
)(
            IComponentRegistrar * This,
            /* [out] */ UINT *pctinfo);

        HRESULT ( STDMETHODCALLTYPE *GetTypeInfo )(
            IComponentRegistrar * This,
            /* [in] */ UINT iTInfo,
            /* [in] */ LCID lcid,
            /* [out] */ ITypeInfo **ppTInfo);

        HRESULT ( STDMETHODCALLTYPE *GetIDsOfNames )(
            IComponentRegistrar * This,
            /* [in] */ REFIID riid,
            /* [size_is][in] */ LPOLESTR *rgszNames,
            /* [in] */ UINT cNames,
            /* [in] */ LCID lcid,
            /* [size_is][out] */ DISPID *rgDispId);

        /* [local] */ HRESULT ( STDMETHODCALLTYPE
*Invoke )(
            IComponentRegistrar * This,
            /* [in] */ DISPID dispIdMember,
            /* [in] */ REFIID riid,
            /* [in] */ LCID lcid,
            /* [in] */ WORD wFlags,
            /* [out][in] */ DISPPARAMS *pDispParams,
            /* [out] */ VARIANT *pVarResult,
            /* [out] */ EXCEPINFO *pExcepInfo,
            /* [out] */ UINT *puArgErr);

        /* [id] */ HRESULT ( STDMETHODCALLTYPE
*Attach )(
            IComponentRegistrar * This,
            /* [in] */ BSTR bstrPath);

        /* [id] */ HRESULT ( STDMETHODCALLTYPE
*RegisterAll )(
            IComponentRegistrar * This);

        /* [id] */ HRESULT ( STDMETHODCALLTYPE
*UnregisterAll )(
            IComponentRegistrar * This);

        /* [id] */ HRESULT ( STDMETHODCALLTYPE
*GetComponents )(
            IComponentRegistrar * This,
            /* [out] */ SAFEARRAY * *pbstrCLSIDs,
            /* [out] */ SAFEARRAY *
*pbstrDescriptions);

        /* [id] */ HRESULT ( STDMETHODCALLTYPE
*RegisterComponent )(
            IComponentRegistrar * This,
            /* [in] */ BSTR bstrCLSID);

        /* [id] */ HRESULT ( STDMETHODCALLTYPE
*UnregisterComponent )(
            IComponentRegistrar * This,
            /* [in] */ BSTR bstrCLSID);

            END_INTERFACE
        } IComponentRegistrarVtbl;

        interface IComponentRegistrar
        {
            CONST_VTBL struct IComponentRegistrarVtbl
*lpVtbl;
        };



#ifdef COBJMACROS


#define
IComponentRegistrar_QueryInterface(This,riid,ppvObjec
t)        \
    (This)->lpVtbl ->
QueryInterface(This,riid,ppvObject)

#define IComponentRegistrar_AddRef(This)          \
    (This)->lpVtbl -> AddRef(This)

#define IComponentRegistrar_Release(This)         \
    (This)->lpVtbl -> Release(This)


#define
IComponentRegistrar_GetTypeInfoCount(This,pctinfo)
          \
    (This)->lpVtbl -> GetTypeInfoCount(This,pctinfo)

#define
IComponentRegistrar_GetTypeInfo(This,iTInfo,lcid,ppTI
nfo)      \
    (This)->lpVtbl ->
GetTypeInfo(This,iTInfo,lcid,ppTInfo)

#define
IComponentRegistrar_GetIDsOfNames(This,riid,rgszNames
,cNames,lcid,rgDispId)        \
    (This)->lpVtbl ->
GetIDsOfNames(This,riid,rgszNames,cNames,lcid,rgDispI
d)

#define
IComponentRegistrar_Invoke(This,dispIdMember,riid,lci
d,wFlags,pDispParams,pVarResult,pExcepInfo,puArgErr)
          \
    (This)->lpVtbl ->
Invoke(This,dispIdMember,riid,lcid,wFlags,pDispParams
,pVarResult,pExcepInfo,puArgErr)


#define IComponentRegistrar_Attach(This,bstrPath) \
    (This)->lpVtbl -> Attach(This,bstrPath)

#define IComponentRegistrar_RegisterAll(This)     \
    (This)->lpVtbl -> RegisterAll(This)

#define IComponentRegistrar_UnregisterAll(This)   \
    (This)->lpVtbl -> UnregisterAll(This)

#define
IComponentRegistrar_GetComponents(This,pbstrCLSIDs,pb
strDescriptions)    \
    (This)->lpVtbl ->
GetComponents(This,pbstrCLSIDs,pbstrDescriptions)

#define
IComponentRegistrar_RegisterComponent(This,bstrCLSID)
          \
    (This)->lpVtbl ->
RegisterComponent(This,bstrCLSID)

#define
IComponentRegistrar_UnregisterComponent(This,bstrCLSI
D)        \
    (This)->lpVtbl ->
UnregisterComponent(This,bstrCLSID)

#endif /* COBJMACROS */


#endif    /* C style interface */



/* [id] */ HRESULT STDMETHODCALLTYPE
IComponentRegistrar_Attach_Proxy(
    IComponentRegistrar * This,
    /* [in] */ BSTR bstrPath);


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


/* [id] */ HRESULT STDMETHODCALLTYPE
IComponentRegistrar_RegisterAll_Proxy(
    IComponentRegistrar * This);


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


/* [id] */ HRESULT STDMETHODCALLTYPE
IComponentRegistrar_UnregisterAll_Proxy(
    IComponentRegistrar * This);


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

```
/* [id] */ HRESULT STDMETHODCALLTYPE
IComponentRegistrar_GetComponents_Proxy(
    IComponentRegistrar * This,
    /* [out] */ SAFEARRAY * *pbstrCLSIDs,
    /* [out] */ SAFEARRAY * *pbstrDescriptions);


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


/* [id] */ HRESULT STDMETHODCALLTYPE
IComponentRegistrar_RegisterComponent_Proxy(
    IComponentRegistrar * This,
    /* [in] */ BSTR bstrCLSID);


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


/* [id] */ HRESULT STDMETHODCALLTYPE
IComponentRegistrar_UnregisterComponent_Proxy(
    IComponentRegistrar * This,
    /* [in] */ BSTR bstrCLSID);


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



#endif    /*
__IComponentRegistrar_INTERFACE_DEFINED__ */


#ifndef __Itpcc_com_INTERFACE_DEFINED__
#define __Itpcc_com_INTERFACE_DEFINED__

/* interface Itpcc_com */
/* [unique][helpstring][uuid][object] */


EXTERN_C const IID IID_Itpcc_com;

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

    MIDL_INTERFACE("5B4FA473-2E68-4D79-A626-
F38B30B8196E")
    Itpcc_com : public IUnknown
    {
    public:
        virtual /* [helpstring] */ HRESULT
STDMETHODCALLTYPE doStockLevel(
            /* [in] */ INT *size,
            /* [size_is][size_is][out][in] */ UCHAR
**buffer) = 0;

        virtual /* [helpstring] */ HRESULT
STDMETHODCALLTYPE doNewOrder(
            /* [in] */ INT *size,
            /* [size_is][size_is][out][in] */ UCHAR
**buffer) = 0;

        virtual /* [helpstring] */ HRESULT
STDMETHODCALLTYPE doPayment(
            /* [in] */ INT *size,
            /* [size_is][size_is][out][in] */ UCHAR
**buffer) = 0;

        virtual /* [helpstring] */ HRESULT
STDMETHODCALLTYPE doOrderStatus(
            /* [in] */ INT *size,
            /* [size_is][size_is][out][in] */ UCHAR
**buffer) = 0;

        virtual /* [helpstring] */ HRESULT
STDMETHODCALLTYPE doDBInfo( void) = 0;

        virtual /* [helpstring] */ HRESULT
STDMETHODCALLTYPE doSetComplete( void) = 0;

    };

#else     /* C style interface */

    typedef struct Itpcc_comVtbl
    {
        BEGIN_INTERFACE

        HRESULT ( STDMETHODCALLTYPE *QueryInterface
)(
            Itpcc_com * This,
            /* [in] */ REFIID riid,
            /* [iid_is][out] */ void **ppvObject);

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

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

        /* [helpstring] */ HRESULT (
STDMETHODCALLTYPE *doStockLevel )(
            Itpcc_com * This,
            /* [in] */ INT *size,
            /* [size_is][size_is][out][in] */ UCHAR
**buffer);

        /* [helpstring] */ HRESULT (
STDMETHODCALLTYPE *doNewOrder )(
            Itpcc_com * This,
            /* [in] */ INT *size,
            /* [size_is][size_is][out][in] */ UCHAR
**buffer);

        /* [helpstring] */ HRESULT (
STDMETHODCALLTYPE *doPayment )(
            Itpcc_com * This,
            /* [in] */ INT *size,
            /* [size_is][size_is][out][in] */ UCHAR
**buffer);

        /* [helpstring] */ HRESULT (
STDMETHODCALLTYPE *doOrderStatus )(
            Itpcc_com * This,
            /* [in] */ INT *size,
            /* [size_is][size_is][out][in] */ UCHAR
**buffer);

        /* [helpstring] */ HRESULT (
STDMETHODCALLTYPE *doDBInfo )(
            Itpcc_com * This);

        /* [helpstring] */ HRESULT (
STDMETHODCALLTYPE *doSetComplete )(
            Itpcc_com * This);

        END_INTERFACE
    } Itpcc_comVtbl;

    interface Itpcc_com
    {
        CONST_VTBL struct Itpcc_comVtbl *lpVtbl;
    };



#ifdef COBJMACROS


#define Itpcc_com_QueryInterface(This,riid,ppvObject)
        \
    (This)->lpVtbl ->
QueryInterface(This,riid,ppvObject)

#define Itpcc_com_AddRef(This)          \
    (This)->lpVtbl -> AddRef(This)

#define Itpcc_com_Release(This)         \
    (This)->lpVtbl -> Release(This)


#define Itpcc_com_doStockLevel(This,size,buffer)  \
    (This)->lpVtbl -> doStockLevel(This,size,buffer)

#define Itpcc_com_doNewOrder(This,size,buffer)    \
    (This)->lpVtbl -> doNewOrder(This,size,buffer)

#define Itpcc_com_doPayment(This,size,buffer)     \
    (This)->lpVtbl -> doPayment(This,size,buffer)

#define Itpcc_com_doOrderStatus(This,size,buffer) \
    (This)->lpVtbl -> doOrderStatus(This,size,buffer)

#define Itpcc_com_doDBInfo(This)        \
```

```
    (This)->lpVtbl -> doDBInfo(This)

#define Itpcc_com_doSetComplete(This)   \
    (This)->lpVtbl -> doSetComplete(This)

#endif /* COBJMACROS */


#endif    /* C style interface */



/* [helpstring] */ HRESULT STDMETHODCALLTYPE
Itpcc_com_doStockLevel_Proxy(
    Itpcc_com * This,
    /* [in] */ INT *size,
    /* [size_is][size_is][out][in] */ UCHAR
**buffer);


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


/* [helpstring] */ HRESULT STDMETHODCALLTYPE
Itpcc_com_doNewOrder_Proxy(
    Itpcc_com * This,
    /* [in] */ INT *size,
    /* [size_is][size_is][out][in] */ UCHAR
**buffer);


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


/* [helpstring] */ HRESULT STDMETHODCALLTYPE
Itpcc_com_doPayment_Proxy(
    Itpcc_com * This,
    /* [in] */ INT *size,
    /* [size_is][size_is][out][in] */ UCHAR
**buffer);


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


/* [helpstring] */ HRESULT STDMETHODCALLTYPE
Itpcc_com_doOrderStatus_Proxy(
    Itpcc_com * This,
    /* [in] */ INT *size,
    /* [size_is][size_is][out][in] */ UCHAR
**buffer);


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


/* [helpstring] */ HRESULT STDMETHODCALLTYPE
Itpcc_com_doDBInfo_Proxy(
    Itpcc_com * This);


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


/* [helpstring] */ HRESULT STDMETHODCALLTYPE
Itpcc_com_doSetComplete_Proxy(
    Itpcc_com * This);


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



#endif    /* __Itpcc_com_INTERFACE_DEFINED__ */



#ifndef __tpccComLib_LIBRARY_DEFINED__
#define __tpccComLib_LIBRARY_DEFINED__

/* library tpccComLib */
/* [custom][helpstring][version][uuid] */


EXTERN_C const IID LIBID_tpccComLib;

EXTERN_C const CLSID CLSID_CompReg;

#ifdef __cplusplus

class DECLSPEC_UUID("90EEDAFF-F8D3-4711-99A9-
8AC3C0FE5DB9")
CompReg;
#endif

EXTERN_C const CLSID CLSID_tpcc_com;

#ifdef __cplusplus

class DECLSPEC_UUID("5F752BF2-F739-43D4-8492-
44C19581C0A1")
tpcc_com;
#endif
#endif /* __tpccComLib_LIBRARY_DEFINED__ */

/* Additional Prototypes for ALL interfaces */

unsigned long             __RPC_USER  BSTR_UserSize(
unsigned long *, unsigned long            , BSTR * );
unsigned char * __RPC_USER  BSTR_UserMarshal(
unsigned long *, unsigned char *, BSTR * );
unsigned char * __RPC_USER
BSTR_UserUnmarshal(unsigned long *, unsigned char *,
BSTR * );
void                      __RPC_USER  BSTR_UserFree(
unsigned long *, BSTR * );

unsigned long             __RPC_USER
LPSAFEARRAY_UserSize(     unsigned long *, unsigned
long            , LPSAFEARRAY * );
unsigned char * __RPC_USER  LPSAFEARRAY_UserMarshal(
unsigned long *, unsigned char *, LPSAFEARRAY * );
unsigned char * __RPC_USER
LPSAFEARRAY_UserUnmarshal(unsigned long *, unsigned
char *, LPSAFEARRAY * );
void                      __RPC_USER
LPSAFEARRAY_UserFree(     unsigned long *,
LPSAFEARRAY * );

/* end of Additional Prototypes */

#ifdef __cplusplus
}
#endif

#endif
```

tpccCom/tpcc_com.h

```
// tpcc_com.h : Declaration of the Ctpcc_com

#pragma once
#include "tpccCom.h"
#include "resource.h"// main symbols
#include <comsvcs.h>
#include "..\tpccIsapi\tpcc.h"
#include <db2tpcc.h>
#include <tpcc.h>
#define NULL_DB
          "nullDB"

static HINSTANCE dbInstance                        =
NULL;

static CRITICAL_SECTION debugMutex;
static CRITICAL_SECTION errorMutex;

static int comServerID
          =   0;
```

```
static ofstream debugStream;
static ofstream errorStream;
static int debugFileOpen                          =
         0;
static int errorFileOpen                          =
         0;
static int nullDB
         =         0;
static char dbType[32];
static char dbName[32];

typedef INT (*NORD_PTR)(nord_wrapper *nord,void
*connectHandle);
typedef INT (*PYMT_PTR)(paym_wrapper *pymt,void
*connectHandle);
typedef INT (*ORDS_PTR)(ords_wrapper *ords,void
*connectHandle);
typedef INT (*STOK_PTR)(stok_wrapper *stok,void
*connectHandle);
typedef INT (*CONNECT_PTR)(char *dbName,void
**connectHandle);
typedef INT (*DISCONNECT_PTR)(void *connectHandle);

NORD_PTR  do_nord;
PYMT_PTR  do_pymt;
ORDS_PTR  do_ords;
STOK_PTR  do_stok;
CONNECT_PTR         do_connection;
DISCONNECT_PTR do_disconnect;

// Ctpcc_com
class ATL_NO_VTABLE Ctpcc_com :
         public
CComObjectRootEx<CComMultiThreadModel>,
         public IObjectControl,
         public CComCoClass<Ctpcc_com,
&CLSID_tpcc_com>,
         public Itpcc_com
{
public:
         Ctpcc_com()
         {
                  int rc
         = ERR;
                  connected                        =
         0;
                  connectHandleInUse  =         0;

                  if(debugFlag)
                  {
                           if(!debugFileOpen)
                           {

         InitializeCriticalSection(&debugMutex);
                                    //open comLog
                                    char
comLogFile[128];

         sprintf(comLogFile,"C:\\Inetpub\\wwwroot\\t
pcc\\comLog_debug.txt");

         debugStream.rdbuf( )-
>open(comLogFile,ios_base::in | ios_base::out |
ios_base::app);

                                             debugFileOpen
= 1;
                           }
                  }

                  //open error log file
                  if(!errorFileOpen)
                  {

         InitializeCriticalSection(&errorMutex);

                           char errorLogFile[128];

         sprintf(errorLogFile,"C:\\Inetpub\\wwwroot\
\tpcc\\comLog_err.txt");
                           errorStream.rdbuf( )-
>open(errorLogFile,ios_base::in | ios_base::out |
ios_base::app);

                           errorFileOpen=1;
                  }

                  //get registry values
                  if((rc = readRegistery()) != OK)
                  {
                           ERRORMSG("Unable to
open registery key " << REGISTERY_SUB_KEY << " rc:"
<< rc <<endl);
                           return;
                  }

                  DEBUGMSG("nullDB:" <<nullDB<<"
dbType:"<<dbType<<" dbName:"<<dbName<<endl);

                  //load library based on registry
                  if( (rc = loadLibrary()) != OK)
                  {
                           ERRORMSG("load library
failure rc:" << rc << endl);
                           return;
                  }

                  DEBUGMSG("dbtype:"<<dbType<<"
instance:" << DEBUGADDRESS(dbInstance) << " loaded."
<< endl);

                  //connect to db

         EnterCriticalSection(&errorMutex);
                  if((rc = connectDB()) != OK)
                  {
                           ERRORMSG("unable to
connect to db "<<dbName<<" rc :"<<rc <<endl);

         LeaveCriticalSection(&errorMutex);
                           return;
                  }

         LeaveCriticalSection(&errorMutex);
                  DEBUGMSG("connected to db "
<<dbName<< " rc:"<< rc << " context:"
<<DEBUGADDRESS(connectHandle) << endl);
         }

         DECLARE_PROTECT_FINAL_CONSTRUCT()

         HRESULT FinalConstruct()
         {
                  return S_OK;
         }

         void FinalRelease()
         {
         }

DECLARE_REGISTRY_RESOURCEID(IDR_TPCC_COM)

BEGIN_COM_MAP(Ctpcc_com)
         COM_INTERFACE_ENTRY(Itpcc_com)
         COM_INTERFACE_ENTRY(IObjectControl)
END_COM_MAP()

// IObjectControl
public:
         STDMETHOD(Activate)();
         STDMETHOD_(BOOL, CanBePooled)();
         STDMETHOD_(void, Deactivate)();
         CComPtr<IObjectContext> m_spObjectContext;

// Itpcc_com
public:
         STDMETHOD(doStockLevel)(INT *size, UCHAR
**buffer);
         STDMETHOD(doNewOrder)(INT* size, UCHAR**
buffer);
         STDMETHOD(doPayment)(INT* size, UCHAR**
buffer);
         STDMETHOD(doOrderStatus)(INT* size, UCHAR**
buffer);
         STDMETHOD(doDBInfo)(void);
         STDMETHOD(doSetComplete)(void);

         int connected;
         int connectHandleInUse;

private:
         //db2 specific context
         void *connectHandle;
         int loadLibrary();
         int readRegistery();
         int connectDB();


};

OBJECT_ENTRY_AUTO(__uuidof(tpcc_com), Ctpcc_com)
```

tpccCom/tpccCom.def

```
; tpccCom.def : Declares the module parameters.

LIBRARY      "tpccCom.DLL"

EXPORTS
          DllCanUnloadNow               PRIVATE
          DllGetClassObject   PRIVATE
          DllRegisterServer   PRIVATE
          DllUnregisterServer PRIVATE
```

tpccCom/tpccCom.idl

```
// tpccCom.idl : IDL source for tpccCom
//

// This file will be processed by the MIDL tool to
// produce the type library (tpccCom.tlb) and
marshalling code.

import "oaidl.idl";
import "ocidl.idl";
//this is test.

[
          object,
          uuid(a817e7a2-43fa-11d0-9e44-00aa00b6770a),
          dual,
          helpstring("IComponentRegistrar
Interface"),
          pointer_default(unique)
]
interface IComponentRegistrar : IDispatch
{
          [id(1)]   HRESULT Attach([in] BSTR
bstrPath);
          [id(2)]   HRESULT RegisterAll();
          [id(3)]   HRESULT UnregisterAll();
          [id(4)]   HRESULT GetComponents([out]
SAFEARRAY(BSTR)* pbstrCLSIDs, [out] SAFEARRAY(BSTR)*
pbstrDescriptions);
          [id(5)]   HRESULT RegisterComponent([in]
BSTR bstrCLSID);
          [id(6)] HRESULT UnregisterComponent([in]
BSTR bstrCLSID);
};

[
          object,
          uuid(5B4FA473-2E68-4D79-A626-F38B30B8196E),
          helpstring("Itpcc_com Interface"),
          pointer_default(unique)
]
interface Itpcc_com : IUnknown{
          [helpstring("method doStockLevel")] HRESULT
doStockLevel([in] INT *size, [in,out,
size_is(,*size)] UCHAR **buffer);
          [helpstring("method doNewOrder")] HRESULT
doNewOrder([in] INT* size, [in,out,size_is(,*size)]
UCHAR** buffer);
          [helpstring("method doPayment")] HRESULT
doPayment([in] INT* size, [in,out,size_is(,*size)]
UCHAR** buffer);
          [helpstring("method doOrderStatus")]
HRESULT doOrderStatus([in] INT* size,
[in,out,size_is(,*size)] UCHAR** buffer);
          [helpstring("method doDBInfo")] HRESULT
doDBInfo(void);
          [helpstring("method doSetComplete")]
HRESULT doSetComplete(void);
};
[
          uuid(91F1B8B0-89E9-457B-A228-3E2D6CE3E752),
          version(1.0),
          helpstring("tpccCom 1.0 Type Library"),
          custom(a817e7a1-43fa-11d0-9e44-
00aa00b6770a,"{90EEDAFF-F8D3-4711-99A9-
8AC3C0FE5DB9}")
]
library tpccComLib
{
          importlib("stdole2.tlb");

          [
                    uuid(90EEDAFF-F8D3-4711-99A9-
8AC3C0FE5DB9),
                    helpstring("ComponentRegistrar
Class")
          ]
          coclass CompReg
          {
                    [default] interface
IComponentRegistrar;
          };
          [
                    uuid(5F752BF2-F739-43D4-8492-
44C19581C0A1),
                    helpstring("tpcc_com Class")
          ]
          coclass tpcc_com
          {
                    [default] interface Itpcc_com;
          };
};
```

tpccCom/tpcc_com.rgs

```
HKCR
{
          tpccCom.tpcc_com.1 = s 'tpcc_com Class'
          {
                    CLSID = s '{5F752BF2-F739-43D4-
8492-44C19581C0A1}'
          }
          tpccCom.tpcc_com = s 'tpcc_com Class'
          {
                    CLSID = s '{5F752BF2-F739-43D4-
8492-44C19581C0A1}'
                    CurVer = s 'tpccCom.tpcc_com.1'
          }
          NoRemove CLSID
          {
                    ForceRemove {5F752BF2-F739-43D4-
8492-44C19581C0A1} = s 'tpcc_com Class'
                    {
                              ProgID = s
'tpccCom.tpcc_com.1'

          VersionIndependentProgID = s
'tpccCom.tpcc_com'
                              InprocServer32 = s
'%MODULE%'
                              {
                                        val
ThreadingModel = s 'Both'
                              }
                              val AppID = s '%APPID%'
                              'TypeLib' = s
'{91F1B8B0-89E9-457B-A228-3E2D6CE3E752}'
                    }
          }
}
```

tpccCom/compreg.cpp

```
// compreg.cpp : Implementation of CCompReg

#include "stdafx.h"
#include "compreg.h"


// CCompReg
```

tpccCom/stdafx.cpp

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

#include "stdafx.h"
```

tpccCom/tpccCom.cpp

```
// tpccCom.cpp : Implementation of DLL Exports.
//
// Note: COM+ 1.0 Information:
//      Please remember to run Microsoft Transaction
Explorer to install the component(s).
//      Registration is not done by default.

#include "stdafx.h"
#include "resource.h"
#include "tpccCom.h"
#include "compreg.h"
#include "dlldatax.h"

class CtpccComModule : public CAtlDllModuleT<
CtpccComModule >
{
public :
         DECLARE_LIBID(LIBID_tpccComLib)
         DECLARE_REGISTRY_APPID_RESOURCEID(IDR_TPCCC
OM, "{11ED2355-1A27-42F1-ADFF-F201F5E82BCE}")
};

CtpccComModule _AtlModule;


// DLL Entry Point
extern "C" BOOL WINAPI DllMain(HINSTANCE hInstance,
DWORD dwReason, LPVOID lpReserved)
{
#ifdef _MERGE_PROXYSTUB
    if (!PrxDllMain(hInstance, dwReason, lpReserved))
        return FALSE;
#endif
         hInstance;
    return _AtlModule.DllMain(dwReason, lpReserved);
}


// Used to determine whether the DLL can be unloaded
by OLE
STDAPI DllCanUnloadNow(void)
{
#ifdef _MERGE_PROXYSTUB
    HRESULT hr = PrxDllCanUnloadNow();
    if (FAILED(hr))
        return hr;
#endif
    return _AtlModule.DllCanUnloadNow();
}


// Returns a class factory to create an object of the
requested type
STDAPI DllGetClassObject(REFCLSID rclsid, REFIID
riid, LPVOID* ppv)
{
#ifdef _MERGE_PROXYSTUB
    if (PrxDllGetClassObject(rclsid, riid, ppv) ==
S_OK)
        return S_OK;
#endif
    return _AtlModule.DllGetClassObject(rclsid, riid,
ppv);
}


// DllRegisterServer - Adds entries to the system
registry
STDAPI DllRegisterServer(void)
{
    // registers object, typelib and all interfaces
in typelib
    HRESULT hr = _AtlModule.DllRegisterServer();
#ifdef _MERGE_PROXYSTUB
    if (FAILED(hr))
        return hr;
    hr = PrxDllRegisterServer();
#endif
         return hr;
}


// DllUnregisterServer - Removes entries from the
system registry
STDAPI DllUnregisterServer(void)
{
         HRESULT hr =
_AtlModule.DllUnregisterServer();
#ifdef _MERGE_PROXYSTUB
    if (FAILED(hr))
        return hr;
    hr = PrxDllRegisterServer();
    if (FAILED(hr))
        return hr;
    hr = PrxDllUnregisterServer();
#endif
         return hr;
}
```

tpccCom/tpcc_com.cpp

```
// tpcc_com.cpp : Implementation of Ctpcc_com

#include "stdafx.h"
#include "tpcc_com.h"

#include ".\tpcc_com.h"
#include <db2tpcc.h>

// Ctpcc_com
HRESULT Ctpcc_com::Activate()
{
         HRESULT hr =
GetObjectContext(&m_spObjectContext);
         if (SUCCEEDED(hr))
         {
                  DEBUGMSG("Object assigned to
thread."<<endl);
                  return S_OK;
         }
         return hr;
}

BOOL Ctpcc_com::CanBePooled()
{
         DEBUGMSG("CanBePooled() returning
true"<<endl);
         return TRUE;
}

void Ctpcc_com::Deactivate()
{
         DEBUGMSG("deactivated() releasing object
back into pool"<<endl);
         m_spObjectContext.Release();
}

/*
**************************************************
**********
** Name                    :         doSetComplete
** Description      :
**
         Release object back into com pool
** Parameters       :
** Returns                 :
**                                                  int
- return code
** Comments                :
**
         Calls SetComplete on the object that the
com
**
         pool manager returned to the caller(isapi
thread)
**************************************************
**********
*/
STDMETHODIMP Ctpcc_com::doSetComplete(void)
{
         // TODO: Add your implementation code here
         HRESULT hres = m_spObjectContext-
>SetComplete();
         if (SUCCEEDED(hres))
         {
                  DEBUGMSG("SetComplete successful.
object bit set to release object into pool."<<endl);
         }
         else
         {
                  DEBUGMSG("SetComplete failed.
object bit set to release object into pool."<<endl);
                  ERRORMSG("SetComplete() failed,
code:"<<HRESULT_CODE(hres)<<"
facility:"<<HRESULT_FACILITY(hres)<<"
hres:"<<hex<<hres<<endl);
         }

         return S_OK;
```

```
}

/*
**************************************************
**********
** Name                        :         doStockLevel
** Description      :
**
         Call db2 dll entry point to execute txn
** Parameters       :
**
         int*                size of UCHAR buffer to
pay attention to
**
         UCHAR**             char buffer that holds
txn wrapper struct
** Returns                    :
**                                                int
- return code
** Comments                   :
**
**************************************************
**********
*/
STDMETHODIMP Ctpcc_com::doStockLevel(INT *size, UCHAR
**buffer)
{
         stok_wrapper * stok;
         stok = (stok_wrapper *) *buffer;

         if(!connectHandleInUse)
         {
                  DEBUGMSG("Setting Context handle
in use to true"<<endl);
                  connectHandleInUse = 1;
         }
         else
         {
                  DEBUGMSG("Context handle in
use."<<endl);
                  ERRORMSG("Context handle in
use."<<endl);
                  return ERR_HANDLE_IN_USE;
         }

         DEBUGMSG("Calling do_stok call using
connectHandle:"<<DEBUGADDRESS(connectHandle)<<"
w_id:"<<stok->in_stok.s_W_ID<<" d_id:"<< stok-
>in_stok.s_D_ID<<
                                 "
s_transtatus:"<<stok->out_stok.s_transtatus<<endl);

         do_stok(stok,connectHandle);

         DEBUGMSG("Return from do_stok call using
connectHandle:"<<DEBUGADDRESS(connectHandle)<<"
w_id:"<<stok->in_stok.s_W_ID<<" d_id:"<< stok-
>in_stok.s_D_ID<<
                                 "
s_transtatus:"<<stok->out_stok.s_transtatus<<endl);

         DEBUGMSG("Connection handle set to free"
<<endl);
         connectHandleInUse = 0;

         return S_OK;
}

/*
**************************************************
**********
** Name                        :         doNewOrder
** Description      :
**
         Call db2 dll entry point to execute txn
** Parameters       :
**
         int*                size of UCHAR buffer to
pay attention to
**
         UCHAR**             char buffer that holds
txn wrapper struct
** Returns                    :
**                                                int
- return code
** Comments                   :
**
**************************************************
**********
*/
STDMETHODIMP Ctpcc_com::doNewOrder(INT* size, UCHAR**
buffer)
{
         nord_wrapper *nord;
         nord = (nord_wrapper *) *buffer;

         if(!connectHandleInUse)
         {
                  DEBUGMSG("Setting Context handle
in use to true"<<endl);
                  connectHandleInUse = 1;
         }
         else
         {
                  DEBUGMSG("Context handle in
use."<<endl);
                  ERRORMSG("Context handle in
use."<<endl);
                  return ERR_HANDLE_IN_USE;
         }

         DEBUGMSG("Calling do_nord call using
connectHandle:"<<DEBUGADDRESS(connectHandle)<<"
w_id:"<<nord->in_nord.s_W_ID<<" d_id:"<< nord-
>in_nord.s_D_ID<<
                                 "
s_transtatus:"<<nord->out_nord.s_transtatus<<endl);

         do_nord(nord,connectHandle);


         DEBUGMSG("Return from do_nord call using
connectHandle:"<<DEBUGADDRESS(connectHandle)<<"
w_id:"<<nord->in_nord.s_W_ID<<" d_id:"<< nord-
>in_nord.s_D_ID<<
                                 "
s_transtatus:"<<nord->out_nord.s_transtatus<<endl);

         DEBUGMSG("Connection handle set to free"
<<endl);
         connectHandleInUse = 0;

         return S_OK;
}

/*
**************************************************
**********
** Name                        :         doPayment
** Description      :
**
         Call db2 dll entry point to execute txn
** Parameters       :
**
         int*                size of UCHAR buffer to
pay attention to
**
         UCHAR**             char buffer that holds
txn wrapper struct
** Returns                    :
**                                                int
- return code
** Comments                   :
**
**************************************************
**********
*/
STDMETHODIMP Ctpcc_com::doPayment(INT* size, UCHAR**
buffer)
{
         paym_wrapper        *pymt;
         pymt = (paym_wrapper *) *buffer;

         if(!connectHandleInUse)
         {
                  DEBUGMSG("Setting Context handle
in use to true"<<endl);
                  connectHandleInUse = 1;
         }
         else
         {
                  DEBUGMSG("Context handle in
use."<<endl);
                  ERRORMSG("Context handle in
use."<<endl);
                  return ERR_HANDLE_IN_USE;
         }


         DEBUGMSG("Calling do_pymt call using
connectHandle:"<<DEBUGADDRESS(connectHandle)<<"
w_id:"<<pymt->in_paym.s_W_ID<<" d_id:"<< pymt-
>in_paym.s_D_ID<<
                                 "
s_transtatus:"<<pymt->out_paym.s_transtatus<<endl);

         do_pymt(pymt,connectHandle);
```

```
        DEBUGMSG("Return from do_pymt call using
connectHandle:"<<DEBUGADDRESS(connectHandle)<<"
w_id:"<<pymt->in_paym.s_W_ID<<" d_id:"<< pymt-
>in_paym.s_D_ID<<
                                "
s_transtatus:"<<pymt->out_paym.s_transtatus<<endl);

        DEBUGMSG("Connection handle set to free"
<<endl);
        connectHandleInUse = 0;

        return S_OK;
}

/*
************************************************
***********
** Name                    :         doOrderStatus
** Description      :
**
        Call db2 dll entry point to execute txn
** Parameters       :
**
        int*                size of UCHAR buffer to
pay attention to
**
        UCHAR**             char buffer that holds
txn wrapper struct
** Returns                 :
**                                          int
- return code
** Comments                :
**
************************************************
***********
*/

STDMETHODIMP Ctpcc_com::doOrderStatus(INT* size,
UCHAR** buffer)
{
        ords_wrapper        *ords;
        ords = (ords_wrapper *) *buffer;

        if(!connectHandleInUse)
        {
                DEBUGMSG("Setting Context handle
in use to true"<<endl);
                connectHandleInUse = 1;
        }
        else
        {
                DEBUGMSG("Context handle in
use."<<endl);
                ERRORMSG("Context handle in
use."<<endl);
                return ERR_HANDLE_IN_USE;
        }


        DEBUGMSG("Calling do_ords call using
connectHandle:"<<DEBUGADDRESS(connectHandle)<<"
w_id:"<<ords->in_ords.s_W_ID<<" d_id:"<< ords-
>in_ords.s_D_ID<<
                                "
s_transtatus:"<<ords->out_ords.s_transtatus<<endl);

        do_ords(ords,connectHandle);

        DEBUGMSG("Return from do_ords call using
connectHandle:"<<DEBUGADDRESS(connectHandle)<<"
w_id:"<<ords->in_ords.s_W_ID<<" d_id:"<< ords-
>in_ords.s_D_ID<<
                                "
s_transtatus:"<<ords->out_ords.s_transtatus<<endl);

        DEBUGMSG("Connection handle set to free"
<<endl);
        connectHandleInUse = 0;

        return S_OK;
}

/*
************************************************
***********
** Name                    :         doDBInfo
** Description      :
**
        Function to test com interface
** Parameters       :
** Returns                 :
**                                          int
- return code
** Comments                :
**
************************************************
***********
*/

STDMETHODIMP Ctpcc_com::doDBInfo(void)
{
        DEBUGMSG("Stub function to warm object
pool"<<endl);
        return S_OK;
}

/*
************************************************
***********
** Name                    :         loadLibrary
** Description      :
**
        Function loads apprioate db library based
on
**
        registry setting
** Parameters       :
** Returns                 :
**                                          int
- return code
** Comments                :
**
************************************************
***********
*/

Ctpcc_com::loadLibrary()
{
        DEBUGMSG("Entered loadLibrary
function"<<endl);
        //check to see if dbInstance is already
loaded
        if(!dbInstance)
        {
                DEBUGMSG("Database dll not
loaded. Loading dll."<<endl);
                if (nullDB)
                {
                        DEBUGMSG("Loading
"<<dbType << " nulldb dll." << endl);
                        dbInstance =
LoadLibrary("c:\\inetpub\\wwwroot\\tpcc\\nullDB.dll")
;
                        if(dbInstance == NULL)
                        {

        DEBUGMSG("Unable to load null db dll,
rc:"<<GetLastError());

        ERRORMSG("Unable to load null db dll,
rc:"<<GetLastError());
                                        return
ERR_NULL_DLL_NOT_LOADED;
                        }
                        DEBUGMSG(dbType << "
nulldb dll loaded"<<endl);
                }
                else if(strcmp(dbType,"DB2") ==
0)
                {
                        DEBUGMSG("Loading
"<<dbType << " dll." << endl);

                        dbInstance =
LoadLibrary("c:\\inetpub\\wwwroot\\tpcc\\tpccDB2glue.
dll");
                        if(dbInstance == NULL)
                        {

        DEBUGMSG("Unable to load library."<<endl);


        ERRORMSG("Unable to load com dll, rc:" <<
GetLastError() << endl);

                                        return
ERR_DB2_DLL_NOT_LOADED;
                        }
                        DEBUGMSG(dbType<< " dll
loaded"<<endl);
                }
                else if( strcmp(dbType,"ORACLE")
== 0 )
                {
                        DEBUGMSG("Unable to
load orcale dll"<<endl);
                        ERRORMSG("Unable to
load orcale dll, rc:"<<GetLastError()<<endl);
```

```
                        return
ERR_ORACLE_DLL_NOT_LOADED;
                }
                else
                {
                        DEBUGMSG("Unknown
database type dll:"<<dbType<<endl);
                        ERRORMSG("Unknown
database type dll:"<<dbType<<endl);
                        return ERR_UNKNOWN_DB;
                }

                //retrieve function addresses
from instance loaded.
                DEBUGMSG("Getting do_connection
function address from "<<dbType<<" dll"<<endl);
                if( (do_connection =
(CONNECT_PTR)GetProcAddress(dbInstance,"connect_db"))
== NULL )
                        return
ERR_CONNECT_ADDRESS_NOT_FOUND;
                DEBUGMSG("do_connection
address:"<<DEBUGADDRESS(do_connection)<<endl);

                DEBUGMSG("Getting do_disconnect
function address from "<<dbType<<" dll"<<endl);
                if( (do_disconnect =
(DISCONNECT_PTR)GetProcAddress(dbInstance,"disconnect
_db")) == NULL )
                        return
ERR_DISCONNECT_ADDRESS_NOT_FOUND;
                DEBUGMSG("do_disconnect
address:"<<DEBUGADDRESS(do_disconnect)<<endl);

                DEBUGMSG("Getting do_nord
function address from "<<dbType<<" dll"<<endl);
                if( (do_nord = (NORD_PTR)
GetProcAddress(dbInstance,"do_nord")) == NULL)
                        return
ERR_NORD_ADDRESS_NOT_FOUND;
                DEBUGMSG("do_nord function
address:"<<DEBUGADDRESS(do_nord)<<endl);

                DEBUGMSG("Getting do_pymt
function address from "<<dbType<<" dll"<<endl);
                if( (do_pymt = (PYMT_PTR)
GetProcAddress(dbInstance,"do_pymt")) == NULL)
                        return
ERR_PYMT_ADDRESS_NOT_FOUND;
                DEBUGMSG("do_pymt function
adddress:"<<DEBUGADDRESS(do_pymt)<<endl);

                DEBUGMSG("Getting do_ords
function address from "<<dbType<<" dll"<<endl);
                if( (do_ords = (ORDS_PTR)
GetProcAddress(dbInstance,"do_ords")) == NULL)
                        return
ERR_ORDS_ADDRESS_NOT_FOUND;
                DEBUGMSG("do_ords function
address:"<<DEBUGADDRESS(do_ords)<<endl);

                DEBUGMSG("Getting do_stok
function address from "<<dbType<<" dll"<<endl);
                if( (do_stok = (STOK_PTR)
GetProcAddress(dbInstance,"do_stok")) == NULL)
                        return
ERR_STOK_ADDRESS_NOT_FOUND;
                DEBUGMSG("do_stok function
address:"<<DEBUGADDRESS(do_stok)<<endl);

                DEBUGMSG("All function addresses
retrieved successfully."<<endl);

        }
        return OK;
}

/*
*************************************************
***********
** Name                   :
        readRegistry()
** Description      :
**
        Function reads registry value
** Parameters       :
** Returns                :
**                                              int
- return code
** Comments               :
**
        Values retrieved from registery
**
        dbName, dbUserName, and dbUserPassword
*************************************************
***********
*/

Ctpcc_com::readRegistery()
{
        //open registery key
        HKEY      registeryKey;
        DWORD     regType;
        char      value[MAX_STRING_LEN];
        DWORD     regValue;
        DWORD     regValueSize = MAX_STRING_LEN;

        DEBUGMSG("Entered readRegistery(), opening
key:"<< REGISTERY_SUB_KEY <<endl);
        //open up registery key
        if(RegOpenKeyEx(HKEY_LOCAL_MACHINE,REGISTER
Y_SUB_KEY,0,KEY_READ,&registeryKey) == ERROR_SUCCESS)

        {
                DEBUGMSG(REGISTERY_SUB_KEY<<"
open, getting database type from key"<<endl);
                regValueSize = sizeof(value);
                if
(RegQueryValueEx(registeryKey,DB_TYPE,0,&regType,(BYT
E *) &value,&regValueSize)== ERROR_SUCCESS )
                        strcpy(dbType,value);
                DEBUGMSG("Database
type:"<<dbType<<" from registery key."<<endl);

                DEBUGMSG("Getting database name
from registery key."<<endl);
                regValueSize = sizeof(value);
                if
(RegQueryValueEx(registeryKey,DB_NAME,0,&regType,(BYT
E *) &value,&regValueSize)== ERROR_SUCCESS )
                        strcpy(dbName,value);
                DEBUGMSG("Database
name:"<<dbName<<endl);

                DEBUGMSG("Getting null database
flag from key."<<endl);
                regValueSize = sizeof(regValue);

        if(RegQueryValueEx(registeryKey,NULL_DB,0,&
regType,(BYTE *)&regValue,&regValueSize) ==
ERROR_SUCCESS)
                        nullDB = regValue;
                DEBUGMSG("Null database
flag:"<<nullDB<<endl);

                return OK;
        }

        DEBUGMSG("Error, unable to open registery
key."<<endl);
        return ERR_UNABLE_TO_OPEN_REG;
}

/*
*************************************************
***********
** Name                   :         connectDB
** Description      :
**
        Function connects to the db
** Parameters       :
** Returns                :
**                                                 int
- return code
** Comments               :
**
*************************************************
***********
*/
Ctpcc_com::connectDB()
{
        DEBUGMSG("Entered connectDB(), checking if
object is connected."<<endl);
        if(!connected)
        {
                DEBUGMSG("Object not connected,
calling do_connection with dbName:"<<dbName<<"
connectHandle:"<<

DEBUGADDRESS(connectHandle)<<endl);
                if(!connectHandleInUse)
                {
                        DEBUGMSG("Setting
Context handle in use to true"<<endl);
                        connectHandleInUse = 1;
                        connected =
do_connection(dbName,&connectHandle);
                        if(connected != OK)
                        {
```

```
        DEBUGMSG("Object do_connect failed,
rc:"<<connected<<endl);

        ERRORMSG("Object do_connect failed,
rc:"<<connected<<endl);
                                        return
connected;
                            }
                            DEBUGMSG("Object
connection complete,
connectHandle:"<<DEBUGADDRESS(connectHandle)<<endl);
                            connectHandleInUse = 0;
                            return OK;
                    }
                    else
                    {
                            DEBUGMSG("Object's
connectHandle already in use, connect failed"<<endl);
                            ERRORMSG("Object's
connectHandle already in use, connect failed"<<endl);
                            return
ERR_HANDLE_IN_USE;
                    }
        }
        DEBUGMSG("Object already has connection
established."<<endl);
        return OK;
}
```

tpccCom/dlldata.c

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

        DO NOT ALTER THIS FILE

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

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

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

#define PROXY_DELEGATION

#include <rpcproxy.h>

#ifdef __cplusplus
extern "C"   {
#endif

EXTERN_PROXY_FILE( tpccCom )


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


DLLDATA_ROUTINES( aProxyFileList, GET_DLL_CLSID )

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

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

tpccCom/dlldatax.c

```
// wrapper for dlldata.c

#ifdef _MERGE_PROXYSTUB // merge proxy stub DLL

#define REGISTER_PROXY_DLL //DllRegisterServer, etc.

#define _WIN32_WINNT 0x0500   //for Win2000, change
it to 0x0400 for NT4 or Win95 with DCOM
#define USE_STUBLESS_PROXY    //defined only with
MIDL switch /Oicf

#pragma comment(lib, "rpcns4.lib")
#pragma comment(lib, "rpcrt4.lib")

#define ENTRY_PREFIX          Prx

#include "dlldata.c"
#include "tpccCom_p.c"

#endif //_MERGE_PROXYSTUB
```

tpccCom/tpccCom_i.c

```
/* this ALWAYS GENERATED file contains the IIDs and
CLSIDs */

/* link this file in with the server and any clients
*/


 /* File created by MIDL compiler version 6.00.0361
*/
/* at Mon Jun 06 13:40:36 2005
 */
/* Compiler settings for .\tpccCom.idl:
    Oicf, W1, Zp8, env=Win32 (32b run)
    protocol : dce , ms_ext, c_ext, robust
    error checks: allocation ref bounds_check enum
stub_data
    VC __declspec() decoration level:
         __declspec(uuid()), __declspec(selectany),
__declspec(novtable)
         DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#if !defined(_M_IA64) && !defined(_M_AMD64)


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


#ifdef __cplusplus
extern "C"{
#endif


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

#ifdef _MIDL_USE_GUIDDEF_

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

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

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

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

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

#endif // __IID_DEFINED__

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

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

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
IID_IComponentRegistrar,0xa817e7a2,0x43fa,0x11d0,0x9e
,0x44,0x00,0xaa,0x00,0xb6,0x77,0x0a);


MIDL_DEFINE_GUID(IID,
IID_Itpcc_com,0x5B4FA473,0x2E68,0x4D79,0xA6,0x26,0xF3
,0x8B,0x30,0xB8,0x19,0x6E);


MIDL_DEFINE_GUID(IID,
LIBID_tpccComLib,0x91F1B8B0,0x89E9,0x457B,0xA2,0x28,0
x3E,0x2D,0x6C,0xE3,0xE7,0x52);


MIDL_DEFINE_GUID(CLSID,
CLSID_CompReg,0x90EEDAFF,0xF8D3,0x4711,0x99,0xA9,0x8A
,0xC3,0xC0,0xFE,0x5D,0xB9);


MIDL_DEFINE_GUID(CLSID,
CLSID_tpcc_com,0x5F752BF2,0xF739,0x43D4,0x84,0x92,0x4
4,0xC1,0x95,0x81,0xC0,0xA1);

#undef MIDL_DEFINE_GUID

#ifdef __cplusplus
}
#endif



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

tpccCom/tpccCom_p.c

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


 /* File created by MIDL compiler version 6.00.0361
*/
/* at Mon Jun 06 13:40:36 2005
 */
/* Compiler settings for .\tpccCom.idl:
    Oicf, W1, Zp8, env=Win32 (32b run)
    protocol : dce , ms_ext, c_ext, robust
    error checks: allocation ref bounds_check enum
stub_data
    VC __declspec() decoration level:
         __declspec(uuid()), __declspec(selectany),
__declspec(novtable)
         DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#if !defined(_M_IA64) && !defined(_M_AMD64)


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


/* verify that the <rpcproxy.h> version is high
enough to compile this file*/
#ifndef __REDQ_RPCPROXY_H_VERSION__
#define __REQUIRED_RPCPROXY_H_VERSION__ 475
#endif


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


#include "tpccCom.h"

#define TYPE_FORMAT_STRING_SIZE   1089
#define PROC_FORMAT_STRING_SIZE   409
#define TRANSMIT_AS_TABLE_SIZE    0
#define WIRE_MARSHAL_TABLE_SIZE   2

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

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


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


extern const MIDL_TYPE_FORMAT_STRING
__MIDL_TypeFormatString;
extern const MIDL_PROC_FORMAT_STRING
__MIDL_ProcFormatString;


extern const MIDL_STUB_DESC Object_StubDesc;


extern const MIDL_SERVER_INFO
IComponentRegistrar_ServerInfo;
extern const MIDL_STUBLESS_PROXY_INFO
IComponentRegistrar_ProxyInfo;


extern const MIDL_STUB_DESC Object_StubDesc;


extern const MIDL_SERVER_INFO Itpcc_com_ServerInfo;
extern const MIDL_STUBLESS_PROXY_INFO
Itpcc_com_ProxyInfo;


extern const USER_MARSHAL_ROUTINE_QUADRUPLE
UserMarshalRoutines[ WIRE_MARSHAL_TABLE_SIZE ];

#if !defined(__RPC_WIN32__)
#error  Invalid build platform for this stub.
#endif

#if !(TARGET_IS_NT50_OR_LATER)
#error You need a Windows 2000 or later to run this
stub because it uses these features:
#error   /robust command line switch.
#error However, your C/C++ compilation flags indicate
you intend to run this app on earlier systems.
#error This app will die there with the
RPC_X_WRONG_STUB_VERSION error.
#endif


static const MIDL_PROC_FORMAT_STRING
__MIDL_ProcFormatString =
    {
        0,
        {

          /* Procedure Attach */

                               0x33,               /*
FC_AUTO_HANDLE */
                               0x6c,               /*
Old Flags:  object, Oi2 */
/*  2 */  NdrFcLong( 0x0 ),   /* 0 */
/*  6 */  NdrFcShort( 0x7 ),  /* 7 */
/*  8 */  NdrFcShort( 0xc ),  /* x86 Stack
size/offset = 12 */
/* 10 */  NdrFcShort( 0x0 ),  /* 0 */
/* 12 */  NdrFcShort( 0x8 ),  /* 8 */
/* 14 */  0x46,               /* Oi2 Flags:  clt must
size, has return, has ext, */
```

```
                            0x2,                /*
2 */
/* 16 */  0x8,                /* 8 */
                            0x5,                /*
Ext Flags:  new corr desc, srv corr check, */
/* 18 */  NdrFcShort( 0x0 ),  /* 0 */
/* 20 */  NdrFcShort( 0x1 ),  /* 1 */
/* 22 */  NdrFcShort( 0x0 ),  /* 0 */

          /* Parameter bstrPath */

/* 24 */  NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 26 */  NdrFcShort( 0x4 ),  /* x86 Stack
size/offset = 4 */
/* 28 */  NdrFcShort( 0x1c ), /* Type Offset=28 */

          /* Return value */

/* 30 */  NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 32 */  NdrFcShort( 0x8 ),  /* x86 Stack
size/offset = 8 */
/* 34 */  0x8,                /* FC_LONG */
                            0x0,                /*
0 */

          /* Procedure doSetComplete */


          /* Procedure RegisterAll */

/* 36 */  0x33,               /* FC_AUTO_HANDLE */
                            0x6c,               /*
Old Flags:  object, Oi2 */
/* 38 */  NdrFcLong( 0x0 ),   /* 0 */
/* 42 */  NdrFcShort( 0x8 ),  /* 8 */
/* 44 */  NdrFcShort( 0x8 ),  /* x86 Stack
size/offset = 8 */
/* 46 */  NdrFcShort( 0x0 ),  /* 0 */
/* 48 */  NdrFcShort( 0x8 ),  /* 8 */
/* 50 */  0x44,               /* Oi2 Flags:  has
return, has ext, */
                            0x1,                /*
1 */
/* 52 */  0x8,                /* 8 */
                            0x1,                /*
Ext Flags:  new corr desc, */
/* 54 */  NdrFcShort( 0x0 ),  /* 0 */
/* 56 */  NdrFcShort( 0x0 ),  /* 0 */
/* 58 */  NdrFcShort( 0x0 ),  /* 0 */

          /* Return value */


          /* Return value */

/* 60 */  NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 62 */  NdrFcShort( 0x4 ),  /* x86 Stack
size/offset = 4 */
/* 64 */  0x8,                /* FC_LONG */
                            0x0,                /*
0 */

          /* Procedure UnregisterAll */

/* 66 */  0x33,               /* FC_AUTO_HANDLE */
                            0x6c,               /*
Old Flags:  object, Oi2 */
/* 68 */  NdrFcLong( 0x0 ),   /* 0 */
/* 72 */  NdrFcShort( 0x9 ),  /* 9 */
/* 74 */  NdrFcShort( 0x8 ),  /* x86 Stack
size/offset = 8 */
/* 76 */  NdrFcShort( 0x0 ),  /* 0 */
/* 78 */  NdrFcShort( 0x8 ),  /* 8 */
/* 80 */  0x44,               /* Oi2 Flags:  has
return, has ext, */
                            0x1,                /*
1 */
/* 82 */  0x8,                /* 8 */
                            0x1,                /*
Ext Flags:  new corr desc, */
/* 84 */  NdrFcShort( 0x0 ),  /* 0 */
/* 86 */  NdrFcShort( 0x0 ),  /* 0 */
/* 88 */  NdrFcShort( 0x0 ),  /* 0 */

          /* Return value */

/* 90 */  NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 92 */  NdrFcShort( 0x4 ),  /* x86 Stack
size/offset = 4 */
/* 94 */  0x8,                /* FC_LONG */
                            0x0,                /*
0 */

          /* Procedure GetComponents */

/* 96 */  0x33,               /* FC_AUTO_HANDLE */
                            0x6c,               /*
Old Flags:  object, Oi2 */
/* 98 */  NdrFcLong( 0x0 ),   /* 0 */
/* 102 */ NdrFcShort( 0xa ),  /* 10 */
/* 104 */ NdrFcShort( 0x10 ), /* x86 Stack
size/offset = 16 */
/* 106 */ NdrFcShort( 0x0 ),  /* 0 */
/* 108 */ NdrFcShort( 0x8 ),  /* 8 */
/* 110 */ 0x45,               /* Oi2 Flags:  srv must
size, has return, has ext, */
                            0x3,                /*
3 */
/* 112 */ 0x8,                /* 8 */
                            0x3,                /*
Ext Flags:  new corr desc, clt corr check, */
/* 114 */ NdrFcShort( 0x24 ), /* 36 */
/* 116 */ NdrFcShort( 0x0 ),  /* 0 */
/* 118 */ NdrFcShort( 0x0 ),  /* 0 */

          /* Parameter pbstrCLSIDs */

/* 120 */ NdrFcShort( 0x2113 ),        /* Flags:
must size, must free, out, simple ref, srv alloc
size=8 */
/* 122 */ NdrFcShort( 0x4 ),  /* x86 Stack
size/offset = 4 */
/* 124 */ NdrFcShort( 0x41e ),         /* Type
Offset=1054 */

          /* Parameter pbstrDescriptions */

/* 126 */ NdrFcShort( 0x2113 ),        /* Flags:
must size, must free, out, simple ref, srv alloc
size=8 */
/* 128 */ NdrFcShort( 0x8 ),  /* x86 Stack
size/offset = 8 */
/* 130 */ NdrFcShort( 0x41e ),         /* Type
Offset=1054 */

          /* Return value */

/* 132 */ NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 134 */ NdrFcShort( 0xc ),  /* x86 Stack
size/offset = 12 */
/* 136 */ 0x8,                /* FC_LONG */
                            0x0,                /*
0 */

          /* Procedure RegisterComponent */

/* 138 */ 0x33,               /* FC_AUTO_HANDLE */
                            0x6c,               /*
Old Flags:  object, Oi2 */
/* 140 */ NdrFcLong( 0x0 ),   /* 0 */
/* 144 */ NdrFcShort( 0xb ),  /* 11 */
/* 146 */ NdrFcShort( 0xc ),  /* x86 Stack
size/offset = 12 */
/* 148 */ NdrFcShort( 0x0 ),  /* 0 */
/* 150 */ NdrFcShort( 0x8 ),  /* 8 */
/* 152 */ 0x46,               /* Oi2 Flags:  clt must
size, has return, has ext, */
                            0x2,                /*
2 */
/* 154 */ 0x8,                /* 8 */
                            0x5,                /*
Ext Flags:  new corr desc, srv corr check, */
/* 156 */ NdrFcShort( 0x0 ),  /* 0 */
/* 158 */ NdrFcShort( 0x1 ),  /* 1 */
/* 160 */ NdrFcShort( 0x0 ),  /* 0 */

          /* Parameter bstrCLSID */

/* 162 */ NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 164 */ NdrFcShort( 0x4 ),  /* x86 Stack
size/offset = 4 */
/* 166 */ NdrFcShort( 0x1c ), /* Type Offset=28 */

          /* Return value */

/* 168 */ NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 170 */ NdrFcShort( 0x8 ),  /* x86 Stack
size/offset = 8 */
/* 172 */ 0x8,                /* FC_LONG */
```

```
                            0x0,                /*
0 */

         /* Procedure UnregisterComponent */

/* 174 */ 0x33,             /* FC_AUTO_HANDLE */
                            0x6c,               /*
Old Flags:  object, Oi2 */
/* 176 */ NdrFcLong( 0x0 ),   /* 0 */
/* 180 */ NdrFcShort( 0xc ),  /* 12 */
/* 182 */ NdrFcShort( 0xc ),  /* x86 Stack
size/offset = 12 */
/* 184 */ NdrFcShort( 0x0 ),  /* 0 */
/* 186 */ NdrFcShort( 0x8 ),  /* 8 */
/* 188 */ 0x46,               /* Oi2 Flags:  clt must
size, has return, has ext, */
                            0x2,                /*
2 */
/* 190 */ 0x8,              /* 8 */
                            0x5,                /*
Ext Flags:  new corr desc, srv corr check, */
/* 192 */ NdrFcShort( 0x0 ),  /* 0 */
/* 194 */ NdrFcShort( 0x1 ),  /* 1 */
/* 196 */ NdrFcShort( 0x0 ),  /* 0 */

         /* Parameter bstrCLSID */

/* 198 */ NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 200 */ NdrFcShort( 0x4 ),  /* x86 Stack
size/offset = 4 */
/* 202 */ NdrFcShort( 0x1c ), /* Type Offset=28 */

         /* Return value */

/* 204 */ NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 206 */ NdrFcShort( 0x8 ),  /* x86 Stack
size/offset = 8 */
/* 208 */ 0x8,              /* FC_LONG */
                            0x0,                /*
0 */

         /* Procedure doStockLevel */

/* 210 */ 0x33,             /* FC_AUTO_HANDLE */
                            0x6c,               /*
Old Flags:  object, Oi2 */
/* 212 */ NdrFcLong( 0x0 ),   /* 0 */
/* 216 */ NdrFcShort( 0x3 ),  /* 3 */
/* 218 */ NdrFcShort( 0x10 ), /* x86 Stack
size/offset = 16 */
/* 220 */ NdrFcShort( 0x1c ), /* 28 */
/* 222 */ NdrFcShort( 0x8 ),  /* 8 */
/* 224 */ 0x47,               /* Oi2 Flags:  srv must
size, clt must size, has return, has ext, */
                            0x3,                /*
3 */
/* 226 */ 0x8,              /* 8 */
                            0x7,                /*
Ext Flags:  new corr desc, clt corr check, srv corr
check, */
/* 228 */ NdrFcShort( 0x1 ),  /* 1 */
/* 230 */ NdrFcShort( 0x1 ),  /* 1 */
/* 232 */ NdrFcShort( 0x0 ),  /* 0 */

         /* Parameter size */

/* 234 */ NdrFcShort( 0x148 ),          /* Flags:
in, base type, simple ref, */
/* 236 */ NdrFcShort( 0x4 ),  /* x86 Stack
size/offset = 4 */
/* 238 */ 0x8,              /* FC_LONG */
                            0x0,                /*
0 */

         /* Parameter buffer */

/* 240 */ NdrFcShort( 0x201b ),         /* Flags:
must size, must free, in, out, srv alloc size=8 */
/* 242 */ NdrFcShort( 0x8 ),  /* x86 Stack
size/offset = 8 */
/* 244 */ NdrFcShort( 0x42c ),          /* Type
Offset=1068 */

         /* Return value */

/* 246 */ NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 248 */ NdrFcShort( 0xc ),  /* x86 Stack
size/offset = 12 */
/* 250 */ 0x8,              /* FC_LONG */
                            0x0,                /*
0 */

         /* Procedure doNewOrder */

/* 252 */ 0x33,             /* FC_AUTO_HANDLE */
                            0x6c,               /*
Old Flags:  object, Oi2 */
/* 254 */ NdrFcLong( 0x0 ),   /* 0 */
/* 258 */ NdrFcShort( 0x4 ),  /* 4 */
/* 260 */ NdrFcShort( 0x10 ), /* x86 Stack
size/offset = 16 */
/* 262 */ NdrFcShort( 0x1c ), /* 28 */
/* 264 */ NdrFcShort( 0x8 ),  /* 8 */
/* 266 */ 0x47,               /* Oi2 Flags:  srv must
size, clt must size, has return, has ext, */
                            0x3,                /*
3 */
/* 268 */ 0x8,              /* 8 */
                            0x7,                /*
Ext Flags:  new corr desc, clt corr check, srv corr
check, */
/* 270 */ NdrFcShort( 0x1 ),  /* 1 */
/* 272 */ NdrFcShort( 0x1 ),  /* 1 */
/* 274 */ NdrFcShort( 0x0 ),  /* 0 */

         /* Parameter size */

/* 276 */ NdrFcShort( 0x148 ),          /* Flags:
in, base type, simple ref, */
/* 278 */ NdrFcShort( 0x4 ),  /* x86 Stack
size/offset = 4 */
/* 280 */ 0x8,              /* FC_LONG */
                            0x0,                /*
0 */

         /* Parameter buffer */

/* 282 */ NdrFcShort( 0x201b ),         /* Flags:
must size, must free, in, out, srv alloc size=8 */
/* 284 */ NdrFcShort( 0x8 ),  /* x86 Stack
size/offset = 8 */
/* 286 */ NdrFcShort( 0x42c ),          /* Type
Offset=1068 */

         /* Return value */

/* 288 */ NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 290 */ NdrFcShort( 0xc ),  /* x86 Stack
size/offset = 12 */
/* 292 */ 0x8,              /* FC_LONG */
                            0x0,                /*
0 */

         /* Procedure doPayment */

/* 294 */ 0x33,             /* FC_AUTO_HANDLE */
                            0x6c,               /*
Old Flags:  object, Oi2 */
/* 296 */ NdrFcLong( 0x0 ),   /* 0 */
/* 300 */ NdrFcShort( 0x5 ),  /* 5 */
/* 302 */ NdrFcShort( 0x10 ), /* x86 Stack
size/offset = 16 */
/* 304 */ NdrFcShort( 0x1c ), /* 28 */
/* 306 */ NdrFcShort( 0x8 ),  /* 8 */
/* 308 */ 0x47,               /* Oi2 Flags:  srv must
size, clt must size, has return, has ext, */
                            0x3,                /*
3 */
/* 310 */ 0x8,              /* 8 */
                            0x7,                /*
Ext Flags:  new corr desc, clt corr check, srv corr
check, */
/* 312 */ NdrFcShort( 0x1 ),  /* 1 */
/* 314 */ NdrFcShort( 0x1 ),  /* 1 */
/* 316 */ NdrFcShort( 0x0 ),  /* 0 */

         /* Parameter size */

/* 318 */ NdrFcShort( 0x148 ),          /* Flags:
in, base type, simple ref, */
/* 320 */ NdrFcShort( 0x4 ),  /* x86 Stack
size/offset = 4 */
/* 322 */ 0x8,              /* FC_LONG */
                            0x0,                /*
0 */

         /* Parameter buffer */

/* 324 */ NdrFcShort( 0x201b ),         /* Flags:
must size, must free, in, out, srv alloc size=8 */
/* 326 */ NdrFcShort( 0x8 ),  /* x86 Stack
size/offset = 8 */
/* 328 */ NdrFcShort( 0x42c ),          /* Type
Offset=1068 */
```

```
        /* Return value */

/* 330 */ NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 332 */ NdrFcShort( 0xc ),  /* x86 Stack
size/offset = 12 */
/* 334 */ 0x8,                /* FC_LONG */
                              0x0,                /*
0 */

        /* Procedure doOrderStatus */

/* 336 */ 0x33,               /* FC_AUTO_HANDLE */
                              0x6c,               /*
Old Flags:  object, Oi2 */
/* 338 */ NdrFcLong( 0x0 ),   /* 0 */
/* 342 */ NdrFcShort( 0x6 ),  /* 6 */
/* 344 */ NdrFcShort( 0x10 ), /* x86 Stack
size/offset = 16 */
/* 346 */ NdrFcShort( 0x1c ), /* 28 */
/* 348 */ NdrFcShort( 0x8 ),  /* 8 */
/* 350 */ 0x47,               /* Oi2 Flags:  srv must
size, clt must size, has return, has ext, */
                              0x3,                /*
3 */
/* 352 */ 0x8,                /* 8 */
                              0x7,                /*
Ext Flags:  new corr desc, clt corr check, srv corr
check, */
/* 354 */ NdrFcShort( 0x1 ),  /* 1 */
/* 356 */ NdrFcShort( 0x1 ),  /* 1 */
/* 358 */ NdrFcShort( 0x0 ),  /* 0 */

        /* Parameter size */

/* 360 */ NdrFcShort( 0x148 ),          /* Flags:
in, base type, simple ref, */
/* 362 */ NdrFcShort( 0x4 ),  /* x86 Stack
size/offset = 4 */
/* 364 */ 0x8,                /* FC_LONG */
                              0x0,                /*
0 */

        /* Parameter buffer */

/* 366 */ NdrFcShort( 0x201b ),         /* Flags:
must size, must free, in, out, srv alloc size=8 */
/* 368 */ NdrFcShort( 0x8 ),  /* x86 Stack
size/offset = 8 */
/* 370 */ NdrFcShort( 0x42c ),          /* Type
Offset=1068 */

        /* Return value */

/* 372 */ NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 374 */ NdrFcShort( 0xc ),  /* x86 Stack
size/offset = 12 */
/* 376 */ 0x8,                /* FC_LONG */
                              0x0,                /*
0 */

        /* Procedure doDBInfo */

/* 378 */ 0x33,               /* FC_AUTO_HANDLE */
                              0x6c,               /*
Old Flags:  object, Oi2 */
/* 380 */ NdrFcLong( 0x0 ),   /* 0 */
/* 384 */ NdrFcShort( 0x7 ),  /* 7 */
/* 386 */ NdrFcShort( 0x8 ),  /* x86 Stack
size/offset = 8 */
/* 388 */ NdrFcShort( 0x0 ),  /* 0 */
/* 390 */ NdrFcShort( 0x8 ),  /* 8 */
/* 392 */ 0x44,               /* Oi2 Flags:  has
return, has ext, */
                              0x1,                /*
1 */
/* 394 */ 0x8,                /* 8 */
                              0x1,                /*
Ext Flags:  new corr desc, */
/* 396 */ NdrFcShort( 0x0 ),  /* 0 */
/* 398 */ NdrFcShort( 0x0 ),  /* 0 */
/* 400 */ NdrFcShort( 0x0 ),  /* 0 */

        /* Return value */

/* 402 */ NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 404 */ NdrFcShort( 0x4 ),  /* x86 Stack
size/offset = 4 */
/* 406 */ 0x8,                /* FC_LONG */
                              0x0,                /*
0 */


                              0x0
        }
    };

static const MIDL_TYPE_FORMAT_STRING
__MIDL_TypeFormatString =
    {
        0,
        {
                              NdrFcShort( 0x0 ),  /*
0 */
/*  2 */
                              0x12, 0x0,          /*
FC_UP */
/*  4 */  NdrFcShort( 0xe ),  /* Offset= 14 (18) */
/*  6 */
                              0x1b,               /*
FC_CARRAY */
                              0x1,                /*
1 */
/*  8 */  NdrFcShort( 0x2 ),  /* 2 */
/* 10 */  0x9,                /* Corr desc: FC_ULONG
*/
                              0x0,                /*
*/
/* 12 */  NdrFcShort( 0xfffc ),         /* -4 */
/* 14 */  NdrFcShort( 0x1 ),  /* Corr flags:  early,
*/
/* 16 */  0x6,                /* FC_SHORT */
                              0x5b,               /*
FC_END */
/* 18 */
                              0x17,               /*
FC_CSTRUCT */
                              0x3,                /*
3 */
/* 20 */  NdrFcShort( 0x8 ),  /* 8 */
/* 22 */  NdrFcShort( 0xfff0 ),         /* Offset= -
16 (6) */
/* 24 */  0x8,                /* FC_LONG */
                              0x8,                /*
FC_LONG */
/* 26 */  0x5c,               /* FC_PAD */
                              0x5b,               /*
FC_END */
/* 28 */  0xb4,               /* FC_USER_MARSHAL */
                              0x83,               /*
131 */
/* 30 */  NdrFcShort( 0x0 ),  /* 0 */
/* 32 */  NdrFcShort( 0x4 ),  /* 4 */
/* 34 */  NdrFcShort( 0x0 ),  /* 0 */
/* 36 */  NdrFcShort( 0xffde ),         /* Offset= -
34 (2) */
/* 38 */
                              0x11, 0x4,          /*
FC_RP [alloced_on_stack] */
/* 40 */  NdrFcShort( 0x3f6 ),          /* Offset=
1014 (1054) */
/* 42 */
                              0x13, 0x10,         /*
FC_OP [pointer_deref] */
/* 44 */  NdrFcShort( 0x2 ),  /* Offset= 2 (46) */
/* 46 */
                              0x13, 0x0,          /*
FC_OP */
/* 48 */  NdrFcShort( 0x3dc ),          /* Offset=
988 (1036) */
/* 50 */
                              0x2a,               /*
FC_ENCAPSULATED_UNION */
                              0x49,               /*
73 */
/* 52 */  NdrFcShort( 0x18 ), /* 24 */
/* 54 */  NdrFcShort( 0xa ),  /* 10 */
/* 56 */  NdrFcLong( 0x8 ),   /* 8 */
/* 60 */  NdrFcShort( 0x5a ), /* Offset= 90 (150) */
/* 62 */  NdrFcLong( 0xd ),   /* 13 */
/* 66 */  NdrFcShort( 0x90 ), /* Offset= 144 (210) */
/* 68 */  NdrFcLong( 0x9 ),   /* 9 */
/* 72 */  NdrFcShort( 0xc2 ), /* Offset= 194 (266) */
/* 74 */  NdrFcLong( 0xc ),   /* 12 */
/* 78 */  NdrFcShort( 0x2c0 ),          /* Offset=
704 (782) */
/* 80 */  NdrFcLong( 0x24 ),  /* 36 */
/* 84 */  NdrFcShort( 0x2ea ),          /* Offset=
746 (830) */
/* 86 */  NdrFcLong( 0x800d ),          /* 32781 */
/* 90 */  NdrFcShort( 0x306 ),          /* Offset=
774 (864) */
/* 92 */  NdrFcLong( 0x10 ),  /* 16 */
/* 96 */  NdrFcShort( 0x320 ),          /* Offset=
800 (896) */
/* 98 */  NdrFcLong( 0x2 ),   /* 2 */
```

```
/* 102 */ NdrFcShort( 0x33a ),          /* Offset=
826 (928) */
/* 104 */ NdrFcLong( 0x3 ),   /* 3 */
/* 108 */ NdrFcShort( 0x354 ),          /* Offset=
852 (960) */
/* 110 */ NdrFcLong( 0x14 ),  /* 20 */
/* 114 */ NdrFcShort( 0x36e ),          /* Offset=
878 (992) */
/* 116 */ NdrFcShort( 0xffff ),         /* Offset= -1
(115) */
/* 118 */
                           0x1b,               /*
FC_CARRAY */
                           0x3,                /*
3 */
/* 120 */ NdrFcShort( 0x4 ),  /* 4 */
/* 122 */ 0x19,               /* Corr desc:  field
pointer, FC_ULONG */
                           0x0,                /*
*/
/* 124 */ NdrFcShort( 0x0 ),  /* 0 */
/* 126 */ NdrFcShort( 0x1 ),  /* Corr flags:  early,
*/
/* 128 */
                           0x4b,               /*
FC_PP */
                           0x5c,               /*
FC_PAD */
/* 130 */
                           0x48,               /*
FC_VARIABLE_REPEAT */
                           0x49,               /*
FC_FIXED_OFFSET */
/* 132 */ NdrFcShort( 0x4 ),  /* 4 */
/* 134 */ NdrFcShort( 0x0 ),  /* 0 */
/* 136 */ NdrFcShort( 0x1 ),  /* 1 */
/* 138 */ NdrFcShort( 0x0 ),  /* 0 */
/* 140 */ NdrFcShort( 0x0 ),  /* 0 */
/* 142 */ 0x13, 0x0,          /* FC_OP */
/* 144 */ NdrFcShort( 0xff82 ),         /* Offset= -
126 (18) */
/* 146 */
                           0x5b,               /*
FC_END */

                           0x8,                /*
FC_LONG */
/* 148 */ 0x5c,               /* FC_PAD */
                           0x5b,               /*
FC_END */
/* 150 */
                           0x16,               /*
FC_PSTRUCT */
                           0x3,                /*
3 */
/* 152 */ NdrFcShort( 0x8 ),  /* 8 */
/* 154 */
                           0x4b,               /*
FC_PP */
                           0x5c,               /*
FC_PAD */
/* 156 */
                           0x46,               /*
FC_NO_REPEAT */
                           0x5c,               /*
FC_PAD */
/* 158 */ NdrFcShort( 0x4 ),  /* 4 */
/* 160 */ NdrFcShort( 0x4 ),  /* 4 */
/* 162 */ 0x11, 0x0,          /* FC_RP */
/* 164 */ NdrFcShort( 0xffd2 ),         /* Offset= -
46 (118) */
/* 166 */
                           0x5b,               /*
FC_END */

                           0x8,                /*
FC_LONG */
/* 168 */ 0x8,                /* FC_LONG */
                           0x5b,               /*
FC_END */
/* 170 */
                           0x2f,               /*
FC_IP */
                           0x5a,               /*
FC_CONSTANT_IID */
/* 172 */ NdrFcLong( 0x0 ),   /* 0 */
/* 176 */ NdrFcShort( 0x0 ),  /* 0 */
/* 178 */ NdrFcShort( 0x0 ),  /* 0 */
/* 180 */ 0xc0,               /* 192 */
                           0x0,                /*
0 */
/* 182 */ 0x0,                /* 0 */
                           0x0,                /*
0 */
/* 184 */ 0x0,                /* 0 */
                           0x0,                /*
0 */
/* 186 */ 0x0,                /* 0 */
                           0x46,               /*
70 */
/* 188 */
                           0x21,               /*
FC_BOGUS_ARRAY */
                           0x3,                /*
3 */
/* 190 */ NdrFcShort( 0x0 ),  /* 0 */
/* 192 */ 0x19,               /* Corr desc:  field
pointer, FC_ULONG */
                           0x0,                /*
*/
/* 194 */ NdrFcShort( 0x0 ),  /* 0 */
/* 196 */ NdrFcShort( 0x1 ),  /* Corr flags:  early,
*/
/* 198 */ NdrFcLong( 0xffffffff ),      /* -1 */
/* 202 */ NdrFcShort( 0x0 ),  /* Corr flags:  */
/* 204 */ 0x4c,               /* FC_EMBEDDED_COMPLEX
*/
                           0x0,                /*
0 */
/* 206 */ NdrFcShort( 0xffdc ),         /* Offset= -
36 (170) */
/* 208 */ 0x5c,               /* FC_PAD */
                           0x5b,               /*
FC_END */
/* 210 */
                           0x1a,               /*
FC_BOGUS_STRUCT */
                           0x3,                /*
3 */
/* 212 */ NdrFcShort( 0x8 ),  /* 8 */
/* 214 */ NdrFcShort( 0x0 ),  /* 0 */
/* 216 */ NdrFcShort( 0x6 ),  /* Offset= 6 (222) */
/* 218 */ 0x8,                /* FC_LONG */
                           0x36,               /*
FC_POINTER */
/* 220 */ 0x5c,               /* FC_PAD */
                           0x5b,               /*
FC_END */
/* 222 */
                           0x11, 0x0,          /*
FC_RP */
/* 224 */ NdrFcShort( 0xffdc ),         /* Offset= -
36 (188) */
/* 226 */
                           0x2f,               /*
FC_IP */
                           0x5a,               /*
FC_CONSTANT_IID */
/* 228 */ NdrFcLong( 0x20400 ),         /* 132096 */
/* 232 */ NdrFcShort( 0x0 ),  /* 0 */
/* 234 */ NdrFcShort( 0x0 ),  /* 0 */
/* 236 */ 0xc0,               /* 192 */
                           0x0,                /*
0 */
/* 238 */ 0x0,                /* 0 */
                           0x0,                /*
0 */
/* 240 */ 0x0,                /* 0 */
                           0x0,                /*
0 */
/* 242 */ 0x0,                /* 0 */
                           0x46,               /*
70 */
/* 244 */
                           0x21,               /*
FC_BOGUS_ARRAY */
                           0x3,                /*
3 */
/* 246 */ NdrFcShort( 0x0 ),  /* 0 */
/* 248 */ 0x19,               /* Corr desc:  field
pointer, FC_ULONG */
                           0x0,                /*
*/
/* 250 */ NdrFcShort( 0x0 ),  /* 0 */
/* 252 */ NdrFcShort( 0x1 ),  /* Corr flags:  early,
*/
/* 254 */ NdrFcLong( 0xffffffff ),      /* -1 */
/* 258 */ NdrFcShort( 0x0 ),  /* Corr flags:  */
/* 260 */ 0x4c,               /* FC_EMBEDDED_COMPLEX
*/
                           0x0,                /*
0 */
/* 262 */ NdrFcShort( 0xffdc ),         /* Offset= -
36 (226) */
/* 264 */ 0x5c,               /* FC_PAD */
                           0x5b,               /*
FC_END */
/* 266 */
```

```
                            0x1a,               /*
FC_BOGUS_STRUCT */
                            0x3,                /*
3 */
/* 268 */ NdrFcShort( 0x8 ),  /* 8 */
/* 270 */ NdrFcShort( 0x0 ),  /* 0 */
/* 272 */ NdrFcShort( 0x6 ),  /* Offset= 6 (278) */
/* 274 */ 0x8,                /* FC_LONG */
                            0x36,               /*
FC_POINTER */
/* 276 */ 0x5c,               /* FC_PAD */
                            0x5b,               /*
FC_END */
/* 278 */
                            0x11, 0x0,          /*
FC_RP */
/* 280 */ NdrFcShort( 0xffdc ),         /* Offset= -
36 (244) */
/* 282 */
                            0x2b,               /*
FC_NON_ENCAPSULATED_UNION */
                            0x9,                /*
FC_ULONG */
/* 284 */ 0x7,                /* Corr desc: FC_USHORT
*/
                            0x0,                /*
*/
/* 286 */ NdrFcShort( 0xfff8 ),         /* -8 */
/* 288 */ NdrFcShort( 0x1 ),  /* Corr flags:  early,
*/
/* 290 */ NdrFcShort( 0x2 ),  /* Offset= 2 (292) */
/* 292 */ NdrFcShort( 0x10 ), /* 16 */
/* 294 */ NdrFcShort( 0x2f ), /* 47 */
/* 296 */ NdrFcLong( 0x14 ),  /* 20 */
/* 300 */ NdrFcShort( 0x800b ),         /* Simple arm
type: FC_HYPER */
/* 302 */ NdrFcLong( 0x3 ),   /* 3 */
/* 306 */ NdrFcShort( 0x8008 ),         /* Simple arm
type: FC_LONG */
/* 308 */ NdrFcLong( 0x11 ),  /* 17 */
/* 312 */ NdrFcShort( 0x8001 ),         /* Simple arm
type: FC_BYTE */
/* 314 */ NdrFcLong( 0x2 ),   /* 2 */
/* 318 */ NdrFcShort( 0x8006 ),         /* Simple arm
type: FC_SHORT */
/* 320 */ NdrFcLong( 0x4 ),   /* 4 */
/* 324 */ NdrFcShort( 0x800a ),         /* Simple arm
type: FC_FLOAT */
/* 326 */ NdrFcLong( 0x5 ),   /* 5 */
/* 330 */ NdrFcShort( 0x800c ),         /* Simple arm
type: FC_DOUBLE */
/* 332 */ NdrFcLong( 0xb ),   /* 11 */
/* 336 */ NdrFcShort( 0x8006 ),         /* Simple arm
type: FC_SHORT */
/* 338 */ NdrFcLong( 0xa ),   /* 10 */
/* 342 */ NdrFcShort( 0x8008 ),         /* Simple arm
type: FC_LONG */
/* 344 */ NdrFcLong( 0x6 ),   /* 6 */
/* 348 */ NdrFcShort( 0xe8 ), /* Offset= 232 (580) */
/* 350 */ NdrFcLong( 0x7 ),   /* 7 */
/* 354 */ NdrFcShort( 0x800c ),         /* Simple arm
type: FC_DOUBLE */
/* 356 */ NdrFcLong( 0x8 ),   /* 8 */
/* 360 */ NdrFcShort( 0xe2 ), /* Offset= 226 (586) */
/* 362 */ NdrFcLong( 0xd ),   /* 13 */
/* 366 */ NdrFcShort( 0xff3c ),         /* Offset= -
196 (170) */
/* 368 */ NdrFcLong( 0x9 ),   /* 9 */
/* 372 */ NdrFcShort( 0xff6e ),         /* Offset= -
146 (226) */
/* 374 */ NdrFcLong( 0x2000 ),          /* 8192 */
/* 378 */ NdrFcShort( 0xd4 ), /* Offset= 212 (590) */
/* 380 */ NdrFcLong( 0x24 ),  /* 36 */
/* 384 */ NdrFcShort( 0xd6 ), /* Offset= 214 (598) */
/* 386 */ NdrFcLong( 0x4024 ),          /* 16420 */
/* 390 */ NdrFcShort( 0xd0 ), /* Offset= 208 (598) */
/* 392 */ NdrFcLong( 0x4011 ),          /* 16401 */
/* 396 */ NdrFcShort( 0x100 ),          /* Offset=
256 (652) */
/* 398 */ NdrFcLong( 0x4002 ),          /* 16386 */
/* 402 */ NdrFcShort( 0xfe ), /* Offset= 254 (656) */
/* 404 */ NdrFcLong( 0x4003 ),          /* 16387 */
/* 408 */ NdrFcShort( 0xfc ), /* Offset= 252 (660) */
/* 410 */ NdrFcLong( 0x4014 ),          /* 16404 */
/* 414 */ NdrFcShort( 0xfa ), /* Offset= 250 (664) */
/* 416 */ NdrFcLong( 0x4004 ),          /* 16388 */
/* 420 */ NdrFcShort( 0xf8 ), /* Offset= 248 (668) */
/* 422 */ NdrFcLong( 0x4005 ),          /* 16389 */
/* 426 */ NdrFcShort( 0xf6 ), /* Offset= 246 (672) */
/* 428 */ NdrFcLong( 0x400b ),          /* 16395 */
/* 432 */ NdrFcShort( 0xe0 ), /* Offset= 224 (656) */
/* 434 */ NdrFcLong( 0x400a ),          /* 16394 */
/* 438 */ NdrFcShort( 0xde ), /* Offset= 222 (660) */
/* 440 */ NdrFcLong( 0x4006 ),          /* 16390 */
/* 444 */ NdrFcShort( 0xe8 ), /* Offset= 232 (676) */
/* 446 */ NdrFcLong( 0x4007 ),          /* 16391 */
/* 450 */ NdrFcShort( 0xde ), /* Offset= 222 (672) */
/* 452 */ NdrFcLong( 0x4008 ),          /* 16392 */
/* 456 */ NdrFcShort( 0xe0 ), /* Offset= 224 (680) */
/* 458 */ NdrFcLong( 0x400d ),          /* 16397 */
/* 462 */ NdrFcShort( 0xde ), /* Offset= 222 (684) */
/* 464 */ NdrFcLong( 0x4009 ),          /* 16393 */
/* 468 */ NdrFcShort( 0xdc ), /* Offset= 220 (688) */
/* 470 */ NdrFcLong( 0x6000 ),          /* 24576 */
/* 474 */ NdrFcShort( 0xda ), /* Offset= 218 (692) */
/* 476 */ NdrFcLong( 0x400c ),          /* 16396 */
/* 480 */ NdrFcShort( 0xe0 ), /* Offset= 224 (704) */
/* 482 */ NdrFcLong( 0x10 ),  /* 16 */
/* 486 */ NdrFcShort( 0x8002 ),         /* Simple arm
type: FC_CHAR */
/* 488 */ NdrFcLong( 0x12 ),  /* 18 */
/* 492 */ NdrFcShort( 0x8006 ),         /* Simple arm
type: FC_SHORT */
/* 494 */ NdrFcLong( 0x13 ),  /* 19 */
/* 498 */ NdrFcShort( 0x8008 ),         /* Simple arm
type: FC_LONG */
/* 500 */ NdrFcLong( 0x15 ),  /* 21 */
/* 504 */ NdrFcShort( 0x800b ),         /* Simple arm
type: FC_HYPER */
/* 506 */ NdrFcLong( 0x16 ),  /* 22 */
/* 510 */ NdrFcShort( 0x8008 ),         /* Simple arm
type: FC_LONG */
/* 512 */ NdrFcLong( 0x17 ),  /* 23 */
/* 516 */ NdrFcShort( 0x8008 ),         /* Simple arm
type: FC_LONG */
/* 518 */ NdrFcLong( 0xe ),   /* 14 */
/* 522 */ NdrFcShort( 0xbe ), /* Offset= 190 (712) */
/* 524 */ NdrFcLong( 0x400e ),          /* 16398 */
/* 528 */ NdrFcShort( 0xc2 ), /* Offset= 194 (722) */
/* 530 */ NdrFcLong( 0x4010 ),          /* 16400 */
/* 534 */ NdrFcShort( 0xc0 ), /* Offset= 192 (726) */
/* 536 */ NdrFcLong( 0x4012 ),          /* 16402 */
/* 540 */ NdrFcShort( 0x74 ), /* Offset= 116 (656) */
/* 542 */ NdrFcLong( 0x4013 ),          /* 16403 */
/* 546 */ NdrFcShort( 0x72 ), /* Offset= 114 (660) */
/* 548 */ NdrFcLong( 0x4015 ),          /* 16405 */
/* 552 */ NdrFcShort( 0x70 ), /* Offset= 112 (664) */
/* 554 */ NdrFcLong( 0x4016 ),          /* 16406 */
/* 558 */ NdrFcShort( 0x66 ), /* Offset= 102 (660) */
/* 560 */ NdrFcLong( 0x4017 ),          /* 16407 */
/* 564 */ NdrFcShort( 0x60 ), /* Offset= 96 (660) */
/* 566 */ NdrFcLong( 0x0 ),   /* 0 */
/* 570 */ NdrFcShort( 0x0 ),  /* Offset= 0 (570) */
/* 572 */ NdrFcLong( 0x1 ),   /* 1 */
/* 576 */ NdrFcShort( 0x0 ),  /* Offset= 0 (576) */
/* 578 */ NdrFcShort( 0xffff ),         /* Offset= -1
(577) */
/* 580 */
                            0x15,               /*
FC_STRUCT */
                            0x7,                /*
7 */
/* 582 */ NdrFcShort( 0x8 ),  /* 8 */
/* 584 */ 0xb,                /* FC_HYPER */
                            0x5b,               /*
FC_END */
/* 586 */
                            0x13, 0x0,          /*
FC_OP */
/* 588 */ NdrFcShort( 0xfdc6 ),         /* Offset= -
570 (18) */
/* 590 */
                            0x13, 0x10,         /*
FC_OP [pointer_deref] */
/* 592 */ NdrFcShort( 0x2 ),  /* Offset= 2 (594) */
/* 594 */
                            0x13, 0x0,          /*
FC_OP */
/* 596 */ NdrFcShort( 0x1b8 ),          /* Offset=
440 (1036) */
/* 598 */
                            0x13, 0x0,          /*
FC_OP */
/* 600 */ NdrFcShort( 0x20 ), /* Offset= 32 (632) */
/* 602 */
                            0x2f,               /*
FC_IP */
                            0x5a,               /*
FC_CONSTANT_IID */
/* 604 */ NdrFcLong( 0x2f ),  /* 47 */
/* 608 */ NdrFcShort( 0x0 ),  /* 0 */
/* 610 */ NdrFcShort( 0x0 ),  /* 0 */
/* 612 */ 0xc0,               /* 192 */
                            0x0,                /*
0 */
/* 614 */ 0x0,                /* 0 */
                            0x0,                /*
0 */
/* 616 */ 0x0,                /* 0 */
```

```
                                0x0,                /*
0 */
/* 618 */ 0x0,                  /* 0 */
                                0x46,               /*
70 */
/* 620 */
                                0x1b,               /*
FC_CARRAY */
                                0x0,                /*
0 */
/* 622 */ NdrFcShort( 0x1 ),    /* 1 */
/* 624 */ 0x19,                 /* Corr desc:  field
pointer, FC_ULONG */
                                0x0,                /*
*/
/* 626 */ NdrFcShort( 0x4 ),    /* 4 */
/* 628 */ NdrFcShort( 0x1 ),    /* Corr flags:  early,
*/
/* 630 */ 0x1,                  /* FC_BYTE */
                                0x5b,               /*
FC_END */
/* 632 */
                                0x1a,               /*
FC_BOGUS_STRUCT */
                                0x3,                /*
3 */
/* 634 */ NdrFcShort( 0x10 ), /* 16 */
/* 636 */ NdrFcShort( 0x0 ),  /* 0 */
/* 638 */ NdrFcShort( 0xa ),  /* Offset= 10 (648) */
/* 640 */ 0x8,                /* FC_LONG */
                                0x8,                /*
FC_LONG */
/* 642 */ 0x4c,                 /* FC_EMBEDDED_COMPLEX
*/
                                0x0,                /*
0 */
/* 644 */ NdrFcShort( 0xffd6 ),         /* Offset= -
42 (602) */
/* 646 */ 0x36,                 /* FC_POINTER */
                                0x5b,               /*
FC_END */
/* 648 */
                                0x13, 0x0,          /*
FC_OP */
/* 650 */ NdrFcShort( 0xffe2 ),         /* Offset= -
30 (620) */
/* 652 */
                                0x13, 0x8,          /*
FC_OP [simple_pointer] */
/* 654 */ 0x1,                  /* FC_BYTE */
                                0x5c,               /*
FC_PAD */
/* 656 */
                                0x13, 0x8,          /*
FC_OP [simple_pointer] */
/* 658 */ 0x6,                  /* FC_SHORT */
                                0x5c,               /*
FC_PAD */
/* 660 */
                                0x13, 0x8,          /*
FC_OP [simple_pointer] */
/* 662 */ 0x8,                  /* FC_LONG */
                                0x5c,               /*
FC_PAD */
/* 664 */
                                0x13, 0x8,          /*
FC_OP [simple_pointer] */
/* 666 */ 0xb,                  /* FC_HYPER */
                                0x5c,               /*
FC_PAD */
/* 668 */
                                0x13, 0x8,          /*
FC_OP [simple_pointer] */
/* 670 */ 0xa,                  /* FC_FLOAT */
                                0x5c,               /*
FC_PAD */
/* 672 */
                                0x13, 0x8,          /*
FC_OP [simple_pointer] */
/* 674 */ 0xc,                  /* FC_DOUBLE */
                                0x5c,               /*
FC_PAD */
/* 676 */
                                0x13, 0x0,          /*
FC_OP */
/* 678 */ NdrFcShort( 0xff9e ),         /* Offset= -
98 (580) */
/* 680 */
                                0x13, 0x10,         /*
FC_OP [pointer_deref] */
/* 682 */ NdrFcShort( 0xffa0 ),         /* Offset= -
96 (586) */
/* 684 */
                                0x13, 0x10,         /*
FC_OP [pointer_deref] */
/* 686 */ NdrFcShort( 0xfdfc ),         /* Offset= -
516 (170) */
/* 688 */
                                0x13, 0x10,         /*
FC_OP [pointer_deref] */
/* 690 */ NdrFcShort( 0xfe30 ),         /* Offset= -
464 (226) */
/* 692 */
                                0x13, 0x10,         /*
FC_OP [pointer_deref] */
/* 694 */ NdrFcShort( 0x2 ),  /* Offset= 2 (696) */
/* 696 */
                                0x13, 0x10,         /*
FC_OP [pointer_deref] */
/* 698 */ NdrFcShort( 0x2 ),  /* Offset= 2 (700) */
/* 700 */
                                0x13, 0x0,          /*
FC_OP */
/* 702 */ NdrFcShort( 0x14e ),          /* Offset=
334 (1036) */
/* 704 */
                                0x13, 0x10,         /*
FC_OP [pointer_deref] */
/* 706 */ NdrFcShort( 0x2 ),  /* Offset= 2 (708) */
/* 708 */
                                0x13, 0x0,          /*
FC_OP */
/* 710 */ NdrFcShort( 0x14 ), /* Offset= 20 (730) */
/* 712 */
                                0x15,               /*
FC_STRUCT */
                                0x7,                /*
7 */
/* 714 */ NdrFcShort( 0x10 ), /* 16 */
/* 716 */ 0x6,                  /* FC_SHORT */
                                0x1,                /*
FC_BYTE */
/* 718 */ 0x1,                  /* FC_BYTE */
                                0x8,                /*
FC_LONG */
/* 720 */ 0xb,                  /* FC_HYPER */
                                0x5b,               /*
FC_END */
/* 722 */
                                0x13, 0x0,          /*
FC_OP */
/* 724 */ NdrFcShort( 0xfff4 ),         /* Offset= -
12 (712) */
/* 726 */
                                0x13, 0x8,          /*
FC_OP [simple_pointer] */
/* 728 */ 0x2,                  /* FC_CHAR */
                                0x5c,               /*
FC_PAD */
/* 730 */
                                0x1a,               /*
FC_BOGUS_STRUCT */
                                0x7,                /*
7 */
/* 732 */ NdrFcShort( 0x20 ), /* 32 */
/* 734 */ NdrFcShort( 0x0 ),  /* 0 */
/* 736 */ NdrFcShort( 0x0 ),  /* Offset= 0 (736) */
/* 738 */ 0x8,                  /* FC_LONG */
                                0x8,                /*
FC_LONG */
/* 740 */ 0x6,                  /* FC_SHORT */
                                0x6,                /*
FC_SHORT */
/* 742 */ 0x6,                  /* FC_SHORT */
                                0x6,                /*
FC_SHORT */
/* 744 */ 0x4c,                 /* FC_EMBEDDED_COMPLEX
*/
                                0x0,                /*
0 */
/* 746 */ NdrFcShort( 0xfe30 ),         /* Offset= -
464 (282) */
/* 748 */ 0x5c,                 /* FC_PAD */
                                0x5b,               /*
FC_END */
/* 750 */
                                0x1b,               /*
FC_CARRAY */
                                0x3,                /*
3 */
/* 752 */ NdrFcShort( 0x4 ),  /* 4 */
/* 754 */ 0x19,                 /* Corr desc:  field
pointer, FC_ULONG */
                                0x0,                /*
*/
/* 756 */ NdrFcShort( 0x0 ),  /* 0 */
```

```
/* 758 */ NdrFcShort( 0x1 ),  /* Corr flags:  early,
*/
/* 760 */
                           0x4b,               /*
FC_PP */
                           0x5c,               /*
FC_PAD */
/* 762 */
                           0x48,               /*
FC_VARIABLE_REPEAT */
                           0x49,               /*
FC_FIXED_OFFSET */
/* 764 */ NdrFcShort( 0x4 ),  /* 4 */
/* 766 */ NdrFcShort( 0x0 ),  /* 0 */
/* 768 */ NdrFcShort( 0x1 ),  /* 1 */
/* 770 */ NdrFcShort( 0x0 ),  /* 0 */
/* 772 */ NdrFcShort( 0x0 ),  /* 0 */
/* 774 */ 0x13, 0x0,          /* FC_OP */
/* 776 */ NdrFcShort( 0xffd2 ),         /* Offset= -
46 (730) */
/* 778 */
                           0x5b,               /*
FC_END */

                           0x8,                /*
FC_LONG */
/* 780 */ 0x5c,               /* FC_PAD */
                           0x5b,               /*
FC_END */
/* 782 */
                           0x1a,               /*
FC_BOGUS_STRUCT */
                           0x3,                /*
3 */
/* 784 */ NdrFcShort( 0x8 ),  /* 8 */
/* 786 */ NdrFcShort( 0x0 ),  /* 0 */
/* 788 */ NdrFcShort( 0x6 ),  /* Offset= 6 (794) */
/* 790 */ 0x8,                /* FC_LONG */
                           0x36,               /*
FC_POINTER */
/* 792 */ 0x5c,               /* FC_PAD */
                           0x5b,               /*
FC_END */
/* 794 */
                           0x11, 0x0,          /*
FC_RP */
/* 796 */ NdrFcShort( 0xffd2 ),         /* Offset= -
46 (750) */
/* 798 */
                           0x1b,               /*
FC_CARRAY */
                           0x3,                /*
3 */
/* 800 */ NdrFcShort( 0x4 ),  /* 4 */
/* 802 */ 0x19,               /* Corr desc:  field
pointer, FC_ULONG */
                           0x0,                /*
*/
/* 804 */ NdrFcShort( 0x0 ),  /* 0 */
/* 806 */ NdrFcShort( 0x1 ),  /* Corr flags:  early,
*/
/* 808 */
                           0x4b,               /*
FC_PP */
                           0x5c,               /*
FC_PAD */
/* 810 */
                           0x48,               /*
FC_VARIABLE_REPEAT */
                           0x49,               /*
FC_FIXED_OFFSET */
/* 812 */ NdrFcShort( 0x4 ),  /* 4 */
/* 814 */ NdrFcShort( 0x0 ),  /* 0 */
/* 816 */ NdrFcShort( 0x1 ),  /* 1 */
/* 818 */ NdrFcShort( 0x0 ),  /* 0 */
/* 820 */ NdrFcShort( 0x0 ),  /* 0 */
/* 822 */ 0x13, 0x0,          /* FC_OP */
/* 824 */ NdrFcShort( 0xff40 ),         /* Offset= -
192 (632) */
/* 826 */
                           0x5b,               /*
FC_END */

                           0x8,                /*
FC_LONG */
/* 828 */ 0x5c,               /* FC_PAD */
                           0x5b,               /*
FC_END */
/* 830 */
                           0x1a,               /*
FC_BOGUS_STRUCT */
                           0x3,                /*
3 */
/* 832 */ NdrFcShort( 0x8 ),  /* 8 */
/* 834 */ NdrFcShort( 0x0 ),  /* 0 */
/* 836 */ NdrFcShort( 0x6 ),  /* Offset= 6 (842) */
/* 838 */ 0x8,                /* FC_LONG */
                           0x36,               /*
FC_POINTER */
/* 840 */ 0x5c,               /* FC_PAD */
                           0x5b,               /*
FC_END */
/* 842 */
                           0x11, 0x0,          /*
FC_RP */
/* 844 */ NdrFcShort( 0xffd2 ),         /* Offset= -
46 (798) */
/* 846 */
                           0x1d,               /*
FC_SMFARRAY */
                           0x0,                /*
0 */
/* 848 */ NdrFcShort( 0x8 ),  /* 8 */
/* 850 */ 0x1,                /* FC_BYTE */
                           0x5b,               /*
FC_END */
/* 852 */
                           0x15,               /*
FC_STRUCT */
                           0x3,                /*
3 */
/* 854 */ NdrFcShort( 0x10 ), /* 16 */
/* 856 */ 0x8,                /* FC_LONG */
                           0x6,                /*
FC_SHORT */
/* 858 */ 0x6,                /* FC_SHORT */
                           0x4c,               /*
FC_EMBEDDED_COMPLEX */
/* 860 */ 0x0,                /* 0 */
                           NdrFcShort( 0xfff1 ),
          /* Offset= -15 (846) */
                           0x5b,               /*
FC_END */
/* 864 */
                           0x1a,               /*
FC_BOGUS_STRUCT */
                           0x3,                /*
3 */
/* 866 */ NdrFcShort( 0x18 ), /* 24 */
/* 868 */ NdrFcShort( 0x0 ),  /* 0 */
/* 870 */ NdrFcShort( 0xa ),  /* Offset= 10 (880) */
/* 872 */ 0x8,                /* FC_LONG */
                           0x36,               /*
FC_POINTER */
/* 874 */ 0x4c,               /* FC_EMBEDDED_COMPLEX
*/
                           0x0,                /*
0 */
/* 876 */ NdrFcShort( 0xffe8 ),         /* Offset= -
24 (852) */
/* 878 */ 0x5c,               /* FC_PAD */
                           0x5b,               /*
FC_END */
/* 880 */
                           0x11, 0x0,          /*
FC_RP */
/* 882 */ NdrFcShort( 0xfd4a ),         /* Offset= -
694 (188) */
/* 884 */
                           0x1b,               /*
FC_CARRAY */
                           0x0,                /*
0 */
/* 886 */ NdrFcShort( 0x1 ),  /* 1 */
/* 888 */ 0x19,               /* Corr desc:  field
pointer, FC_ULONG */
                           0x0,                /*
*/
/* 890 */ NdrFcShort( 0x0 ),  /* 0 */
/* 892 */ NdrFcShort( 0x1 ),  /* Corr flags:  early,
*/
/* 894 */ 0x1,                /* FC_BYTE */
                           0x5b,               /*
FC_END */
/* 896 */
                           0x16,               /*
FC_PSTRUCT */
                           0x3,                /*
3 */
/* 898 */ NdrFcShort( 0x8 ),  /* 8 */
/* 900 */
                           0x4b,               /*
FC_PP */
                           0x5c,               /*
FC_PAD */
/* 902 */
                           0x46,               /*
FC_NO_REPEAT */
```

```
                            0x5c,               /*
FC_PAD */
/* 904 */ NdrFcShort( 0x4 ),  /* 4 */
/* 906 */ NdrFcShort( 0x4 ),  /* 4 */
/* 908 */ 0x13, 0x0,          /* FC_OP */
/* 910 */ NdrFcShort( 0xffe6 ),        /* Offset= -
26 (884) */
/* 912 */
                            0x5b,               /*
FC_END */

                            0x8,                /*
FC_LONG */
/* 914 */ 0x8,                /* FC_LONG */
                            0x5b,               /*
FC_END */
/* 916 */
                            0x1b,               /*
FC_CARRAY */
                            0x1,                /*
1 */
/* 918 */ NdrFcShort( 0x2 ),  /* 2 */
/* 920 */ 0x19,               /* Corr desc:  field
pointer, FC_ULONG */
                            0x0,                /*
*/
/* 922 */ NdrFcShort( 0x0 ),  /* 0 */
/* 924 */ NdrFcShort( 0x1 ),  /* Corr flags:  early,
*/
/* 926 */ 0x6,                /* FC_SHORT */
                            0x5b,               /*
FC_END */
/* 928 */
                            0x16,               /*
FC_PSTRUCT */
                            0x3,                /*
3 */
/* 930 */ NdrFcShort( 0x8 ),  /* 8 */
/* 932 */
                            0x4b,               /*
FC_PP */
                            0x5c,               /*
FC_PAD */
/* 934 */
                            0x46,               /*
FC_NO_REPEAT */
                            0x5c,               /*
FC_PAD */
/* 936 */ NdrFcShort( 0x4 ),  /* 4 */
/* 938 */ NdrFcShort( 0x4 ),  /* 4 */
/* 940 */ 0x13, 0x0,          /* FC_OP */
/* 942 */ NdrFcShort( 0xffe6 ),        /* Offset= -
26 (916) */
/* 944 */
                            0x5b,               /*
FC_END */

                            0x8,                /*
FC_LONG */
/* 946 */ 0x8,                /* FC_LONG */
                            0x5b,               /*
FC_END */
/* 948 */
                            0x1b,               /*
FC_CARRAY */
                            0x3,                /*
3 */
/* 950 */ NdrFcShort( 0x4 ),  /* 4 */
/* 952 */ 0x19,               /* Corr desc:  field
pointer, FC_ULONG */
                            0x0,                /*
*/
/* 954 */ NdrFcShort( 0x0 ),  /* 0 */
/* 956 */ NdrFcShort( 0x1 ),  /* Corr flags:  early,
*/
/* 958 */ 0x8,                /* FC_LONG */
                            0x5b,               /*
FC_END */
/* 960 */
                            0x16,               /*
FC_PSTRUCT */
                            0x3,                /*
3 */
/* 962 */ NdrFcShort( 0x8 ),  /* 8 */
/* 964 */
                            0x4b,               /*
FC_PP */
                            0x5c,               /*
FC_PAD */
/* 966 */
                            0x46,               /*
FC_NO_REPEAT */
                            0x5c,               /*
FC_PAD */
/* 968 */ NdrFcShort( 0x4 ),  /* 4 */
/* 970 */ NdrFcShort( 0x4 ),  /* 4 */
/* 972 */ 0x13, 0x0,          /* FC_OP */
/* 974 */ NdrFcShort( 0xffe6 ),        /* Offset= -
26 (948) */
/* 976 */
                            0x5b,               /*
FC_END */

                            0x8,                /*
FC_LONG */
/* 978 */ 0x8,                /* FC_LONG */
                            0x5b,               /*
FC_END */
/* 980 */
                            0x1b,               /*
FC_CARRAY */
                            0x7,                /*
7 */
/* 982 */ NdrFcShort( 0x8 ),  /* 8 */
/* 984 */ 0x19,               /* Corr desc:  field
pointer, FC_ULONG */
                            0x0,                /*
*/
/* 986 */ NdrFcShort( 0x0 ),  /* 0 */
/* 988 */ NdrFcShort( 0x1 ),  /* Corr flags:  early,
*/
/* 990 */ 0xb,                /* FC_HYPER */
                            0x5b,               /*
FC_END */
/* 992 */
                            0x16,               /*
FC_PSTRUCT */
                            0x3,                /*
3 */
/* 994 */ NdrFcShort( 0x8 ),  /* 8 */
/* 996 */
                            0x4b,               /*
FC_PP */
                            0x5c,               /*
FC_PAD */
/* 998 */
                            0x46,               /*
FC_NO_REPEAT */
                            0x5c,               /*
FC_PAD */
/* 1000 */          NdrFcShort( 0x4 ),  /* 4 */
/* 1002 */          NdrFcShort( 0x4 ),  /* 4 */
/* 1004 */          0x13, 0x0,          /* FC_OP */
/* 1006 */          NdrFcShort( 0xffe6 ),       /*
Offset= -26 (980) */
/* 1008 */
                            0x5b,               /*
FC_END */

                            0x8,                /*
FC_LONG */
/* 1010 */          0x8,                /* FC_LONG */
                            0x5b,               /*
FC_END */
/* 1012 */
                            0x15,               /*
FC_STRUCT */
                            0x3,                /*
3 */
/* 1014 */          NdrFcShort( 0x8 ),  /* 8 */
/* 1016 */          0x8,                /* FC_LONG */
                            0x8,                /*
FC_LONG */
/* 1018 */          0x5c,               /* FC_PAD */
                            0x5b,               /*
FC_END */
/* 1020 */
                            0x1b,               /*
FC_CARRAY */
                            0x3,                /*
3 */
/* 1022 */          NdrFcShort( 0x8 ),  /* 8 */
/* 1024 */          0x7,                /* Corr desc:
FC_USHORT */
                            0x0,                /*
*/
/* 1026 */          NdrFcShort( 0xffd8 ),       /*
-40 */
/* 1028 */          NdrFcShort( 0x1 ),  /* Corr
flags:  early, */
/* 1030 */          0x4c,               /*
FC_EMBEDDED_COMPLEX */
                            0x0,                /*
0 */
/* 1032 */          NdrFcShort( 0xffec ),       /*
Offset= -20 (1012) */
/* 1034 */          0x5c,               /* FC_PAD */
```

```
                            0x5b,               /*
FC_END */
/* 1036 */
                            0x1a,               /*
FC_BOGUS_STRUCT */
                            0x3,                /*
3 */
/* 1038 */          NdrFcShort( 0x28 ), /* 40 */
/* 1040 */          NdrFcShort( 0xffec ),       /*
Offset= -20 (1020) */
/* 1042 */          NdrFcShort( 0x0 ),  /* Offset= 0
(1042) */
/* 1044 */          0x6,                /* FC_SHORT
*/
                            0x6,                /*
FC_SHORT */
/* 1046 */          0x8,                /* FC_LONG */
                            0x8,                /*
FC_LONG */
/* 1048 */          0x4c,               /*
FC_EMBEDDED_COMPLEX */
                            0x0,                /*
0 */
/* 1050 */          NdrFcShort( 0xfc18 ),       /*
Offset= -1000 (50) */
/* 1052 */          0x5c,               /* FC_PAD */
                            0x5b,               /*
FC_END */
/* 1054 */          0xb4,               /*
FC_USER_MARSHAL */
                            0x83,               /*
131 */
/* 1056 */          NdrFcShort( 0x1 ),  /* 1 */
/* 1058 */          NdrFcShort( 0x4 ),  /* 4 */
/* 1060 */          NdrFcShort( 0x0 ),  /* 0 */
/* 1062 */          NdrFcShort( 0xfc04 ),       /*
Offset= -1020 (42) */
/* 1064 */
                            0x11, 0x8,          /*
FC_RP [simple_pointer] */
/* 1066 */          0x8,                /* FC_LONG */
                            0x5c,               /*
FC_PAD */
/* 1068 */
                            0x11, 0x14,         /*
FC_RP [alloced_on_stack] [pointer_deref] */
/* 1070 */          NdrFcShort( 0x2 ),  /* Offset= 2
(1072) */
/* 1072 */
                            0x13, 0x0,          /*
FC_OP */
/* 1074 */          NdrFcShort( 0x2 ),  /* Offset= 2
(1076) */
/* 1076 */
                            0x1b,               /*
FC_CARRAY */
                            0x0,                /*
0 */
/* 1078 */          NdrFcShort( 0x1 ),  /* 1 */
/* 1080 */          0x28,               /* Corr desc:
parameter, FC_LONG */
                            0x54,               /*
FC_DEREFERENCE */
/* 1082 */          NdrFcShort( 0x4 ),  /* x86 Stack
size/offset = 4 */
/* 1084 */          NdrFcShort( 0x1 ),  /* Corr
flags:  early, */
/* 1086 */          0x2,                /* FC_CHAR */
                            0x5b,               /*
FC_END */

                            0x0
        }
    };

static const USER_MARSHAL_ROUTINE_QUADRUPLE
UserMarshalRoutines[ WIRE_MARSHAL_TABLE_SIZE ] =
        {

            {
            BSTR_UserSize
            ,BSTR_UserMarshal
            ,BSTR_UserUnmarshal
            ,BSTR_UserFree
            },
            {
            LPSAFEARRAY_UserSize
            ,LPSAFEARRAY_UserMarshal
            ,LPSAFEARRAY_UserUnmarshal
            ,LPSAFEARRAY_UserFree
            }

        };



/* Object interface: IUnknown, ver. 0.0,

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


/* Object interface: IDispatch, ver. 0.0,

GUID={0x00020400,0x0000,0x0000,{0xC0,0x00,0x00,0x00,0
x00,0x00,0x00,0x46}} */


/* Object interface: IComponentRegistrar, ver. 0.0,

GUID={0xa817e7a2,0x43fa,0x11d0,{0x9e,0x44,0x00,0xaa,0
x00,0xb6,0x77,0x0a}} */

#pragma code_seg(".orpc")
static const unsigned short
IComponentRegistrar_FormatStringOffsetTable[] =
    {
    (unsigned short) -1,
    (unsigned short) -1,
    (unsigned short) -1,
    (unsigned short) -1,
    0,
    36,
    66,
    96,
    138,
    174
    };

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


static const MIDL_SERVER_INFO
IComponentRegistrar_ServerInfo =
    {
    &Object_StubDesc,
    0,
    __MIDL_ProcFormatString.Format,
    &IComponentRegistrar_FormatStringOffsetTable[-3],
    0,
    0,
    0,
    0};
CINTERFACE_PROXY_VTABLE(13)
_IComponentRegistrarProxyVtbl =
{
    &IComponentRegistrar_ProxyInfo,
    &IID_IComponentRegistrar,
    IUnknown_QueryInterface_Proxy,
    IUnknown_AddRef_Proxy,
    IUnknown_Release_Proxy ,
    0 /* (void *) (INT_PTR) -1 /*
IDispatch::GetTypeInfoCount */ ,
    0 /* (void *) (INT_PTR) -1 /*
IDispatch::GetTypeInfo */ ,
    0 /* (void *) (INT_PTR) -1 /*
IDispatch::GetIDsOfNames */ ,
    0 /* IDispatch_Invoke_Proxy */ ,
    (void *) (INT_PTR) -1 /*
IComponentRegistrar::Attach */ ,
    (void *) (INT_PTR) -1 /*
IComponentRegistrar::RegisterAll */ ,
    (void *) (INT_PTR) -1 /*
IComponentRegistrar::UnregisterAll */ ,
    (void *) (INT_PTR) -1 /*
IComponentRegistrar::GetComponents */ ,
    (void *) (INT_PTR) -1 /*
IComponentRegistrar::RegisterComponent */ ,
    (void *) (INT_PTR) -1 /*
IComponentRegistrar::UnregisterComponent */
};


static const PRPC_STUB_FUNCTION
IComponentRegistrar_table[] =
{
    STUB_FORWARDING_FUNCTION,
    STUB_FORWARDING_FUNCTION,
    STUB_FORWARDING_FUNCTION,
    STUB_FORWARDING_FUNCTION,
```

```
    NdrStubCall2,
    NdrStubCall2,
    NdrStubCall2,
    NdrStubCall2,
    NdrStubCall2,
    NdrStubCall2
};

CInterfaceStubVtbl _IComponentRegistrarStubVtbl =
{
    &IID_IComponentRegistrar,
    &IComponentRegistrar_ServerInfo,
    13,
    &IComponentRegistrar_table[-3],
    CStdStubBuffer_DELEGATING_METHODS
};


/* Object interface: Itpcc_com, ver. 0.0,

GUID={0x5B4FA473,0x2E68,0x4D79,{0xA6,0x26,0xF3,0x8B,0
x30,0xB8,0x19,0x6E}} */

#pragma code_seg(".orpc")
static const unsigned short
Itpcc_com_FormatStringOffsetTable[] =
    {
    210,
    252,
    294,
    336,
    378,
    36
    };

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


static const MIDL_SERVER_INFO Itpcc_com_ServerInfo =
    {
    &Object_StubDesc,
    0,
    __MIDL_ProcFormatString.Format,
    &Itpcc_com_FormatStringOffsetTable[-3],
    0,
    0,
    0,
    0};
CINTERFACE_PROXY_VTABLE(9) _Itpcc_comProxyVtbl =
{
    &Itpcc_com_ProxyInfo,
    &IID_Itpcc_com,
    IUnknown_QueryInterface_Proxy,
    IUnknown_AddRef_Proxy,
    IUnknown_Release_Proxy ,
    (void *) (INT_PTR) -1 /* Itpcc_com::doStockLevel
*/ ,
    (void *) (INT_PTR) -1 /* Itpcc_com::doNewOrder */
,
    (void *) (INT_PTR) -1 /* Itpcc_com::doPayment */
,
    (void *) (INT_PTR) -1 /* Itpcc_com::doOrderStatus
*/ ,
    (void *) (INT_PTR) -1 /* Itpcc_com::doDBInfo */ ,
    (void *) (INT_PTR) -1 /* Itpcc_com::doSetComplete
*/
};

const CInterfaceStubVtbl _Itpcc_comStubVtbl =
{
    &IID_Itpcc_com,
    &Itpcc_com_ServerInfo,
    9,
    0, /* pure interpreted */
    CStdStubBuffer_METHODS
};

static const MIDL_STUB_DESC Object_StubDesc =
    {
    0,
    NdrOleAllocate,
    NdrOleFree,
    0,
    0,
    0,
    0,
    0,
    __MIDL_TypeFormatString.Format,
    1, /* -error bounds_check flag */
    0x50002, /* Ndr library version */
    0,
    0x6000169, /* MIDL Version 6.0.361 */
    0,
    UserMarshalRoutines,
    0,  /* notify & notify_flag routine table */
    0x1, /* MIDL flag */
    0, /* cs routines */
    0,   /* proxy/server info */
    0   /* Reserved5 */
    };

const CInterfaceProxyVtbl * _tpccCom_ProxyVtblList[]
=
{
    ( CInterfaceProxyVtbl *) &_Itpcc_comProxyVtbl,
    ( CInterfaceProxyVtbl *)
&_IComponentRegistrarProxyVtbl,
    0
};

const CInterfaceStubVtbl * _tpccCom_StubVtblList[] =
{
    ( CInterfaceStubVtbl *) &_Itpcc_comStubVtbl,
    ( CInterfaceStubVtbl *)
&_IComponentRegistrarStubVtbl,
    0
};

PCInterfaceName const _tpccCom_InterfaceNamesList[] =
{
    "Itpcc_com",
    "IComponentRegistrar",
    0
};

const IID *  _tpccCom_BaseIIDList[] =
{
    0,
    &IID_IDispatch,
    0
};


#define _tpccCom_CHECK_IID(n) IID_GENERIC_CHECK_IID(
_tpccCom, pIID, n)

int __stdcall _tpccCom_IID_Lookup( const IID * pIID,
int * pIndex )
{
    IID_BS_LOOKUP_SETUP

    IID_BS_LOOKUP_INITIAL_TEST( _tpccCom, 2, 1 )
    IID_BS_LOOKUP_RETURN_RESULT( _tpccCom, 2, *pIndex
)

}

const ExtendedProxyFileInfo tpccCom_ProxyFileInfo =
{
    (PCInterfaceProxyVtblList *) &
_tpccCom_ProxyVtblList,
    (PCInterfaceStubVtblList *) &
_tpccCom_StubVtblList,
    (const PCInterfaceName * ) &
_tpccCom_InterfaceNamesList,
    (const IID ** ) & _tpccCom_BaseIIDList,
    & _tpccCom_IID_Lookup,
    2,
    2,
    0, /* table of [async_uuid] interfaces */
    0, /* Filler1 */
    0, /* Filler2 */
    0  /* Filler3 */
};
#if _MSC_VER >= 1200
#pragma warning(pop)
#endif


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

TpccDB2Glue/stdafx.h

```
// stdafx.h : include file for standard system
include files,
```

```
// or project specific include files that are used
frequently, but
// are changed infrequently
//

#pragma once


#define WIN32_LEAN_AND_MEAN             // Exclude
rarely-used stuff from Windows headers
// Windows Header Files:
#include <windows.h>

// TODO: reference additional headers your program
requires here
```

tpccDB2Glue/tpccDB2glue.h

```
// The following ifdef block is the standard way of
creating macros which make exporting
// from a DLL simpler. All files within this DLL are
compiled with the TPCCDB2GLUE_EXPORTS
// symbol defined on the command line. this symbol
should not be defined on any project
// that uses this DLL. This way any other project
whose source files include this file see
// TPCCDB2GLUE_API functions as being imported from a
DLL, whereas this DLL sees symbols
// defined with this macro as being exported.
#ifdef TPCCDB2GLUE_EXPORTS
#define TPCCDB2GLUE_API __declspec(dllexport)
#else
#define TPCCDB2GLUE_API __declspec(dllimport)
#endif

#ifndef SPGENERAL
          #define SPGENERAL
#endif

#include <db2tpcc.h>
#include <tpcc.h>

////////////////////////////////////////////////////
////////////////////
// Error/Debug log file defines
////////////////////////////////////////////////////
////////////////////
ofstream debugStream;
ofstream errorStream;

CRITICAL_SECTION debugMutex;
CRITICAL_SECTION errorMutex;

//#define TIMING    1
FILE *respTimes;
struct txn
{
          short txnType;
          struct  _timeb
          startTime;
          struct  _timeb
          endTime;
          short padding;
};

////////////////////////////////////////////////////
////////////////////
// Registery Values
////////////////////////////////////////////////////
////////////////////
#define             DB_USER_NAME
                              "dbUserName"
#define             DB_USER_PASSWORD
                    "dbPassword"
#define             DB_NAME
                                        "dbName"

char userName[16] = {NULL};
char userPassword[16] = {NULL};

HKEY      registeryKey;
DWORD     regType;
char      value[MAX_STRING_LEN];
DWORD     regValueSize = MAX_STRING_LEN;


////////////////////////////////////////////////////
////////////////////
// DB2 Glue Function Prototypes
////////////////////////////////////////////////////
////////////////////
extern "C" TPCCDB2GLUE_API int connect_db(char
*dbName,void **ctx);
extern "C" TPCCDB2GLUE_API int getContext(void
**ctx);
extern "C" TPCCDB2GLUE_API int detachContext(void
*ctx);
extern "C" TPCCDB2GLUE_API int attachContext(void
*ctx);
extern "C" TPCCDB2GLUE_API int disconnect_db(void
*ctx);

extern "C" TPCCDB2GLUE_API int do_nord(nord_wrapper
*nord,void *ctx);
extern "C" TPCCDB2GLUE_API int do_pymt(paym_wrapper
*pymt,void *ctx);
extern "C" TPCCDB2GLUE_API int do_ords(ords_wrapper
*ords,void *ctx);
extern "C" TPCCDB2GLUE_API int do_dlvy(dlvy_wrapper
*dlvy,void *ctx);
extern "C" TPCCDB2GLUE_API int do_stok(stok_wrapper
*stok,void *ctx);
```

tpccDB2Glue/stdafx.cpp

```
// stdafx.cpp : source file that includes just the
standard includes
// tpccDB2glue.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
```

tpccDB2Glue/tpccDB2glue.cpp

```
// tpccDB2glue.cpp : Defines the entry point for the
DLL application.
//
#include "stdafx.h"
#include "tpccDB2glue.h"

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

                    if(debugFlag)
                    {

          InitializeCriticalSection(&debugMutex);

                              debugStream.rdbuf( )-
>open("C:\\inetpub\\wwwroot\\tpcc\\debug_gluecode.txt
",ios_base::in | ios_base::out | ios_base::app);
                              if(!debugStream.rdbuf(
) ->is_open())
                                        return FALSE;
                    }


                    DEBUGMSG("Entered dllMain of
tpccDB2glue.dll" << endl);

          InitializeCriticalSection(&errorMutex);
                    errorStream.rdbuf( )-
>open("C:\\inetpub\\wwwroot\\tpcc\\error_gluecode.txt
",ios_base::in | ios_base::out | ios_base::app);
                    if(!errorStream.rdbuf( )-
>is_open())
                              return FALSE;

#ifdef TIMING

          respTimes=fopen("c:\\inetpub\\wwwroot\\tpcc
\\respTimes","wb");
```

```
                    if(!respTimes)
                    {
                              ERRORMSG("Unable to
open response time file
c:\\inetpub\\wwwroot\\tpcc\\respTimes"<<endl);
                              return FALSE;
                    }
                    ERRORMSG("Response time file
created:"<<endl);
#endif


                    DEBUGMSG("Opening registery sub
key "<< REGISTERY_SUB_KEY << endl);
                    //open up registery key

          if(RegOpenKeyEx(HKEY_LOCAL_MACHINE,REGISTER
Y_SUB_KEY,0,KEY_READ,&registeryKey) == ERROR_SUCCESS)

                    {
                              DEBUGMSG("Registery key
open"<<endl);
                              //get the null db user
name
                              regValueSize =
sizeof(value);
                              if
(RegQueryValueEx(registeryKey,DB_USER_NAME,0,&regType
,(BYTE *) &value,&regValueSize)== ERROR_SUCCESS )

          strcpy(userName,value);
                              else
                                        return
ERR_INVALID_USERNAME;
                              DEBUGMSG("DB user
name:"<< userName << endl);

                              regValueSize =
sizeof(value);
                              if
(RegQueryValueEx(registeryKey,DB_USER_PASSWORD,0,&reg
Type,(BYTE *) &value,&regValueSize)== ERROR_SUCCESS )

          strcpy(userPassword,value);
                              else
                                        return
ERR_INVALID_PASSWORD;
                              DEBUGMSG("DB user
password:"<<userPassword << endl);
                    }
                    else
                    {
                              return
ERR_INVALID_REGISTERY_KEY;
                              DEBUGMSG("Unable to
open registery key"<< REGISTERY_SUB_KEY << endl);
                    }

                    break;
          case DLL_THREAD_ATTACH:
                    break;
          case DLL_THREAD_DETACH:
                    break;
          case DLL_PROCESS_DETACH:
                    #ifdef TIMING

          ERRORMSG("dll_process_detach called,
closing timing file"<<endl);
                              fclose(respTimes);
                    #endif
                    break;
          }
     return TRUE;
}

/*
**************************************************
***********
** Name                     :         attachContext
** Description      :
**
          Function calls db2 api to attach thread to
**                                                  a
specific context per thread basis.
** Parameters       :
**
          void*               stored context
** Returns                  :
**                                                  int
- return code
** Comments                 :
**
**************************************************
***********
*/
extern "C" int attachContext(void *ctx)
{
          int rc;
          if ( (rc = attach_context(ctx)) != OK)
                    return ERR_ATTACHING_CONTEXT;

          return OK;
}

/*
**************************************************
***********
** Name                     :         detachContext
** Description      :
**
          Function calls db2 api to detach thread
from context
** Parameters       :
**
          void*               stored context
** Returns                  :
**                                                  int
- return code
** Comments                 :
**
**************************************************
***********
*/
extern "C" int detachContext(void *ctx)
{
          int rc;
          if ( (rc = detach_context(ctx)) != OK)
          {
                    ERRORMSG("error detaching context
from db, rc:"<<rc<<endl);
                    return ERR_DETACHING_CONTEXT;
          }
          return OK;
}

/*
**************************************************
***********
** Name                     :         connect_db
** Description      :
**
          Function calls db2 api to connect to db
** Parameters       :
**
          char*               dbName
**
          void**              uninitialized context
** Returns                  :
**                                                  int
- return code
** Comments                 :
**                                                  To
connect to db, first connection must be
**
          established.  Next, context for that
connect
**                                                  be
saved off.  Finally, detach from the
**
          context just created.
**
**************************************************
***********
*/
extern "C" TPCCDB2GLUE_API int connect_db(char
*dbName,void **ctx)
{
          DEBUGMSG("Entered db2glue do_connect using
dbName:"<< dbName << endl << "Calling
connect_to_TM_auth() with username:"<< userName << "
password:" <<userPassword << endl);

          int rc =
connect_to_TM_auth(dbName,userName,userPassword);
          if(rc != OK)
          {
                    DEBUGMSG("Object do_connect
failed, rc:"<<rc<<endl);
                    ERRORMSG("Object do_connect
failed, rc:"<<rc<<endl);

                    return rc;
          }

          DEBUGMSG("calling get_context"<<endl);
          if ( (rc = get_context(ctx)) != OK)
          {
                    DEBUGMSG("Object get_context()
failed, rc:"<< rc <<endl);
```

```
                ERRORMSG("Object get_context()
failed, rc:"<< rc <<endl);

                return ERR_SAVING_CONTEXT;
        }
        DEBUGMSG("Object get_context successful,
context:"<< DEBUGADDRESS(*ctx)<<" saved"<<endl);

        DEBUGMSG("Object calling detach_context()
w/ ctx:"<<DEBUGADDRESS(*ctx)<<endl);
        if( (rc = detach_context(*ctx)) != OK)
        {
                DEBUGMSG("Object failed
detach_context w/ ctx:"<<DEBUGADDRESS(*ctx)<<" rc:"
<< rc << endl);
                ERRORMSG("Object failed
detach_context w/ ctx:"<<DEBUGADDRESS(*ctx)<<" rc:"
<< rc << endl);

                return ERR_DETACHING_CONTEXT;
        }
        DEBUGMSG("Object detach_context successful,
context:"<<DEBUGADDRESS(*ctx)<<", connection
complete"<<endl);

        return OK;
}

/*
**************************************************
**********
** Name                  :         disconnect_db
** Description      :
**
        Function calls db2 api to disconnect from
db
** Parameters       :
**
        void*           stored context
** Returns              :
**                                              int
- return code
** Comments             :
**                                              To
disconnect from db, first must attach to
**
        thread's context.  Next, disconnect from db
**************************************************
**********
*/

extern "C" TPCCDB2GLUE_API int disconnect_db(void
*ctx)
{
        DEBUGMSG("Entered do_disconnect, attaching
to context:" << DEBUGADDRESS(ctx) << endl);
        int rc = attachContext(ctx);
        if(rc != OK)
        {
                ERRORMSG("failed attach_context
w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" << rc << endl);
                DEBUGMSG("failed attach_context
w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" << rc << endl);

                return ERR_ATTACHING_CONTEXT;
        }
        DEBUGMSG("context established.  preparing
to call db2" << endl);

        rc = disconnect_from_TM();
        if(rc != OK)
        {
                DEBUGMSG("disconnect failed,
rc:"<<rc<<endl);
                ERRORMSG("disconnect failed,
rc:"<<rc<<endl);
                return rc;
        }
        return OK;
}

/*
**************************************************
**********
** Name                  :         do_nord
** Description      :
**
        Function calls db2 api to execute nord txn
** Parameters       :
**
        nord_wrapper*       new order txn structs
wrapper
**
        void*                   stored
context
** Returns              :
**                                              int
- return code
** Comments             :
**
        Attach to thread's context, call nord sql
function
**
        then detach from context.
**************************************************
**********
*/
extern "C" TPCCDB2GLUE_API int do_nord(nord_wrapper
*nord,void *ctx)
{
        DEBUGMSG("Entered do_nord, attaching to
context:" << DEBUGADDRESS(ctx) << endl);
        int rc = attachContext(ctx);
        if(rc != OK)
        {
                ERRORMSG("nord failed
attach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);
                DEBUGMSG("nord failed
attach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);

                return ERR_ATTACHING_CONTEXT;
        }
        DEBUGMSG("attached to context:" <<
DEBUGADDRESS(ctx)<<", preparing to call db2" <<
endl);

#ifdef TIMING
        struct txn timeSample;
        _ftime(&timeSample.startTime);
#endif

        //call new order txn
        neword_sql(&nord->in_nord,&nord->out_nord);

#ifdef TIMING
        _ftime(&timeSample.endTime);
        timeSample.txnType=1;
        EnterCriticalSection(&errorMutex);
        rc = fwrite(&timeSample,sizeof(struct
txn),1,respTimes);

        LeaveCriticalSection(&errorMutex);
#endif
        DEBUGMSG("return from neword_sql(),
s_transtatus:" << nord->out_nord.s_transtatus <<
endl);

        rc = detachContext(ctx);
        if(rc != OK)
        {
                ERRORMSG("nord failed
detach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);
                DEBUGMSG("nord failed
detach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);

                return ERR_DETACHING_CONTEXT;
        }

        return OK;
}

/*
**************************************************
**********
** Name                  :         do_pymt
** Description      :
**
        Function calls db2 api to execute pymt txn
** Parameters       :
**
        paym_wrapper*       payment txn structs
wrapper
**
        void*                   stored
context
** Returns              :
**                                              int
- return code
** Comments             :
**
        Attach to thread's context, call nord sql
function
```

```
**
        then detach from context.
*************************************************
**********
*/

extern "C" TPCCDB2GLUE_API int do_pymt(paym_wrapper
*pymt,void *ctx)
{
        DEBUGMSG("Entered do_pymt, attaching to
context:" << DEBUGADDRESS(ctx) << endl);
        int rc = attachContext(ctx);
        if(rc != OK)
        {
                ERRORMSG("pymt failed
attach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);
                DEBUGMSG("pymt failed
attach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);

                return ERR_ATTACHING_CONTEXT;
        }
        DEBUGMSG("attached to context:"<<
DEBUGADDRESS(ctx) <<" preparing to call db2" <<
endl);

#ifdef TIMING
        struct txn timeSample;
        _ftime(&timeSample.startTime);
#endif

        //call pymt txn
        payment_sql(&pymt->in_paym,&pymt-
>out_paym);

#ifdef TIMING
        _ftime(&timeSample.endTime);
        timeSample.txnType=2;
        EnterCriticalSection(&errorMutex);
        if(  (fwrite(&timeSample,sizeof(struct
txn),1,respTimes)) != 1 )
        {
                ERRORMSG("Unable to write to
binary file, pymt"<<endl);
        }
        LeaveCriticalSection(&errorMutex);
#endif

        DEBUGMSG("return from payment_sql(),
s_transtatus:" << pymt->out_paym.s_transtatus <<
endl);

        rc = detachContext(ctx);
        if(rc != OK)
        {
                ERRORMSG("pymt failed
detach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<endl);
                DEBUGMSG("pymt failed
detach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);

                return ERR_DETACHING_CONTEXT;
        }
        DEBUGMSG("pymt detach_context successful.
pymt txn complete."<<endl);

        return OK;
}

/*
*************************************************
**********
** Name                    :         do_ords
** Description      :
**
        Function calls db2 api to execute ords txn
** Parameters       :
**
        ords_wrapper*       order status txn
structs wrapper
**
        void*                       stored
context
** Returns                 :
**                                              int
- return code
** Comments                :
**
        Attach to thread's context, call nord sql
function
**
        then detach from context.
*************************************************
**********
*/
extern "C"  TPCCDB2GLUE_API int do_ords(ords_wrapper
*ords,void *ctx)
{
        DEBUGMSG("Entered do_ords, attaching to
context:" << DEBUGADDRESS(ctx) << endl);
        int rc = attachContext(ctx);
        if(rc != OK)
        {
                ERRORMSG("ords failed
attach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);
                DEBUGMSG("ords failed
attach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);

                return ERR_ATTACHING_CONTEXT;
        }
        DEBUGMSG("attached to
context:"<<DEBUGADDRESS(ctx)<<",  preparing to call
db2" << endl);

        DEBUGMSG("calling ordstat_sql()" <<endl);

#ifdef TIMING
        struct txn timeSample;
        _ftime(&timeSample.startTime);
#endif
        ordstat_sql(&ords->in_ords,&ords-
>out_ords);
#ifdef TIMING
        _ftime(&timeSample.endTime);
        timeSample.txnType=3;
        EnterCriticalSection(&errorMutex);
        if(  (fwrite(&timeSample,sizeof(struct
txn),1,respTimes)) != 1 )
        {
                ERRORMSG("Unable to write to
binary file, ords"<<endl);
        }
        LeaveCriticalSection(&errorMutex);
#endif

        DEBUGMSG("return from ordstat_sql(),
s_transtatus:" << ords->out_ords.s_transtatus <<
endl);

        rc = detachContext(ctx);
        if(rc != OK)
        {
                ERRORMSG("ords failed
attach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);
                DEBUGMSG("ords failed
attach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);

                return ERR_DETACHING_CONTEXT;
        }
        DEBUGMSG("ords detach_context successful.
pymt txn complete."<<endl);

        return OK;
}

/*
*************************************************
**********
** Name                    :         do_dlvy
** Description      :
**
        Function calls db2 api to execute ords txn
** Parameters       :
**
        dlvy_wrapper*       dlvy txn structs
wrapper
**
        void*                       stored
context
** Returns                 :
**                                              int
- return code
** Comments                :
**
        Attach to thread's context, call nord sql
function
**
        then detach from context.
*************************************************
**********
*/
extern "C" TPCCDB2GLUE_API int do_dlvy(dlvy_wrapper
*dlvy,void *ctx)
{
```

```
        DEBUGMSG("Entered do_dlvy, attaching to
context:" << DEBUGADDRESS(ctx) << endl);
        int rc = attachContext(ctx);
        if(rc != OK)
        {
                ERRORMSG("dlvy failed
attach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);
                DEBUGMSG("dlvy failed
attach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);

                return ERR_ATTACHING_CONTEXT;
        }
        DEBUGMSG("attached to
context:"<<DEBUGADDRESS(ctx)<<", preparing to call
db2" << endl);

        DEBUGMSG("calling delivery_sql" <<  endl);
#ifdef TIMING
        struct txn timeSample;
        _ftime(&timeSample.startTime);
#endif

        //call dlvy txn
        delivery_sql(&dlvy->in_dlvy,&dlvy-
>out_dlvy);
#ifdef TIMING
        _ftime(&timeSample.endTime);
        timeSample.txnType=3;
        EnterCriticalSection(&errorMutex);
        if(  (fwrite(&timeSample,sizeof(struct
txn),1,respTimes)) != 1 )
        {
                ERRORMSG("Unable to write to
binary file, dlvy"<<endl);
        }
        LeaveCriticalSection(&errorMutex);
#endif

        DEBUGMSG("return from delivery_sql(),
s_transtatus:" << dlvy->out_dlvy.s_transtatus <<
endl);

        rc = detachContext(ctx);
        if(rc != OK)
        {
                ERRORMSG("dlvy failed
detach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);
                DEBUGMSG("dlvy failed
detach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);

                return ERR_DETACHING_CONTEXT;
        }

        DEBUGMSG("dlvy detach_context successful.
dlvy txn complete."<<endl);

  return OK;
}
```

```
/*
**************************************************
**********
** Name                        :         do_stok
** Description      :
**
        Function calls db2 api to execute stok txn
** Parameters       :
**
        stok_wrapper*       stock txn structs
wrapper
**
        void*                           stored
context
** Returns                     :
**                                              int
- return code
** Comments                    :
**
        Attach to thread's context, call nord sql
function
**
        then detach from context.
**************************************************
**********
*/

extern "C" TPCCDB2GLUE_API int do_stok(stok_wrapper
*stok,void *ctx)
{
        DEBUGMSG("Entered do_stok, attaching to
context:" << DEBUGADDRESS(ctx) << endl);
        int rc = attachContext(ctx);
        if(rc != OK)
        {
                ERRORMSG("stok failed
attach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);
                DEBUGMSG("stok failed
attach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);

                return ERR_ATTACHING_CONTEXT;
        }
        DEBUGMSG("attaching to
context:"<<DEBUGADDRESS(ctx)<<", preparing to call
db2" << endl);

        DEBUGMSG("calling stocklev_sql()" <<endl);

#ifdef TIMING
        struct txn timeSample;
        _ftime(&timeSample.startTime);
#endif

        //call stock level txn
        stocklev_sql(&stok->in_stok, &stok-
>out_stok);

#ifdef TIMING
        _ftime(&timeSample.endTime);
        timeSample.txnType=5;
        EnterCriticalSection(&errorMutex);
        if(  (fwrite(&timeSample,sizeof(struct
txn),1,respTimes)) != 1 )
        {
                ERRORMSG("Unable to write to
binary file, stok"<<endl);
        }
        LeaveCriticalSection(&errorMutex);
#endif

        DEBUGMSG("return from stocklev_sql(),
s_transtatus:" << stok->out_stok.s_transtatus <<
endl);

        DEBUGMSG("calling detach_context"<<endl);
        rc = detachContext(ctx);
        if(rc != OK)
        {
                ERRORMSG("stok failed
attach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);
                DEBUGMSG("stok failed
attach_context w/ ctx:"<<DEBUGADDRESS(ctx)<<" rc:" <<
rc << endl);

                return ERR_DETACHING_CONTEXT;
        }
        DEBUGMSG("detach_context successful. stok
txn complete."<<endl);

        return OK;
}
```

tpccComClient/ tpccComClient. cpp

```
// tpccComClient.cpp : Defines the entry point for
the console application.
//

#include "stdafx.h"

#include "..\tpccCom\tpccCom.h"
#include "..\tpccCom\tpccCom_i.c"
#include <tpcc.h>

struct txn_buffer
{
        char      *dataBuffer;
        int                size;
};

int _tmain(int argc, _TCHAR* argv[])
{
        HRESULT hres;
        Itpcc_com * pTxn;

        hres = CoInitialize(NULL);
```

```
        if (FAILED(hres))
        {
                printf("Error : CoInitialize()
failed rc:%d\n",GetLastError());
                fflush(stdout);
                return 0;
        }

        hres =
CoCreateInstance(CLSID_tpcc_com,NULL,CLSCTX_SERVER,II
D_Itpcc_com,(void **)&pTxn);
        if (FAILED(hres))
        {
                printf("Error :
CoCreateInstance() failed rc:%d
hres:%X\n",GetLastError(),hres);
                fflush(stdout);
                return 0;
        }

        //int size = sizeof(in_stocklev_struct);
        //int size2 = sizeof(out_stocklev_struct);

        //define txn buffer to store txn structure
in
        struct txn_buffer   comBuffer;
        comBuffer.dataBuffer          = (char *)
CoTaskMemAlloc(sizeof(STOCKLEVELDATA));
        if (!(comBuffer.dataBuffer))
        {

        printf(comBuffer.dataBuffer,"CoTaskMemAlloc
failed, rc:%d\n",GetLastError());
                return(TRUE);
        };
        comBuffer.size                          =
sizeof(STOCKLEVELDATA);

        struct STOCKLEVELDATA         *pStock;
        pStock =
(STOCKLEVELDATA*)comBuffer.dataBuffer;
        ZeroMemory(pStock,comBuffer.size);

        //initialize fields
        pStock->in_s_W_ID = 10; pStock->in_s_D_ID =
1;
        pStock->in_s_threshold = 2; pStock-
>out_s_transtatus = -1;

        int dataLen = comBuffer.size;
        try{
                hres = pTxn-
>doStockLevel(&dataLen,(unsigned
char**)&comBuffer.dataBuffer);
        }
        catch(...)
        {
                printf("Error : StockLevel() com
caused exeception failed rc:%d\n",GetLastError());
                fflush(stdout);
                return 0;
        }
        if (FAILED(hres))
        {
                printf("Error : StockLevel() com
call failed rc:%d\n",GetLastError());
                return 0;
        }

        pStock = (STOCKLEVELDATA
*)comBuffer.dataBuffer;

        printf("Stock Level txn complete.
s_transtatus:%d\n",pStock->out_s_transtatus);

        return 0;
        return 0;
}
```

tpccComClient/ stdafx.cpp

```
// stdafx.cpp : source file that includes just the
standard includes
// tpccComClient.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
```

tpccComClient/ stdafx.h

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

#pragma once


#include <iostream>
#include <tchar.h>

// TODO: reference additional headers your program
requires here
```

Appendix B: Database Design

The TPC-C database was created with the following scripts:

ALTTBSP_PF_0.ddl

```
connect to TPCC;
alter tablespace is_customer_001 prefetchsize 0;
alter tablespace is_customer_002 prefetchsize 0;
alter tablespace is_customer_003 prefetchsize 0;
alter tablespace is_customer_004 prefetchsize 0;
alter tablespace is_customer_005 prefetchsize 0;
alter tablespace is_customer_006 prefetchsize 0;
alter tablespace is_customer_007 prefetchsize 0;
alter tablespace is_customer_008 prefetchsize 0;
alter tablespace is_customer_009 prefetchsize 0;
alter tablespace is_customer_010 prefetchsize 0;
alter tablespace is_customer_011 prefetchsize 0;
alter tablespace is_customer_012 prefetchsize 0;
alter tablespace is_order_001 prefetchsize 0;
alter tablespace is_order_002 prefetchsize 0;
alter tablespace is_order_003 prefetchsize 0;
alter tablespace is_order_004 prefetchsize 0;
alter tablespace ts_customer_001 prefetchsize 0;
alter tablespace ts_customer_002 prefetchsize 0;
alter tablespace ts_customer_003 prefetchsize 0;
alter tablespace ts_customer_004 prefetchsize 0;
alter tablespace ts_customer_005 prefetchsize 0;
alter tablespace ts_customer_006 prefetchsize 0;
alter tablespace ts_customer_007 prefetchsize 0;
alter tablespace ts_customer_008 prefetchsize 0;
alter tablespace ts_customer_009 prefetchsize 0;
alter tablespace ts_customer_010 prefetchsize 0;
alter tablespace ts_customer_011 prefetchsize 0;
alter tablespace ts_customer_012 prefetchsize 0;
alter tablespace ts_district_001 prefetchsize 0;
alter tablespace ts_district_002 prefetchsize 0;
alter tablespace ts_district_003 prefetchsize 0;
alter tablespace ts_district_004 prefetchsize 0;
alter tablespace ts_history_001 prefetchsize 0;
alter tablespace ts_history_002 prefetchsize 0;
alter tablespace ts_history_003 prefetchsize 0;
alter tablespace ts_history_004 prefetchsize 0;
alter tablespace ts_item_01 prefetchsize 0;
alter tablespace ts_newordA_001 prefetchsize 0;
alter tablespace ts_newordA_002 prefetchsize 0;
alter tablespace ts_newordA_003 prefetchsize 0;
alter tablespace ts_newordA_004 prefetchsize 0;
alter tablespace ts_newordB_001 prefetchsize 0;
alter tablespace ts_newordB_002 prefetchsize 0;
alter tablespace ts_newordB_003 prefetchsize 0;
alter tablespace ts_newordB_004 prefetchsize 0;
alter tablespace ts_order_001 prefetchsize 0;
alter tablespace ts_order_002 prefetchsize 0;
alter tablespace ts_order_003 prefetchsize 0;
alter tablespace ts_order_004 prefetchsize 0;
alter tablespace ts_orderline_001 prefetchsize 0;
alter tablespace ts_orderline_002 prefetchsize 0;
alter tablespace ts_orderline_003 prefetchsize 0;
alter tablespace ts_orderline_004 prefetchsize 0;
alter tablespace ts_orderline_005 prefetchsize 0;
alter tablespace ts_orderline_006 prefetchsize 0;
alter tablespace ts_orderline_007 prefetchsize 0;
alter tablespace ts_orderline_008 prefetchsize 0;
alter tablespace ts_stock_001 prefetchsize 0;
alter tablespace ts_stock_002 prefetchsize 0;
alter tablespace ts_stock_003 prefetchsize 0;
alter tablespace ts_stock_004 prefetchsize 0;
alter tablespace ts_stock_005 prefetchsize 0;
alter tablespace ts_stock_006 prefetchsize 0;
alter tablespace ts_stock_007 prefetchsize 0;
alter tablespace ts_stock_008 prefetchsize 0;
alter tablespace ts_stock_009 prefetchsize 0;
alter tablespace ts_stock_010 prefetchsize 0;
alter tablespace ts_stock_011 prefetchsize 0;
alter tablespace ts_stock_012 prefetchsize 0;
alter tablespace ts_warehouse_001 prefetchsize 0;
alter tablespace ts_warehouse_002 prefetchsize 0;
alter tablespace ts_warehouse_003 prefetchsize 0;
alter tablespace ts_warehouse_004 prefetchsize 0;
connect reset;
```

ALTTBSP_PF_4096.ddl

```
connect to TPCC;
alter tablespace is_customer_001 prefetchsize 4096;
alter tablespace is_customer_002 prefetchsize 4096;
alter tablespace is_customer_003 prefetchsize 4096;
alter tablespace is_customer_004 prefetchsize 4096;
alter tablespace is_customer_005 prefetchsize 4096;
alter tablespace is_customer_006 prefetchsize 4096;
alter tablespace is_customer_007 prefetchsize 4096;
alter tablespace is_customer_008 prefetchsize 4096;
alter tablespace is_customer_009 prefetchsize 4096;
alter tablespace is_customer_010 prefetchsize 4096;
alter tablespace is_customer_011 prefetchsize 4096;
alter tablespace is_customer_012 prefetchsize 4096;
alter tablespace is_order_001 prefetchsize 4096;
alter tablespace is_order_002 prefetchsize 4096;
alter tablespace is_order_003 prefetchsize 4096;
alter tablespace is_order_004 prefetchsize 4096;
alter tablespace ts_customer_001 prefetchsize 4096;
alter tablespace ts_customer_002 prefetchsize 4096;
alter tablespace ts_customer_003 prefetchsize 4096;
alter tablespace ts_customer_004 prefetchsize 4096;
alter tablespace ts_customer_005 prefetchsize 4096;
alter tablespace ts_customer_006 prefetchsize 4096;
alter tablespace ts_customer_007 prefetchsize 4096;
alter tablespace ts_customer_008 prefetchsize 4096;
alter tablespace ts_customer_009 prefetchsize 4096;
```

```
alter tablespace ts_customer_010 prefetchsize 4096;
alter tablespace ts_customer_011 prefetchsize 4096;
alter tablespace ts_customer_012 prefetchsize 4096;
alter tablespace ts_district_001 prefetchsize 4096;
alter tablespace ts_district_002 prefetchsize 4096;
alter tablespace ts_district_003 prefetchsize 4096;
alter tablespace ts_district_004 prefetchsize 4096;
alter tablespace ts_history_001 prefetchsize 4096;
alter tablespace ts_history_002 prefetchsize 4096;
alter tablespace ts_history_003 prefetchsize 4096;
alter tablespace ts_history_004 prefetchsize 4096;
alter tablespace ts_item_01 prefetchsize 4096;
alter tablespace ts_newordA_001 prefetchsize 4096;
alter tablespace ts_newordA_002 prefetchsize 4096;
alter tablespace ts_newordA_003 prefetchsize 4096;
alter tablespace ts_newordA_004 prefetchsize 4096;
alter tablespace ts_newordB_001 prefetchsize 4096;
alter tablespace ts_newordB_002 prefetchsize 4096;
alter tablespace ts_newordB_003 prefetchsize 4096;
alter tablespace ts_newordB_004 prefetchsize 4096;
alter tablespace ts_order_001 prefetchsize 4096;
alter tablespace ts_order_002 prefetchsize 4096;
alter tablespace ts_order_003 prefetchsize 4096;
alter tablespace ts_order_004 prefetchsize 4096;
alter tablespace ts_orderline_001 prefetchsize 4096;
alter tablespace ts_orderline_002 prefetchsize 4096;
alter tablespace ts_orderline_003 prefetchsize 4096;
alter tablespace ts_orderline_004 prefetchsize 4096;
alter tablespace ts_orderline_005 prefetchsize 4096;
alter tablespace ts_orderline_006 prefetchsize 4096;
alter tablespace ts_orderline_007 prefetchsize 4096;
alter tablespace ts_orderline_008 prefetchsize 4096;
alter tablespace ts_stock_001 prefetchsize 4096;
alter tablespace ts_stock_002 prefetchsize 4096;
alter tablespace ts_stock_003 prefetchsize 4096;
alter tablespace ts_stock_004 prefetchsize 4096;
alter tablespace ts_stock_005 prefetchsize 4096;
alter tablespace ts_stock_006 prefetchsize 4096;
alter tablespace ts_stock_007 prefetchsize 4096;
alter tablespace ts_stock_008 prefetchsize 4096;
alter tablespace ts_stock_009 prefetchsize 4096;
alter tablespace ts_stock_010 prefetchsize 4096;
alter tablespace ts_stock_011 prefetchsize 4096;
alter tablespace ts_stock_012 prefetchsize 4096;
alter tablespace ts_warehouse_001 prefetchsize 4096;
alter tablespace ts_warehouse_002 prefetchsize 4096;
alter tablespace ts_warehouse_003 prefetchsize 4096;
alter tablespace ts_warehouse_004 prefetchsize 4096;
connect reset;
```

CRCONST_CUSTOMER1.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR CUSTOMER1 OFF;
ALTER TABLE CUSTOMER1 DROP CONSTRAINT CUSTOMER1CKC;
ALTER TABLE CUSTOMER1 ADD CONSTRAINT CUSTOMER1CKC CHECK (C_W_ID BETWEEN 1 AND 1600);
SET INTEGRITY FOR CUSTOMER1 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_CUSTOMER2.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR CUSTOMER2 OFF;
ALTER TABLE CUSTOMER2 DROP CONSTRAINT CUSTOMER2CKC;
ALTER TABLE CUSTOMER2 ADD CONSTRAINT CUSTOMER2CKC CHECK (C_W_ID BETWEEN 1601 AND
3200);
SET INTEGRITY FOR CUSTOMER2 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_CUSTOMER3.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR CUSTOMER3 OFF;
ALTER TABLE CUSTOMER3 DROP CONSTRAINT CUSTOMER3CKC;
ALTER TABLE CUSTOMER3 ADD CONSTRAINT CUSTOMER3CKC CHECK (C_W_ID BETWEEN 3201 AND
4800);
SET INTEGRITY FOR CUSTOMER3 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_CUSTOMER4.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR CUSTOMER4 OFF;
ALTER TABLE CUSTOMER4 DROP CONSTRAINT CUSTOMER4CKC;
ALTER TABLE CUSTOMER4 ADD CONSTRAINT CUSTOMER4CKC CHECK (C_W_ID BETWEEN 4801 AND
6400);
SET INTEGRITY FOR CUSTOMER4 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_CUSTOMER5.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR CUSTOMER5 OFF;
ALTER TABLE CUSTOMER5 DROP CONSTRAINT CUSTOMER5CKC;
ALTER TABLE CUSTOMER5 ADD CONSTRAINT CUSTOMER5CKC CHECK (C_W_ID BETWEEN 6401 AND
8000);
SET INTEGRITY FOR CUSTOMER5 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_CUSTOMER6.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR CUSTOMER6 OFF;
ALTER TABLE CUSTOMER6 DROP CONSTRAINT CUSTOMER6CKC;
ALTER TABLE CUSTOMER6 ADD CONSTRAINT CUSTOMER6CKC CHECK (C_W_ID BETWEEN 8001 AND
9600);
SET INTEGRITY FOR CUSTOMER6 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_CUSTOMER7.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR CUSTOMER7 OFF;
ALTER TABLE CUSTOMER7 DROP CONSTRAINT CUSTOMER7CKC;
ALTER TABLE CUSTOMER7 ADD CONSTRAINT CUSTOMER7CKC CHECK (C_W_ID BETWEEN 9601 AND
11200);
SET INTEGRITY FOR CUSTOMER7 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_CUSTOMER8.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR CUSTOMER8 OFF;
ALTER TABLE CUSTOMER8 DROP CONSTRAINT CUSTOMER8CKC;
ALTER TABLE CUSTOMER8 ADD CONSTRAINT CUSTOMER8CKC CHECK (C_W_ID BETWEEN 11201 AND
12800);
SET INTEGRITY FOR CUSTOMER8 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_DISTRICT1.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR DISTRICT1 OFF;
ALTER TABLE DISTRICT1 DROP CONSTRAINT DISTRICT1CKC;
ALTER TABLE DISTRICT1 ADD CONSTRAINT DISTRICT1CKC CHECK (D_W_ID BETWEEN 1 AND 4800);
SET INTEGRITY FOR DISTRICT1 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_DISTRICT2.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR DISTRICT2 OFF;
ALTER TABLE DISTRICT2 DROP CONSTRAINT DISTRICT2CKC;
ALTER TABLE DISTRICT2 ADD CONSTRAINT DISTRICT2CKC CHECK (D_W_ID BETWEEN 4801 AND
9600);
SET INTEGRITY FOR DISTRICT2 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_DISTRICT3.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR DISTRICT3 OFF;
ALTER TABLE DISTRICT3 DROP CONSTRAINT DISTRICT3CKC;
ALTER TABLE DISTRICT3 ADD CONSTRAINT DISTRICT3CKC CHECK (D_W_ID BETWEEN 9601 AND
14400);
SET INTEGRITY FOR DISTRICT3 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_DISTRICT4.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR DISTRICT4 OFF;
ALTER TABLE DISTRICT4 DROP CONSTRAINT DISTRICT4CKC;
ALTER TABLE DISTRICT4 ADD CONSTRAINT DISTRICT4CKC CHECK (D_W_ID >= 14401);
SET INTEGRITY FOR DISTRICT4 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_HISTORY1.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR HISTORY1 OFF;
ALTER TABLE HISTORY1 DROP CONSTRAINT HISTORY1CKC;
ALTER TABLE HISTORY1 ADD CONSTRAINT HISTORY1CKC CHECK (H_W_ID BETWEEN 1 AND 4800);
SET INTEGRITY FOR HISTORY1 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_HISTORY2.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR HISTORY2 OFF;
ALTER TABLE HISTORY2 DROP CONSTRAINT HISTORY2CKC;
ALTER TABLE HISTORY2 ADD CONSTRAINT HISTORY2CKC CHECK (H_W_ID BETWEEN 4801 AND
9600);
SET INTEGRITY FOR HISTORY2 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_HISTORY3.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR HISTORY3 OFF;
ALTER TABLE HISTORY3 DROP CONSTRAINT HISTORY3CKC;
ALTER TABLE HISTORY3 ADD CONSTRAINT HISTORY3CKC CHECK (H_W_ID BETWEEN 9601 AND
14400);
SET INTEGRITY FOR HISTORY3 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_HISTORY4.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR HISTORY4 OFF;
ALTER TABLE HISTORY4 DROP CONSTRAINT HISTORY4CKC;
ALTER TABLE HISTORY4 ADD CONSTRAINT HISTORY4CKC CHECK (H_W_ID >= 14401);
SET INTEGRITY FOR HISTORY4 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_NEW_ORDERA1.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR NEW_ORDERA1 OFF;
ALTER TABLE NEW_ORDERA1 DROP CONSTRAINT NEW_ORDERA1CKC;
ALTER TABLE NEW_ORDERA1 ADD CONSTRAINT NEW_ORDERA1CKC CHECK ((NO_W_ID BETWEEN 1 AND
4800) AND (NO_O_ID <= 3605));
SET INTEGRITY FOR NEW_ORDERA1 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_NEW_ORDERA2.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR NEW_ORDERA2 OFF;
ALTER TABLE NEW_ORDERA2 DROP CONSTRAINT NEW_ORDERA2CKC;
ALTER TABLE NEW_ORDERA2 ADD CONSTRAINT NEW_ORDERA2CKC CHECK ((NO_W_ID BETWEEN 4801
AND 9600) AND (NO_O_ID <= 3605));
SET INTEGRITY FOR NEW_ORDERA2 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_NEW_ORDERA3.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR NEW_ORDERA3 OFF;
ALTER TABLE NEW_ORDERA3 DROP CONSTRAINT NEW_ORDERA3CKC;
ALTER TABLE NEW_ORDERA3 ADD CONSTRAINT NEW_ORDERA3CKC CHECK ((NO_W_ID BETWEEN 9601
AND 14400) AND (NO_O_ID <= 3605));
SET INTEGRITY FOR NEW_ORDERA3 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_NEW_ORDERA4.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR NEW_ORDERA4 OFF;
ALTER TABLE NEW_ORDERA4 DROP CONSTRAINT NEW_ORDERA4CKC;
ALTER TABLE NEW_ORDERA4 ADD CONSTRAINT NEW_ORDERA4CKC CHECK ((NO_W_ID >= 14401) AND
(NO_O_ID <= 3605));
SET INTEGRITY FOR NEW_ORDERA4 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_NEW_ORDERB1.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR NEW_ORDERB1 OFF;
ALTER TABLE NEW_ORDERB1 DROP CONSTRAINT NEW_ORDERB1CKC;
ALTER TABLE NEW_ORDERB1 ADD CONSTRAINT NEW_ORDERB1CKC CHECK ((NO_W_ID BETWEEN 1 AND
4800) AND (NO_O_ID >= 3606));
SET INTEGRITY FOR NEW_ORDERB1 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_NEW_ORDERB2.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR NEW_ORDERB2 OFF;
ALTER TABLE NEW_ORDERB2 DROP CONSTRAINT NEW_ORDERB2CKC;
ALTER TABLE NEW_ORDERB2 ADD CONSTRAINT NEW_ORDERB2CKC CHECK ((NO_W_ID BETWEEN 4801
AND 9600) AND (NO_O_ID >= 3606));
SET INTEGRITY FOR NEW_ORDERB2 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_NEW_ORDERB3.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR NEW_ORDERB3 OFF;
ALTER TABLE NEW_ORDERB3 DROP CONSTRAINT NEW_ORDERB3CKC;
ALTER TABLE NEW_ORDERB3 ADD CONSTRAINT NEW_ORDERB3CKC CHECK ((NO_W_ID BETWEEN 9601
AND 14400) AND (NO_O_ID >= 3606));
SET INTEGRITY FOR NEW_ORDERB3 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_NEW_ORDERB4.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR NEW_ORDERB4 OFF;
ALTER TABLE NEW_ORDERB4 DROP CONSTRAINT NEW_ORDERB4CKC;
ALTER TABLE NEW_ORDERB4 ADD CONSTRAINT NEW_ORDERB4CKC CHECK ((NO_W_ID >= 14401) AND
(NO_O_ID >= 3606));
SET INTEGRITY FOR NEW_ORDERB4 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_ORDERS1.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR ORDERS1 OFF;
ALTER TABLE ORDERS1 DROP CONSTRAINT ORDERS1CKC;
ALTER TABLE ORDERS1 ADD CONSTRAINT ORDERS1CKC CHECK (O_W_ID BETWEEN 1 AND 4800);
SET INTEGRITY FOR ORDERS1 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_ORDERS2.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR ORDERS2 OFF;
ALTER TABLE ORDERS2 DROP CONSTRAINT ORDERS2CKC;
ALTER TABLE ORDERS2 ADD CONSTRAINT ORDERS2CKC CHECK (O_W_ID BETWEEN 4801 AND 9600);
SET INTEGRITY FOR ORDERS2 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_ORDERS3.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR ORDERS3 OFF;
ALTER TABLE ORDERS3 DROP CONSTRAINT ORDERS3CKC;
ALTER TABLE ORDERS3 ADD CONSTRAINT ORDERS3CKC CHECK (O_W_ID BETWEEN 9601 AND 14400);
SET INTEGRITY FOR ORDERS3 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_ORDERS4.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR ORDERS4 OFF;
ALTER TABLE ORDERS4 DROP CONSTRAINT ORDERS4CKC;
ALTER TABLE ORDERS4 ADD CONSTRAINT ORDERS4CKC CHECK (O_W_ID >= 14401);
SET INTEGRITY FOR ORDERS4 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_ORDER_LINE1.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR ORDER_LINE1 OFF;
ALTER TABLE ORDER_LINE1 DROP CONSTRAINT ORDER_LINE1CKC;
ALTER TABLE ORDER_LINE1 ADD CONSTRAINT ORDER_LINE1CKC CHECK (OL_W_ID BETWEEN 1 AND
2400);
SET INTEGRITY FOR ORDER_LINE1 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_ORDER_LINE2.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR ORDER_LINE2 OFF;
ALTER TABLE ORDER_LINE2 DROP CONSTRAINT ORDER_LINE2CKC;
ALTER TABLE ORDER_LINE2 ADD CONSTRAINT ORDER_LINE2CKC CHECK (OL_W_ID BETWEEN 2401
AND 4800);
SET INTEGRITY FOR ORDER_LINE2 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_ORDER_LINE3.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR ORDER_LINE3 OFF;
ALTER TABLE ORDER_LINE3 DROP CONSTRAINT ORDER_LINE3CKC;
ALTER TABLE ORDER_LINE3 ADD CONSTRAINT ORDER_LINE3CKC CHECK (OL_W_ID BETWEEN 4801
AND 7200);
SET INTEGRITY FOR ORDER_LINE3 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_ORDER_LINE4.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR ORDER_LINE4 OFF;
ALTER TABLE ORDER_LINE4 DROP CONSTRAINT ORDER_LINE4CKC;
ALTER TABLE ORDER_LINE4 ADD CONSTRAINT ORDER_LINE4CKC CHECK (OL_W_ID BETWEEN 7201
AND 9600);
SET INTEGRITY FOR ORDER_LINE4 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_STOCK1.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR STOCK1 OFF;
ALTER TABLE STOCK1 DROP CONSTRAINT STOCK1CKC;
ALTER TABLE STOCK1 ADD CONSTRAINT STOCK1CKC CHECK (S_W_ID BETWEEN 1 AND 1600);
SET INTEGRITY FOR STOCK1 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_STOCK2.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR STOCK2 OFF;
ALTER TABLE STOCK2 DROP CONSTRAINT STOCK2CKC;
ALTER TABLE STOCK2 ADD CONSTRAINT STOCK2CKC CHECK (S_W_ID BETWEEN 1601 AND 3200);
SET INTEGRITY FOR STOCK2 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_STOCK3.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR STOCK3 OFF;
ALTER TABLE STOCK3 DROP CONSTRAINT STOCK3CKC;
ALTER TABLE STOCK3 ADD CONSTRAINT STOCK3CKC CHECK (S_W_ID BETWEEN 3201 AND 4800);
SET INTEGRITY FOR STOCK3 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_STOCK4.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR STOCK4 OFF;
ALTER TABLE STOCK4 DROP CONSTRAINT STOCK4CKC;
ALTER TABLE STOCK4 ADD CONSTRAINT STOCK4CKC CHECK (S_W_ID BETWEEN 4801 AND 6400);
SET INTEGRITY FOR STOCK4 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_STOCK5.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR STOCK5 OFF;
ALTER TABLE STOCK5 DROP CONSTRAINT STOCK5CKC;
ALTER TABLE STOCK5 ADD CONSTRAINT STOCK5CKC CHECK (S_W_ID BETWEEN 6401 AND 8000);
SET INTEGRITY FOR STOCK5 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_STOCK6.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR STOCK6 OFF;
ALTER TABLE STOCK6 DROP CONSTRAINT STOCK6CKC;
ALTER TABLE STOCK6 ADD CONSTRAINT STOCK6CKC CHECK (S_W_ID BETWEEN 8001 AND 9600);
SET INTEGRITY FOR STOCK6 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_STOCK7.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR STOCK7 OFF;
ALTER TABLE STOCK7 DROP CONSTRAINT STOCK7CKC;
ALTER TABLE STOCK7 ADD CONSTRAINT STOCK7CKC CHECK (S_W_ID BETWEEN 9601 AND 11200);
SET INTEGRITY FOR STOCK7 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_STOCK8.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR STOCK8 OFF;
ALTER TABLE STOCK8 DROP CONSTRAINT STOCK8CKC;
ALTER TABLE STOCK8 ADD CONSTRAINT STOCK8CKC CHECK (S_W_ID BETWEEN 11201 AND 12800);
SET INTEGRITY FOR STOCK8 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_WAREHOUSE1.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR WAREHOUSE1 OFF;
ALTER TABLE WAREHOUSE1 DROP CONSTRAINT WAREHOUSE1CKC;
ALTER TABLE WAREHOUSE1 ADD CONSTRAINT WAREHOUSE1CKC CHECK (W_ID BETWEEN 1 AND 4800);
SET INTEGRITY FOR WAREHOUSE1 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_WAREHOUSE2.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR WAREHOUSE2 OFF;
ALTER TABLE WAREHOUSE2 DROP CONSTRAINT WAREHOUSE2CKC;
ALTER TABLE WAREHOUSE2 ADD CONSTRAINT WAREHOUSE2CKC CHECK (W_ID BETWEEN 4801 AND
9600);
SET INTEGRITY FOR WAREHOUSE2 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_WAREHOUSE3.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR WAREHOUSE3 OFF;
ALTER TABLE WAREHOUSE3 DROP CONSTRAINT WAREHOUSE3CKC;
ALTER TABLE WAREHOUSE3 ADD CONSTRAINT WAREHOUSE3CKC CHECK (W_ID BETWEEN 9601 AND
14400);
SET INTEGRITY FOR WAREHOUSE3 ALL IMMEDIATE UNCHECKED;
connect reset;
```

CRCONST_WAREHOUSE4.ddl

```
connect to TPCC in share mode;
SET INTEGRITY FOR WAREHOUSE4 OFF;
ALTER TABLE WAREHOUSE4 DROP CONSTRAINT WAREHOUSE4CKC;
ALTER TABLE WAREHOUSE4 ADD CONSTRAINT WAREHOUSE4CKC CHECK (W_ID >= 14401);
SET INTEGRITY FOR WAREHOUSE4 ALL IMMEDIATE UNCHECKED;
connect reset;
```

create_bufferpool_numa.ddl

```
connect to tpcc;
alter bufferpool IBMDEFAULTBP size 1024;
alter bufferpool IBM8KBP size 16;
alter bufferpool IBM16KBP size 16;

create bufferpool I_001                deferred size 2500  pagesize 4k
;
create bufferpool WD_001               deferred size 1280  pagesize 4k;
create bufferpool CUSTOMER_001                  deferred size 5000  pagesize 4k;
create bufferpool IDX_CUSTOMER_001     deferred size 43600           pagesize 8k;
create bufferpool HISTORY_001                   deferred size 220   pagesize 16k;
create bufferpool ORDER_001            deferred size 32900           pagesize 8k;
create bufferpool IDX_ORDER_001        deferred size 93800           pagesize 8k;
create bufferpool ORDERLINE_001        deferred size 120000          pagesize 8k;
create bufferpool NEWORDER_001                  deferred size 100000
         pagesize 4k;
create bufferpool STOCK_001            deferred size 3190000         pagesize 4k;

create bufferpool WD_002               deferred size 1280  pagesize 4k;
create bufferpool CUSTOMER_002                  deferred size 5000  pagesize 4k;
create bufferpool IDX_CUSTOMER_002     deferred size 43600           pagesize 8k;
create bufferpool HISTORY_002                   deferred size 220   pagesize 16k;
create bufferpool ORDER_002            deferred size 32900           pagesize 8k;
create bufferpool IDX_ORDER_002        deferred size 93800           pagesize 8k;
create bufferpool ORDERLINE_002        deferred size 120000          pagesize 8k;
create bufferpool NEWORDER_002                  deferred size 100000
         pagesize 4k;
create bufferpool STOCK_002            deferred size 3190000         pagesize 4k;

create bufferpool WD_003               deferred size 1280  pagesize 4k;
create bufferpool CUSTOMER_003                  deferred size 5000  pagesize 4k;
create bufferpool IDX_CUSTOMER_003     deferred size 43600           pagesize 8k;
create bufferpool HISTORY_003                   deferred size 220   pagesize 16k;
create bufferpool ORDER_003            deferred size 32900           pagesize 8k;
create bufferpool IDX_ORDER_003        deferred size 93800           pagesize 8k;
create bufferpool ORDERLINE_003        deferred size 120000          pagesize 8k;
create bufferpool NEWORDER_003                  deferred size 100000
         pagesize 4k;
create bufferpool STOCK_003            deferred size 3190000         pagesize 4k;

create bufferpool WD_004               deferred size 1280  pagesize 4k;
create bufferpool CUSTOMER_004                  deferred size 5000  pagesize 4k;
create bufferpool IDX_CUSTOMER_004     deferred size 43600           pagesize 8k;
create bufferpool HISTORY_004                   deferred size 220   pagesize 16k;
create bufferpool ORDER_004            deferred size 32900           pagesize 8k;
create bufferpool IDX_ORDER_004        deferred size 93800           pagesize 8k;
create bufferpool ORDERLINE_004        deferred size 120000          pagesize 8k;
create bufferpool NEWORDER_004                  deferred size 100000
         pagesize 4k;
create bufferpool STOCK_004            deferred size 3190000         pagesize 4k;

alter tablespace  TS_ITEM_01           bufferpool I_001;

alter tablespace  TS_WAREHOUSE_001     bufferpool WD_001;
alter tablespace  TS_DISTRICT_001      bufferpool WD_001;
alter tablespace  TS_CUSTOMER_001      bufferpool CUSTOMER_001;
alter tablespace  TS_CUSTOMER_002      bufferpool CUSTOMER_001;
alter tablespace  TS_CUSTOMER_003      bufferpool CUSTOMER_001;
alter tablespace  IS_CUSTOMER_001      bufferpool IDX_CUSTOMER_001;
alter tablespace  TS_HISTORY_001       bufferpool HISTORY_001;
alter tablespace  TS_ORDER_001                  bufferpool ORDER_001;
alter tablespace  IS_ORDER_001                  bufferpool IDX_ORDER_001;
alter tablespace  TS_ORDERLINE_001     bufferpool ORDERLINE_001;
alter tablespace  TS_ORDERLINE_002     bufferpool ORDERLINE_001;
alter tablespace  TS_NEWORDA_001       bufferpool NEWORDER_001;
alter tablespace  TS_NEWORDB_001       bufferpool NEWORDER_001;
alter tablespace  TS_STOCK_001                  bufferpool STOCK_001;
alter tablespace  TS_STOCK_002                  bufferpool STOCK_001;
alter tablespace  TS_STOCK_003                  bufferpool STOCK_001;


alter tablespace  TS_WAREHOUSE_002     bufferpool WD_002;
alter tablespace  TS_DISTRICT_002      bufferpool WD_002;
alter tablespace  TS_CUSTOMER_004      bufferpool CUSTOMER_002;
alter tablespace  TS_CUSTOMER_005      bufferpool CUSTOMER_002;
alter tablespace  TS_CUSTOMER_006      bufferpool CUSTOMER_002;
alter tablespace  IS_CUSTOMER_002      bufferpool IDX_CUSTOMER_002;
alter tablespace  TS_HISTORY_002       bufferpool HISTORY_002;
alter tablespace  TS_ORDER_002                  bufferpool ORDER_002;
alter tablespace  IS_ORDER_002                  bufferpool IDX_ORDER_002;
```

```
alter tablespace  TS_ORDERLINE_003      bufferpool ORDERLINE_002;
alter tablespace  TS_ORDERLINE_004      bufferpool ORDERLINE_002;
alter tablespace  TS_NEWORDA_002        bufferpool NEWORDER_002;
alter tablespace  TS_NEWORDB_002        bufferpool NEWORDER_002;
alter tablespace  TS_STOCK_004                  bufferpool STOCK_002;
alter tablespace  TS_STOCK_005                  bufferpool STOCK_002;
alter tablespace  TS_STOCK_006                  bufferpool STOCK_002;

alter tablespace  TS_WAREHOUSE_003      bufferpool WD_003;
alter tablespace  TS_DISTRICT_003       bufferpool WD_003;
alter tablespace  TS_CUSTOMER_007       bufferpool CUSTOMER_003;
alter tablespace  TS_CUSTOMER_008       bufferpool CUSTOMER_003;
alter tablespace  TS_CUSTOMER_009       bufferpool CUSTOMER_003;
alter tablespace  IS_CUSTOMER_003       bufferpool IDX_CUSTOMER_003;
alter tablespace  TS_HISTORY_003        bufferpool HISTORY_003;
alter tablespace  TS_ORDER_003                  bufferpool ORDER_003;
alter tablespace  IS_ORDER_003                  bufferpool IDX_ORDER_003;
alter tablespace  TS_ORDERLINE_005      bufferpool ORDERLINE_003;
alter tablespace  TS_ORDERLINE_006      bufferpool ORDERLINE_003;
alter tablespace  TS_NEWORDA_003        bufferpool NEWORDER_003;
alter tablespace  TS_NEWORDB_003        bufferpool NEWORDER_003;
alter tablespace  TS_STOCK_007                  bufferpool STOCK_003;
alter tablespace  TS_STOCK_008                  bufferpool STOCK_003;
alter tablespace  TS_STOCK_009                  bufferpool STOCK_003;

alter tablespace  TS_WAREHOUSE_004      bufferpool WD_004;
alter tablespace  TS_DISTRICT_004       bufferpool WD_004;
alter tablespace  TS_CUSTOMER_010       bufferpool CUSTOMER_004;
alter tablespace  TS_CUSTOMER_011       bufferpool CUSTOMER_004;
alter tablespace  TS_CUSTOMER_012       bufferpool CUSTOMER_004;
alter tablespace  IS_CUSTOMER_004       bufferpool IDX_CUSTOMER_004;
alter tablespace  TS_HISTORY_004        bufferpool HISTORY_004;
alter tablespace  TS_ORDER_004                  bufferpool ORDER_004;
alter tablespace  IS_ORDER_004                  bufferpool IDX_ORDER_004;
alter tablespace  TS_ORDERLINE_007      bufferpool ORDERLINE_004;
alter tablespace  TS_ORDERLINE_008      bufferpool ORDERLINE_004;
alter tablespace  TS_NEWORDA_004        bufferpool NEWORDER_004;
alter tablespace  TS_NEWORDB_004        bufferpool NEWORDER_004;
alter tablespace  TS_STOCK_010                  bufferpool STOCK_004;
alter tablespace  TS_STOCK_011                  bufferpool STOCK_004;
alter tablespace  TS_STOCK_012                  bufferpool STOCK_004;


connect reset;
```

alter_bufferpool_numa.ddl

```
connect to tpcc;
alter bufferpool I_001                          deferred size 2600  ;
alter bufferpool WD_001                         deferred size 1800  ;
alter bufferpool CUSTOMER_001                   deferred size 110000        ;
alter bufferpool IDX_CUSTOMER_001       deferred size 132500          ;
alter bufferpool HISTORY_001            deferred size 200   ;
alter bufferpool ORDER_001              deferred size 65000 ;
alter bufferpool IDX_ORDER_001                  deferred size 260000        ;
alter bufferpool ORDERLINE_001                  deferred size 190000        ;
alter bufferpool NEWORDER_001                   deferred size 120000        ;
alter bufferpool STOCK_001              deferred size 6150000         ;

alter bufferpool WD_002                         deferred size 1800  ;
alter bufferpool CUSTOMER_002                   deferred size 110000        ;
alter bufferpool IDX_CUSTOMER_002       deferred size 132500          ;
alter bufferpool HISTORY_002            deferred size 200   ;
alter bufferpool ORDER_002              deferred size 65000 ;
alter bufferpool IDX_ORDER_002                  deferred size 260000        ;
alter bufferpool ORDERLINE_002                  deferred size 190000        ;
alter bufferpool NEWORDER_002                   deferred size 120000        ;
alter bufferpool STOCK_002              deferred size 6150000         ;

alter bufferpool WD_003                         deferred size 1800  ;
alter bufferpool CUSTOMER_003                   deferred size 110000        ;
alter bufferpool IDX_CUSTOMER_003       deferred size 132500          ;
alter bufferpool HISTORY_003            deferred size 200   ;
alter bufferpool ORDER_003              deferred size 65000 ;
alter bufferpool IDX_ORDER_003                  deferred size 260000        ;
alter bufferpool ORDERLINE_003                  deferred size 190000        ;
alter bufferpool NEWORDER_003                   deferred size 120000        ;
alter bufferpool STOCK_003              deferred size 6150000         ;

alter bufferpool WD_004                         deferred size 1800  ;
alter bufferpool CUSTOMER_004                   deferred size 110000        ;
alter bufferpool IDX_CUSTOMER_004       deferred size 132500          ;
alter bufferpool HISTORY_004            deferred size 200   ;
alter bufferpool ORDER_004              deferred size 65000 ;
alter bufferpool IDX_ORDER_004                  deferred size 260000        ;
alter bufferpool ORDERLINE_004                  deferred size 190000        ;
alter bufferpool NEWORDER_004                   deferred size 120000        ;
alter bufferpool STOCK_004              deferred size 6150000         ;

connect reset;
```

create_database.ddl

```
-------------------------------------------------------------------------------
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-- License Agreement for Non-Warranted Sample Code.
--
-- (C) COPYRIGHT International Business Machines Corp. 1996 - 2002
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--
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-- disclosure restricted by GSA ADP Schedule Contract with IBM Corp.
-------------------------------------------------------------------------------

drop database tpcc;
create database tpcc collate using identity;
```

create_tablespace.ddl

```
connect to tpcc;
drop bufferpool IBM8KBP;
create bufferpool IBM8KBP size 40000 pagesize 8K;
drop bufferpool IBM16KBP;
create bufferpool IBM16KBP size 20000 pagesize 16K;

drop tablespace ts_warehouse_001;
create regular tablespace ts_warehouse_001 pagesize 4K
          managed by database using ( device 'C:\DEV\warehouse_1' 15360K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_warehouse_002;
```

```
create regular tablespace ts_warehouse_002 pagesize 4K
          managed by database using ( device 'C:\DEV\warehouse_2' 15360K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_warehouse_003;
create regular tablespace ts_warehouse_003 pagesize 4K
          managed by database using ( device 'C:\DEV\warehouse_3' 15360K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_warehouse_004;
create regular tablespace ts_warehouse_004 pagesize 4K
          managed by database using ( device 'C:\DEV\warehouse_4' 15360K)
          extentsize 256
          prefetchsize 512;


drop tablespace ts_district_001;
create regular tablespace ts_district_001 pagesize 4K
          managed by database using ( device 'C:\DEV\district_1' 15360K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_district_002;
create regular tablespace ts_district_002 pagesize 4K
          managed by database using ( device 'C:\DEV\district_2' 15360K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_district_003;
create regular tablespace ts_district_003 pagesize 4K
          managed by database using ( device 'C:\DEV\district_3' 15360K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_district_004;
create regular tablespace ts_district_004 pagesize 4K
          managed by database using ( device 'C:\DEV\district_4' 15360K)
          extentsize 256
          prefetchsize 512;


drop tablespace ts_item_01;
create regular tablespace ts_item_01 pagesize 4K
          managed by database using ( device 'C:\DEV\ITEM_1' 15360K, device
'C:\DEV\ITEM_2' 15360K, device 'C:\DEV\ITEM_3' 15360K, device 'C:\DEV\ITEM_4'
15360K)
          extentsize 256
          prefetchsize 512;

drop tablespace ts_stock_001;
create regular tablespace ts_stock_001 pagesize 4K
           managed by database using ( device 'C:\DEV\STOCK_1' 61432528K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_stock_002;
create regular tablespace ts_stock_002 pagesize 4K
           managed by database using ( device 'C:\DEV\STOCK_2' 61432528K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_stock_003;
create regular tablespace ts_stock_003 pagesize 4K
           managed by database using ( device 'C:\DEV\STOCK_3' 61432528K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_stock_004;
create regular tablespace ts_stock_004 pagesize 4K
           managed by database using ( device 'C:\DEV\STOCK_4' 61432528K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_stock_005;
create regular tablespace ts_stock_005 pagesize 4K
           managed by database using ( device 'C:\DEV\STOCK_5' 61432528K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_stock_006;
create regular tablespace ts_stock_006 pagesize 4K
           managed by database using ( device 'C:\DEV\STOCK_6' 61432528K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_stock_007;
create regular tablespace ts_stock_007 pagesize 4K
           managed by database using ( device 'C:\DEV\STOCK_7' 61432528K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_stock_008;
create regular tablespace ts_stock_008 pagesize 4K
           managed by database using ( device 'C:\DEV\STOCK_8' 61432528K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_stock_009;
create regular tablespace ts_stock_009 pagesize 4K
           managed by database using ( device 'C:\DEV\STOCK_9' 61432528K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_stock_010;
create regular tablespace ts_stock_010 pagesize 4K
           managed by database using ( device 'C:\DEV\STOCK_10' 61432528K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_stock_011;
create regular tablespace ts_stock_011 pagesize 4K
           managed by database using ( device 'C:\DEV\STOCK_11' 61432528K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_stock_012;
create regular tablespace ts_stock_012 pagesize 4K
           managed by database using ( device 'C:\DEV\STOCK_12' 61432528K)
          extentsize 256
          prefetchsize 512;


drop tablespace ts_customer_001;
create regular tablespace ts_customer_001 pagesize 4K
           managed by database using ( device 'C:\DEV\customer_1' 40957684K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_customer_002;
create regular tablespace ts_customer_002 pagesize 4K
           managed by database using ( device 'C:\DEV\customer_2' 40957684K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_customer_003;
create regular tablespace ts_customer_003 pagesize 4K
           managed by database using ( device 'C:\DEV\customer_3' 40957684K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_customer_004;
create regular tablespace ts_customer_004 pagesize 4K
           managed by database using ( device 'C:\DEV\customer_4' 40957684K)
```

```
          extentsize 256
          prefetchsize 512;
drop tablespace ts_customer_005;
create regular tablespace ts_customer_005 pagesize 4K
           managed by database using ( device 'C:\DEV\customer_5' 40957684K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_customer_006;
create regular tablespace ts_customer_006 pagesize 4K
           managed by database using ( device 'C:\DEV\customer_6' 40957684K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_customer_007;
create regular tablespace ts_customer_007 pagesize 4K
           managed by database using ( device 'C:\DEV\customer_7' 40957684K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_customer_008;
create regular tablespace ts_customer_008 pagesize 4K
           managed by database using ( device 'C:\DEV\customer_8' 40957684K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_customer_009;
create regular tablespace ts_customer_009 pagesize 4K
           managed by database using ( device 'C:\DEV\customer_9' 40957684K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_customer_010;
create regular tablespace ts_customer_010 pagesize 4K
           managed by database using ( device 'C:\DEV\customer_10' 40957684K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_customer_011;
create regular tablespace ts_customer_011 pagesize 4K
           managed by database using ( device 'C:\DEV\customer_11' 40957684K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_customer_012;
create regular tablespace ts_customer_012 pagesize 4K
           managed by database using ( device 'C:\DEV\customer_12' 40957684K)
          extentsize 256
          prefetchsize 512;

drop tablespace is_customer_001;
create regular tablespace is_customer_001 pagesize 8K
           managed by database using ( device 'C:\DEV\IDX_CUSTOMER_1' 8185084K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;
drop tablespace is_customer_002;
create regular tablespace is_customer_002 pagesize 8K
           managed by database using ( device 'C:\DEV\IDX_CUSTOMER_2' 8185084K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;
drop tablespace is_customer_003;
create regular tablespace is_customer_003 pagesize 8K
           managed by database using ( device 'C:\DEV\IDX_CUSTOMER_3' 8185084K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;
drop tablespace is_customer_004;
create regular tablespace is_customer_004 pagesize 8K
           managed by database using ( device 'C:\DEV\IDX_CUSTOMER_4' 8185084K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;

drop tablespace ts_history_001;
create regular tablespace ts_history_001 pagesize 16K
           managed by database using ( device 'C:\DEV\HISTORY_1' 13301788K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM16KBP;
drop tablespace ts_history_002;
create regular tablespace ts_history_002 pagesize 16K
           managed by database using ( device 'C:\DEV\HISTORY_2' 13301788K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM16KBP;
drop tablespace ts_history_003;
create regular tablespace ts_history_003 pagesize 16K
           managed by database using ( device 'C:\DEV\HISTORY_3' 13301788K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM16KBP;
drop tablespace ts_history_004;
create regular tablespace ts_history_004 pagesize 16K
           managed by database using ( device 'C:\DEV\HISTORY_4' 13301788K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM16KBP;

drop tablespace ts_order_001;
create regular tablespace ts_order_001 pagesize 8K
           managed by database using ( device 'C:\DEV\ORDER_1' 7164956K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;
drop tablespace ts_order_002;
create regular tablespace ts_order_002 pagesize 8K
           managed by database using ( device 'C:\DEV\ORDER_2' 7164956K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;
drop tablespace ts_order_003;
create regular tablespace ts_order_003 pagesize 8K
           managed by database using ( device 'C:\DEV\ORDER_3' 7164956K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;
drop tablespace ts_order_004;
create regular tablespace ts_order_004 pagesize 8K
           managed by database using ( device 'C:\DEV\ORDER_4' 7164956K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;

drop tablespace is_order_001;
create regular tablespace is_order_001 pagesize 8K
           managed by database using ( device 'C:\DEV\IDX_ORDER_1' 6136796K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;
drop tablespace is_order_002;
create regular tablespace is_order_002 pagesize 8K
```

```
          managed by database using ( device 'C:\DEV\IDX_ORDER_2' 6136796K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;
drop tablespace is_order_003;
create regular tablespace is_order_003 pagesize 8K
          managed by database using ( device 'C:\DEV\IDX_ORDER_3' 6136796K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;
drop tablespace is_order_004;
create regular tablespace is_order_004 pagesize 8K
          managed by database using ( device 'C:\DEV\IDX_ORDER_4' 6136796K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;

drop tablespace ts_orderline_001;
create regular tablespace ts_orderline_001 pagesize 8K
          managed by database using ( device 'C:\DEV\ORDERLINE_1' 92156840K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;
drop tablespace ts_orderline_002;
create regular tablespace ts_orderline_002 pagesize 8K
          managed by database using ( device 'C:\DEV\ORDERLINE_2' 92156840K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;
drop tablespace ts_orderline_003;
create regular tablespace ts_orderline_003 pagesize 8K
          managed by database using ( device 'C:\DEV\ORDERLINE_3' 92156840K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;
drop tablespace ts_orderline_004;
create regular tablespace ts_orderline_004 pagesize 8K
          managed by database using ( device 'C:\DEV\ORDERLINE_4' 92156840K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;
drop tablespace ts_orderline_005;
create regular tablespace ts_orderline_005 pagesize 8K
          managed by database using ( device 'C:\DEV\ORDERLINE_5' 92156840K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;
drop tablespace ts_orderline_006;
create regular tablespace ts_orderline_006 pagesize 8K
          managed by database using ( device 'C:\DEV\ORDERLINE_6' 92156840K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;
drop tablespace ts_orderline_007;
create regular tablespace ts_orderline_007 pagesize 8K
          managed by database using ( device 'C:\DEV\ORDERLINE_7' 92156840K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;
drop tablespace ts_orderline_008;
create regular tablespace ts_orderline_008 pagesize 8K
          managed by database using ( device 'C:\DEV\ORDERLINE_8' 92156840K)
          extentsize 256
          prefetchsize 512
          bufferpool IBM8KBP;

drop tablespace ts_neworda_001;
create regular tablespace ts_neworda_001 pagesize 4K
          managed by database using ( device 'C:\DEV\NEWORDERA_1' 2040220K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_neworda_002;
create regular tablespace ts_neworda_002 pagesize 4K
          managed by database using ( device 'C:\DEV\NEWORDERA_2' 2040220K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_neworda_003;
create regular tablespace ts_neworda_003 pagesize 4K
          managed by database using ( device 'C:\DEV\NEWORDERA_3' 2040220K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_neworda_004;
create regular tablespace ts_neworda_004 pagesize 4K
          managed by database using ( device 'C:\DEV\NEWORDERA_4' 2040220K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_newordb_001;
create regular tablespace ts_newordb_001 pagesize 4K
          managed by database using ( device 'C:\DEV\NEWORDERB_1' 2040220K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_newordb_002;
create regular tablespace ts_newordb_002 pagesize 4K
          managed by database using ( device 'C:\DEV\NEWORDERB_2' 2040220K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_newordb_003;
create regular tablespace ts_newordb_003 pagesize 4K
          managed by database using ( device 'C:\DEV\NEWORDERB_3' 2040220K)
          extentsize 256
          prefetchsize 512;
drop tablespace ts_newordb_004;
create regular tablespace ts_newordb_004 pagesize 4K
          managed by database using ( device 'C:\DEV\NEWORDERB_4' 2040220K)
          extentsize 256
          prefetchsize 512;



commit;
connect reset;
```

CRIDX_CUST_IDXB1.ddl

```
connect to TPCC in share mode;
DROP INDEX CUST_IDXB1;
CREATE INDEX CUST_IDXB1
                        ON CUSTOMER1(C_LAST, C_W_ID, C_D_ID, C_FIRST, C_ID)
PCTFREE 0;
connect reset;
```

CRIDX_CUST_IDXB2.ddl

```
connect to TPCC in share mode;
```

```
DROP INDEX CUST_IDXB2;
CREATE INDEX CUST_IDXB2
                        ON CUSTOMER2(C_LAST, C_W_ID, C_D_ID, C_FIRST, C_ID)
PCTFREE 0;
connect reset;
```

CRIDX_CUST_IDXB3.ddl

```
connect to TPCC in share mode;
DROP INDEX CUST_IDXB3;
CREATE INDEX CUST_IDXB3
                        ON CUSTOMER3(C_LAST, C_W_ID, C_D_ID, C_FIRST, C_ID)
PCTFREE 0;
connect reset;
```

CRIDX_CUST_IDXB4.ddl

```
connect to TPCC in share mode;
DROP INDEX CUST_IDXB4;
CREATE INDEX CUST_IDXB4
                        ON CUSTOMER4(C_LAST, C_W_ID, C_D_ID, C_FIRST, C_ID)
PCTFREE 0;
connect reset;
```

CRIDX_CUST_IDXB5.ddl

```
connect to TPCC in share mode;
DROP INDEX CUST_IDXB5;
CREATE INDEX CUST_IDXB5
                        ON CUSTOMER5(C_LAST, C_W_ID, C_D_ID, C_FIRST, C_ID)
PCTFREE 0;
connect reset;
```

CRIDX_CUST_IDXB6.ddl

```
connect to TPCC in share mode;
DROP INDEX CUST_IDXB6;
CREATE INDEX CUST_IDXB6
                        ON CUSTOMER6(C_LAST, C_W_ID, C_D_ID, C_FIRST, C_ID)
PCTFREE 0;
connect reset;
```

CRIDX_CUST_IDXB7.ddl

```
connect to TPCC in share mode;
DROP INDEX CUST_IDXB7;
CREATE INDEX CUST_IDXB7
                        ON CUSTOMER7(C_LAST, C_W_ID, C_D_ID, C_FIRST, C_ID)
PCTFREE 0;
connect reset;
```

CRIDX_CUST_IDXB8.ddl

```
connect to TPCC in share mode;
DROP INDEX CUST_IDXB8;
CREATE INDEX CUST_IDXB8
                        ON CUSTOMER8(C_LAST, C_W_ID, C_D_ID, C_FIRST, C_ID)
PCTFREE 0;
connect reset;
```

CRIDX_ORDR_IDXB1.ddl

```
connect to TPCC in share mode;
DROP INDEX ORDR_IDXB1;
CREATE INDEX ORDR_IDXB1
                        ON ORDERS1(O_C_ID, O_W_ID, O_D_ID, O_ID DESC) PCTFREE 20
LEVEL2 PCTFREE 20;
connect reset;
```

CRIDX_ORDR_IDXB2.ddl

```
connect to TPCC in share mode;
DROP INDEX ORDR_IDXB2;
CREATE INDEX ORDR_IDXB2
                        ON ORDERS2(O_C_ID, O_W_ID, O_D_ID, O_ID DESC) PCTFREE 20
LEVEL2 PCTFREE 20;
connect reset;
```

CRIDX_ORDR_IDXB3.ddl

```
connect to TPCC in share mode;
DROP INDEX ORDR_IDXB3;
CREATE INDEX ORDR_IDXB3
                        ON ORDERS3(O_C_ID, O_W_ID, O_D_ID, O_ID DESC) PCTFREE 20
LEVEL2 PCTFREE 20;
connect reset;
```

CRIDX_ORDR_IDXB4.ddl

```
connect to TPCC in share mode;
DROP INDEX ORDR_IDXB4;
CREATE INDEX ORDR_IDXB4
                        ON ORDERS4(O_C_ID, O_W_ID, O_D_ID, O_ID DESC) PCTFREE 20
LEVEL2 PCTFREE 20;
connect reset;
```

CRTB_CUSTOMER1.ddl

```
connect to TPCC in share mode;
DROP TABLE CUSTOMER1;
CREATE TABLE CUSTOMER1
                  (
                   C_ID            INTEGER       NOT NULL,
                   C_STATE         CHAR(2)       NOT NULL,
                   C_ZIP           CHAR(9)       NOT NULL,
                   C_PHONE         CHAR(16)      NOT NULL,
                   C_SINCE         BIGINT        NOT NULL,
                   C_CREDIT_LIM    BIGINT        NOT NULL,
                   C_MIDDLE        CHAR(2)       NOT NULL,
                   C_CREDIT        CHAR(2)       NOT NULL,
                   C_DISCOUNT      INTEGER       NOT NULL,
                   C_DATA          VARCHAR(500)  NOT NULL,
                   C_LAST          VARCHAR(16)   NOT NULL,
```

```
                 C_FIRST         VARCHAR(16)   NOT NULL,
                 C_STREET_1      VARCHAR(20)   NOT NULL,
                 C_STREET_2      VARCHAR(20)   NOT NULL,
                 C_CITY          VARCHAR(20)   NOT NULL,
                 C_D_ID          SMALLINT      NOT NULL,
                 C_W_ID          INTEGER       NOT NULL,
                 C_DELIVERY_CNT  INTEGER       NOT NULL,
                 C_BALANCE       BIGINT        NOT NULL,
                 C_YTD_PAYMENT   BIGINT        NOT NULL,
                 C_PAYMENT_CNT   INTEGER       NOT NULL
                )
                IN ts_customer_001
                INDEX IN is_customer_001
                ORGANIZE BY KEY SEQUENCE (
                 C_ID STARTING FROM 1 ENDING AT 3000,
                 C_W_ID STARTING FROM 1 ENDING AT 1600,
                 C_D_ID STARTING FROM 1 ENDING AT 10
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_CUSTOMER2.ddl

```
connect to TPCC in share mode;
DROP TABLE CUSTOMER2;
CREATE TABLE CUSTOMER2
                (
                 C_ID            INTEGER       NOT NULL,
                 C_STATE         CHAR(2)       NOT NULL,
                 C_ZIP           CHAR(9)       NOT NULL,
                 C_PHONE         CHAR(16)      NOT NULL,
                 C_SINCE         BIGINT        NOT NULL,
                 C_CREDIT_LIM    BIGINT        NOT NULL,
                 C_MIDDLE        CHAR(2)       NOT NULL,
                 C_CREDIT        CHAR(2)       NOT NULL,
                 C_DISCOUNT      INTEGER       NOT NULL,
                 C_DATA          VARCHAR(500)  NOT NULL,
                 C_LAST          VARCHAR(16)   NOT NULL,
                 C_FIRST         VARCHAR(16)   NOT NULL,
                 C_STREET_1      VARCHAR(20)   NOT NULL,
                 C_STREET_2      VARCHAR(20)   NOT NULL,
                 C_CITY          VARCHAR(20)   NOT NULL,
                 C_D_ID          SMALLINT      NOT NULL,
                 C_W_ID          INTEGER       NOT NULL,
                 C_DELIVERY_CNT  INTEGER       NOT NULL,
                 C_BALANCE       BIGINT        NOT NULL,
                 C_YTD_PAYMENT   BIGINT        NOT NULL,
                 C_PAYMENT_CNT   INTEGER       NOT NULL
                )
                IN ts_customer_002
                INDEX IN is_customer_002
                ORGANIZE BY KEY SEQUENCE (
                 C_ID STARTING FROM 1 ENDING AT 3000,
                 C_W_ID STARTING FROM 1601 ENDING AT 3200,
                 C_D_ID STARTING FROM 1 ENDING AT 10
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_CUSTOMER3.ddl

```
connect to TPCC in share mode;
DROP TABLE CUSTOMER3;
CREATE TABLE CUSTOMER3
                (
                 C_ID            INTEGER       NOT NULL,
                 C_STATE         CHAR(2)       NOT NULL,
                 C_ZIP           CHAR(9)       NOT NULL,
                 C_PHONE         CHAR(16)      NOT NULL,
                 C_SINCE         BIGINT        NOT NULL,
                 C_CREDIT_LIM    BIGINT        NOT NULL,
                 C_MIDDLE        CHAR(2)       NOT NULL,
                 C_CREDIT        CHAR(2)       NOT NULL,
                 C_DISCOUNT      INTEGER       NOT NULL,
                 C_DATA          VARCHAR(500)  NOT NULL,
                 C_LAST          VARCHAR(16)   NOT NULL,
                 C_FIRST         VARCHAR(16)   NOT NULL,
                 C_STREET_1      VARCHAR(20)   NOT NULL,
                 C_STREET_2      VARCHAR(20)   NOT NULL,
                 C_CITY          VARCHAR(20)   NOT NULL,
                 C_D_ID          SMALLINT      NOT NULL,
                 C_W_ID          INTEGER       NOT NULL,
                 C_DELIVERY_CNT  INTEGER       NOT NULL,
                 C_BALANCE       BIGINT        NOT NULL,
                 C_YTD_PAYMENT   BIGINT        NOT NULL,
                 C_PAYMENT_CNT   INTEGER       NOT NULL
                )
                IN ts_customer_003
                INDEX IN is_customer_003
                ORGANIZE BY KEY SEQUENCE (
                 C_ID STARTING FROM 1 ENDING AT 3000,
                 C_W_ID STARTING FROM 3201 ENDING AT 4800,
                 C_D_ID STARTING FROM 1 ENDING AT 10
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_CUSTOMER4.ddl

```
connect to TPCC in share mode;
DROP TABLE CUSTOMER4;
CREATE TABLE CUSTOMER4
                (
                 C_ID            INTEGER       NOT NULL,
                 C_STATE         CHAR(2)       NOT NULL,
                 C_ZIP           CHAR(9)       NOT NULL,
                 C_PHONE         CHAR(16)      NOT NULL,
                 C_SINCE         BIGINT        NOT NULL,
                 C_CREDIT_LIM    BIGINT        NOT NULL,
                 C_MIDDLE        CHAR(2)       NOT NULL,
                 C_CREDIT        CHAR(2)       NOT NULL,
                 C_DISCOUNT      INTEGER       NOT NULL,
                 C_DATA          VARCHAR(500)  NOT NULL,
                 C_LAST          VARCHAR(16)   NOT NULL,
                 C_FIRST         VARCHAR(16)   NOT NULL,
                 C_STREET_1      VARCHAR(20)   NOT NULL,
                 C_STREET_2      VARCHAR(20)   NOT NULL,
                 C_CITY          VARCHAR(20)   NOT NULL,
                 C_D_ID          SMALLINT      NOT NULL,
                 C_W_ID          INTEGER       NOT NULL,
                 C_DELIVERY_CNT  INTEGER       NOT NULL,
                 C_BALANCE       BIGINT        NOT NULL,
                 C_YTD_PAYMENT   BIGINT        NOT NULL,
```

```
                 C_PAYMENT_CNT   INTEGER       NOT NULL
                )
                IN ts_customer_004
                INDEX IN is_customer_004
                ORGANIZE BY KEY SEQUENCE (
                 C_ID STARTING FROM 1 ENDING AT 3000,
                 C_W_ID STARTING FROM 4801 ENDING AT 6400,
                 C_D_ID STARTING FROM 1 ENDING AT 10
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_CUSTOMER5.ddl

```
connect to TPCC in share mode;
DROP TABLE CUSTOMER5;
CREATE TABLE CUSTOMER5
                (
                 C_ID            INTEGER       NOT NULL,
                 C_STATE         CHAR(2)       NOT NULL,
                 C_ZIP           CHAR(9)       NOT NULL,
                 C_PHONE         CHAR(16)      NOT NULL,
                 C_SINCE         BIGINT        NOT NULL,
                 C_CREDIT_LIM    BIGINT        NOT NULL,
                 C_MIDDLE        CHAR(2)       NOT NULL,
                 C_CREDIT        CHAR(2)       NOT NULL,
                 C_DISCOUNT      INTEGER       NOT NULL,
                 C_DATA          VARCHAR(500)  NOT NULL,
                 C_LAST          VARCHAR(16)   NOT NULL,
                 C_FIRST         VARCHAR(16)   NOT NULL,
                 C_STREET_1      VARCHAR(20)   NOT NULL,
                 C_STREET_2      VARCHAR(20)   NOT NULL,
                 C_CITY          VARCHAR(20)   NOT NULL,
                 C_D_ID          SMALLINT      NOT NULL,
                 C_W_ID          INTEGER       NOT NULL,
                 C_DELIVERY_CNT  INTEGER       NOT NULL,
                 C_BALANCE       BIGINT        NOT NULL,
                 C_YTD_PAYMENT   BIGINT        NOT NULL,
                 C_PAYMENT_CNT   INTEGER       NOT NULL
                )
                IN ts_customer_005
                INDEX IN is_customer_001
                ORGANIZE BY KEY SEQUENCE (
                 C_ID STARTING FROM 1 ENDING AT 3000,
                 C_W_ID STARTING FROM 6401 ENDING AT 8000,
                 C_D_ID STARTING FROM 1 ENDING AT 10
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_CUSTOMER6.ddl

```
connect to TPCC in share mode;
DROP TABLE CUSTOMER6;
CREATE TABLE CUSTOMER6
                (
                 C_ID            INTEGER       NOT NULL,
                 C_STATE         CHAR(2)       NOT NULL,
                 C_ZIP           CHAR(9)       NOT NULL,
                 C_PHONE         CHAR(16)      NOT NULL,
                 C_SINCE         BIGINT        NOT NULL,
                 C_CREDIT_LIM    BIGINT        NOT NULL,
                 C_MIDDLE        CHAR(2)       NOT NULL,
                 C_CREDIT        CHAR(2)       NOT NULL,
                 C_DISCOUNT      INTEGER       NOT NULL,
                 C_DATA          VARCHAR(500)  NOT NULL,
                 C_LAST          VARCHAR(16)   NOT NULL,
                 C_FIRST         VARCHAR(16)   NOT NULL,
                 C_STREET_1      VARCHAR(20)   NOT NULL,
                 C_STREET_2      VARCHAR(20)   NOT NULL,
                 C_CITY          VARCHAR(20)   NOT NULL,
                 C_D_ID          SMALLINT      NOT NULL,
                 C_W_ID          INTEGER       NOT NULL,
                 C_DELIVERY_CNT  INTEGER       NOT NULL,
                 C_BALANCE       BIGINT        NOT NULL,
                 C_YTD_PAYMENT   BIGINT        NOT NULL,
                 C_PAYMENT_CNT   INTEGER       NOT NULL
                )
                IN ts_customer_006
                INDEX IN is_customer_002
                ORGANIZE BY KEY SEQUENCE (
                 C_ID STARTING FROM 1 ENDING AT 3000,
                 C_W_ID STARTING FROM 8001 ENDING AT 9600,
                 C_D_ID STARTING FROM 1 ENDING AT 10
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_CUSTOMER7.ddl

```
connect to TPCC in share mode;
DROP TABLE CUSTOMER7;
CREATE TABLE CUSTOMER7
                (
                 C_ID            INTEGER       NOT NULL,
                 C_STATE         CHAR(2)       NOT NULL,
                 C_ZIP           CHAR(9)       NOT NULL,
                 C_PHONE         CHAR(16)      NOT NULL,
                 C_SINCE         BIGINT        NOT NULL,
                 C_CREDIT_LIM    BIGINT        NOT NULL,
                 C_MIDDLE        CHAR(2)       NOT NULL,
                 C_CREDIT        CHAR(2)       NOT NULL,
                 C_DISCOUNT      INTEGER       NOT NULL,
                 C_DATA          VARCHAR(500)  NOT NULL,
                 C_LAST          VARCHAR(16)   NOT NULL,
                 C_FIRST         VARCHAR(16)   NOT NULL,
                 C_STREET_1      VARCHAR(20)   NOT NULL,
                 C_STREET_2      VARCHAR(20)   NOT NULL,
                 C_CITY          VARCHAR(20)   NOT NULL,
                 C_D_ID          SMALLINT      NOT NULL,
                 C_W_ID          INTEGER       NOT NULL,
                 C_DELIVERY_CNT  INTEGER       NOT NULL,
                 C_BALANCE       BIGINT        NOT NULL,
                 C_YTD_PAYMENT   BIGINT        NOT NULL,
                 C_PAYMENT_CNT   INTEGER       NOT NULL
                )
                IN ts_customer_007
                INDEX IN is_customer_003
                ORGANIZE BY KEY SEQUENCE (
                 C_ID STARTING FROM 1 ENDING AT 3000,
                 C_W_ID STARTING FROM 9601 ENDING AT 11200,
                 C_D_ID STARTING FROM 1 ENDING AT 10
                )
```

```
                ALLOW OVERFLOW;
connect reset;
```

CRTB_CUSTOMER8.ddl

```
connect to TPCC in share mode;
DROP TABLE CUSTOMER8;
CREATE TABLE CUSTOMER8
                (
                 C_ID            INTEGER       NOT NULL,
                 C_STATE         CHAR(2)       NOT NULL,
                 C_ZIP           CHAR(9)       NOT NULL,
                 C_PHONE         CHAR(16)      NOT NULL,
                 C_SINCE         BIGINT        NOT NULL,
                 C_CREDIT_LIM    BIGINT        NOT NULL,
                 C_MIDDLE        CHAR(2)       NOT NULL,
                 C_CREDIT        CHAR(2)       NOT NULL,
                 C_DISCOUNT      INTEGER       NOT NULL,
                 C_DATA          VARCHAR(500)  NOT NULL,
                 C_LAST          VARCHAR(16)   NOT NULL,
                 C_FIRST         VARCHAR(16)   NOT NULL,
                 C_STREET_1      VARCHAR(20)   NOT NULL,
                 C_STREET_2      VARCHAR(20)   NOT NULL,
                 C_CITY          VARCHAR(20)   NOT NULL,
                 C_D_ID          SMALLINT      NOT NULL,
                 C_W_ID          INTEGER       NOT NULL,
                 C_DELIVERY_CNT  INTEGER       NOT NULL,
                 C_BALANCE       BIGINT        NOT NULL,
                 C_YTD_PAYMENT   BIGINT        NOT NULL,
                 C_PAYMENT_CNT   INTEGER       NOT NULL
                )
                IN ts_customer_008
                INDEX IN is_customer_004
                ORGANIZE BY KEY SEQUENCE (
                 C_ID STARTING FROM 1 ENDING AT 3000,
                 C_W_ID STARTING FROM 11201 ENDING AT 12800,
                 C_D_ID STARTING FROM 1 ENDING AT 10
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_DISTRICT1.ddl

```
connect to TPCC in share mode;
DROP TABLE DISTRICT1;
CREATE TABLE DISTRICT1
                (
                 D_NEXT_O_ID INTEGER         NOT NULL,
                 D_TAX       INTEGER         NOT NULL,
                 D_YTD       BIGINT          NOT NULL,
                 D_NAME      CHAR(10)        NOT NULL,
                 D_STREET_1  CHAR(20)        NOT NULL,
                 D_STREET_2  CHAR(20)        NOT NULL,
                 D_CITY      CHAR(20)        NOT NULL,
                 D_STATE     CHAR(2)         NOT NULL,
                 D_ZIP       CHAR(9)         NOT NULL,
                 D_ID        SMALLINT        NOT NULL,
                 D_W_ID      INTEGER         NOT NULL
                )
                IN ts_district_001
                INDEX IN ts_district_001
                ORGANIZE BY KEY SEQUENCE (
                 D_ID STARTING FROM 1 ENDING AT 10,
                 D_W_ID STARTING FROM 1 ENDING AT 4800
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_DISTRICT2.ddl

```
connect to TPCC in share mode;
DROP TABLE DISTRICT2;
CREATE TABLE DISTRICT2
                (
                 D_NEXT_O_ID INTEGER         NOT NULL,
                 D_TAX       INTEGER         NOT NULL,
                 D_YTD       BIGINT          NOT NULL,
                 D_NAME      CHAR(10)        NOT NULL,
                 D_STREET_1  CHAR(20)        NOT NULL,
                 D_STREET_2  CHAR(20)        NOT NULL,
                 D_CITY      CHAR(20)        NOT NULL,
                 D_STATE     CHAR(2)         NOT NULL,
                 D_ZIP       CHAR(9)         NOT NULL,
                 D_ID        SMALLINT        NOT NULL,
                 D_W_ID      INTEGER         NOT NULL
                )
                IN ts_district_002
                INDEX IN ts_district_002
                ORGANIZE BY KEY SEQUENCE (
                 D_ID STARTING FROM 1 ENDING AT 10,
                 D_W_ID STARTING FROM 4801 ENDING AT 9600
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_DISTRICT3.ddl

```
connect to TPCC in share mode;
DROP TABLE DISTRICT3;
CREATE TABLE DISTRICT3
                (
                 D_NEXT_O_ID INTEGER         NOT NULL,
                 D_TAX       INTEGER         NOT NULL,
                 D_YTD       BIGINT          NOT NULL,
                 D_NAME      CHAR(10)        NOT NULL,
                 D_STREET_1  CHAR(20)        NOT NULL,
                 D_STREET_2  CHAR(20)        NOT NULL,
                 D_CITY      CHAR(20)        NOT NULL,
                 D_STATE     CHAR(2)         NOT NULL,
                 D_ZIP       CHAR(9)         NOT NULL,
                 D_ID        SMALLINT        NOT NULL,
                 D_W_ID      INTEGER         NOT NULL
                )
                IN ts_district_003
                INDEX IN ts_district_003
                ORGANIZE BY KEY SEQUENCE (
                 D_ID STARTING FROM 1 ENDING AT 10,
                 D_W_ID STARTING FROM 9601 ENDING AT 14400
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_DISTRICT4.ddl

```
connect to TPCC in share mode;
DROP TABLE DISTRICT4;
CREATE TABLE DISTRICT4
                  (
                   D_NEXT_O_ID INTEGER         NOT NULL,
                   D_TAX       INTEGER         NOT NULL,
                   D_YTD       BIGINT          NOT NULL,
                   D_NAME      CHAR(10)        NOT NULL,
                   D_STREET_1  CHAR(20)        NOT NULL,
                   D_STREET_2  CHAR(20)        NOT NULL,
                   D_CITY      CHAR(20)        NOT NULL,
                   D_STATE     CHAR(2)         NOT NULL,
                   D_ZIP       CHAR(9)         NOT NULL,
                   D_ID        SMALLINT        NOT NULL,
                   D_W_ID      INTEGER         NOT NULL
                  )
                  IN ts_district_004
                  INDEX IN ts_district_004
                  ORGANIZE BY KEY SEQUENCE (
                   D_ID STARTING FROM 1 ENDING AT 10,
                   D_W_ID STARTING FROM 14401 ENDING AT 19200
                  )
                  ALLOW OVERFLOW;
connect reset;
```

CRTB_HISTORY1.ddl

```
connect to TPCC in share mode;
DROP TABLE HISTORY1;
CREATE TABLE HISTORY1
                  (
                   H_C_ID          INTEGER     NOT NULL,
                   H_C_D_ID        SMALLINT    NOT NULL,
                   H_C_W_ID        INTEGER     NOT NULL,
                   H_D_ID          SMALLINT    NOT NULL,
                   H_W_ID          INTEGER     NOT NULL,
                   H_DATE          BIGINT      NOT NULL,
                   H_AMOUNT        INTEGER     NOT NULL,
                   H_DATA          CHAR(24)    NOT NULL
                  )
                  IN ts_history_001
                  INDEX IN ts_history_001;
ALTER TABLE HISTORY1 APPEND ON;
connect reset;
```

CRTB_HISTORY2.ddl

```
connect to TPCC in share mode;
DROP TABLE HISTORY2;
CREATE TABLE HISTORY2
                  (
                   H_C_ID          INTEGER     NOT NULL,
                   H_C_D_ID        SMALLINT    NOT NULL,
                   H_C_W_ID        INTEGER     NOT NULL,
                   H_D_ID          SMALLINT    NOT NULL,
                   H_W_ID          INTEGER     NOT NULL,
                   H_DATE          BIGINT      NOT NULL,
                   H_AMOUNT        INTEGER     NOT NULL,
                   H_DATA          CHAR(24)    NOT NULL
                  )
                  IN ts_history_002
                  INDEX IN ts_history_002;
ALTER TABLE HISTORY2 APPEND ON;
connect reset;
```

CRTB_HISTORY3.ddl

```
connect to TPCC in share mode;
DROP TABLE HISTORY3;
CREATE TABLE HISTORY3
                  (
                   H_C_ID          INTEGER     NOT NULL,
                   H_C_D_ID        SMALLINT    NOT NULL,
                   H_C_W_ID        INTEGER     NOT NULL,
                   H_D_ID          SMALLINT    NOT NULL,
                   H_W_ID          INTEGER     NOT NULL,
                   H_DATE          BIGINT      NOT NULL,
                   H_AMOUNT        INTEGER     NOT NULL,
                   H_DATA          CHAR(24)    NOT NULL
                  )
                  IN ts_history_003
                  INDEX IN ts_history_003;
ALTER TABLE HISTORY3 APPEND ON;
connect reset;
```

CRTB_HISTORY4.ddl

```
connect to TPCC in share mode;
DROP TABLE HISTORY4;
CREATE TABLE HISTORY4
                  (
                   H_C_ID          INTEGER     NOT NULL,
                   H_C_D_ID        SMALLINT    NOT NULL,
                   H_C_W_ID        INTEGER     NOT NULL,
                   H_D_ID          SMALLINT    NOT NULL,
                   H_W_ID          INTEGER     NOT NULL,
                   H_DATE          BIGINT      NOT NULL,
                   H_AMOUNT        INTEGER     NOT NULL,
                   H_DATA          CHAR(24)    NOT NULL
                  )
                  IN ts_history_004
                  INDEX IN ts_history_004;
ALTER TABLE HISTORY4 APPEND ON;
connect reset;
```

CRTB_ITEM.ddl

```
connect to TPCC in share mode;
DROP TABLE ITEM;
CREATE TABLE ITEM
                  (
                   I_NAME          CHAR(24)    NOT NULL,
                   I_PRICE         INTEGER     NOT NULL,
                   I_DATA          VARCHAR(50) NOT NULL,
                   I_IM_ID         INTEGER     NOT NULL,
                   I_ID            INTEGER     NOT NULL
```

```
                  )
                  IN ts_item_01
                  INDEX IN ts_item_01
                  ORGANIZE BY KEY SEQUENCE (
                   I_ID STARTING FROM 1 ENDING AT 100000
                  )
                  ALLOW OVERFLOW;
ALTER TABLE ITEM LOCKSIZE TABLE;
connect reset;
```

CRTB_NEW_ORDERA1.ddl

```
connect to TPCC in share mode;
DROP TABLE NEW_ORDERA1;
CREATE TABLE NEW_ORDERA1
                  (
                   NO_O_ID         INTEGER     NOT NULL,
                   NO_D_ID         SMALLINT    NOT NULL,
                   NO_W_ID         INTEGER     NOT NULL
                  )
                  IN ts_newordA_001
                  INDEX IN ts_newordA_001
                  ORGANIZE BY KEY SEQUENCE (
                   NO_W_ID STARTING FROM 1 ENDING AT 4800,
                   NO_D_ID STARTING FROM 1 ENDING AT 10,
                   NO_O_ID STARTING FROM 1900 ENDING AT 3605
                  )
                  ALLOW OVERFLOW;
connect reset;
```

CRTB_NEW_ORDERA2.ddl

```
connect to TPCC in share mode;
DROP TABLE NEW_ORDERA2;
CREATE TABLE NEW_ORDERA2
                  (
                   NO_O_ID         INTEGER     NOT NULL,
                   NO_D_ID         SMALLINT    NOT NULL,
                   NO_W_ID         INTEGER     NOT NULL
                  )
                  IN ts_newordA_002
                  INDEX IN ts_newordA_002
                  ORGANIZE BY KEY SEQUENCE (
                   NO_W_ID STARTING FROM 4801 ENDING AT 9600,
                   NO_D_ID STARTING FROM 1 ENDING AT 10,
                   NO_O_ID STARTING FROM 1900 ENDING AT 3605
                  )
                  ALLOW OVERFLOW;
connect reset;
```

CRTB_NEW_ORDERA3.ddl

```
connect to TPCC in share mode;
DROP TABLE NEW_ORDERA3;
CREATE TABLE NEW_ORDERA3
                  (
                   NO_O_ID         INTEGER     NOT NULL,
                   NO_D_ID         SMALLINT    NOT NULL,
                   NO_W_ID         INTEGER     NOT NULL
                  )
                  IN ts_newordA_003
                  INDEX IN ts_newordA_003
                  ORGANIZE BY KEY SEQUENCE (
                   NO_W_ID STARTING FROM 9601 ENDING AT 14400,
                   NO_D_ID STARTING FROM 1 ENDING AT 10,
                   NO_O_ID STARTING FROM 1900 ENDING AT 3605
                  )
                  ALLOW OVERFLOW;
connect reset;
```

CRTB_NEW_ORDERA4.ddl

```
connect to TPCC in share mode;
DROP TABLE NEW_ORDERA4;
CREATE TABLE NEW_ORDERA4
                  (
                   NO_O_ID         INTEGER     NOT NULL,
                   NO_D_ID         SMALLINT    NOT NULL,
                   NO_W_ID         INTEGER     NOT NULL
                  )
                  IN ts_newordA_004
                  INDEX IN ts_newordA_004
                  ORGANIZE BY KEY SEQUENCE (
                   NO_W_ID STARTING FROM 14401 ENDING AT 19200,
                   NO_D_ID STARTING FROM 1 ENDING AT 10,
                   NO_O_ID STARTING FROM 1900 ENDING AT 3605
                  )
                  ALLOW OVERFLOW;
connect reset;
```

CRTB_NEW_ORDERB1.ddl

```
connect to TPCC in share mode;
DROP TABLE NEW_ORDERB1;
CREATE TABLE NEW_ORDERB1
                  (
                   NO_O_ID         INTEGER     NOT NULL,
                   NO_D_ID         SMALLINT    NOT NULL,
                   NO_W_ID         INTEGER     NOT NULL
                  )
                  IN ts_newordB_001
                  INDEX IN ts_newordB_001
                  ORGANIZE BY KEY SEQUENCE (
                   NO_W_ID STARTING FROM 1 ENDING AT 4800,
                   NO_D_ID STARTING FROM 1 ENDING AT 10,
                   NO_O_ID STARTING FROM 3606 ENDING AT 5311
                  )
                  ALLOW OVERFLOW;
connect reset;
```

CRTB_NEW_ORDERB2.ddl

```
connect to TPCC in share mode;
DROP TABLE NEW_ORDERB2;
CREATE TABLE NEW_ORDERB2
                  (
                   NO_O_ID         INTEGER     NOT NULL,
                   NO_D_ID         SMALLINT    NOT NULL,
```

```
                 NO_W_ID         INTEGER     NOT NULL
                )
                IN ts_newordB_002
                INDEX IN ts_newordB_002
                ORGANIZE BY KEY SEQUENCE (
                 NO_W_ID STARTING FROM 4801 ENDING AT 9600,
                 NO_D_ID STARTING FROM 1 ENDING AT 10,
                 NO_O_ID STARTING FROM 3606 ENDING AT 5311
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_NEW_ORDERB3.ddl

```
connect to TPCC in share mode;
DROP TABLE NEW_ORDERB3;
CREATE TABLE NEW_ORDERB3
                (
                 NO_O_ID         INTEGER     NOT NULL,
                 NO_D_ID         SMALLINT    NOT NULL,
                 NO_W_ID         INTEGER     NOT NULL
                )
                IN ts_newordB_003
                INDEX IN ts_newordB_003
                ORGANIZE BY KEY SEQUENCE (
                 NO_W_ID STARTING FROM 9601 ENDING AT 14400,
                 NO_D_ID STARTING FROM 1 ENDING AT 10,
                 NO_O_ID STARTING FROM 3606 ENDING AT 5311
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_NEW_ORDERB4.ddl

```
connect to TPCC in share mode;
DROP TABLE NEW_ORDERB4;
CREATE TABLE NEW_ORDERB4
                (
                 NO_O_ID         INTEGER     NOT NULL,
                 NO_D_ID         SMALLINT    NOT NULL,
                 NO_W_ID         INTEGER     NOT NULL
                )
                IN ts_newordB_004
                INDEX IN ts_newordB_004
                ORGANIZE BY KEY SEQUENCE (
                 NO_W_ID STARTING FROM 14401 ENDING AT 19200,
                 NO_D_ID STARTING FROM 1 ENDING AT 10,
                 NO_O_ID STARTING FROM 3606 ENDING AT 5311
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_ORDERS1.ddl

```
connect to TPCC in share mode;
DROP TABLE ORDERS1;
CREATE TABLE ORDERS1
                (
                 O_C_ID          INTEGER     NOT NULL,
                 O_ENTRY_D       BIGINT      NOT NULL,
                 O_CARRIER_ID    SMALLINT    NOT NULL,
                 O_OL_CNT        SMALLINT    NOT NULL,
                 O_ALL_LOCAL     SMALLINT    NOT NULL,
                 O_ID            INTEGER     NOT NULL,
                 O_W_ID          INTEGER     NOT NULL,
                 O_D_ID          SMALLINT    NOT NULL
                )
                IN ts_order_001
                INDEX IN is_order_001
                ORGANIZE BY KEY SEQUENCE (
                 O_ID STARTING FROM 0 ENDING AT 3605,
                 O_W_ID STARTING FROM 1 ENDING AT 4800,
                 O_D_ID STARTING FROM 1 ENDING AT 10
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_ORDERS2.ddl

```
connect to TPCC in share mode;
DROP TABLE ORDERS2;
CREATE TABLE ORDERS2
                (
                 O_C_ID          INTEGER     NOT NULL,
                 O_ENTRY_D       BIGINT      NOT NULL,
                 O_CARRIER_ID    SMALLINT    NOT NULL,
                 O_OL_CNT        SMALLINT    NOT NULL,
                 O_ALL_LOCAL     SMALLINT    NOT NULL,
                 O_ID            INTEGER     NOT NULL,
                 O_W_ID          INTEGER     NOT NULL,
                 O_D_ID          SMALLINT    NOT NULL
                )
                IN ts_order_002
                INDEX IN is_order_002
                ORGANIZE BY KEY SEQUENCE (
                 O_ID STARTING FROM 0 ENDING AT 3605,
                 O_W_ID STARTING FROM 4801 ENDING AT 9600,
                 O_D_ID STARTING FROM 1 ENDING AT 10
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_ORDERS3.ddl

```
connect to TPCC in share mode;
DROP TABLE ORDERS3;
CREATE TABLE ORDERS3
                (
                 O_C_ID          INTEGER     NOT NULL,
                 O_ENTRY_D       BIGINT      NOT NULL,
                 O_CARRIER_ID    SMALLINT    NOT NULL,
                 O_OL_CNT        SMALLINT    NOT NULL,
                 O_ALL_LOCAL     SMALLINT    NOT NULL,
                 O_ID            INTEGER     NOT NULL,
                 O_W_ID          INTEGER     NOT NULL,
                 O_D_ID          SMALLINT    NOT NULL
                )
                IN ts_order_003
                INDEX IN is_order_003
                ORGANIZE BY KEY SEQUENCE (
```

```
                 O_ID STARTING FROM 0 ENDING AT 3605,
                 O_W_ID STARTING FROM 9601 ENDING AT 14400,
                 O_D_ID STARTING FROM 1 ENDING AT 10
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_ORDERS4.ddl

```
connect to TPCC in share mode;
DROP TABLE ORDERS4;
CREATE TABLE ORDERS4
                (
                 O_C_ID          INTEGER     NOT NULL,
                 O_ENTRY_D       BIGINT      NOT NULL,
                 O_CARRIER_ID    SMALLINT    NOT NULL,
                 O_OL_CNT        SMALLINT    NOT NULL,
                 O_ALL_LOCAL     SMALLINT    NOT NULL,
                 O_ID            INTEGER     NOT NULL,
                 O_W_ID          INTEGER     NOT NULL,
                 O_D_ID          SMALLINT    NOT NULL
                )
                IN ts_order_004
                INDEX IN is_order_004
                ORGANIZE BY KEY SEQUENCE (
                 O_ID STARTING FROM 0 ENDING AT 3605,
                 O_W_ID STARTING FROM 14401 ENDING AT 19200,
                 O_D_ID STARTING FROM 1 ENDING AT 10
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_ORDER_LINE1.ddl

```
connect to TPCC in share mode;
DROP TABLE ORDER_LINE1;
CREATE TABLE ORDER_LINE1
                (
                 OL_DELIVERY_D    BIGINT     NOT NULL,
                 OL_AMOUNT        INTEGER    NOT NULL,
                 OL_I_ID          INTEGER    NOT NULL,
                 OL_SUPPLY_W_ID   INTEGER    NOT NULL,
                 OL_QUANTITY      SMALLINT   NOT NULL,
                 OL_DIST_INFO     CHAR(24)   NOT NULL,
                 OL_O_ID          INTEGER    NOT NULL,
                 OL_D_ID          SMALLINT   NOT NULL,
                 OL_W_ID          INTEGER    NOT NULL,
                 OL_NUMBER        SMALLINT   NOT NULL
                )
                IN ts_orderline_001
                INDEX IN ts_orderline_001
                ORGANIZE BY KEY SEQUENCE (
                 OL_W_ID STARTING FROM 1 ENDING AT 2400,
                 OL_D_ID STARTING FROM 1 ENDING AT 10,
                 OL_O_ID STARTING FROM 0 ENDING AT 3605,
                 OL_NUMBER STARTING FROM 1 ENDING AT 15
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_ORDER_LINE2.ddl

```
connect to TPCC in share mode;
DROP TABLE ORDER_LINE2;
CREATE TABLE ORDER_LINE2
                (
                 OL_DELIVERY_D    BIGINT     NOT NULL,
                 OL_AMOUNT        INTEGER    NOT NULL,
                 OL_I_ID          INTEGER    NOT NULL,
                 OL_SUPPLY_W_ID   INTEGER    NOT NULL,
                 OL_QUANTITY      SMALLINT   NOT NULL,
                 OL_DIST_INFO     CHAR(24)   NOT NULL,
                 OL_O_ID          INTEGER    NOT NULL,
                 OL_D_ID          SMALLINT   NOT NULL,
                 OL_W_ID          INTEGER    NOT NULL,
                 OL_NUMBER        SMALLINT   NOT NULL
                )
                IN ts_orderline_002
                INDEX IN ts_orderline_002
                ORGANIZE BY KEY SEQUENCE (
                 OL_W_ID STARTING FROM 2401 ENDING AT 4800,
                 OL_D_ID STARTING FROM 1 ENDING AT 10,
                 OL_O_ID STARTING FROM 0 ENDING AT 3605,
                 OL_NUMBER STARTING FROM 1 ENDING AT 15
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_ORDER_LINE3.ddl

```
connect to TPCC in share mode;
DROP TABLE ORDER_LINE3;
CREATE TABLE ORDER_LINE3
                (
                 OL_DELIVERY_D    BIGINT     NOT NULL,
                 OL_AMOUNT        INTEGER    NOT NULL,
                 OL_I_ID          INTEGER    NOT NULL,
                 OL_SUPPLY_W_ID   INTEGER    NOT NULL,
                 OL_QUANTITY      SMALLINT   NOT NULL,
                 OL_DIST_INFO     CHAR(24)   NOT NULL,
                 OL_O_ID          INTEGER    NOT NULL,
                 OL_D_ID          SMALLINT   NOT NULL,
                 OL_W_ID          INTEGER    NOT NULL,
                 OL_NUMBER        SMALLINT   NOT NULL
                )
                IN ts_orderline_003
                INDEX IN ts_orderline_003
                ORGANIZE BY KEY SEQUENCE (
                 OL_W_ID STARTING FROM 4801 ENDING AT 7200,
                 OL_D_ID STARTING FROM 1 ENDING AT 10,
                 OL_O_ID STARTING FROM 0 ENDING AT 3605,
                 OL_NUMBER STARTING FROM 1 ENDING AT 15
                )
                ALLOW OVERFLOW;
connect reset;
```

CRTB_ORDER_LINE4.ddl

```
connect to TPCC in share mode;
```

```
DROP TABLE ORDER_LINE4;
CREATE TABLE ORDER_LINE4
                  (
                   OL_DELIVERY_D    BIGINT     NOT NULL,
                   OL_AMOUNT        INTEGER    NOT NULL,
                   OL_I_ID          INTEGER    NOT NULL,
                   OL_SUPPLY_W_ID   INTEGER    NOT NULL,
                   OL_QUANTITY      SMALLINT   NOT NULL,
                   OL_DIST_INFO     CHAR(24)   NOT NULL,
                   OL_O_ID          INTEGER    NOT NULL,
                   OL_D_ID          SMALLINT   NOT NULL,
                   OL_W_ID          INTEGER    NOT NULL,
                   OL_NUMBER        SMALLINT   NOT NULL
                  )
                  IN ts_orderline_004
                  INDEX IN ts_orderline_004
                  ORGANIZE BY KEY SEQUENCE (
                   OL_W_ID STARTING FROM 7201 ENDING AT 9600,
                   OL_D_ID STARTING FROM 1 ENDING AT 10,
                   OL_O_ID STARTING FROM 0 ENDING AT 3605,
                   OL_NUMBER STARTING FROM 1 ENDING AT 15
                  )
                  ALLOW OVERFLOW;
connect reset;
```

CRTB_STOCK1.ddl

```
connect to TPCC in share mode;
DROP TABLE STOCK1;
CREATE TABLE STOCK1
                  (
                   S_REMOTE_CNT    INTEGER     NOT NULL,
                   S_QUANTITY      INTEGER     NOT NULL,
                   S_ORDER_CNT     INTEGER     NOT NULL,
                   S_YTD           INTEGER     NOT NULL,
                   S_DATA          VARCHAR(50) NOT NULL,
                   S_DIST_01       CHAR(24)    NOT NULL,
                   S_DIST_02       CHAR(24)    NOT NULL,
                   S_DIST_03       CHAR(24)    NOT NULL,
                   S_DIST_04       CHAR(24)    NOT NULL,
                   S_DIST_05       CHAR(24)    NOT NULL,
                   S_DIST_06       CHAR(24)    NOT NULL,
                   S_DIST_07       CHAR(24)    NOT NULL,
                   S_DIST_08       CHAR(24)    NOT NULL,
                   S_DIST_09       CHAR(24)    NOT NULL,
                   S_DIST_10       CHAR(24)    NOT NULL,
                   S_I_ID          INTEGER     NOT NULL,
                   S_W_ID          INTEGER     NOT NULL
                  )
                  IN ts_stock_001
                  INDEX IN ts_stock_001
                  ORGANIZE BY KEY SEQUENCE (
                   S_I_ID STARTING FROM 1 ENDING AT 100000,
                   S_W_ID STARTING FROM 1 ENDING AT 1600
                  )
                  ALLOW OVERFLOW;
connect reset;
```

CRTB_STOCK2.ddl

```
connect to TPCC in share mode;
DROP TABLE STOCK2;
CREATE TABLE STOCK2
                  (
                   S_REMOTE_CNT    INTEGER     NOT NULL,
                   S_QUANTITY      INTEGER     NOT NULL,
                   S_ORDER_CNT     INTEGER     NOT NULL,
                   S_YTD           INTEGER     NOT NULL,
                   S_DATA          VARCHAR(50) NOT NULL,
                   S_DIST_01       CHAR(24)    NOT NULL,
                   S_DIST_02       CHAR(24)    NOT NULL,
                   S_DIST_03       CHAR(24)    NOT NULL,
                   S_DIST_04       CHAR(24)    NOT NULL,
                   S_DIST_05       CHAR(24)    NOT NULL,
                   S_DIST_06       CHAR(24)    NOT NULL,
                   S_DIST_07       CHAR(24)    NOT NULL,
                   S_DIST_08       CHAR(24)    NOT NULL,
                   S_DIST_09       CHAR(24)    NOT NULL,
                   S_DIST_10       CHAR(24)    NOT NULL,
                   S_I_ID          INTEGER     NOT NULL,
                   S_W_ID          INTEGER     NOT NULL
                  )
                  IN ts_stock_002
                  INDEX IN ts_stock_002
                  ORGANIZE BY KEY SEQUENCE (
                   S_I_ID STARTING FROM 1 ENDING AT 100000,
                   S_W_ID STARTING FROM 1601 ENDING AT 3200
                  )
                  ALLOW OVERFLOW;
connect reset;
```

CRTB_STOCK3.ddl

```
connect to TPCC in share mode;
DROP TABLE STOCK3;
CREATE TABLE STOCK3
                  (
                   S_REMOTE_CNT    INTEGER     NOT NULL,
                   S_QUANTITY      INTEGER     NOT NULL,
                   S_ORDER_CNT     INTEGER     NOT NULL,
                   S_YTD           INTEGER     NOT NULL,
                   S_DATA          VARCHAR(50) NOT NULL,
                   S_DIST_01       CHAR(24)    NOT NULL,
                   S_DIST_02       CHAR(24)    NOT NULL,
                   S_DIST_03       CHAR(24)    NOT NULL,
                   S_DIST_04       CHAR(24)    NOT NULL,
                   S_DIST_05       CHAR(24)    NOT NULL,
                   S_DIST_06       CHAR(24)    NOT NULL,
                   S_DIST_07       CHAR(24)    NOT NULL,
                   S_DIST_08       CHAR(24)    NOT NULL,
                   S_DIST_09       CHAR(24)    NOT NULL,
                   S_DIST_10       CHAR(24)    NOT NULL,
                   S_I_ID          INTEGER     NOT NULL,
                   S_W_ID          INTEGER     NOT NULL
                  )
                  IN ts_stock_003
                  INDEX IN ts_stock_003
                  ORGANIZE BY KEY SEQUENCE (
                   S_I_ID STARTING FROM 1 ENDING AT 100000,
                   S_W_ID STARTING FROM 3201 ENDING AT 4800
                  )
                  ALLOW OVERFLOW;
connect reset;
```

CRTB_STOCK4.ddl

```
connect to TPCC in share mode;
DROP TABLE STOCK4;
CREATE TABLE STOCK4
                  (
                   S_REMOTE_CNT    INTEGER     NOT NULL,
                   S_QUANTITY      INTEGER     NOT NULL,
                   S_ORDER_CNT     INTEGER     NOT NULL,
                   S_YTD           INTEGER     NOT NULL,
                   S_DATA          VARCHAR(50) NOT NULL,
                   S_DIST_01       CHAR(24)    NOT NULL,
                   S_DIST_02       CHAR(24)    NOT NULL,
                   S_DIST_03       CHAR(24)    NOT NULL,
                   S_DIST_04       CHAR(24)    NOT NULL,
                   S_DIST_05       CHAR(24)    NOT NULL,
                   S_DIST_06       CHAR(24)    NOT NULL,
                   S_DIST_07       CHAR(24)    NOT NULL,
                   S_DIST_08       CHAR(24)    NOT NULL,
                   S_DIST_09       CHAR(24)    NOT NULL,
                   S_DIST_10       CHAR(24)    NOT NULL,
                   S_I_ID          INTEGER     NOT NULL,
                   S_W_ID          INTEGER     NOT NULL
                  )
                  IN ts_stock_004
                  INDEX IN ts_stock_004
                  ORGANIZE BY KEY SEQUENCE (
                   S_I_ID STARTING FROM 1 ENDING AT 100000,
                   S_W_ID STARTING FROM 4801 ENDING AT 6400
                  )
                  ALLOW OVERFLOW;
connect reset;
```

CRTB_STOCK5.ddl

```
connect to TPCC in share mode;
DROP TABLE STOCK5;
CREATE TABLE STOCK5
                  (
                   S_REMOTE_CNT    INTEGER     NOT NULL,
                   S_QUANTITY      INTEGER     NOT NULL,
                   S_ORDER_CNT     INTEGER     NOT NULL,
                   S_YTD           INTEGER     NOT NULL,
                   S_DATA          VARCHAR(50) NOT NULL,
                   S_DIST_01       CHAR(24)    NOT NULL,
                   S_DIST_02       CHAR(24)    NOT NULL,
                   S_DIST_03       CHAR(24)    NOT NULL,
                   S_DIST_04       CHAR(24)    NOT NULL,
                   S_DIST_05       CHAR(24)    NOT NULL,
                   S_DIST_06       CHAR(24)    NOT NULL,
                   S_DIST_07       CHAR(24)    NOT NULL,
                   S_DIST_08       CHAR(24)    NOT NULL,
                   S_DIST_09       CHAR(24)    NOT NULL,
                   S_DIST_10       CHAR(24)    NOT NULL,
                   S_I_ID          INTEGER     NOT NULL,
                   S_W_ID          INTEGER     NOT NULL
                  )
                  IN ts_stock_005
                  INDEX IN ts_stock_005
                  ORGANIZE BY KEY SEQUENCE (
                   S_I_ID STARTING FROM 1 ENDING AT 100000,
                   S_W_ID STARTING FROM 6401 ENDING AT 8000
                  )
                  ALLOW OVERFLOW;
connect reset;
```

CRTB_STOCK6.ddl

```
connect to TPCC in share mode;
DROP TABLE STOCK6;
CREATE TABLE STOCK6
                  (
                   S_REMOTE_CNT    INTEGER     NOT NULL,
                   S_QUANTITY      INTEGER     NOT NULL,
                   S_ORDER_CNT     INTEGER     NOT NULL,
                   S_YTD           INTEGER     NOT NULL,
                   S_DATA          VARCHAR(50) NOT NULL,
                   S_DIST_01       CHAR(24)    NOT NULL,
                   S_DIST_02       CHAR(24)    NOT NULL,
                   S_DIST_03       CHAR(24)    NOT NULL,
                   S_DIST_04       CHAR(24)    NOT NULL,
                   S_DIST_05       CHAR(24)    NOT NULL,
                   S_DIST_06       CHAR(24)    NOT NULL,
                   S_DIST_07       CHAR(24)    NOT NULL,
                   S_DIST_08       CHAR(24)    NOT NULL,
                   S_DIST_09       CHAR(24)    NOT NULL,
                   S_DIST_10       CHAR(24)    NOT NULL,
                   S_I_ID          INTEGER     NOT NULL,
                   S_W_ID          INTEGER     NOT NULL
                  )
                  IN ts_stock_006
                  INDEX IN ts_stock_006
                  ORGANIZE BY KEY SEQUENCE (
                   S_I_ID STARTING FROM 1 ENDING AT 100000,
                   S_W_ID STARTING FROM 8001 ENDING AT 9600
                  )
                  ALLOW OVERFLOW;
connect reset;
```

CRTB_STOCK7.ddl

```
connect to TPCC in share mode;
DROP TABLE STOCK7;
CREATE TABLE STOCK7
                  (
                   S_REMOTE_CNT    INTEGER     NOT NULL,
                   S_QUANTITY      INTEGER     NOT NULL,
                   S_ORDER_CNT     INTEGER     NOT NULL,
                   S_YTD           INTEGER     NOT NULL,
                   S_DATA          VARCHAR(50) NOT NULL,
                   S_DIST_01       CHAR(24)    NOT NULL,
                   S_DIST_02       CHAR(24)    NOT NULL,
                   S_DIST_03       CHAR(24)    NOT NULL,
                   S_DIST_04       CHAR(24)    NOT NULL,
                   S_DIST_05       CHAR(24)    NOT NULL,
                   S_DIST_06       CHAR(24)    NOT NULL,
                   S_DIST_07       CHAR(24)    NOT NULL,
                   S_DIST_08       CHAR(24)    NOT NULL,
                   S_DIST_09       CHAR(24)    NOT NULL,
                   S_DIST_10       CHAR(24)    NOT NULL,
                   S_I_ID          INTEGER     NOT NULL,
```

```
 S_W_ID          INTEGER     NOT NULL
)
IN ts_stock_007
INDEX IN ts_stock_007
ORGANIZE BY KEY SEQUENCE (
 S_I_ID STARTING FROM 1 ENDING AT 100000,
 S_W_ID STARTING FROM 9601 ENDING AT 11200
)
ALLOW OVERFLOW;
connect reset;
```

CRTB_STOCK8.ddl

```
connect to TPCC in share mode;
DROP TABLE STOCK8;
CREATE TABLE STOCK8
                (
 S_REMOTE_CNT    INTEGER     NOT NULL,
 S_QUANTITY      INTEGER     NOT NULL,
 S_ORDER_CNT     INTEGER     NOT NULL,
 S_YTD           INTEGER     NOT NULL,
 S_DATA          VARCHAR(50) NOT NULL,
 S_DIST_01       CHAR(24)    NOT NULL,
 S_DIST_02       CHAR(24)    NOT NULL,
 S_DIST_03       CHAR(24)    NOT NULL,
 S_DIST_04       CHAR(24)    NOT NULL,
 S_DIST_05       CHAR(24)    NOT NULL,
 S_DIST_06       CHAR(24)    NOT NULL,
 S_DIST_07       CHAR(24)    NOT NULL,
 S_DIST_08       CHAR(24)    NOT NULL,
 S_DIST_09       CHAR(24)    NOT NULL,
 S_DIST_10       CHAR(24)    NOT NULL,
 S_I_ID          INTEGER     NOT NULL,
 S_W_ID          INTEGER     NOT NULL
)
IN ts_stock_008
INDEX IN ts_stock_008
ORGANIZE BY KEY SEQUENCE (
 S_I_ID STARTING FROM 1 ENDING AT 100000,
 S_W_ID STARTING FROM 11201 ENDING AT 12800
)
ALLOW OVERFLOW;
connect reset;
```

CRTB_WAREHOUSE1.ddl

```
connect to TPCC in share mode;
DROP TABLE WAREHOUSE1;
CREATE TABLE WAREHOUSE1
                (
 W_NAME      CHAR(10)        NOT NULL,
 W_STREET_1  CHAR(20)        NOT NULL,
 W_STREET_2  CHAR(20)        NOT NULL,
 W_CITY      CHAR(20)        NOT NULL,
 W_STATE     CHAR(2)         NOT NULL,
 W_ZIP       CHAR(9)         NOT NULL,
 W_TAX       INTEGER         NOT NULL,
 W_YTD       BIGINT          NOT NULL,
 W_ID        INTEGER         NOT NULL
)
IN ts_warehouse_001
INDEX IN ts_warehouse_001
ORGANIZE BY KEY SEQUENCE (
 W_ID STARTING FROM 1 ENDING AT 4800
)
ALLOW OVERFLOW;
connect reset;
```

CRTB_WAREHOUSE2.ddl

```
connect to TPCC in share mode;
DROP TABLE WAREHOUSE2;
CREATE TABLE WAREHOUSE2
                (
 W_NAME      CHAR(10)        NOT NULL,
 W_STREET_1  CHAR(20)        NOT NULL,
 W_STREET_2  CHAR(20)        NOT NULL,
 W_CITY      CHAR(20)        NOT NULL,
 W_STATE     CHAR(2)         NOT NULL,
 W_ZIP       CHAR(9)         NOT NULL,
 W_TAX       INTEGER         NOT NULL,
 W_YTD       BIGINT          NOT NULL,
 W_ID        INTEGER         NOT NULL
)
IN ts_warehouse_002
INDEX IN ts_warehouse_002
ORGANIZE BY KEY SEQUENCE (
 W_ID STARTING FROM 4801 ENDING AT 9600
)
ALLOW OVERFLOW;
connect reset;
```

CRTB_WAREHOUSE3.ddl

```
connect to TPCC in share mode;
DROP TABLE WAREHOUSE3;
CREATE TABLE WAREHOUSE3
                (
 W_NAME      CHAR(10)        NOT NULL,
 W_STREET_1  CHAR(20)        NOT NULL,
 W_STREET_2  CHAR(20)        NOT NULL,
 W_CITY      CHAR(20)        NOT NULL,
 W_STATE     CHAR(2)         NOT NULL,
 W_ZIP       CHAR(9)         NOT NULL,
 W_TAX       INTEGER         NOT NULL,
 W_YTD       BIGINT          NOT NULL,
 W_ID        INTEGER         NOT NULL
)
IN ts_warehouse_003
INDEX IN ts_warehouse_003
ORGANIZE BY KEY SEQUENCE (
 W_ID STARTING FROM 9601 ENDING AT 14400
)
ALLOW OVERFLOW;
connect reset;
```

CRTB_WAREHOUSE4.ddl

```
connect to TPCC in share mode;
DROP TABLE WAREHOUSE4;
```

```
CREATE TABLE WAREHOUSE4
                  (
                   W_NAME      CHAR(10)        NOT NULL,
                   W_STREET_1  CHAR(20)        NOT NULL,
                   W_STREET_2  CHAR(20)        NOT NULL,
                   W_CITY      CHAR(20)        NOT NULL,
                   W_STATE     CHAR(2)         NOT NULL,
                   W_ZIP       CHAR(9)         NOT NULL,
                   W_TAX       INTEGER         NOT NULL,
                   W_YTD       BIGINT          NOT NULL,
                   W_ID        INTEGER         NOT NULL
                  )
                  IN ts_warehouse_004
                  INDEX IN ts_warehouse_004
                  ORGANIZE BY KEY SEQUENCE (
                   W_ID STARTING FROM 14401 ENDING AT 19200
                  )
                  ALLOW OVERFLOW;
connect reset;
```

CRVW_CUSTOMER.ddl

```
connect to TPCC in share mode;
DROP VIEW CUSTOMER;
CREATE VIEW CUSTOMER
                  (C_ID,
                   C_STATE,
                   C_ZIP,
                   C_PHONE,
                   C_SINCE,
                   C_CREDIT_LIM,
                   C_MIDDLE,
                   C_CREDIT,
                   C_DISCOUNT,
                   C_DATA,
                   C_LAST,
                   C_FIRST,
                   C_STREET_1,
                   C_STREET_2,
                   C_CITY,
                   C_D_ID,
                   C_W_ID,
                   C_DELIVERY_CNT,
                   C_BALANCE,
                   C_YTD_PAYMENT,
                   C_PAYMENT_CNT
                  ) AS SELECT * FROM CUSTOMER1 UNION ALL
SELECT * FROM CUSTOMER2 UNION ALL
SELECT * FROM CUSTOMER3 UNION ALL
SELECT * FROM CUSTOMER4 UNION ALL
SELECT * FROM CUSTOMER5 UNION ALL
SELECT * FROM CUSTOMER6 UNION ALL
SELECT * FROM CUSTOMER7 UNION ALL
SELECT * FROM CUSTOMER8 UNION ALL
SELECT * FROM CUSTOMER9 UNION ALL
SELECT * FROM CUSTOMER10 UNION ALL
SELECT * FROM CUSTOMER11 UNION ALL
SELECT * FROM CUSTOMER12
WITH ROW MOVEMENT;
COMMIT WORK;
connect reset;
```

CRVW_DISTRICT.ddl

```
connect to TPCC in share mode;
DROP VIEW DISTRICT;
CREATE VIEW DISTRICT
                  (D_NEXT_O_ID,
                   D_TAX,
                   D_YTD,
                   D_NAME,
                   D_STREET_1,
                   D_STREET_2,
                   D_CITY,
                   D_STATE,
                   D_ZIP,
                   D_ID,
                   D_W_ID
                  ) AS SELECT * FROM DISTRICT1 UNION ALL
SELECT * FROM DISTRICT2 UNION ALL
SELECT * FROM DISTRICT3 UNION ALL
SELECT * FROM DISTRICT4
WITH ROW MOVEMENT;
COMMIT WORK;
connect reset;
```

CRVW_HISTORY.ddl

```
connect to TPCC in share mode;
DROP VIEW HISTORY;
CREATE VIEW HISTORY
                  (H_C_ID,
                   H_C_D_ID,
                   H_C_W_ID,
                   H_D_ID,
                   H_W_ID,
                   H_DATE,
                   H_AMOUNT,
                   H_DATA
                  ) AS SELECT * FROM HISTORY1 UNION ALL
SELECT * FROM HISTORY2 UNION ALL
SELECT * FROM HISTORY3 UNION ALL
SELECT * FROM HISTORY4
WITH ROW MOVEMENT;
COMMIT WORK;
connect reset;
```

CRVW_NEW_ORDER.ddl

```
connect to TPCC in share mode;
DROP VIEW NEW_ORDER;
CREATE VIEW NEW_ORDER
                 (NO_O_ID,
                  NO_D_ID,
                  NO_W_ID
                 ) AS SELECT * FROM NEW_ORDERA1 UNION ALL
SELECT * FROM NEW_ORDERA2 UNION ALL
SELECT * FROM NEW_ORDERA3 UNION ALL
SELECT * FROM NEW_ORDERA4 UNION ALL
SELECT * FROM NEW_ORDERB1 UNION ALL
SELECT * FROM NEW_ORDERB2 UNION ALL
```

```
SELECT * FROM NEW_ORDERB3 UNION ALL
SELECT * FROM NEW_ORDERB4
WITH ROW MOVEMENT;
COMMIT WORK;
connect reset;
```

CRVW_ORDERS.ddl

```
connect to TPCC in share mode;
DROP VIEW ORDERS;
CREATE VIEW ORDERS
                  (O_C_ID,
                   O_ENTRY_D,
                   O_CARRIER_ID,
                   O_OL_CNT,
                   O_ALL_LOCAL,
                   O_ID,
                   O_W_ID,
                   O_D_ID
                  ) AS SELECT * FROM ORDERS1 UNION ALL
SELECT * FROM ORDERS2 UNION ALL
SELECT * FROM ORDERS3 UNION ALL
SELECT * FROM ORDERS4
WITH ROW MOVEMENT;
COMMIT WORK;
connect reset;
```

CRVW_ORDER_LINE.ddl

```
connect to TPCC in share mode;
DROP VIEW ORDER_LINE;
CREATE VIEW ORDER_LINE
                  (OL_DELIVERY_D,
                   OL_AMOUNT,
                   OL_I_ID,
                   OL_SUPPLY_W_ID,
                   OL_QUANTITY,
                   OL_DIST_INFO,
                   OL_O_ID,
                   OL_D_ID,
                   OL_W_ID,
                   OL_NUMBER
                  ) AS SELECT * FROM ORDER_LINE1 UNION ALL
SELECT * FROM ORDER_LINE2 UNION ALL
SELECT * FROM ORDER_LINE3 UNION ALL
SELECT * FROM ORDER_LINE4 UNION ALL
SELECT * FROM ORDER_LINE5 UNION ALL
SELECT * FROM ORDER_LINE6 UNION ALL
SELECT * FROM ORDER_LINE7 UNION ALL
SELECT * FROM ORDER_LINE8
WITH ROW MOVEMENT;
COMMIT WORK;
connect reset;
```

CRVW_STOCK.ddl

```
connect to TPCC in share mode;
DROP VIEW STOCK;
CREATE VIEW STOCK
                  (S_REMOTE_CNT,
                   S_QUANTITY,
                   S_ORDER_CNT,
                   S_YTD,
                   S_DATA,
                   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,
                   S_I_ID,
                   S_W_ID
                  ) AS SELECT * FROM STOCK1 UNION ALL
SELECT * FROM STOCK2 UNION ALL
SELECT * FROM STOCK3 UNION ALL
SELECT * FROM STOCK4 UNION ALL
SELECT * FROM STOCK5 UNION ALL
SELECT * FROM STOCK6 UNION ALL
SELECT * FROM STOCK7 UNION ALL
SELECT * FROM STOCK8 UNION ALL
SELECT * FROM STOCK9 UNION ALL
SELECT * FROM STOCK10 UNION ALL
SELECT * FROM STOCK11 UNION ALL
SELECT * FROM STOCK12
WITH ROW MOVEMENT;
COMMIT WORK;
connect reset;
```

CRVW_WAREHOUSE.ddl

```
connect to TPCC in share mode;
DROP VIEW WAREHOUSE;
CREATE VIEW WAREHOUSE
                  (W_NAME,
                   W_STREET_1,
                   W_STREET_2,
                   W_CITY,
                   W_STATE,
                   W_ZIP,
                   W_TAX,
                   W_YTD,
                   W_ID
                  ) AS SELECT * FROM WAREHOUSE1 UNION ALL
SELECT * FROM WAREHOUSE2 UNION ALL
SELECT * FROM WAREHOUSE3 UNION ALL
SELECT * FROM WAREHOUSE4
WITH ROW MOVEMENT;
COMMIT WORK;
connect reset;
```

GEN_CUSTOMER_1.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 7 -r 1 1600 -f1 Z:\flat_001\customer_001_1.dat
```

GEN_CUSTOMER_2.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 7 -r 1601 3200 -f1 Z:\flat_002\customer_002_1.dat
```

GEN_CUSTOMER_3.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 7 -r 3201 4800 -f1 Z:\flat_003\customer_003_1.dat
```

GEN_CUSTOMER_4.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 7 -r 4801 6400 -f1 Z:\flat_004\customer_004_1.dat
```

GEN_CUSTOMER_5.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 7 -r 6401 8000 -f1 Z:\flat_005\customer_005_1.dat
```

GEN_CUSTOMER_6.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 7 -r 8001 9600 -f1 Z:\flat_006\customer_006_1.dat
```

GEN_CUSTOMER_7.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 7 -r 9601 11200 -f1 Z:\flat_007\customer_007_1.dat
```

GEN_CUSTOMER_8.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 7 -r 11201 12800 -f1
Z:\flat_008\customer_008_1.dat
```

GEN_DISTRICT_1.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 4 -r 1 4800 -f1 Z:\flat_001\district_001_1.dat
```

GEN_DISTRICT_2.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 4 -r 4801 9600 -f1 Z:\flat_002\district_002_1.dat
```

GEN_DISTRICT_3.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 4 -r 9601 14400 -f1 Z:\flat_003\district_003_1.dat
```

GEN_DISTRICT_4.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 4 -r 14401 19200 -f1
Z:\flat_004\district_004_1.dat
```

GEN_HISTORY_1.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 8 -r 1 4800 -f1 Z:\flat_001\history_001_1.dat
```

GEN_HISTORY_2.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 8 -r 4801 9600 -f1 Z:\flat_002\history_002_1.dat
```

GEN_HISTORY_3.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 8 -r 9601 14400 -f1 Z:\flat_003\history_003_1.dat
```

GEN_HISTORY_4.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 8 -r 14401 19200 -f1 Z:\flat_004\history_004_1.dat
```

GEN_ITEM_1.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 5 -f1 Z:\flat\item_1.dat
```

GEN_NEW_ORDER_1.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 11 -r 1 4800 -f1 Z:\flat_001\neworder_001_1.dat
```

GEN_NEW_ORDER_2.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 11 -r 4801 9600 -f1 Z:\flat_002\neworder_002_1.dat
```

GEN_NEW_ORDER_3.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 11 -r 9601 14400 -f1
Z:\flat_003\neworder_003_1.dat
```

GEN_NEW_ORDER_4.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 11 -r 14401 19200 -f1
Z:\flat_004\neworder_004_1.dat
```

GEN_ORDERS_1.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 9 -r 1 2400 -f1 Z:\flat_001\orders_001_1.dat -f2
Z:\flat_001\orderline_001_1.dat
```

GEN_ORDERS_2.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 9 -r 2401 4800 -f1 Z:\flat_001\orders_001_2.dat -
f2 Z:\flat_002\orderline_002_1.dat
```

GEN_ORDERS_3.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 9 -r 4801 7200 -f1 Z:\flat_002\orders_002_1.dat -
f2 Z:\flat_003\orderline_003_1.dat
```

GEN_ORDERS_4.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 9 -r 7201 9600 -f1 Z:\flat_002\orders_002_2.dat -
f2 Z:\flat_004\orderline_004_1.dat
```

GEN_STOCK_1.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 6 -r 1 1600 -f1 Z:\flat_001\stock_001_1.dat
```

GEN_STOCK_2.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 6 -r 1601 3200 -f1 Z:\flat_002\stock_002_1.dat
```

GEN_STOCK_3.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 6 -r 3201 4800 -f1 Z:\flat_003\stock_003_1.dat
```

GEN_STOCK_4.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 6 -r 4801 6400 -f1 Z:\flat_004\stock_004_1.dat
```

GEN_STOCK_5.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 6 -r 6401 8000 -f1 Z:\flat_005\stock_005_1.dat
```

GEN_STOCK_6.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 6 -r 8001 9600 -f1 Z:\flat_006\stock_006_1.dat
```

GEN_STOCK_7.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 6 -r 9601 11200 -f1 Z:\flat_007\stock_007_1.dat
```

GEN_STOCK_8.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 6 -r 11201 12800 -f1 Z:\flat_008\stock_008_1.dat
```

GEN_WAREHOUSE_1.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 3 -r 1 4800 -f1 Z:\flat_001\warehouse_001_1.dat
```

GEN_WAREHOUSE_2.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 3 -r 4801 9600 -f1 Z:\flat_002\warehouse_002_1.dat
```

GEN_WAREHOUSE_3.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 3 -r 9601 14400 -f1
Z:\flat_003\warehouse_003_1.dat
```

GEN_WAREHOUSE_4.bat

```
C:\tpc-c.ibm\dbgen\gendata.exe -t 3 -r 14401 19200 -f1
Z:\flat_004\warehouse_004_1.dat
```

LOAD_CUSTOMER1_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE CUSTOMER1 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_001\customer_001_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 48000000 INSERT INTO CUSTOMER1;
COMMIT WORK;
CONNECT RESET;
```

LOAD_CUSTOMER2_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE CUSTOMER2 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_002\customer_002_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 48000000 INSERT INTO CUSTOMER2;
COMMIT WORK;
CONNECT RESET;
```

LOAD_CUSTOMER3_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE CUSTOMER3 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_003\customer_003_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 48000000 INSERT INTO CUSTOMER3;
COMMIT WORK;
CONNECT RESET;
```

LOAD_CUSTOMER4_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE CUSTOMER4 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_004\customer_004_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 48000000 INSERT INTO CUSTOMER4;
COMMIT WORK;
CONNECT RESET;
```

LOAD_CUSTOMER5_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
```

```
ALTER TABLE CUSTOMER5 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_005\customer_005_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 48000000 INSERT INTO CUSTOMER5;
COMMIT WORK;
CONNECT RESET;
```

LOAD_CUSTOMER6_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE CUSTOMER6 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_006\customer_006_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 48000000 INSERT INTO CUSTOMER6;
COMMIT WORK;
CONNECT RESET;
```

LOAD_CUSTOMER7_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE CUSTOMER7 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_007\customer_007_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 48000000 INSERT INTO CUSTOMER7;
COMMIT WORK;
CONNECT RESET;
```

LOAD_CUSTOMER8_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE CUSTOMER8 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_008\customer_008_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 48000000 INSERT INTO CUSTOMER8;
COMMIT WORK;
CONNECT RESET;
```

LOAD_DISTRICT1_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
IMPORT FROM Z:\flat_001\district_001_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50 ALLOW WRITE ACCESS COMMITCOUNT 1000 INSERT INTO DISTRICT1;
COMMIT WORK;
CONNECT RESET;
```

LOAD_DISTRICT2_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
IMPORT FROM Z:\flat_002\district_002_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50 ALLOW WRITE ACCESS COMMITCOUNT 1000 INSERT INTO DISTRICT2;
COMMIT WORK;
CONNECT RESET;
```

LOAD_DISTRICT3_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
IMPORT FROM Z:\flat_003\district_003_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50 ALLOW WRITE ACCESS COMMITCOUNT 1000 INSERT INTO DISTRICT3;
COMMIT WORK;
CONNECT RESET;
```

LOAD_DISTRICT4_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
IMPORT FROM Z:\flat_004\district_004_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50 ALLOW WRITE ACCESS COMMITCOUNT 1000 INSERT INTO DISTRICT4;
COMMIT WORK;
CONNECT RESET;
```

LOAD_HISTORY1.ddl

```
connect to TPCC in share mode;
LOAD FROM Z:\flat_001\history_001_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
FASTPARSE REPLACE INTO HISTORY1 NONRECOVERABLE DATA BUFFER 32000 CPU_PARALLELISM 1 ;
connect reset;
```

LOAD_HISTORY2.ddl

```
connect to TPCC in share mode;
LOAD FROM Z:\flat_002\history_002_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
FASTPARSE REPLACE INTO HISTORY2 NONRECOVERABLE DATA BUFFER 32000 CPU_PARALLELISM 1 ;
connect reset;
```

LOAD_HISTORY3.ddl

```
connect to TPCC in share mode;
LOAD FROM Z:\flat_003\history_003_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
FASTPARSE REPLACE INTO HISTORY3 NONRECOVERABLE DATA BUFFER 32000 CPU_PARALLELISM 1 ;
connect reset;
```

LOAD_HISTORY4.ddl

```
connect to TPCC in share mode;
LOAD FROM Z:\flat_004\history_004_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
FASTPARSE REPLACE INTO HISTORY4 NONRECOVERABLE DATA BUFFER 32000 CPU_PARALLELISM 1 ;
connect reset;
```

LOAD_ITEM_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
IMPORT FROM Z:\flat\item_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS COMPOUND=50
COMMITCOUNT 1000 INSERT INTO ITEM;
COMMIT WORK;
CONNECT RESET;
```

LOAD_NEW_ORDERA1_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
IMPORT FROM Z:\flat_001\neworder_001_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50 ALLOW WRITE ACCESS COMMITCOUNT 1000 INSERT INTO NEW_ORDERA1;
```

```
COMMIT WORK;
CONNECT RESET;
```

LOAD_NEW_ORDERA2_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
IMPORT FROM Z:\flat_002\neworder_002_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50 ALLOW WRITE ACCESS COMMITCOUNT 1000 INSERT INTO NEW_ORDERA2;
COMMIT WORK;
CONNECT RESET;
```

LOAD_NEW_ORDERA3_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
IMPORT FROM Z:\flat_003\neworder_003_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50 ALLOW WRITE ACCESS COMMITCOUNT 1000 INSERT INTO NEW_ORDERA3;
COMMIT WORK;
CONNECT RESET;
```

LOAD_NEW_ORDERA4_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
IMPORT FROM Z:\flat_004\neworder_004_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50 ALLOW WRITE ACCESS COMMITCOUNT 1000 INSERT INTO NEW_ORDERA4;
COMMIT WORK;
CONNECT RESET;
```

LOAD_ORDERS1_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
IMPORT FROM Z:\flat_001\orders_001_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50 ALLOW WRITE ACCESS COMMITCOUNT 1000 INSERT INTO ORDERS1;
COMMIT WORK;
CONNECT RESET;
```

LOAD_ORDERS2_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
IMPORT FROM Z:\flat_002\orders_002_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50 ALLOW WRITE ACCESS COMMITCOUNT 1000 INSERT INTO ORDERS2;
COMMIT WORK;
CONNECT RESET;
```

LOAD_ORDERS3_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
IMPORT FROM Z:\flat_003\orders_003_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50 ALLOW WRITE ACCESS COMMITCOUNT 1000 INSERT INTO ORDERS3;
COMMIT WORK;
CONNECT RESET;
```

LOAD_ORDERS4_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
IMPORT FROM Z:\flat_004\orders_004_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50 ALLOW WRITE ACCESS COMMITCOUNT 1000 INSERT INTO ORDERS4;
COMMIT WORK;
CONNECT RESET;
```

LOAD_ORDER_LINE1_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE ORDER_LINE1 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_001\orderline_001_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 792000000 INSERT INTO ORDER_LINE1;
COMMIT WORK;
CONNECT RESET;
```

LOAD_ORDER_LINE2_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE ORDER_LINE2 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_002\orderline_002_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 792000000 INSERT INTO ORDER_LINE2;
COMMIT WORK;
CONNECT RESET;
```

LOAD_ORDER_LINE3_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE ORDER_LINE3 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_003\orderline_003_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 792000000 INSERT INTO ORDER_LINE3;
COMMIT WORK;
CONNECT RESET;
```

LOAD_ORDER_LINE4_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE ORDER_LINE4 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_004\orderline_004_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 792000000 INSERT INTO ORDER_LINE4;
COMMIT WORK;
CONNECT RESET;
```

LOAD_STOCK1_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE STOCK1 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_001\stock_001_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 160000000 INSERT INTO STOCK1;
COMMIT WORK;
CONNECT RESET;
```

LOAD_STOCK2_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE STOCK2 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_002\stock_002_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 160000000 INSERT INTO STOCK2;
COMMIT WORK;
CONNECT RESET;
```

LOAD_STOCK3_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE STOCK3 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_003\stock_003_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 160000000 INSERT INTO STOCK3;
COMMIT WORK;
CONNECT RESET;
```

LOAD_STOCK4_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE STOCK4 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_004\stock_004_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 160000000 INSERT INTO STOCK4;
COMMIT WORK;
CONNECT RESET;
```

LOAD_STOCK5_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE STOCK5 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_005\stock_005_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 160000000 INSERT INTO STOCK5;
COMMIT WORK;
CONNECT RESET;
```

LOAD_STOCK6_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE STOCK6 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_006\stock_006_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 160000000 INSERT INTO STOCK6;
COMMIT WORK;
CONNECT RESET;
```

LOAD_STOCK7_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE STOCK7 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_007\stock_007_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 160000000 INSERT INTO STOCK7;
COMMIT WORK;
CONNECT RESET;
```

LOAD_STOCK8_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
UPDATE COMMAND OPTIONS USING C OFF;
ALTER TABLE STOCK8 ACTIVATE NOT LOGGED INITIALLY;
IMPORT FROM Z:\flat_008\stock_008_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50  COMMITCOUNT 160000000 INSERT INTO STOCK8;
COMMIT WORK;
CONNECT RESET;
```

LOAD_WAREHOUSE1_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
IMPORT FROM Z:\flat_001\warehouse_001_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50 ALLOW WRITE ACCESS COMMITCOUNT 1000 INSERT INTO WAREHOUSE1;
COMMIT WORK;
CONNECT RESET;
```

LOAD_WAREHOUSE2_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
IMPORT FROM Z:\flat_002\warehouse_002_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50 ALLOW WRITE ACCESS COMMITCOUNT 1000 INSERT INTO WAREHOUSE2;
COMMIT WORK;
CONNECT RESET;
```

LOAD_WAREHOUSE3_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
IMPORT FROM Z:\flat_003\warehouse_003_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50 ALLOW WRITE ACCESS COMMITCOUNT 1000 INSERT INTO WAREHOUSE3;
COMMIT WORK;
CONNECT RESET;
```

LOAD_WAREHOUSE4_1.ddl

```
CONNECT TO TPCC IN SHARE MODE;
IMPORT FROM Z:\flat_004\warehouse_004_1.dat OF DEL MODIFIED BY COLDEL| KEEPBLANKS
COMPOUND=50 ALLOW WRITE ACCESS COMMITCOUNT 1000 INSERT INTO WAREHOUSE4;
COMMIT WORK;
CONNECT RESET;
```

RNST_CUSTOMER1.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.CUSTOMER1 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_CUSTOMER2.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.CUSTOMER2 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_CUSTOMER3.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.CUSTOMER3 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_CUSTOMER4.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.CUSTOMER4 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_CUSTOMER5.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.CUSTOMER5 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_CUSTOMER6.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.CUSTOMER6 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_CUSTOMER7.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.CUSTOMER7 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_CUSTOMER8.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.CUSTOMER8 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_DISTRICT1.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.DISTRICT1 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_DISTRICT2.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.DISTRICT2 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_DISTRICT3.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.DISTRICT3 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_DISTRICT4.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.DISTRICT4 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_HISTORY1.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.HISTORY1 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_HISTORY2.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.HISTORY2 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_HISTORY3.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.HISTORY3 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_HISTORY4.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.HISTORY4 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_ITEM.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.ITEM AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_NEW_ORDERA1.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.NEW_ORDERA1 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_NEW_ORDERA2.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.NEW_ORDERA2 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_NEW_ORDERA3.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.NEW_ORDERA3 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_NEW_ORDERA4.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.NEW_ORDERA4 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_NEW_ORDERB1.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.NEW_ORDERB1 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_NEW_ORDERB2.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.NEW_ORDERB2 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_NEW_ORDERB3.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.NEW_ORDERB3 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_NEW_ORDERB4.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.NEW_ORDERB4 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_ORDERS1.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.ORDERS1 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_ORDERS2.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.ORDERS2 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_ORDERS3.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.ORDERS3 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_ORDERS4.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.ORDERS4 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_ORDER_LINE1.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.ORDER_LINE1 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_ORDER_LINE2.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.ORDER_LINE2 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_ORDER_LINE3.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.ORDER_LINE3 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_ORDER_LINE4.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.ORDER_LINE4 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_STOCK1.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.STOCK1 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_STOCK2.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.STOCK2 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_STOCK3.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.STOCK3 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_STOCK4.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.STOCK4 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_STOCK5.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.STOCK5 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_STOCK6.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.STOCK6 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_STOCK7.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.STOCK7 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_STOCK8.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.STOCK8 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_WAREHOUSE1.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.WAREHOUSE1 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_WAREHOUSE2.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.WAREHOUSE2 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_WAREHOUSE3.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.WAREHOUSE3 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

RNST_WAREHOUSE4.ddl

```
connect to TPCC in share mode;
RUNSTATS ON TABLE db2admin.WAREHOUSE4 AND INDEXES ALL;
COMMIT WORK;
connect reset;
```

Appendix C: Tunable Parameters

IBM DB2 Database Manager Configuration Parameters

```
         Database Manager Configuration


     Node type = Enterprise Server Edition with local
and remote clients


 Database manager configuration release level
= 0x0a00


 Maximum total of files open
(MAXTOTFILOP) = 16000

 CPU speed (millisec/instruction)
(CPUSPEED) = 2.046825e-007

 Communications bandwidth (MB/sec)
(COMM_BANDWIDTH) = 1.000000e+002


 Max number of concurrently active databases
(NUMDB) = 1

 Data Links support
(DATALINKS) = NO

 Federated Database System Support
(FEDERATED) = NO

 Transaction processor monitor name
(TP_MON_NAME) =


 Default charge-back account
(DFT_ACCOUNT_STR) =


 Java Development Kit installation path
(JDK_PATH) = C:\Program Files\IBM\SQLLIB\java\jdk


 Diagnostic error capture level
(DIAGLEVEL) = 3

 Notify Level
(NOTIFYLEVEL) = 3

 Diagnostic data directory path
(DIAGPATH) =


 Default database monitor switches

   Buffer pool
(DFT_MON_BUFPOOL) = OFF

   Lock
(DFT_MON_LOCK) = OFF

   Sort
(DFT_MON_SORT) = OFF

   Statement
(DFT_MON_STMT) = OFF

   Table
(DFT_MON_TABLE) = OFF

   Timestamp
(DFT_MON_TIMESTAMP) = OFF

   Unit of work
(DFT_MON_UOW) = OFF

 Monitor health of instance and databases
(HEALTH_MON) = OFF


 SYSADM group name
(SYSADM_GROUP) = DB2ADMNS

 SYSCTRL group name
(SYSCTRL_GROUP) =

 SYSMAINT group name
(SYSMAINT_GROUP) =

 SYSMON group name
(SYSMON_GROUP) =


 Client Userid-Password Plugin
(CLNT_PW_PLUGIN) =


 Client Kerberos Plugin
(CLNT_KRB_PLUGIN) = IBMkrb5

 Group Plugin
(GROUP_PLUGIN) =

 GSS Plugin for Local Authorization
(LOCAL_GSSPLUGIN) =

 Server Plugin Mode
(SRV_PLUGIN_MODE) = UNFENCED

 Server List of GSS Plugins
(SRVCON_GSSPLUGIN_LIST) =

 Server Userid-Password Plugin
(SRVCON_PW_PLUGIN) =

 Server Connection Authentication
(SRVCON_AUTH) = NOT_SPECIFIED

 Database manager authentication
(AUTHENTICATION) = CLIENT

 Cataloging allowed without authority
(CATALOG_NOAUTH) = NO

 Trust all clients
(TRUST_ALLCLNTS) = YES

 Trusted client authentication
(TRUST_CLNTAUTH) = CLIENT

 Bypass federated authentication
(FED_NOAUTH) = NO


 Default database path
(DFTDBPATH) = C:


 Database monitor heap size (4KB)
(MON_HEAP_SZ) = 4096

 Java Virtual Machine heap size (4KB)
(JAVA_HEAP_SZ) = 1024

 Audit buffer size (4KB)
(AUDIT_BUF_SZ) = 0

 Size of instance shared memory (4KB)
(INSTANCE_MEMORY) = AUTOMATIC

 Backup buffer default size (4KB)
(BACKBUFSZ) = 1024

 Restore buffer default size (4KB)
(RESTBUFSZ) = 1024
```

```
 Agent stack size
(AGENT_STACK_SZ) = 16

 Minimum committed private memory (4KB)
(MIN_PRIV_MEM) = 32

 Private memory threshold (4KB)
(PRIV_MEM_THRESH) = 112000


 Sort heap threshold (4KB)
(SHEAPTHRES) = 10000


 Directory cache support
(DIR_CACHE) = YES


 Application support layer heap size (4KB)
(ASLHEAPSZ) = 15

 Max requester I/O block size (bytes)
(RQRIOBLK) = 4096

 DOS requester I/O block size (bytes)
(DOS_RQRIOBLK) = 4096

 Query heap size (4KB)
(QUERY_HEAP_SZ) = 1000


 Workload impact by throttled
utilities(UTIL_IMPACT_LIM) = 10


 Priority of agents
(AGENTPRI) = SYSTEM

 Max number of existing agents
(MAXAGENTS) = 390

 Agent pool size
(NUM_POOLAGENTS) = 0

 Initial number of agents in pool
(NUM_INITAGENTS) = 0

 Max number of coordinating agents
(MAX_COORDAGENTS) = 390

 Max no. of concurrent coordinating agents
(MAXCAGENTS) = MAX_COORDAGENTS

 Max number of client connections
(MAX_CONNECTIONS) = MAX_COORDAGENTS


 Keep fenced process
(KEEPFENCED) = YES

 Number of pooled fenced processes
(FENCED_POOL) = MAX_COORDAGENTS

 Initial number of fenced processes
(NUM_INITFENCED) = 0


 Index re-creation time and redo index build
(INDEXREC) = RESTART


 Transaction manager database name
(TM_DATABASE) = 1ST_CONN

 Transaction resync interval (sec)
(RESYNC_INTERVAL) = 180


 SPM name
(SPM_NAME) =

 SPM log size
(SPM_LOG_FILE_SZ) = 256

 SPM resync agent limit
(SPM_MAX_RESYNC) = 20

 SPM log path
(SPM_LOG_PATH) =


 NetBIOS Workstation name
(NNAME) =


 TCP/IP Service name
(SVCENAME) =

 Discovery mode
(DISCOVER) = SEARCH

 Discover server instance
(DISCOVER_INST) = ENABLE


 Maximum query degree of parallelism
(MAX_QUERYDEGREE) = ANY

 Enable intra-partition parallelism
(INTRA_PARALLEL) = NO


 No. of int. communication
buffers(4KB)(FCM_NUM_BUFFERS) = 4096

 Number of FCM request blocks
(FCM_NUM_RQB) = AUTOMATIC

 Number of FCM connection entries
(FCM_NUM_CONNECT) = AUTOMATIC

 Number of FCM message anchors
(FCM_NUM_ANCHORS) = AUTOMATIC


 Node connection elapse time (sec)
(CONN_ELAPSE) = 10

 Max number of node connection retries
(MAX_CONNRETRIES) = 5

 Max time difference between nodes (min)
(MAX_TIME_DIFF) = 60


 db2start/db2stop timeout (min)
(START_STOP_TIME) = 10
```

IBM DB2 Database Configuration Parameters

```
       Database Configuration for Database tpcc


 Database configuration release level
= 0x0a00

 Database release level
= 0x0a00


 Database territory
= US

 Database code page
= 1252
```

```
 Database code set
= IBM-1252

 Database country/region code
= 1

 Database collating sequence
= BINARY

 Alternate collating sequence
(ALT_COLLATE) =

 Database page size
= 4096



 Dynamic SQL Query management
(DYN_QUERY_MGMT) = DISABLE



 Discovery support for this database
(DISCOVER_DB) = ENABLE



 Default query optimization class
(DFT_QUERYOPT) = 5

 Degree of parallelism
(DFT_DEGREE) = 1

 Continue upon arithmetic exceptions
(DFT_SQLMATHWARN) = NO

 Default refresh age
(DFT_REFRESH_AGE) = 0

 Default maintained table types for opt
(DFT_MTTB_TYPES) = SYSTEM

 Number of frequent values retained
(NUM_FREQVALUES) = 10

 Number of quantiles retained
(NUM_QUANTILES) = 20



 Backup pending
= NO



 Database is consistent
= YES

 Rollforward pending
= NO

 Restore pending
= NO



 Multi-page file allocation enabled
= YES



 Log retain for recovery status
= NO

 User exit for logging status
= NO



 Data Links Token Expiry Interval (sec)
(DL_EXPINT) = 60

 Data Links Write Token Init Expiry
Intvl(DL_WT_IEXPINT) = 60

 Data Links Number of Copies
(DL_NUM_COPIES) = 1

 Data Links Time after Drop (days)
(DL_TIME_DROP) = 1

 Data Links Token in Uppercase
(DL_UPPER) = NO

 Data Links Token Algorithm
(DL_TOKEN) = MAC0



 Database heap (4KB)
(DBHEAP) = 8192

 Size of database shared memory (4KB)
(DATABASE_MEMORY) = AUTOMATIC

 Catalog cache size (4KB)
(CATALOGCACHE_SZ) = (MAXAPPLS*4)

 Log buffer size (4KB)
(LOGBUFSZ) = 512

 Utilities heap size (4KB)
(UTIL_HEAP_SZ) = 16

 Buffer pool size (pages)
(BUFFPAGE) = 250

 Extended storage segments size (4KB)
(ESTORE_SEG_SZ) = 16000

 Number of extended storage segments
(NUM_ESTORE_SEGS) = 0

 Max storage for lock list (4KB)
(LOCKLIST) = 8000



 Max size of appl. group mem set (4KB)
(APPGROUP_MEM_SZ) = 30000

 Percent of mem for appl. group heap
(GROUPHEAP_RATIO) = 70

 Max appl. control heap size (4KB)
(APP_CTL_HEAP_SZ) = 128



 Sort heap thres for shared sorts (4KB)
(SHEAPTHRES_SHR) = (SHEAPTHRES)

 Sort list heap (4KB)
(SORTHEAP) = 16

 SQL statement heap (4KB)
(STMTHEAP) = 2000

 Default application heap (4KB)
(APPLHEAPSZ) = 328

 Package cache size (4KB)
(PCKCACHESZ) = 1000

 Statistics heap size (4KB)
(STAT_HEAP_SZ) = 1096



 Interval for checking deadlock (ms)
(DLCHKTIME) = 3000

 Percent. of lock lists per application
(MAXLOCKS) = 100

 Lock timeout (sec)
(LOCKTIMEOUT) = -1



 Changed pages threshold
(CHNGPGS_THRESH) = 99

 Number of asynchronous page cleaners
(NUM_IOCLEANERS) = 8

 Number of I/O servers
(NUM_IOSERVERS) = 1

 Index sort flag
(INDEXSORT) = YES

 Sequential detect flag
(SEQDETECT) = NO

 Default prefetch size (pages)
(DFT_PREFETCH_SZ) = AUTOMATIC
```

```
 Track modified pages
(TRACKMOD) = OFF



 Default number of containers
= 1

 Default tablespace extentsize (pages)
(DFT_EXTENT_SZ) = 32



 Max number of active applications
(MAXAPPLS) = 390

 Average number of active applications
(AVG_APPLS) = 390

 Max DB files open per application
(MAXFILOP) = 800



 Log file size (4KB)
(LOGFILSIZ) = 262140

 Number of primary log files
(LOGPRIMARY) = 32

 Number of secondary log files
(LOGSECOND) = 0

 Changed path to log files
(NEWLOGPATH) =

 Path to log files
= \\.\y:

 Overflow log path
(OVERFLOWLOGPATH) =

 Mirror log path
(MIRRORLOGPATH) =

 First active log file
=

 Block log on disk full
(BLK_LOG_DSK_FUL) = NO

 Percent of max active log space by
transaction(MAX_LOG) = 0

 Num. of active log files for 1 active
UOW(NUM_LOG_SPAN) = 0



 Group commit count
(MINCOMMIT) = 3

 Percent log file reclaimed before soft chckpt
(SOFTMAX) = 1050

 Log retain for recovery enabled
(LOGRETAIN) = OFF

 User exit for logging enabled
(USEREXIT) = OFF



 HADR database role
= STANDARD

 HADR local host name
(HADR_LOCAL_HOST) =

 HADR local service name
(HADR_LOCAL_SVC) =

 HADR remote host name
(HADR_REMOTE_HOST) =

 HADR remote service name
(HADR_REMOTE_SVC) =

 HADR instance name of remote server
(HADR_REMOTE_INST) =

 HADR timeout value
(HADR_TIMEOUT) = 120

 HADR log write synchronization mode
(HADR_SYNCMODE) = NEARSYNC



 First log archive method
(LOGARCHMETH1) = OFF

 Options for logarchmeth1
(LOGARCHOPT1) =

 Second log archive method
(LOGARCHMETH2) = OFF

 Options for logarchmeth2
(LOGARCHOPT2) =

 Failover log archive path
(FAILARCHPATH) =

 Number of log archive retries on error
(NUMARCHRETRY) = 5

 Log archive retry Delay (secs)
(ARCHRETRYDELAY) = 20

 Vendor options
(VENDOROPT) =

 Auto restart enabled
(AUTORESTART) = ON

 Index re-creation time and redo index build
(INDEXREC) = SYSTEM (RESTART)

 Log pages during index build
(LOGINDEXBUILD) = OFF

 Default number of loadrec sessions
(DFT_LOADREC_SES) = 1

 Number of database backups to retain
(NUM_DB_BACKUPS) = 12

 Recovery history retention (days)
(REC_HIS_RETENTN) = 366



 TSM management class
(TSM_MGMTCLASS) =

 TSM node name
(TSM_NODENAME) =

 TSM owner
(TSM_OWNER) =

 TSM password
(TSM_PASSWORD) =



 Automatic maintenance
(AUTO_MAINT) = OFF

   Automatic database backup
(AUTO_DB_BACKUP) = OFF

   Automatic table maintenance
(AUTO_TBL_MAINT) = OFF

     Automatic runstats
(AUTO_RUNSTATS) = OFF

     Automatic statistics profiling
(AUTO_STATS_PROF) = OFF

      Automatic profile updates
(AUTO_PROF_UPD) = OFF

     Automatic reorganization
(AUTO_REORG) = OFF
```

IBM DB2 DB2SET Configuration Parameters

```
DB2_RESOURCE_POLICY=c:\tpc-c.ibm\aff4cell1.cfg
DB2_SELUDI_COMM_BUFFER=Y
DB2_USE_ALTERNATE_PAGE_CLEANING=YES
DB2_MAX_NON_TABLE_LOCKS=41
DB2_LGPAGE_BP=YES
DB2_TRUSTED_BINDIN=ON
DB2_KEEPTABLELOCK=ON
DB2_EVENT_LOG_CONFIG=OFF
DB2_NO_FORK_CHECK=ON
DB2_FMP_COMM_HEAPSZ=0
DB2_APM_PERFORMANCE=ALL
DB2_ENABLE_BUFPD=OFF
DB2_PINNED_BP=YES
DB2_SELECTIVITY=ON
DB2ASSUMEUPDATE=ON
DB2BPVARS=c:\tpc-c.ibm\testvars.cfg
DB2CHECKCLIENTINTERVAL=0
DB2_HASH_JOIN=OFF
DB2CHKSQLDA=OFF
DB2_COLLECT_TS_REC_INFO=false
DB2NTNOCACHE=ON
DB2COMM=tcpip
DB2CHKPTR=OFF
```

IBM DB2 Resource Policy

```
<RESOURCE_POLICY>
<DATABASE_RESOURCE_POLICY>
 <DBNAME>TPCC</DBNAME>
 <METHOD>CPUMASK</METHOD>
 <RESOURCE_BINDING>
  <RESOURCE>192</RESOURCE>
  <DBMEM_PERCENTAGE>0.0</DBMEM_PERCENTAGE>
  <SERVICE_NAME>4550</SERVICE_NAME>
  <BUFFERPOOL_BINDING>
   <NUM_CLEANERS>2</NUM_CLEANERS>
   <BUFFERPOOL_ID>1</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>2</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>3</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>4</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>5</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>6</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>7</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>8</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>9</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>10</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>11</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>12</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>13</BUFFERPOOL_ID>
  </BUFFERPOOL_BINDING>
 </RESOURCE_BINDING>
 <RESOURCE_BINDING>
  <RESOURCE>3</RESOURCE>
  <DBMEM_PERCENTAGE>0.0</DBMEM_PERCENTAGE>
  <SERVICE_NAME>7550</SERVICE_NAME>
  <BUFFERPOOL_BINDING>
   <NUM_CLEANERS>2</NUM_CLEANERS>
   <BUFFERPOOL_ID>32</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>33</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>34</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>35</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>36</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>37</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>38</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>39</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>40</BUFFERPOOL_ID>
  </BUFFERPOOL_BINDING>
 </RESOURCE_BINDING>
 <RESOURCE_BINDING>
  <RESOURCE>48</RESOURCE>
  <DBMEM_PERCENTAGE>0.0</DBMEM_PERCENTAGE>
  <SERVICE_NAME>5550</SERVICE_NAME>
  <BUFFERPOOL_BINDING>
   <NUM_CLEANERS>2</NUM_CLEANERS>
   <BUFFERPOOL_ID>14</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>15</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>16</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>17</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>18</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>19</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>20</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>21</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>22</BUFFERPOOL_ID>
  </BUFFERPOOL_BINDING>
 </RESOURCE_BINDING>
 <RESOURCE_BINDING>
  <RESOURCE>12</RESOURCE>
  <DBMEM_PERCENTAGE>0.0</DBMEM_PERCENTAGE>
  <SERVICE_NAME>6550</SERVICE_NAME>
  <BUFFERPOOL_BINDING>
   <NUM_CLEANERS>2</NUM_CLEANERS>
   <BUFFERPOOL_ID>23</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>24</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>25</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>26</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>27</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>28</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>29</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>30</BUFFERPOOL_ID>
   <BUFFERPOOL_ID>31</BUFFERPOOL_ID>
  </BUFFERPOOL_BINDING>
 </RESOURCE_BINDING>
</DATABASE_RESOURCE_POLICY>
</RESOURCE_POLICY>
```

IBM DB2 Bufferpools settings

```
DISABLE_BUCKET_GROUP_RESIZE=0,6
DISABLE_BUCKET_GROUP_RESIZE=0,7
DISABLE_BUCKET_GROUP_RESIZE=0,9
DISABLE_BUCKET_GROUP_RESIZE=0,10
DISABLE_BUCKET_GROUP_RESIZE=0,11
DISABLE_BUCKET_GROUP_RESIZE=0,12
DISABLE_BUCKET_GROUP_RESIZE=0,13
DISABLE_BUCKET_GROUP_RESIZE=0,15
DISABLE_BUCKET_GROUP_RESIZE=0,16
DISABLE_BUCKET_GROUP_RESIZE=0,18
DISABLE_BUCKET_GROUP_RESIZE=0,19
DISABLE_BUCKET_GROUP_RESIZE=0,20
DISABLE_BUCKET_GROUP_RESIZE=0,21
DISABLE_BUCKET_GROUP_RESIZE=0,22
DISABLE_BUCKET_GROUP_RESIZE=0,24
DISABLE_BUCKET_GROUP_RESIZE=0,25
DISABLE_BUCKET_GROUP_RESIZE=0,27
DISABLE_BUCKET_GROUP_RESIZE=0,28
DISABLE_BUCKET_GROUP_RESIZE=0,29
DISABLE_BUCKET_GROUP_RESIZE=0,30
DISABLE_BUCKET_GROUP_RESIZE=0,31
DISABLE_BUCKET_GROUP_RESIZE=0,33
DISABLE_BUCKET_GROUP_RESIZE=0,34
DISABLE_BUCKET_GROUP_RESIZE=0,36
DISABLE_BUCKET_GROUP_RESIZE=0,37
DISABLE_BUCKET_GROUP_RESIZE=0,38
DISABLE_BUCKET_GROUP_RESIZE=0,39
DISABLE_BUCKET_GROUP_RESIZE=0,40
```

PRTE Profile

```
echo


#####################################################
##########################
#
#
#
#
#                       PRTE COMMAND FILE FOR v6-1-0
#
#
#
#
#
#####################################################
##########################


noecho

disable initialized_messages
```

```
disable stopped_messages




#########################################################
##################
#
#
# PRTE internal variables.
#
#
#
#   set {var} {val}
#
#
#
#########################################################
##################
#
# startup_interval must be set (before connects).  It
controls the rate at
#                  which prte user processes are
forked off initially.
#
# start_interval   controls the rate at which prte
users are started when the
#                  "start" command is issued at the
console level.
#
# resume_interval  controls how fast resumes are done
when the "resume"
#                  command is issued at the console
level.  (NOTE: resumes
#                  done on the tester's behalf by the
master user are
#                  controlled by the network variable
RESUME_DELAY set below).
#
# stop_interval    controls how fast stops are done
when the "stop"
#                  command is issued at the console
level.  (NOTE: stops done
#                  on the tester's behalf by the
master user are controlled by
#                  the network variable STOP_DELAY
set below).
#
# type_rate        is the typing delay between each
character???

set startup_interval          0.00001
set start_interval  0.00001
set resume_interval 0.00003
set stop_interval   0.00003
set type_rate                 0.0




echo
```

```
#########################################################
##########################
#
#
# Initializing connections.
#
#
#
#########################################################
##########################


noecho

#########################################################
##################
#
#
# Connect commands.
#
#
#
#   connect {exe} {prte to run on} {# users} {machine
to connect to}  #
#
#
#########################################################
##################
#
# delay between the fork for each user process is
startup_interval,
# defined above in the "PRTE internal variables"
section.
#
# NOTE: The order of the connect statements is
relevant since it determines
#       the order in which prte user id's get
assigned.  All connect statements
#       for tpcc users (web_user, unix_user) should
come first, followed by
#       the connect statement for reduce, followed by
the connect
#       statement for tpcc_master.
#



connect /home/tpcc/bin/web_user                   n10
1200      cr81
connect /home/tpcc/bin/web_user                   n10
1200      cr81
connect /home/tpcc/bin/web_user                   n10
1200      cr81
connect /home/tpcc/bin/web_user                   n10
1200      cr81
connect /home/tpcc/bin/web_user                   n10
1200      cr81
connect /home/tpcc/bin/web_user                   n10
1200      cr81
connect /home/tpcc/bin/web_user                   n10
1200      cr81
```

```
connect /home/tpcc/bin/web_user                   n10
1200      cr81
connect /home/tpcc/bin/web_user                   n10
1200      cr81
connect /home/tpcc/bin/web_user                   n10
1200      cr81
connect /home/tpcc/bin/web_user                   n10
1200      cr81
connect /home/tpcc/bin/web_user                   n10
1200      cr81
connect /home/tpcc/bin/web_user                   n10
1200      cr81
connect /home/tpcc/bin/web_user                   n10
1200      cr81
connect /home/tpcc/bin/web_user                   n10
1200      cr81
connect /home/tpcc/bin/web_user                   n10
1200      cr81
connect /home/tpcc/bin/web_user                   n10
1200      cr81

connect /home/tpcc/bin/web_user                   n11
1200      cr82
connect /home/tpcc/bin/web_user                   n11
1200      cr82
connect /home/tpcc/bin/web_user                   n11
1200      cr82
connect /home/tpcc/bin/web_user                   n11
1200      cr82
connect /home/tpcc/bin/web_user                   n11
1200      cr82
connect /home/tpcc/bin/web_user                   n11
1200      cr82
connect /home/tpcc/bin/web_user                   n11
1200      cr82
connect /home/tpcc/bin/web_user                   n11
1200      cr82
connect /home/tpcc/bin/web_user                   n11
1200      cr82
connect /home/tpcc/bin/web_user                   n11
1200      cr82
connect /home/tpcc/bin/web_user                   n11
1200      cr82
connect /home/tpcc/bin/web_user                   n11
1200      cr82
connect /home/tpcc/bin/web_user                   n11
1200      cr82
connect /home/tpcc/bin/web_user                   n11
1200      cr82
connect /home/tpcc/bin/web_user                   n11
1200      cr82
```

```
connect /home/tpcc/bin/web_user                 n11
1200      cr82

connect /home/tpcc/bin/web_user                 n20
1200      cr83
connect /home/tpcc/bin/web_user                 n20
1200      cr83
connect /home/tpcc/bin/web_user                 n20
1200      cr83
connect /home/tpcc/bin/web_user                 n20
1200      cr83
connect /home/tpcc/bin/web_user                 n20
1200      cr83
connect /home/tpcc/bin/web_user                 n20
1200      cr83
connect /home/tpcc/bin/web_user                 n20
1200      cr83
connect /home/tpcc/bin/web_user                 n20
1200      cr83
connect /home/tpcc/bin/web_user                 n20
1200      cr83
connect /home/tpcc/bin/web_user                 n20
1200      cr83
connect /home/tpcc/bin/web_user                 n20
1200      cr83
connect /home/tpcc/bin/web_user                 n20
1200      cr83
connect /home/tpcc/bin/web_user                 n20
1200      cr83
connect /home/tpcc/bin/web_user                 n20
1200      cr83
connect /home/tpcc/bin/web_user                 n20
1200      cr83
connect /home/tpcc/bin/web_user                 n20
1200      cr83
connect /home/tpcc/bin/web_user                 n20
1200      cr83
connect /home/tpcc/bin/web_user                 n20
1200      cr83

connect /home/tpcc/bin/web_user                 n24
1200      cr84
connect /home/tpcc/bin/web_user                 n24
1200      cr84
connect /home/tpcc/bin/web_user                 n24
1200      cr84
connect /home/tpcc/bin/web_user                 n24
1200      cr84
connect /home/tpcc/bin/web_user                 n24
1200      cr84
connect /home/tpcc/bin/web_user                 n24
1200      cr84
connect /home/tpcc/bin/web_user                 n24
1200      cr84
connect /home/tpcc/bin/web_user                 n24
1200      cr84
connect /home/tpcc/bin/web_user                 n24
1200      cr84
connect /home/tpcc/bin/web_user                 n24
1200      cr84
connect /home/tpcc/bin/web_user                 n24
1200      cr84
connect /home/tpcc/bin/web_user                 n24
1200      cr84
connect /home/tpcc/bin/web_user                 n24
1200      cr84
connect /home/tpcc/bin/web_user                 n24
1200      cr84
connect /home/tpcc/bin/web_user                 n24
1200      cr84

connect /home/tpcc/bin/web_user                 n37
1200      cr85
connect /home/tpcc/bin/web_user                 n37
1200      cr85
connect /home/tpcc/bin/web_user                 n37
1200      cr85
connect /home/tpcc/bin/web_user                 n37
1200      cr85
connect /home/tpcc/bin/web_user                 n37
1200      cr85
connect /home/tpcc/bin/web_user                 n37
1200      cr85
connect /home/tpcc/bin/web_user                 n37
1200      cr85
connect /home/tpcc/bin/web_user                 n37
1200      cr85
connect /home/tpcc/bin/web_user                 n37
1200      cr85
connect /home/tpcc/bin/web_user                 n37
1200      cr85
connect /home/tpcc/bin/web_user                 n37
1200      cr85
connect /home/tpcc/bin/web_user                 n37
1200      cr85
connect /home/tpcc/bin/web_user                 n37
1200      cr85
connect /home/tpcc/bin/web_user                 n37
1200      cr85
connect /home/tpcc/bin/web_user                 n37
1200      cr85
connect /home/tpcc/bin/web_user                 n37
1200      cr85

connect /home/tpcc/bin/web_user                 n38
1200      cr86
connect /home/tpcc/bin/web_user                 n38
1200      cr86
connect /home/tpcc/bin/web_user                 n38
1200      cr86
connect /home/tpcc/bin/web_user                 n38
1200      cr86
connect /home/tpcc/bin/web_user                 n38
1200      cr86
connect /home/tpcc/bin/web_user                 n38
1200      cr86
connect /home/tpcc/bin/web_user                 n38
1200      cr86
connect /home/tpcc/bin/web_user                 n38
1200      cr86
connect /home/tpcc/bin/web_user                 n38
1200      cr86
connect /home/tpcc/bin/web_user                 n38
1200      cr86
connect /home/tpcc/bin/web_user                 n38
1200      cr86
connect /home/tpcc/bin/web_user                 n38
1200      cr86
connect /home/tpcc/bin/web_user                 n38
1200      cr86
connect /home/tpcc/bin/web_user                 n38
1200      cr86
connect /home/tpcc/bin/web_user                 n38
1200      cr86
connect /home/tpcc/bin/web_user                 n38
1200      cr86
connect /home/tpcc/bin/web_user                 n38
1200      cr86

connect /home/tpcc/bin/web_user                 n39
1200      cr87
connect /home/tpcc/bin/web_user                 n39
1200      cr87
connect /home/tpcc/bin/web_user                 n39
1200      cr87
connect /home/tpcc/bin/web_user                 n39
1200      cr87
connect /home/tpcc/bin/web_user                 n39
1200      cr87
connect /home/tpcc/bin/web_user                 n39
1200      cr87
connect /home/tpcc/bin/web_user                 n39
1200      cr87
connect /home/tpcc/bin/web_user                 n39
1200      cr87
connect /home/tpcc/bin/web_user                 n39
1200      cr87
```

```
connect /home/tpcc/bin/web_user                 n39
1200      cr87
connect /home/tpcc/bin/web_user                 n39
1200      cr87
connect /home/tpcc/bin/web_user                 n39
1200      cr87
connect /home/tpcc/bin/web_user                 n39
1200      cr87
connect /home/tpcc/bin/web_user                 n39
1200      cr87
connect /home/tpcc/bin/web_user                 n39
1200      cr87
connect /home/tpcc/bin/web_user                 n39
1200      cr87
connect /home/tpcc/bin/web_user                 n39
1200      cr87
connect /home/tpcc/bin/web_user                 n39
1200      cr87

connect /home/tpcc/bin/web_user                 n69
1200      cr88
connect /home/tpcc/bin/web_user                 n69
1200      cr88
connect /home/tpcc/bin/web_user                 n69
1200      cr88
connect /home/tpcc/bin/web_user                 n69
1200      cr88
connect /home/tpcc/bin/web_user                 n69
1200      cr88
connect /home/tpcc/bin/web_user                 n69
1200      cr88
connect /home/tpcc/bin/web_user                 n69
1200      cr88
connect /home/tpcc/bin/web_user                 n69
1200      cr88
connect /home/tpcc/bin/web_user                 n69
1200      cr88
connect /home/tpcc/bin/web_user                 n69
1200      cr88
connect /home/tpcc/bin/web_user                 n69
1200      cr88
connect /home/tpcc/bin/web_user                 n69
1200      cr88
connect /home/tpcc/bin/web_user                 n69
1200      cr88
connect /home/tpcc/bin/web_user                 n69
1200      cr88
connect /home/tpcc/bin/web_user                 n69
1200      cr88
```

```
connect /home/tpcc/bin/reduce           localhost 1
          localhost

#connect /home/tpcc/bin/aide            localhost 1
          localhost

connect /home/tpcc/bin/tpcc_master      localhost 1
          localhost

# NOTE:             timeout MUST be set after the
connect statements for it to
#                    take effect.
#
# timeout          is how long prte will wait for an
outstanding command to
#                   return its expected prompt before
timing out.
#

set timeout 600



echo


#########################################################
#########################
#
#
# Setting PRTE network variables.
#
#
#
#########################################################
#########################


noecho


#########################################################
##################
#
#
# PRTE network variables.
#
#
#
#   set network_variable {name} {val}
#
#
#
#########################################################
##################


#################################
#                               #
#  FRONT END NETWORK VARIABLES  #
#                               #
#################################
#
```

```
# FE_NAMES       A comma seperated list of the front
end network node names.
#
# FE_USER_COUNTS A comma seperated list of the users
to run on each front end.
#                NOTE: The order of counts in this
list should match the order
#                          of names in FE_NAMES.
# ADMIN_USER_COUNT is the number of aides to run.
#
# ADMIN_FE_NAMES is a comma seperated list of FEs on
which the aides will
#                    operated.

set network_variable FE_NAMES
cr81,cr82,cr83,cr84,cr85,cr86,cr87,cr88
set network_variable FE_USER_COUNTS
24000,24000,24000,24000,24000,24000,24000,24000

set network_variable ADMIN_USER_COUNT 0
set network_variable ADMIN_FE_NAMES localhost


################################
#                              #
#  REDUCER NETWORK VARIABLES   #
#                              #
################################
#
# REDUCER_UPDATE_INTERVAL       The interval, in
seconds, between updates
#                               displayed on the
console.
#
# REDUCER_HEADER_INTERVAL       Every
REDUCER_HEADER_INTERVAL updates the
#                               column headers will
be displayed on the
#                               console.
#

set network_variable REDUCER_UPDATE_INTERVAL 30
set network_variable REDUCER_HEADER_INTERVAL 6


################################
#                              #
#  TPCC USER NETWORK VARIABLES #
#                              #
################################
#
# TPCC_USER_LOG_TYPE controls what information the
prte users log to thier
#                    respective files. This is a bit
mask.
#
#                    0 - no logging
#                    1 - timer logging (required for
asci data reduction)
#                    2 - sut data logging (required
for durability)
#                    4 - script logging (required by
the tpcc user script)
```

```
#                   8 - user sut data logging
(required by web users for
#                       error checking)
#
#                   In general, leave this at 12 for
web clients doing binary
#                   data reduction, and 13 for web
clients doing asci data
#                   reduction.
#
# TPCC_USER_FLUSH_LOG is whether or not to flush
every write to the log.
#
# DURABILITY_LOGGING is whether or not to parse new
order response pages for
#                   durability data (to be sent to
reducer). This variable
#                       is a boolean so legal values
are 0,f,F and 1,t,T.
#
# C_LAST  is the constant value used for customer
last names.
#                   This value must be chosen with
care.  It must be based on
#                   the value you used when
populating your database.


set network_variable TPCC_USER_LOG_TYPE           0
set network_variable TPCC_USER_FLUSH_LOG          0
set network_variable DURABILITY_LOGGING           0
set network_variable C_LAST                       88


####################################
#                                  #
#  CONFIGURATION NETWORK VARIABLES  #
#                                  #
####################################
#
# CGI_SCRIPT_NAME is the name of the application to
run on the front ends.
#
# LOAD_DLL_TIMEOUT is how long master should wait (in
seconds) for the dll
#                   to initially load before
timing out.
#

set network_variable CGI_SCRIPT_NAME
         /tpcc/tpcc.html
set network_variable LOAD_DLL_TIMEOUT   300

####################################
#                                  #
#  TEST CONTROL NETWORK VARIABLES  #
#                                  #
####################################
#
# LOOPBACK_MODE
#                   0 - Full end-to-end runs.
#                   1 - Back end loopback runs (not
implemented yet)
#                   2 - Front end loopback runs
#                   3 - RTE loopback runs
#
# RUN_NUMBER          is used to tag all output files
with the run number.
#
#                 1 - the primary measurement run.
#                 2 - the repeatability run.
#                 5 - the 50% run.
#                 8 - the 80% run.
#
#                       If you are unsure which run
this really will end up being,
#                       just leave it at 1, and you can
rename files later if you
#                       need to.
#
# VERSION_NUMBER      is used to tag all output files
with the version number.
#                       This is used if you submit
files to the auditor, and then
#                       need to rerun the test, and
resubmit files to the auditor,
#                       for some reason.  For example,
you submit a repeatability
#                       run (RUN_NUMBER 2,
VERSION_NUMBER 1) and the auditor finds
#                       a problem and asks you to re-
run the test (RUN_NUMBER 1,
#                       VERSION_NUMBER 2).
#                       Under normal circumstances,
this can just be left at 1.
#
# TEST_RESULTS_DIR    is the full directory path
where the test's run directory
#                       will be created.  All files
(data, log, etc) will be
#                       put into the run directory.
#
# WARMUP_TIME         is the time in seconds to warm
up.  This is the period
#                       of time after all users have
started doing transactions
#                       and before the measurement
interval begins.
#
# STEADY_STATE_TIME is the time for which the test is
considered to be
#                               in a steady running
state.  It is during this time
#                               that all data for
measurement intervals will be
#                               collected.
#
# MEASUREMENT_INTERVAL        defines the length of a
test period within the
#                               STEADY_STATE_TIME. The
steady state time may have 1
#                               or more measurement
intervals. Each measurement
#                               interval can be thought
of as a seperate measurement
#                               run.
#
# COOLDOWN_TIME       is the length of time the test
will continue to run
#                       after the measurement interval
is over.  This time can
#                       be used for doing various types
of data collection by
#                       hand if desired that might
otherwise have a negative
#                       impact on the measured test
results. Even if you are
#                       not collecting any extra data
by hand, it is recommended
#                       that you keep this value at
something like 300 or 600
#                       to avoid "clipping" effects at
the end of the measurement
#                       interval.
#
# CHECKPOINT_INTERVAL         is the total time
between the start of each
#                               checkpoint command.
#
# CKPT_PROXIMITY_ADDITIONAL_OFFSET      This value
will be added to any
#                               required proximity time
to give the actual start
#                               time of the first
checkpoint in the measurement
#                               interval.
#
# LOGIN_DELAY         is the delay between logins on
a per front end basis.
#                       NOTE: This is similar to the
prte internal variable
#                       resume_interval (tpcc users
start, then immediately
#                       pause, so the act of logging in
is just a resume) but
#                       not exactly the same.
#
# RESUME_DELAY        is the delay between resumes on
a per front end basis.
#                       NOTE: This is similar to the
prte internal variable
#                       resume_interval but not exactly
the same.
#
# STOP_DELAY          is the delay between stops on a
per front end basis.
#                       NOTE: This is similar to the
prte internal variable
#                       stop_interval but not exactly
the same.
#
# SYNC_OFFSET                 how many users we'll
allow to have outstanding
#                               when doing crowd
control.
#
# SYNC_UPDATE                 how often user
login/resume/stop progress is printed
```

```
#                           out to the console
(heartbeat of user synchronization
#                           effectively).
#
# MSG_TIMEOUT               how long we'll wait for
status and sync messages.
#

set network_variable LOOPBACK_MODE       0

set network_variable RUN_NUMBER          1
set network_variable VERSION_NUMBER      1
set network_variable TEST_RESULTS_DIR
/home/tpcc/results

set network_variable WARMUP_TIME
         7200.0
set network_variable STEADY_STATE_TIME
         7200.0
set network_variable MEASUREMENT_INTERVAL
         7200.0
set network_variable COOLDOWN_TIME
         600.0

set network_variable CHECKPOINT_INTERVAL          0
set network_variable CKPT_PROXIMITY_ADDITIONAL_OFFSET
         0

set network_variable LOGIN_DELAY         0.001
set network_variable RESUME_DELAY        0.003
set network_variable STOP_DELAY          0.003

set network_variable SYNC_OFFSET                  128
set network_variable SYNC_UPDATE
         1000


set network_variable MSG_TIMEOUT
         600.0

set network_variable NO_THINK_TIME_UPDATE_INTERVAL
10.0

set network_variable NO_THINK_TIME      80.0


# In general, the SEED network variable should not be
set. A random value
# based on process id and the current time will be
used.  This varaible is
# really only exposed in case you want to exactly
reproduce a previous run
# using that previous run's seed.
#set network_variable         SEED
         123127777

#########################################################
##################
#
# AUDIT UTILITIES -- these are the replacement for
the audit
# shell scripts -- they currently only work for
Oracle on DUNIX.
# They do the following:
#     Collect logspace info
#     Write data to audit table for later use in
runcheck
#     Collect checkpoint info
#     Run optional custom scripts on back-end before
or after the test
#     For Oracle, collect bstat/estat (optional)
#
#########################################################
##################
#
# GET_ALL_AUDIT_FILES if True (or 1) will create the
following:
#                           Audit table for doing
runcheck later
#                           m1log.v1 -- a before &
after snapshot of the logsize
#
# BE_NAMES          Comma-separated list of back-
ends
#
# BE_USERNAME       Username to use when logging
into back-ends
#                   NOTE: you must have .rhosts
configured so no password
#                   is needed.
#
# DATABASE_TYPE     Oracle, Sybase or MsSql
#
# DATABASE_USERNAME  Username and password for
database.
# DATABASE_PASSWORD  Defaults are: tpcc/tpcc for
Oracle and sa/<no-passwd>
#                   for Sybase and MsSql
#
# Optional variables -- if you don't want them,
comment them out or set to ""
#
# ORACLE_STATS_SCRIPT_PATH
#                   Path to directory on back-end
containing Oracle's
#                   orst_<xxx>.sql files.
#                   For example:
$ORACLE_HOME/bench/gen/sql
#
# CUSTOM_BEFORE_TEST_SCRIPT
# CUSTOM_AFTER_TEST_SCRIPT
#                   Path of executable file on back-
end to be run before/after
#                   the test.  For example, if you
wanted to run processor
#                   affinity and load some stored
procedures before a test,
#                   you could put the commands in a
shell script on the BE
#                   and call put the path to that
shell script into the
#                   CUSTOM_BEFORE_TEST_SCRIPT
variable
#
#########################################################
##################

set network_variable GET_ALL_AUDIT_FILES FALSE


set network_variable BE_NAMES         be1, be2, be3
set network_variable BE_USERNAME        oracle

set network_variable DATABASE_TYPE      MSSQL
set network_variable DATABASE_USERNAME  db2admin
set network_variable DATABASE_PASSWORD  blue

set network_variable MAX_W_ID           19200
set network_variable BASE_W_ID          1

set network_variable ORACLE_STATS_SCRIPT_PATH     ""
set network_variable CUSTOM_BEFORE_TEST_SCRIPT  ""
set network_variable CUSTOM_AFTER_TEST_SCRIPT   ""



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


# now start all the users.  delay between each user
being started is controled
# by start_interval defined above in the "PRTE
internal variables" section.
#



echo


#########################################################
#########################
#
#
# Starting all PRTE users (may take a while,
depending on the number of users) #
#
#
#########################################################
#########################

noecho


#start
```

Internet Information Server Registry Parameters

```
Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\InetInfo]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\InetInfo\Parameters]
"ListenBackLog"=dword:00000019
"DispatchEntries"=hex(7):4c,00,44,00,41,00,50,00,53,0
0,56,00,43,00,00,00,00,00
"PoolThreadLimit"=dword:000003fe
"ThreadTimeout"=dword:00015180

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\InetInfo\Performance]
"Library"="infoctrs.dll"
"Open"="OpenINFOPerformanceData"
"Close"="CloseINFOPerformanceData"
"Collect"="CollectINFOPerformanceData"
"Last Counter"=dword:00000842
"Last Help"=dword:00000843
"First Counter"=dword:00000802
"First Help"=dword:00000803
"Library Validation
Code"=hex:30,bb,ee,43,77,5b,c2,01,10,25,00,00,00,00,0
0,00
"WbemAdapFileTime"=hex:00,73,79,5b,bc,d4,c0,01
"WbemAdapFileSize"=dword:00002510
"WbemAdapStatus"=dword:00000000
```

World Wide Web Service Registry Parameters

```
Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\W3SVC]
"Type"=dword:00000020
"Start"=dword:00000002
"ErrorControl"=dword:00000001
"ImagePath"=hex(2):43,00,3a,00,5c,00,57,00,49,00,4e,0
0,4e,00,54,00,5c,00,53,00,\

79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,69,00
,6e,00,65,00,74,00,73,\

00,72,00,76,00,5c,00,69,00,6e,00,65,00,74,00,69,00,6e
,00,66,00,6f,00,2e,00,\
  65,00,78,00,65,00,00,00
"DisplayName"="World Wide Web Publishing Service"
"DependOnService"=hex(7):49,00,49,00,53,00,41,00,44,0
0,4d,00,49,00,4e,00,00,00,\
  00,00
"DependOnGroup"=hex(7):00,00

"ObjectName"="LocalSystem"
"Description"="Provides Web connectivity and
administration through the Internet Information
Services snap-in."
"FailureActions"=hex:ff,ff,ff,ff,80,3a,0e,00,90,3a,0e
,00,03,00,00,00,98,3a,0e,\

00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00
,00,00,00,00,00,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\W3SVC\ASP]
"NOTE"="This is for backward compatibility only."

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\W3SVC\ASP\LanguageEngines]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\W3SVC\ASP\LanguageEngines\PerlScript]
"Write"="$Response->write(|);"
"WriteBlock"="$Response->writeblock(|);"

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\W3SVC\ASP\Parameters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\W3SVC\Parameters]
"MajorVersion"=dword:00000005
"MinorVersion"=dword:00000000
"InstallPath"="C:\\WINNT\\System32\\inetsrv"
"CertMapList"="C:\\WINNT\\System32\\inetsrv\\iiscrmap
.dll"
"AccessDeniedMessage"="Error: Access is Denied."
"Filter DLLs"=""
"LogFileDirectory"="C:\\WINNT\\System32\\LogFiles"
"AcceptExOutstanding"=dword:00000028

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\W3SVC\Parameters\ADCLaunch]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\W3SVC\Parameters\ADCLaunch\AdvancedDataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\W3SVC\Parameters\ADCLaunch\RDSServer.DataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\W3SVC\Parameters\Script Map]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\W3SVC\Parameters\Virtual Roots]
"/"="c:\\inetpub\\wwwroot,,207"
"/Scripts"="c:\\inetpub\\scripts,,1"
"/IISHelp"="c:\\winnt\\help\\iishelp,,1"
"/IISAdmin"="C:\\WINNT\\System32\\inetsrv\\iisadmin,,
1"
"/IISSamples"="c:\\inetpub\\iissamples,,1"
"/MSADC"="c:\\program files\\common
files\\system\\msadc,,1"
"/_vti_bin"="C:\\Program Files\\Common
Files\\Microsoft Shared\\Web Server
Extensions\\40\\isapi,,1"
"/Printers"="C:\\WINNT\\web\\printers,,201"
"/tpcc"="C:\\Inetpub\\wwwroot\\tpcc,,207"

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\W3SVC\Performance]
"Library"="w3ctrs.dll"
"Open"="OpenW3PerformanceData"
"Close"="CloseW3PerformanceData"
"Collect"="CollectW3PerformanceData"
"Last Counter"=dword:000008e6
"Last Help"=dword:000008e7
"First Counter"=dword:00000844
"First Help"=dword:00000845
"Library Validation
Code"=hex:de,61,7e,46,77,5b,c2,01,10,3d,00,00,00,00,0
0,00
"WbemAdapFileTime"=hex:00,73,79,5b,bc,d4,c0,01
"WbemAdapFileSize"=dword:00001d10
"WbemAdapStatus"=dword:00000000

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\W3SVC\Security]
"Security"=hex:01,00,14,80,a0,00,00,00,ac,00,00,00,14
,00,00,00,30,00,00,00,02,\

00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00
,00,00,00,00,01,00,00,\

00,00,02,00,70,00,04,00,00,00,00,00,18,00,fd,01,02,00
,01,01,00,00,00,00,00,\

05,12,00,00,00,74,00,6f,00,00,00,1c,00,ff,01,0f,00,01
,02,00,00,00,00,00,05,\

20,00,00,00,20,02,00,00,72,00,73,00,00,00,18,00,8d,01
,02,00,01,01,00,00,00,\

00,00,05,0b,00,00,00,20,02,00,00,00,00,1c,00,fd,01,02
,00,01,02,00,00,00,00,\

00,05,20,00,00,00,23,02,00,00,72,00,73,00,01,01,00,00
,00,00,00,05,12,00,00,\
  00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\W3SVC\Enum]
"0"="Root\\LEGACY_W3SVC\\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001
```

TPCC Application Registry Parameters

```
Windows Registry Editor Version 5.00
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\TPCC]
"dbType"="DB2"
"dlvyLogPath"="c:\\\\inetpub\\\\wwwroot\\\\tpcc\\\\dl
vy"
"dlvyQueueLen"=dword:00007530
"nullDB"=dword:00000000
"dbName"="tpcc"
"errorLogFile"="c:\\\\inetpub\\\\wwwroot\\\\tpcc\\\\e
rrorLog.txt"
"htmlTraceLogFile"="c:\\\\inetpub\\\\wwwroot\\\\tpcc\
\\\\htmlTrace.txt"
"numUsers"=dword:00007530
"dbUserName"="db2admin"
"dbPassword"="blue"
"dbInterfacePath"="c:\\\\inetpub\\\\wwwroot\\\\tpcc\\
\\\db2glue.dll"
"DlvyThreads"=dword:00000008
```

Array configuration

```
Array Diagnostic Utility Version 7.30.6.0
Array Diagnostic Utility Inspection Report Version
7.30.5.0

Date/Time:          Monday, November 28, 2005
9:22:58AM
Computer Model:     HP Server


SLOT SUMMARY:
   Slot Num  Slot Type  Array Controllers and Host
Adapters Detected
   --------  ---------  ----------------------------
---------------
   SLOT 0    PCI        Smart Array 5i Controller
   SLOT 1    PCI        Smart Array 6400 Controller
   SLOT 1    PCI        Smart Array 6400EM Controller
   SLOT 2    PCI        Smart Array 6400 Controller
   SLOT 2    PCI        Smart Array 6400EM Controller
   SLOT 3    PCI        Smart Array 642 Controller
                           |
                            -(ID 0) Modular Smart
Array 500

   SLOT 4    PCI        Smart Array 6400 Controller
   SLOT 4    PCI        Smart Array 6400EM Controller
   SLOT 5    PCI        Smart Array 6400 Controller
   SLOT 5    PCI        Smart Array 6400EM Controller
   SLOT 6    PCI        Smart Array 6400 Controller
   SLOT 6    PCI        Smart Array 6400EM Controller
   SLOT 7    PCI        Smart Array 6400 Controller
   SLOT 7    PCI        Smart Array 6400EM Controller
   SLOT 8    PCI        Smart Array 6400 Controller
   SLOT 8    PCI        Smart Array 6400EM Controller
```

Boot configuration

```
[boot loader]
timeout=3
default=multi(0)disk(0)rdisk(0)partition(1)\WINDOWS
[operating systems]
multi(0)disk(0)rdisk(0)partition(1)\WINDOWS="Windows
Server 2003 Enterprise x64 Edition" /noexecute=optout
/fastdetect
```

Server Bus Performance Driver Registry Parameters

```
Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\hpqcissb]
"Type"=dword:00000001
"Start"=dword:00000000
"ErrorControl"=dword:00000001
"Tag"=dword:00000102
"ImagePath"=hex(2):73,00,79,00,73,00,74,00,65,00,6d,0
0,33,00,32,00,5c,00,44,00,\

52,00,49,00,56,00,45,00,52,00,53,00,5c,00,68,00,70,00
,71,00,63,00,69,00,73,\
  00,73,00,62,00,2e,00,73,00,79,00,73,00,00,00
"DisplayName"="Smart Array Controllers Non-Miniport
Bus Driver"
"Group"="port"

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\hpqcissb\Parameters]
"CompletionMode"=dword:00000002
"CosTimerRate"=dword:00000001

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\hpqcissb\Parameters\Controller8]
"CompletionMode"=dword:00000001

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\hpqcissb\Security]
"Security"=hex:01,00,14,80,b8,00,00,00,c4,00,00,00,14
,00,00,00,30,00,00,00,02,\

00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00
,00,00,00,00,01,00,00,\

00,00,02,00,88,00,06,00,00,00,00,00,14,00,fd,01,02,00
,01,01,00,00,00,00,00,\

05,12,00,00,00,00,00,18,00,ff,01,0f,00,01,02,00,00,00
,00,00,05,20,00,00,00,\

20,02,00,00,00,00,14,00,8d,01,02,00,01,01,00,00,00,00
,00,05,04,00,00,00,00,\

00,14,00,8d,01,02,00,01,01,00,00,00,00,00,05,06,00,00
,00,00,00,14,00,00,01,\

00,00,01,01,00,00,00,00,00,05,0b,00,00,00,00,00,00,18,00
,fd,01,02,00,01,02,00,\

00,00,00,00,05,20,00,00,00,23,02,00,00,01,01,00,00,00
,00,00,05,12,00,00,00,\
  01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\hpqcissb\Enum]
"0"="PCI\\VEN_0E11&DEV_0046&SUBSYS_409C0E11&REV_01\\5
&2c344c1f&0&203840"
"Count"=dword:0000000f
"NextInstance"=dword:0000000f
"1"="PCI\\VEN_0E11&DEV_0046&SUBSYS_409D0E11&REV_01\\5
&2c344c1f&0&283840"
"2"="PCI\\VEN_0E11&DEV_0046&SUBSYS_409C0E11&REV_01\\5
&2363b0a8&0&204040"
"3"="PCI\\VEN_0E11&DEV_0046&SUBSYS_409D0E11&REV_01\\5
&2363b0a8&0&284040"
"4"="PCI\\VEN_0E11&DEV_0046&SUBSYS_409C0E11&REV_01\\5
&56dd264&0&206848"
"5"="PCI\\VEN_0E11&DEV_0046&SUBSYS_409D0E11&REV_01\\5
&56dd264&0&286848"
"6"="PCI\\VEN_0E11&DEV_0046&SUBSYS_409C0E11&REV_01\\5
&260febdf&0&207050"
"7"="PCI\\VEN_0E11&DEV_0046&SUBSYS_409D0E11&REV_01\\5
&260febdf&0&287050"
"8"="PCI\\VEN_0E11&DEV_0046&SUBSYS_409B0E11&REV_01\\4
&2534a57b&0&5058"
"9"="PCI\\VEN_0E11&DEV_0046&SUBSYS_409C0E11&REV_01\\5
&2c57bd9b&0&204858"
"10"="PCI\\VEN_0E11&DEV_0046&SUBSYS_409D0E11&REV_01\\
5&2c57bd9b&0&284858"
"11"="PCI\\VEN_0E11&DEV_0046&SUBSYS_409C0E11&REV_01\\
5&30fce3fc&0&205860"
"12"="PCI\\VEN_0E11&DEV_0046&SUBSYS_409D0E11&REV_01\\
5&30fce3fc&0&285860"
"13"="PCI\\VEN_0E11&DEV_0046&SUBSYS_409C0E11&REV_01\\
5&282c4885&0&206060"
"14"="PCI\\VEN_0E11&DEV_0046&SUBSYS_409D0E11&REV_01\\
5&282c4885&0&286060"

Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\hpqcissd]
"Type"=dword:00000001
"Start"=dword:00000000
"ErrorControl"=dword:00000001
"Tag"=dword:00000102
"ImagePath"=hex(2):73,00,79,00,73,00,74,00,65,00,6d,0
0,33,00,32,00,5c,00,44,00,\
```

```
52,00,49,00,56,00,45,00,52,00,53,00,5c,00,68,00,70,00
,71,00,63,00,69,00,73,\
  00,73,00,64,00,2e,00,73,00,79,00,73,00,00,00
"DisplayName"="Smart Array Controllers Non-Miniport
Disk Driver"
"Group"="Primary Disk"

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\hpqcissd\Security]
"Security"=hex:01,00,14,80,b8,00,00,00,c4,00,00,00,14
,00,00,00,30,00,00,00,02,\

00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00
,00,00,00,00,01,00,00,\

00,00,02,00,88,00,06,00,00,00,00,00,14,00,fd,01,02,00
,01,01,00,00,00,00,00,\

05,12,00,00,00,00,00,18,00,ff,01,0f,00,01,02,00,00,00
,00,00,05,20,00,00,00,\

20,02,00,00,00,00,14,00,8d,01,02,00,01,01,00,00,00,00
,00,05,04,00,00,00,00,\

00,14,00,8d,01,02,00,01,01,00,00,00,00,00,05,06,00,00
,00,00,00,14,00,00,01,\

00,00,01,01,00,00,00,00,00,05,0b,00,00,00,00,00,18,00
,fd,01,02,00,01,02,00,\

00,00,00,00,05,20,00,00,00,23,02,00,00,01,01,00,00,00
,00,00,05,12,00,00,00,\
  01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services
\hpqcissd\Enum]
"0"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&5f1d
c7&0&0000004000000000"
"Count"=dword:0000002d
"NextInstance"=dword:0000002d
"1"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&5f1d
c7&0&0100004000000000"
"2"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&5f1d
c7&0&0200004000000000"
"3"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&78f0
8cd&0&0000004000000000"
"4"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&78f0
8cd&0&0100004000000000"
"5"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&27e4
7dd0&0&0000004000000000"
"6"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&27e4
7dd0&0&0100004000000000"
"7"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&27e4
7dd0&0&0200004000000000"
"8"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&1e3d
cc80&0&0000004000000000"
"9"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&1e3d
cc80&0&0100004000000000"
"10"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&1bb
4d19c&0&0000004000000000"
"11"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&1bb
4d19c&0&0200004000000000"
"12"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&1bb
4d19c&0&0300004000000000"
"13"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&1ec
08c08&0&0000004000000000"
"14"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&1ec
08c08&0&0100004000000000"
"15"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&176
65490&0&0000004000000000"
"16"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&176
65490&0&0100004000000000"
"17"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&176
65490&0&0200004000000000"
"18"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&176
65490&0&0300004000000000"
"19"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&176
65490&0&0400004000000000"
"20"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&176
65490&0&0500004000000000"
"21"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&176
65490&0&0600004000000000"
"22"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&176
65490&0&0700004000000000"
"23"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&2c2
29c0b&0&0000004000000000"
"24"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&2c2
29c0b&0&0100004000000000"
"25"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&2c2
29c0b&0&0200004000000000"
"26"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&2c2
29c0b&0&0300004000000000"
"27"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&2c2
29c0b&0&0400004000000000"
"28"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&2c2
29c0b&0&0500004000000000"
"29"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&2c2
29c0b&0&0600004000000000"
"30"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&2c2
29c0b&0&0700004000000000"
"31"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&596
1f2d&0&0000004000000000"
"32"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&596
1f2d&0&0100004000000000"
"33"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&596
1f2d&0&0200004000000000"
"34"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&410
9223&0&0000004000000000"
"35"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&410
9223&0&0100004000000000"
"36"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\5&c63
3b0d&0&0000014001000000"
"37"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&152
00e66&0&0000004000000000"
"38"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&152
00e66&0&0100004000000000"
"39"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&1ec
6bfb6&0&0000004000000000"
"40"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&1ec
6bfb6&0&0100004000000000"
"41"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&267
0e50&0&0000004000000000"
"42"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&267
0e50&0&0100004000000000"
"43"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&345
b2707&0&0000004000000000"
"44"="HPQCISS\\Disk&VEN_HP&PROD_LOGICAL_VOLUME\\6&345
b2707&0&0100004000000000"
```

System Summary

```
System Information report written at: 11/28/05
09:56:20
System Name: DARKANGEL
[System Summary]

Item      Value
OS Name   Microsoft(R) Windows(R) Server 2003
Enterprise x64 Edition
Version   5.2.3790 Service Pack 1 Build 3790
Other OS Description          Not Available
OS Manufacturer     Microsoft Corporation
System Name         DARKANGEL
System Manufacturer HP
System Model        ProLiant DL585 G1
System Type         x64-based PC
Processor AMD64 Family 15 Model 33 Stepping 2
AuthenticAMD ~2400 Mhz
Processor AMD64 Family 15 Model 33 Stepping 2
AuthenticAMD ~2400 Mhz
Processor AMD64 Family 15 Model 33 Stepping 2
AuthenticAMD ~2400 Mhz
Processor AMD64 Family 15 Model 33 Stepping 2
AuthenticAMD ~2400 Mhz
Processor AMD64 Family 15 Model 33 Stepping 2
AuthenticAMD ~2400 Mhz
Processor AMD64 Family 15 Model 33 Stepping 2
AuthenticAMD ~2400 Mhz
Processor AMD64 Family 15 Model 33 Stepping 2
AuthenticAMD ~2400 Mhz
Processor AMD64 Family 15 Model 33 Stepping 2
AuthenticAMD ~2400 Mhz
BIOS Version/Date   HP A01, 8/26/2005
SMBIOS Version      2.3
Windows Directory   C:\WINDOWS
System Directory    C:\WINDOWS\system32
Boot Device         \Device\HarddiskVolume58
Locale    United States
Hardware Abstraction Layer    Version =
"5.2.3790.1830 (srv03_sp1_rtm.050324-1447)"
User Name Not Available
Time Zone Eastern Standard Time
Total Physical Memory         130,903.27 MB
Available Physical Memory     124.75 GB
Total Virtual Memory          128.96 GB
Available Virtual Memory      128.76 GB
Page File Space     3.98 GB
Page File C:\pagefile.sys

[Hardware Resources]
```

```
[Conflicts/Sharing]

Resource  Device
I/O Port 0x0000A000-0x0000BFFF          PCI standard
PCI-to-PCI bridge
I/O Port 0x0000A000-0x0000BFFF          Smart Array
642 Controller (Non-Miniport)

Memory Address 0xF7800000-0xF79FFFFF    PCI standard
PCI-to-PCI bridge
Memory Address 0xF7800000-0xF79FFFFF    PCI standard
PCI-to-PCI bridge

I/O Port 0x00000000-0x000003AF          PCI bus
I/O Port 0x00000000-0x000003AF          Direct memory
access controller

I/O Port 0x000003C0-0x000003DF          PCI bus
I/O Port 0x000003C0-0x000003DF          PCI standard
PCI-to-PCI bridge
I/O Port 0x000003C0-0x000003DF          RAGE XL  PCI
(Microsoft Corporation)

Memory Address 0xF7E00000-0xF7FFFFFF    PCI standard
PCI-to-PCI bridge
Memory Address 0xF7E00000-0xF7FFFFFF    PCI standard
PCI-to-PCI bridge

I/O Port 0x00009000-0x00009FFF          PCI standard
PCI-to-PCI bridge
I/O Port 0x00009000-0x00009FFF          PCI standard
PCI-to-PCI bridge
I/O Port 0x00009000-0x00009FFF          Smart Array
6400 Controller (Non-Miniport)

I/O Port 0x00006000-0x00007FFF          PCI standard
PCI-to-PCI bridge
I/O Port 0x00006000-0x00007FFF          PCI standard
PCI-to-PCI bridge
I/O Port 0x00006000-0x00007FFF          Smart Array
6400 Controller (Non-Miniport)

Memory Address 0xF7A00000-0xF7FFFFFF    PCI bus
Memory Address 0xF7A00000-0xF7FFFFFF    PCI standard
PCI-to-PCI bridge
Memory Address 0xF7A00000-0xF7FFFFFF    PCI standard
PCI-to-PCI bridge

I/O Port 0x0000B000-0x0000BFFF          PCI standard
PCI-to-PCI bridge
I/O Port 0x0000B000-0x0000BFFF          Smart Array
6400 Controller (Non-Miniport)

I/O Port 0x00005000-0x00005FFF          PCI standard
PCI-to-PCI bridge
I/O Port 0x00005000-0x00005FFF          Smart Array
5i

I/O Port 0x000000A0-0x000000A1          Motherboard
resources

I/O Port 0x000000A0-0x000000A1          Programmable
interrupt controller

IRQ 19    AMD PCI to USB Open Host Controller
IRQ 19    AMD PCI to USB Open Host Controller

Memory Address 0xA0000-0xBFFFF          PCI bus
Memory Address 0xA0000-0xBFFFF          PCI standard
PCI-to-PCI bridge
Memory Address 0xA0000-0xBFFFF          RAGE XL  PCI
(Microsoft Corporation)

Memory Address 0xF7B00000-0xF7BFFFFF    PCI standard
PCI-to-PCI bridge
Memory Address 0xF7B00000-0xF7BFFFFF    PCI standard
PCI-to-PCI bridge

I/O Port 0x00007000-0x00007FFF          PCI standard
PCI-to-PCI bridge
I/O Port 0x00007000-0x00007FFF          Smart Array
6400 Controller (Non-Miniport)

Memory Address 0xF5F00000-0xF79FFFFF    PCI bus
Memory Address 0xF5F00000-0xF79FFFFF    PCI standard
PCI-to-PCI bridge

Memory Address 0xF5E00000-0xF5EFFFFF    PCI bus
Memory Address 0xF5E00000-0xF5EFFFFF    PCI standard
PCI-to-PCI bridge

I/O Port 0x000003B0-0x000003BB          PCI bus
I/O Port 0x000003B0-0x000003BB          PCI standard
PCI-to-PCI bridge
I/O Port 0x000003B0-0x000003BB          RAGE XL  PCI
(Microsoft Corporation)

I/O Port 0x00004000-0x00004FFF          PCI standard
PCI-to-PCI bridge
I/O Port 0x00004000-0x00004FFF          HP iLO
Management Channel Interface Driver

I/O Port 0x0000C000-0x0000DFFF          PCI standard
PCI-to-PCI bridge
I/O Port 0x0000C000-0x0000DFFF          PCI standard
PCI-to-PCI bridge
I/O Port 0x0000C000-0x0000DFFF          Smart Array
6400 Controller (Non-Miniport)

I/O Port 0x00008000-0x0000DFFF          PCI bus
I/O Port 0x00008000-0x0000DFFF          PCI standard
PCI-to-PCI bridge
I/O Port 0x00008000-0x0000DFFF          PCI standard
PCI-to-PCI bridge
I/O Port 0x00008000-0x0000DFFF          Smart Array
6400 Controller (Non-Miniport)

I/O Port 0x0000D000-0x0000DFFF          PCI standard
PCI-to-PCI bridge
I/O Port 0x0000D000-0x0000DFFF          Smart Array
6400 Controller (Non-Miniport)

I/O Port 0x00000020-0x00000021          Motherboard
resources

I/O Port 0x00000020-0x00000021          Programmable
interrupt controller


[DMA]

Resource  Device    Status
Channel 7 Direct memory access controller         OK

Channel 2 Standard floppy disk controller         OK


[Forced Hardware]

Device    PNP Device ID

[I/O]

Resource  Device    Status
0x00000000-0x000003AF         PCI bus   OK
0x00000000-0x000003AF         Direct memory access
controller          OK
0x000003B0-0x000003BB         PCI bus   OK
0x000003B0-0x000003BB         PCI standard PCI-to-PCI
bridge    OK
0x000003B0-0x000003BB         RAGE XL  PCI (Microsoft
Corporation)        OK
0x000003C0-0x000003DF         PCI bus   OK
0x000003C0-0x000003DF         PCI standard PCI-to-PCI
bridge    OK
0x000003C0-0x000003DF         RAGE XL  PCI (Microsoft
Corporation)        OK
0x000003E0-0x00000FFF         PCI bus   OK
0x00001000-0x00007FFF         PCI bus   OK
0x00004000-0x00004FFF         PCI standard PCI-to-PCI
bridge    OK
0x00004000-0x00004FFF         HP iLO Management
Channel Interface Driver      OK
0x00004800-0x000048FF         HP ProLiant iLO
Advanced System Management Controller   OK
0x00004400-0x000044FF         RAGE XL  PCI (Microsoft
Corporation)        OK
0x00000020-0x00000021         Motherboard resources
          OK
0x00000020-0x00000021         Programmable interrupt
controller          OK
0x00000050-0x00000051         Motherboard resources
          OK
0x00000092-0x00000092         Motherboard resources
          OK
0x000000A0-0x000000A1         Motherboard resources
          OK
0x000000A0-0x000000A1         Programmable interrupt
controller          OK
0x000000F0-0x000000F1         Motherboard resources
          OK
0x00000230-0x00000233         Motherboard resources
          OK
0x00000260-0x00000267         Motherboard resources
          OK
0x000004D0-0x000004D1         Motherboard resources
          OK
```

```
0x00000800-0x0000081F         Motherboard resources
          OK
0x00000900-0x00000903         Motherboard resources
          OK
0x00000904-0x00000907         Motherboard resources
          OK
0x00000908-0x0000090B         Motherboard resources
          OK
0x0000090C-0x0000092E         Motherboard resources
          OK
0x0000092F-0x0000092F         Motherboard resources
          OK
0x00000930-0x000009FF         Motherboard resources
          OK
0x00000C80-0x00000C87         Motherboard resources
          OK
0x00000CF9-0x00000CF9         Motherboard resources
          OK
0x000002F8-0x000002FF         Motherboard resources
          OK
0x00000040-0x00000043         System timer        OK

0x00000080-0x0000008F         Direct memory access
controller          OK
0x000000C0-0x000000DF         Direct memory access
controller          OK
0x00000061-0x00000061         System speaker      OK

0x00000060-0x00000060         Standard 101/102-Key or
Microsoft Natural PS/2 Keyboard         OK
0x00000064-0x00000064         Standard 101/102-Key or
Microsoft Natural PS/2 Keyboard         OK
0x0000002E-0x0000002F         Extended IO Bus     OK

0x00000220-0x00000223         Extended IO Bus     OK

0x00000240-0x0000025F         Extended IO Bus     OK

0x00000070-0x00000073         Extended IO Bus     OK

0x000003F8-0x000003FF         Communications Port
(COM1)    OK
0x000003F2-0x000003F5         Standard floppy disk
controller          OK
0x000003F7-0x000003F7         Standard floppy disk
controller          OK
0x00002000-0x0000200F         AMD-8111 PCI Bus Master
IDE Controller      OK
0x000001F0-0x000001F7         Primary IDE Channel OK

0x000003F6-0x000003F6         Primary IDE Channel OK

0x00005000-0x00005FFF         PCI standard PCI-to-PCI
bridge    OK
0x00005000-0x00005FFF         Smart Array 5i      OK

0x00006000-0x00007FFF         PCI standard PCI-to-PCI
bridge    OK
0x00006000-0x00007FFF         PCI standard PCI-to-PCI
bridge    OK
0x00006000-0x00007FFF         Smart Array 6400
Controller (Non-Miniport)     OK

0x00006400-0x000064FF         Smart Array 6400
Controller U320 Expansion Module (Non-Miniport)   OK

0x00007000-0x00007FFF         PCI standard PCI-to-PCI
bridge    OK
0x00007000-0x00007FFF         Smart Array 6400
Controller (Non-Miniport)     OK
0x00007400-0x000074FF         Smart Array 6400
Controller U320 Expansion Module (Non-Miniport)   OK

0x00008000-0x0000DFFF         PCI bus   OK
0x00008000-0x0000DFFF         PCI standard PCI-to-PCI
bridge    OK
0x00008000-0x0000DFFF         PCI standard PCI-to-PCI
bridge    OK
0x00008000-0x0000DFFF         Smart Array 6400
Controller (Non-Miniport)     OK
0x00008400-0x000084FF         Smart Array 6400
Controller U320 Expansion Module (Non-Miniport)   OK

0x00009000-0x00009FFF         PCI standard PCI-to-PCI
bridge    OK
0x00009000-0x00009FFF         PCI standard PCI-to-PCI
bridge    OK
0x00009000-0x00009FFF         Smart Array 6400
Controller (Non-Miniport)     OK
0x00009400-0x000094FF         Smart Array 6400
Controller U320 Expansion Module (Non-Miniport)   OK

0x0000A000-0x0000BFFF         PCI standard PCI-to-PCI
bridge    OK
0x0000A000-0x0000BFFF         Smart Array 642
Controller (Non-Miniport)     OK
0x0000B000-0x0000BFFF         PCI standard PCI-to-PCI
bridge    OK
0x0000B000-0x0000BFFF         Smart Array 6400
Controller (Non-Miniport)     OK
0x0000B400-0x0000B4FF         Smart Array 6400
Controller U320 Expansion Module (Non-Miniport)   OK

0x0000C000-0x0000DFFF         PCI standard PCI-to-PCI
bridge    OK
0x0000C000-0x0000DFFF         PCI standard PCI-to-PCI
bridge    OK
0x0000C000-0x0000DFFF         Smart Array 6400
Controller (Non-Miniport)     OK
0x0000C400-0x0000C4FF         Smart Array 6400
Controller U320 Expansion Module (Non-Miniport)   OK

0x0000D000-0x0000DFFF         PCI standard PCI-to-PCI
bridge    OK
0x0000D000-0x0000DFFF         Smart Array 6400
Controller (Non-Miniport)     OK
0x0000D400-0x0000D4FF         Smart Array 6400
Controller U320 Expansion Module (Non-Miniport)   OK


[IRQs]

Resource  Device    Status
IRQ 9     Microsoft ACPI-Compliant System         OK

IRQ 19    AMD PCI to USB Open Host Controller     OK

IRQ 19    AMD PCI to USB Open Host Controller     OK

IRQ 16    HP ProLiant iLO Advanced System Management
Controller          OK
IRQ 17    HP iLO Management Channel Interface Driver
          OK
IRQ 0     System timer        OK
IRQ 1     Standard 101/102-Key or Microsoft Natural
PS/2 Keyboard       OK
IRQ 12    PS/2 Compatible Mouse         OK
IRQ 4     Communications Port (COM1)    OK
IRQ 6     Standard floppy disk controller         OK

IRQ 14    Primary IDE Channel OK
IRQ 18    Smart Array 5i      OK
IRQ 25    HP NC7782 Gigabit Server Adapter        OK

IRQ 24    HP NC7782 Gigabit Server Adapter #2     OK

IRQ 28    Smart Array 6400 Controller (Non-Miniport)
          OK
IRQ 29    Smart Array 6400 Controller U320 Expansion
Module (Non-Miniport)         OK
IRQ 30    Smart Array 6400 Controller (Non-Miniport)
          OK
IRQ 31    Smart Array 6400 Controller U320 Expansion
Module (Non-Miniport)         OK
IRQ 32    Smart Array 6400 Controller (Non-Miniport)
          OK
IRQ 33    Smart Array 6400 Controller U320 Expansion
Module (Non-Miniport)         OK
IRQ 36    Smart Array 6400 Controller (Non-Miniport)
          OK
IRQ 37    Smart Array 6400 Controller U320 Expansion
Module (Non-Miniport)         OK
IRQ 40    Smart Array 6400 Controller (Non-Miniport)
          OK
IRQ 41    Smart Array 6400 Controller U320 Expansion
Module (Non-Miniport)         OK
IRQ 42    Smart Array 642 Controller (Non-Miniport)
          OK
IRQ 44    Smart Array 6400 Controller (Non-Miniport)
          OK
IRQ 45    Smart Array 6400 Controller U320 Expansion
Module (Non-Miniport)         OK
IRQ 46    Smart Array 6400 Controller (Non-Miniport)
          OK
IRQ 47    Smart Array 6400 Controller U320 Expansion
Module (Non-Miniport)         OK

[Memory]

Resource  Device    Status
0xA0000-0xBFFFF     PCI bus   OK
0xA0000-0xBFFFF     PCI standard PCI-to-PCI bridge
          OK
0xA0000-0xBFFFF     RAGE XL  PCI (Microsoft
Corporation)        OK
0xF5E00000-0xF5EFFFFF         PCI bus   OK
0xF5E00000-0xF5EFFFFF         PCI standard PCI-to-PCI
bridge    OK
```

```
0xF5F00000-0xF79FFFFF         PCI bus   OK
0xF5F00000-0xF79FFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF76F0000-0xF76F0FFF         AMD PCI to USB Open
Host Controller     OK
0xF76E0000-0xF76E0FFF         AMD PCI to USB Open
Host Controller     OK
0xF76B0000-0xF76B01FF         HP ProLiant iLO
Advanced System Management Controller   OK
0xF76A0000-0xF76A07FF         HP iLO Management
Channel Interface Driver      OK
0xF7690000-0xF7691FFF         HP iLO Management
Channel Interface Driver      OK
0xF7600000-0xF767FFFF         HP iLO Management
Channel Interface Driver      OK
0xF6000000-0xF6FFFFFF         RAGE XL  PCI (Microsoft
Corporation)        OK
0xF5FF0000-0xF5FF0FFF         RAGE XL  PCI (Microsoft
Corporation)        OK
0xF7700000-0xF77FFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF77C0000-0xF77FFFFF         Smart Array 5i      OK

0xF5EF0000-0xF5EF3FFF         Smart Array 5i      OK

0xF77B0000-0xF77BFFFF         HP NC7782 Gigabit
Server Adapter      OK
0xF77A0000-0xF77AFFFF         HP NC7782 Gigabit
Server Adapter #2   OK
0xF7800000-0xF79FFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF7800000-0xF79FFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF78F0000-0xF78F1FFF         Smart Array 6400
Controller (Non-Miniport)     OK
0xF7870000-0xF7871FFF         Smart Array 6400
Controller U320 Expansion Module (Non-Miniport)   OK

0xF7900000-0xF79FFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF79F0000-0xF79F1FFF         Smart Array 6400
Controller (Non-Miniport)     OK
0xF7970000-0xF7971FFF         Smart Array 6400
Controller U320 Expansion Module (Non-Miniport)   OK

0xF7A00000-0xF7FFFFFF         PCI bus   OK
0xF7A00000-0xF7FFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF7A00000-0xF7FFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF7AF0000-0xF7AF1FFF         Smart Array 6400
Controller (Non-Miniport)     OK
0xF7A70000-0xF7A71FFF         Smart Array 6400
Controller U320 Expansion Module (Non-Miniport)   OK

0xF7B00000-0xF7BFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF7B00000-0xF7BFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF7BF0000-0xF7BF1FFF         Smart Array 6400
Controller (Non-Miniport)     OK
0xF7B70000-0xF7B71FFF         Smart Array 6400
Controller U320 Expansion Module (Non-Miniport)   OK

0xF7C00000-0xF7DFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF7D00000-0xF7DFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF7DF0000-0xF7DF1FFF         Smart Array 6400
Controller (Non-Miniport)     OK
0xF7D70000-0xF7D71FFF         Smart Array 6400
Controller U320 Expansion Module (Non-Miniport)   OK

0xF7CF0000-0xF7CF1FFF         Smart Array 642
Controller (Non-Miniport)     OK
0xF7C80000-0xF7CBFFFF         Smart Array 642
Controller (Non-Miniport)     OK
0xF7E00000-0xF7FFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF7E00000-0xF7FFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF7EF0000-0xF7EF1FFF         Smart Array 6400
Controller (Non-Miniport)     OK
0xF7E70000-0xF7E71FFF         Smart Array 6400
Controller U320 Expansion Module (Non-Miniport)   OK

0xF7F00000-0xF7FFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xF7FF0000-0xF7FF1FFF         Smart Array 6400
Controller (Non-Miniport)     OK
0xF7F70000-0xF7F71FFF         Smart Array 6400
Controller U320 Expansion Module (Non-Miniport)   OK


[Components]



[Multimedia]



[Audio Codecs]

CODEC     Manufacturer        Description
          Status    File      Version   Size
          Creation Date
c:\windows\system32\tssoft32.acm        DSP GROUP,
INC.                OK
          C:\WINDOWS\system32\TSSOFT32.ACM
          1.01      13.50 KB (13,824 bytes)
          3/25/2005 7:00 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
7:00 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
7:00 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
7:00 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
7:00 AM

[Video Codecs]

CODEC     Manufacturer        Description
          Status    File      Version   Size
          Creation Date
c:\windows\system32\iyuv_32.dll         Microsoft
Corporation         OK
          C:\WINDOWS\system32\IYUV_32.DLL
          5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          52.50 KB (53,760 bytes)       3/24/2005
12:19 PM
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
7:00 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
7:00 AM
c:\windows\system32\msyuv.dll Microsoft Corporation
                OK
          C:\WINDOWS\system32\MSYUV.DLL 5.2.3790.1830
(srv03_sp1_rtm.050324-1447)   21.00 KB (21,504 bytes)
          3/24/2005 12:21 PM
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
12:34 PM

[CD-ROM]

Item      Value
Drive     E:
Description         CD-ROM Drive
Media Loaded        No
Media Type          CD-ROM
Name      TEAC CD-224E
Manufacturer        (Standard CD-ROM drives)
Status    OK
Transfer Rate       Not Available
SCSI Target ID      0
PNP Device ID       IDE\CDROMTEAC_CD-
224E_____________________________9.9A____\5&2DC47F1C&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 7:00 AM)

[Sound Device]

Item      Value

[Display]

Item      Value
Name      RAGE XL  PCI (Microsoft Corporation)
PNP Device ID
          PCI\VEN_1002&DEV_4752&SUBSYS_001E0E11&REV_2
7\4&12365AD0&0&1818
Adapter Type         ATI RAGE XL PCI (B41), ATI
Technologies, Inc. compatible
Adapter Description RAGE XL  PCI (Microsoft
Corporation)
Adapter RAM          8.00 MB (8,388,608 bytes)
Installed Drivers    ati2drad.dll
Driver Version       6.14.3655.6024
INF File  atiixpad.inf (ati2mpad section)
Color Planes         1
Color Table Entries 65536
Resolution           1024 x 768 x 60 hertz
Bits/Pixel           16
Memory Address       0xF6000000-0xF6FFFFFF
I/O Port  0x00004400-0x000044FF
Memory Address       0xF5FF0000-0xF5FF0FFF
I/O Port  0x000003B0-0x000003BB
I/O Port  0x000003C0-0x000003DF
Memory Address       0xA0000-0xBFFFF
Driver    c:\windows\system32\drivers\ati2mpad.sys
(6.14.3655.6024, 318.75 KB (326,400 bytes), 2/11/2005
4:52 AM)

[Infrared]

Item      Value

[Input]



[Keyboard]

Item      Value
Description          Standard 101/102-Key or Microsoft
Natural PS/2 Keyboard
Name      Enhanced (101- or 102-key)
Layout    00000409
PNP Device ID        ACPI\PNP0303\4&1C7DEDE8&0
Number of Function Keys       12
I/O Port  0x00000060-0x00000060
I/O Port  0x00000064-0x00000064
IRQ Channel          IRQ 1
Driver    c:\windows\system32\drivers\i8042prt.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 91.00 KB
(93,184 bytes), 3/25/2005 7:00 AM)

[Pointing Device]

Item      Value
Hardware Type        PS/2 Compatible Mouse
Number of Buttons    5
Status    OK
PNP Device ID        ACPI\PNP0F13\4&1C7DEDE8&0
Power Management Supported    No
Double Click Threshold        6
Handedness           Right Handed Operation
IRQ Channel          IRQ 12
Driver    c:\windows\system32\drivers\i8042prt.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 91.00 KB
(93,184 bytes), 3/25/2005 7:00 AM)

[Modem]

Item      Value

[Network]



[Adapter]

Item      Value
Name      [00000001] HP NC7782 Gigabit Server Adapter

Adapter Type         Ethernet 802.3
Product Type         HP NC7782 Gigabit Server Adapter

Installed Yes
PNP Device ID
          PCI\VEN_14E4&DEV_1648&SUBSYS_00D00E11&REV_1
0\4&82820FC&0&3038
Last Reset           11/28/2005 9:32 AM
Index     1
Service Name         q57amd64
IP Address           130.168.211.32
IP Subnet 255.255.0.0
Default IP Gateway   Not Available
DHCP Enabled         No
DHCP Server          Not Available
DHCP Lease Expires   Not Available
DHCP Lease Obtained  Not Available
MAC Address          00:0E:7F:B0:9D:47
Memory Address       0xF77B0000-0xF77BFFFF
IRQ Channel          IRQ 25
Driver    c:\windows\system32\drivers\q57amd64.sys
(7.96.0.0 built by: WinDDK, 186.50 KB (190,976
bytes), 3/17/2005 3:25 PM)

Name      [00000002] HP NC7782 Gigabit Server Adapter

Adapter Type         Ethernet 802.3
Product Type         HP NC7782 Gigabit Server Adapter

Installed Yes
PNP Device ID
          PCI\VEN_14E4&DEV_1648&SUBSYS_00D00E11&REV_1
0\4&82820FC&0&3138
Last Reset           11/28/2005 9:32 AM
Index     2
Service Name         q57amd64
IP Address           130.168.211.31
IP Subnet 255.255.0.0
Default IP Gateway   Not Available
DHCP Enabled         No
DHCP Server          Not Available
DHCP Lease Expires   Not Available
DHCP Lease Obtained  Not Available
MAC Address          00:0E:7F:B0:9D:46
Memory Address       0xF77A0000-0xF77AFFFF
IRQ Channel          IRQ 24
Driver    c:\windows\system32\drivers\q57amd64.sys
(7.96.0.0 built by: WinDDK, 186.50 KB (190,976
bytes), 3/17/2005 3:25 PM)

Name      [00000003] RAS Async Adapter
Adapter Type         Not Available
Product Type         RAS Async Adapter
Installed Yes
PNP Device ID        Not Available
Last Reset           11/28/2005 9:32 AM
Index     3
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      [00000004] WAN Miniport (L2TP)
Adapter Type         Not Available
Product Type         WAN Miniport (L2TP)
Installed Yes
PNP Device ID        ROOT\MS_L2TPMINIPORT\0000
Last Reset           11/28/2005 9:32 AM
Index     4
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 7:00 AM)

Name      [00000005] WAN Miniport (PPTP)
Adapter Type         Wide Area Network (WAN)
Product Type         WAN Miniport (PPTP)
Installed Yes
PNP Device ID        ROOT\MS_PPTPMINIPORT\0000
Last Reset           11/28/2005 9:32 AM
Index     5
Service Name         PptpMiniport
IP Address           Not Available
IP Subnet Not Available
Default IP Gateway   Not Available
DHCP Enabled         No
DHCP Server          Not Available
```

```
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
MAC Address         50:50:54:50:30:30
Driver    c:\windows\system32\drivers\raspptp.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 117.50 KB
(120,320 bytes), 3/25/2005 7:00 AM)

Name      [00000006] 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          11/28/2005 9:32 AM
Index     6
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 7:00 AM)

Name      [00000007] Direct Parallel
Adapter Type        Not Available
Product Type        Direct Parallel
Installed Yes
PNP Device ID       ROOT\MS_PTIMINIPORT\0000
Last Reset          11/28/2005 9:32 AM
Index     7
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 7:00 AM)

Name      [00000008] WAN Miniport (IP)
Adapter Type        Not Available
Product Type        WAN Miniport (IP)
Installed Yes
PNP Device ID       ROOT\MS_NDISWANIP\0000
Last Reset          11/28/2005 9:32 AM
Index     8
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 7:00 AM)

Name      [00000009] Intel(R) PRO/1000 MT Server
Adapter
Adapter Type        Not Available
Product Type        Intel(R) PRO/1000 MT Server
Adapter
Installed Yes
PNP Device ID       Not Available
Last Reset          11/28/2005 9:32 AM
Index     9
Service Name        E1000
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      [00000010] HP NC7170 Dual Gigabit Server
Adapter
Adapter Type        Not Available
Product Type        HP NC7170 Dual Gigabit Server
Adapter
Installed Yes
PNP Device ID       Not Available
Last Reset          11/28/2005 9:32 AM
Index     10
Service Name        N1000
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      [00000011] HP NC7170 Dual Gigabit Server
Adapter
Adapter Type        Not Available
Product Type        HP NC7170 Dual Gigabit Server
Adapter
Installed Yes
PNP Device ID       Not Available
Last Reset          11/28/2005 9:32 AM
Index     11
Service Name        N1000
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      [00000012] Broadcom NetXtreme Gigabit
Ethernet
Adapter Type        Not Available
Product Type        Broadcom NetXtreme Gigabit
Ethernet
Installed Yes
PNP Device ID       Not Available
Last Reset          11/28/2005 9:32 AM
Index     12
Service Name        b57nd
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      [00000013] Broadcom NetXtreme Gigabit
Ethernet
Adapter Type        Not Available
Product Type        Broadcom NetXtreme Gigabit
Ethernet
Installed Yes
PNP Device ID       Not Available
Last Reset          11/28/2005 9:32 AM
Index     13
Service Name        b57nd
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      [00000014] Broadcom NetXtreme Gigabit
Ethernet
Adapter Type        Not Available
Product Type        Broadcom NetXtreme Gigabit
Ethernet
Installed Yes
PNP Device ID       Not Available
Last Reset          11/28/2005 9:32 AM
Index     14
Service Name        b57nd
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

[Protocol]

Item      Value
Name      MSAFD Tcpip [TCP/IP]
Connectionless Service        No
Guarantees Delivery Yes
Guarantees Sequencing         Yes
Maximum Address Size          16 bytes
```

```
Maximum Message Size          0 bytes
Message Oriented    No
Minimum Address Size          16 bytes
Pseudo Stream Oriented        No
Supports Broadcasting         No
Supports Connect Data         No
Supports Disconnect Data      No
Supports Encryption No
Supports Expedited Data       Yes
Supports Graceful Closing     Yes
Supports Guaranteed Bandwidth No
Supports Multicasting         No

Name      MSAFD Tcpip [UDP/IP]
Connectionless Service        Yes
Guarantees Delivery No
Guarantees Sequencing         No
Maximum Address Size          16 bytes
Maximum Message Size          63.93 KB (65,467 bytes)

Message Oriented    Yes
Minimum Address Size          16 bytes
Pseudo Stream Oriented        No
Supports Broadcasting         Yes
Supports Connect Data         No
Supports Disconnect Data      No
Supports Encryption No
Supports Expedited Data       No
Supports Graceful Closing     No
Supports Guaranteed Bandwidth No
Supports Multicasting         Yes

Name      RSVP UDP Service Provider
Connectionless Service        Yes
Guarantees Delivery No
Guarantees Sequencing         No
Maximum Address Size          16 bytes
Maximum Message Size          63.93 KB (65,467 bytes)

Message Oriented    Yes
Minimum Address Size          16 bytes
Pseudo Stream Oriented        No
Supports Broadcasting         Yes
Supports Connect Data         No
Supports Disconnect Data      No
Supports Encryption Yes
Supports Expedited Data       No
Supports Graceful Closing     No
Supports Guaranteed Bandwidth No
Supports Multicasting         Yes

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

[WinSock]

Item      Value
File      c:\windows\system32\wsock32.dll
Size      24.50 KB (25,088 bytes)
Version   5.2.3790.1830 (srv03_sp1_rtm.050324-1447)


[Ports]



[Serial]

Item      Value
Name      Communications Port (COM1)
Status    OK
PNP Device ID       ACPI\PNP0501\0
Maximum Input Buffer Size     0
Maximum Output Buffer Size    No
Settable Baud Rate  Yes
Settable Data Bits  Yes
Settable Flow Control         Yes
Settable Parity     Yes
Settable Parity Check         Yes
Settable Stop Bits  Yes
Settable RLSD       Yes
Supports RLSD       Yes
Supports 16 Bit Mode          No
Supports Special Characters   No
Baud Rate 9600
Bits/Byte 8
Stop Bits 1
Parity    None
Busy      No
Abort Read/Write on Error     No
Binary Mode Enabled Yes
Continue XMit on XOff         No
CTS Outflow Control No
Discard NULL Bytes  No
DSR Outflow Control 0
DSR Sensitivity     0
DTR Flow Control Type         Enable
EOF Character       0
Error Replace Character       0
Error Replacement Enabled     No
Event Character     0
Parity Check Enabled          No
RTS Flow Control Type         Enable
XOff Character      19
XOffXMit Threshold  512
XOn Character       17
XOnXMit Threshold   2048
XOnXOff InFlow Control        0
XOnXOff OutFlow Control       0
IRQ Channel         IRQ 4
I/O Port  0x000003F8-0x000003FF
Driver    c:\windows\system32\drivers\serial.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 118.50 KB
(121,344 bytes), 3/25/2005 7:00 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      33.91 GB (36,410,552,320 bytes)
Free Space          16.89 GB (18,135,547,904 bytes)

Volume Name
Volume Serial Number          88769F17

Drive     E:
Description         CD-ROM Disc

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

Drive     Z:
Description         Local Fixed Disk
Compressed          No
File System         NTFS
Size      4.58 TB (5,033,076,715,520 bytes)
Free Space          1.52 TB (1,666,614,054,912 bytes)

Volume Name         New Volume
Volume Serial Number          186EBF8B

[Disks]

Item      Value
Description         \\.\PHYSICALDRIVE40
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
```

```
SCSI Target ID      Not Available
Sectors/Track       63
Size      339.18 GB (364,190,722,560 bytes)
Total Cylinders     44,277
Total Sectors       711,310,005
Total Tracks        11,290,635
Tracks/Cylinder     255
Partition Disk #40, Partition #0
Partition Size      339.18 GB (364,190,690,304 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE18
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          2
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      15.62 GB (16,771,345,920 bytes)
Total Cylinders     2,039
Total Sectors       32,756,535
Total Tracks        519,945
Tracks/Cylinder     255
Partition Disk #18, Partition #0
Partition Size      7.81 GB (8,381,528,064 bytes)
Partition Starting Offset     32,256 bytes
Partition Disk #18, Partition #1
Partition Size      7.81 GB (8,381,560,320 bytes)
Partition Starting Offset     8,381,560,320 bytes

Description         \\.\PHYSICALDRIVE19
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          2
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      3.90 GB (4,186,667,520 bytes)
Total Cylinders     509
Total Sectors       8,177,085
Total Tracks        129,795
Tracks/Cylinder     255
Partition Disk #19, Partition #0
Partition Size      1.95 GB (2,089,188,864 bytes)
Partition Starting Offset     32,256 bytes
Partition Disk #19, Partition #1
Partition Size      1.95 GB (2,089,221,120 bytes)
Partition Starting Offset     2,089,221,120 bytes

Description         \\.\PHYSICALDRIVE20
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          2
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      13.67 GB (14,673,899,520 bytes)
Total Cylinders     1,784
Total Sectors       28,659,960
Total Tracks        454,920
Tracks/Cylinder     255
Partition Disk #20, Partition #0
Partition Size      6.83 GB (7,336,917,504 bytes)
Partition Starting Offset     32,256 bytes
Partition Disk #20, Partition #1
Partition Size      6.83 GB (7,336,949,760 bytes)
Partition Starting Offset     7,336,949,760 bytes

Description         \\.\PHYSICALDRIVE21
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          2
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      11.71 GB (12,576,453,120 bytes)
Total Cylinders     1,529
Total Sectors       24,563,385
Total Tracks        389,895
Tracks/Cylinder     255
Partition Disk #21, Partition #0
Partition Size      5.85 GB (6,284,081,664 bytes)
Partition Starting Offset     32,256 bytes
Partition Disk #21, Partition #1
Partition Size      5.85 GB (6,284,113,920 bytes)
Partition Starting Offset     6,284,113,920 bytes

Description         \\.\PHYSICALDRIVE22
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          2
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      25.39 GB (27,258,577,920 bytes)
Total Cylinders     3,314
Total Sectors       53,239,410
Total Tracks        845,070
Tracks/Cylinder     255
Partition Disk #22, Partition #0
Partition Size      12.69 GB (13,621,031,424 bytes)

Partition Starting Offset     32,256 bytes
Partition Disk #22, Partition #1
Partition Size      12.69 GB (13,621,063,680 bytes)

Partition Starting Offset     13,621,063,680 bytes


Description         \\.\PHYSICALDRIVE23
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       32
Size      119.00 MB (124,780,544 bytes)
Total Cylinders     119
Total Sectors       243,712
Total Tracks        7,616
Tracks/Cylinder     64
Partition Disk #23, Partition #0
Partition Size      117.63 MB (123,346,944 bytes)
Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE24
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          4
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      351.56 GB (377,482,775,040 bytes)
Total Cylinders     45,893
Total Sectors       737,271,045
Total Tracks        11,702,715
Tracks/Cylinder     255
Partition Disk #24, Partition #0
Partition Size      87.89 GB (94,368,605,184 bytes)

Partition Starting Offset     32,256 bytes
Partition Disk #24, Partition #1
Partition Size      87.89 GB (94,368,637,440 bytes)

Partition Starting Offset     94,368,637,440 bytes

Partition Disk #24, Partition #2
Partition Size      87.89 GB (94,368,637,440 bytes)

Partition Starting Offset     188,737,274,880 bytes

Partition Disk #24, Partition #3
```

```
Partition Size      87.89 GB (94,368,637,440 bytes)

Partition Starting Offset     283,105,912,320 bytes


Description         \\.\PHYSICALDRIVE25
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          2
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      4.39 GB (4,713,085,440 bytes)
Total Cylinders     573
Total Sectors       9,205,245
Total Tracks        146,115
Tracks/Cylinder     255
Partition Disk #25, Partition #0
Partition Size      2.19 GB (2,352,397,824 bytes)
Partition Starting Offset     32,256 bytes
Partition Disk #25, Partition #1
Partition Size      2.19 GB (2,352,430,080 bytes)
Partition Starting Offset     2,352,430,080 bytes

Description         \\.\PHYSICALDRIVE12
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      58.59 GB (62,915,166,720 bytes)
Total Cylinders     7,649
Total Sectors       122,881,185
Total Tracks        1,950,495
Tracks/Cylinder     255
Partition Disk #12, Partition #0
Partition Size      58.59 GB (62,906,909,184 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE13
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      39.06 GB (41,940,702,720 bytes)
Total Cylinders     5,099
Total Sectors       81,915,435
Total Tracks        1,300,245
Tracks/Cylinder     255
Partition Disk #13, Partition #0
Partition Size      39.06 GB (41,940,670,464 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE14
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      390.62 GB (419,423,477,760 bytes)
Total Cylinders     50,992
Total Sectors       819,186,480
Total Tracks        13,002,960
Tracks/Cylinder     255
Partition Disk #14, Partition #0
Partition Size      390.62 GB (419,423,445,504 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE44
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      58.59 GB (62,915,166,720 bytes)
Total Cylinders     7,649
Total Sectors       122,881,185
Total Tracks        1,950,495
Tracks/Cylinder     255
Partition Disk #44, Partition #0
Partition Size      58.59 GB (62,906,909,184 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE45
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      39.06 GB (41,940,702,720 bytes)
Total Cylinders     5,099
Total Sectors       81,915,435
Total Tracks        1,300,245
Tracks/Cylinder     255
Partition Disk #45, Partition #0
Partition Size      39.06 GB (41,940,670,464 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE46
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      390.62 GB (419,423,477,760 bytes)
Total Cylinders     50,992
Total Sectors       819,186,480
Total Tracks        13,002,960
Tracks/Cylinder     255
Partition Disk #46, Partition #0
Partition Size      390.62 GB (419,423,445,504 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE15
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      58.59 GB (62,915,166,720 bytes)
Total Cylinders     7,649
Total Sectors       122,881,185
Total Tracks        1,950,495
Tracks/Cylinder     255
Partition Disk #15, Partition #0
Partition Size      58.59 GB (62,906,909,184 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE16
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
```

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Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      39.06 GB (41,940,702,720 bytes)
Total Cylinders     5,099
Total Sectors       81,915,435
Total Tracks        1,300,245
Tracks/Cylinder     255
Partition Disk #16, Partition #0
Partition Size      39.06 GB (41,940,670,464 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE17
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      390.62 GB (419,423,477,760 bytes)
Total Cylinders     50,992
Total Sectors       819,186,480
Total Tracks        13,002,960
Tracks/Cylinder     255
Partition Disk #17, Partition #0
Partition Size      390.62 GB (419,423,445,504 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE47
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      58.59 GB (62,915,166,720 bytes)
Total Cylinders     7,649
Total Sectors       122,881,185
Total Tracks        1,950,495
Tracks/Cylinder     255
Partition Disk #47, Partition #0
Partition Size      58.59 GB (62,906,909,184 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE48
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      39.06 GB (41,940,702,720 bytes)
Total Cylinders     5,099
Total Sectors       81,915,435
Total Tracks        1,300,245
Tracks/Cylinder     255
Partition Disk #48, Partition #0
Partition Size      39.06 GB (41,940,670,464 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE49
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      390.62 GB (419,423,477,760 bytes)
Total Cylinders     50,992
Total Sectors       819,186,480
Total Tracks        13,002,960
Tracks/Cylinder     255
Partition Disk #49, Partition #0
Partition Size      390.62 GB (419,423,445,504 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE41
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      58.59 GB (62,915,166,720 bytes)
Total Cylinders     7,649
Total Sectors       122,881,185
Total Tracks        1,950,495
Tracks/Cylinder     255
Partition Disk #41, Partition #0
Partition Size      58.59 GB (62,911,102,976 bytes)

Partition Starting Offset     16,384 bytes

Description         \\.\PHYSICALDRIVE42
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      39.06 GB (41,940,702,720 bytes)
Total Cylinders     5,099
Total Sectors       81,915,435
Total Tracks        1,300,245
Tracks/Cylinder     255
Partition Disk #42, Partition #0
Partition Size      39.06 GB (41,940,670,464 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE43
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      390.62 GB (419,423,477,760 bytes)
Total Cylinders     50,992
Total Sectors       819,186,480
Total Tracks        13,002,960
Tracks/Cylinder     255
Partition Disk #43, Partition #0
Partition Size      390.62 GB (419,423,445,504 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE26
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          2
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      15.62 GB (16,771,345,920 bytes)
Total Cylinders     2,039
Total Sectors       32,756,535
Total Tracks        519,945
Tracks/Cylinder     255
Partition Disk #26, Partition #0
Partition Size      7.81 GB (8,381,528,064 bytes)
```

```
Partition Starting Offset     32,256 bytes
Partition Disk #26, Partition #1
Partition Size      7.81 GB (8,381,560,320 bytes)
Partition Starting Offset     8,381,560,320 bytes

Description         \\.\PHYSICALDRIVE27
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          2
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      3.90 GB (4,186,667,520 bytes)
Total Cylinders     509
Total Sectors       8,177,085
Total Tracks        129,795
Tracks/Cylinder     255
Partition Disk #27, Partition #0
Partition Size      1.95 GB (2,089,188,864 bytes)
Partition Starting Offset     32,256 bytes
Partition Disk #27, Partition #1
Partition Size      1.95 GB (2,089,221,120 bytes)
Partition Starting Offset     2,089,221,120 bytes

Description         \\.\PHYSICALDRIVE28
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          2
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      13.67 GB (14,673,899,520 bytes)
Total Cylinders     1,784
Total Sectors       28,659,960
Total Tracks        454,920
Tracks/Cylinder     255
Partition Disk #28, Partition #0
Partition Size      6.83 GB (7,336,917,504 bytes)
Partition Starting Offset     32,256 bytes
Partition Disk #28, Partition #1
Partition Size      6.83 GB (7,336,949,760 bytes)
Partition Starting Offset     7,336,949,760 bytes

Description         \\.\PHYSICALDRIVE29
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          2
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      11.71 GB (12,576,453,120 bytes)
Total Cylinders     1,529
Total Sectors       24,563,385
Total Tracks        389,895
Tracks/Cylinder     255
Partition Disk #29, Partition #0
Partition Size      5.85 GB (6,284,081,664 bytes)
Partition Starting Offset     32,256 bytes
Partition Disk #29, Partition #1
Partition Size      5.85 GB (6,284,113,920 bytes)
Partition Starting Offset     6,284,113,920 bytes

Description         \\.\PHYSICALDRIVE30
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          2
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      25.39 GB (27,258,577,920 bytes)
Total Cylinders     3,314
Total Sectors       53,239,410
Total Tracks        845,070
Tracks/Cylinder     255
Partition Disk #30, Partition #0
Partition Size      12.69 GB (13,621,031,424 bytes)

Partition Starting Offset     32,256 bytes
Partition Disk #30, Partition #1
Partition Size      12.69 GB (13,621,063,680 bytes)

Partition Starting Offset     13,621,063,680 bytes


Description         \\.\PHYSICALDRIVE31
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       32
Size      119.00 MB (124,780,544 bytes)
Total Cylinders     119
Total Sectors       243,712
Total Tracks        7,616
Tracks/Cylinder     64
Partition Disk #31, Partition #0
Partition Size      119.52 MB (125,321,216 bytes)
Partition Starting Offset     16,384 bytes

Description         \\.\PHYSICALDRIVE32
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          4
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      351.56 GB (377,482,775,040 bytes)
Total Cylinders     45,893
Total Sectors       737,271,045
Total Tracks        11,702,715
Tracks/Cylinder     255
Partition Disk #32, Partition #0
Partition Size      87.89 GB (94,368,605,184 bytes)

Partition Starting Offset     32,256 bytes
Partition Disk #32, Partition #1
Partition Size      87.89 GB (94,368,637,440 bytes)

Partition Starting Offset     94,368,637,440 bytes

Partition Disk #32, Partition #2
Partition Size      87.89 GB (94,368,637,440 bytes)

Partition Starting Offset     188,737,274,880 bytes

Partition Disk #32, Partition #3
Partition Size      87.89 GB (94,368,637,440 bytes)

Partition Starting Offset     283,105,912,320 bytes


Description         \\.\PHYSICALDRIVE33
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          2
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      4.39 GB (4,713,085,440 bytes)
Total Cylinders     573
Total Sectors       9,205,245
Total Tracks        146,115
Tracks/Cylinder     255
Partition Disk #33, Partition #0
Partition Size      2.19 GB (2,352,397,824 bytes)
Partition Starting Offset     32,256 bytes
Partition Disk #33, Partition #1
Partition Size      2.19 GB (2,352,430,080 bytes)
Partition Starting Offset     2,352,430,080 bytes

Description         \\.\PHYSICALDRIVE50
Manufacturer        Not Available
Model     Not Available
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Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      58.59 GB (62,915,166,720 bytes)
Total Cylinders     7,649
Total Sectors       122,881,185
Total Tracks        1,950,495
Tracks/Cylinder     255
Partition Disk #50, Partition #0
Partition Size      58.59 GB (62,911,102,976 bytes)

Partition Starting Offset     16,384 bytes

Description         \\.\PHYSICALDRIVE51
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      39.06 GB (41,940,702,720 bytes)
Total Cylinders     5,099
Total Sectors       81,915,435
Total Tracks        1,300,245
Tracks/Cylinder     255
Partition Disk #51, Partition #0
Partition Size      39.06 GB (41,940,670,464 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE52
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      390.62 GB (419,423,477,760 bytes)
Total Cylinders     50,992
Total Sectors       819,186,480
Total Tracks        13,002,960
Tracks/Cylinder     255
Partition Disk #52, Partition #0
Partition Size      390.62 GB (419,423,445,504 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE37
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      58.59 GB (62,915,166,720 bytes)
Total Cylinders     7,649
Total Sectors       122,881,185
Total Tracks        1,950,495
Tracks/Cylinder     255
Partition Disk #37, Partition #0
Partition Size      58.59 GB (62,906,909,184 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE38
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      39.06 GB (41,940,702,720 bytes)
Total Cylinders     5,099
Total Sectors       81,915,435
Total Tracks        1,300,245
Tracks/Cylinder     255
Partition Disk #38, Partition #0
Partition Size      39.06 GB (41,940,670,464 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE39
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      390.62 GB (419,423,477,760 bytes)
Total Cylinders     50,992
Total Sectors       819,186,480
Total Tracks        13,002,960
Tracks/Cylinder     255
Partition Disk #39, Partition #0
Partition Size      390.62 GB (419,423,445,504 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE6
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      58.59 GB (62,915,166,720 bytes)
Total Cylinders     7,649
Total Sectors       122,881,185
Total Tracks        1,950,495
Tracks/Cylinder     255
Partition Disk #6, Partition #0
Partition Size      58.59 GB (62,911,102,976 bytes)

Partition Starting Offset     16,384 bytes

Description         \\.\PHYSICALDRIVE7
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      39.06 GB (41,940,702,720 bytes)
Total Cylinders     5,099
Total Sectors       81,915,435
Total Tracks        1,300,245
Tracks/Cylinder     255
Partition Disk #7, Partition #0
Partition Size      39.06 GB (41,940,670,464 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE8
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      390.62 GB (419,423,477,760 bytes)
Total Cylinders     50,992
Total Sectors       819,186,480
```

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Total Tracks        13,002,960
Tracks/Cylinder     255
Partition Disk #8, Partition #0
Partition Size      390.62 GB (419,423,445,504 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE9
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      58.59 GB (62,915,166,720 bytes)
Total Cylinders     7,649
Total Sectors       122,881,185
Total Tracks        1,950,495
Tracks/Cylinder     255
Partition Disk #9, Partition #0
Partition Size      58.59 GB (62,911,102,976 bytes)

Partition Starting Offset     16,384 bytes

Description         \\.\PHYSICALDRIVE10
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      39.06 GB (41,940,702,720 bytes)
Total Cylinders     5,099
Total Sectors       81,915,435
Total Tracks        1,300,245
Tracks/Cylinder     255
Partition Disk #10, Partition #0
Partition Size      39.06 GB (41,940,670,464 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE11
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      390.62 GB (419,423,477,760 bytes)
Total Cylinders     50,992
Total Sectors       819,186,480
Total Tracks        13,002,960
Tracks/Cylinder     255
Partition Disk #11, Partition #0
Partition Size      390.62 GB (419,423,445,504 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE0
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      58.59 GB (62,915,166,720 bytes)
Total Cylinders     7,649
Total Sectors       122,881,185
Total Tracks        1,950,495
Tracks/Cylinder     255
Partition Disk #0, Partition #0
Partition Size      58.59 GB (62,906,909,184 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE1
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      39.06 GB (41,940,702,720 bytes)
Total Cylinders     5,099
Total Sectors       81,915,435
Total Tracks        1,300,245
Tracks/Cylinder     255
Partition Disk #1, Partition #0
Partition Size      39.06 GB (41,940,670,464 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE2
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      390.62 GB (419,423,477,760 bytes)
Total Cylinders     50,992
Total Sectors       819,186,480
Total Tracks        13,002,960
Tracks/Cylinder     255
Partition Disk #2, Partition #0
Partition Size      390.62 GB (419,423,445,504 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE3
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      58.59 GB (62,915,166,720 bytes)
Total Cylinders     7,649
Total Sectors       122,881,185
Total Tracks        1,950,495
Tracks/Cylinder     255
Partition Disk #3, Partition #0
Partition Size      58.59 GB (62,911,102,976 bytes)

Partition Starting Offset     16,384 bytes

Description         \\.\PHYSICALDRIVE4
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      39.06 GB (41,940,702,720 bytes)
Total Cylinders     5,099
Total Sectors       81,915,435
Total Tracks        1,300,245
Tracks/Cylinder     255
Partition Disk #4, Partition #0
Partition Size      39.06 GB (41,940,670,464 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE5
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
```

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Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      390.62 GB (419,423,477,760 bytes)
Total Cylinders     50,992
Total Sectors       819,186,480
Total Tracks        13,002,960
Tracks/Cylinder     255
Partition Disk #5, Partition #0
Partition Size      390.62 GB (419,423,445,504 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE34
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      58.59 GB (62,915,166,720 bytes)
Total Cylinders     7,649
Total Sectors       122,881,185
Total Tracks        1,950,495
Tracks/Cylinder     255
Partition Disk #34, Partition #0
Partition Size      58.59 GB (62,906,909,184 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE35
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      39.06 GB (41,940,702,720 bytes)
Total Cylinders     5,099
Total Sectors       81,915,435
Total Tracks        1,300,245
Tracks/Cylinder     255
Partition Disk #35, Partition #0
Partition Size      39.06 GB (41,940,670,464 bytes)

Partition Starting Offset     32,256 bytes

Description         \\.\PHYSICALDRIVE36
Manufacturer        Not Available
Model     Not Available
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  Not Available
SCSI Logical Unit   Not Available
SCSI Port Not Available
SCSI Target ID      Not Available
Sectors/Track       63
Size      390.62 GB (419,423,477,760 bytes)
Total Cylinders     50,992
Total Sectors       819,186,480
Total Tracks        13,002,960
Tracks/Cylinder     255
Partition Disk #36, Partition #0
Partition Size      390.62 GB (419,429,728,256 bytes)

Partition Starting Offset     16,384 bytes

Description         Disk drive
Manufacturer        (Standard disk drives)
Model     COMPAQ LOGICAL VOLUME SCSI Disk Device
Bytes/Sector        512
Media Loaded        Yes
Media Type          Fixed hard disk
Partitions          1
SCSI Bus  0
SCSI Logical Unit   0
SCSI Port 1
SCSI Target ID      4
Sectors/Track       32
Size      33.91 GB (36,414,750,720 bytes)
Total Cylinders     8,716
Total Sectors       71,122,560
Total Tracks        2,222,580
Tracks/Cylinder     255
Partition Disk #53, Partition #0
Partition Size      33.91 GB (36,410,556,416 bytes)

Partition Starting Offset     16,384 bytes

[SCSI]

Item      Value
Name      Smart Array 5i
Manufacturer        Compaq
Status    OK
PNP Device ID
          PCI\VEN_0E11&DEV_B178&SUBSYS_40800E11&REV_0
1\4&82820FC&0&2038
Memory Address      0xF77C0000-0xF77FFFFF
I/O Port  0x00005000-0x00005FFF
Memory Address      0xF5EF0000-0xF5EF3FFF
IRQ Channel         IRQ 18
Driver    c:\windows\system32\drivers\hpcisss.sys
(5.11.0.64 Build 2 (x86-64) (NT.041115-0204), 30.50
KB (31,232 bytes), 3/25/2005 7:00 AM)

Name      Smart Array 6400 Controller (Non-Miniport)

Manufacturer        Hewlett-Packard
Status    OK
PNP Device ID
          PCI\VEN_0E11&DEV_0046&SUBSYS_409C0E11&REV_0
1\5&2C344C1F&0&203840
Memory Address      0xF78F0000-0xF78F1FFF
I/O Port  0x00006000-0x00007FFF
IRQ Channel         IRQ 28
Driver    c:\windows\system32\drivers\hpqcissb.sys
(5.16.2.64 built by: (RobertVC), 54.00 KB (55,296
bytes), 2/11/2005 4:34 PM)

Name      Smart Array 6400 Controller U320 Expansion
Module (Non-Miniport)
Manufacturer        Hewlett-Packard
Status    OK
PNP Device ID
          PCI\VEN_0E11&DEV_0046&SUBSYS_409D0E11&REV_0
1\5&2C344C1F&0&283840
Memory Address      0xF7870000-0xF7871FFF
I/O Port  0x00006400-0x000064FF
IRQ Channel         IRQ 29
Driver    c:\windows\system32\drivers\hpqcissb.sys
(5.16.2.64 built by: (RobertVC), 54.00 KB (55,296
bytes), 2/11/2005 4:34 PM)

Name      Smart Array 6400 Controller (Non-Miniport)

Manufacturer        Hewlett-Packard
Status    OK
PNP Device ID
          PCI\VEN_0E11&DEV_0046&SUBSYS_409C0E11&REV_0
1\5&34813DC5&0&204040
Memory Address      0xF79F0000-0xF79F1FFF
I/O Port  0x00007000-0x00007FFF
IRQ Channel         IRQ 30
Driver    c:\windows\system32\drivers\hpqcissb.sys
(5.16.2.64 built by: (RobertVC), 54.00 KB (55,296
bytes), 2/11/2005 4:34 PM)

Name      Smart Array 6400 Controller U320 Expansion
Module (Non-Miniport)
Manufacturer        Hewlett-Packard
Status    OK
PNP Device ID
          PCI\VEN_0E11&DEV_0046&SUBSYS_409D0E11&REV_0
1\5&34813DC5&0&284040
Memory Address      0xF7970000-0xF7971FFF
I/O Port  0x00007400-0x000074FF
IRQ Channel         IRQ 31
Driver    c:\windows\system32\drivers\hpqcissb.sys
(5.16.2.64 built by: (RobertVC), 54.00 KB (55,296
bytes), 2/11/2005 4:34 PM)

Name      Smart Array 6400 Controller (Non-Miniport)

Manufacturer        Hewlett-Packard
Status    OK
PNP Device ID
          PCI\VEN_0E11&DEV_0046&SUBSYS_409C0E11&REV_0
1\5&56DD264&0&206848
Memory Address      0xF7AF0000-0xF7AF1FFF
I/O Port  0x00008000-0x0000DFFF
IRQ Channel         IRQ 32
```

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Driver    c:\windows\system32\drivers\hpqcissb.sys
(5.16.2.64 built by: (RobertVC), 54.00 KB (55,296
bytes), 2/11/2005 4:34 PM)

Name      Smart Array 6400 Controller U320 Expansion
Module (Non-Miniport)
Manufacturer        Hewlett-Packard
Status    OK
PNP Device ID
          PCI\VEN_0E11&DEV_0046&SUBSYS_409D0E11&REV_0
1\5&56DD264&0&286848
Memory Address      0xF7A70000-0xF7A71FFF
I/O Port  0x00008400-0x000084FF
IRQ Channel         IRQ 33
Driver    c:\windows\system32\drivers\hpqcissb.sys
(5.16.2.64 built by: (RobertVC), 54.00 KB (55,296
bytes), 2/11/2005 4:34 PM)

Name      Smart Array 6400 Controller (Non-Miniport)

Manufacturer        Hewlett-Packard
Status    OK
PNP Device ID
          PCI\VEN_0E11&DEV_0046&SUBSYS_409C0E11&REV_0
1\5&260FEBDF&0&207050
Memory Address      0xF7BF0000-0xF7BF1FFF
I/O Port  0x00009000-0x00009FFF
IRQ Channel         IRQ 36
Driver    c:\windows\system32\drivers\hpqcissb.sys
(5.16.2.64 built by: (RobertVC), 54.00 KB (55,296
bytes), 2/11/2005 4:34 PM)

Name      Smart Array 6400 Controller U320 Expansion
Module (Non-Miniport)
Manufacturer        Hewlett-Packard
Status    OK
PNP Device ID
          PCI\VEN_0E11&DEV_0046&SUBSYS_409D0E11&REV_0
1\5&260FEBDF&0&287050
Memory Address      0xF7B70000-0xF7B71FFF
I/O Port  0x00009400-0x000094FF
IRQ Channel         IRQ 37
Driver    c:\windows\system32\drivers\hpqcissb.sys
(5.16.2.64 built by: (RobertVC), 54.00 KB (55,296
bytes), 2/11/2005 4:34 PM)

Name      Smart Array 6400 Controller (Non-Miniport)

Manufacturer        Hewlett-Packard
Status    OK
PNP Device ID
          PCI\VEN_0E11&DEV_0046&SUBSYS_409C0E11&REV_0
1\5&1B3A307E&0&204858
Memory Address      0xF7DF0000-0xF7DF1FFF
I/O Port  0x0000B000-0x0000BFFF
IRQ Channel         IRQ 40
Driver    c:\windows\system32\drivers\hpqcissb.sys
(5.16.2.64 built by: (RobertVC), 54.00 KB (55,296
bytes), 2/11/2005 4:34 PM)

Name      Smart Array 6400 Controller U320 Expansion
Module (Non-Miniport)
Manufacturer        Hewlett-Packard
Status    OK
PNP Device ID
          PCI\VEN_0E11&DEV_0046&SUBSYS_409D0E11&REV_0
1\5&1B3A307E&0&284858
Memory Address      0xF7D70000-0xF7D71FFF
I/O Port  0x0000B400-0x0000B4FF
IRQ Channel         IRQ 41
Driver    c:\windows\system32\drivers\hpqcissb.sys
(5.16.2.64 built by: (RobertVC), 54.00 KB (55,296
bytes), 2/11/2005 4:34 PM)

Name      Smart Array 642 Controller (Non-Miniport)

Manufacturer        Hewlett-Packard
Status    OK
PNP Device ID
          PCI\VEN_0E11&DEV_0046&SUBSYS_409B0E11&REV_0
1\4&2534A57B&0&5058
Memory Address      0xF7CF0000-0xF7CF1FFF
I/O Port  0x0000A000-0x0000BFFF
Memory Address      0xF7C80000-0xF7CBFFFF
IRQ Channel         IRQ 42
Driver    c:\windows\system32\drivers\hpqcissb.sys
(5.16.2.64 built by: (RobertVC), 54.00 KB (55,296
bytes), 2/11/2005 4:34 PM)

Name      Smart Array 6400 Controller (Non-Miniport)

Manufacturer        Hewlett-Packard
Status    OK
PNP Device ID
          PCI\VEN_0E11&DEV_0046&SUBSYS_409C0E11&REV_0
1\5&31734F95&0&205860
Memory Address      0xF7EF0000-0xF7EF1FFF
I/O Port  0x0000C000-0x0000DFFF
IRQ Channel         IRQ 44
Driver    c:\windows\system32\drivers\hpqcissb.sys
(5.16.2.64 built by: (RobertVC), 54.00 KB (55,296
bytes), 2/11/2005 4:34 PM)

Name      Smart Array 6400 Controller U320 Expansion
Module (Non-Miniport)
Manufacturer        Hewlett-Packard
Status    OK
PNP Device ID
          PCI\VEN_0E11&DEV_0046&SUBSYS_409D0E11&REV_0
1\5&31734F95&0&285860
Memory Address      0xF7E70000-0xF7E71FFF
I/O Port  0x0000C400-0x0000C4FF
IRQ Channel         IRQ 45
Driver    c:\windows\system32\drivers\hpqcissb.sys
(5.16.2.64 built by: (RobertVC), 54.00 KB (55,296
bytes), 2/11/2005 4:34 PM)

Name      Smart Array 6400 Controller (Non-Miniport)

Manufacturer        Hewlett-Packard
Status    OK
PNP Device ID
          PCI\VEN_0E11&DEV_0046&SUBSYS_409C0E11&REV_0
1\5&282C4885&0&206060
Memory Address      0xF7FF0000-0xF7FF1FFF
I/O Port  0x0000D000-0x0000DFFF
IRQ Channel         IRQ 46
Driver    c:\windows\system32\drivers\hpqcissb.sys
(5.16.2.64 built by: (RobertVC), 54.00 KB (55,296
bytes), 2/11/2005 4:34 PM)

Name      Smart Array 6400 Controller U320 Expansion
Module (Non-Miniport)
Manufacturer        Hewlett-Packard
Status    OK
PNP Device ID
          PCI\VEN_0E11&DEV_0046&SUBSYS_409D0E11&REV_0
1\5&282C4885&0&286060
Memory Address      0xF7F70000-0xF7F71FFF
I/O Port  0x0000D400-0x0000D4FF
IRQ Channel         IRQ 47
Driver    c:\windows\system32\drivers\hpqcissb.sys
(5.16.2.64 built by: (RobertVC), 54.00 KB (55,296
bytes), 2/11/2005 4:34 PM)

[IDE]

Item      Value
Name      AMD-8111 PCI Bus Master IDE Controller
Manufacturer        Advanced Micro Devices
Status    OK
PNP Device ID
          PCI\VEN_1022&DEV_7469&SUBSYS_32040E11&REV_0
3\3&20FEA912&0&21
I/O Port  0x00002000-0x0000200F
Driver    c:\windows\system32\drivers\amdide.sys
(5.2.3790.1830 (srv03_sp1_rtm.050324-1447), 8.00 KB
(8,192 bytes), 3/25/2005 7:00 AM)

Name      Primary IDE Channel
Manufacturer        (Standard IDE ATA/ATAPI
controllers)
Status    OK
PNP Device ID       PCIIDE\IDECHANNEL\4&21637DBD&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 7:00 AM)

[Printing]

Name      Driver    Port Name Server Name

[Problem Devices]

Device    PNP Device ID       Error Code

[USB]

Device    PNP Device ID
AMD PCI to USB Open Host Controller
          PCI\VEN_1022&DEV_7464&SUBSYS_32020E11&REV_0
B\4&12365AD0&0&0018
AMD PCI to USB Open Host Controller
          PCI\VEN_1022&DEV_7464&SUBSYS_32020E11&REV_0
B\4&12365AD0&0&0118
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[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
          c:\windows\system32\drivers\amdide.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

amdk8     AMD K8 Processor Driver
          c:\windows\system32\drivers\amdk8.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

arc       arc       Not Available       Kernel Driver
          No        Disabled  Stopped   OK
          Normal    No        No
asyncmac  RAS Asynchronous Media Driver
          c:\windows\system32\drivers\asyncmac.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

atapi     Standard IDE/ESDI Hard Disk Controller
          c:\windows\system32\drivers\atapi.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

atdisk    Atdisk    Not Available       Kernel Driver
          No        Disabled  Stopped   OK
          Ignore    No        No
ati2mpad  ati2mpad
          c:\windows\system32\drivers\ati2mpad.sys
          Kernel Driver       Yes       Manual
          Running   OK        Ignore    No        Yes

atmarpc   ATM ARP Client Protocol
          c:\windows\system32\drivers\atmarpc.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

audstub   Audio Stub Driver
          c:\windows\system32\drivers\audstub.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

b57nd     Broadcom NetXtreme Gigabit Ethernet
          c:\windows\system32\drivers\b57amd64.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

beep      Beep
          c:\windows\system32\drivers\beep.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

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
cpqasm2   cpqasm2
          c:\windows\system32\drivers\cpqasm2.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

cpqcidrv  HP iLO Management Channel Interface Driver
          c:\windows\system32\drivers\cpqcidrv.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

cpqcissm  cpqcissm  Not Available       Kernel Driver
          No        Disabled  Stopped   OK
          Normal    No        No
cpqteam   HP Network Configuration Utility 7
          c:\windows\system32\drivers\cpqteam.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

cqdetect  Compaq Hardware Detection Service
          c:\windows\system32\drivers\cqdetect.sys
          Kernel Driver       No        Manual
          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       Yes       Disabled
          Running   OK        Normal    No        Yes

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
e1000     Intel(R) PRO/1000 Device Driver
          c:\windows\system32\drivers\e1g5132e.sys
          Kernel Driver       No        Manual
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          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  Yes       Disabled
          Running   OK        Normal    No        Yes

fdc       Floppy Disk Controller Driver
          c:\windows\system32\drivers\fdc.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

fips      Fips
          c:\windows\system32\drivers\fips.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

flpydisk  Floppy Disk Driver
          c:\windows\system32\drivers\flpydisk.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

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

hpcisss   hpcisss
          c:\windows\system32\drivers\hpcisss.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

hpqcissb  Smart Array Controllers Non-Miniport Bus
Driver    c:\windows\system32\drivers\hpqcissb.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

hpqcissd  Smart Array Controllers Non-Miniport Disk
Driver    c:\windows\system32\drivers\hpqcissd.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

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  i8042 Keyboard and PS/2 Mouse Port Driver
          c:\windows\system32\drivers\i8042prt.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

iirsp     iirsp     Not Available       Kernel Driver
          No        Disabled  Stopped   OK
          Normal    No        No
imapi     CD-Burning Filter Driver
          c:\windows\system32\drivers\imapi.sys
          Kernel Driver       No        System
          Stopped   OK        Normal    No        No

intelide  IntelIde  Not Available       Kernel Driver
          No        Disabled  Stopped   OK
          Normal    No        No
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       Yes       Manual
          Running   OK        Normal    No        Yes

ipsec     IPSEC driver
          c:\windows\system32\drivers\ipsec.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

isapnp    PnP ISA/EISA Bus Driver
          c:\windows\system32\drivers\isapnp.sys
          Kernel Driver       Yes       Boot
          Running   OK        Critical  No        Yes

kbdclass  Keyboard Class Driver
          c:\windows\system32\drivers\kbdclass.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

ksecdd    KSecDD
          c:\windows\system32\drivers\ksecdd.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

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
mnmdd     mnmdd
          c:\windows\system32\drivers\mnmdd.sys
          Kernel Driver       Yes       System
          Running   OK        Ignore    No        Yes

modem     Modem
          c:\windows\system32\drivers\modem.sys
          Kernel Driver       No        Manual
          Stopped   OK        Ignore    No        No

mouclass  Mouse Class Driver
          c:\windows\system32\drivers\mouclass.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

mountmgr  Mount Point Manager
          c:\windows\system32\drivers\mountmgr.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

mraid35x  mraid35x  Not Available       Kernel Driver
          No        Disabled  Stopped   OK
          Normal    No        No
mrxdav    WebDav Client Redirector
          c:\windows\system32\drivers\mrxdav.sys
          File System Driver  No        Manual
          Stopped   OK        Normal    No        No

mrxsmb    MRXSMB
          c:\windows\system32\drivers\mrxsmb.sys
          File System Driver  Yes       System
          Running   OK        Normal    No        Yes

msfs      Msfs
          c:\windows\system32\drivers\msfs.sys
          File System Driver  Yes       System
          Running   OK        Normal    No        Yes

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

n1000     HP Gigabit NIC Driver
          c:\windows\system32\drivers\n1g5132e.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

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
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          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    Not Available       Kernel Driver
          No        Disabled  Stopped   OK
          Normal    No        No
pcmcia    Pcmcia
          c:\windows\system32\drivers\pcmcia.sys
          Kernel Driver       No        Disabled
          Stopped   OK        Normal    No        No

pdcomp    PDCOMP    Not Available       Kernel Driver
          No        Manual    Stopped   OK
          Ignore    No        No
pdframe   PDFRAME   Not Available       Kernel Driver
          No        Manual    Stopped   OK
          Ignore    No        No
pdreli    PDRELI    Not Available       Kernel Driver
          No        Manual    Stopped   OK
          Ignore    No        No
pdrframe  PDRFRAME  Not Available       Kernel Driver
          No        Manual    Stopped   OK
          Ignore    No        No
pptpminiport        WAN Miniport (PPTP)
          c:\windows\system32\drivers\raspptp.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

processor Processor Driver
          c:\windows\system32\drivers\processr.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

ptilink   Direct Parallel Link Driver
          c:\windows\system32\drivers\ptilink.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

q57amd64  HP NC7782 Gigabit Server Adapter
          c:\windows\system32\drivers\q57amd64.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       Yes       System
          Running   OK        Normal    No        Yes

rasl2tp   WAN Miniport (L2TP)
          c:\windows\system32\drivers\rasl2tp.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

raspppoe  Remote Access PPPOE Driver
          c:\windows\system32\drivers\raspppoe.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

raspti    Direct Parallel
          c:\windows\system32\drivers\raspti.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

rdbss     Rdbss
          c:\windows\system32\drivers\rdbss.sys
          File System Driver  Yes       System
          Running   OK        Normal    No        Yes

rdpcdd    RDPCDD
          c:\windows\system32\drivers\rdpcdd.sys
          Kernel Driver       Yes       System
          Running   OK        Ignore    No        Yes

rdpdr     Terminal Server Device Redirector Driver
          c:\windows\system32\drivers\rdpdr.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

rdpwd     RDPWD
          c:\windows\system32\drivers\rdpwd.sys
          Kernel Driver       Yes       Manual
          Running   OK        Ignore    No        Yes

redbook   Digital CD Audio Playback Filter Driver
          c:\windows\system32\drivers\redbook.sys
          Kernel Driver       Yes       System
          Running   OK        Normal    No        Yes

secdrv    Security Driver
          c:\windows\system32\drivers\secdrv.sys
          Kernel Driver       Yes       Auto
          Running   OK        Normal    No        Yes

serenum   Serenum Filter Driver
          c:\windows\system32\drivers\serenum.sys
          Kernel Driver       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
          Kernel 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
sysmgmt   HP ProLiant System Management Interface
Driver    c:\windows\system32\drivers\sysmgmt.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

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

usbhub    Microsoft USB Standard Hub Driver
          c:\windows\system32\drivers\usbhub.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

usbohci   Microsoft USB Open Host Controller Miniport
Driver    c:\windows\system32\drivers\usbohci.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

usbstor   USB Mass Storage Driver
          c:\windows\system32\drivers\usbstor.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No

vgasave   VGA Display Controller.
          c:\windows\system32\drivers\vga.sys
          Kernel Driver       Yes       System
          Running   OK        Ignore    No        Yes

viaide    ViaIde    Not Available       Kernel Driver
          No        Disabled  Stopped   OK
          Normal    No        No
volsnap   Storage volumes
          c:\windows\system32\drivers\volsnap.sys
          Kernel Driver       Yes       Boot
          Running   OK        Normal    No        Yes

wanarp    Remote Access IP ARP Driver
          c:\windows\system32\drivers\wanarp.sys
          Kernel Driver       Yes       Manual
          Running   OK        Normal    No        Yes

wdica     WDICA     Not Available       Kernel Driver
          No        Manual    Stopped   OK
          Ignore    No        No
wlbs      Network Load Balancing
          c:\windows\system32\drivers\wlbs.sys
          Kernel Driver       No        Manual
          Stopped   OK        Normal    No        No


[Signed Drivers]

Device Name         Signed    Device Class
          Driver Version      Driver Date
          Manufacturer        INF Name  Driver Name
          Device ID
Microsoft System Management BIOS Driver Yes
          SYSTEM    5.2.3790.1830       10/1/2002
          (Standard system devices)     machine.inf
          Not Available       ROOT\SYSTEM\0002
Microcode Update Device       Yes       SYSTEM
          5.2.3790.1830       10/1/2002 (Standard
system devices)     machine.inf         Not Available
          ROOT\SYSTEM\0001
Plug and Play Software Device Enumerator          Yes
          SYSTEM    5.2.3790.1830       10/1/2002
          (Standard system devices)     machine.inf
          Not Available       ROOT\SYSTEM\0000
Terminal Server Mouse Driver  Yes       SYSTEM
          5.2.3790.1830       10/1/2002 (Standard
system devices)     machine.inf         Not Available
          ROOT\RDP_MOU\0000
Terminal Server Keyboard Driver         Yes
          SYSTEM    5.2.3790.1830       10/1/2002
          (Standard system devices)     machine.inf
          Not Available       ROOT\RDP_KBD\0000
Terminal Server Device Redirector       Yes
          SYSTEM    5.2.3790.1830       10/1/2002
          (Standard system devices)     machine.inf
          Not Available       ROOT\RDPDR\0000
Direct Parallel     Yes       NET       5.2.3790.1830
          10/1/2002 Microsoft netrasa.inf         Not
Available ROOT\MS_PTIMINIPORT\0000
WAN Miniport (PPTP) Yes       NET       5.2.3790.1830
          10/1/2002 Microsoft netrasa.inf         Not
Available ROOT\MS_PPTPMINIPORT\0000
WAN Miniport (PPPOE)          Yes       NET
          5.2.3790.1830       10/1/2002 Microsoft
          netrasa.inf         Not Available
          ROOT\MS_PPPOEMINIPORT\0000
WAN Miniport (IP)   Yes       NET       5.2.3790.1830
          10/1/2002 Microsoft netrasa.inf         Not
Available ROOT\MS_NDISWANIP\0000
WAN Miniport (L2TP) Yes       NET       5.2.3790.1830
          10/1/2002 Microsoft netrasa.inf         Not
Available ROOT\MS_L2TPMINIPORT\0000
Video Codecs        Yes       MEDIA     5.2.3790.1830
          10/1/2002 (Standard system devices)
          wave.inf  Not Available
          ROOT\MEDIA\MS_MMVID
Legacy Video Capture Devices  Yes       MEDIA
          5.2.3790.1830       10/1/2002 (Standard
system devices)     wave.inf  Not Available
          ROOT\MEDIA\MS_MMVCD
Media Control Devices         Yes       MEDIA
          5.2.3790.1830       10/1/2002 (Standard
system devices)     wave.inf  Not Available
          ROOT\MEDIA\MS_MMMCI
Legacy Audio Drivers          Yes       MEDIA
          5.2.3790.1830       10/1/2002 (Standard
system devices)     wave.inf  Not Available
          ROOT\MEDIA\MS_MMDRV
Audio Codecs        Yes       MEDIA     5.2.3790.1830
          10/1/2002 (Standard system devices)
          wave.inf  Not Available
          ROOT\MEDIA\MS_MMACM
Remote Access IP ARP Driver   Not Available
          LEGACYDRIVER        Not Available       Not
Available Not Available       Not Available       Not
Available ROOT\LEGACY_WANARP\0000
volsnap   Not Available       LEGACYDRIVER        Not
Available Not Available       Not Available       Not
Available Not Available
          ROOT\LEGACY_VOLSNAP\0000
VGA Display Controller.       Not Available
          LEGACYDRIVER        Not Available       Not
Available Not Available       Not Available       Not
Available ROOT\LEGACY_VGASAVE\0000
TDTCP     Not Available       LEGACYDRIVER        Not
Available Not Available       Not Available       Not
Available Not Available       ROOT\LEGACY_TDTCP\0000

TCP/IP Protocol Driver        Not Available
          LEGACYDRIVER        Not Available       Not
Available Not Available       Not Available       Not
Available ROOT\LEGACY_TCPIP\0000
HP ProLiant System Management Interface Driver    Not
Available LEGACYDRIVER        Not Available       Not
Available Not Available       Not Available       Not
Available ROOT\LEGACY_SYSMGMT\0000
Security Driver     Not Available       LEGACYDRIVER
          Not Available       Not Available       Not
Available Not Available       Not Available
          ROOT\LEGACY_SECDRV\0000
RDPWD     Not Available       LEGACYDRIVER        Not
Available Not Available       Not Available       Not
```

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Available Not Available       ROOT\LEGACY_RDPWD\0000

RDPCDD    Not Available       LEGACYDRIVER        Not
Available Not Available       Not 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 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       Not
Available Not Available
          ROOT\LEGACY_NDPROXY\0000
NDIS Usermode I/O Protocol    Not Available
          LEGACYDRIVER        Not Available       Not
Available Not Available       Not Available       Not
Available ROOT\LEGACY_NDISUIO\0000
Remote Access NDIS TAPI Driver          Not Available
          LEGACYDRIVER        Not Available       Not
Available Not Available       Not Available       Not
Available ROOT\LEGACY_NDISTAPI\0000
NDIS System Driver  Not Available       LEGACYDRIVER
          Not Available       Not Available       Not
Available Not Available       Not Available
          ROOT\LEGACY_NDIS\0000
mountmgr  Not Available       LEGACYDRIVER        Not
Available Not Available       Not Available       Not
Available Not Available
          ROOT\LEGACY_MOUNTMGR\0000
mnmdd     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 ROOT\LEGACY_IPNAT\0000
Generic Packet Classifier     Not Available
          LEGACYDRIVER        Not Available       Not
Available Not Available       Not Available       Not
Available ROOT\LEGACY_GPC\0000
```

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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 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&SIGNATURE75B1FA
1FOFFSET4000LENGTH87A3D0000
Generic volume      Yes       VOLUME    5.2.3790.1830
          10/1/2002 Microsoft volume.inf          Not
Available
          STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
54OFFSET7E00LENGTH9C3DBD800
Generic volume      Yes       VOLUME    5.2.3790.1830
          10/1/2002 Microsoft volume.inf          Not
Available
          STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
55OFFSET4000LENGTHEA5CB4000
Generic volume      Yes       VOLUME    5.2.3790.1830
          10/1/2002 Microsoft volume.inf          Not
Available
          STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
50OFFSET7E00LENGTH9C3DBD800
Generic volume      Yes       VOLUME    5.2.3790.1830
          10/1/2002 Microsoft volume.inf          Not
Available
          STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
52OFFSET7E00LENGTHEA58B4200
Generic volume      Yes       VOLUME    5.2.3790.1830
          10/1/2002 Microsoft volume.inf          Not
Available
          STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
44OFFSET7E00LENGTH9C3DBD800
```

```
Generic volume      Yes       VOLUME    5.2.3790.1830
          10/1/2002 Microsoft volume.inf          Not
Available
          STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
45OFFSET7E00LENGTHEA58B4200
Generic volume      Yes       VOLUME    5.2.3790.1830
          10/1/2002 Microsoft volume.inf          Not
Available
          STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
40OFFSET7E00LENGTH9C3DBD800
Generic volume      Yes       VOLUME    5.2.3790.1830
          10/1/2002 Microsoft volume.inf          Not
Available
          STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
41OFFSET4000LENGTHEA5CB4000
Generic volume      Yes       VOLUME    5.2.3790.1830
          10/1/2002 Microsoft volume.inf          Not
Available
          STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
48OFFSET7E00LENGTH54CB74EC00
Generic volume      Yes       VOLUME    5.2.3790.1830
          10/1/2002 Microsoft volume.inf          Not
Available
          STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
72OFFSET7E00LENGTH9C3DBD800
Generic volume      Yes       VOLUME    5.2.3790.1830
          10/1/2002 Microsoft volume.inf          Not
Available
          STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
73OFFSET7E00LENGTHEA58B4200
Generic volume      Yes       VOLUME    5.2.3790.1830
          10/1/2002 Microsoft volume.inf          Not
Available
          STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
79OFFSET7E00LENGTH9C3DBD800
Generic volume      Yes       VOLUME    5.2.3790.1830
          10/1/2002 Microsoft volume.inf          Not
Available
          STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
7AOFFSET7E00LENGTHEA58B4200
Generic volume      Yes       VOLUME    5.2.3790.1830
          10/1/2002 Microsoft volume.inf          Not
Available
          STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
6EOFFSET8C373C00LENGTH8C373C00
Generic volume      Yes       VOLUME    5.2.3790.1830
          10/1/2002 Microsoft volume.inf          Not
Available
          STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
6EOFFSET7E00LENGTH8C36BE00
Generic volume      Yes       VOLUME    5.2.3790.1830
          10/1/2002 Microsoft volume.inf          Not
Available
          STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
6FOFFSET41EA6D6600LENGTH15F8CF2200
Generic volume      Yes       VOLUME    5.2.3790.1830
          10/1/2002 Microsoft volume.inf          Not
Available
          STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
6FOFFSET2BF19E4400LENGTH15F8CF2200
Generic volume      Yes       VOLUME    5.2.3790.1830
          10/1/2002 Microsoft volume.inf          Not
Available
```

```
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
6FOFFSET15F8CF2200LENGTH15F8CF2200
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
6FOFFSET7E00LENGTH15F8CEA400
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
62OFFSET32BE0F000LENGTH32BE0F000
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
62OFFSET7E00LENGTH32BE07200
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
63OFFSET1768FF800LENGTH1768FF800
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
63OFFSET7E00LENGTH1768F7A00
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
7DOFFSET1B550F800LENGTH1B550F800
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
7DOFFSET7E00LENGTH1B5507A00
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
7EOFFSET7C86FC00LENGTH7C86FC00
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
7EOFFSET7E00LENGTH7C867E00
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
7FOFFSET1F3947600LENGTH1F3947600
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
7FOFFSET7E00LENGTH1F393F800
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
6COFFSET8C373C00LENGTH8C373C00
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
6COFFSET7E00LENGTH8C36BE00
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
6DOFFSET41EA6D6600LENGTH15F8CF2200
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
6DOFFSET2BF19E4400LENGTH15F8CF2200
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
6DOFFSET15F8CF2200LENGTH15F8CF2200
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
6DOFFSET7E00LENGTH15F8CEA400
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
67OFFSET32BE0F000LENGTH32BE0F000
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
67OFFSET7E00LENGTH32BE07200
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
61OFFSET1768FF800LENGTH1768FF800
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
61OFFSET7E00LENGTH1768F7A00
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73196
91OFFSET1B550F800LENGTH1B550F800
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73196
91OFFSET7E00LENGTH1B5507A00
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73196
92OFFSET7C86FC00LENGTH7C86FC00
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73196
92OFFSET7E00LENGTH7C867E00
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73196
93OFFSET1F3947600LENGTH1F3947600
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73196
93OFFSET7E00LENGTH1F393F800
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
75OFFSET7E00LENGTH9C3DBD800
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
77OFFSET7E00LENGTHEA58B4200
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
4DOFFSET7E00LENGTH9C3DBD800
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
4EOFFSET7E00LENGTHEA58B4200
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
58OFFSET7E00LENGTH9C3DBD800
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
59OFFSET4000LENGTHEA5CB4000
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
43OFFSET7E00LENGTH9C3DBD800
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
5DOFFSET4000LENGTHEA5CB4000
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
2DOFFSET7E00LENGTH9C3DBD800
Generic volume      Yes       VOLUME    5.2.3790.1830
        10/1/2002 Microsoft volume.inf          Not
Available
        STORAGE\VOLUME\1&30A96598&0&SIGNATUREB73197
2EOFFSET4000LENGTHEA5CB4000
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Generic volume      Yes       VOLUME    5.2.3790.1830
         10/1/2002 Microsoft volume.inf          Not
Available
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Generic volume      Yes       VOLUME    5.2.3790.1830
         10/1/2002 Microsoft volume.inf          Not
Available
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64OFFSET7E00LENGTHEA58B4200
Volume Manager      Yes       SYSTEM    5.2.3790.1830
         10/1/2002 (Standard system devices)
         machine.inf         Not Available
         ROOT\FTDISK\0000
Generic volume      Yes       VOLUME    5.2.3790.1830
         10/1/2002 Microsoft volume.inf          Not
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CC8E-406C-9528-30A8C424DCB6}
Generic volume      Yes       VOLUME    5.2.3790.1830
         10/1/2002 Microsoft volume.inf          Not
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FF48-4252-A671-2C6B1C2A37B5}
Generic volume      Yes       VOLUME    5.2.3790.1830
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Generic volume      Yes       VOLUME    5.2.3790.1830
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3EDE-4E44-B39C-C937B8C06969}
Generic volume      Yes       VOLUME    5.2.3790.1830
         10/1/2002 Microsoft volume.inf          Not
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0527-4140-A956-100328F07C01}
Generic volume      Yes       VOLUME    5.2.3790.1830
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Generic volume      Yes       VOLUME    5.2.3790.1830
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Generic volume      Yes       VOLUME    5.2.3790.1830
         10/1/2002 Microsoft volume.inf          Not
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Generic volume      Yes       VOLUME    5.2.3790.1830
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Generic volume      Yes       VOLUME    5.2.3790.1830
         10/1/2002 Microsoft volume.inf          Not
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Logical Disk Manager          Yes       SYSTEM
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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
AMD-8131 HyperTransport(tm) IOAPIC Controller     Yes
         SYSTEM    5.2.3790.1830       10/1/2002 AMD
         machine.inf         Not Available
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1\3&33B859B7&0&61
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         oem1.inf  Not Available
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(Non-Miniport)      No        SCSIADAPTER
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         oem1.inf  Not Available
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670E50&0&0000004000000000
Smart Array 6400 Controller (Non-Miniport)        No
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         Hewlett-Packard     oem0.inf  Not Available
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1\5&282C4885&0&206060
PCI standard PCI-to-PCI bridge          Yes
         SYSTEM    5.2.3790.1830       10/1/2002
         (Standard system devices)     machine.inf
         Not Available
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2\4&62BA2CA&0&6060
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Available Not Available       Not Available       Not
Available Not Available       Not Available
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Available Not Available       Not Available       Not
Available Not Available       Not Available
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HP LOGICAL VOLUME Disk Device Not Available       Not
Available Not Available       Not Available       Not
Available Not Available       Not Available
         HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\6&1
CEBB458&0&0000004000000000
Smart Array 6400 Controller U320 Expansion Module
(Non-Miniport)      No        SCSIADAPTER
         5.12.2.64 8/11/2004 Hewlett-Packard
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HP LOGICAL VOLUME Disk Device Not Available       Not
Available Not Available       Not Available       Not
Available Not Available       Not Available
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Available Not Available       Not Available
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HP LOGICAL VOLUME Disk Device Not Available       Not
Available Not Available       Not Available       Not
Available Not Available       Not Available
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1\5&31734F95&0&205860
PCI standard PCI-to-PCI bridge          Yes
         SYSTEM    5.2.3790.1830       10/1/2002
         (Standard system devices)     machine.inf
         Not Available
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3\4&62BA2CA&0&5860
PCI standard PCI-to-PCI bridge          Yes
         SYSTEM    5.2.3790.1830       10/1/2002
         (Standard system devices)     machine.inf
         Not Available
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2\3&33B859B7&0&60
AMD-8131 HyperTransport(tm) IOAPIC Controller     Yes
         SYSTEM    5.2.3790.1830       10/1/2002 AMD
         machine.inf         Not Available
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         oem1.inf  Not Available
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633B0D&0&0000014001000000
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        SCSIADAPTER         5.12.2.64 8/11/2004
        Hewlett-Packard     oem0.inf  Not Available
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(Non-Miniport)      No        SCSIADAPTER
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Smart Array 6400 Controller (Non-Miniport)        No
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PCI standard PCI-to-PCI bridge          Yes
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        (Standard system devices)     machine.inf
        Not Available
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PCI standard PCI-to-PCI bridge          Yes
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AMD-8131 HyperTransport(tm) IOAPIC Controller     Yes
        SYSTEM    5.2.3790.1830       10/1/2002 AMD
        machine.inf         Not Available
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(Non-Miniport)      No        SCSIADAPTER
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PCI standard PCI-to-PCI bridge          Yes
        SYSTEM    5.2.3790.1830       10/1/2002
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PCI standard PCI-to-PCI bridge          Yes
        SYSTEM    5.2.3790.1830       10/1/2002
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AMD-8131 HyperTransport(tm) IOAPIC Controller     Yes
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        machine.inf         Not Available
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Smart Array 6400 Controller (Non-Miniport)        No
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PCI standard PCI-to-PCI bridge          Yes
          SYSTEM    5.2.3790.1830       10/1/2002
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          Not Available
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PCI standard PCI-to-PCI bridge          Yes
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          Not Available
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2\3&33B859B7&0&48
PCI bus   Yes       SYSTEM    5.2.3790.1830
          10/1/2002 (Standard system devices)
          machine.inf         Not Available
          ACPI\PNP0A03\8
AMD Miscellaneous Configuration         Yes
          SYSTEM    5.2.3790.1830       10/1/2002 AMD
          machine.inf         Not Available
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AMD DRAM and HyperTransport(tm) Trace Mode
Configuration       Yes       SYSTEM    5.2.3790.1830
          10/1/2002 AMD       machine.inf         Not
Available
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AMD Address Map Configuration Yes       SYSTEM
          5.2.3790.1830       10/1/2002 AMD
          machine.inf         Not Available
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AMD HyperTransport(tm) Configuration    Yes
          SYSTEM    5.2.3790.1830       10/1/2002 AMD
          machine.inf         Not Available
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AMD Miscellaneous Configuration         Yes
          SYSTEM    5.2.3790.1830       10/1/2002 AMD
          machine.inf         Not Available
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0\3&20FEA912&0&D3
AMD DRAM and HyperTransport(tm) Trace Mode
Configuration       Yes       SYSTEM    5.2.3790.1830
          10/1/2002 AMD       machine.inf         Not
Available
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0\3&20FEA912&0&D2
AMD Address Map Configuration Yes       SYSTEM
          5.2.3790.1830       10/1/2002 AMD
          machine.inf         Not Available
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AMD HyperTransport(tm) Configuration    Yes
          SYSTEM    5.2.3790.1830       10/1/2002 AMD
          machine.inf         Not Available
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0\3&20FEA912&0&D0
AMD Miscellaneous Configuration         Yes
          SYSTEM    5.2.3790.1830       10/1/2002 AMD
          machine.inf         Not Available
          PCI\VEN_1022&DEV_1103&SUBSYS_00000000&REV_0
0\3&20FEA912&0&CB
AMD DRAM and HyperTransport(tm) Trace Mode
Configuration       Yes       SYSTEM    5.2.3790.1830
          10/1/2002 AMD       machine.inf         Not
Available
          PCI\VEN_1022&DEV_1102&SUBSYS_00000000&REV_0
0\3&20FEA912&0&CA
AMD Address Map Configuration Yes       SYSTEM
          5.2.3790.1830       10/1/2002 AMD
          machine.inf         Not Available
          PCI\VEN_1022&DEV_1101&SUBSYS_00000000&REV_0
0\3&20FEA912&0&C9
AMD HyperTransport(tm) Configuration    Yes
          SYSTEM    5.2.3790.1830       10/1/2002 AMD
          machine.inf         Not Available
          PCI\VEN_1022&DEV_1100&SUBSYS_00000000&REV_0
0\3&20FEA912&0&C8
AMD Miscellaneous Configuration         Yes
          SYSTEM    5.2.3790.1830       10/1/2002 AMD
          machine.inf         Not Available
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0\3&20FEA912&0&C3
AMD DRAM and HyperTransport(tm) Trace Mode
Configuration       Yes       SYSTEM    5.2.3790.1830
          10/1/2002 AMD       machine.inf         Not
Available
          PCI\VEN_1022&DEV_1102&SUBSYS_00000000&REV_0
0\3&20FEA912&0&C2
AMD Address Map Configuration Yes       SYSTEM
          5.2.3790.1830       10/1/2002 AMD
          machine.inf         Not Available
          PCI\VEN_1022&DEV_1101&SUBSYS_00000000&REV_0
0\3&20FEA912&0&C1
AMD HyperTransport(tm) Configuration    Yes
          SYSTEM    5.2.3790.1830       10/1/2002 AMD
          machine.inf         Not Available
          PCI\VEN_1022&DEV_1100&SUBSYS_00000000&REV_0
0\3&20FEA912&0&C0
AMD-8131 HyperTransport(tm) IOAPIC Controller     Yes
          SYSTEM    5.2.3790.1830       10/1/2002 AMD
          machine.inf         Not Available
          PCI\VEN_1022&DEV_7451&SUBSYS_00000000&REV_0
1\3&20FEA912&0&41
HP LOGICAL VOLUME Disk Device Not Available       Not
Available Not Available       Not Available       Not
Available Not Available       Not Available
          HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\6&4
F22543&0&0200004000000000
HP LOGICAL VOLUME Disk Device Not Available       Not
Available Not Available       Not Available       Not
Available Not Available       Not Available
          HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\6&4
F22543&0&0100004000000000
HP LOGICAL VOLUME Disk Device Not Available       Not
Available Not Available       Not Available       Not
Available Not Available       Not Available
          HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\6&4
F22543&0&0000004000000000
Smart Array 6400 Controller U320 Expansion Module
(Non-Miniport)      No        SCSIADAPTER
          5.12.2.64 8/11/2004 Hewlett-Packard
          oem0.inf  Not Available
          PCI\VEN_0E11&DEV_0046&SUBSYS_409D0E11&REV_0
1\5&34813DC5&0&284040
HP LOGICAL VOLUME Disk Device Not Available       Not
Available Not Available       Not Available       Not
Available Not Available       Not Available
          HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\6&4
B48C0D&0&0200004000000000
HP LOGICAL VOLUME Disk Device Not Available       Not
Available Not Available       Not Available       Not
Available Not Available       Not Available
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B48C0D&0&0100004000000000
HP LOGICAL VOLUME Disk Device Not Available       Not
Available Not Available       Not Available       Not
Available Not Available       Not Available
          HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\6&4
B48C0D&0&0000004000000000
Smart Array 6400 Controller (Non-Miniport)        No
          SCSIADAPTER         5.12.2.64 8/11/2004
          Hewlett-Packard     oem0.inf  Not Available
          PCI\VEN_0E11&DEV_0046&SUBSYS_409C0E11&REV_0
1\5&34813DC5&0&204040
PCI standard PCI-to-PCI bridge          Yes
          SYSTEM    5.2.3790.1830       10/1/2002
          (Standard system devices)     machine.inf
          Not Available
          PCI\VEN_1014&DEV_01A7&SUBSYS_00000000&REV_0
3\4&24B9E852&0&4040
Smart Array Logical Volume    No        DISKDRIVE
          5.6.2.32  7/14/2004 Hewlett-Packard
          oem1.inf  Not Available
          HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\6&7
8F08CD&0&0200004000000000
Smart Array Logical Volume    No        DISKDRIVE
          5.6.2.32  7/14/2004 Hewlett-Packard
          oem1.inf  Not Available
          HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\6&7
8F08CD&0&0100004000000000
```

```
Smart Array Logical Volume    No        DISKDRIVE
          5.6.2.32  7/14/2004 Hewlett-Packard
          oem1.inf  Not Available
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8F08CD&0&0000004000000000
Smart Array 6400 Controller U320 Expansion Module
(Non-Miniport)      No        SCSIADAPTER
          5.12.2.64 8/11/2004 Hewlett-Packard
          oem0.inf  Not Available
          PCI\VEN_0E11&DEV_0046&SUBSYS_409D0E11&REV_0
1\5&2C344C1F&0&283840
Smart Array Logical Volume    No        DISKDRIVE
          5.6.2.32  7/14/2004 Hewlett-Packard
          oem1.inf  Not Available
          HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\6&5
F1DC7&0&0200004000000000
Smart Array Logical Volume    No        DISKDRIVE
          5.6.2.32  7/14/2004 Hewlett-Packard
          oem1.inf  Not Available
          HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\6&5
F1DC7&0&0100004000000000
Smart Array Logical Volume    No        DISKDRIVE
          5.6.2.32  7/14/2004 Hewlett-Packard
          oem1.inf  Not Available
          HPQCISS\DISK&VEN_HP&PROD_LOGICAL_VOLUME\6&5
F1DC7&0&0000004000000000
Smart Array 6400 Controller (Non-Miniport)        No
          SCSIADAPTER         5.12.2.64 8/11/2004
          Hewlett-Packard     oem0.inf  Not Available
          PCI\VEN_0E11&DEV_0046&SUBSYS_409C0E11&REV_0
1\5&2C344C1F&0&203840
PCI standard PCI-to-PCI bridge          Yes
          SYSTEM    5.2.3790.1830       10/1/2002
          (Standard system devices)     machine.inf
          Not Available
          PCI\VEN_1014&DEV_01A7&SUBSYS_00000000&REV_0
2\4&24B9E852&0&3840
PCI standard PCI-to-PCI bridge          Yes
          SYSTEM    5.2.3790.1830       10/1/2002
          (Standard system devices)     machine.inf
          Not Available
          PCI\VEN_1022&DEV_7450&SUBSYS_00000000&REV_1
2\3&20FEA912&0&40
AMD-8131 HyperTransport(tm) IOAPIC Controller     Yes
          SYSTEM    5.2.3790.1830       10/1/2002 AMD
          machine.inf         Not Available
          PCI\VEN_1022&DEV_7451&SUBSYS_00000000&REV_0
1\3&20FEA912&0&39
HP NC7782 Gigabit Server Adapter        No        NET
          7.96.0.0  12/1/2004 Hewlett-Packard Company
          oem10.inf Not Available
          PCI\VEN_14E4&DEV_1648&SUBSYS_00D00E11&REV_1
0\4&82820FC&0&3138
HP NC7782 Gigabit Server Adapter        No        NET
          7.96.0.0  12/1/2004 Hewlett-Packard Company
          oem10.inf Not Available
          PCI\VEN_14E4&DEV_1648&SUBSYS_00D00E11&REV_1
0\4&82820FC&0&3038
Disk drive          Yes       DISKDRIVE 5.2.3790.1830
          10/1/2002 (Standard disk drives)
          disk.inf  Not Available
          SCSI\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLUME&RE
V_2.56\5&208597A6&0&040
HP Virtual LUN      Yes       SYSTEM    5.2.3790.1830
          10/1/2002 Compaq    scsidev.inf         Not
Available
          SCSI\OTHER&VEN_COMPAQ&PROD_SCSI_COMMUNICATE
&REV_CISS\5&208597A6&0&000
Smart Array 5i      Yes       SCSIADAPTER
          5.2.3790.1830       10/1/2002 Compaq
          pnpscsi.inf         Not Available
          PCI\VEN_0E11&DEV_B178&SUBSYS_40800E11&REV_0
1\4&82820FC&0&2038
PCI standard PCI-to-PCI bridge          Yes
          SYSTEM    5.2.3790.1830       10/1/2002
          (Standard system devices)     machine.inf
          Not Available
          PCI\VEN_1022&DEV_7450&SUBSYS_00000000&REV_1
2\3&20FEA912&0&38
AMD-8111 System Management Controller   Yes
          SYSTEM    5.2.3790.1830       10/1/2002 AMD
          machine.inf         Not Available
          PCI\VEN_1022&DEV_746B&SUBSYS_32050E11&REV_0
5\3&20FEA912&0&23
CD-ROM Drive        Yes       CDROM     5.2.3790.1830
          10/1/2002 (Standard CD-ROM drives)
          cdrom.inf Not Available
          IDE\CDROMTEAC_CD-
224E_____________________________9.9A____\5&2DC47F1C&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&21637DBD&0&0
AMD-8111 PCI Bus Master IDE Controller  Yes       HDC
          5.2.3790.1830       10/1/2002 Advanced
Micro Devices       mshdc.inf Not Available
          PCI\VEN_1022&DEV_7469&SUBSYS_32040E11&REV_0
3\3&20FEA912&0&21
Floppy disk drive   Yes       FLOPPYDISK
          5.2.3790.1830       10/1/2002 (Standard
floppy disk drives) flpydisk.inf        Not Available
          FDC\GENERIC_FLOPPY_DRIVE\6&2F72E85F&0&0
Standard floppy disk controller         Yes       FDC
          5.2.3790.1830       10/1/2002 (Standard
floppy disk controllers)      fdc.inf   Not Available
          ACPI\PNP0700\5&1C430410&0
Communications Port Yes       PORTS     5.2.3790.1830
          10/1/2002 (Standard port types)
          msports.inf         Not Available
          ACPI\PNP0501\0
Extended IO Bus     Yes       SYSTEM    5.2.3790.1830
          10/1/2002 (Standard system devices)
          machine.inf         Not Available
          ACPI\PNP0A06\4&1C7DEDE8&0
PS/2 Compatible Mouse         Yes       MOUSE
          5.2.3790.1830       10/1/2002 Microsoft
          msmouse.inf         Not Available
          ACPI\PNP0F13\4&1C7DEDE8&0
Standard 101/102-Key or Microsoft Natural PS/2
Keyboard  Yes       KEYBOARD  5.2.3790.1830
          10/1/2002 (Standard keyboards)
          keyboard.inf        Not Available
          ACPI\PNP0303\4&1C7DEDE8&0
System speaker      Yes       SYSTEM    5.2.3790.1830
          10/1/2002 (Standard system devices)
          machine.inf         Not Available
          ACPI\PNP0800\4&1C7DEDE8&0
Direct memory access controller         Yes
          SYSTEM    5.2.3790.1830       10/1/2002
          (Standard system devices)     machine.inf
          Not Available
          ACPI\PNP0200\4&1C7DEDE8&0
System timer        Yes       SYSTEM    5.2.3790.1830
          10/1/2002 (Standard system devices)
          machine.inf         Not Available
          ACPI\PNP0100\4&1C7DEDE8&0
Programmable interrupt controller       Yes
          SYSTEM    5.2.3790.1830       10/1/2002
          (Standard system devices)     machine.inf
          Not Available
          ACPI\PNP0000\4&1C7DEDE8&0
Motherboard resources         Yes       SYSTEM
          5.2.3790.1830       10/1/2002 (Standard
system devices)     machine.inf         Not Available
          ACPI\PNP0C02\0
PCI standard ISA bridge       Yes       SYSTEM
          5.2.3790.1830       10/1/2002 (Standard
system devices)     machine.inf         Not Available
          PCI\VEN_1022&DEV_7468&SUBSYS_00000000&REV_0
5\3&20FEA912&0&20
Plug and Play Monitor         Yes       MONITOR
          5.2.3790.1830       10/1/2002 (Standard
monitor types)      monitor.inf         Not Available
          DISPLAY\AVO0402\5&38B1FFCB&0&80000001&01&03

RAGE XL  PCI (Microsoft Corporation)    Yes
          DISPLAY   6.14.10.6025       12/3/2004 ATI
Technologies, Inc.  atiixpad.inf        Not Available
          PCI\VEN_1002&DEV_4752&SUBSYS_001E0E11&REV_2
7\4&12365AD0&0&1818
HP iLO Management Channel Interface Driver        No
          MULTIFUNCTION       1.5.3790.0
          10/29/2004          Hewlett-Packard Company
(x64)     oem7.inf  Not Available
          PCI\VEN_0E11&DEV_B204&SUBSYS_B2060E11&REV_0
1\4&12365AD0&0&1218
HP ProLiant iLO Advanced System Management Controller
          No        SYSTEM    5.36.0.0  2/18/2005
          Compaq    oem9.inf  Not Available
          PCI\VEN_0E11&DEV_B203&SUBSYS_B2060E11&REV_0
1\4&12365AD0&0&1018
USB Root Hub        Yes       USB       5.2.3790.1830
          10/1/2002 (Standard USB Host Controller)
          usbport.inf         Not Available
          USB\ROOT_HUB\5&194CD4CC&0
AMD PCI to USB Open Host Controller     Yes       USB
          5.2.3790.1830       10/1/2002 Advanced
Micro Devices (AMD) usbport.inf         Not Available
          PCI\VEN_1022&DEV_7464&SUBSYS_32020E11&REV_0
B\4&12365AD0&0&0118
USB Root Hub        Yes       USB       5.2.3790.1830
          10/1/2002 (Standard USB Host Controller)
          usbport.inf         Not Available
          USB\ROOT_HUB\5&9B4CD91&0
AMD PCI to USB Open Host Controller     Yes       USB
          5.2.3790.1830       10/1/2002 Advanced
Micro Devices (AMD) usbport.inf         Not Available
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        PCI\VEN_1022&DEV_7464&SUBSYS_32020E11&REV_0
B\4&12365AD0&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_1022&DEV_7460&SUBSYS_00000000&REV_0
7\3&20FEA912&0&18
PCI bus   Yes       SYSTEM    5.2.3790.1830
        10/1/2002 (Standard system devices)
        machine.inf         Not Available
        ACPI\PNP0A03\7
Processor Yes       PROCESSOR 5.2.3790.1830
        10/1/2002 (Standard processor types)
        cpu.inf   Not Available
        ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_15_MODEL_33\_7
Processor Yes       PROCESSOR 5.2.3790.1830
        10/1/2002 (Standard processor types)
        cpu.inf   Not Available
        ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_15_MODEL_33\_6
Processor Yes       PROCESSOR 5.2.3790.1830
        10/1/2002 (Standard processor types)
        cpu.inf   Not Available
        ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_15_MODEL_33\_5
Processor Yes       PROCESSOR 5.2.3790.1830
        10/1/2002 (Standard processor types)
        cpu.inf   Not Available
        ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_15_MODEL_33\_4
Processor Yes       PROCESSOR 5.2.3790.1830
        10/1/2002 (Standard processor types)
        cpu.inf   Not Available
        ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_15_MODEL_33\_3
Processor Yes       PROCESSOR 5.2.3790.1830
        10/1/2002 (Standard processor types)
        cpu.inf   Not Available
        ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_15_MODEL_33\_2
Processor Yes       PROCESSOR 5.2.3790.1830
        10/1/2002 (Standard processor types)
        cpu.inf   Not Available
        ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_15_MODEL_33\_1
Processor Yes       PROCESSOR 5.2.3790.1830
        10/1/2002 (Standard processor types)
        cpu.inf   Not Available
        ACPI\AUTHENTICAMD_-
_AMD64_FAMILY_15_MODEL_33\_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
CLASSPATH
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:\PROGRA~1\IBM\SQLLIB\java\db2jcc.jar;C:\PROGRA~1\IBM
\SQLLIB\java\db2jcc_license_cu.jar;C:\PROGRA~1\IBM\SQ
LLIB\bin;C:\PROGRA~1\IBM\SQLLIB\java\common.jar
        <SYSTEM>
ClusterLog          C:\WINDOWS\Cluster\cluster.log
        <SYSTEM>
ComSpec   %SystemRoot%\system32\cmd.exe <SYSTEM>
FP_NO_HOST_CHECK    NO        <SYSTEM>
HP_SSL_SHARE        C:\hp\sslshare\     <SYSTEM>
INCLUDE
        C:\PROGRA~1\IBM\SQLLIB\INCLUDE;C:\PROGRA~1\
IBM\SQLLIB\LIB;C:\Program Files\Microsoft Platform
SDK\Include;C:\Program Files\Microsoft Platform
SDK\Include\crt     <SYSTEM>
LIB       C:\Program Files\Microsoft Platform
SDK\lib\amd64;C:\PROGRA~1\IBM\SQLLIB\LIB;C:\Program
Files\Microsoft Platform SDK\Lib\       <SYSTEM>
NUMBER_OF_PROCESSORS          8         <SYSTEM>
OS        Windows_NT          <SYSTEM>
Path
        %SystemRoot%\system32;%SystemRoot%;%SystemR
oot%\system32\WBEM;C:\Perl\bin\;C:\Program
Files\Microsoft Platform
SDK\Bin\win64\x86\AMD64;C:\Program Files
(x86)\Microsoft SQL
Server\80\Tools\Binn\;C:\PROGRA~2\HP\SYSTEM~2\bin;C:\
PROGRA~2\HP\SYSTEM~2\lbin;C:\PROGRA~2\HP\SYSTEM~2\lib
;C:\PROGRA~2\HP\SYSTEM~2\j2re\bin;C:\PROGRA~2\HP\SYST
EM~2\j2re\bin\server;C:\PROGRA~1\IBM\SQLLIB\BIN;C:\PR
OGRA~1\IBM\SQLLIB\FUNCTION;C:\PROGRA~1\IBM\SQLLIB\SAM
PLES\REPL <SYSTEM>
PATHEXT
        .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF
;.WSH     <SYSTEM>
PROCESSOR_ARCHITECTURE        AMD64     <SYSTEM>
PROCESSOR_IDENTIFIER          AMD64 Family 15 Model
33 Stepping 2, AuthenticAMD   <SYSTEM>
PROCESSOR_LEVEL     15        <SYSTEM>
PROCESSOR_REVISION  2102      <SYSTEM>
TEMP      %SystemRoot%\TEMP   <SYSTEM>
TMP       %SystemRoot%\TEMP   <SYSTEM>
windir    %SystemRoot%        <SYSTEM>
DB2TEMPDIR          C:\PROGRA~1\IBM\SQLLIB\
        <SYSTEM>
DB2INSTANCE         DB2       <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
        DARKANGEL\db2admin
TMP       %USERPROFILE%\Local Settings\Temp
        DARKANGEL\db2admin

[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
Not Available       \\inforb\audit_fdr  Disk
          Current Connection  DARKANGEL\dpol

[Running Tasks]

Name      Path      Process ID          Priority  Min
Working Set         Max Working Set     Start Time
          Version   Size      File Date
system idle process Not Available       0         0
          Not Available       Not Available       Not
Available Not Available       Not Available       Not
Available
system    Not Available       4         8         0
          1413120   Not Available       Not Available
          Not Available       Not Available
smss.exe  Not Available       840       11
          204800    1413120   11/28/2005 9:34 AM  Not
Available Not Available       Not Available
csrss.exe Not Available       968       13        Not
Available Not Available       11/28/2005 9:34 AM  Not
Available Not Available       Not Available
winlogon.exe        c:\windows\system32\winlogon.exe
          1008      13        204800    1413120
          11/28/2005 9:34 AM  5.2.3790.1830
(srv03_sp1_rtm.050324-1447)   901.00 KB (922,624
bytes)    3/25/2005 7:00 AM
services.exe        c:\windows\system32\services.exe
          268       9         204800    1413120
          11/28/2005 9:34 AM  5.2.3790.1830
(srv03_sp1_rtm.050324-1447)   216.50 KB (221,696
bytes)    3/25/2005 7:00 AM
lsass.exe c:\windows\system32\lsass.exe 276       9
          204800    1413120   11/28/2005 9:34 AM
          5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          14.00 KB (14,336 bytes)       3/25/2005
7:00 AM
svchost.exe         c:\windows\system32\svchost.exe
          488       8         204800    1413120
          11/28/2005 9:34 AM  5.2.3790.1830
(srv03_sp1_rtm.050324-1447)   24.50 KB (25,088 bytes)
          3/25/2005 7:00 AM
svchost.exe         Not Available       608       8
          Not Available       Not Available
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         11/28/2005 9:34 AM  Not Available       Not
Available Not Available
svchost.exe         Not Available       652       8
         Not Available       Not Available
         11/28/2005 9:34 AM  Not Available       Not
Available Not Available
svchost.exe         c:\windows\system32\svchost.exe
         688       8         204800    1413120
         11/28/2005 9:34 AM  5.2.3790.1830
(srv03_sp1_rtm.050324-1447)   24.50 KB (25,088 bytes)
         3/25/2005 7:00 AM
msdtc.exe Not Available       1136      8         Not
Available Not Available       11/28/2005 9:34 AM  Not
Available Not Available       Not Available
db2dasrrm.exe       Not Available       1280      8
         Not Available       Not Available
         11/28/2005 9:34 AM  Not Available       Not
Available Not Available
db2reg64.exe        Not Available       1296      8
         Not Available       Not Available
         11/28/2005 9:34 AM  Not Available       Not
Available Not Available
svchost.exe         c:\windows\system32\svchost.exe
         1340      8         204800    1413120
         11/28/2005 9:34 AM  5.2.3790.1830
(srv03_sp1_rtm.050324-1447)   24.50 KB (25,088 bytes)
         3/25/2005 7:00 AM
snmp.exe  c:\windows\system32\snmp.exe  1400      8
         204800    1413120   11/28/2005 9:34 AM
         5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
         59.50 KB (60,928 bytes)       4/26/2005
1:36 PM
sysdown.exe         c:\windows\system32\sysdown.exe
         1500      8         204800    1413120
         11/28/2005 9:34 AM  5.35.0.0 built by:
WINBUILD1 43.00 KB (44,032 bytes)       3/17/2005
3:26 PM
db2rcmd.exe         Not Available       1704      8
         Not Available       Not Available
         11/28/2005 9:34 AM  Not Available       Not
Available Not Available
svchost.exe         c:\windows\system32\svchost.exe
         1924      8         204800    1413120
         11/28/2005 9:34 AM  5.2.3790.1830
(srv03_sp1_rtm.050324-1447)   24.50 KB (25,088 bytes)
         3/25/2005 7:00 AM
alg.exe   Not Available       444       8         Not
Available Not Available       11/28/2005 9:34 AM  Not
Available Not Available       Not Available
wmiprvse.exe        Not Available       668       8
         Not Available       Not Available
         11/28/2005 9:34 AM  Not Available       Not
Available Not Available
logon.scr Not Available       516       4         Not
Available Not Available       11/28/2005 9:44 AM  Not
Available Not Available       Not Available
csrss.exe Not Available       1388      13        Not
Available Not Available       11/28/2005 9:52 AM  Not
Available Not Available       Not Available
winlogon.exe        c:\windows\system32\winlogon.exe
         1480      13        204800    1413120
         11/28/2005 9:52 AM  5.2.3790.1830
(srv03_sp1_rtm.050324-1447)   901.00 KB (922,624
bytes)    3/25/2005 7:00 AM
rdpclip.exe         c:\windows\system32\rdpclip.exe
         984       8         204800    1413120
         11/28/2005 9:52 AM  5.2.3790.1830
(srv03_sp1_rtm.050324-1447)   99.00 KB (101,376
bytes)    2/11/2005 11:53 AM
explorer.exe        c:\windows\explorer.exe       888
         8         204800    1413120   11/28/2005
9:52 AM   6.00.3790.1830 (srv03_sp1_rtm.050324-1447)
         1.30 MB (1,364,480 bytes)     3/25/2005
7:00 AM
cpqteam.exe         c:\windows\system32\cpqteam.exe
         244       8         204800    1413120
         11/28/2005 9:52 AM  8.00.0.38 56.00 KB
(57,344 bytes)      10/27/2004 11:05 AM
cmd.exe   c:\windows\system32\cmd.exe   428       8
         204800    1413120   11/28/2005 9:53 AM
         5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
         538.50 KB (551,424 bytes)     3/25/2005
7:00 AM
msinfo32.exe        c:\program files\common
files\microsoft shared\msinfo\msinfo32.exe
         1872      8         204800    1413120
         11/28/2005 9:53 AM  5.2.3790.1830
(srv03_sp1_rtm.050324-1447)   48.50 KB (49,664 bytes)
         2/11/2005 11:55 AM
wmiprvse.exe        Not Available       1892      8
         Not Available       Not Available
         11/28/2005 9:53 AM  Not Available       Not
Available Not Available
regedit.exe         c:\windows\regedit.exe
         1700      8         204800    1413120
         11/28/2005 9:53 AM  5.2.3790.1830
(srv03_sp1_rtm.050324-1447)   219.50 KB (224,768
bytes)    3/25/2005 7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\userenv.dll
psapi     5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          29.00 KB (29,696 bytes)       3/25/2005
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\ws2_32.dll
```

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ws2help   5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          30.50 KB (31,232 bytes)       3/25/2005
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\ole32.dll
comctl32  6.0 (srv03_sp1_rtm.050324-1447)
          1.51 MB (1,584,128 bytes)     4/1/2005
10:03 AM  Microsoft Corporation
          c:\windows\winsxs\amd64_microsoft.windows.c
ommon-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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\mpr.dll
oleaut32  5.2.3790.1830       1.06 MB (1,116,160
bytes)    3/25/2005 7:00 AM   Microsoft Corporation
          c:\windows\system32\oleaut32.dll
winmm     5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          303.50 KB (310,784 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\winmm.dll
winspool  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          247.00 KB (252,928 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\winspool.drv
comctl32  5.82 (srv03_sp1_rtm.050324-1447)
          934.50 KB (956,928 bytes)     4/1/2005
10:03 AM  Microsoft Corporation
          c:\windows\winsxs\amd64_microsoft.windows.c
ommon-controls_6595b64144ccf1df_5.82.3790.1830_x-
ww_4d792d2a\comctl32.dll
uxtheme   6.00.3790.1830 (srv03_sp1_rtm.050324-1447)
          494.50 KB (506,368 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\uxtheme.dll
mprapi    5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          154.50 KB (158,208 bytes)     3/25/2005
7:00 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
7:00 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
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\credui.dll
atl       3.05.2284 96.50 KB (98,816 bytes)
          3/25/2005 7:00 AM   Microsoft Corporation
          c:\windows\system32\atl.dll
rtutils   5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          66.00 KB (67,584 bytes)       3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\rtutils.dll
samlib    5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          69.00 KB (70,656 bytes)       3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\samlib.dll
services  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          216.50 KB (221,696 bytes)     3/25/2005
7:00 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
7:00 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
7:00 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
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\authz.dll
umpnpmgr  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          205.00 KB (209,920 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\umpnpmgr.dll
eventlog  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          127.00 KB (130,048 bytes)     3/25/2005
7:00 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
7:00 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
7:00 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
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\imm32.dll
lsass     5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          14.00 KB (14,336 bytes)       3/25/2005
7:00 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
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\ntdsapi.dll
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dnsapi    5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          297.50 KB (304,640 bytes)     3/25/2005
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\ws03res.dll
pstorsvc  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          36.00 KB (36,864 bytes)       3/25/2005
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\psbase.dll
hnetcfg   5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          561.00 KB (574,464 bytes)     3/25/2005
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\wshtcpip.dll
dssenh    5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          226.96 KB (232,408 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\dssenh.dll
svchost   5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          24.50 KB (25,088 bytes)       3/25/2005
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\rpcss.dll
xpsp2res  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          2.77 MB (2,899,456 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\xpsp2res.dll
clbcatq   2001.12.4720.1830 (srv03_sp1_rtm.050324-
1447)     865.00 KB (885,760 bytes)     2/11/2005
11:53 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\comres.dll
ntmarta   5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          222.50 KB (227,840 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\ntmarta.dll
schedsvc  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          308.50 KB (315,904 bytes)     2/11/2005
11:54 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
7:00 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
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\wiarpc.dll
aelupsvc  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          31.50 KB (32,256 bytes)       3/25/2005
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\apphelp.dll
dmserver  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          36.50 KB (37,376 bytes)       3/25/2005
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\es.dll
srvsvc    5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          156.50 KB (160,256 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\srvsvc.dll
netman    5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          457.00 KB (467,968 bytes)     3/25/2005
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
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12:35 PM  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
12:35 PM  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
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\dhcpcsvc.dll
seclogon  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          27.50 KB (28,160 bytes)       3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\seclogon.dll
wmisvc    5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          227.00 KB (232,448 bytes)     2/11/2005
11:53 AM  Microsoft Corporation
          c:\windows\system32\wbem\wmisvc.dll
vssapi    5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          1.26 MB (1,320,960 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\vssapi.dll
ipnathlp  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          532.00 KB (544,768 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\ipnathlp.dll
comsvcs   2001.12.4720.1830 (srv03_sp1_rtm.050324-
1447)     2.06 MB (2,156,544 bytes)     2/11/2005
11:53 AM  Microsoft Corporation
          c:\windows\system32\comsvcs.dll
sens      5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          63.50 KB (65,024 bytes)       3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\sens.dll
rasadhlp  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          12.00 KB (12,288 bytes)       3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\rasadhlp.dll
wbemcomn  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          524.00 KB (536,576 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\wbem\wbemcomn.dll
wbemcore  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          1.24 MB (1,299,968 bytes)     2/11/2005
11:53 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)     2/11/2005
11:53 AM  Microsoft Corporation
          c:\windows\system32\wbem\esscli.dll
fastprox  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          866.50 KB (887,296 bytes)     2/11/2005
11:53 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)       2/11/2005
11:53 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)     2/11/2005
11:53 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)     2/11/2005
11:53 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)     2/11/2005
11:53 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)     2/11/2005
11:53 AM  Microsoft Corporation
          c:\windows\system32\wbem\wbemess.dll
cryptsvc  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          114.00 KB (116,736 bytes)     3/25/2005
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\certcli.dll
ncprov    5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          73.00 KB (74,752 bytes)       2/11/2005
11:53 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\actxprxy.dll
netcfgx   5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          1.29 MB (1,354,240 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\netcfgx.dll
winipsec  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          52.50 KB (53,760 bytes)       3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\winipsec.dll
rasdlg    5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          859.50 KB (880,128 bytes)     3/25/2005
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\ersvc.dll
snmp      5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          59.50 KB (60,928 bytes)       4/26/2005
1:36 PM   Microsoft Corporation
          c:\windows\system32\snmp.exe
snmpapi   5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          31.50 KB (32,256 bytes)       3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\snmpapi.dll
winrnr    5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          30.00 KB (30,720 bytes)       3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\winrnr.dll
lmmib2    5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          51.00 KB (52,224 bytes)       4/26/2005
1:36 PM   Microsoft Corporation
          c:\windows\system32\lmmib2.dll
inetmib1  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          66.50 KB (68,096 bytes)       3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\inetmib1.dll
hostmib   5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          58.50 KB (59,904 bytes)       4/26/2005
1:36 PM   Microsoft Corporation
          c:\windows\system32\hostmib.dll
wsock32   5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          24.50 KB (25,088 bytes)       3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\wsock32.dll
snmpmib   5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          8.00 KB (8,192 bytes)         4/1/2005 4:42
PM        Microsoft Corporation
          c:\windows\system32\snmpmib.dll
evntagnt  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          113.50 KB (116,224 bytes)     4/1/2005 4:40
PM        Microsoft Corporation
          c:\windows\system32\evntagnt.dll
igmpagnt  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          12.00 KB (12,288 bytes)       3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\igmpagnt.dll
mcastmib  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          19.00 KB (19,456 bytes)       3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\mcastmib.dll
ripagnt   5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          35.00 KB (35,840 bytes)       3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\ripagnt.dll
ospfagnt  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          8.50 KB (8,704 bytes)         3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\ospfagnt.dll
btpagnt   5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          18.00 KB (18,432 bytes)       3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\btpagnt.dll
sysdown   5.35.0.0 built by: WINBUILD1  43.00 KB
(44,032 bytes)      3/17/2005 3:26 PM   Compaq
Computer Corporation
          c:\windows\system32\sysdown.exe
termsrv   5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          354.50 KB (363,008 bytes)     2/11/2005
11:53 AM  Microsoft Corporation
          c:\windows\system32\termsrv.dll
icaapi    5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          27.50 KB (28,160 bytes)       2/11/2005
11:53 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\mstlsapi.dll
rdpwsx    5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          170.13 KB (174,216 bytes)     2/11/2005
11:53 AM  Microsoft Corporation
          c:\windows\system32\rdpwsx.dll
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rdpsnd    5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          25.00 KB (25,600 bytes)       3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\rdpsnd.dll
scredir   5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          38.50 KB (39,424 bytes)       3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\scredir.dll
cscui     5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          441.00 KB (451,584 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\cscui.dll
msacm32   5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          31.00 KB (31,744 bytes)       3/25/2005
7:00 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
7:00 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
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\msadp32.acm
msg711    5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          13.50 KB (13,824 bytes)       3/25/2005
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\msgsm32.acm
tssoft32  1.01      13.50 KB (13,824 bytes)
          3/25/2005 7:00 AM   DSP GROUP, INC.
          c:\windows\system32\tssoft32.acm
tsd32     1.03      24.50 KB (25,088 bytes)
          3/25/2005 7:00 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)      2/11/2005
11:53 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\ntshrui.dll
msi       3.1.4000.1830       4.27 MB (4,476,416
bytes)    3/25/2005 7:00 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
7:00 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
7:00 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
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\powrprof.dll
drprov    5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          24.00 KB (24,576 bytes)       3/25/2005
7:00 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
7:00 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
7:00 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
7:00 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
7:00 AM   Microsoft Corporation
          c:\windows\system32\davclnt.dll
browselc  6.00.3790.1830 (srv03_sp1_rtm.050324-1447)
          63.00 KB (64,512 bytes)       3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\browselc.dll
shdoclc   6.00.3790.1830 (srv03_sp1_rtm.050324-1447)
          589.50 KB (603,648 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\shdoclc.dll
zipfldr   6.00.3790.1830 (srv03_sp1_rtm.050324-1447)
          449.50 KB (460,288 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\zipfldr.dll
cpqteam   8.00.0.38 56.00 KB (57,344 bytes)
          10/27/2004 11:05 AM Hewlett-Packard Company
          c:\windows\system32\cpqteam.exe
cmd       5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          538.50 KB (551,424 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\cmd.exe
msinfo32  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          48.50 KB (49,664 bytes)       2/11/2005
11:55 AM  Microsoft Corporation         c:\program
files\common files\microsoft
shared\msinfo\msinfo32.exe
mfc42u    6.50.9146.0         1.39 MB (1,462,272
bytes)    3/25/2005 7:00 AM   Microsoft Corporation
          c:\windows\system32\mfc42u.dll
msinfo    5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          636.00 KB (651,264 bytes)     2/11/2005
11:55 AM  Microsoft Corporation
          c:\windows\pchealth\helpctr\binaries\msinfo
.dll
comdlg32  6.00.3790.1830 (srv03_sp1_rtm.050324-1447)
          446.50 KB (457,216 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\comdlg32.dll
riched32  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          7.00 KB (7,168 bytes)         3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\riched32.dll
riched20  5.31.23.1224        1.10 MB (1,157,120
bytes)    3/25/2005 7:00 AM   Microsoft Corporation
          c:\windows\system32\riched20.dll
wbemprox  5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          38.00 KB (38,912 bytes)       2/11/2005
11:53 AM  Microsoft Corporation
          c:\windows\system32\wbem\wbemprox.dll
regedit   5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          219.50 KB (224,768 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\regedit.exe
aclui     5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          176.00 KB (180,224 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\aclui.dll
ulib      5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          342.50 KB (350,720 bytes)     3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\ulib.dll
clb       5.2.3790.1830 (srv03_sp1_rtm.050324-1447)
          17.00 KB (17,408 bytes)       3/25/2005
7:00 AM   Microsoft Corporation
          c:\windows\system32\clb.dll

[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   Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k
localservice        Normal    NT
AUTHORITY\LocalService        0
Application Layer Gateway Service       ALG
          Running   Manual    Own Process
          c:\windows\system32\alg.exe   Normal    NT
AUTHORITY\LocalService        0
Application Management        AppMgmt   Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Windows Audio       AudioSrv  Stopped   Disabled
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Background Intelligent Transfer Service BITS
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Computer Browser    Browser   Stopped   Disabled
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Indexing Service    CiSvc     Stopped   Manual
          Share Process
          c:\windows\system32\cisvc.exe Normal
          LocalSystem         0
ClipBook  ClipSrv   Stopped   Disabled  Own Process
          c:\windows\system32\clipsrv.exe
          Normal    LocalSystem         0
COM+ System Application       COMSysApp Stopped
          Manual    Own Process
          c:\windows\system32\dllhost.exe
/processid:{02d4b3f1-fd88-11d1-960d-00805fc79235}
          Normal    LocalSystem         0
Cryptographic Services        CryptSvc  Running
          Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
DB2 - DB2ADMIN-0    DB2ADMIN-0          Stopped
          Manual    Own Process
          c:\progra~1\ibm\sqllib\bin\db2syscs.exe
          Normal    .\db2admin          0
DB2DAS - DB2DAS00   DB2DAS00  Running   Auto      Own
Process   "c:\program
files\ibm\sqllib\\bin\db2dasrrm.exe"    Normal
          .\db2admin          0
DB2 Governor        DB2GOVERNOR         Stopped
          Manual    Own Process         "c:\program
files\ibm\sqllib\bin\db2govds.exe"      Normal
          .\db2admin          0
DB2 JDBC Applet Server        DB2JDS    Stopped
          Manual    Own Process         "c:\program
files\ibm\sqllib\bin\db2jds.exe"        Normal
          LocalSystem         0
DB2 License Server  DB2LICD   Stopped   Manual    Own
Process   "c:\program
files\ibm\sqllib\bin\db2licd.exe"       Ignore
          LocalSystem         0
DB2 Registry Reflector        DB2NTREGREFLECTOR
          Running   Auto      Own Process
          "c:\program
files\ibm\sqllib\bin\db2reg64.exe"      Normal
          .\db2admin          0
DB2 Security Server DB2NTSECSERVER      Stopped
          Manual    Own Process         "c:\program
files\ibm\sqllib\bin\db2sec.exe"        Normal
          LocalSystem         0
DB2 Remote Command Server     DB2REMOTECMD
          Running   Auto      Own Process
          "c:\program
files\ibm\sqllib\bin\db2rcmd.exe"       Ignore
          .\db2admin          0
DCOM Server Process Launcher  DcomLaunch
          Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k
dcomlaunch          Normal    LocalSystem         0

Distributed File System       Dfs       Stopped
          Manual    Own Process
          c:\windows\system32\dfssvc.exe
          Normal    LocalSystem         0
DHCP Client         Dhcp      Stopped   Manual
          Share Process
          c:\windows\system32\svchost.exe -k
networkservice      Normal    NT
AUTHORITY\NetworkService      0
Logical Disk Manager Administrative Service
          dmadmin   Stopped   Manual    Share Process
          c:\windows\system32\dmadmin.exe /com
          Normal    LocalSystem         0
Logical Disk Manager          dmserver  Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
DNS Client          Dnscache  Stopped   Manual
          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   Stopped   Manual
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Human Interface Device Access HidServ   Stopped
          Disabled  Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
HTTP SSL  HTTPFilter          Stopped   Manual
          Share Process
          c:\windows\system32\lsass.exe Normal
          LocalSystem         0
IAS Jet Database Access       IASJet    Stopped
          Manual    Share Process
          c:\windows\syswow64\svchost.exe -k iasjet
          Normal    LocalSystem         0
IMAPI CD-Burning COM Service  ImapiService
          Stopped   Disabled  Own Process
          c:\windows\system32\imapi.exe Normal
          LocalSystem         0
Intersite Messaging IsmServ   Stopped   Disabled  Own
Process   c:\windows\system32\ismserv.exe
          Normal    LocalSystem         0
Kerberos Key Distribution Center        kdc
          Stopped   Disabled  Share Process
          c:\windows\system32\lsass.exe Normal
          LocalSystem         0
Server    lanmanserver        Running   Auto
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Workstation         lanmanworkstation   Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
License Logging     LicenseService      Stopped
          Disabled  Own Process
          c:\windows\system32\llssrv.exe
          Normal    NT AUTHORITY\NetworkService   0

TCP/IP NetBIOS Helper         LmHosts   Running
          Auto      Share Process
          c:\windows\system32\svchost.exe -k
localservice        Normal    NT
AUTHORITY\LocalService        0
Messenger Messenger Stopped   Disabled  Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
NetMeeting Remote Desktop Sharing       mnmsrvc
          Stopped   Manual    Own Process
          c:\windows\system32\mnmsrvc.exe
          Normal    LocalSystem         0
Distributed Transaction Coordinator     MSDTC
          Running   Auto      Own Process
          c:\windows\system32\msdtc.exe Normal    NT
AUTHORITY\NetworkService      1
Windows Installer   MSIServer Stopped   Manual
          Share Process
          c:\windows\system32\msiexec.exe /v
          Normal    LocalSystem         0
Network DDE         NetDDE    Stopped   Disabled
          Share Process
          c:\windows\system32\netdde.exe
          Normal    LocalSystem         0
Network DDE DSDM    NetDDEdsdm          Stopped
          Disabled  Share Process
          c:\windows\system32\netdde.exe
          Normal    LocalSystem         0
```

```
Net Logon Netlogon  Stopped   Manual    Share Process
          c:\windows\system32\lsass.exe Normal
          LocalSystem         0
Network Connections Netman    Running   Manual
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Network Location Awareness (NLA)        Nla
          Running   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
File Replication    NtFrs     Stopped   Manual    Own
Process   c:\windows\system32\ntfrs.exe Ignore
          LocalSystem         0
NT LM Security Support Provider         NtLmSsp
          Stopped   Manual    Share Process
          c:\windows\system32\lsass.exe Normal
          LocalSystem         0
Removable Storage   NtmsSvc   Stopped   Manual
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Plug and Play       PlugPlay  Running   Auto
          Share Process
          c:\windows\system32\services.exe
          Normal    LocalSystem         0
IPSEC Services      PolicyAgent         Stopped
          Manual    Share Process
          c:\windows\system32\lsass.exe Normal
          LocalSystem         0
Protected Storage   ProtectedStorage    Running
          Auto      Share Process
          c:\windows\system32\lsass.exe Normal
          LocalSystem         0
Remote Access Auto Connection Manager   RasAuto
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Remote Access Connection Manager        RasMan
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Remote Desktop Help Session Manager     RDSessMgr
          Stopped   Manual    Own Process
          c:\windows\system32\sessmgr.exe
          Normal    LocalSystem         0
Routing and Remote Access     RemoteAccess
          Stopped   Disabled  Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Remote Registry     RemoteRegistry      Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k regsvc
          Normal    NT AUTHORITY\LocalService     0

Remote Procedure Call (RPC) Locator     RpcLocator
          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
Sandra Data Service SandraDataSrv       Stopped
          Manual    Own Process         c:\program
files (x86)\sisoftware\sisoftware sandra lite
2005.sr1\rpcdatasrv.exe       Normal    LocalSystem
          0
Sandra Service      SandraTheSrv        Stopped
          Manual    Own Process         c:\program
files (x86)\sisoftware\sisoftware sandra lite
2005.sr1\rpcsandrasrv.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
          Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Windows Firewall/Internet Connection Sharing (ICS)
          SharedAccess        Running   Auto
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Shell Hardware Detection      ShellHWDetection
          Running   Auto      Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Ignore    LocalSystem         0
SNMP Service        SNMP      Running   Auto      Own
Process   c:\windows\system32\snmp.exe  Normal
          LocalSystem         0
SNMP Trap Service   SNMPTRAP  Stopped   Manual    Own
Process   c:\windows\system32\snmptrap.exe
          Normal    NT AUTHORITY\LocalService     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
HP ProLiant System Shutdown Service     sysdown
          Running   Auto      Own Process
          c:\windows\system32\sysdown.exe
          Normal    LocalSystem         0
Performance Logs and Alerts   SysmonLog Stopped
          Auto      Own Process
          c:\windows\system32\smlogsvc.exe
          Normal    NT Authority\NetworkService   0

Telephony TapiSrv   Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k tapisrv
          Normal    LocalSystem         0
Terminal Services   TermService         Running
          Manual    Share Process
          c:\windows\system32\svchost.exe -k termsvcs
          Normal    LocalSystem         0
Themes    Themes    Stopped   Disabled  Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Telnet    TlntSvr   Stopped   Disabled  Own Process
          c:\windows\system32\tlntsvr.exe
          Normal    NT AUTHORITY\LocalService     0

Distributed Link Tracking Server        TrkSvr
          Stopped   Disabled  Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Distributed Link Tracking Client        TrkWks
          Stopped   Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Terminal Services Session Directory     Tssdis
          Stopped   Disabled  Own Process
          c:\windows\system32\tssdis.exe
          Normal    LocalSystem         0
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   wuauserv  Stopped   Manual
          Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Wireless Configuration        WZCSVC    Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Network Provisioning Service  xmlprov   Stopped
          Manual    Share Process
          c:\windows\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0

[Program Groups]

Group Name          Name      User Name
Accessories         Default User:Accessories
          Default User
Accessories\Accessibility     Default
User:Accessories\Accessibility          Default User

Accessories\Entertainment     Default
User:Accessories\Entertainment          Default User

Startup   Default User:Startup          Default User

Accessories         All Users:Accessories         All
Users
Accessories\Accessibility     All
Users:Accessories\Accessibility         All Users
Accessories\Communications    All
Users:Accessories\Communications        All Users
Accessories\Entertainment     All
Users:Accessories\Entertainment         All Users
Accessories\System Tools      All
Users:Accessories\System Tools          All Users
```

```
ActiveState ActivePerl 5.8    All Users:ActiveState
ActivePerl 5.8      All Users
Administrative Tools          All
Users:Administrative Tools    All Users
HP System Tools     All Users:HP System Tools     All
Users
HP System Tools\HP Array Configuration Utility    All
Users:HP System Tools\HP Array Configuration Utility
          All Users
HP System Tools\HP Array Diagnostic Utility       All
Users:HP System Tools\HP Array Diagnostic Utility All
Users
IBM DB2   All Users:IBM DB2   All Users
IBM DB2\Command Line Tools    All Users:IBM
DB2\Command Line Tools        All Users
IBM DB2\Information All Users:IBM DB2\Information All
Users
Microsoft Platform SDK for Windows Server 2003 SP1
          All Users:Microsoft Platform SDK for
Windows Server 2003 SP1       All Users
Microsoft Platform SDK for Windows Server 2003
SP1\Open Build Environment Window       All
Users:Microsoft Platform SDK for Windows Server 2003
SP1\Open Build Environment Window       All Users
Microsoft Platform SDK for Windows Server 2003
SP1\Open Build Environment Window\Windows 2000 Build
Environment         All Users:Microsoft Platform SDK
for Windows Server 2003 SP1\Open Build Environment
Window\Windows 2000 Build Environment   All Users
Microsoft Platform SDK for Windows Server 2003
SP1\Open Build Environment Window\Windows Server 2003
32-bit Build Environment      All Users:Microsoft
Platform SDK for Windows Server 2003 SP1\Open Build
Environment Window\Windows Server 2003 32-bit Build
Environment         All Users
Microsoft Platform SDK for Windows Server 2003
SP1\Open Build Environment Window\Windows Server 2003
64-bit Build Environment      All Users:Microsoft
Platform SDK for Windows Server 2003 SP1\Open Build
Environment Window\Windows Server 2003 64-bit Build
Environment         All Users
Microsoft Platform SDK for Windows Server 2003
SP1\Open Build Environment Window\Windows XP 32-bit
Build Environment   All Users:Microsoft Platform SDK
for Windows Server 2003 SP1\Open Build Environment
Window\Windows XP 32-bit Build Environment        All
Users
Microsoft Platform SDK for Windows Server 2003
SP1\Open Build Environment Window\Windows XP 64-bit
Build Environment   All Users:Microsoft Platform SDK
for Windows Server 2003 SP1\Open Build Environment
Window\Windows XP 64-bit Build Environment        All
Users
Microsoft Platform SDK for Windows Server 2003
SP1\Tools All Users:Microsoft Platform SDK for
Windows Server 2003 SP1\Tools All Users
Microsoft Platform SDK for Windows Server 2003
SP1\Visual Studio Registration          All
Users:Microsoft Platform SDK for Windows Server 2003
SP1\Visual Studio Registration          All Users
SiSoftware Utilities          All Users:SiSoftware
Utilities 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         DARKANGEL\db2admin:Accessories
          DARKANGEL\db2admin
Accessories\Accessibility
          DARKANGEL\db2admin:Accessories\Accessibilit
y         DARKANGEL\db2admin
Accessories\Entertainment
          DARKANGEL\db2admin:Accessories\Entertainmen
t         DARKANGEL\db2admin
Administrative Tools
          DARKANGEL\db2admin:Administrative Tools
          DARKANGEL\db2admin
Startup   DARKANGEL\db2admin:Startup
          DARKANGEL\db2admin

[Startup Programs]

Program   Command   User Name Location
desktop   desktop.ini         NT AUTHORITY\SYSTEM
          Startup
desktop   desktop.ini         DARKANGEL\db2admin
          Startup
desktop   desktop.ini         .DEFAULT  Startup
desktop   desktop.ini         All Users Common
Startup
CPQTEAM   cpqteam.exe         All Users
          HKLM\SOFTWARE\Microsoft\Windows\CurrentVers
ion\Run

[OLE Registration]

Object    Local Server
Sound (OLE2)        sndrec32.exe
Media Clip          mplay32.exe
Video Clip          mplay32.exe /avi
MIDI Sequence       mplay32.exe /mid
Sound     Not Available
Media Clip          Not Available
WordPad Document    "%programfiles%\windows
nt\accessories\wordpad.exe"
Bitmap Image        mspaint.exe

[Windows Error Reporting]

Time      Type      Details
11/1/2005 10:30 PM  Application Error   Faulting
application db2bp.exe, version 8.1.9.710, faulting
module db2app64.dll, version 8.1.9.710, fault address
0x0000000000481d2d.&#x000d;&#x000a;
11/1/2005 10:30 PM  Application Error   Faulting
application db2bp.exe, version 8.1.9.710, faulting
module db2app64.dll, version 8.1.9.710, fault address
0x0000000000481d2d.&#x000d;&#x000a;
```

```
11/1/2005 10:30 PM  Application Error   Faulting
application db2bp.exe, version 8.1.9.710, faulting
module db2app64.dll, version 8.1.9.710, fault address
0x0000000000481d2d.&#x000d;&#x000a;
11/22/2005 12:28 PM MsiInstaller        Detection of
product '{1DFD702A-3D0C-4266-9F28-25B13B648132}',
feature 'PSDK' failed during request for component
'{63425B32-4009-43D4-8122-
F8C21EA1EEDA}'&#x000d;&#x000a;
9/13/2005 9:30 AM   Application Hang    Hanging
application mmc.exe, version 5.2.3790.1830, hang
module hungapp, version 0.0.0.0, hang address
0x0000000000000000.&#x000d;&#x000a;

[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

browselc.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
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
iexplore.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

inetcpl.cpl         6.0.3790.1830       428 KB
          3/25/2005 7:00:00 AM
          C:\WINDOWS\system32 Microsoft Corporation

inetcplc.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

mshtmled.dll        6.0.3790.1830       906 KB
          3/25/2005 7:00:00 AM
          C:\WINDOWS\system32 Microsoft Corporation

mshtmler.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

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\db2admin\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  Custom
Restricted sites    Custom
```

Client Summary

```
System Information report written at: 11/28/2005
08:52:10 AM
cl82[System Information]

[ Following are sub-categories of this main category
]

[System Summary]

Item      Value
OS Name   Microsoft Windows 2000 Server
Version   5.0.2195 Service Pack 2 Build 2195
OS Manufacturer     Microsoft Corporation
System Name         CL82
System Manufacturer HP
System Model        ProLiant DL360 G4
System Type         X86-based PC
Processor x86 Family 15 Model 4 Stepping 1
GenuineIntel ~38627 Mhz
Processor x86 Family 15 Model 4 Stepping 1
GenuineIntel ~38627 Mhz
Processor x86 Family 15 Model 4 Stepping 1
GenuineIntel ~38627 Mhz
Processor x86 Family 15 Model 4 Stepping 1
GenuineIntel ~38627 Mhz
BIOS Version        12/02/04
```

```
Windows Directory   C:\WINNT
System Directory    C:\WINNT\System32
Boot Device         \Device\Harddisk0\Partition1
Locale    United States
User Name Not Available
Time Zone Central Standard Time
Total Physical Memory         1,048,056 KB
Available Physical Memory     896,508 KB
Total Virtual Memory          2,783,064 KB
Available Virtual Memory      2,574,808 KB
Page File Space     1,735,008 KB
Page File C:\pagefile.sys

[Hardware Resources]

[ Following are sub-categories of this main category
]

[Conflicts/Sharing]

Resource  Device
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    Standard Universal PCI to USB Host
Controller
IRQ 5     Universal Serial Bus (USB) Controller
IRQ 5     Base System Device
IRQ 5     Base System Device

[DMA]

Channel   Device    Status
7         Direct memory access controller         OK
2         Standard floppy disk controller         OK

[Forced Hardware]

Device    PNP Device ID
No Forced Hardware

[I/O]

Address Range       Device    Status
0x0000-0x0CF7       PCI bus   OK
0x0000-0x0CF7       Direct memory access controller
          OK
0x0D00-0xFFFF       PCI bus   OK
0x4000-0x4FFF       PCI standard PCI-to-PCI bridge
          OK
0x4000-0x4FFF       Smart Array 6i      OK
0x2000-0x201F       Standard Universal PCI to USB
Host Controller     OK
0x2020-0x203F       Standard Universal PCI to USB
Host Controller     OK
0x3000-0x30FF       ATI Technologies Inc. RAGE XL PCI
          OK
0x03B0-0x03BB       ATI Technologies Inc. RAGE XL PCI
          OK
0x03C0-0x03DF       ATI Technologies Inc. RAGE XL PCI
          OK
0x1800-0x18FF       Base System Device  OK
0x3400-0x34FF       Base System Device  OK
```

```
0x0A79-0x0A79       ISAPNP Read Data Port         OK
0x0279-0x0279       ISAPNP Read Data Port         OK
0x0274-0x0277       ISAPNP Read Data Port         OK
0x0070-0x0077       Motherboard resources         OK
0x0408-0x040F       Motherboard resources         OK
0x04D0-0x04D1       Motherboard resources         OK
0x0020-0x003F       Motherboard resources         OK
0x00A0-0x00BF       Motherboard resources         OK
0x0090-0x009F       Motherboard resources         OK
0x0050-0x0053       Motherboard resources         OK
0x0700-0x071F       Motherboard resources         OK
0x0800-0x083F       Motherboard resources         OK
0x0900-0x097F       Motherboard resources         OK
0x0010-0x001F       Motherboard resources         OK
0x0C80-0x0C83       Motherboard resources         OK
0x0CD4-0x0CD7       Motherboard resources         OK
0x0F50-0x0F58       Motherboard resources         OK
0x02F8-0x02FF       Motherboard resources         OK
0x0040-0x0043       System timer        OK
0x0080-0x008F       Direct memory access controller
          OK
0x00C0-0x00DF       Direct memory access controller
          OK
0x0061-0x0061       System speaker      OK
0x0060-0x0060       Standard 101/102-Key or Microsoft
Natural PS/2 Keyboard         OK
0x0064-0x0064       Standard 101/102-Key or Microsoft
Natural PS/2 Keyboard         OK
0x002E-0x002F       Extended IO Bus     OK
0x004E-0x004F       Extended IO Bus     OK
0x0220-0x025F       Extended IO Bus     OK
0x0280-0x029F       Extended IO Bus     OK
0x03F8-0x03FF       Communications Port (COM1)    OK
0x03F2-0x03F5       Standard floppy disk controller
          OK
0x03F7-0x03F7       Standard floppy disk controller
          OK
0x0500-0x050F       Standard Dual Channel PCI IDE
Controller          OK
0x01F0-0x01F7       Primary IDE Channel OK
0x03F6-0x03F6       Primary IDE Channel OK
0x0170-0x0177       Secondary IDE Channel         OK
0x0376-0x0376       Secondary IDE Channel         OK

[IRQs]

IRQ Number          Device
9         Microsoft ACPI-Compliant System
16        PCI standard PCI-to-PCI bridge
16        PCI standard PCI-to-PCI bridge
16        PCI standard PCI-to-PCI bridge
16        Standard Universal PCI to USB Host
Controller
24        Smart Array 6i
25        HP NC7782 Gigabit Server Adapter
26        HP NC7782 Gigabit Server Adapter #2
19        Standard Universal PCI to USB Host
Controller
5         Universal Serial Bus (USB) Controller
5         Base System Device
5         Base System Device
1         Standard 101/102-Key or Microsoft Natural
PS/2 Keyboard
12        PS/2 Compatible Mouse
4         Communications Port (COM1)
6         Standard floppy disk controller
14        Primary IDE Channel

[Memory]

Range     Device    Status
0xA0000-0xBFFFF     PCI bus   OK
0xA0000-0xBFFFF     ATI Technologies Inc. RAGE XL PCI
          OK
0x40000000-0xFEBFFFFF         PCI bus   OK
0xFDF00000-0xFDFFFFFF         PCI standard PCI-to-PCI
bridge    OK
0xFDFF0000-0xFDFF1FFF         Smart Array 6i      OK
0xFDF80000-0xFDFBFFFF         Smart Array 6i      OK
0xFDF70000-0xFDF7FFFF         HP NC7782 Gigabit
Server Adapter      OK
0xFDF60000-0xFDF6FFFF         HP NC7782 Gigabit
Server Adapter #2   OK
0xFBEF0000-0xFBEF000F         Intel(R) 6300ESB
Watchdog Timer - 25AB         OK
0xFBEE0000-0xFBEE03FF         Universal Serial Bus
(USB) Controller    OK
0xFC000000-0xFCFFFFFF         ATI Technologies Inc.
RAGE XL PCI         OK
0xFBFF0000-0xFBFF0FFF         ATI Technologies Inc.
RAGE XL PCI         OK
0xFBFE0000-0xFBFE01FF         Base System Device  OK
0xFBFD0000-0xFBFD07FF         Base System Device  OK
0xFBFC0000-0xFBFC1FFF         Base System Device  OK
0xFBF00000-0xFBF7FFFF         Base System Device  OK
0xE0000000-0xEFFFFFFF         Motherboard resources
          OK
0xFEBFFC00-0xFEBFFFFF         Standard Dual Channel
PCI IDE Controller  OK

[Components]

[ Following are sub-categories of this main category
]

[Multimedia]

[ Following are sub-categories of this main category
]

[Audio Codecs]

Codec     Manufacturer        Description
          Status    File      Version   Size
          Creation Date
c:\winnt\system32\iac25_32.ax Intel Corporation
          Indeo® audio software         OK
          C:\WINNT\System32\IAC25_32.AX 2.05.53
          195.00 KB (199,680 bytes)     12/7/1999
7:00:00 AM
c:\winnt\system32\msg723.acm  Microsoft Corporation
                    OK
          C:\WINNT\System32\MSG723.ACM  4.4.3385
          106.77 KB (109,328 bytes)     9/13/2002
5:46:03 PM
c:\winnt\system32\lhacm.acm   Microsoft Corporation
                    OK
          C:\WINNT\System32\LHACM.ACM   4.4.3385
          33.27 KB (34,064 bytes)       9/13/2002
5:46:04 PM
c:\winnt\system32\tssoft32.acm          DSP GROUP,
INC.                OK
          C:\WINNT\System32\TSSOFT32.ACM
          1.01      9.27 KB (9,488 bytes)
          12/7/1999 7:00:00 AM
c:\winnt\system32\msgsm32.acm Microsoft Corporation
                    OK
          C:\WINNT\System32\MSGSM32.ACM 5.00.2134.1
          22.27 KB (22,800 bytes)       12/7/1999
7:00:00 AM
c:\winnt\system32\msg711.acm  Microsoft Corporation
                    OK
          C:\WINNT\System32\MSG711.ACM  5.00.2134.1
          10.27 KB (10,512 bytes)       12/7/1999
7:00:00 AM
c:\winnt\system32\msadp32.acm Microsoft Corporation
                    OK
          C:\WINNT\System32\MSADP32.ACM 5.00.2134.1
          14.77 KB (15,120 bytes)       12/7/1999
7:00:00 AM
c:\winnt\system32\imaadp32.acm          Microsoft
Corporation         OK
          C:\WINNT\System32\IMAADP32.ACM
          5.00.2134.1         16.27 KB (16,656 bytes)
          12/7/1999 7:00:00 AM

[Video Codecs]

Codec     Manufacturer        Description
          Status    File      Version   Size
          Creation Date
c:\winnt\system32\ir50_32.dll Intel Corporation
          Indeo® video 5.10   OK
          C:\WINNT\System32\IR50_32.DLL
          R.5.10.15.2.55      737.50 KB (755,200
bytes)    12/7/1999 7:00:00 AM
c:\winnt\system32\msh261.drv  Microsoft Corporation
                    OK
          C:\WINNT\System32\MSH261.DRV  4.4.3385
          163.77 KB (167,696 bytes)     9/13/2002
5:46:04 PM
c:\winnt\system32\msh263.drv  Microsoft Corporation
                    OK
          C:\WINNT\System32\MSH263.DRV  4.4.3385
          252.27 KB (258,320 bytes)     9/13/2002
5:45:39 PM
c:\winnt\system32\msvidc32.dll          Microsoft
Corporation         OK
          C:\WINNT\System32\MSVIDC32.DLL
          5.00.2134.1         27.27 KB (27,920 bytes)
          12/7/1999 7:00:00 AM
c:\winnt\system32\msrle32.dll Microsoft Corporation
                    OK
          C:\WINNT\System32\MSRLE32.DLL 5.00.2134.1
          10.77 KB (11,024 bytes)       12/7/1999
7:00:00 AM
c:\winnt\system32\ir32_32.dll Intel(R) Corporation
                    OK
```

```
         C:\WINNT\System32\IR32_32.DLL Not Available
         194.50 KB (199,168 bytes)     12/7/1999
7:00:00 AM
c:\winnt\system32\iccvid.dll  Radius Inc.
         OK        C:\WINNT\System32\ICCVID.DLL
         1.10.0.6  108.00 KB (110,592 bytes)
         12/7/1999 7:00:00 AM

[CD-ROM]

Item      Value
Drive     D:
Description         CD-ROM Drive
Media Loaded        False
Media Type          CD-ROM
Name      COMPAQ CD-ROM SN-124
Manufacturer        (Standard CD-ROM drives)
Status    OK
Transfer Rate       Not Available
SCSI Target ID      0
PNP Device ID       IDE\CDROMCOMPAQ_CD-ROM_SN-
124_____________________N104____\5&180B77CF&0&0.0.0


[Sound Device]

Item      Value
No sound devices

[Display]

Item      Value
Name      ATI Technologies Inc. RAGE XL PCI
PNP Device ID
         PCI\VEN_1002&DEV_4752&SUBSYS_001E0E11&REV_2
7\4&2183A681&0&18F0
Adapter Type        ATI RAGE XL PCI, ATI Technologies
Inc. compatible
Adapter Description ATI Technologies Inc. RAGE XL PCI
Adapter RAM         8.00 MB (8,388,608 bytes)
Installed Drivers   atidrab.dll
Driver Version      5.00.2179.1
INF File  display.inf (atirage3 section)
Color Planes        1
Color Table Entries 65536
Resolution          640 x 480 x 60 hertz
Bits/Pixel          16


[Infrared]

Item      Value
No infrared devices

[Input]

[ Following are sub-categories of this main category
]

[Keyboard]

Item      Value
Description         Standard 101/102-Key or Microsoft
Natural PS/2 Keyboard
Name      Enhanced (101- or 102-key)
Layout    00000409
PNP Device ID       ACPI\PNP0303\4&1F443D2A&0
NumberOfFunctionKeys          12


[Pointing Device]

Item      Value
Hardware Type       PS/2 Compatible Mouse
Number of Buttons   2
Status    OK
PNP Device ID       ACPI\PNP0F13\4&1F443D2A&0
Power Management Supported    False
Double Click Threshold        6
Handedness          Right Handed Operation


[Modem]

Item      Value
No modems

[Network]

[ Following are sub-categories of this main category
]

[Adapter]

Item      Value
Name      [00000000] RAS Async Adapter
Adapter Type        Not Available
Product Name        RAS Async Adapter
Installed True
PNP Device ID       Not Available
Last Reset          11/23/2005 5:44:46 AM
Index     0
Service Name        AsyncMac
IP Address          Not Available
IP Subnet Not Available
Default IP Gateway  Not Available
DHCP Enabled        False
DHCP Server         Not Available
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
MAC Address         Not Available
Service Name        Not Available

Name      [00000001] WAN Miniport (L2TP)
Adapter Type        Not Available
Product Name        WAN Miniport (L2TP)
Installed True
PNP Device ID       ROOT\MS_L2TPMINIPORT\0000
Last Reset          11/23/2005 5:44:46 AM
Index     1
Service Name        Rasl2tp
IP Address          Not Available
IP Subnet Not Available
Default IP Gateway  Not Available
DHCP Enabled        False
DHCP Server         Not Available
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
MAC Address         Not Available
Service Name        Rasl2tp
Driver    c:\winnt\system32\drivers\rasl2tp.sys
(50800, 5.00.2179.1)

Name      [00000002] WAN Miniport (PPTP)
Adapter Type        Wide Area Network (WAN)
Product Name        WAN Miniport (PPTP)
Installed True
PNP Device ID       ROOT\MS_PPTPMINIPORT\0000
Last Reset          11/23/2005 5:44:46 AM
Index     2
Service Name        PptpMiniport
IP Address          Not Available
IP Subnet Not Available
Default IP Gateway  Not Available
DHCP Enabled        False
DHCP Server         Not Available
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
MAC Address         50:50:54:50:30:30
Service Name        PptpMiniport
Driver    c:\winnt\system32\drivers\raspptp.sys
(47856, 5.00.2160.1)

Name      [00000003] Direct Parallel
Adapter Type        Not Available
Product Name        Direct Parallel
Installed True
PNP Device ID       ROOT\MS_PTIMINIPORT\0000
Last Reset          11/23/2005 5:44:46 AM
Index     3
Service Name        Raspti
IP Address          Not Available
IP Subnet Not Available
Default IP Gateway  Not Available
DHCP Enabled        False
DHCP Server         Not Available
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
MAC Address         Not Available
Service Name        Raspti
Driver    c:\winnt\system32\drivers\raspti.sys
(16880, 5.00.2146.1)

Name      [00000004] WAN Miniport (IP)
Adapter Type        Not Available
Product Name        WAN Miniport (IP)
Installed True
PNP Device ID       ROOT\MS_NDISWANIP\0000
Last Reset          11/23/2005 5:44:46 AM
Index     4
Service Name        NdisWan
IP Address          Not Available
IP Subnet Not Available
Default IP Gateway  Not Available
DHCP Enabled        False
DHCP Server         Not Available
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
```

```
MAC Address         Not Available
Service Name        NdisWan
Driver    c:\winnt\system32\drivers\ndiswan.sys
(90096, 5.00.2195.2779)

Name      [00000005] Compaq NC7780 Gigabit Server
Adapter
Adapter Type        Not Available
Product Name        Compaq NC7780 Gigabit Server
Adapter
Installed True
PNP Device ID       Not Available
Last Reset          11/23/2005 5:44:46 AM
Index     5
Service Name        q57w2k
IP Address          130.172.11.82
IP Subnet 255.255.0.0
Default IP Gateway  Not Available
DHCP Enabled        True
DHCP Server         130.168.253.2
DHCP Lease Expires  9/16/2002 7:03:07 PM
DHCP Lease Obtained 9/15/2002 7:03:07 PM
MAC Address         00:13:21:B1:88:D0
Service Name        Not Available

Name      [00000006] Compaq NC7780 Gigabit Server
Adapter
Adapter Type        Not Available
Product Name        Compaq NC7780 Gigabit Server
Adapter
Installed True
PNP Device ID       Not Available
Last Reset          11/23/2005 5:44:46 AM
Index     6
Service Name        q57w2k
IP Address          130.168.40.82
IP Subnet 255.255.0.0
Default IP Gateway  Not Available
DHCP Enabled        False
DHCP Server         Not Available
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
MAC Address         00:13:21:B1:88:CF
Service Name        Not Available

Name      [00000007] Compaq NC3123 Fast Ethernet NIC
Adapter Type        Not Available
Product Name        Compaq NC3123 Fast Ethernet NIC
Installed True
PNP Device ID       Not Available
Last Reset          11/23/2005 5:44:46 AM
Index     7
Service Name        N100
IP Address          130.168.40.82
IP Subnet 255.255.0.0
Default IP Gateway  Not Available
DHCP Enabled        True
DHCP Server         130.168.253.2
DHCP Lease Expires  9/16/2002 3:58:55 PM
DHCP Lease Obtained 9/15/2002 3:58:55 PM
MAC Address         00:13:21:B1:88:CF
Service Name        Not Available

Name      [00000008] Compaq NC7781 Gigabit Server
Adapter
Adapter Type        Not Available
Product Name        Compaq NC7781 Gigabit Server
Adapter
Installed True
PNP Device ID       Not Available
Last Reset          11/23/2005 5:44:46 AM
Index     8
Service Name        q57w2k
IP Address          130.168.40.82
IP Subnet 255.255.0.0
Default IP Gateway  Not Available
DHCP Enabled        False
DHCP Server         Not Available
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
MAC Address         00:13:21:B1:88:CF
Service Name        Not Available

Name      [00000009] Compaq NC7781 Gigabit Server
Adapter
Adapter Type        Not Available
Product Name        Compaq NC7781 Gigabit Server
Adapter
Installed True
PNP Device ID       Not Available
Last Reset          11/23/2005 5:44:46 AM
Index     9
Service Name        q57w2k
IP Address          130.172.11.82
IP Subnet 255.255.0.0
Default IP Gateway  Not Available
DHCP Enabled        False
DHCP Server         Not Available
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
MAC Address         00:13:21:B1:88:D0
Service Name        Not Available

Name      [00000010] HP NC7782 Gigabit Server Adapter
Adapter Type        Ethernet 802.3
Product Name        HP NC7782 Gigabit Server Adapter
Installed True
PNP Device ID
        PCI\VEN_14E4&DEV_1648&SUBSYS_00D00E11&REV_1
0\4&19638ECB&0&10E0
Last Reset          11/23/2005 5:44:46 AM
Index     10
Service Name        q57w2k
IP Address          130.172.11.82
IP Subnet 255.255.0.0
Default IP Gateway  Not Available
DHCP Enabled        False
DHCP Server         Not Available
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
MAC Address         00:13:21:B1:88:D0
Service Name        q57w2k
IRQ Number          25
Driver    c:\winnt\system32\drivers\q57w2k.sys
(192247, 7.80.0.0)

Name      [00000011] HP NC7782 Gigabit Server Adapter
Adapter Type        Ethernet 802.3
Product Name        HP NC7782 Gigabit Server Adapter
Installed True
PNP Device ID
        PCI\VEN_14E4&DEV_1648&SUBSYS_00D00E11&REV_1
0\4&19638ECB&0&11E0
Last Reset          11/23/2005 5:44:46 AM
Index     11
Service Name        q57w2k
IP Address          130.168.40.82
IP Subnet 255.255.0.0
Default IP Gateway  Not Available
DHCP Enabled        False
DHCP Server         Not Available
DHCP Lease Expires  Not Available
DHCP Lease Obtained Not Available
MAC Address         00:13:21:B1:88:CF
Service Name        q57w2k
IRQ Number          26
Driver    c:\winnt\system32\drivers\q57w2k.sys
(192247, 7.80.0.0)


[Protocol]

Item      Value
Name      MSAFD Tcpip [TCP/IP]
ConnectionlessService         False
GuaranteesDelivery  True
GuaranteesSequencing          True
MaximumAddressSize  16 bytes
MaximumMessageSize  0 bytes
MessageOriented     False
MinimumAddressSize  16 bytes
PseudoStreamOriented          False
SupportsBroadcasting          False
SupportsConnectData False
SupportsDisconnectData        False
SupportsEncryption  False
SupportsExpeditedData         True
SupportsGracefulClosing       True
SupportsGuaranteedBandwidth   False
SupportsMulticasting          False

Name      MSAFD Tcpip [UDP/IP]
ConnectionlessService         True
GuaranteesDelivery  False
GuaranteesSequencing          False
MaximumAddressSize  16 bytes
MaximumMessageSize  65467 bytes
MessageOriented     True
MinimumAddressSize  16 bytes
PseudoStreamOriented          False
SupportsBroadcasting          True
SupportsConnectData False
SupportsDisconnectData        False
SupportsEncryption  False
SupportsExpeditedData         False
SupportsGracefulClosing       False
SupportsGuaranteedBandwidth   False
SupportsMulticasting          True
```

```
Name      RSVP UDP Service Provider
ConnectionlessService          True
GuaranteesDelivery  False
GuaranteesSequencing           False
MaximumAddressSize  16 bytes
MaximumMessageSize  65467 bytes
MessageOriented     True
MinimumAddressSize  16 bytes
PseudoStreamOriented           False
SupportsBroadcasting           True
SupportsConnectData False
SupportsDisconnectData         False
SupportsEncryption  True
SupportsExpeditedData          False
SupportsGracefulClosing        False
SupportsGuaranteedBandwidth    False
SupportsMulticasting           True

Name      RSVP TCP Service Provider
ConnectionlessService          False
GuaranteesDelivery  True
GuaranteesSequencing           True
MaximumAddressSize  16 bytes
MaximumMessageSize  0 bytes
MessageOriented     False
MinimumAddressSize  16 bytes
PseudoStreamOriented           False
SupportsBroadcasting           False
SupportsConnectData False
SupportsDisconnectData         False
SupportsEncryption  True
SupportsExpeditedData          True
SupportsGracefulClosing        True
SupportsGuaranteedBandwidth    False
SupportsMulticasting           False

Name      MSAFD NetBIOS
[\Device\NetBT_Tcpip_{37E5A54E-FF18-486C-B3AD-
E80449420A01}] SEQPACKET 8
ConnectionlessService          False
GuaranteesDelivery  True
GuaranteesSequencing           True
MaximumAddressSize  20 bytes
MaximumMessageSize  64000 bytes
MessageOriented     True
MinimumAddressSize  20 bytes
PseudoStreamOriented           False
SupportsBroadcasting           False
SupportsConnectData False
SupportsDisconnectData         False
SupportsEncryption  False
SupportsExpeditedData          False
SupportsGracefulClosing        False
SupportsGuaranteedBandwidth    False
SupportsMulticasting           False

Name      MSAFD NetBIOS
[\Device\NetBT_Tcpip_{37E5A54E-FF18-486C-B3AD-
E80449420A01}] DATAGRAM 8
ConnectionlessService          True
GuaranteesDelivery  False
GuaranteesSequencing           False
MaximumAddressSize  20 bytes
MaximumMessageSize  64000 bytes
MessageOriented     True
MinimumAddressSize  20 bytes
PseudoStreamOriented           False
SupportsBroadcasting           True
SupportsConnectData False
SupportsDisconnectData         False
SupportsEncryption  False
SupportsExpeditedData          False
SupportsGracefulClosing        False
SupportsGuaranteedBandwidth    False
SupportsMulticasting           False

Name      MSAFD NetBIOS
[\Device\NetBT_Tcpip_{4D85C014-5E76-48CF-93EA-
317E0F725486}] SEQPACKET 7
ConnectionlessService          False
GuaranteesDelivery  True
GuaranteesSequencing           True
MaximumAddressSize  20 bytes
MaximumMessageSize  64000 bytes
MessageOriented     True
MinimumAddressSize  20 bytes
PseudoStreamOriented           False
SupportsBroadcasting           False
SupportsConnectData False
SupportsDisconnectData         False
SupportsEncryption  False
SupportsExpeditedData          False
SupportsGracefulClosing        False
SupportsGuaranteedBandwidth    False
SupportsMulticasting           False

Name      MSAFD NetBIOS
[\Device\NetBT_Tcpip_{4D85C014-5E76-48CF-93EA-
317E0F725486}] DATAGRAM 7
ConnectionlessService          True
GuaranteesDelivery  False
GuaranteesSequencing           False
MaximumAddressSize  20 bytes
MaximumMessageSize  64000 bytes
MessageOriented     True
MinimumAddressSize  20 bytes
PseudoStreamOriented           False
SupportsBroadcasting           True
SupportsConnectData False
SupportsDisconnectData         False
SupportsEncryption  False
SupportsExpeditedData          False
SupportsGracefulClosing        False
SupportsGuaranteedBandwidth    False
SupportsMulticasting           False

Name      MSAFD NetBIOS
[\Device\NetBT_Tcpip_{2D8AA674-9F13-43EE-9055-
F9ECADD87F7F}] SEQPACKET 6
ConnectionlessService          False
GuaranteesDelivery  True
GuaranteesSequencing           True
MaximumAddressSize  20 bytes
MaximumMessageSize  64000 bytes
MessageOriented     True
MinimumAddressSize  20 bytes
PseudoStreamOriented           False
SupportsBroadcasting           False
SupportsConnectData False
SupportsDisconnectData         False
SupportsEncryption  False
SupportsExpeditedData          False
SupportsGracefulClosing        False
SupportsGuaranteedBandwidth    False
SupportsMulticasting           False

Name      MSAFD NetBIOS
[\Device\NetBT_Tcpip_{2D8AA674-9F13-43EE-9055-
F9ECADD87F7F}] DATAGRAM 6
ConnectionlessService          True
GuaranteesDelivery  False
GuaranteesSequencing           False
MaximumAddressSize  20 bytes
MaximumMessageSize  64000 bytes
MessageOriented     True
MinimumAddressSize  20 bytes
PseudoStreamOriented           False
SupportsBroadcasting           True
SupportsConnectData False
SupportsDisconnectData         False
SupportsEncryption  False
SupportsExpeditedData          False
SupportsGracefulClosing        False
SupportsGuaranteedBandwidth    False
SupportsMulticasting           False

Name      MSAFD NetBIOS
[\Device\NetBT_Tcpip_{EFD5741D-3A14-456C-98EB-
17ABC580A075}] SEQPACKET 5
ConnectionlessService          False
GuaranteesDelivery  True
GuaranteesSequencing           True
MaximumAddressSize  20 bytes
MaximumMessageSize  64000 bytes
MessageOriented     True
MinimumAddressSize  20 bytes
PseudoStreamOriented           False
SupportsBroadcasting           False
SupportsConnectData False
SupportsDisconnectData         False
SupportsEncryption  False
SupportsExpeditedData          False
SupportsGracefulClosing        False
SupportsGuaranteedBandwidth    False
SupportsMulticasting           False

Name      MSAFD NetBIOS
[\Device\NetBT_Tcpip_{EFD5741D-3A14-456C-98EB-
17ABC580A075}] DATAGRAM 5
ConnectionlessService          True
GuaranteesDelivery  False
GuaranteesSequencing           False
MaximumAddressSize  20 bytes
MaximumMessageSize  64000 bytes
MessageOriented     True
MinimumAddressSize  20 bytes
PseudoStreamOriented           False
SupportsBroadcasting           True
SupportsConnectData False
```

```
SupportsDisconnectData        False
SupportsEncryption  False
SupportsExpeditedData         False
SupportsGracefulClosing       False
SupportsGuaranteedBandwidth   False
SupportsMulticasting          False

Name      MSAFD NetBIOS
[\Device\NetBT_Tcpip_{4249431A-469E-4735-A292-
01AA526741FC}] SEQPACKET 4
ConnectionlessService         False
GuaranteesDelivery  True
GuaranteesSequencing          True
MaximumAddressSize  20 bytes
MaximumMessageSize  64000 bytes
MessageOriented     True
MinimumAddressSize  20 bytes
PseudoStreamOriented          False
SupportsBroadcasting          False
SupportsConnectData False
SupportsDisconnectData        False
SupportsEncryption  False
SupportsExpeditedData         False
SupportsGracefulClosing       False
SupportsGuaranteedBandwidth   False
SupportsMulticasting          False

Name      MSAFD NetBIOS
[\Device\NetBT_Tcpip_{4249431A-469E-4735-A292-
01AA526741FC}] DATAGRAM 4
ConnectionlessService         True
GuaranteesDelivery  False
GuaranteesSequencing          False
MaximumAddressSize  20 bytes
MaximumMessageSize  64000 bytes
MessageOriented     True
MinimumAddressSize  20 bytes
PseudoStreamOriented          False
SupportsBroadcasting          True
SupportsConnectData False
SupportsDisconnectData        False
SupportsEncryption  False
SupportsExpeditedData         False
SupportsGracefulClosing       False
SupportsGuaranteedBandwidth   False
SupportsMulticasting          False

Name      MSAFD NetBIOS
[\Device\NetBT_Tcpip_{3B09DDB7-7EB8-4941-8121-
52DC6359F5A6}] SEQPACKET 3
ConnectionlessService         False
GuaranteesDelivery  True
GuaranteesSequencing          True
MaximumAddressSize  20 bytes
MaximumMessageSize  64000 bytes
MessageOriented     True
MinimumAddressSize  20 bytes
PseudoStreamOriented          False
SupportsBroadcasting          False
SupportsConnectData False
SupportsDisconnectData        False
SupportsEncryption  False
SupportsExpeditedData         False
SupportsGracefulClosing       False
SupportsGuaranteedBandwidth   False
SupportsMulticasting          False

Name      MSAFD NetBIOS
[\Device\NetBT_Tcpip_{3B09DDB7-7EB8-4941-8121-
52DC6359F5A6}] DATAGRAM 3
ConnectionlessService         True
GuaranteesDelivery  False
GuaranteesSequencing          False
MaximumAddressSize  20 bytes
MaximumMessageSize  64000 bytes
MessageOriented     True
MinimumAddressSize  20 bytes
PseudoStreamOriented          False
SupportsBroadcasting          True
SupportsConnectData False
SupportsDisconnectData        False
SupportsEncryption  False
SupportsExpeditedData         False
SupportsGracefulClosing       False
SupportsGuaranteedBandwidth   False
SupportsMulticasting          False

Name      MSAFD NetBIOS
[\Device\NetBT_Tcpip_{684FA660-D082-4A8C-AC8C-
C9D449B21686}] SEQPACKET 0
ConnectionlessService         False
GuaranteesDelivery  True
GuaranteesSequencing          True
MaximumAddressSize  20 bytes
MaximumMessageSize  64000 bytes
MessageOriented     True
MinimumAddressSize  20 bytes
PseudoStreamOriented          False
SupportsBroadcasting          False
SupportsConnectData False
SupportsDisconnectData        False
SupportsEncryption  False
SupportsExpeditedData         False
SupportsGracefulClosing       False
SupportsGuaranteedBandwidth   False
SupportsMulticasting          False

Name      MSAFD NetBIOS
[\Device\NetBT_Tcpip_{684FA660-D082-4A8C-AC8C-
C9D449B21686}] DATAGRAM 0
ConnectionlessService         True
GuaranteesDelivery  False
GuaranteesSequencing          False
MaximumAddressSize  20 bytes
MaximumMessageSize  64000 bytes
MessageOriented     True
MinimumAddressSize  20 bytes
PseudoStreamOriented          False
SupportsBroadcasting          True
SupportsConnectData False
SupportsDisconnectData        False
SupportsEncryption  False
SupportsExpeditedData         False
SupportsGracefulClosing       False
SupportsGuaranteedBandwidth   False
SupportsMulticasting          False

Name      MSAFD NetBIOS
[\Device\NetBT_Tcpip_{D90E04F2-3AD9-4F98-9464-
751E106D7E6A}] SEQPACKET 1
ConnectionlessService         False
GuaranteesDelivery  True
GuaranteesSequencing          True
MaximumAddressSize  20 bytes
MaximumMessageSize  64000 bytes
MessageOriented     True
MinimumAddressSize  20 bytes
PseudoStreamOriented          False
SupportsBroadcasting          False
SupportsConnectData False
SupportsDisconnectData        False
SupportsEncryption  False
SupportsExpeditedData         False
SupportsGracefulClosing       False
SupportsGuaranteedBandwidth   False
SupportsMulticasting          False

Name      MSAFD NetBIOS
[\Device\NetBT_Tcpip_{D90E04F2-3AD9-4F98-9464-
751E106D7E6A}] DATAGRAM 1
ConnectionlessService         True
GuaranteesDelivery  False
GuaranteesSequencing          False
MaximumAddressSize  20 bytes
MaximumMessageSize  64000 bytes
MessageOriented     True
MinimumAddressSize  20 bytes
PseudoStreamOriented          False
SupportsBroadcasting          True
SupportsConnectData False
SupportsDisconnectData        False
SupportsEncryption  False
SupportsExpeditedData         False
SupportsGracefulClosing       False
SupportsGuaranteedBandwidth   False
SupportsMulticasting          False

Name      MSAFD NetBIOS
[\Device\NetBT_Tcpip_{3F1BA297-E685-416B-82D7-
70E771CC8745}] SEQPACKET 2
ConnectionlessService         False
GuaranteesDelivery  True
GuaranteesSequencing          True
MaximumAddressSize  20 bytes
MaximumMessageSize  64000 bytes
MessageOriented     True
MinimumAddressSize  20 bytes
PseudoStreamOriented          False
SupportsBroadcasting          False
SupportsConnectData False
SupportsDisconnectData        False
SupportsEncryption  False
SupportsExpeditedData         False
SupportsGracefulClosing       False
SupportsGuaranteedBandwidth   False
SupportsMulticasting          False
```

```
Name      MSAFD NetBIOS
[\Device\NetBT_Tcpip_{3F1BA297-E685-416B-82D7-
70E771CC8745}] DATAGRAM 2
ConnectionlessService         True
GuaranteesDelivery  False
GuaranteesSequencing          False
MaximumAddressSize  20 bytes
MaximumMessageSize  64000 bytes
MessageOriented     True
MinimumAddressSize  20 bytes
PseudoStreamOriented          False
SupportsBroadcasting          True
SupportsConnectData False
SupportsDisconnectData        False
SupportsEncryption  False
SupportsExpeditedData         False
SupportsGracefulClosing       False
SupportsGuaranteedBandwidth   False
SupportsMulticasting          False


[WinSock]

Item      Value
File      c:\winnt\system32\winsock.dll
Version   3.10
Size      2.80 KB (2,864 bytes)

File      c:\winnt\system32\wsock32.dll
Version   5.00.2195.2871
Size      21.27 KB (21,776 bytes)


[Ports]

[ Following are sub-categories of this main category
]

[Serial]

Item      Value
Name      COM1
Status    OK
PNP Device ID       ACPI\PNP0501\0
Maximum Input Buffer Size     Not Available
Maximum Output Buffer Size    Not Available
Settable Baud Rate  Not Available
Settable Data Bits  Not Available
Settable Flow Control         Not Available
Settable Parity     Not Available
Settable Parity Check         Not Available
Settable Stop Bits  Not Available
Settable RLSD       Not Available
Supports RLSD       Not Available
Supports 16 Bit Mode          Not Available
Supports Special Characters   Not Available
Baud Rate 9600
Bits/Byte 8
Stop Bits 1
Parity    None
Busy      -1
Abort Read/Write on Error     Not Available
Binary Mode Enabled Not Available
Continue XMit on XOff         Not Available
CTS Outflow Control Not Available
Discard NULL Bytes  Not Available
DSR Outflow Control Not Available
DSR Sensitivity     Not Available
DTR Flow Control Type         Not Available
EOF Character       Not Available
Error Replace Character       Not Available
Error Replacement Enabled     Not Available
Event Character     Not Available
Parity Check Enabled          -1
RTS Flow Control Type         Not Available
XOff Character      19
XOffXMit Threshold  512
XOn Character       17
XOnXMit Threshold   2048
XOnXOff InFlow Control        Not Available
XOnXOff OutFlow Control       Not Available
IRQ Number          4
I/O Port  0x03F8-0x03FF
Driver    c:\winnt\system32\drivers\serial.sys
(62416, 5.00.2195.2780)


[Parallel]

Item      Value
No parallel port information

[Storage]

[ Following are sub-categories of this main category
]

[Drives]

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

Drive     C:
Description         Local Fixed Disk
Compressed          False
File System         NTFS
Size      33.91 GB (36,410,556,416 bytes)
Free Space          31.20 GB (33,499,308,032 bytes)
Volume Name
Volume Serial Number          C8B488FA
Partition Disk #0, Partition #0
Partition Size      33.91 GB (36,410,556,416 bytes)
Starting Offset     16384 bytes
Drive Description   Disk drive
Drive Manufacturer  (Standard disk drives)
Drive Model         HP LOGICAL VOLUME SCSI Disk
Device
Drive BytesPerSector          512
Drive MediaLoaded   True
Drive MediaType     Fixed hard disk media
Drive Partitions    1
Drive SCSIBus       0
Drive SCSILogicalUnit         0
Drive SCSIPort      2
Drive SCSITargetId  4
Drive SectorsPerTrack         32
Drive Size          36414750720 bytes
Drive TotalCylinders          8716
Drive TotalSectors  71122560
Drive TotalTracks   2222580
Drive TracksPerCylinder       255


[SCSI]

Item      Value
Name      Smart Array 6i
Caption   Smart Array 6i
Driver    cpqcissm
Status    OK
PNP Device ID
          PCI\VEN_0E11&DEV_0046&SUBSYS_40910E11&REV_0
1\4&19638ECB&0&08E0
Device ID
          PCI\VEN_0E11&DEV_0046&SUBSYS_40910E11&REV_0
1\4&19638ECB&0&08E0
Device Map          Not Available
Index     Not Available
Max Number Controlled         Not Available
IRQ Number          24
I/O Port  0x4000-0x4FFF
Driver    c:\winnt\system32\drivers\cpqcissm.sys
(16512, 5.64.0.32 Build 7 (x86))


[Printing]

Name      Port Name Server Name
No printing information

[Problem Devices]

Device    PNP Device ID       Error Code
Universal Serial Bus (USB) Controller
          PCI\VEN_8086&DEV_25AD&SUBSYS_32010E11&REV_0
2\3&61AAA01&0&EF    28
Base System Device
          PCI\VEN_0E11&DEV_B203&SUBSYS_B2060E11&REV_0
1\4&2183A681&0&20F0 28
Base System Device
          PCI\VEN_0E11&DEV_B204&SUBSYS_B2060E11&REV_0
1\4&2183A681&0&22F0 28

[USB]

Device    PNP Device ID
Standard Universal PCI to USB Host Controller
          PCI\VEN_8086&DEV_25A9&SUBSYS_32010E11&REV_0
2\3&61AAA01&0&E8
USB Root Hub        USB\ROOT_HUB\4&312B1C17&0
Standard Universal PCI to USB Host Controller
          PCI\VEN_8086&DEV_25AA&SUBSYS_32010E11&REV_0
2\3&61AAA01&0&E9
USB Root Hub        USB\ROOT_HUB\4&24B43ADC&0

[Software Environment]
```

```
[ Following are sub-categories of this main category
]

[Drivers]

Name      Description         File      Type
          Started   Start Mode          State
          Status    Error Control       Accept Pause
          Accept Stop
abiosdsk  Abiosdsk  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Ignore    False     False
abp480n5  abp480n5  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
acpi      Microsoft ACPI Driver
          c:\winnt\system32\drivers\acpi.sys
          Kernel Driver       True      Boot
          Running   OK        Normal    False
          True
acpiec    ACPIEC
          c:\winnt\system32\drivers\acpiec.sys
          Kernel Driver       False     Disabled
          Stopped   OK        Normal    False
          False
adpu160m  adpu160m  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
afd       AFD Networking Support Environment
          c:\winnt\system32\drivers\afd.sys
          Kernel Driver       True      Auto
          Running   OK        Normal    False
          True
aha154x   Aha154x   Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
aic116x   aic116x   Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
aic78u2   aic78u2   Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
aic78xx   aic78xx   Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
alkernel  Altiris Kernel Driver
          c:\winnt\system32\drivers\alkernel.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
ami0nt    ami0nt    Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
amsint    amsint    Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
asc       asc       Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
asc3350p  asc3350p  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
asc3550   asc3550   Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
asyncmac  RAS Asynchronous Media Driver
          c:\winnt\system32\drivers\asyncmac.sys
          Kernel Driver       False     Manual
          Stopped   OK        Normal    False
          False
atapi     Standard IDE/ESDI Hard Disk Controller
          c:\winnt\system32\drivers\atapi.sys
          Kernel Driver       True      Boot
          Running   OK        Normal    False
          True
atdisk    Atdisk    Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Ignore    False     False
atirage3  atirage3
          c:\winnt\system32\drivers\atimpab.sys
          Kernel Driver       True      Manual
          Running   OK        Ignore    False
          True
atmarpc   ATM ARP Client Protocol
          c:\winnt\system32\drivers\atmarpc.sys
          Kernel Driver       False     Manual
          Stopped   OK        Normal    False
          False
audstub   Audio Stub Driver
          c:\winnt\system32\drivers\audstub.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
beep      Beep
          c:\winnt\system32\drivers\beep.sys
          Kernel Driver       True      System
          Running   OK        Normal    False
          True
buslogic  BusLogic  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
cd20xrnt  cd20xrnt  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
cdaudio   Cdaudio
          c:\winnt\system32\drivers\cdaudio.sys
          Kernel Driver       False     System
          Stopped   OK        Ignore    False
          False
cdfs      Cdfs
          c:\winnt\system32\drivers\cdfs.sys
          File System Driver  True      Disabled
          Running   OK        Normal    False
          True
cdrom     CD-ROM Driver
          c:\winnt\system32\drivers\cdrom.sys
          Kernel Driver       True      System
          Running   OK        Normal    False
          True
changer   Changer   Not Available       Kernel Driver
          False     System    Stopped   OK
          Ignore    False     False
cpqarray  Cpqarray  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
cpqarry2  cpqarry2  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
cpqcissm  cpqcissm
          c:\winnt\system32\drivers\cpqcissm.sys
          Kernel Driver       True      Boot
          Running   OK        Normal    False
          True
cpqfcalm  cpqfcalm  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
cpqfws2e  cpqfws2e  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
dac960nt  dac960nt  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
deckzpsx  deckzpsx  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
dfsdriver DfsDriver c:\winnt\system32\drivers\dfs.sys
          File System Driver  True      Boot
          Running   OK        Normal    False
          True
disk      Disk Driver
          c:\winnt\system32\drivers\disk.sys
          Kernel Driver       True      Boot
          Running   OK        Normal    False
          True
diskperf  Diskperf
          c:\winnt\system32\drivers\diskperf.sys
          Kernel Driver       True      Boot
          Running   OK        Normal    False
          True
dmboot    dmboot
          c:\winnt\system32\drivers\dmboot.sys
          Kernel Driver       False     Disabled
          Stopped   OK        Normal    False
          False
dmio      Logical Disk Manager Driver
          c:\winnt\system32\drivers\dmio.sys
          Kernel Driver       True      Boot
          Running   OK        Normal    False
          True
dmload    dmload
          c:\winnt\system32\drivers\dmload.sys
          Kernel Driver       True      Boot
          Running   OK        Normal    False
          True
efs       EFS       c:\winnt\system32\drivers\efs.sys
          File System Driver  True      Disabled
          Running   OK        Normal    False
          True
fastfat   Fastfat
          c:\winnt\system32\drivers\fastfat.sys
          File System Driver  True      Disabled
          Running   OK        Normal    False
          True
fd16_700  Fd16_700  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
fdc       Floppy Disk Controller Driver
          c:\winnt\system32\drivers\fdc.sys
```

```
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
fips      Fips
          c:\winnt\system32\drivers\fips.sys
          Kernel Driver       True      Auto
          Running   OK        Normal    False
          True
fireport  fireport  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
flashpnt  flashpnt  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
flpydisk  Floppy Disk Driver
          c:\winnt\system32\drivers\flpydisk.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
ftdisk    Volume Manager Driver
          c:\winnt\system32\drivers\ftdisk.sys
          Kernel Driver       True      Boot
          Running   OK        Normal    False
          True
gpc       Generic Packet Classifier
          c:\winnt\system32\drivers\msgpc.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
hidusb    Microsoft HID Class Driver
          c:\winnt\system32\drivers\hidusb.sys
          Kernel Driver       False     Auto
          Stopped   OK        Ignore    False
          False
i8042prt  i8042 Keyboard and PS/2 Mouse Port Driver
          c:\winnt\system32\drivers\i8042prt.sys
          Kernel Driver       True      System
          Running   OK        Normal    False
          True
ini910u   ini910u   Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
intelide  IntelIde  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
ipfilterdriver      IP Traffic Filter Driver
          c:\winnt\system32\drivers\ipfltdrv.sys
          Kernel Driver       False     Manual
          Stopped   OK        Normal    False
          False
ipinip    IP in IP Tunnel Driver
          c:\winnt\system32\drivers\ipinip.sys
          Kernel Driver       False     Manual
          Stopped   OK        Normal    False
          False
ipnat     IP Network Address Translator
          c:\winnt\system32\drivers\ipnat.sys
          Kernel Driver       False     Manual
          Stopped   OK        Normal    False
          False
ipsec     IPSEC driver
          c:\winnt\system32\drivers\ipsec.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
ipsraidn  ipsraidn  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
isapnp    PnP ISA/EISA Bus Driver
          c:\winnt\system32\drivers\isapnp.sys
          Kernel Driver       True      Boot
          Running   OK        Critical  False
          True
kbdclass  Keyboard Class Driver
          c:\winnt\system32\drivers\kbdclass.sys
          Kernel Driver       True      System
          Running   OK        Normal    False
          True
ksecdd    KSecDD
          c:\winnt\system32\drivers\ksecdd.sys
          Kernel Driver       True      Boot
          Running   OK        Normal    False
          True
lbrtfdc   lbrtfdc   Not Available       Kernel Driver
          False     System    Stopped   OK
          Ignore    False     False
lp6nds35  lp6nds35  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
mnmdd     mnmdd
          c:\winnt\system32\drivers\mnmdd.sys
          Kernel Driver       True      System
          Running   OK        Ignore    False
          True
modem     Modem
          c:\winnt\system32\drivers\modem.sys
          Kernel Driver       False     Manual
          Stopped   OK        Ignore    False
          False
mouclass  Mouse Class Driver
          c:\winnt\system32\drivers\mouclass.sys
          Kernel Driver       True      System
          Running   OK        Normal    False
          True
mouhid    Mouse HID Driver
          c:\winnt\system32\drivers\mouhid.sys
          Kernel Driver       False     Manual
          Stopped   OK        Ignore    False
          False
mountmgr  MountMgr
          c:\winnt\system32\drivers\mountmgr.sys
          Kernel Driver       True      Boot
          Running   OK        Normal    False
          True
mraid35x  mraid35x  Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
mrxsmb    MRXSMB
          c:\winnt\system32\drivers\mrxsmb.sys
          File System Driver  True      System
          Running   OK        Normal    False
          True
msfs      Msfs
          c:\winnt\system32\drivers\msfs.sys
          File System Driver  True      System
          Running   OK        Normal    False
          True
msskssrv  Microsoft Streaming Service Proxy
          c:\winnt\system32\drivers\mskssrv.sys
          Kernel Driver       False     Manual
          Stopped   OK        Normal    False
          False
mspclock  Microsoft Streaming Clock Proxy
          c:\winnt\system32\drivers\mspclock.sys
          Kernel Driver       False     Manual
          Stopped   OK        Normal    False
          False
mspqm     Microsoft Streaming Quality Manager Proxy
          c:\winnt\system32\drivers\mspqm.sys
          Kernel Driver       False     Manual
          Stopped   OK        Normal    False
          False
mup       Mup       c:\winnt\system32\drivers\mup.sys
          File System Driver  True      Boot
          Running   OK        Normal    False
          True
n100      Compaq Ethernet or Fast Ethernet NIC NT
Driver    c:\winnt\system32\drivers\n100nt5.sys
          Kernel Driver       False     Manual
          Stopped   OK        Normal    False
          False
ncrc710   Ncrc710   Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
ndis      NDIS System Driver
          c:\winnt\system32\drivers\ndis.sys
          Kernel Driver       True      Boot
          Running   OK        Normal    False
          True
ndistapi  Remote Access NDIS TAPI Driver
          c:\winnt\system32\drivers\ndistapi.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
ndiswan   Remote Access NDIS WAN Driver
          c:\winnt\system32\drivers\ndiswan.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
ndproxy   NDIS Proxy
          c:\winnt\system32\drivers\ndproxy.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
netbios   NetBIOS Interface
          c:\winnt\system32\drivers\netbios.sys
          File System Driver  True      System
          Running   OK        Normal    False
          True
netbt     NetBios over Tcpip
          c:\winnt\system32\drivers\netbt.sys
          Kernel Driver       True      System
          Running   OK        Normal    False
          True
netdetect NetDetect
          c:\winnt\system32\drivers\netdtect.sys
          Kernel Driver       False     Manual
```

```
          Stopped   OK        Normal    False
          False
npfs      Npfs
          c:\winnt\system32\drivers\npfs.sys
          File System Driver  True      System
          Running   OK        Normal    False
          True
ntfs      Ntfs
          c:\winnt\system32\drivers\ntfs.sys
          File System Driver  True      Disabled
          Running   OK        Normal    False
          True
null      Null
          c:\winnt\system32\drivers\null.sys
          Kernel Driver       True      System
          Running   OK        Normal    False
          True
nwlnkflt  IPX Traffic Filter Driver
          c:\winnt\system32\drivers\nwlnkflt.sys
          Kernel Driver       False     Manual
          Stopped   OK        Normal    False
          False
nwlnkfwd  IPX Traffic Forwarder Driver
          c:\winnt\system32\drivers\nwlnkfwd.sys
          Kernel Driver       False     Manual
          Stopped   OK        Normal    False
          False
openhci   Microsoft USB Open Host Controller Driver
          c:\winnt\system32\drivers\openhci.sys
          Kernel Driver       False     Manual
          Stopped   OK        Normal    False
          False
parallel  Parallel
          c:\winnt\system32\drivers\parallel.sys
          Kernel Driver       False     Auto
          Stopped   OK        Ignore    False
          False
parport   Parport
          c:\winnt\system32\drivers\parport.sys
          Kernel Driver       False     Auto
          Stopped   OK        Ignore    False
          False
partmgr   PartMgr
          c:\winnt\system32\drivers\partmgr.sys
          Kernel Driver       True      Boot
          Running   OK        Normal    False
          True
parvdm    ParVdm
          c:\winnt\system32\drivers\parvdm.sys
          Kernel Driver       False     Auto
          Stopped   OK        Ignore    False
          False
pci       PCI Bus Driver
          c:\winnt\system32\drivers\pci.sys
          Kernel Driver       True      Boot
          Running   OK        Critical  False
          True
pcidump   PCIDump   Not Available       Kernel Driver
          False     System    Stopped   OK
          Ignore    False     False
pciide    PCIIde
          c:\winnt\system32\drivers\pciide.sys
          Kernel Driver       True      Boot
          Running   OK        Normal    False
          True
pcmcia    Pcmcia
          c:\winnt\system32\drivers\pcmcia.sys
          Kernel Driver       False     Disabled
          Stopped   OK        Normal    False
          False
pdcomp    PDCOMP    Not Available       Kernel Driver
          False     Manual    Stopped   OK
          Ignore    False     False
pdframe   PDFRAME   Not Available       Kernel Driver
          False     Manual    Stopped   OK
          Ignore    False     False
pdreli    PDRELI    Not Available       Kernel Driver
          False     Manual    Stopped   OK
          Ignore    False     False
pdrframe  PDRFRAME  Not Available       Kernel Driver
          False     Manual    Stopped   OK
          Ignore    False     False
pptpminiport        WAN Miniport (PPTP)
          c:\winnt\system32\drivers\raspptp.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
ptilink   Direct Parallel Link Driver
          c:\winnt\system32\drivers\ptilink.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
q57w2k    HP NC7782 Gigabit Server Adapter
          c:\winnt\system32\drivers\q57w2k.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
ql1080    ql1080    Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
ql10wnt   Ql10wnt   Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
ql1240    ql1240    Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
ql2100    ql2100    Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
rasacd    Remote Access Auto Connection Driver
          c:\winnt\system32\drivers\rasacd.sys
          Kernel Driver       True      System
          Running   OK        Normal    False
          True
rasl2tp   WAN Miniport (L2TP)
          c:\winnt\system32\drivers\rasl2tp.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
raspti    Direct Parallel
          c:\winnt\system32\drivers\raspti.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
rca       Microsoft Streaming Network Raw Channel
Access    c:\winnt\system32\drivers\rca.sys
          Kernel Driver       False     Manual
          Stopped   OK        Normal    False
          False
rdbss     Rdbss
          c:\winnt\system32\drivers\rdbss.sys
          File System Driver  True      System
          Running   OK        Normal    False
          True
rdpdr     Terminal Server Device Redirector Driver
          c:\winnt\system32\drivers\rdpdr.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
rdpwd     RDPWD
          c:\winnt\system32\drivers\rdpwd.sys
          Kernel Driver       True      Manual
          Running   OK        Ignore    False
          True
redbook   Digital CD Audio Playback Filter Driver
          c:\winnt\system32\drivers\redbook.sys
          Kernel Driver       False     System
          Stopped   OK        Normal    False
          False
serenum   Serenum Filter Driver
          c:\winnt\system32\drivers\serenum.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
serial    Serial port driver
          c:\winnt\system32\drivers\serial.sys
          Kernel Driver       True      System
          Running   OK        Ignore    False
          True
sfloppy   Sfloppy
          c:\winnt\system32\drivers\sfloppy.sys
          Kernel Driver       False     System
          Stopped   OK        Ignore    False
          False
sglfb     sglfb     Not Available       Kernel Driver
          False     System    Stopped   OK
          Normal    False     False
simbad    Simbad    Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
sparrow   Sparrow   Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
spud      Special Purpose Utility Driver
          c:\winnt\system32\drivers\spud.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
srv       Srv       c:\winnt\system32\drivers\srv.sys
          File System Driver  True      Manual
          Running   OK        Normal    False
          True
swenum    Software Bus Driver
          c:\winnt\system32\drivers\swenum.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
```

```
symc810   symc810   Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
symc8xx   symc8xx   Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
sym_hi    sym_hi    Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
tcpip     TCP/IP Protocol Driver
          c:\winnt\system32\drivers\tcpip.sys
          Kernel Driver       True      System
          Running   OK        Normal    False
          True
tdasync   TDASYNC
          c:\winnt\system32\drivers\tdasync.sys
          Kernel Driver       False     Manual
          Stopped   OK        Ignore    False
          False
tdipx     TDIPX
          c:\winnt\system32\drivers\tdipx.sys
          Kernel Driver       False     Manual
          Stopped   OK        Ignore    False
          False
tdnetb    TDNETB
          c:\winnt\system32\drivers\tdnetb.sys
          Kernel Driver       False     Manual
          Stopped   OK        Ignore    False
          False
tdpipe    TDPIPE
          c:\winnt\system32\drivers\tdpipe.sys
          Kernel Driver       False     Manual
          Stopped   OK        Ignore    False
          False
tdspx     TDSPX
          c:\winnt\system32\drivers\tdspx.sys
          Kernel Driver       False     Manual
          Stopped   OK        Ignore    False
          False
tdtcp     TDTCP
          c:\winnt\system32\drivers\tdtcp.sys
          Kernel Driver       True      Manual
          Running   OK        Ignore    False
          True
termdd    Terminal Device Driver
          c:\winnt\system32\drivers\termdd.sys
          Kernel Driver       True      Auto
          Running   OK        Normal    False
          True
tga       tga       Not Available       Kernel Driver
          False     System    Stopped   OK
          Ignore    False     False
udfs      Udfs
          c:\winnt\system32\drivers\udfs.sys
          File System Driver  False     Disabled
          Stopped   OK        Normal    False
          False
uhcd      Microsoft USB Universal Host Controller
Driver    c:\winnt\system32\drivers\uhcd.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
```

```
ultra66   ultra66   Not Available       Kernel Driver
          False     Disabled  Stopped   OK
          Normal    False     False
update    Microcode Update Driver
          c:\winnt\system32\drivers\update.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
usbhub    Microsoft USB Standard Hub Driver
          c:\winnt\system32\drivers\usbhub.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
vgasave   VgaSave   c:\winnt\system32\drivers\vga.sys
          Kernel Driver       True      System
          Running   OK        Ignore    False
          True
wanarp    Remote Access IP ARP Driver
          c:\winnt\system32\drivers\wanarp.sys
          Kernel Driver       True      Manual
          Running   OK        Normal    False
          True
wdica     WDICA     Not Available       Kernel Driver
          False     Manual    Stopped   OK
          Ignore    False     False

[Environment Variables]

Variable  Value     User Name
CLASSPATH
          .;C:\PROGRA~1\IBM\SQLLIB\java\db2java.zip;C
:\PROGRA~1\IBM\SQLLIB\java\db2jcc.jar;C:\PROGRA~1\IBM
\SQLLIB\java\db2jcc_license_cu.jar;C:\PROGRA~1\IBM\SQ
LLIB\bin  <SYSTEM>
ComSpec   %SystemRoot%\system32\cmd.exe <SYSTEM>
DB2INSTANCE         DB2       <SYSTEM>
DB2TEMPDIR          C:\PROGRA~1\IBM\SQLLIB\
          <SYSTEM>
NUMBER_OF_PROCESSORS          4         <SYSTEM>
OS        Windows_NT          <SYSTEM>
Os2LibPath          %SystemRoot%\system32\os2\dll;
          <SYSTEM>
Path
          C:\Perl\bin\;%SystemRoot%\system32;%SystemR
oot%;%SystemRoot%\System32\Wbem;C:\Program
Files\Microsoft SQL
Server\80\Tools\BINN;C:\PROGRA~1\IBM\SQLLIB\BIN;C:\PR
OGRA~1\IBM\SQLLIB\FUNCTION    <SYSTEM>
PATHEXT
          .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF
;.WSH     <SYSTEM>
PROCESSOR_ARCHITECTURE        x86       <SYSTEM>
PROCESSOR_IDENTIFIER          x86 Family 15 Model 4
Stepping 1, GenuineIntel      <SYSTEM>
PROCESSOR_LEVEL     15        <SYSTEM>
PROCESSOR_REVISION  0401      <SYSTEM>
TEMP      %SystemRoot%\TEMP   <SYSTEM>
TMP       %SystemRoot%\TEMP   <SYSTEM>
windir    %SystemRoot%        <SYSTEM>
TEMP      %USERPROFILE%\Local Settings\Temp
          CL82\db2admin
TMP       %USERPROFILE%\Local Settings\Temp
          CL82\db2admin
```

```
TEMP      %USERPROFILE%\Local Settings\Temp
          CL82\Administrator
TMP       %USERPROFILE%\Local Settings\Temp
          CL82\Administrator

[Jobs]

[ Following are sub-categories of this main category
]

[Print]

Document  Size      Owner     Notify    Status
          Time Submitted      Start Time
          Until Time          Elapsed Time
          Pages Printed       Job ID    Priority
          Parameters          Driver Name
          Print Processor     Host Print Queue
          Data Type Name
Unknown   Unknown   Unknown   Unknown   Unknown
          Unknown   Unknown   Unknown   Unknown
          Unknown   Unknown   Unknown   Unknown
          Unknown   Unknown   Unknown   Unknown
          Unknown

[Network Connections]

Local Name          Remote Name         Type
          Status    User Name
No network connections information


[Running Tasks]

Name      Path      Process ID          Priority  Min
Working Set         Max Working Set     Start Time
          Version   Size      File Date
system idle process Not Available       0         0
          Not Available       Not Available       Not
Available Unknown   Unknown   Unknown
system    Not Available       8         8         0
          1413120   Not Available       Unknown
          Unknown   Unknown
smss.exe  c:\winnt\system32\smss.exe    192       11
          204800    1413120   11/23/2005 11:44:56 AM
          5.00.2195.2901      44.27 KB (45,328 bytes)
          12/7/1999 7:00:00 AM
csrss.exe c:\winnt\system32\csrss.exe   220       13
          204800    1413120   11/23/2005 11:44:57 AM
          5.00.2195.2581      5.27 KB (5,392 bytes)
          9/13/2002 6:09:17 PM
winlogon.exe        c:\winnt\system32\winlogon.exe
          216       13        204800    1413120
          11/23/2005 11:44:58 AM
          5.00.2195.2953      173.77 KB (177,936
bytes)    12/7/1999 7:00:00 AM
services.exe        c:\winnt\system32\services.exe
          268       9         204800    1413120
          11/23/2005 11:44:59 AM
          5.00.2195.2780      86.77 KB (88,848 bytes)
          12/7/1999 7:00:00 AM
lsass.exe c:\winnt\system32\lsass.exe   280       9
          204800    1413120   11/23/2005 11:44:59 AM
```

```
          5.00.2195.2964      32.77 KB (33,552 bytes)
          12/7/1999 7:00:00 AM
termsrv.exe         c:\winnt\system32\termsrv.exe 372
          10        204800    1413120   11/23/2005
11:44:59 AM         5.00.2195.2342      137.27 KB
(140,560 bytes)     9/13/2002 6:09:44 PM
aclient.exe         c:\program
files\altiris\aclient\aclient.exe       476       8
          204800    1413120   11/23/2005 11:45:00 AM
          6.1.401   4.63 MB (4,857,932 bytes)
          6/5/2003 1:55:46 PM
regsvc.exe          c:\winnt\system32\regsvc.exe  512
          8         204800    1413120   11/23/2005
11:45:00 AM         5.00.2195.2104      65.27 KB
(66,832 bytes)      9/13/2002 6:09:39 PM
rsys.exe  c:\benchcraft\rsys.exe        524       8
          204800    1413120   11/23/2005 11:45:00 AM
          Not Available       32.00 KB (32,768 bytes)
          9/13/2002 6:30:57 PM
svchost.exe         c:\winnt\system32\svchost.exe 548
          8         204800    1413120   11/23/2005
11:45:01 AM         5.00.2134.1         7.77 KB
(7,952 bytes)       12/7/1999 7:00:00 AM
svchost.exe         c:\winnt\system32\svchost.exe 664
          8         204800    1413120   11/23/2005
11:45:04 AM         5.00.2134.1         7.77 KB
(7,952 bytes)       12/7/1999 7:00:00 AM
mstask.exe          c:\winnt\system32\mstask.exe  692
          8         204800    1413120   11/23/2005
11:45:04 AM         4.71.2195.1         115.27 KB
(118,032 bytes)     9/13/2002 6:09:32 PM
winmgmt.exe
          c:\winnt\system32\wbem\winmgmt.exe      728
          8         204800    1413120   11/23/2005
11:45:04 AM         1.50.1085.0029      192.08 KB
(196,685 bytes)     9/13/2002 6:09:52 PM
inetinfo.exe
          c:\winnt\system32\inetsrv\inetinfo.exe  780
          8         204800    1413120   11/23/2005
11:45:04 AM         5.00.0984 14.27 KB (14,608 bytes)
          9/13/2002 6:10:42 PM
dfssvc.exe          c:\winnt\system32\dfssvc.exe  660
          8         204800    1413120   11/23/2005
11:45:09 AM         5.00.2195.2841      88.27 KB
(90,384 bytes)      9/13/2002 6:09:18 PM
svchost.exe         c:\winnt\system32\svchost.exe
          1020      8         204800    1413120
          11/23/2005 11:45:22 AM        5.00.2134.1
          7.77 KB (7,952 bytes)         12/7/1999
7:00:00 AM
logon.scr c:\winnt\system32\logon.scr   684       4
          204800    1413120   11/23/2005 12:00:11 PM
          5.00.2195.2104      127.77 KB (130,832
bytes)    9/13/2002 6:09:26 PM
rsvp.exe  c:\winnt\system32\rsvp.exe    1120      8
          204800    1413120   11/28/2005 8:51:55 AM
          5.00.2167.1         172.77 KB (176,912
bytes)    12/7/1999 7:00:00 AM

[Loaded Modules]

Name      Version   Size      File Date Manufacturer
          Path
```

```
traffic.dll         5.00.2139.1         30.77 KB
(31,504 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\traffic.dll
rsvp.exe  5.00.2167.1         172.77 KB (176,912
bytes)    12/7/1999 7:00:00 AM          Microsoft
Corporation         c:\winnt\system32\rsvp.exe
logon.scr 5.00.2195.2104      127.77 KB (130,832
bytes)    9/13/2002 6:09:26 PM          Microsoft
Corporation         c:\winnt\system32\logon.scr
tapisrv.dll         5.00.2195.2955      169.27 KB
(173,328 bytes)     9/13/2002 6:09:44 PM
          Microsoft Corporation
          c:\winnt\system32\tapisrv.dll
resutils.dll        5.00.2195.2787      39.77 KB
(40,720 bytes)      9/13/2002 6:09:40 PM
          Microsoft Corporation
          c:\winnt\system32\resutils.dll
clusapi.dll         5.00.2195.2104      54.27 KB
(55,568 bytes)      9/13/2002 6:09:16 PM
          Microsoft Corporation
          c:\winnt\system32\clusapi.dll
dfssvc.exe          5.00.2195.2841      88.27 KB
(90,384 bytes)      9/13/2002 6:09:18 PM
          Microsoft Corporation
          c:\winnt\system32\dfssvc.exe
iislog.dll          5.00.0984 75.27 KB (77,072 bytes)
          9/13/2002 6:10:42 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\iislog.dll
httpext.dll         0.9.3940.21         435.27 KB
(445,712 bytes)     9/13/2002 6:10:42 PM
          Microsoft Corporation
          c:\winnt\system32\inetsrv\httpext.dll
fpexedll.dll        4.0.2.4324          20.06 KB
(20,541 bytes)      9/13/2002 6:10:33 PM
          Microsoft Corporation         c:\program
files\common files\microsoft shared\web server
extensions\40\bin\fpexedll.dll
md5filt.dll         5.00.0984 32.77 KB (33,552 bytes)
          9/13/2002 6:10:43 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\md5filt.dll
gzip.dll  5.00.0984 30.27 KB (30,992 bytes)
          9/13/2002 6:10:42 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\gzip.dll
compfilt.dll        5.00.0984 22.77 KB (23,312 bytes)
          9/13/2002 6:10:41 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\compfilt.dll
sspifilt.dll        5.00.0984 43.27 KB (44,304 bytes)
          9/13/2002 6:10:43 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\sspifilt.dll
iscomlog.dll        5.00.0984 24.77 KB (25,360 bytes)
          9/13/2002 6:10:43 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\iscomlog.dll
lonsint.dll         5.00.0984 11.77 KB (12,048 bytes)
          9/13/2002 6:10:43 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\lonsint.dll
```

```
inetsloc.dll        5.00.0984 20.27 KB (20,752 bytes)
          9/13/2002 6:09:24 PM          Microsoft
Corporation         c:\winnt\system32\inetsloc.dll
iisfecnv.dll        5.00.0984 7.27 KB (7,440 bytes)
          9/13/2002 5:45:32 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\iisfecnv.dll
isatq.dll 5.00.0984 60.27 KB (61,712 bytes)
          9/13/2002 6:10:43 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\isatq.dll
infocomm.dll        5.00.0984 238.27 KB (243,984
bytes)    9/13/2002 6:10:43 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\infocomm.dll
w3svc.dll 5.00.0984 343.27 KB (351,504 bytes)
          9/13/2002 6:10:44 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\w3svc.dll
security.dll        5.00.2154.1         5.77 KB
(5,904 bytes)       12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\security.dll
svcext.dll          5.00.0984 39.77 KB (40,720 bytes)
          9/13/2002 6:10:44 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\svcext.dll
admexs.dll          5.00.0984 27.77 KB (28,432 bytes)
          9/13/2002 6:10:41 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\admexs.dll
wamreg.dll          5.00.0984 45.77 KB (46,864 bytes)
          9/13/2002 6:10:44 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\wamreg.dll
metadata.dll        5.00.0984 68.77 KB (70,416 bytes)
          9/13/2002 6:10:43 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\metadata.dll
iismap.dll          5.00.0984 55.77 KB (57,104 bytes)
          9/13/2002 6:09:23 PM          Microsoft
Corporation         c:\winnt\system32\iismap.dll
nsepm.dll 5.00.0984 43.27 KB (44,304 bytes)
          9/13/2002 6:10:43 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\nsepm.dll
admwprox.dll        5.00.0984 31.77 KB (32,528 bytes)
          9/13/2002 5:45:33 PM          Microsoft
Corporation         c:\winnt\system32\admwprox.dll
coadmin.dll         5.00.0984 39.27 KB (40,208 bytes)
          9/13/2002 6:10:41 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\coadmin.dll
iisadmin.dll        5.00.0984 15.27 KB (15,632 bytes)
          9/13/2002 6:10:42 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\iisadmin.dll
rpcref.dll          5.00.0984 4.27 KB (4,368 bytes)
          9/13/2002 6:10:43 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\rpcref.dll
```

```
iisrtl.dll          5.00.0984 119.77 KB (122,640
bytes)    9/13/2002 6:09:23 PM          Microsoft
Corporation         c:\winnt\system32\iisrtl.dll
inetinfo.exe        5.00.0984 14.27 KB (14,608 bytes)
          9/13/2002 6:10:42 PM          Microsoft
Corporation
          c:\winnt\system32\inetsrv\inetinfo.exe
wshnetbs.dll        5.00.2134.1         7.77 KB
(7,952 bytes)       12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\wshnetbs.dll
rapilib.dll         5.00.2195.2717      24.77 KB
(25,360 bytes)      9/13/2002 6:09:39 PM
          Microsoft Corporation
          c:\winnt\system32\rapilib.dll
rsvpsp.dll          5.00.2195.2749      74.77 KB
(76,560 bytes)      9/13/2002 6:09:40 PM
          Microsoft Corporation
          c:\winnt\system32\rsvpsp.dll
provthrd.dll        1.50.1085.0000      68.07 KB
(69,708 bytes)      9/13/2002 5:45:53 PM
          Microsoft Corporation
          c:\winnt\system32\wbem\provthrd.dll
ntevt.dll 1.50.1085.0000      192.06 KB (196,669
bytes)    12/7/1999 7:00:00 AM          Microsoft
Corporation         c:\winnt\system32\wbem\ntevt.dll
perfos.dll          5.00.2155.1         21.27 KB
(21,776 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\perfos.dll
wmi.dll   5.00.2191.1         6.27 KB (6,416 bytes)
          12/7/1999 7:00:00 AM          Microsoft
Corporation         c:\winnt\system32\wmi.dll
framedyn.dll        1.50.1085.0000      164.05 KB
(167,992 bytes)     12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\wbem\framedyn.dll
cimwin32.dll        1.50.1085.0038      1.02 MB
(1,073,232 bytes)   9/13/2002 6:09:50 PM
          Microsoft Corporation
          c:\winnt\system32\wbem\cimwin32.dll
wbemsvc.dll         1.50.1085.0007      40.07 KB
(41,036 bytes)      9/13/2002 6:09:52 PM
          Microsoft Corporation
          c:\winnt\system32\wbem\wbemsvc.dll
wbemess.dll         1.50.1085.0039      364.07 KB
(372,804 bytes)     9/13/2002 6:09:52 PM
          Microsoft Corporation
          c:\winnt\system32\wbem\wbemess.dll
fastprox.dll        1.50.1085.0037      144.08 KB
(147,536 bytes)     9/13/2002 6:09:51 PM
          Microsoft Corporation
          c:\winnt\system32\wbem\fastprox.dll
wbemcore.dll        1.50.1085.0036      628.07 KB
(643,140 bytes)     9/13/2002 6:09:52 PM
          Microsoft Corporation
          c:\winnt\system32\wbem\wbemcore.dll
wbemcomn.dll        1.50.1085.0021      692.07 KB
(708,675 bytes)     9/13/2002 6:09:51 PM
          Microsoft Corporation
          c:\winnt\system32\wbem\wbemcomn.dll
winmgmt.exe         1.50.1085.0029      192.08 KB
(196,685 bytes)     9/13/2002 6:09:52 PM
          Microsoft Corporation
          c:\winnt\system32\wbem\winmgmt.exe
msidle.dll          5.00.2920.0000      6.27 KB
(6,416 bytes)       12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\msidle.dll
mstask.exe          4.71.2195.1         115.27 KB
(118,032 bytes)     9/13/2002 6:09:32 PM
          Microsoft Corporation
          c:\winnt\system32\mstask.exe
ntmsdba.dll         5.00.2195.2779      167.27 KB
(171,280 bytes)     9/13/2002 6:09:35 PM
          Microsoft Corporation
          c:\winnt\system32\ntmsdba.dll
rasdlg.dll          5.00.2195.2671      514.27 KB
(526,608 bytes)     12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\rasdlg.dll
netcfgx.dll         5.00.2195.2228      534.77 KB
(547,600 bytes)     9/13/2002 6:09:34 PM
          Microsoft Corporation
          c:\winnt\system32\netcfgx.dll
rasmans.dll         5.00.2195.2728      147.27 KB
(150,800 bytes)     9/13/2002 6:09:39 PM
          Microsoft Corporation
          c:\winnt\system32\rasmans.dll
sens.dll  5.00.2163.1         36.77 KB (37,648 bytes)
          12/7/1999 7:00:00 AM          Microsoft
Corporation         c:\winnt\system32\sens.dll
ntmssvc.dll         5.00.2195.2779      391.27 KB
(400,656 bytes)     9/13/2002 6:09:35 PM
          Microsoft Corporation
          c:\winnt\system32\ntmssvc.dll
txfaux.dll          2000.2.3471.1       374.27 KB
(383,248 bytes)     9/13/2002 6:09:44 PM
          Microsoft Corporation
          c:\winnt\system32\txfaux.dll
es.dll    2000.2.3471.1       222.27 KB (227,600
bytes)    9/13/2002 6:09:21 PM          Microsoft
Corporation         c:\winnt\system32\es.dll
rpcss.dll 5.00.2195.2815      231.27 KB (236,816
bytes)    9/13/2002 6:09:40 PM          Microsoft
Corporation         c:\winnt\system32\rpcss.dll
svchost.exe         5.00.2134.1         7.77 KB
(7,952 bytes)       12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\svchost.exe
rsys.exe  Not Available       32.00 KB (32,768 bytes)
          9/13/2002 6:30:57 PM          Not Available
          c:\benchcraft\rsys.exe
regsvc.exe          5.00.2195.2104      65.27 KB
(66,832 bytes)      9/13/2002 6:09:39 PM
          Microsoft Corporation
          c:\winnt\system32\regsvc.exe
ntmarta.dll         5.00.2195.2862      98.77 KB
(101,136 bytes)     9/13/2002 6:09:35 PM
          Microsoft Corporation
          c:\winnt\system32\ntmarta.dll
psapi.dll 5.00.2134.1         28.27 KB (28,944 bytes)
          12/7/1999 7:00:00 AM          Microsoft
Corporation         c:\winnt\system32\psapi.dll
riched20.dll        5.30.23.1205        421.27 KB
(431,376 bytes)     9/13/2002 6:09:40 PM
          Microsoft Corporation
          c:\winnt\system32\riched20.dll
riched32.dll        5.00.2134.1         3.77 KB
(3,856 bytes)       12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\riched32.dll
comdlg32.dll        5.00.3103.1000      236.77 KB
(242,448 bytes)     12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\comdlg32.dll
aclient.exe         6.1.401   4.63 MB (4,857,932
bytes)    6/5/2003 1:55:46 PM Altiris, Inc.
          c:\program
files\altiris\aclient\aclient.exe
rdpwsx.dll          5.00.2180.1         94.40 KB
(96,664 bytes)      9/13/2002 5:45:10 PM
          Microsoft Corporation
          c:\winnt\system32\rdpwsx.dll
ntlsapi.dll         5.00.2134.1         6.77 KB
(6,928 bytes)       12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\ntlsapi.dll
mstlsapi.dll        5.00.2181.1         24.77 KB
(25,360 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\mstlsapi.dll
icaapi.dll          5.00.2134.1         118.77 KB
(121,616 bytes)     9/13/2002 5:45:09 PM
          Microsoft Corporation
          c:\winnt\system32\icaapi.dll
regapi.dll          5.00.2155.1         35.27 KB
(36,112 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\regapi.dll
termsrv.exe         5.00.2195.2342      137.27 KB
(140,560 bytes)     9/13/2002 6:09:44 PM
          Microsoft Corporation
          c:\winnt\system32\termsrv.exe
dssenh.dll          5.00.2195.2228      142.77 KB
(146,192 bytes)     9/13/2002 6:10:37 PM
          Microsoft Corporation
          c:\winnt\system32\dssenh.dll
oakley.dll          5.00.2195.2785      378.77 KB
(387,856 bytes)     9/13/2002 6:09:36 PM
          Microsoft Corporation
          c:\winnt\system32\oakley.dll
mfc42u.dll          6.00.8665.0         972.05 KB
(995,384 bytes)     12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\mfc42u.dll
polagent.dll        5.00.2183.1         108.27 KB
(110,864 bytes)     12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\polagent.dll
scecli.dll          5.00.2195.2780      105.27 KB
(107,792 bytes)     9/13/2002 6:09:41 PM
          Microsoft Corporation
          c:\winnt\system32\scecli.dll
atl.dll   3.00.8449 57.56 KB (58,938 bytes)
          12/7/1999 7:00:00 AM          Microsoft
Corporation         c:\winnt\system32\atl.dll
certcli.dll         5.00.2195.2778      130.77 KB
(133,904 bytes)     9/13/2002 6:09:16 PM
```

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          Microsoft Corporation
          c:\winnt\system32\certcli.dll
mswsock.dll         5.00.2195.2871      62.77 KB
(64,272 bytes)      9/13/2002 6:09:33 PM
          Microsoft Corporation
          c:\winnt\system32\mswsock.dll
ntdsatq.dll         5.00.2195.2878      31.27 KB
(32,016 bytes)      9/13/2002 6:09:35 PM
          Microsoft Corporation
          c:\winnt\system32\ntdsatq.dll
ntdsa.dll 5.00.2195.2899      990.77 KB (1,014,544
bytes)    9/13/2002 6:09:34 PM          Microsoft
Corporation         c:\winnt\system32\ntdsa.dll
kdcsvc.dll          5.00.2195.2878      137.77 KB
(141,072 bytes)     9/13/2002 6:09:26 PM
          Microsoft Corporation
          c:\winnt\system32\kdcsvc.dll
sfmapi.dll          5.00.2134.1         38.77 KB
(39,696 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\sfmapi.dll
rassfm.dll          5.00.2195.2671      21.27 KB
(21,776 bytes)      9/13/2002 6:09:39 PM
          Microsoft Corporation
          c:\winnt\system32\rassfm.dll
mpr.dll   5.00.2195.2779      53.27 KB (54,544 bytes)
          9/13/2002 6:09:27 PM          Microsoft
Corporation         c:\winnt\system32\mpr.dll
rsabase.dll         5.00.2195.2228      128.27 KB
(131,344 bytes)     5/4/2001 12:05:02 PM
          Microsoft Corporation
          c:\winnt\system32\rsabase.dll
schannel.dll        5.00.2195.2922      138.27 KB
(141,584 bytes)     5/4/2001 12:05:02 PM
          Microsoft Corporation
          c:\winnt\system32\schannel.dll
netlogon.dll        5.00.2195.2865      357.77 KB
(366,352 bytes)     9/13/2002 6:09:34 PM
          Microsoft Corporation
          c:\winnt\system32\netlogon.dll
kerberos.dll        5.00.2195.2913      198.77 KB
(203,536 bytes)     9/13/2002 6:09:26 PM
          Microsoft Corporation
          c:\winnt\system32\kerberos.dll
msprivs.dll         5.00.2154.1         41.50 KB
(42,496 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\msprivs.dll
samsrv.dll          5.00.2195.2918      369.77 KB
(378,640 bytes)     12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\samsrv.dll
lsasrv.dll          5.00.2195.2964      492.77 KB
(504,592 bytes)     12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\lsasrv.dll
lsass.exe 5.00.2195.2964      32.77 KB (33,552 bytes)
          12/7/1999 7:00:00 AM          Microsoft
Corporation         c:\winnt\system32\lsass.exe
xactsrv.dll         5.00.2134.1         90.27 KB
(92,432 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\xactsrv.dll
esent.dll 6.0.3940.13         1.08 MB (1,135,376
bytes)    9/13/2002 6:09:21 PM          Microsoft
Corporation         c:\winnt\system32\esent.dll
wmicore.dll         5.00.2195.2842      72.27 KB
(74,000 bytes)      9/13/2002 6:09:46 PM
          Microsoft Corporation
          c:\winnt\system32\wmicore.dll
browser.dll         5.00.2195.2778      48.27 KB
(49,424 bytes)      9/13/2002 6:09:14 PM
          Microsoft Corporation
          c:\winnt\system32\browser.dll
trkwks.dll          5.00.2166.1         88.77 KB
(90,896 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\trkwks.dll
psbase.dll          5.00.2195.2779      111.77 KB
(114,448 bytes)     9/13/2002 6:09:39 PM
          Microsoft Corporation
          c:\winnt\system32\psbase.dll
cryptsvc.dll        5.00.2181.1         61.77 KB
(63,248 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\cryptsvc.dll
seclogon.dll        5.00.2135.1         15.77 KB
(16,144 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\seclogon.dll
cryptdll.dll        5.00.2135.1         41.27 KB
(42,256 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\cryptdll.dll
wkssvc.dll          5.00.2195.2780      95.27 KB
(97,552 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\wkssvc.dll
srvsvc.dll          5.00.2195.2904      79.27 KB
(81,168 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\srvsvc.dll
cfgmgr32.dll        5.00.2134.1         16.77 KB
(17,168 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\cfgmgr32.dll
dmserver.dll        2195.2778.297.3     11.77 KB
(12,048 bytes)      9/13/2002 6:09:19 PM
          VERITAS Software Corp.
          c:\winnt\system32\dmserver.dll
lmhsvc.dll          5.00.2195.2778      9.77 KB
(10,000 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\lmhsvc.dll
eventlog.dll        5.00.2178.1         43.77 KB
(44,816 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\eventlog.dll
scesrv.dll          5.00.2195.2780      226.27 KB
(231,696 bytes)     9/13/2002 6:09:41 PM
          Microsoft Corporation
          c:\winnt\system32\scesrv.dll
umpnpmgr.dll        5.00.2182.1         86.27 KB
(88,336 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\umpnpmgr.dll
services.exe        5.00.2195.2780      86.77 KB
(88,848 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\services.exe
wininet.dll         5.00.3315.1000      456.77 KB
(467,728 bytes)     9/13/2002 6:09:46 PM
          Microsoft Corporation
          c:\winnt\system32\wininet.dll
cryptnet.dll        5.131.2157.1        41.77 KB
(42,768 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\cryptnet.dll
msv1_0.dll          5.00.2195.2900      111.77 KB
(114,448 bytes)     12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\msv1_0.dll
ntdsapi.dll         5.00.2195.2661      55.77 KB
(57,104 bytes)      9/13/2002 6:09:35 PM
          Microsoft Corporation
          c:\winnt\system32\ntdsapi.dll
rasadhlp.dll        5.00.2168.1         7.27 KB
(7,440 bytes)       12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\rasadhlp.dll
winrnr.dll          5.00.2160.1         18.77 KB
(19,216 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\winrnr.dll
rnr20.dll 5.00.2195.2871      35.77 KB (36,624 bytes)
          9/13/2002 6:09:40 PM          Microsoft
Corporation         c:\winnt\system32\rnr20.dll
clbcatq.dll         2000.2.3471.1       496.77 KB
(508,688 bytes)     9/13/2002 6:09:16 PM
          Microsoft Corporation
          c:\winnt\system32\clbcatq.dll
dhcpcsvc.dll        5.00.2195.2778      88.77 KB
(90,896 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\dhcpcsvc.dll
tapi32.dll          5.00.2182.1         123.27 KB
(126,224 bytes)     12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\tapi32.dll
rasman.dll          5.00.2195.2780      54.77 KB
(56,080 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\rasman.dll
rasapi32.dll        5.00.2195.2671      189.77 KB
(194,320 bytes)     12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\rasapi32.dll
rtutils.dll         5.00.2168.1         43.77 KB
(44,816 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\rtutils.dll
adsldpc.dll         5.00.2195.2842      127.27 KB
(130,320 bytes)     9/13/2002 6:09:12 PM
          Microsoft Corporation
          c:\winnt\system32\adsldpc.dll
activeds.dll        5.00.2195.2778      174.77 KB
(178,960 bytes)     9/13/2002 6:09:09 PM
          Microsoft Corporation
          c:\winnt\system32\activeds.dll
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oleaut32.dll        2.40.4517 612.27 KB (626,960
bytes)    12/7/1999 7:00:00 AM          Microsoft
Corporation         c:\winnt\system32\oleaut32.dll
mprapi.dll          5.00.2181.1         79.27 KB
(81,168 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\mprapi.dll
icmp.dll  5.00.2134.1         7.27 KB (7,440 bytes)
          12/7/1999 7:00:00 AM          Microsoft
Corporation         c:\winnt\system32\icmp.dll
iphlpapi.dll        5.00.2173.2         67.77 KB
(69,392 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\iphlpapi.dll
wshtcpip.dll        5.00.2195.2104      17.27 KB
(17,680 bytes)      9/13/2002 6:09:46 PM
          Microsoft Corporation
          c:\winnt\system32\wshtcpip.dll
msafd.dll 5.00.2195.2779      106.77 KB (109,328
bytes)    9/13/2002 6:09:27 PM          Microsoft
Corporation         c:\winnt\system32\msafd.dll
winspool.drv        5.00.2195.2780      109.77 KB
(112,400 bytes)     12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\winspool.drv
winscard.dll        5.00.2134.1         77.27 KB
(79,120 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\winscard.dll
wlnotify.dll        5.00.2195.2780      53.77 KB
(55,056 bytes)      9/13/2002 6:09:46 PM
          Microsoft Corporation
          c:\winnt\system32\wlnotify.dll
cscdll.dll          5.00.2195.2401      98.27 KB
(100,624 bytes)     9/13/2002 6:09:17 PM
          Microsoft Corporation
          c:\winnt\system32\cscdll.dll
lz32.dll  5.00.2134.1         9.77 KB (10,000 bytes)
          12/7/1999 7:00:00 AM          Microsoft
Corporation         c:\winnt\system32\lz32.dll
version.dll         5.00.2134.1         15.77 KB
(16,144 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\version.dll
rsaenh.dll          5.00.2195.2228      130.77 KB
(133,904 bytes)     9/13/2002 6:10:37 PM
          Microsoft Corporation
          c:\winnt\system32\rsaenh.dll
mscat32.dll         5.131.2134.1        7.77 KB
(7,952 bytes)       12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\mscat32.dll
ole32.dll 5.00.2195.2887      969.77 KB (993,040
bytes)    9/13/2002 6:09:38 PM          Microsoft
Corporation         c:\winnt\system32\ole32.dll
imagehlp.dll        5.00.2195.2778      125.77 KB
(128,784 bytes)     5/4/2001 12:05:02 PM
          Microsoft Corporation
          c:\winnt\system32\imagehlp.dll
msasn1.dll          5.00.2134.1         51.27 KB
(52,496 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\msasn1.dll
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crypt32.dll         5.131.2195.2833     451.27 KB
(462,096 bytes)     9/13/2002 6:09:17 PM
          Microsoft Corporation
          c:\winnt\system32\crypt32.dll
wintrust.dll        5.131.2195.2779     162.27 KB
(166,160 bytes)     9/13/2002 6:09:46 PM
          Microsoft Corporation
          c:\winnt\system32\wintrust.dll
shlwapi.dll         5.00.3315.1000      282.77 KB
(289,552 bytes)     9/13/2002 6:09:42 PM
          Microsoft Corporation
          c:\winnt\system32\shlwapi.dll
shell32.dll         5.00.3315.2902      2.25 MB
(2,359,056 bytes)   9/13/2002 6:09:42 PM
          Microsoft Corporation
          c:\winnt\system32\shell32.dll
msgina.dll          5.00.2195.2779      324.27 KB
(332,048 bytes)     12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\msgina.dll
comctl32.dll        5.81      537.77 KB (550,672
bytes)    12/7/1999 7:00:00 AM          Microsoft
Corporation         c:\winnt\system32\comctl32.dll
setupapi.dll        5.00.2195.2663      555.77 KB
(569,104 bytes)     12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\setupapi.dll
winmm.dll 5.00.2161.1         184.77 KB (189,200
bytes)    12/7/1999 7:00:00 AM          Microsoft
Corporation         c:\winnt\system32\winmm.dll
winsta.dll          5.00.2195.2386      36.77 KB
(37,648 bytes)      9/13/2002 6:09:46 PM
          Microsoft Corporation
          c:\winnt\system32\winsta.dll
wsock32.dll         5.00.2195.2871      21.27 KB
(21,776 bytes)      9/13/2002 6:09:46 PM
          Microsoft Corporation
          c:\winnt\system32\wsock32.dll
dnsapi.dll          5.00.2195.2785      130.77 KB
(133,904 bytes)     9/13/2002 6:09:19 PM
          Microsoft Corporation
          c:\winnt\system32\dnsapi.dll
wldap32.dll         5.00.2195.2797      125.27 KB
(128,272 bytes)     9/13/2002 6:09:46 PM
          Microsoft Corporation
          c:\winnt\system32\wldap32.dll
ws2help.dll         5.00.2134.1         17.77 KB
(18,192 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\ws2help.dll
ws2_32.dll          5.00.2195.2780      67.77 KB
(69,392 bytes)      9/13/2002 6:09:46 PM
          Microsoft Corporation
          c:\winnt\system32\ws2_32.dll
samlib.dll          5.00.2195.2780      49.77 KB
(50,960 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\samlib.dll
netrap.dll          5.00.2134.1         11.27 KB
(11,536 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\netrap.dll
```

```
netapi32.dll        5.00.2195.2808      303.77 KB
(311,056 bytes)     9/13/2002 6:09:34 PM
          Microsoft Corporation
          c:\winnt\system32\netapi32.dll
profmap.dll         5.00.2181.1         29.27 KB
(29,968 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\profmap.dll
secur32.dll         5.00.2195.2862      46.77 KB
(47,888 bytes)      9/13/2002 6:09:41 PM
          Microsoft Corporation
          c:\winnt\system32\secur32.dll
sfc.dll   5.00.2195.2896      92.11 KB (94,320 bytes)
          9/13/2002 6:09:41 PM          Microsoft
Corporation         c:\winnt\system32\sfc.dll
nddeapi.dll         5.00.2137.1         15.27 KB
(15,632 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\nddeapi.dll
userenv.dll         5.00.2195.2780      361.77 KB
(370,448 bytes)     12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\userenv.dll
rpcrt4.dll          5.00.2195.2832      437.27 KB
(447,760 bytes)     9/13/2002 6:09:40 PM
          Microsoft Corporation
          c:\winnt\system32\rpcrt4.dll
advapi32.dll        5.00.2195.2867      351.77 KB
(360,208 bytes)     12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\advapi32.dll
msvcrt.dll          6.10.8924.0         284.05 KB
(290,869 bytes)     5/4/2001 12:05:02 PM
          Microsoft Corporation
          c:\winnt\system32\msvcrt.dll
winlogon.exe        5.00.2195.2953      173.77 KB
(177,936 bytes)     12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\winlogon.exe
gdi32.dll 5.00.2195.2778      228.77 KB (234,256
bytes)    12/7/1999 7:00:00 AM          Microsoft
Corporation         c:\winnt\system32\gdi32.dll
kernel32.dll        5.00.2195.2778      714.77 KB
(731,920 bytes)     12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\kernel32.dll
user32.dll          5.00.2195.2821      392.77 KB
(402,192 bytes)     12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\user32.dll
winsrv.dll          5.00.2195.2797      246.27 KB
(252,176 bytes)     11/30/1999 5:39:54 PM
          Microsoft Corporation
          c:\winnt\system32\winsrv.dll
basesrv.dll         5.00.2195.2581      40.77 KB
(41,744 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\basesrv.dll
csrsrv.dll          5.00.2195.2581      33.77 KB
(34,576 bytes)      12/7/1999 7:00:00 AM
          Microsoft Corporation
          c:\winnt\system32\csrsrv.dll
```

```
csrss.exe 5.00.2195.2581      5.27 KB (5,392 bytes)
          9/13/2002 6:09:17 PM          Microsoft
Corporation         c:\winnt\system32\csrss.exe
sfcfiles.dll        5.00.2195.2967      948.27 KB
(971,024 bytes)     9/13/2002 6:09:41 PM
          Microsoft Corporation
          c:\winnt\system32\sfcfiles.dll
ntdll.dll 5.00.2195.2779      478.77 KB (490,256
bytes)    5/4/2001 12:05:02 PM          Microsoft
Corporation         c:\winnt\system32\ntdll.dll
smss.exe  5.00.2195.2901      44.27 KB (45,328 bytes)
          12/7/1999 7:00:00 AM          Microsoft
Corporation         c:\winnt\system32\smss.exe

[Services]

Display Name        Name      State     Start Mode
          Service Type        Path      Error Control
          Start Name          Tag ID
Altiris Client Service        AClient   Running
          Auto      Own Process         c:\program
files\altiris\aclient\aclient.exe -service
          Normal    LocalSystem         0
Alerter   Alerter   Stopped   Manual    Share Process
          c:\winnt\system32\services.exe
          Normal    LocalSystem         0
Application Management        AppMgmt   Stopped
          Manual    Share Process
          c:\winnt\system32\services.exe
          Normal    LocalSystem         0
Computer Browser    Browser   Running   Auto
          Share Process
          c:\winnt\system32\services.exe
          Normal    LocalSystem         0
Indexing Service    cisvc     Stopped   Manual
          Share Process
          c:\winnt\system32\cisvc.exe   Normal
          LocalSystem         0
ClipBook  ClipSrv   Stopped   Manual    Own Process
          c:\winnt\system32\clipsrv.exe Normal
          LocalSystem         0
DB2 JDBC Applet Server        DB2JDS    Stopped
          Manual    Own Process         "c:\program
files\ibm\sqllib\bin\db2jds.exe"        Normal
          LocalSystem         0
DB2 Security Server DB2NTSECSERVER      Stopped
          Manual    Own Process         "c:\program
files\ibm\sqllib\bin\db2sec.exe"        Normal
          LocalSystem         0
Distributed File System       Dfs       Running
          Auto      Own Process
          c:\winnt\system32\dfssvc.exe  Normal
          LocalSystem         0
DHCP Client         Dhcp      Running   Auto
          Share Process
          c:\winnt\system32\services.exe
          Normal    LocalSystem         0
Logical Disk Manager Administrative Service
          dmadmin   Stopped   Manual    Share Process
          c:\winnt\system32\dmadmin.exe /com
          Normal    LocalSystem         0
Logical Disk Manager          dmserver  Running
          Auto      Share Process
          c:\winnt\system32\services.exe
          Normal    LocalSystem         0
DNS Client          Dnscache  Stopped   Manual
          Share Process
          c:\winnt\system32\services.exe
          Normal    LocalSystem         0
Event Log Eventlog  Running   Auto      Share Process
          c:\winnt\system32\services.exe
          Normal    LocalSystem         0
COM+ Event System   EventSystem         Running
          Manual    Share Process
          c:\winnt\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Fax Service         Fax       Stopped   Manual    Own
Process   c:\winnt\system32\faxsvc.exe  Normal
          LocalSystem         0
IIS Admin Service   IISADMIN  Running   Auto
          Share Process
          c:\winnt\system32\inetsrv\inetinfo.exe
          Normal    LocalSystem         0
Intersite Messaging IsmServ   Stopped   Disabled  Own
Process   c:\winnt\system32\ismserv.exe Normal
          LocalSystem         0
Kerberos Key Distribution Center        kdc
          Stopped   Disabled  Share Process
          c:\winnt\system32\lsass.exe   Normal
          LocalSystem         0
Server    lanmanserver        Running   Auto
          Share Process
          c:\winnt\system32\services.exe
          Normal    LocalSystem         0
Workstation         lanmanworkstation   Running
          Auto      Share Process
          c:\winnt\system32\services.exe
          Normal    LocalSystem         0
License Logging Service       LicenseService
          Stopped   Manual    Own Process
          c:\winnt\system32\llssrv.exe  Normal
          LocalSystem         0
TCP/IP NetBIOS Helper Service LmHosts   Running
          Auto      Share Process
          c:\winnt\system32\services.exe
          Normal    LocalSystem         0
Messenger Messenger Stopped   Manual    Share Process
          c:\winnt\system32\services.exe
          Normal    LocalSystem         0
NetMeeting Remote Desktop Sharing       mnmsrvc
          Stopped   Manual    Own Process
          c:\winnt\system32\mnmsrvc.exe Normal
          LocalSystem         0
Distributed Transaction Coordinator     MSDTC
          Stopped   Manual    Own Process
          c:\winnt\system32\msdtc.exe   Normal
          LocalSystem         0
Windows Installer   MSIServer Stopped   Manual
          Share Process
          c:\winnt\system32\msiexec.exe /v
          Normal    LocalSystem         0
Network DDE         NetDDE    Stopped   Manual
          Share Process
          c:\winnt\system32\netdde.exe  Normal
          LocalSystem         0
Network DDE DSDM    NetDDEdsdm          Stopped
          Manual    Share Process
          c:\winnt\system32\netdde.exe  Normal
          LocalSystem         0
Net Logon Netlogon  Stopped   Manual    Share Process
          c:\winnt\system32\lsass.exe   Normal
          LocalSystem         0
Network Connections Netman    Stopped   Manual
          Share Process
          c:\winnt\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
File Replication    NtFrs     Stopped   Manual    Own
Process   c:\winnt\system32\ntfrs.exe   Ignore
          LocalSystem         0
NT LM Security Support Provider         NtLmSsp
          Stopped   Manual    Share Process
          c:\winnt\system32\lsass.exe   Normal
          LocalSystem         0
Removable Storage   NtmsSvc   Running   Auto
          Share Process
          c:\winnt\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Plug and Play       PlugPlay  Running   Auto
          Share Process
          c:\winnt\system32\services.exe
          Normal    LocalSystem         0
IPSEC Policy Agent  PolicyAgent         Running
          Auto      Share Process
          c:\winnt\system32\lsass.exe   Normal
          LocalSystem         0
Protected Storage   ProtectedStorage    Running
          Auto      Share Process
          c:\winnt\system32\services.exe
          Normal    LocalSystem         0
Remote Access Auto Connection Manager   RasAuto
          Stopped   Manual    Share Process
          c:\winnt\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Remote Access Connection Manager        RasMan
          Stopped   Manual    Share Process
          c:\winnt\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Routing and Remote Access     RemoteAccess
          Stopped   Disabled  Share Process
          c:\winnt\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Remote Registry Service       RemoteRegistry
          Running   Auto      Own Process
          c:\winnt\system32\regsvc.exe  Normal
          LocalSystem         0
Remote Command Service        RMSYS     Running
          Auto      Own Process
          c:\benchcraft\rsys.exe        Normal
          LocalSystem         0
Remote Procedure Call (RPC) Locator     RpcLocator
          Stopped   Manual    Own Process
          c:\winnt\system32\locator.exe Normal
          LocalSystem         0
Remote Procedure Call (RPC)   RpcSs     Running
          Auto      Share Process
          c:\winnt\system32\svchost -k rpcss
          Normal    LocalSystem         0
```

```
QoS RSVP  RSVP      Running   Manual    Own Process
          c:\winnt\system32\rsvp.exe -s Normal
          LocalSystem         0
Security Accounts Manager     SamSs     Running
          Auto      Share Process
          c:\winnt\system32\lsass.exe   Normal
          LocalSystem         0
Smart Card Helper   SCardDrv  Stopped   Manual
          Share Process
          c:\winnt\system32\scardsvr.exe
          Ignore    LocalSystem         0
Smart Card          SCardSvr  Stopped   Manual
          Share Process
          c:\winnt\system32\scardsvr.exe
          Ignore    LocalSystem         0
Task Scheduler      Schedule  Running   Auto
          Share Process
          c:\winnt\system32\mstask.exe  Normal
          LocalSystem         0
RunAs Service       seclogon  Running   Auto
          Share Process
          c:\winnt\system32\services.exe
          Ignore    LocalSystem         0
System Event Notification     SENS      Running
          Auto      Share Process
          c:\winnt\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Internet Connection Sharing   SharedAccess
          Stopped   Manual    Share Process
          c:\winnt\system32\svchost.exe -k netsvcs
          Normal    LocalSystem         0
Print Spooler       Spooler   Stopped   Manual    Own
Process   c:\winnt\system32\spoolsv.exe Normal
          LocalSystem         0
Performance Logs and Alerts   SysmonLog Stopped
          Manual    Own Process
          c:\winnt\system32\smlogsvc.exe
          Normal    LocalSystem         0
Telephony TapiSrv   Running   Manual    Share Process
          c:\winnt\system32\svchost.exe -k tapisrv
          Normal    LocalSystem         0
Terminal Services   TermService         Running
          Auto      Own Process
          c:\winnt\system32\termsrv.exe Normal
          LocalSystem         0
Telnet    TlntSvr   Stopped   Manual    Own Process
          c:\winnt\system32\tlntsvr.exe Normal
          LocalSystem         0
Distributed Link Tracking Server        TrkSvr
          Stopped   Manual    Share Process
          c:\winnt\system32\services.exe
          Normal    LocalSystem         0
Distributed Link Tracking Client        TrkWks
          Running   Auto      Share Process
          c:\winnt\system32\services.exe
          Normal    LocalSystem         0
Uninterruptible Power Supply  UPS       Stopped
          Manual    Own Process
          c:\winnt\system32\ups.exe     Normal
          LocalSystem         0
Utility Manager     UtilMan   Stopped   Manual    Own
Process   c:\winnt\system32\utilman.exe Normal
          LocalSystem         0
Windows Time        W32Time   Stopped   Manual
          Share Process
          c:\winnt\system32\services.exe
          Normal    LocalSystem         0
World Wide Web Publishing Service       W3SVC
          Running   Auto      Share Process
          c:\winnt\system32\inetsrv\inetinfo.exe
          Normal    LocalSystem         0
Windows Management Instrumentation      WinMgmt
          Running   Auto      Own Process
          c:\winnt\system32\wbem\winmgmt.exe
          Ignore    LocalSystem         0
Windows Management Instrumentation Driver Extensions
          Wmi       Running   Manual    Share Process
          c:\winnt\system32\services.exe
          Normal    LocalSystem         0

[Program Groups]

Group Name          Name      User Name
Accessories         Default User:Accessories
          Default User
Accessories\Accessibility     Default
User:Accessories\Accessibility          Default User
Accessories\Entertainment     Default
User:Accessories\Entertainment          Default User
Accessories\System Tools      Default
User:Accessories\System Tools Default User
Startup   Default User:Startup          Default User
Accessories         All Users:Accessories         All
Users
Accessories\Communications    All
Users:Accessories\Communications        All Users
Accessories\Entertainment     All
Users:Accessories\Entertainment         All Users
Accessories\Microsoft Script Debugger   All
Users:Accessories\Microsoft Script Debugger       All
Users
Accessories\System Tools      All
Users:Accessories\System Tools          All Users
ActiveState ActivePerl 5.8    All Users:ActiveState
ActivePerl 5.8      All Users
Administrative Tools          All
Users:Administrative Tools    All Users
IBM DB2   All Users:IBM DB2   All Users
IBM DB2\Command Line Tools    All Users:IBM
DB2\Command Line Tools        All Users
Microsoft SQL Server          All Users:Microsoft SQL
Server    All Users
Startup   All Users:Startup   All Users
Tardis    All Users:Tardis    All Users
Accessories         CL82\db2admin:Accessories
          CL82\db2admin
Accessories\Accessibility
          CL82\db2admin:Accessories\Accessibility
          CL82\db2admin
Accessories\Entertainment
          CL82\db2admin:Accessories\Entertainment
          CL82\db2admin
Accessories\System Tools
          CL82\db2admin:Accessories\System Tools
          CL82\db2admin
Startup   CL82\db2admin:Startup         CL82\db2admin
Accessories         CL82\Administrator:Accessories
          CL82\Administrator
Accessories\Accessibility
          CL82\Administrator:Accessories\Accessibilit
y         CL82\Administrator
Accessories\Entertainment
          CL82\Administrator:Accessories\Entertainmen
t         CL82\Administrator
Accessories\System Tools
          CL82\Administrator:Accessories\System Tools
          CL82\Administrator
Administrative Tools
          CL82\Administrator:Administrative Tools
          CL82\Administrator
Startup   CL82\Administrator:Startup
          CL82\Administrator

[Startup Programs]

Program   Command   User Name Location
Tardis 2000         c:\progra~1\tardis~1.4\tardis.exe
          All Users Common Startup
AClntUsr  c:\program
files\altiris\aclient\aclntusr.exe      All Users
          HKLM\SOFTWARE\Microsoft\Windows\CurrentVers
ion\Run

[OLE Registration]

Object    Local Server
Sound (OLE2)        sndrec32.exe
Media Clip          mplay32.exe
Video Clip          mplay32.exe /avi
MIDI Sequence       mplay32.exe /mid
Sound     Not Available
Media Clip          Not Available
Image Document      "C:\Program Files\Windows
NT\Accessories\ImageVue\KodakImg.exe"
WordPad Document    "%ProgramFiles%\Windows
NT\Accessories\WORDPAD.EXE"
Windows Media Services DRM Storage object         Not
Available
Bitmap Image        mspaint.exe

[Internet Explorer 5]

[ Following are sub-categories of this main category
]

[Summary]

Item      Value
Version   5.00.3315.1000
Build     53315.1000
Product ID          51876-270-9567332-05753
Application Path    C:\Program Files\Internet
Explorer
Language  English (United States)
Active Printer      Not Available

Cipher Strength     168-bit
Content Advisor     Disabled
IEAK Install        No
```

```
[File Versions]

File      Version   Size      Date      Path
          Company
advapi32.dll        5.0.2195.2867       352 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
advpack.dll         5.0.3103.1000       87 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
browselc.dll        5.0.3315.2846       35 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
browseui.dll        5.0.3315.2846       789 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
ckcnv.exe 5.0.2189.1          9 KB      12/7/1999
7:00:00 AM          C:\WINNT\system32   Microsoft
Corporation
comctl32.dll        5.81.3103.1000      538 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
crypt32.dll         5.131.2195.2833     451 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
enhsig.dll          <File Missing>      Not Available
          Not Available       Not Available       Not
Available
iemigrat.dll        <File Missing>      Not Available
          Not Available       Not Available       Not
Available
iesetup.dll         5.0.3103.1000       57 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
iexplore.exe        5.0.2920.0          59 KB
          12/7/1999 7:00:00 AM          C:\Program
Files\Internet Explorer       Microsoft Corporation
imagehlp.dll        5.0.2195.2778       126 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
imghelp.dll         <File Missing>      Not Available
          Not Available       Not Available       Not
Available
inseng.dll          5.0.3103.1000       72 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
jobexec.dll         5.0.0.1   47 KB     12/7/1999
7:00:00 AM          C:\WINNT\system32   Microsoft
Corporation
jscript.dll         5.1.0.5907          476 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
jsproxy.dll         5.0.2920.0          13 KB
          12/7/1999 7:00:00 AM
          C:\WINNT\system32   Microsoft Corporation
msaahtml.dll        <File Missing>      Not Available
          Not Available       Not Available       Not
Available
mshtml.dll          5.0.3315.2870       2290 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
msjava.dll          5.0.3802.0          923 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
msoss.dll <File Missing>      Not Available       Not
Available Not Available       Not Available
msxml.dll 8.0.5718.1          493 KB    5/4/2001
11:05:02 AM         C:\WINNT\system32   Microsoft
Corporation
occache.dll         5.0.3103.1000       86 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
ole32.dll 5.0.2195.2887       970 KB    5/4/2001
11:05:02 AM         C:\WINNT\system32   Microsoft
Corporation
oleaut32.dll        2.40.4517.0         612 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
olepro32.dll        5.0.4517.0          160 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
rsabase.dll         5.0.2195.2228       128 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
rsaenh.dll          5.0.2195.2228       131 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
rsapi32.dll         <File Missing>      Not Available
          Not Available       Not Available       Not
Available
rsasig.dll          <File Missing>      Not Available
          Not Available       Not Available       Not
Available
schannel.dll        5.1.2195.0          138 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
shdoc401.dll        <File Missing>      Not Available
          Not Available       Not Available       Not
Available
shdocvw.dll         5.0.3315.2879       1078 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
shell32.dll         5.0.3315.2902       2304 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
shlwapi.dll         5.0.3315.1000       283 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
url.dll   5.0.2920.0          82 KB     12/7/1999
7:00:00 AM          C:\WINNT\system32   Microsoft
Corporation
urlmon.dll          5.0.3315.1000       441 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
vbscript.dll        5.1.0.5907          428 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
webcheck.dll        5.0.3315.1000       252 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
win.com   5.0.2134.1          24 KB     12/7/1999
7:00:00 AM          C:\WINNT\system32   Microsoft
Corporation
wininet.dll         5.0.3315.1000       457 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
winsock.dll         3.10.0.103          3 KB
          12/7/1999 7:00:00 AM
          C:\WINNT\system32   Microsoft Corporation
wintrust.dll        5.131.2195.2779     162 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
wsock.vxd <File Missing>      Not Available       Not
Available Not Available       Not Available
wsock32.dll         5.0.2195.2871       21 KB
          5/4/2001 11:05:02 AM
          C:\WINNT\system32   Microsoft Corporation
wsock32n.dll        <File Missing>      Not Available
          Not Available       Not Available       Not
Available

[Connectivity]

Item      Value
Connection Preference         Never dial
EnableHttp1.1       1
ProxyHttp1.1        0

LAN Settings

AutoConfigProxy     Not Available
AutoProxyDetectMode Enabled
AutoConfigURL
Proxy     Disabled
ProxyServer
ProxyOverride

[Cache]

[ Following are sub-categories of this main category
]

[Summary]

Item      Value
Page Refresh Type   Automatic
Temporary Internet Files Folder         C:\Documents
and Settings\Default User\Local Settings\Temporary
Internet Files
Total Disk Space    Not Available
Available Disk Space          Not Available
Maximum Cache Size  Not Available
Available Cache Size          Not Available

[List of Objects]

Program File        Status    CodeBase
No cached object information available

[Content]

[ Following are sub-categories of this main category
]

[Summary]
```

```
Item      Value
Content Advisor     Disabled

[Personal Certificates]

Issued To Issued By Validity  Signature Algorithm
No personal certificate information available


[Other People Certificates]

Issued To Issued By Validity  Signature Algorithm
No other people certificate information available


[Publishers]

Name
No publisher information available

[Security]

Zone      Security Level
```

Microsoft COM Component Configuration Parameters

The component services tool in Windows 2000 was used to change the queue settings for the TPCC COM+ queue components. All tpcc queue components were set to enable object pooling and just in time activation. The single queue tpccCom.tpcc_com.1 object was used, with the Min and Max both being set to 40 queues. Delivery threads were set under the TPCC key in the registry.

Appendix D: 60-Day Space

60 Days Space Computation

All Data sizes are in MB unless otherwise stated

Warehouses	19,200	**tpmC**	236,054.00	**tpmC/W**	12.29

Table	**Rows**	**Data**	**Index**	**5% Space**	**Total Space**
History	576,000,000	35,504	0	0	35,504
Orders	576,000,000	21,164	16,120	0	37,284
Order-line	5,760,185,535	378,305	0	0	378,305
New-order	172,800,000	6,384	0	319	6,703
Warehouse	19,200	20	0	1	21
District	192,000	40	0	2	42
Item	100,000	14	0	1	15
Customer	576,000,000	450,060	27,768	23,891	501,719
Stock	1,920,000,000	625,056	0	31,253	656,309
					1,615,902
Free Space	195,490				
Dynamic Space	434,972				
Static Space	1,164,809				
Daily Growth	85,564				
Daily Spread	67,144				
60 Days MB	10,327,284				
60 Days GB	10,085				

Log File Storage Requirement:

Log Pages Written	4,146,797.00	log file storage used in a steady state 30 minute interval
Total N-O Txn	7,081,620.00	New Order transactions completed during the same 30 minute interval du
Log per N-O txn	2.34	KB of log storage used per New Order transaction (Log page size = 4k)
8 Hour Log (GB)	253.10	8-hour log storage required

Disks Type	**Disk Formatted Capacity (GB)**	**SUT # of Disks**	**SUT Capacity (GB)**	**Priced # of Disks**	**Priced Capacity (GB)**
392 External disks for Data	33.860	392	13,273	392	13,273
14 External disks for Log	67.720	10	677	10	677
1 Internal OS disk	33.860	1	34	1	34
Priced Space (GB)			13,984		13,984

Appendix E: Third Party Letters

October 28, 2005

IBM Corporation
Ms. Celia Schreiber
xSeries Performance

Dear Celia:

The table shown below lists the U.S. pricing for DB2 Universal Database Enterprise Server Edition product that has been used in the TPC-C Benchmark.

All prices shown are in U.S. Dollars.

DB2 Enterprise Server Edition (ESE)	Qty	Reference Price per unit	Total Reference price
SW License & 12 Months Maintenance	4	22,608	90,432
SW Maintenance Renewal - 1 year	8	1,077	8,616
		Sub-total reference price for DB2 ESE:	**99,048**
		TOTAL REFERENCE PRICE:	**99,048**

Any and all prices herein are suggested prices only and are subject to change at IBM's sole discretion. Products listed herein are subject to withdrawal or modification by IBM at any time at IBM's sole discretion.

Sincerely,

Richard Hughes
IBM Sales & Distribution, Software Sales
Americas Sales Executive DB2 and Informix
212-493-2065
rhughes@us.ibm.com

Microsoft Corporation
One Microsoft Way
Redmond, WA 98052-6399

Tel 425 882 8080
Fax 425 936 7329
http://www.microsoft.com/

Microsoft

October 27, 2005

IBM Corporation
Chris King
3079 Cornwallis Road
Durham, NC 27709

Ms. King:

Here is the information you requested regarding pricing for several Microsoft products to be used in conjunction with your TPC-C benchmark testing.

All pricing shown is in US Dollars ($).

Part Number	Description	Unit Price	Quantity	Price
P72-00981	**Windows Server 2003 Enterprise x64 Edition** *Server License Only - No CALs* *No Discounts Applied*	$3,999	1	$3,999
C11-00821	**Windows 2000 Server** *Server License Only - No CALs* *Discount Schedule: No Level* *Unit Price reflects a 8% discount from the retail unit price of $799.*	$738	8	$5,904
254-00170	**Visual C++ Standard Edition** *No Discounts Applied*	$109	1	$109
N/A	**Microsoft Problem Resolution Services** *Professional Support* *(1 Incident)*	$245	1	$245

All products are currently orderable through Microsoft's normal distribution channels.

Defect support is included in the purchase price. Additional support is available from Microsoft PSS on an incident by incident basis at $245 per call.

This quote is valid for the next 90 days.

If we can be of any further assistance, please contact Jamie Reding at (425) 703-0510 or jamiere@microsoft.com.