



TPC Benchmark™ C
Full Disclosure Report

NEC Express5800/1320Xc (32 SMP)

**Using Microsoft Windows .NET Server 2003, Datacenter Edition
and Microsoft SQL Server 2000, Enterprise Edition (64-bit)**

First Edition
Submitted for Review
December 12, 2002

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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. NEC 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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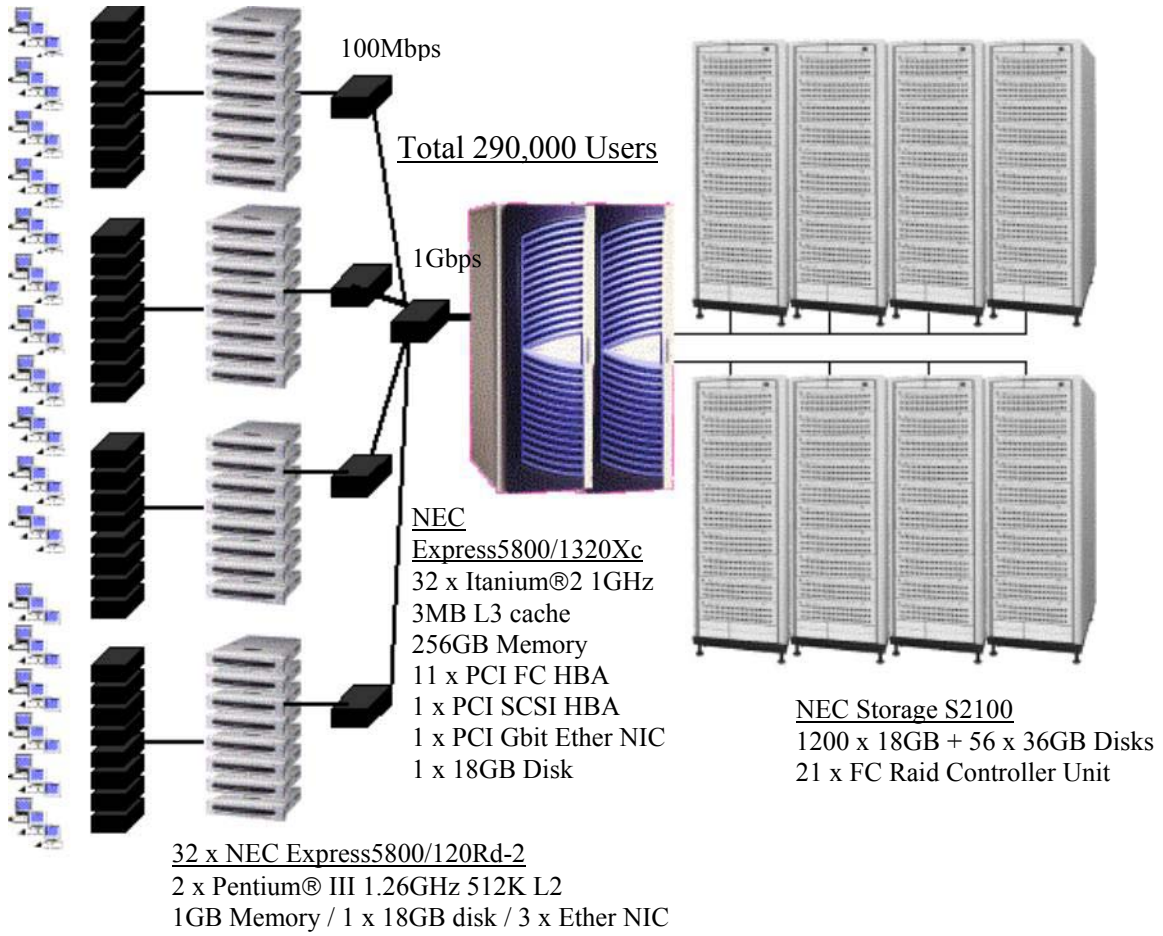


NEC Express5800/1320Xc

C/S with Express5800/120Rd-2

TPC-C Rev.5.0
Reported Date
Dec 12, 2002

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
\$ 4,409,084	342,746.25 tpmC	\$12.86 per tpmC	March 31, 2003
Processors	Database Manager	Operating System	Other Software
32 Intel Itanium®2 1GHz for Server 64 Intel Pentium®III 1.26GHz for Client	Microsoft SQL Server 2000 Enterprise Edition(64-bit)	Microsoft Windows .NET Server 2003 Datacenter Edition	Windows 2000 Server Microsoft VC++ Microsoft COM+
Number of Users			
290,000			



System Component	Server		Each Client	
Processors	32	Itanium®2 1GHz	2	Pentium® III 1.26GHz
Cache		3MB L3 Cache		512KB L2 Cache
Memory		1 GB x 256		512MB x 2
Disk Controllers	11 1	QLA2200F Adaptec 39160	1	On-board SCSI
Disk Drives	1 1200 56	18GB (16.6GB Usable) 18GB (16.6GB Usable) 36GB (33.2GB Usable)	1	18GB
Total Storage		23,634GB		18GB
Others	1 1	DVD-ROM Drive 1Gbps Ether NIC	1 2 1	CD-ROM Drive On-board Ether controller External Ether controller

NEC	NEC Express5800/1320Xc				TPC-C REV 5.0			
	C/S with Express5800/120Rd-2				Report Date:			
					12/12/02			
Description	Part Number	Third Party Brand	Pricing	Unit Price	Qty	Extended Price	3-yr Mnt. Price	
Server Hardware								
Express5800/1320Xc system	050-02170-001	NEC	1	1,396,490	1	1,396,490	983,806	
Base Original 32	Included	NEC	1	-	1	-	-	
Cell Card Original	Included	NEC	1	-	8	-	-	
CPU(1GHz/3MB)	Included	NEC	1	-	32	-	-	
Memory(4GB)	Included	NEC	1	-	64	-	-	
Base PCI Box	Included	NEC	1	-	3	-	-	
Core PCI Box(Windows Model)	Included	NEC	1	-	1	-	-	
PCI Cable(2.5m)	Included	NEC	1	-	6	-	-	
PCI Cable(3.0m)	Included	NEC	1	-	2	-	-	
Expansion Cabinet	Included	NEC	1	-	1	-	-	
18GB 10K rpm HDD	Included	NEC	1	-	1	-	-	
Gbit Ether NIC	Included	NEC	1	-	1	-	-	
Mouse/Keyboard	Included	NEC	1	-	1	-	-	
SCSI HBA with VHDCI cables	Included	NEC	1	-	1	-	-	
Windows .NET Server 2003, Datacenter Edition	Included	NEC	1	-	1	-	-	
NEC AccuSync50 (15" monitor)	AS50	NEC	3	135	1	135	-	
FC HBA QLA2200 (+2 spares)	QLA2200F-CK	Qlogic	3	1,060	13	13,780	-	
FC Cable 10M SC-SC (+2 spares)	050-02059-000	NEC	1	200	3	600	-	
Subtotal						1,411,005	983,806	
Disk Subsystem								
NEC Storage S2100 Basic Unit	050-02055-000	NEC	1	44,021	21	924,441	222,825	
2 RAID_Cntrl, 512MB Cache, 1DE, 3 x 18GB Drive								
1GB(2 x 512MB) PC133 SDRAM memory,	062-02029-000	NEC	1	999	4	3,996	-	
S2100 DE (including 2 FC DB9-DB9 cables)	050-02056-000	NEC	1	6,016	70	421,120	-	
18GB 10k rpm FC HDD (+10% spares)	050-02057-000	NEC	1	450	1254	564,300	-	
36GB 10K rpm FC HDD (+10% spares)	050-02058-000	NEC	1	815	62	50,530	-	
42U Rackframe	050-01790-000	NEC	1	1,799	11	19,789	-	
FC Cable 10M SC-SC (+10% spares)	050-02059-000	NEC	1	200	24	4,800	-	
Subtotal						1,988,976	222,825	
Server Software								
SQL Server2000 Ent. Edition(64-bit) ,Processor License	810-00560	Microsoft	2	16,541	32	529,312	5,850	
Subtotal						529,312	5,850	
Client Hardware								
NEC Express5800/120Rd-2								
Base System with 1 x Pentium III 1.26GHz/512KB	850156001	NEC	1	2,349	32	75,168	-	
1 x Pentium III 1.26GHz/512KB BTO Option	062-02025-000	NEC	1	699	32	22,368	-	
1GB(2 x 512MB) PC133 SDRAM memory,	062-02029-000	NEC	1	999	32	31,968	-	
1 x 18.2GB 10K rpm Ultra160 HDD,	062-02011-000	NEC	1	339	32	10,848	-	
CD-ROM, 2 x On-board LAN, KB/MS	Included	NEC	1	-	32	-	-	
3 years of warranty service to 4-hour response, 7x24	WG-0000-1095-7244	NEC	1	1,399	32	-	44,768	
NEC AccuSync50 (15" monitor)	AS50	NEC	3	135	32	4,320	-	
42U Rackframe	050-01790-000	NEC	1	1,799	2	3,598	-	
Intel PRO/100 S Server Adapter *	PILA8470C3	Intel	3	69	1	69	-	
Intel PRO/100 S Server Adapter, 5-pack *	PILA8470C3PAK5	Intel	3	277	7	1,939	-	
Fast Ether Cable 25' RJ45-RJ45 (+10% spares)	C5E-114GY-25FB	AESP	3	11	110	1,210	-	
Subtotal						151,488	44,768	
Client Software								
Windows2000 Server, Server License	C11-00821	Microsoft	2	738	32	23,616	(Included)	
Visual C++ .NET Standard	254-00170	Microsoft	2	109	1	109	(Included)	
Subtotal						23,725		
User Connectivity								
24-port Fast Ether Switch w/ 2 optional uplink (+2 spare)	AT-8224XL-10	Allied Telesyn	4	649	3	1,947	-	
1-port 1000BASE-SX expansion module (+2 spares)	AT-A15/SX	Allied Telesyn	4	325	3	975	-	
16-port Fast Ether Switch (+2 spares)	AT-FS716	Allied Telesyn	4	115	6	690	-	
Subtotal						3,612	0	
TOTAL						4,108,118	1,257,249	
NEC brand total(Pricing 1-NEC)						3,530,016	1,251,399	
NEC brand Large Purchase Cash Prepay Discount(-20%)						(706,003)	(250,280)	
Notes:						3-Yr. Cost of Ownership: \$4,409,084		
Client software maintenance is covered by the maintenance costs of Microsoft SQL Server						tpmC Rating: 342746.25		
Pricing: 1-NEC 2-Microsoft 3-CDW 4-Allied Telesyn								
* = These include 10% spare for "Intel PRO/100 S Server Adapter"						\$ / tpmC: 12.860		
Results and methodology audited by Francois Raab of InfoSizing, Inc. (www.sizing.com)								
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 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.								

Numerical Quantities Summary

MQTh, Computed Maximum Qualified Throughput

342,746.25 tpmC

<u>Response Times(in seconds)</u>	<u>90%</u>	<u>Average</u>	<u>Maximum</u>
New-Order	3.43	1.69	30.43
Payment	3.36	1.63	26.27
Stock-Level	3.72	1.88	28.92
Delivery(interactive portion)	0.11	0.10	5.25
Delivery(deferred portion)	0.27	0.19	16.03
Order-status	3.46	1.69	28.02
Menu	0.11	0.10	5.29

Response time delay added for emulated components

0.1

Transaction Mix , in percent of total transaction

New-Order	44.85%
Payment	43.06%
Order-Status	4.02%
Delivery	4.04%
Stock-Level	4.03%

<u>Keying/Think Times (in seconds)</u>	<u>Min.</u>		<u>Average</u>		<u>Max</u>	
New-Order	18.00	0.00	18.02	12.07	18.06	120.72
Payment	3.00	0.00	3.02	12.08	3.07	120.72
Order-Status	2.00	0.00	2.02	10.09	2.06	100.71
Delivery	2.00	0.00	2.02	5.08	2.06	50.71
Stock-Level	2.00	0.00	2.02	5.06	2.06	50.71

Test Duration

Ramp-up time	60 minutes
Measurement interval	120 minutes
Number of checkpoints	4
Checkpoint interval	30 minutes
Number of transactions (all types) completed in measurement interval	95,419,807

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Abstract

This report documents the compliance of NEC Corporation's TPC Benchmark™ C tests on the NEC Express5800/1320Xc client/server system with version 5.0 of the TPC Benchmark C Standard Specification. 32 Clients (NEC Express5800/120Rd-2) were used as the front-end clients.

The operating system and the DBMS used on the server were Microsoft Windows .NET Server 2003, Datacenter Edition and Microsoft SQL Server 2000, Enterprise Edition(64-bit). The operating system on the clients was Microsoft Windows 2000 Server SP2. Those clients ran Microsoft's IIS server 5.0 and COM+.

Two standard metrics, transaction-per-minute-C(tpmC) and price per tpmC(\$/tpmC) are reported, in accordance with the TPC Benchmark™ C Standard. The independent auditor's report by Francois Raab appears at the end of this report.

TPC Benchmark™ C Metrics

The standard TPC Benchmark™ C metrics, tpmC (transactions per minute), price per tpmC (three year capital cost per measured tpmC) are reported.

System	SW	Total System Cost	TpmC	\$ per tpmC	Availability Date
NEC Express5800 /1320Xc	MS Windows .NET Server 2003 Datacenter Edition MS SQL Server 2000, Enterprise Edition(64-bit)	\$4,409,084	342,756.25	\$12.86	March 31, 2003

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 Francois Raab of Info Sizing Inc. to verify compliance with the relevant TPC specifications.

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 5.0.

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.

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 benchmark when critical capacity planning and/or product evaluation decisions are contemplated.

Document Structure

This TPC Benchmark™ C Full Disclosure Report is organized as follows:

- The main body of the document lists each item in Clause 8 of the TPC-C Standard and explains how each requirement is satisfied.
- Appendix A contains the source code of the TPC-C application code used to implement the TPC-C transactions.
- Appendix B contains the database definition and population code used in the tests.
- Appendix C contains the tunable parameters used in the TPC-C tests.
- Appendix D contains space calculation table.
- Appendix E contains third-party price quotations.

TPC Benchmark™ C Full Disclosure

The TPC Benchmark™ C Standard Specification requires test sponsors to publish, and make available to the public, a full disclosure report for the results to be considered compliant with the Standard. The required contents of the full disclosure report are specified in Clause 8. This report is intended to satisfy the Standard's requirement for full disclosure. It documents the compliance of the benchmark tests with each item listed in Clause 8 of the TPC Benchmark™ C Standard Specification.

In the Standard Specification, the main headings in Clause 8 are keyed to the other clauses. The headings in this report use the same sequence, so that they correspond to the titles or subjects referred to in Clause 8.

Each section in this report begins with the text of the corresponding item from Clause 8 of the Standard Specification, printed in italic type. The plain text that follows explains how the tests comply with the TPC Benchmark™ C requirement. In sections where Clause 8 requires extensive listings, the section refers to the appropriate appendix at the end of this report.

General Items

Order and titles

The order and titles of sections in the Test Sponsor's Full Disclosure report must correspond with the order and titles of sections from the TPC-C standard specification (i.e., this document). The intent is to make it as easy as possible for readers to compare and contrast material in different Full Disclosure reports.

The order and titles of sections in this report correspond with that of the TPC-C standard specification.

Summary Statement

The TPC Executive Summary Statement must be included near the beginning of the Full Disclosure report.

The TPC Executive Summary Statement is included at the beginning of this report.

Numerical Quantities Summary

The numerical quantities listed below must be summarized near the beginning of the Full Disclosure report :

- *measurement interval in minutes,*
- *number of checkpoints in the measurement interval,*
- *checkpoint interval in minutes,*
- *number of transactions (all types) completed within the measurement interval,*
- *computed maximum Qualified Throughput in tpmC,*
- *ninetieth percentile, average and maximum response times for the New-Order, Payment, Order-Status, Stock-Level, Delivery (deferred and interactive) and Menu transactions,*
- *time in seconds added to response time to compensate for delays associated with emulated components,*
- *percentage of transaction mix for each transaction type.*

These numerical quantities are summarized at the beginning of this report.

Application Program

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

Appendix A contains the application source codes used in the TPC-C benchmark.

Sponsor

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

This benchmark test was sponsored by NEC Corporation . NEC has authorized NEC Corp. to publish TPC-C performance and price/performance results for the NEC Express5800/1320Xc. Price quotations contained in Appendix E correspond to the NEC Express5800/1320Xc server.

Parameters and Options

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

- *Database tuning options.*
- *Recovery/commit options.*
- *Consistency/locking options.*
- *Operating system and application configuration parameters.*
- *Compilation and linkage options and run-time optimizations used to create/install applications, OS, and/or databases.*

Appendix C contains the tunable parameters used in the TPC-C tests.

Configuration Diagrams

Diagrams of both measured and priced configurations must be provided, accompanied by a description of the differences. This includes, but is not limited to:

- *Number and type of processors*
- *Size of allocated memory, and any specific mapping/partitioning of memory unique to the test.*
- *Number and type of disk units (and controllers, if applicable).*
- *Number of channels or bus connections to disk units, including their protocol type.*
- *Number of LAN (e.g., Ethernet) connections, including routers, workstations, terminals, etc., that were physically used in the test or are incorporated into the pricing structure (see Clause 8.1.8).*
- *Type and the run-time execution location of software components (e.g., DBMS, client processes, transaction monitors, software drivers, etc.).*

Figure 1.1 shows the measured configuration diagram.

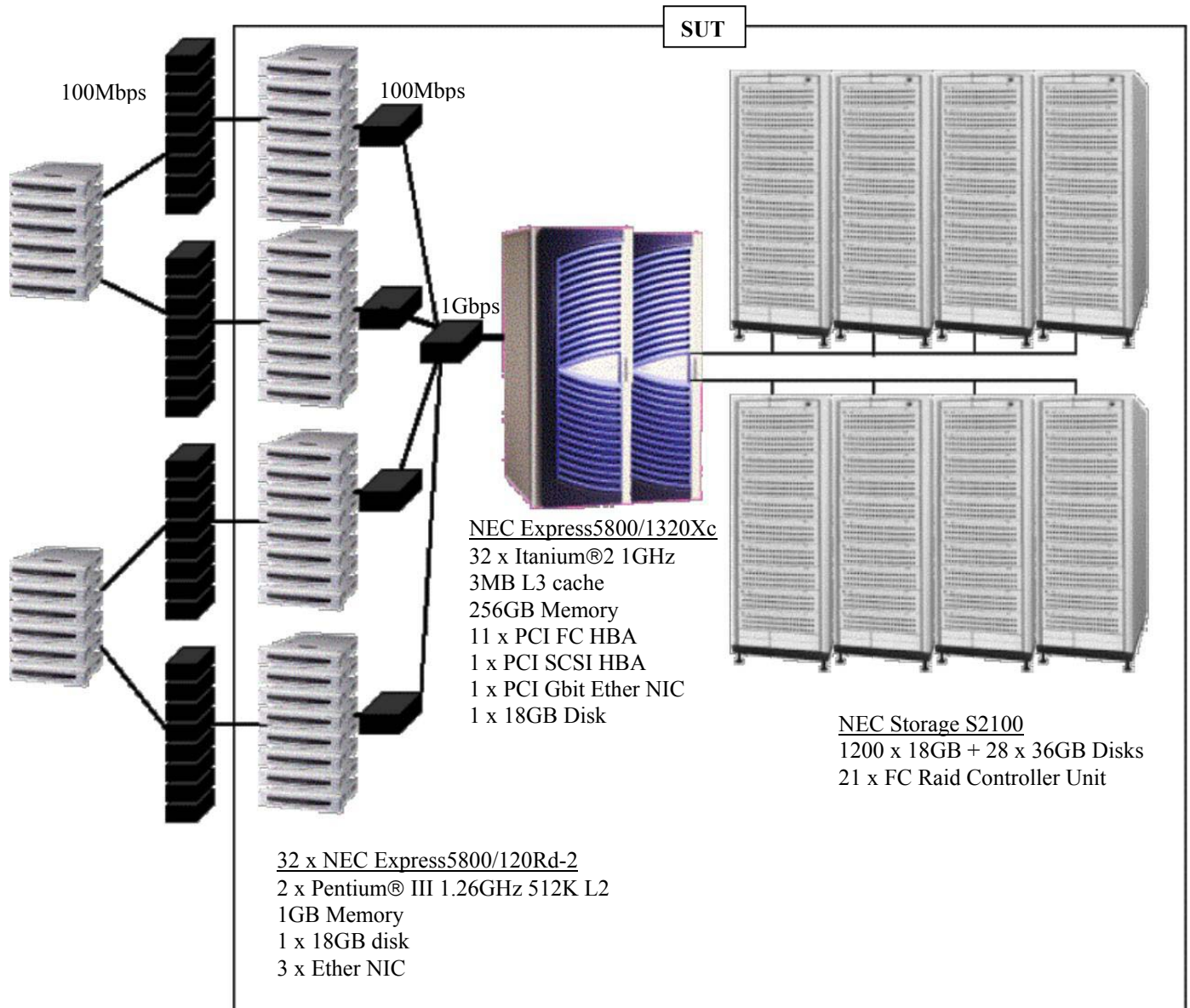
Figure 1.2 shows the priced configuration diagram.

Measured Configuration

The following figure represents the measured configuration. The benchmark system used a remote terminal emulator(RTE) to initiate transactions and measure response times of transactions, as well as record various data for each transaction.

Figure 1.1 Express5800/1320Xc, Measured Configuration Diagram

16 RTEs emulating 290,000 users

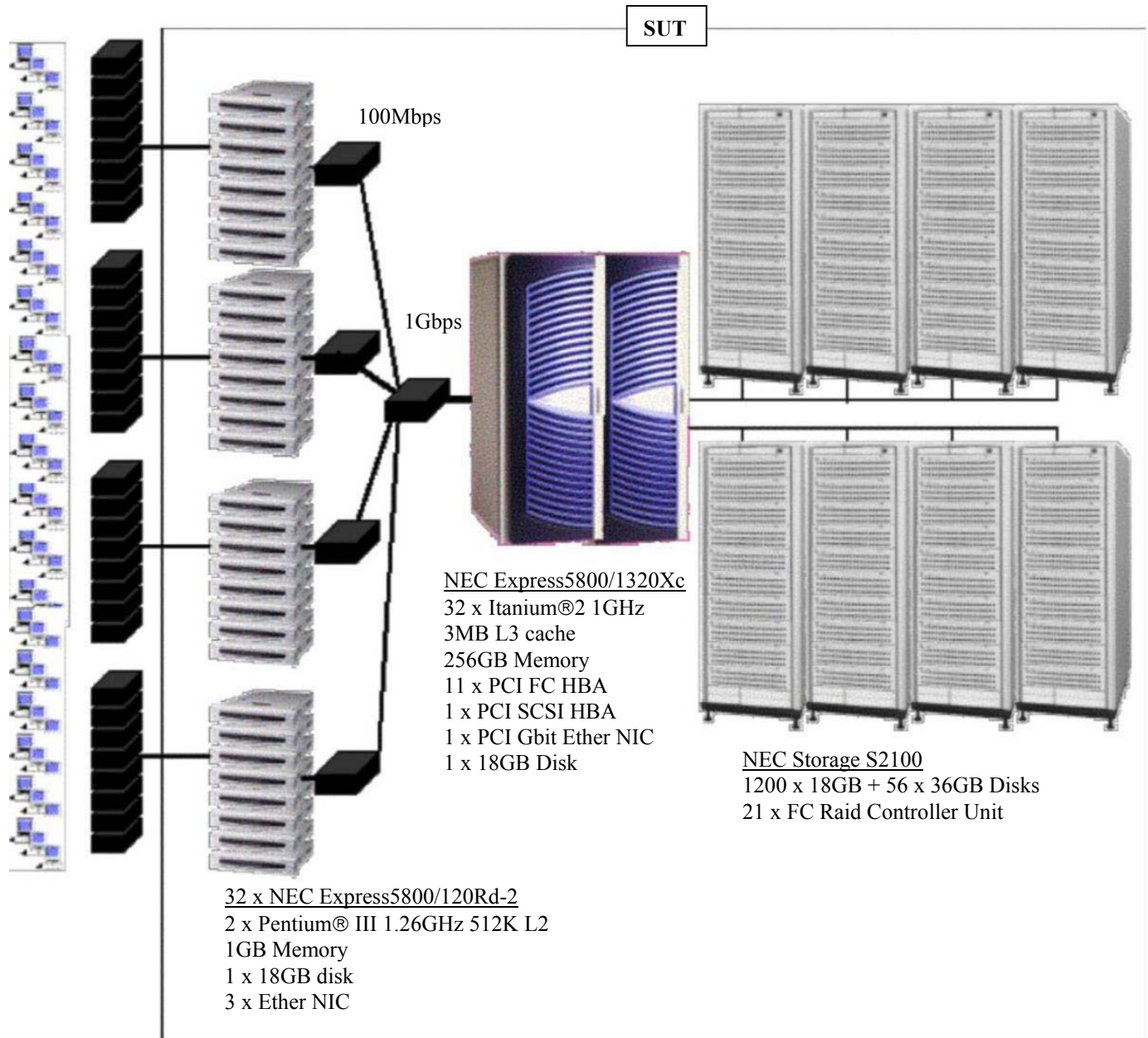


Priced System Configuration

The following figure depicts the priced system, whose cost determines the normalized price per tpmC reported for the test.

Figure1.2: Express5800/1320Xc, Priced Configuration Diagram

Total 290,000 Users



Clause 1 : Logical Database Design and Related Items

Table Definitions

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

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

Table Organization

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

Appendix B contains the code used to define the physical organization of tables and indices

Insert and Delete Operations

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

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

Disclosure of Partitioning

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

Partitioning was not used on any table in this benchmark.

Replication of Tables

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

No tables were replicated in this benchmark test.

Additional and/or Duplicated Attributes in any Table

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

No duplications or additional attributes were used in this benchmark.

Clause 2 : Transaction and Terminal profiles Related Items

Random Number Generation

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

Random numbers were generated internally by the Microsoft BenchCraft RTE program which was already audited independently.

Terminal Input/Output Screen Layout

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

All screen layouts followed the specifications exactly.

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).

Each of five transaction types was tested by the auditor. The auditor verified that all the features specified in Clause 2.2.2.4 were provided.

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 applications is listed in Appendix A.

Transaction Profiles

- . *The percentage of home and remote order-lines in the New-Order transactions must be disclosed.*
- . *The percentage of New-Order transactions that were rolled back as a result of an unused item number must be disclosed.*
- . *The number of items per orders entered by New-Order transactions must be disclosed.*
- . *The percentage of home and remote Payment transactions must be disclosed.*
- . *The percentage of Payment and Order-Status transactions that used non-primary key (C_LAST) access to the database must be disclosed.*
- . *The percentage of Delivery transactions that were skipped as a result of an insufficient number of rows in the NEW-ORDER table must be disclosed.*

Table 1 shows the numerical quantities required by Clause 8.1.3.5 through 8.1.3.10.

Transaction Mix

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

Table 1 shows the mix of transaction types seen by the SUT during the reported measurement interval.

Following table summarizes the data required for disclosure in Clause 8.1.3.5 through 8.1.3.11

Table 1 Transaction Statistics

Statistic		Value
New Order	Home warehouse order lines	99.00%
	Remote warehouse order lines	1.00%
	Rolled back transactions	1.00%
	Average items per order	10.00
Payment	Home warehouse payments	85.01%
	Remote warehouse payments	14.99%
	Accessed by last name	60.00%
Order Status	Accessed by last name	60.17%
Delivery	Skipped deliveries	0
Transaction Mix	New Order	44.85%
	Payment	43.06%
	Order Status	4.02%
	Delivery	4.04%
	Stock Level	4.03%

Queuing Mechanism

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

The client application processes submitted delivery transactions to named pipe delivery server software running on the client machines. There was a single delivery server with multiple execution threads running on each client machine. These delivery servers were responsible for processing deliveries queued to the named pipe and submitting them to the database server.

The source code is listed in Appendix A.

Clause 3 : Transaction and System Properties 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.

The TPC Benchmark™ C Standard Specification defines a set of transaction processing system properties that a system under test (SUT) must support during the execution of the benchmark. Those properties are Atomicity, Consistency, Isolation and Durability (ACID). This section quotes the specification definition of each of those properties and describes the tests done as specified and monitored by the auditor , to demonstrate compliance.

Atomicity Tests

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

Completed Transactions

Perform the Payment transaction for a randomly selected warehouse, district and customer (by customer number as specified in Clause 2.5.1.2) and verify that the records in the CUSTOMER, DISTRICT and WAREHOUSE tables have been changed appropriately.

The value of w_ytd, d_ytd, c_balance, c_ytd_payment and c_payment_cnt of a randomly selected warehouse, district, and customer were retrieved. The Payment transaction was executed on the same warehouse, district, and customer. The transaction was committed. The values w_ytd, d_ytd, c_balance, c_ytd_payment, and c_payment_cnt were retrieved again. It was verified that all values had been changed appropriately.

Aborted Transactions

Perform the Payment transaction for a randomly selected warehouse, district and customer (by customer number as specified in Clause 2.5.1.2) and substitute a ROLLBACK of the transaction for the COMMIT of the transaction. Verify that the records in CUSTOMER, DISTRICT and WAREHOUSE tables have Not been changed.

The value of w_ytd, d_ytd, c_balance, c_ytd_payment and c_payment_cnt of randomly selected warehouse , district, and customer were retrieved. The Payment transaction was executed on the same warehouse, district, and customer. The transaction was rolled back. The values of w_ytd, d_ytd, c_balance, c_ytd_payment, c_payment_cnt were retrieved again. It was verified that none of the values had changed.

Consistency Tests

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 over 50 minutes under 145000 users (14500 active warehouse) condition . A checkpoint generated in the test. The shell script of consistency was executed before and after the run. The result of the same queries verified that the database remained consistent after the run.

Isolation Tests

Sufficient conditions must be enabled at either the system or application level to ensure the required isolation level 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 to demonstrate the required isolation had been met.

Case A was followed for Isolation Test 7, 8 and 9.

Durability Tests

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

- *Permanent irrecoverable failure of any single durable medium containing TPC-C database tables or recovery log data.*
- *Instantaneous interruption(system crash/system hang) in processing which requires system re-boot to recover.*
- *Failure of all or part of memory(loss of contents)*

Loss of Memory and Log

Because the loss of power erases the contents of memory, both of instantaneous interruption and loss of memory were combined into a single test.

The following steps were performed on a database of 29,000 warehouses under the full load of users.

1. A sum of D_NEXT_O_ID of all rows in the district table was taken.
2. 290,000 users were logged in to the database and start transactions.
3. Waited for all emulated users to be activated and the number of TpmC exceed 90% of reported TpmC.
4. Removed one of mirrored log disk. The running continued without any interruptions.
5. Keep running more 5 minutes.
6. The system was powered off.
7. The RTE was shutted down.
8. The system was powered up. SQL Server was restarted and automatically recovered.
9. A new count of D_NEXT_O_ID was taken.
10. This number was compared with the number of new orders reported by the RTE.

Loss of Data

Loss of data was demonstrated on a 2,900 Warehouse database. The standard driving mechanism was used to generate the transaction load of 29,000 users for the test. To demonstrate recovery from a permanent failure of durable media containing TPC-C tables, the following steps were performed. The loss of log was combined into the test

1. A 2,900 Warehouse database was built having similar characteristics to the large database.
2. The database was backed up using SQL Server backup facilities.
3. A sum of D_NEXT_O_ID was taken.
4. 29,000 users were logged in to the database and kept running transactions about 5 minutes in steady state.
5. One disk drive for data part in the array was removed causing SQL Server error. Shut down SQL Server.
6. SQL Server was restarted and a dump of the transaction log was taken.
7. The 2,900 Warehouse database was restored from backup.
8. The transaction log was restored and transactions rolled forward.
9. A new count of D_NEXT_O_ID was taken.
10. This number was compared with the number of new orders reported by the RTE.

Loss of mirrored write-back cache

The Fibre Array system used for this benchmark has integrated feature of mirrored write-back cache. When a LUN is configured to enable write-back caching, the data on the cache is automatically mirrored on the RAMs in two controller modules, which are powered and protected from loss of power by the controller BBU. Loss of write-back cache was demonstrated on 2,900 warehouse database, by pulling off one of the controller module. A fully scaled database would also pass this test.

1. A sum of D_NEXT_O_ID of all rows in the district table was taken.
2. 29,000 users were logged in to the database and kept running transactions about 5 minutes in steady state.
3. A controller module, which manages write-back cache of mirrored drives, was pulled off.
4. Fibre system reported system error resulted in IO error for SQL database.
5. Contents on mirrored cache on another controller was automatically saved to temporal disk area and the Fibre Array house was eventually stopped. System was shut down.
6. The Fibre array was re-powered.
7. Saved data was automatically restored to mirrored cache and flushed to drives.
8. SQL Server was started up and database was recovered automatically.

9. A new count of D_NEXT_O_ID was taken.
10. This number was compared with the number of new orders reported by the RTE.

Clause 4 : Scaling and Database Population Related Items

Initial Cardinality of Tables

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

The TPC-C database was originally built with 29,000 warehouses.

Table 2 Number of Rows for Server

Table	Cardinality as benchmarked
Warehouse	29,000
District	290,000
Customer	870,000,000
History	870,000,000
Orders	870,000,000
New Order	261,000,000
Order Line	8,699,958,798
Stock	2,900,000,000
Item	100,000
Deleted Warehouse Rows	0

Constant Value for the NURand function

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

C_LAST (Build)	123
C_LAST (RUN)	233

Distribution of Tables and Logs

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

Table 3 depicts the distribution of the database over the disks of the tested and priced system.

Figure 1.1, 1.2 shows the disk configuration for measured and priced system.

Table 3 : Data Distribution

HBA#	storage system#	SP#	DEU#	# of Disks	RAID Level	Capacity (GB)	Partition1	Partition2	Partition3	Partition4
Partitions for DB Log							Logfiles (raw)	Junction point (NTFS)		
0	0	0	0	14	1/0	233.01	z:\dev\log (200GB)	Z: (33.01GB)		
				1	1/0	233.01	z:\dev\log2 (200GB)	unused (33.01GB)		
				2	1/0	233.01	Not included in tested configuration			
				3	1/0	233.01	Not included in tested configuration			

Partitions for DB Data							misc fg (raw)	cs fg (raw)	freespace	backup file (NTFS)	
1	1	0	0	15	0	249.45	z:\dev\m001 (15GB)	z:\dev\c001 (30GB)	(30GB)	z:\dev\lb001 (174.45GB)	
				1	0	249.45	z:\dev\m002 (15GB)	z:\dev\c002 (30GB)	(30GB)	z:\dev\lb002 (174.45GB)	
				2	0	249.45	z:\dev\m003 (15GB)	z:\dev\c003 (30GB)	(30GB)	z:\dev\lb003 (174.45GB)	
				3	0	249.45	z:\dev\m004 (15GB)	z:\dev\c004 (30GB)	(30GB)	z:\dev\lb004 (174.45GB)	
	2	0	0	0	15	0	249.45	z:\dev\m005 (15GB)	z:\dev\c005 (30GB)	(30GB)	z:\dev\lb005 (174.45GB)
					1	0	249.45	z:\dev\m006 (15GB)	z:\dev\c006 (30GB)	(30GB)	z:\dev\lb006 (174.45GB)
					2	0	249.45	z:\dev\m007 (15GB)	z:\dev\c007 (30GB)	(30GB)	z:\dev\lb007 (174.45GB)
					3	0	249.45	z:\dev\m008 (15GB)	z:\dev\c008 (30GB)	(30GB)	z:\dev\lb008 (174.45GB)
	2	3	0	0	15	0	249.45	z:\dev\m009 (15GB)	z:\dev\c009 (30GB)	(30GB)	z:\dev\lb009 (174.45GB)
					1	0	249.45	z:\dev\m010 (15GB)	z:\dev\c010 (30GB)	(30GB)	z:\dev\lb010 (174.45GB)
					2	0	249.45	z:\dev\m011 (15GB)	z:\dev\c011 (30GB)	(30GB)	z:\dev\lb011 (174.45GB)
					3	0	249.45	z:\dev\m012 (15GB)	z:\dev\c012 (30GB)	(30GB)	z:\dev\lb012 (174.45GB)
4		0	0	0	15	0	249.45	z:\dev\m013 (15GB)	z:\dev\c013 (30GB)	(30GB)	z:\dev\lb013 (174.45GB)
					1	0	249.45	z:\dev\m014 (15GB)	z:\dev\c014 (30GB)	(30GB)	z:\dev\lb014 (174.45GB)
					2	0	249.45	z:\dev\m015 (15GB)	z:\dev\c015 (30GB)	(30GB)	z:\dev\lb015 (174.45GB)
					3	0	249.45	z:\dev\m016 (15GB)	z:\dev\c016 (30GB)	(30GB)	z:\dev\lb016 (174.45GB)
3	5	0	0	15	0	249.45	z:\dev\m017 (15GB)	z:\dev\c017 (30GB)	(30GB)	z:\dev\lb017 (174.45GB)	
				1	0	249.45	z:\dev\m018 (15GB)	z:\dev\c018 (30GB)	(30GB)	z:\dev\lb018 (174.45GB)	
				2	0	249.45	z:\dev\m019 (15GB)	z:\dev\c019 (30GB)	(30GB)	z:\dev\lb019 (174.45GB)	
				3	0	249.45	z:\dev\m020 (15GB)	z:\dev\c020 (30GB)	(30GB)	z:\dev\lb020 (174.45GB)	
	6	0	0	0	15	0	249.45	z:\dev\m021 (15GB)	z:\dev\c021 (30GB)	(30GB)	z:\dev\lb021 (174.45GB)
					1	0	249.45	z:\dev\m022 (15GB)	z:\dev\c022 (30GB)	(30GB)	z:\dev\lb022 (174.45GB)
					2	0	249.45	z:\dev\m023 (15GB)	z:\dev\c023 (30GB)	(30GB)	z:\dev\lb023 (174.45GB)
					3	0	249.45	z:\dev\m024 (15GB)	z:\dev\c024 (30GB)	(30GB)	z:\dev\lb024 (174.45GB)
4	7	0	0	15	0	249.45	z:\dev\m025 (15GB)	z:\dev\c025 (30GB)	(30GB)	z:\dev\lb025 (174.45GB)	
				1	0	249.45	z:\dev\m026 (15GB)	z:\dev\c026 (30GB)	(30GB)	z:\dev\lb026 (174.45GB)	
				2	0	249.45	z:\dev\m027 (15GB)	z:\dev\c027 (30GB)	(30GB)	z:\dev\lb027 (174.45GB)	
				3	0	249.45	z:\dev\m028 (15GB)	z:\dev\c028 (30GB)	(30GB)	z:\dev\lb028 (174.45GB)	
	8	0	0	0	15	0	249.45	z:\dev\m029 (15GB)	z:\dev\c029 (30GB)	(30GB)	z:\dev\lb029 (174.45GB)
					1	0	249.45	z:\dev\m030 (15GB)	z:\dev\c030 (30GB)	(30GB)	z:\dev\lb030 (174.45GB)
					2	0	249.45	z:\dev\m031 (15GB)	z:\dev\c031 (30GB)	(30GB)	z:\dev\lb031 (174.45GB)
					3	0	249.45	z:\dev\m032 (15GB)	z:\dev\c032 (30GB)	(30GB)	z:\dev\lb032 (174.45GB)
5	9	0	0	15	0	249.45	z:\dev\m033 (15GB)	z:\dev\c033 (30GB)	(30GB)	z:\dev\lb033 (174.45GB)	
				1	0	249.45	z:\dev\m034 (15GB)	z:\dev\c034 (30GB)	(30GB)	z:\dev\lb034 (174.45GB)	
				2	0	249.45	z:\dev\m035 (15GB)	z:\dev\c035 (30GB)	(30GB)	z:\dev\lb035 (174.45GB)	
				3	0	249.45	z:\dev\m036 (15GB)	z:\dev\c036 (30GB)	(30GB)	z:\dev\lb036 (174.45GB)	
	10	0	0	0	15	0	249.45	z:\dev\m037 (15GB)	z:\dev\c037 (30GB)	(30GB)	z:\dev\lb037 (174.45GB)
					1	0	249.45	z:\dev\m038 (15GB)	z:\dev\c038 (30GB)	(30GB)	z:\dev\lb038 (174.45GB)
					2	0	249.45	z:\dev\m039 (15GB)	z:\dev\c039 (30GB)	(30GB)	z:\dev\lb039 (174.45GB)
					3	0	249.45	z:\dev\m040 (15GB)	z:\dev\c040 (30GB)	(30GB)	z:\dev\lb040 (174.45GB)

6	11	0	0	15	0	249.45	z:\dev\m041 (15GB)	z:\dev\c041 (30GB)	(30GB)	z:\dev\b041 (174.45GB)
			1	15	0	249.45	z:\dev\m042 (15GB)	z:\dev\c042 (30GB)	(30GB)	z:\dev\b042 (174.45GB)
			2	15	0	249.45	z:\dev\m043 (15GB)	z:\dev\c043 (30GB)	(30GB)	z:\dev\b043 (174.45GB)
			3	15	0	249.45	z:\dev\m044 (15GB)	z:\dev\c044 (30GB)	(30GB)	z:\dev\b044 (174.45GB)
	12	0	0	15	0	249.45	z:\dev\m045 (15GB)	z:\dev\c045 (30GB)	(30GB)	z:\dev\b045 (174.45GB)
			1	15	0	249.45	z:\dev\m046 (15GB)	z:\dev\c046 (30GB)	(30GB)	z:\dev\b046 (174.45GB)
			2	15	0	249.45	z:\dev\m047 (15GB)	z:\dev\c047 (30GB)	(30GB)	z:\dev\b047 (174.45GB)
			3	15	0	249.45	z:\dev\m048 (15GB)	z:\dev\c048 (30GB)	(30GB)	z:\dev\b048 (174.45GB)
7	13	0	0	15	0	249.45	z:\dev\m049 (15GB)	z:\dev\c049 (30GB)	(30GB)	z:\dev\b049 (174.45GB)
			1	15	0	249.45	z:\dev\m050 (15GB)	z:\dev\c050 (30GB)	(30GB)	z:\dev\b050 (174.45GB)
			2	15	0	249.45	z:\dev\m051 (15GB)	z:\dev\c051 (30GB)	(30GB)	z:\dev\b051 (174.45GB)
			3	15	0	249.45	z:\dev\m052 (15GB)	z:\dev\c052 (30GB)	(30GB)	z:\dev\b052 (174.45GB)
	14	0	0	15	0	249.45	z:\dev\m053 (15GB)	z:\dev\c053 (30GB)	(30GB)	z:\dev\b053 (174.45GB)
			1	15	0	249.45	z:\dev\m054 (15GB)	z:\dev\c054 (30GB)	(30GB)	z:\dev\b054 (174.45GB)
			2	15	0	249.45	z:\dev\m055 (15GB)	z:\dev\c055 (30GB)	(30GB)	z:\dev\b055 (174.45GB)
			3	15	0	249.45	z:\dev\m056 (15GB)	z:\dev\c056 (30GB)	(30GB)	z:\dev\b056 (174.45GB)
8	15	0	0	15	0	249.45	z:\dev\m057 (15GB)	z:\dev\c057 (30GB)	(30GB)	z:\dev\b057 (174.45GB)
			1	15	0	249.45	z:\dev\m058 (15GB)	z:\dev\c058 (30GB)	(30GB)	z:\dev\b058 (174.45GB)
			2	15	0	249.45	z:\dev\m059 (15GB)	z:\dev\c059 (30GB)	(30GB)	z:\dev\b059 (174.45GB)
			3	15	0	249.45	z:\dev\m060 (15GB)	z:\dev\c060 (30GB)	(30GB)	z:\dev\b060 (174.45GB)
	16	0	0	15	0	249.45	z:\dev\m061 (15GB)	z:\dev\c061 (30GB)	(30GB)	z:\dev\b061 (174.45GB)
			1	15	0	249.45	z:\dev\m062 (15GB)	z:\dev\c062 (30GB)	(30GB)	z:\dev\b062 (174.45GB)
			2	15	0	249.45	z:\dev\m063 (15GB)	z:\dev\c063 (30GB)	(30GB)	z:\dev\b063 (174.45GB)
			3	15	0	249.45	z:\dev\m064 (15GB)	z:\dev\c064 (30GB)	(30GB)	z:\dev\b064 (174.45GB)
9	17	0	0	15	0	249.45	z:\dev\m065 (15GB)	z:\dev\c065 (30GB)	(30GB)	z:\dev\b065 (174.45GB)
			1	15	0	249.45	z:\dev\m066 (15GB)	z:\dev\c066 (30GB)	(30GB)	z:\dev\b066 (174.45GB)
			2	15	0	249.45	z:\dev\m067 (15GB)	z:\dev\c067 (30GB)	(30GB)	z:\dev\b067 (174.45GB)
			3	15	0	249.45	z:\dev\m068 (15GB)	z:\dev\c068 (30GB)	(30GB)	z:\dev\b068 (174.45GB)
	18	0	0	15	0	249.45	z:\dev\m069 (15GB)	z:\dev\c069 (30GB)	(30GB)	z:\dev\b069 (174.45GB)
			1	15	0	249.45	z:\dev\m070 (15GB)	z:\dev\c070 (30GB)	(30GB)	z:\dev\b070 (174.45GB)
			2	15	0	249.45	z:\dev\m071 (15GB)	z:\dev\c071 (30GB)	(30GB)	z:\dev\b071 (174.45GB)
			3	15	0	249.45	z:\dev\m072 (15GB)	z:\dev\c072 (30GB)	(30GB)	z:\dev\b072 (174.45GB)
10	19	0	0	15	0	249.45	z:\dev\m073 (15GB)	z:\dev\c073 (30GB)	(30GB)	z:\dev\b073 (174.45GB)
			1	15	0	249.45	z:\dev\m074 (15GB)	z:\dev\c074 (30GB)	(30GB)	z:\dev\b074 (174.45GB)
			2	15	0	249.45	z:\dev\m075 (15GB)	z:\dev\c075 (30GB)	(30GB)	z:\dev\b075 (174.45GB)
			3	15	0	249.45	z:\dev\m076 (15GB)	z:\dev\c076 (30GB)	(30GB)	z:\dev\b076 (174.45GB)
	20	0	0	15	0	249.45	z:\dev\m077 (15GB)	z:\dev\c077 (30GB)	(30GB)	z:\dev\b077 (174.45GB)
			1	15	0	249.45	z:\dev\m078 (15GB)	z:\dev\c078 (30GB)	(30GB)	z:\dev\b078 (174.45GB)
			2	15	0	249.45	z:\dev\m079 (15GB)	z:\dev\c079 (30GB)	(30GB)	z:\dev\b079 (174.45GB)
			3	15	0	249.45	z:\dev\m080 (15GB)	z:\dev\c080 (30GB)	(30GB)	z:\dev\b080 (174.45GB)

Type of Database

A statement must be provided that describes:

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

Microsoft SQL Server, a relational database, was used in this benchmark. SQL Server stored procedures were used and invoked through DB-Library function calls embedded in C code.

Database Mapping

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

No partitioning or replication was used.

60-Days 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 (see Clause 4.2.3).

The detail of 60-day space calculation is shown in Appendix D.

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

1. The free space on the log file was queried using *DBCC sqlperf(logspace)*.
2. Transactions were run against the database with a full load of users.
3. The free space was again queried using *DBCC sqlperf(logspace)*.
4. The space used was calculated as the difference between the first and second query.
5. The number of NEW-ORDERS was verified from an RTE report covering the entire run.
6. The space used was divided by the number of NEW-ORDERS giving a spaceused per NEW-ORDER transaction.
7. The space used per transaction was multiplied by the measured tpmC rate times 480 minutes.

The results of the above steps yielded a requirement of 731.82 GB of logspace (i.e., 1,463.64 GB of mirrored transaction log volume) to be available to sustain 8 hours. Total space of priced disks for the transaction log volume was 1,864.07 GB. It indicates that enough storage was configured to sustain 8 hours of growth.

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

Clause 5 : Performance Metrics and Response Time Related Items

Throughput

Measured tpmC must be reported

Table 4 : Measured tpmC

342,746.25tpmC

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 : Response Times (in seconds)

Type	Average	Maximum	90 th %
New-Order	1.69	30.43	3.43
Payment	1.63	26.27	3.36
Stock Level	1.88	28.92	3.72
Interactive Delivery	0.10	5.25	0.11
Deferred Delivery	0.19	16.03	0.27
Order Status	1.69	28.02	3.46
Menu	0.10	5.29	0.11

Keying and Think Times

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

Table 6 : Keying Times

Type	Minimum	Average	Maximum
New-Order	18.00	18.02	18.06
Payment	3.00	3.02	3.07
Stock Level	2.00	2.02	2.06
Interactive Delivery	2.00	2.02	2.06
Order Status	2.00	2.02	2.06

Table 7 : Think Times

Type	Minimum	Average	Maximum
New-Order	0.00	12.07	120.72
Payment	0.00	12.08	120.72
Stock Level	0.00	5.06	50.71
Interactive Delivery	0.00	5.08	50.71
Order Status	0.00	10.09	100.71

Response Time Frequency Distribution Curves

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

Figure 2.1 : New-Order Response Time Distribution

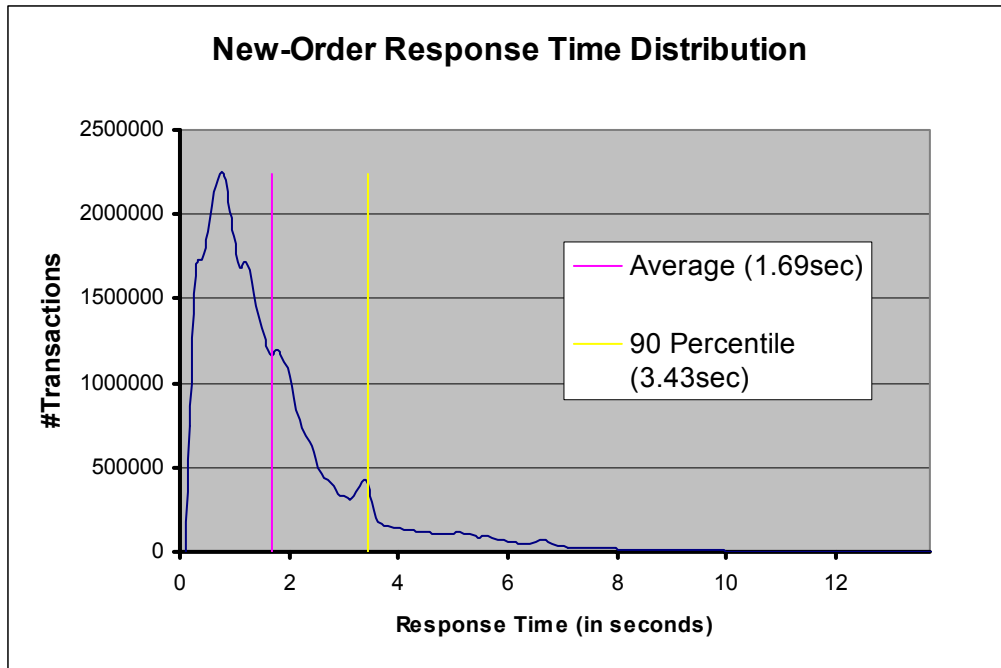


Figure 2.2 : Payment Response Time Distribution

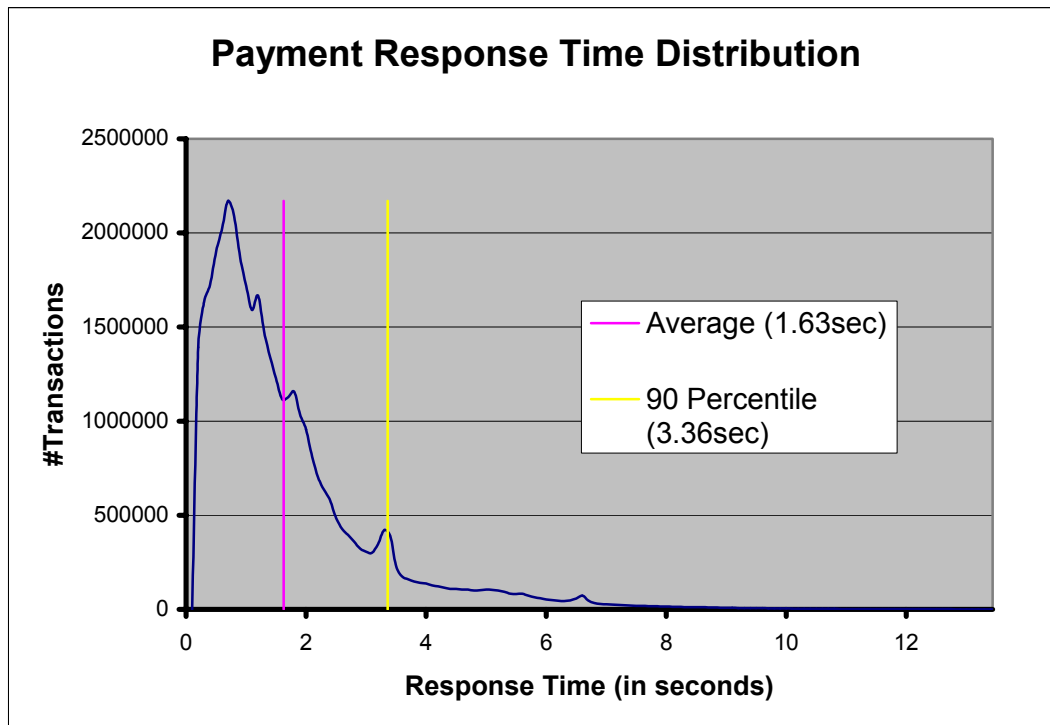


Figure 2.3 : Order-Status Response Time Distribution

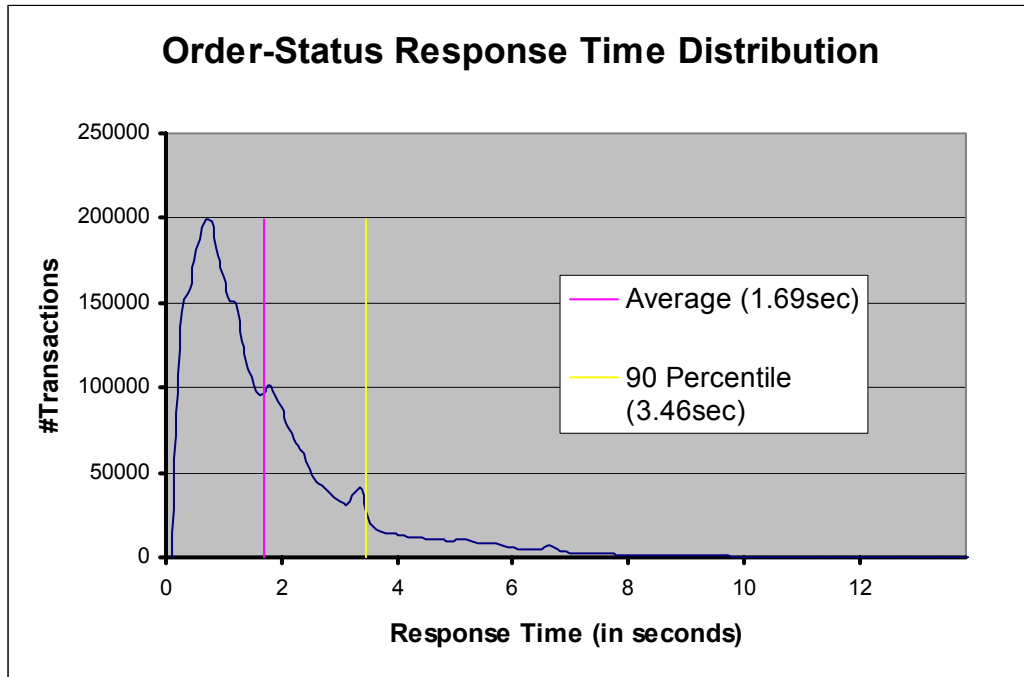


Figure 2.4 : Delivery Response Time Distribution

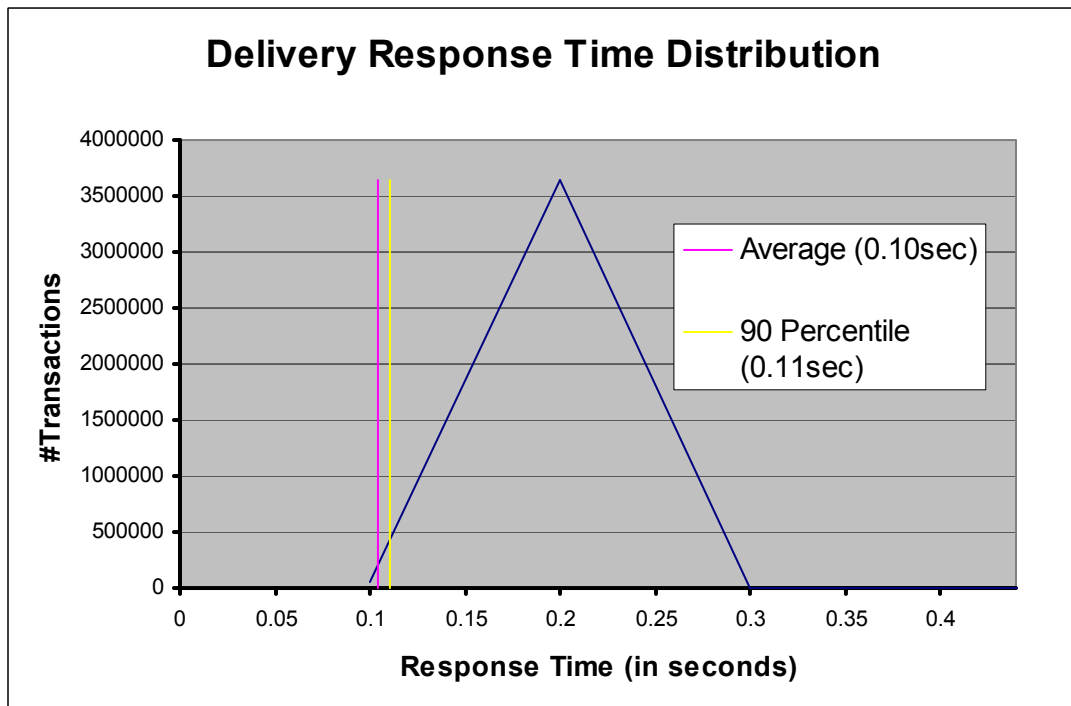
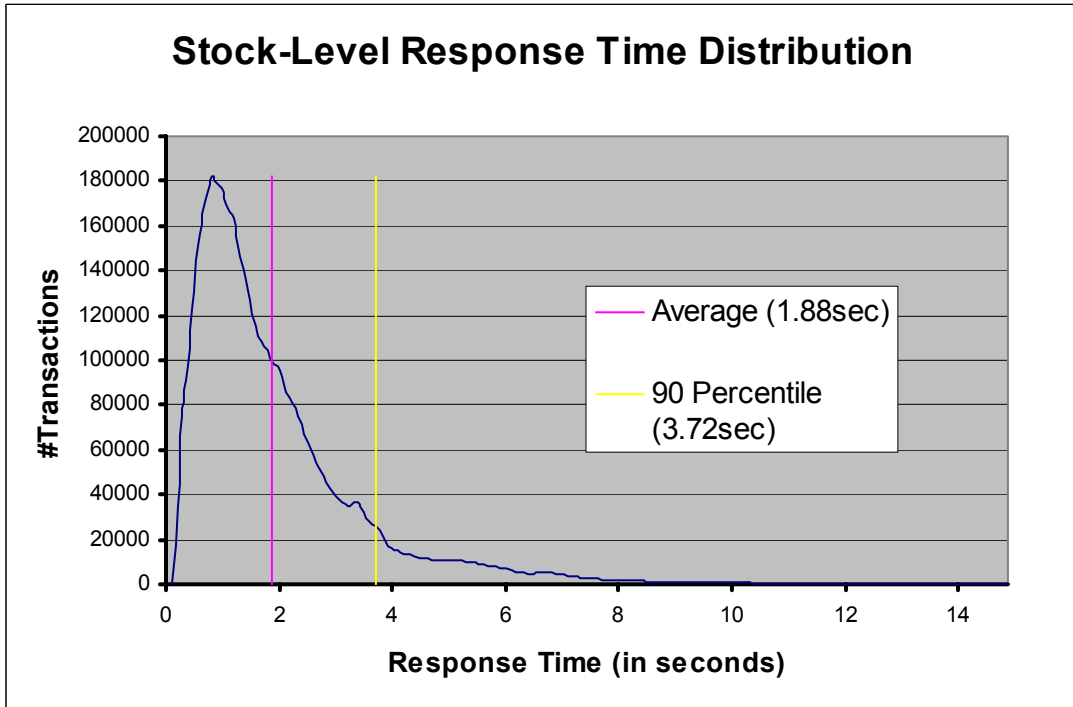


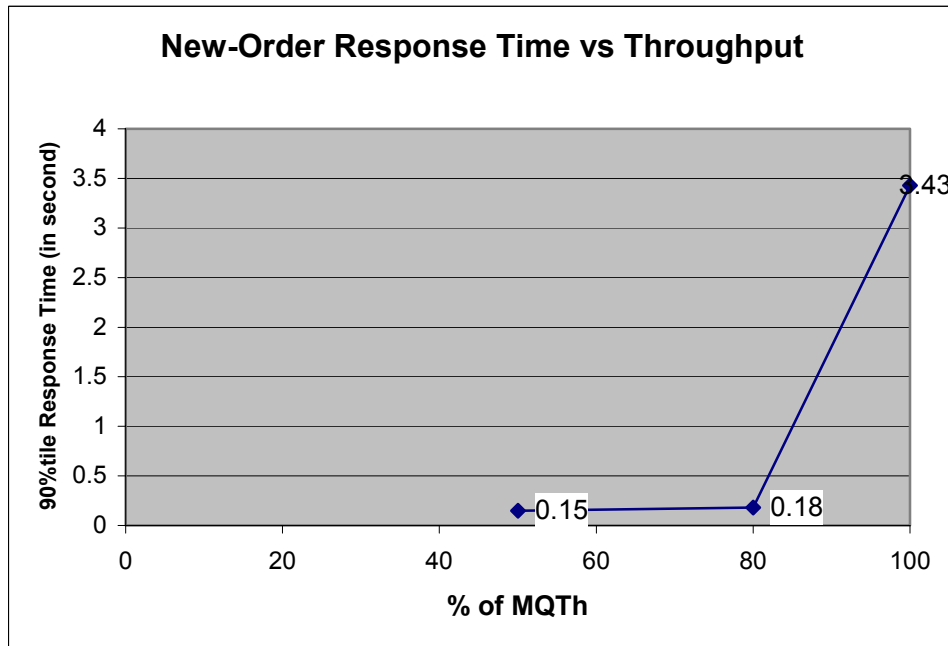
Figure 2.5 : Stock-Level Response Time Distribution



Response time versus Throughput Curve

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

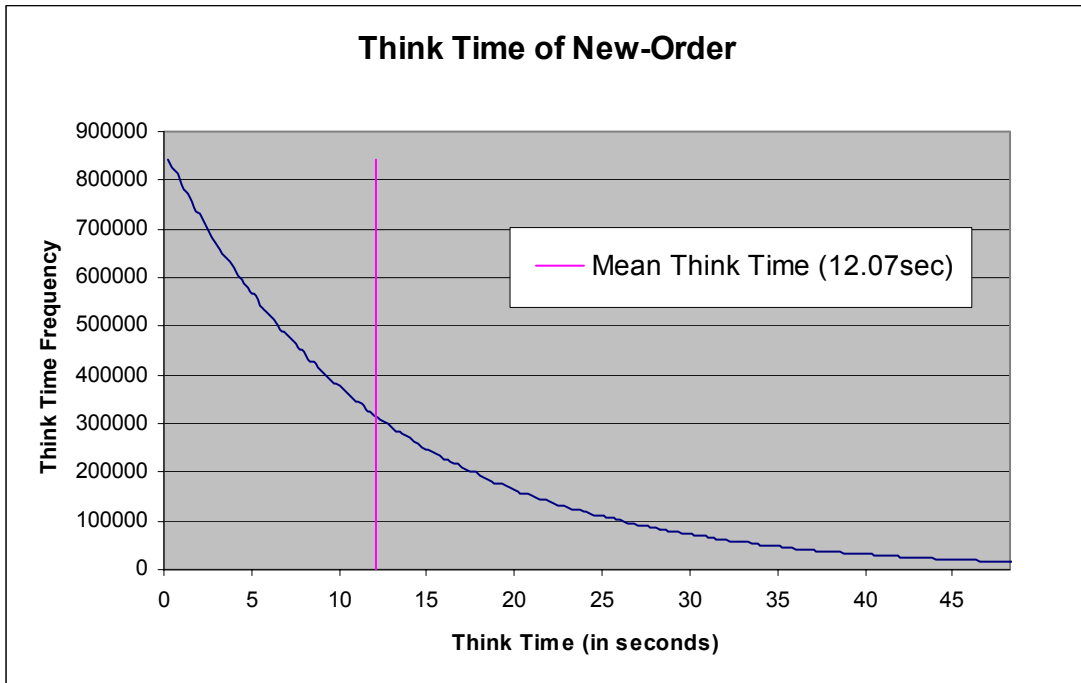
Figure 2.6 Response Time vs. Throughput Curve



New-Order Think Time Frequency Distribution

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

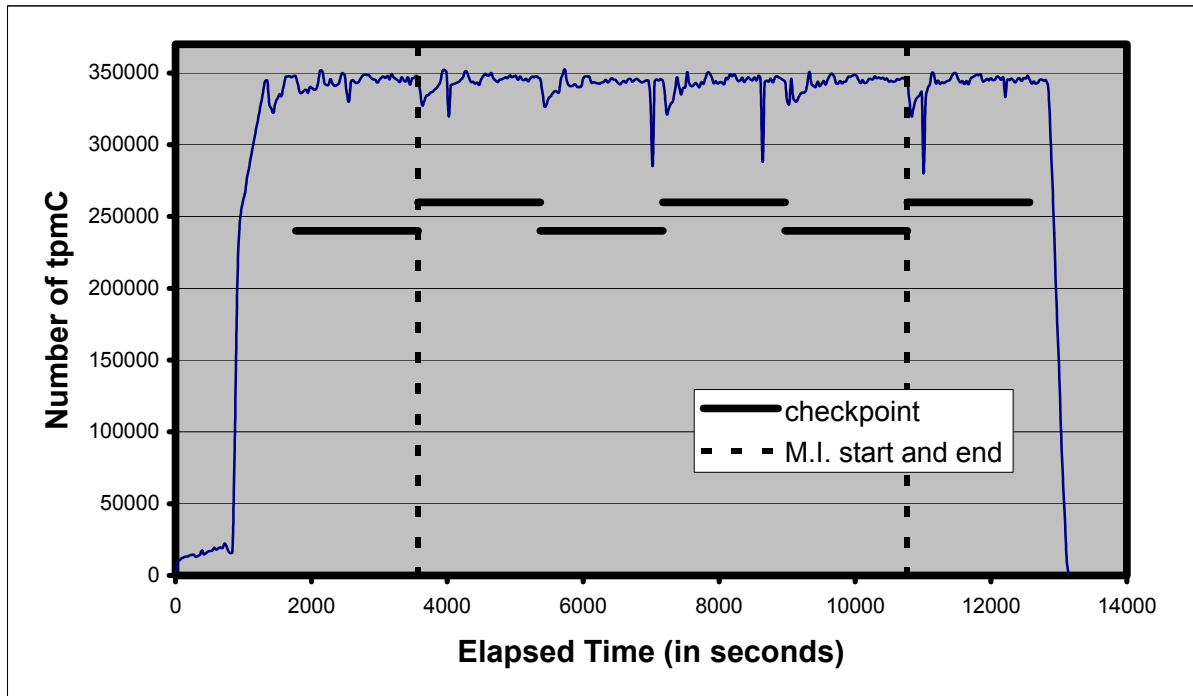
Figure 2.7 New-Order Think Time



New-Order Throughput vs. Elapsed Time

A graph of throughput versus elapsed time (see Clause 5.6.4) must be reported for the New-Order transaction.

Figure 2.8 New Order Throughput vs. Elapsed Time



Steady State

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

Steady state was confirmed by the throughput data collected during the run and graphed in Figure 2.8.

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.

A checkpoint in Microsoft SQL Server writes to disk all updated memory pages that have not been yet actually written to disk. SQL Server recovery interval parameter was set to the maximum allowable value to perform checkpoint at specific intervals. A checkpoint script, which issues specified number of checkpoint at specified (30 minutes) intervals, was started after all users logged in and sending transactions.

Measurement Period Duration and Checkpoint Duration

- The start time and duration in seconds of at least the four (4) longest checkpoints during the Measurement Interval must be disclosed (see Clause 5.5.2.2 (2)).*
- A statement of the duration of the measurement interval for the reported Maximum Qualified Throughput (tpmC) must be included.*

	Start	End	Duration (in second)
M.I.	13:07:15	15:07:15	7200
1 st Checkpoint	13:07:25	13:37:10	1785
2 nd Checkpoint	13:37:24	14:07:09	1785
3 rd Checkpoint	14:07:22	14:37:07	1785
4 th Checkpoint	14:37:21	15:07:06	1785

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 could not be 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 entered 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.*

The above statistics are disclosed in Table 1.

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.

There was one checkpoint before measurement and four checkpoints during measurement.

The time of the first checkpoint during the measurement interval is 9.73 seconds after the start of the measurement, and the checkpoint interval is 30 minutes.

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

Descriptions of RTE

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

The RTE used was the Microsoft BenchCraft RTE System. The RTE input parameters are listed in Appendix C.

Loss of Terminal Connections

The number of terminal connections lost during the Measurement Interval must be disclosed (see Clause 6.6.2).

No terminal connections were lost.

Emulated Components

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

AS configured for this test, the driver software emulates the traffic that would be observed from the users' PCs connected by Ethernet to the front-end clients using HTTP (HyperText Transfer Protocol) over TCP/IP. One tenth of a second (100 milli seconds) was added to each transaction time to compensate for the overhead of the Web browser.

Functional Diagrams and Detail of Driver System

A complete functional diagram of both the benchmark configuration and the configuration of the proposed (target) system must be disclosed. A detailed list of all software and hardware functionality being performed on the Driver System, and its interface to the SUT must be disclosed (see Clause 6.6.3.6).

The diagrams in figure 1.1 and 1.2 show the tested and priced benchmark configurations.

Network configurations and Driver system

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

Figure 1.1 and 1.2 in this report has the network configurations of both the tested system and the priced system.

Network Bandwidth

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

The Database server contains one 1Gbps LAN adapter. The LAN adapter was connected to a 1000/100/10 LAN switch with 1Gbps bandwidth. 32 front-end clients were connected to the 1000/100/10 LAN switch with 100Mbps bandwidth. Each front-end clients has three 100Mbps adapters, one for connecting to a back-end database server and other two for connecting to RTE system. The network bandwidth between RTE system and the front-end clients is 100Mbps. 64 segments were used for the connection of 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 : Pricing Related Items

Hardware and Software Components

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

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 detailed list of all hardware and software for the priced configuration is listed in the system pricing summary.

Availability

The committed delivery date for general availability (availability date) of products used in the price calculations must be reported. When the priced system includes products with different availability dates, the reported availability date for the priced system must be the date at which all components are committed to be available. This single date must be reported on the first page of the Executive Summary. All availability dates, whether for individual components or for the SUT as a whole, must be disclosed to a precision of one day.

The total system as priced will be available March 31,2003.

Throughput, and Price Performance

A statement of the measured tpmC, as well as the respective calculations for 3-year pricing, price/performance (price/tpmC), and the availability date must be included.

- Maximum Qualified Throughput 342,746.25 tpmC
- Price per tpmC : \$ 12.86 per tpmC
- Total 3-year cost of ownership

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 7.1.8.

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:

- 32 SQL Server2000, Enterprise Edition(64-bit) ,Processor License
- 1 Windows .NET Server 2003, Datacenter Edition

- . 32 Windows2000 Server, Server License
- . 1 Visual C++ .NET Standard

System Pricing

System pricing should include subtotals for the following components: Server Hardware, Server Software, Client Hardware, Client Software, and Network Components .

System pricing must include line item indication where non-sponsoring companies' brands are used. System pricing must also include line item indication of third party pricing.

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

Clause 8 : Audit 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.

Next page contains the complete independent auditor's report by Francois Raab of InfoSizing Inc. for the test described in this report.

Availability of the Full Disclosure Report

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

Requests for this TPC Benchmark™ C Full Disclosure Report should be sent to:
Transaction Processing Performance Council
c/o Shanley Public Relations
777 North First Street, Suite 6000
San Jose, CA 95112-6311

Auditor's letter



Sponsor: Eiichi Kennai
NEC Corporation
1-10 Nisshincho
Fuchu City Tokyo 183-8501

December 4, 2002

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

Platform: NEC Express5800/1320Xc c/s
Operating system: Microsoft Windows .NET Server 2003 Datacenter Edition
Database Manager: Microsoft SQL Server 2000 Enterprise Edition (64bit)
Transaction Manager: Microsoft COM+

The results were:

CPU's Speed	Memory	Disks	NewOrder 90% Response Time	tpmC
Server: NEC Express5800/1320Xc				
32 x Itanium-2 (1 GHz)	256 GB (3 MB cache/cpu)	1 x 18 GB int. 1200 x 18 GB ext. 56 x 36 GB ext.	3.43 Seconds	342,746.25
Thirty two Clients: NEC Express 5800/120Rd-2 (Specification for each)				
2 x Pentium III (1.26 GHz)	1 GB (512 KB cache/cpu)	1 x 18 GB	n/a	n/a

In my opinion, these performance results were produced in compliance with the TPC requirements for Revision 5.0 of the benchmark.

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The following verification items were given special attention:

- The transactions were correctly implemented
- The database records were the proper size
- The database was properly scaled and populated
- The ACID properties were met
- Input data was generated according to the specified percentages
- The transaction cycle times included the required keying and think times
- The reported response times were correctly measured.
- At least 90% of all delivery transactions met the 80 Second completion time limit
- All 90% response times were under the specified maximums
- The measurement interval was representative of steady state conditions
- The reported measurement interval was 120 minutes
- Four checkpoints were taken during the measurement interval
- The 60 day storage requirement was correctly computed
- The system pricing was verified for major components and maintenance

Additional Audit Notes:

None.

Respectfully Yours,



François Raab, President

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

Appendix A: Application Source Code

webclnt.dsp

```
# Microsoft Developer Studio Project File - Name="webclnt" - Package Owner=<4>
# Microsoft Developer Studio Generated Build File, Format Version 5.00
# ** DO NOT EDIT **

# TARGETTYPE "Win32 (x86) Application" 0x0101

CFG=webclnt - Win32 Release
!MESSAGE This is not a valid makefile. To build this project using NMAKE,
!MESSAGE use the Export Makefile command and run
!MESSAGE
!MESSAGE NMAKE /f "webclnt.mak".
!MESSAGE
!MESSAGE You can specify a configuration when running NMAKE
!MESSAGE by defining the macro CFG on the command line. For example:
!MESSAGE NMAKE /f "webclnt.mak" CFG="webclnt - Win32 Release"
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "webclnt - Win32 Release" (based on "Win32 (x86) Application")
!MESSAGE "webclnt - Win32 Debug" (based on "Win32 (x86) Application")
!MESSAGE

# Begin Project
# PROP_Scc_ProjName ""
# PROP_Scc_LocalPath ""
CPP=cl.exe
MTL=ml.exe
RSC=rc.exe

!IF "$ (CFG)" == "webclnt - Win32 Release"

# PROP_BASE Use_MFC 0
# PROP_BASE Use_Debug_Libraries 0
# PROP_BASE Output_Dir ".\Release"
# PROP_BASE Intermediate_Dir ".\Release"
# PROP_BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\Release"
# PROP Intermediate_Dir ".\Release"
# PROP Target_Dir ""
# ADD BASE CPP /nologo /w3 /GX /O2 /D "WIN32" /D "NDEBUG" /D "_WINDOWS" /YX /C
# ADD CPP /nologo /w3 /GX /O2 /D "WIN32" /D "NDEBUG" /D "_WINDOWS" /YX /FD /C
# ADD BASE MTL /nologo /D "NDEBUG" /win32
# ADD MTL /nologo /D "NDEBUG" /mktyplib203 /win32
# ADD BASE RSC /I 0x409 /d "NDEBUG"
# ADD RSC /I 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib

odbcc32.lib odbccp32.lib /nologo /subsystem:windows /machine:I386
# ADD LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbcc32.lib

odbccp32.lib /nologo /subsystem:windows /machine:I386

!ELSEIF "$ (CFG)" == "webclnt - Win32 Debug"

# PROP_BASE Use_MFC 0
# PROP_BASE Use_Debug_Libraries 1
# PROP_BASE Output_Dir ".\Debug"
# PROP_BASE Intermediate_Dir ".\Debug"
# PROP_BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\Debug"
# PROP Intermediate_Dir ".\Debug"
# PROP Target_Dir ""
# ADD BASE CPP /nologo /w3 /Gm /GX /Zi /Od /D "WIN32" /D "_DEBUG" /D "_WINDOWS"
/YX /C
# ADD CPP /nologo /w3 /Gm /GX /Zi /Od /D "WIN32" /D "_DEBUG" /D "_WINDOWS" /YX
/FD /C
# ADD BASE MTL /nologo /D "_DEBUG" /win32
# ADD MTL /nologo /D "_DEBUG" /mktyplib203 /win32
# ADD BASE RSC /I 0x409 /d "_DEBUG"
# ADD RSC /I 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbcc32.lib

odbcc32.lib odbccp32.lib /nologo /subsystem:windows /debug /machine:I386
# ADD LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbcc32.lib

odbccp32.lib /nologo /subsystem:windows /debug /machine:I386
```

```
!ENDIF
# Begin Target
# Name "webclnt - Win32 Release"
# Name "webclnt - Win32 Debug"
# End Target
# End Project
```

webclnt.dsw

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

#####

Project: "db_dblib_d11"=. \db_dblib_d11\db_dblib_d11.dsp - Package Owner=<4>

Package=<5>
{{{
}}}

Package=<4>
{{{
}}}

#####

Project: "db_odbc_d11"=. \db_odbc_d11\db_odbc_d11.dsp - Package Owner=<4>

Package=<5>
{{{
}}}

#####

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

Package=<5>
{{{
}}}

Package=<4>
{{{
Begin Project Dependency
Project_Dep_Name isapi_d11
End Project Dependency
Begin Project Dependency
Project_Dep_Name tuxapp
End Project Dependency
Begin Project Dependency
Project_Dep_Name db_dblib_d11
End Project Dependency
Begin Project Dependency
Project_Dep_Name db_odbc_d11
End Project Dependency
Begin Project Dependency
Project_Dep_Name tm_com_d11
End Project Dependency
Begin Project Dependency
Project_Dep_Name tm_tuxedo_d11
End Project Dependency
Begin Project Dependency
Project_Dep_Name tpcc_com_all
End Project Dependency
Begin Project Dependency
Project_Dep_Name tpcc_com_ps
End Project Dependency
}}}

#####

Project: "isapi_d11"=. \isapi_d11\isapi_d11.dsp - Package Owner=<4>

Package=<5>
{{{
}}}

Package=<4>
{{{
Begin Project Dependency
Project_Dep_Name db_dblib_d11
End Project Dependency
Begin Project Dependency
Project_Dep_Name db_odbc_d11
End Project Dependency
Begin Project Dependency
Project_Dep_Name tm_tuxedo_d11
End Project Dependency
Begin Project Dependency
Project_Dep_Name tm_encina_d11
End Project Dependency
}}}

#####

Project: "tm_com_d11"=. \tm_com_d11\tm_com_d11.dsp - Package Owner=<4>

Package=<5>
{{{
}}}
```

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

#####

Project: "tm_encina_d11"=. \tm_encina_d11\tm_encina_d11.dsp - Package Owner=<4>

Package=<5>
{{{
}}}

Package=<4>
{{{
}}}

#####

Project: "tm_tuxedo_d11"=. \tm_tuxedo_d11\tm_tuxedo_d11.dsp - Package Owner=<4>

Package=<5>
{{{
}}}

Package=<4>
{{{
}}}

#####

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

Package=<5>
{{{
}}}

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

#####

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

Package=<5>
{{{
}}}

Package=<4>
{{{
}}}

#####

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

Package=<5>
{{{
}}}

Package=<4>
{{{
Begin Project Dependency
Project_Dep_Name db_dblib_d11
End Project Dependency
Begin Project Dependency
Project_Dep_Name db_odbc_d11
End Project Dependency
}}}

#####

Global:

Package=<5>
{{{
}}}

Package=<3>
{{{
}}}

#####

common/src/error.h

/* FILE: ERROR.H Microsoft TPC-C Kit Ver.
4.20.000 Copyright Microsoft, 1999
* All Rights Reserved
* Version 4.10.000 audited
* by Richard Gimarc, Performance Metrics, 3/17/99
*/
```

```

*          PURPOSE:   Header file for error exception classes.
*
* Change history:
*          4.20.000 - updated rev number to match kit
*          4.21.000 - fixed bug: ~CBaseErr needed to be declared
virtual
*/
#pragma once
#ifdef _INC_STRING
#include <string.h>
#endif
const int m_szMsg_size = 512;
const int m_szApp_size = 64;
const int m_szLoc_size = 64;
//error message structure used in ErrorText routines
typedef struct _SERRORMSG
{
    int          iError;
    //error id of message
    char         szMsg[256]; //message to
    sent to browser
} SERRORMSG;
typedef enum _ErrorLevel
{
    ERR_FATAL_LEVEL           = 1,
    ERR_WARNING_LEVEL        = 2,
    ERR_INFORMATION_LEVEL    = 3
} ErrorLevel;
#define ERR_TYPE_LOGIC      -1 //logic error in program;
internal error
#define ERR_SUCCESS        0 //success (a
non-error error)
#define ERR_BAD_ITEM_ID   1 //expected abort record in
txnRecord
#define ERR_TYPE_DELIVERY_POST 2 //expected delivery post failed
#define ERR_TYPE_WEBDLL    3 //tpcc web
generated error
#define ERR_TYPE_SQL      4 //sql server generated
error
#define ERR_TYPE_DBLIB    5 //dblib
generated error
#define ERR_TYPE_ODBC     6 //odbc generated error
#define ERR_TYPE_SOCKET   7 //error on communication
socket client rte only
#define ERR_TYPE_DEADLOCK 8 //dblib and odbc only deadlock condition
#define ERR_TYPE_COM      9 //error from COM call
#define ERR_TYPE_TUXEDO   10 //tuxedo error
#define ERR_TYPE_OS       11 //operating
system error
#define ERR_TYPE_MEMORY   12 //memory allocation error
#define ERR_TYPE_TPCC_ODBC 13 //error from tpcc odbc txn module
#define ERR_TYPE_TPCC_DBLIB 14 //error from tpcc dblib
txn module
#define ERR_TYPE_DELISRV  15 //delivery server error
#define ERR_TYPE_TXNLOG   16 //txn log error
#define ERR_TYPE_BCCONN   17 //Benchcraft connection
class
#define ERR_TYPE_TPCC_CONN 18 //Benchcraft connection class
#define ERR_TYPE_ENCINA   19 //Encina error
#define ERR_TYPE_COMPONENT 20 //error from COM component
#define ERR_TYPE_RTE      21 //Benchcraft rte
#define ERR_TYPE_AUTOMATION 22 //Benchcraft automation
errors
#define ERR_TYPE_DRIVER   23 //Driver engine errors
#define ERR_TYPE_RTE_BASE 24 //Framework errors
#define ERR_BUF_OVERFLOW  25 //Buffer overflow during
receive
// TPC-W error types
#define ERR_TYPE_TPCW_CONN 50 //Benchcraft connection class
#define ERR_TYPE_TPCW_HTML 51 //error from Tpcwhtml dll
#define ERR_TYPE_TPCW_USER 52 //error from TPC-W user class
#define ERR_TYPE_TPCW_ENG_BASE 53
#define ERR_TYPE_TPCW_ENG_OS 54

```

```

#define ERR_TYPE_HTML_RESP 55
#define ERR_TYPE_TPCW_ODBC 56
#define ERR_TYPE_SCHANNEL 57
#define ERR_INS_MEMORY      "Insufficient Memory to
continue."
#define ERR_UNKNOWN        "Unknown
error."
#define ERR_MSG_BUF_SIZE   512
#define INV_ERROR_CODE     -1
#define ERR_INS_BUF_OVERFLOW "Insufficient Buffer size to recieve HTML
pages."
class CBaseErr
{
public:
    CBaseErr(LPCTSTR szLoc = NULL)
    {
        m_idMsg          = INV_ERROR_CODE;
        if (szLoc)
        {
            m_szLoc = new char[m_szLoc_size];
            strcpy(m_szLoc, szLoc);
        }
        else
            m_szLoc = NULL;
        m_szApp          = new char[m_szApp_size];
        GetModuleFileName(GetModuleHandle(NULL), m_szApp,
m_szApp_size);
    }
    CBaseErr(int idMsg, LPCTSTR szLoc = NULL)
    {
        m_idMsg          = idMsg;
        if (szLoc)
        {
            m_szLoc = new char[m_szLoc_size];
            strcpy(m_szLoc, szLoc);
        }
        else
            m_szLoc = NULL;
        m_szApp          = new char[m_szApp_size];
        GetModuleFileName(GetModuleHandle(NULL), m_szApp,
m_szApp_size);
    }
    virtual ~CBaseErr(void)
    {
        if (m_szApp) delete [] m_szApp;
        if (m_szLoc) delete [] m_szLoc;
    };
    virtual void Draw(HWND hwnd, LPCTSTR szStr = NULL)
    {
        int          char         j = 0;
        char         szTmp[512];
        if (szStr)
            j = sprintf(szTmp, "%s\n", szStr);
        if (ErrorNum() != INV_ERROR_CODE)
            j += sprintf(szTmp+j, "Error = %d\n",
ErrorNum());
        if (m_szLoc)
            j += sprintf(szTmp+j, "Location = %s\n",
GetLocation());
        j += sprintf(szTmp+j, "%s\n", ErrorText());
        ::MessageBox(hwnd, szTmp, m_szApp, MB_OK);
    }
    char *GetApp(void) { return m_szApp; }
    char *GetLocation(void) { return m_szLoc; }
    virtual int ErrorNum() { return m_idMsg; }
    virtual int ErrorType() = 0; // a value which
distinguishes the kind of error that occurred
    virtual char *ErrorText() = 0; // a string (i.e., human readable)
representation of the error
protected:
    char         *m_szApp;
    char         *m_szLoc; // code location where the error
occurred
    int          m_idMsg;
}; //short
m_errType;
class CSocketErr : public CBaseErr
{
public:

```

```

enum Action
{
    eNone = 0,
    eSend,
    eSocket,
    eBind,
    eConnect,
    eListen,
    eHost,
    eRecv,
    eGetHostByName,
    eWSACreateEvent,
    eWSASend,
    eWSASendImage,
    eWSAGetOverlappedResult,
    eWSARecv,
    eWSARecvImage,
    eWSAWaitForMultipleEvents,
    eWSASStartup,
    eWSAResetEvent,
    eNonRetryable,
};
CSocketErr(Action eAction, LPCTSTR szLocation = NULL);
~CSocketErr()
{
    if (m_szErrorText != NULL)
        delete [] m_szErrorText;
};
Action          m_eAction;
char            *m_szErrorText;
int ErrorType() { return ERR_TYPE_SOCKET; };
char *ErrorText(void);
};
class CSystemErr : public CBaseErr
{
public:
    enum Action
    {
        eNone = 0,
        eTransactNamedPipe,
        eWaitNamedPipe,
        eSetNamedPipeHandleState,
        eCreateFile,
        eCreateProcess,
        eCallNamedPipe,
        eCreateEvent,
        eCreateThread,
        eVirtualAlloc,
        eReadFile = 10,
        eWriteFile,
        eMapViewOfFile,
        eCreateFileMapping,
        eInitializeSecurityDescriptor,
        eSetSecurityDescriptorDacl,
        eCreateNamedPipe,
        eConnectNamedPipe,
        eWaitForSingleObject,
        eRegOpenKeyEx,
        eRegQueryValueEx = 20,
        eBeginThread,
        eRegEnumValue,
        eRegSetValueEx,
        eRegCreateKeyEx,
        eWaitForMultipleObjects,
        eRegisterClassEx,
        eCreateWindow,
        eCreateSemaphore,
        eFindFile,
        eRead,
        eWrite,
        eTempFile,
        eSetFilePointer,
        eNew,
    };
    CSystemErr(Action eAction, LPCTSTR
szLocation);
    CSystemErr(int iError, Action eAction,
LPCTSTR szLocation);
    int          ErrorType() { return ERR_TYPE_OS; };
    char         *ErrorText(void);
    Draw(HWND hwnd, LPCTSTR szStr = NULL);
    Action          m_eAction;
private:
    char m_szMsg[ERR_MSG_BUF_SIZE];
};
class CMemoryErr : public CBaseErr
{
public:
    CMemoryErr();
    int ErrorType() {return ERR_TYPE_MEMORY;};
    char *ErrorText() {return ERR_INS_MEMORY;};
};
class CBufferOverflowErr : public CBaseErr
{
public:
    CBufferOverflowErr(int, LPCTSTR);
    int ErrorType() {return ERR_BUF_OVERFLOW;};
};

```

```
}; char *ErrorText() {return ERR_INS_BUF_OVERFLOW;};
```

common/src/ReadRegistry.cpp

```
/* FILE: READREGISTRY.CPP Microsoft TPC-C Kit Ver. 4.20.000 Copyright Microsoft, 1999 All Rights Reserved not yet audited PURPOSE: Implementation for TPC-C Tuxedo class. Contact: Charles Levine (clevine@microsoft.com) Change history: 4.20.000 - first version */
```

```
/* FUNCTION: ReadTPCCRegistrySettings
```

```
/* PURPOSE: This function reads the NT registry for startup parameters. There parameters are under the TPCC key. RETURNS FALSE = no errors TRUE = error reading registry */
```

```
BOOL ReadTPCCRegistrySettings( TPCCREGISTRYDATA *pReg ) { HKEY hkey; DWORD size; DWORD type; DWORD dwTmp; char szTmp[256]; if ( RegOpenKeyEx(HKEY_LOCAL_MACHINE, "SOFTWARE\\Microsoft\\TPCC", 0, KEY_READ, &hkey) != ERROR_SUCCESS ) return TRUE; // determine database protocol to use; may be either ODBC or DDLIB pReg->edb_Protocol = Unspecified; size = sizeof(szTmp); if ( RegQueryValueEx(hkey, "DB_Protocol", 0, &type, (BYTE *)&szTmp, &size) == ERROR_SUCCESS ) { if ( !strcmp(szTmp, szDBNames[ODBC]) ) pReg->edb_Protocol = ODBC; else if ( !strcmp(szTmp, szDBNames[DLIB]) ) pReg->edb_Protocol = DDLIB; } pReg->eTxnMon = None; // determine txn monitor to use; may be either TUXEDO, or blank size = sizeof(szTmp); if ( RegQueryValueEx(hkey, "TxnMonitor", 0, &type, (BYTE *)&szTmp, &size) == ERROR_SUCCESS ) { if ( !strcmp(szTmp, szTxnMonNames[TUXEDO]) ) pReg->eTxnMon = TUXEDO; else if ( !strcmp(szTmp, szTxnMonNames[ENCINA]) ) pReg->eTxnMon = ENCINA; else if ( !strcmp(szTmp, szTxnMonNames[COM]) ) pReg->eTxnMon = COM; } pReg->bCOM_SinglePool = FALSE; size = sizeof(szTmp); if ( RegQueryValueEx(hkey, "COM_SinglePool", 0, &type, (BYTE *)&szTmp, &size) == ERROR_SUCCESS ) { if ( !strcmp(szTmp, "YES") ) pReg->bCOM_SinglePool = TRUE; } pReg->dwMaxConnections = 0; size = sizeof(dwTmp); if ( RegQueryValueEx(hkey, "MaxConnections", 0, &type, (LPBYTE)&dwTmp, &size) == ERROR_SUCCESS ) && (type == REG_DWORD) ) pReg->dwMaxConnections = dwTmp; pReg->dwMaxPendingDeliveries = 0; size = sizeof(dwTmp); if ( RegQueryValueEx(hkey, "MaxPendingDeliveries", 0, &type, (LPBYTE)&dwTmp, &size) == ERROR_SUCCESS ) && (type == REG_DWORD) ) pReg->dwMaxPendingDeliveries = dwTmp; pReg->dwNumberOfDeliveryThreads = 0; size = sizeof(dwTmp); if ( RegQueryValueEx(hkey, "NumberOfDeliveryThreads", 0, &type, (LPBYTE)&dwTmp, &size) == ERROR_SUCCESS ) && (type == REG_DWORD) ) pReg->dwNumberOfDeliveryThreads = dwTmp; size = sizeof(pReg->szPath); if ( RegQueryValueEx(hkey, "Path", 0, &type, (BYTE *)&pReg->szPath, &size) != ERROR_SUCCESS ) pReg->szPath[0] = 0; size = sizeof(pReg->szDBServer); if ( RegQueryValueEx(hkey, "DBServer", 0, &type, (BYTE *)&pReg->szDBServer, &size) != ERROR_SUCCESS ) pReg->szDBServer[0] = 0;
```

```
size = sizeof(pReg->szDBName); if ( RegQueryValueEx(hkey, "DBName", 0, &type, (BYTE *)&pReg->szDBName, &size) != ERROR_SUCCESS ) pReg->szDBName[0] = 0; size = sizeof(pReg->szDBUser); if ( RegQueryValueEx(hkey, "DBUser", 0, &type, (BYTE *)&pReg->szDBUser, &size) != ERROR_SUCCESS ) pReg->szDBUser[0] = 0; size = sizeof(pReg->szDBPassword); if ( RegQueryValueEx(hkey, "DBPassword", 0, &type, (BYTE *)&pReg->szDBPassword, &size) != ERROR_SUCCESS ) pReg->szDBPassword[0] = 0; RegCloseKey(hkey); return FALSE; }
```

common/src/ReadRegistry.h

```
/* FILE: ReadRegistry.h Microsoft TPC-C Kit Ver. 4.20.000 Copyright Microsoft, 1999 All Rights Reserved not audited PURPOSE: Header for registry related code. Change history: 4.20.000 - first version */ enum DBPROTOCOL { Unspecified, ODBC, DDLIB }; const char *szDBNames[] = { "Unspecified", "ODBC", "DDLIB" }; enum TXNMON { None, TUXEDO, ENCINA, COM }; const char *szTxnMonNames[] = { "NONE", "TUXEDO", "ENCINA", "COM" }; //This structure defines the data necessary to keep distinct for each terminal or client connection. typedef struct _TPCCREGISTRYDATA { enum DBPROTOCOL edb_Protocol; enum TXNMON eTxnMon; BOOL bCOM_SinglePool; DWORD dwMaxConnections; DWORD dwMaxPendingDeliveries; DWORD dwNumberOfDeliveryThreads; char szPath[128]; char szDBServer[32]; char szDBName[32]; char szDBUser[32]; char szDBPassword[32]; } TPCCREGISTRYDATA, *PTPCCREGISTRYDATA; BOOL ReadTPCCRegistrySettings( TPCCREGISTRYDATA *pReg );
```

common/src/trans.h

```
/* FILE: TRANS.H Microsoft TPC-C Kit Ver. 4.20.000 Copyright Microsoft, 1999 All Rights Reserved Version 4.10.000 audited by Richard Gimarc, Performance Metrics, 3/17/99 PURPOSE: Header file for TPC-C structure templates. Change history: 4.20.000 - updated rev number to match kit */ #pragma once // String length constants #define SERVER_NAME_LEN 20 #define DATABASE_NAME_LEN 20 #define USER_NAME_LEN 20 #define PASSWORD_LEN 20 #define TABLE_NAME_LEN 20 #define I_DATA_LEN 50 #define I_NAME_LEN 24 #define BRAND_LEN 10 #define LAST_NAME_LEN 16 #define W_NAME_LEN 10 #define ADDRESS_LEN 20 #define STATE_LEN 2 #define ZIP_LEN 9 #define S_DIST_LEN 24 #define S_DATA_LEN 10 #define D_NAME_LEN 10 #define FIRST_NAME_LEN 16 #define MIDDLE_NAME_LEN 2 #define PHONE_LEN 16 #define DATETIME_LEN 30 #define CREDIT_LEN 2
```

```
#define C_DATA_LEN 250 #define H_DATA_LEN 24 #define DIST_INFO_LEN 24 #define MAX_OL_NEW_ORDER_ITEMS 15 #define MAX_OL_ORDER_STATUS_ITEMS 15 #define STATUS_LEN 25 #define OL_DIST_INFO_LEN 24 // TIMESTAMP_STRUCT is provided by the ODBC header file sqltypes.h, but is not available // when compiling with dlib, so redefined here. Note: we are using the symbol __SQLTYPES__ (declared in sqltypes.h) as a way to determine if TIMESTAMP_STRUCT has been declared. #ifndef __SQLTYPES__ typedef struct { short year; unsigned short month; unsigned short day; unsigned short hour; unsigned short minute; unsigned short second; unsigned long SQUINTEGER } TIMESTAMP_STRUCT; #endif // possible values for exec_status_code after transaction completes enum EXEC_STATUS { committed, eOK, // 0 "transaction eInvalidItem, // 1 "Item number is not valid." eDeliveryFailed, // 2 "Delivery Post Failed." }; // transaction structures typedef struct { // input params short ol_supply_w_id; long ol_i_id; short ol_quantity; // output params char ol_i_name[T_NAME_LEN+1]; char ol_brand_generic[BRAND_LEN+1]; double ol_i_price; double ol_amount; short ol_stock; } OL_NEW_ORDER_DATA; typedef struct { // input params short w_id; short d_id; long c_id; short o_ol_cnt; // output params EXEC_STATUS exec_status_code; char c_last[LAST_NAME_LEN+1]; char c_credit[CREDIT_LEN+1]; double total_amount; double w_tax; double d_tax; short o_id; short o_commit_flag; TIMESTAMP_STRUCT o_entry_d; short o_all_local; double total_amount; double OL_NEW_ORDER_DATA OL[MAX_OL_NEW_ORDER_ITEMS]; } NEW_ORDER_DATA, *PNEW_ORDER_DATA; typedef struct { // input params short w_id; short d_id; long c_id; short c_d_id; short c_w_id; double h_amount; char c_last[LAST_NAME_LEN+1]; // output params EXEC_STATUS exec_status_code; TIMESTAMP_STRUCT h_date; char w_street_1[ADDRESS_LEN+1]; char w_street_2[ADDRESS_LEN+1]; char w_city[ADDRESS_LEN+1]; char w_state[STATE_LEN+1]; char w_zip[ZIP_LEN+1]; char d_street_1[ADDRESS_LEN+1]; char d_street_2[ADDRESS_LEN+1]; char d_city[ADDRESS_LEN+1]; char d_state[STATE_LEN+1];
```

```

char d_zip[ZIP_LEN+1];
char c_first[FIRST_NAME_LEN+1];
char c_street_1[ADDRESS_LEN+1];
char c_street_2[ADDRESS_LEN+1];
char c_city[ADDRESS_LEN+1];
char c_state[STATE_LEN+1];
char c_zip[ZIP_LEN+1];
char c_phone[PHONE_LEN+1];
TIMESTAMP_STRUCT c_since;
char c_credit[CREDIT_LEN+1];
double c_credit_lim;
double c_discount;
double c_balance;
char c_data[200+1];
} PAYMENT_DATA, *PPAYMENT_DATA;
typedef struct
{
    long ol_i_id;
    short ol_supply_w_id;
    short ol_quantity;
    double ol_amount;
    TIMESTAMP_STRUCT ol_delivery_d;
} OL_ORDER_STATUS_DATA;
typedef struct
{
    // input params
    short w_id;
    short d_id;
    long c_id;
    char c_last[LAST_NAME_LEN+1];
    // output params
    EXEC_STATUS exec_status_code;
    char c_first[FIRST_NAME_LEN+1];
    char c_middle[MIDDLE_NAME_LEN+1];
    double c_balance;
    long o_id;
    TIMESTAMP_STRUCT o_entry_d;
    short o_carrier_id;
    OL_ORDER_STATUS_DATA ol[MAX_OL_ORDER_STATUS_ITEMS];
    short o_ol_cnt;
} ORDER_STATUS_DATA, *PORDER_STATUS_DATA;
typedef struct
{
    // input params
    short w_id;
    short o_carrier_id;
    // output params
    EXEC_STATUS exec_status_code;
    SYSTEMTIME queue_time;
    long o_id[10];
} DELIVERY_DATA, *PDELIVERY_DATA;
// This structure is used for posting delivery transactions and for writing them
// to the delivery server.
typedef struct _DELIVERY_TRANSACTION
{
    SYSTEMTIME queue; //time
    short w_id;
    short //delivery warehouse
    short o_carrier_id; //carrier id
} DELIVERY_TRANSACTION;
typedef struct
{
    // input params
    short w_id;
    short d_id;
    short threshold;
    // output params
    EXEC_STATUS exec_status_code;
    long low_stock;
} STOCK_LEVEL_DATA, *PSTOCK_LEVEL_DATA;

```

common/src/txn_base.h

```

/* FILE: TXN_BASE.H
 * Microsoft TPC-C Kit Ver.
 * 4.20.000 Copyright Microsoft, 1999
 * All Rights Reserved
 * Version 4.10.000 audited
 * by Richard Gimarc, Performance Metrics, 3/17/99
 * PURPOSE: Header file for TPC-C txn class implementation.
 * Change history: 4.20.000 - updated rev number to match kit
 */
#pragma once
// need to declare functions for import, unless define has already been created
// by the DLL's .cpp module for export.
#ifdef DllDecl
#define DllDecl __declspec( dllimport )

```

```

#endif
class DllDecl CTPCC_BASE
{
public:
    CTPCC_BASE(void) {};
    virtual ~CTPCC_BASE(void) {};
    virtual PNEW_ORDER_DATA = 0;
    virtual PPAYMENT_DATA = 0;
    virtual PDELIVERY_DATA = 0;
    virtual PSTOCK_LEVEL_DATA = 0;
    virtual PORDER_STATUS_DATA = 0;
    virtual void NewOrder() = 0;
    virtual void Payment() = 0;
    virtual void Delivery() = 0;
    virtual void OrderStatus() = 0;
};

```

common/txnlog/include/rtetime.h

```

/* FILE: rtetime.h : header file
 * Copyright 1997 Microsoft Corp., All rights reserved.
 * Source code licensed to Tandem Computers for Internal
 * use only. Redistribution of source or object files or
 * any derivative works is prohibited. By agreement, this
 * notice may not be removed.
 * Authors: Charles Levine, Philip Durr
 * Microsoft Corp.
 */
//FILE: RTETIME.H
#define MAX_JULIAN_TIME 0x7FFFFFFF
#define JULIAN_TIME __int64
#define TC_TIME DWORD
extern "C"
{
    BOOL InitJulianTime(LPSYSTEMTIME lpInitTime);
    JULIAN_TIME GetJulianTime(void);
    DWORD MyTickCount(void);
    void GetJulianAndTC(JULIAN_TIME *pJulian, DWORD *pTC);
    JULIAN_TIME ConvertTo64BitTime(int iYear, int iMonth, int iDay, int iHour, int iMinute, int iSecond);
    JULIAN_TIME Get64BitTime(LPSYSTEMTIME lpInitTime);
    int JulianDay(int yr, int mm, int dd);
    void JulianToTime(JULIAN_TIME julians, int* yr, int* mm, int* dd, int* hh, int* mi, int* ss);
    void JulianToCalendar(int day, int* yr, int* mm, int* dd);
}

```

common/txnlog/include/spinlock.h

```

/* FILE: SPINLOCK.H
 * Copyright 1997 Microsoft Corp., All rights reserved.
 * Source code licensed to Tandem Computers for Internal
 * use only. Redistribution of source or object files or
 * any derivative works is prohibited. By agreement, this
 * notice may not be removed.
 * Authors: Mike Parkes, Charles Levine, Philip Durr
 * Microsoft Corp.
 */
#ifdef _INC_Spinlock
const LONG LockClosed = 1;
const LONG LockOpen = 0;
// Spinlock and Semaphore locking.
// This class provides a very conservative locking scheme.
// The assumption behind the code is that locks will be
// held for a very short time. When a lock is taken a memory
// location is exchanged. All other threads that want this
// lock wait by spinning and sometimes sleeping on a semaphore
// until it becomes free again. The only other choice is not
// to wait at all and move on to do something else. This
// module should normally be used in conjunction with cache
// aligned memory in minimize cache line misses.
class Spinlock
{
    // Private data.
    HANDLE Semaphore;
};

```

```

volatile LONG m_Spinlock;
volatile LONG Waiting;
#ifdef _DEBUG
// Counters for debugging builds.
volatile LONG TotalLocks;
volatile LONG TotalSleeps;
volatile LONG TotalSpins;
volatile LONG TotalWaits;
#endif
public:
    // Public functions.
    Spinlock(void);
    inline BOOL ClaimLock(BOOL wait = TRUE);
    inline void ReleaseLock(void);
    // Disabled operations.
    Spinlock(const Spinlock & Copy);
    void operator=(const Spinlock & Copy);
private:
    // Private functions.
    inline BOOL ClaimSpinlock(volatile LONG *s1);
    void WaitForLock(void);
    void WakeAllSleepers(void);
};
// A guaranteed atomic exchange.
// An attempt is made to claim the Spinlock. This action is
// guaranteed to be atomic.
inline BOOL Spinlock::ClaimSpinlock(volatile LONG *spinlock)
{
#ifdef _DEBUG
    InterlockedIncrement(&LPLONG &TotalLocks);
#endif
    return ((*(spinlock) == LockOpen) && (InterlockedExchange(&LPLONG spinlock, LockClosed) == LockOpen));
}
// Claim the Spinlock.
// Claim the lock if available else wait or exit.
inline BOOL Spinlock::ClaimLock(BOOL wait)
{
    if (!ClaimSpinlock((volatile LONG*) &m_Spinlock))
    {
        if (wait)
            WaitForLock();
        return TRUE;
    }
}
// Release the spinlock.
// Release the lock and if needed wakeup any sleepers.
inline void Spinlock::ReleaseLock(void)
{
    m_Spinlock = LockOpen;
    if (Waiting > 0)
        WakeAllSleepers();
}
#define _INC_Spinlock
#endif

```

common/txnlog/include/txnlog.h

```

/* FILE: TXNLOG.H
 * Microsoft TPC-C Kit Ver.
 * 4.10.000 not yet audited
 * PURPOSE: Header file for txn log class
 * Copyright Microsoft, 1999
 * All Rights Reserved
 */
#pragma once
typedef struct _TXN_NEWORDER
{

```



```

static void LogFileIO(CTXNLog *);

//used in sort/merge to load record buffers
public:
    CTXNLog::CTXNLog(LPCTSTR szFileName, DWORD dwOpts);
    ~CTXNLog(void);

    int writeToLog(PTXN_RECORD_TPCC pTxnRcd);
    int writeToLog(PTXN_RECORD_TPCC_DELIV_DEF pTxnRcd);
    int writeToLog(PTXN_RECORD_CONTROL pCtrlRec);
    int writeToLog(PTXN_RECORD_HEADER pCtrlRec);

    int writeCtrlRecToLog(BYTE SubType, LPCTSTR lpStr,
        DWORD dwLen);

    void CloseTransactionLogFile(void);

    PTXN_RECORD_HEADER GetNextRecord(BOOL bSkipCtrlRecs =
        FALSE);
    PTXN_RECORD_HEADER GetNextRecord(JULIAN_TIME
        SeekTime0, BOOL bSkipCtrlRecs = FALSE);

    int Sort(void);
    PTXN_RECORD_HEADER GetSortedRecord();

    inline BOOL IsSorted(void) { return blogSorted; };
    inline JULIAN_TIME BeginTS(void) { return
        BeginTxnTS; };

    inline JULIAN_TIME EndTS(void) { return EndTxnTS; };
    inline int RecordCount(void) { return iRecCount; };

class CTXNLOG_ERR : public CBaseErr
{
public:
    enum CTXNLOG_ERRS
    {
        ERR_BAD_FILE_FORMAT,
        // "File format is invalid."
        ERR_UNKNOWN_LOG_VERSION, // "Log file
        version is unknown."
        ERR_BROKEN_LOG_FILE,
        // "Log file is broken."
        ERR_LOG_NOT_SORTED,
        // "Log file is not sorted"
        ERR_INVALID_TIME_SEQ,
        // "Internal Error: Record Time Sequence invalid."
    };

    CTXNLOG_ERR(int iErr) : CBaseErr(iErr) {};
    int errType() { return ERR_TYPE_TXNLOG; };

    char *ErrorText()
    {
        static char *szMsgs[] = {
            "File format is invalid.",
            "Log file version is
            unknown.",
            "Log file is broken.",
            "Log file is not sorted",
            "Internal Error: Record
            Time Sequence invalid.",
            ""
        };

        for(int i = 0; szMsgs[i][0]; i++)
        {
            if ( m_idMsg == i )
                break;
        }

        return(szMsgs[i] ? szMsgs[i] :
            ERR_UNKNOWN);
    };
};

```

db_dblib_dll/db_dblib_dll.dsp

```

# Microsoft Developer Studio Project File - Name="db_dblib_dll" - Package
Owner=<4>
# Microsoft Developer Studio Generated Build File, Format Version 6.00
# ** DO NOT EDIT **

# TARGETTYPE "win32 (x86) dynamic-link library" 0x0102

CFG=db_dblib_dll - win32 IceCAP
MESSAGE This is not a valid makefile. To build this project using NMAKE,
MESSAGE use the Export Makefile command and run
MESSAGE
MESSAGE NMAKE /f "db_dblib_dll.mak".
MESSAGE
MESSAGE You can specify a configuration when running NMAKE
MESSAGE by defining the macro CFG on the command line. For example:
MESSAGE NMAKE /f "db_dblib_dll.mak" CFG="db_dblib_dll - win32 IceCAP"
MESSAGE
MESSAGE Possible choices for configuration are:
MESSAGE
MESSAGE "db_dblib_dll - win32 Release" (based on "win32 (x86) Dynamic-Link
MESSAGE Library")
MESSAGE "db_dblib_dll - win32 Debug" (based on "win32 (x86) Dynamic-Link
MESSAGE Library")
MESSAGE "db_dblib_dll - win32 IceCAP" (based on "win32 (x86) Dynamic-Link
MESSAGE Library")

```

```

!MESSAGE

# Begin Project
# PROP AllowPerConfigDependencies 0
# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CPPL=cl.exe
MTL=midl.exe
RSC=rc.exe

!IF "$CFG" == "db_dblib_dll - win32 Release"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir "Release"
# PROP BASE Intermediate_Dir "Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0 /c
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MT /w3 /GX /O2 /D "WIN32" /D "NDEBUG" /D "_WINDOWS" /YX
/ FD /c
# ADD CPP /nologo /MD /w3 /GX /O2 /D "WIN32" /D "NDEBUG" /D "_WINDOWS" /YX /FD
/c
# ADD BASE MTL /nologo /D "NDEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD MTL /nologo /D "NDEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD BASE RSC /I 0x409 /d "NDEBUG"
# ADD RSC /I 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib

odbcc32.lib odbccp32.lib /nologo /subsystem:windows /dll /machine:I386
# ADD LINK32 ntwdblib.lib kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib

/nologo /subsystem:windows /dll /machine:I386 /out:".bin\tpcc_dblib.dll"

!ELSEIF "$CFG" == "db_dblib_dll - win32 Debug"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "Debug"
# PROP BASE Intermediate_Dir "Debug"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MTD /w3 /Gm /GX /Zi /Od /D "WIN32" /D "_DEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD CPP /nologo /MDd /w3 /Gm /GX /ZI /Od /D "WIN32" /D "_DEBUG" /D "_WINDOWS"
/YX /FD /c
# ADD BASE MTL /nologo /D "_DEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD MTL /nologo /D "_DEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD BASE RSC /I 0x409 /d "_DEBUG"
# ADD RSC /I 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib

odbcc32.lib odbccp32.lib /nologo /subsystem:windows /dll /debug /machine:I386
/pdbtype:sept
# ADD LINK32 ntwdblib.lib kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib

/nologo /subsystem:windows /dll /debug /machine:I386 /out:".bin\tpcc_dblib.dll"
/pdbtype:sept

!ELSEIF "$CFG" == "db_dblib_dll - win32 IceCAP"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "db_dblib"
# PROP BASE Intermediate_Dir "db_dblib"
# PROP BASE Ignore_Export_Lib 0
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MDd /w3 /Gm /GX /Zi /Od /D "WIN32" /D "_DEBUG" /D
"_WINDOWS" /YX /FD /Gh /c
# ADD CPP /nologo /MD /w3 /Gm /GX /ZI /O2 /D "WIN32" /D "NDEBUG" /D "_WINDOWS"
/D "ICECAP" /YX /FD /Gh /c
# ADD BASE MTL /nologo /D "_DEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD MTL /nologo /D "_DEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD BASE RSC /I 0x409 /d "_DEBUG"
# ADD RSC /I 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 ntwdblib.lib kernel32.lib user32.lib gdi32.lib winspool.lib
comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib

uuid.lib /nologo /subsystem:windows /dll /debug /machine:I386
/out:".bin\tpcc_dblib.dll" /pdbtype:sept
# ADD LINK32 icap.lib ntwdblib.lib kernel32.lib user32.lib gdi32.lib

```

```

winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib
uuid.lib /nologo /subsystem:windows /dll /debug /machine:I386
/out:".bin\tpcc_dblib.dll" /pdbtype:sept

!ENDIF

# Begin Target

# Name "db_dblib_dll - win32 Release"
# Name "db_dblib_dll - win32 Debug"
# Name "db_dblib_dll - win32 IceCAP"
# Begin Group "Source"

# PROP Default_Filter "*.cpp"
# Begin Source File

SOURCE=.\src\tpcc_dblib.cpp
# End Source File
# End Group
# Begin Group "Header"

# PROP Default_Filter "*.h"
# Begin Source File

SOURCE=..\common\src\error.h
# End Source File
# Begin Source File

SOURCE=.\src\tpcc_dblib.h
# End Source File
# Begin Source File

SOURCE=..\common\src\trans.h
# End Source File
# Begin Source File

SOURCE=..\common\src\txn_base.h
# End Source File
# End Group
# End Target
# End Project

```

db_dblib_dll/src/tpcc_dblib.cpp

```

/* FILE: TPCC,DBLIB.CPP Microsoft TPC-C kit ver.
4.20.000 Copyright Microsoft, 1999
*
* All Rights Reserved
*
* Version 4.10.000 audited
* by Richard Gimarc, Performance Metrics, 3/17/99
*
* PURPOSE: Implements dblib calls for TPC-C txns.
* Contact: Charles Levine (clevine@microsoft.com)
*
* Change history:
* 4.20.000 - updated rev number to match kit
* 4.10.001 - not deleting error class in catch handler
on deadlock retry; not a functional bug,
but a memory leak not a functional bug,
* - had to tweak some
declarations to compile with latest SDK; no functional change
*/

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

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

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

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

#include "..\..\common\src\error.h"
#include "..\..\common\src\trans.h"
#include "..\..\common\src\txn_base.h"
#include "tpcc_dblib.h"

#define DEFCLPACKSIZE 4096

// version string; must match return value from tpcc_version stored proc
const char sVersion[] = "4.10.000";

const int iMaxRetries = 10;
static long iConnectionCount = 0; // number of current dblib
connections

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

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

```



```

dblib                dbinit();                // initialize
                    break;

dblib structures/connections
                    case DLL_PROCESS_DETACH:
                    dbexit();                // close all
                    break;
                    default:                /* nothing */;
                    return TRUE;
}

int err_handler(DBPROCESS *dbproc, int severity, int dberr, int oserr, LPCSTR
dberrstr, LPCSTR oserrstr)
{
    CTPCC_DBLIB *pConn;
    assert(dbproc != NULL);
    pConn = (CTPCC_DBLIB*)dbgetuserdata(dbproc);
    if (pConn != NULL)
    {
        pConn->SetDbLibError( severity, dberr, oserr,
dberrstr, oserrstr );
    }
    return INT_CANCEL;
}

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

// typedef INT (SQLAPI *DBMSGHANDLE_PROC)(PDBPROCESS, DBINT, INT, INT, LPCSTR,
LPCSTR, LPCSTR, DBUSMALLINT);
int msg_handler(DBPROCESS *dbproc, DBINT msgno, int msgstate, int severity,
LPCSTR srvcname, LPCSTR procname, DBUSMALLINT line)
{
    CTPCC_DBLIB *pConn;
    assert(dbproc != NULL);
    pConn = (CTPCC_DBLIB*)dbgetuserdata(dbproc);
    if (pConn != NULL)
    {
        pConn->SetSqlError( msgno, msgstate, severity,
msgstate );
    }
    return 0;
}

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

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

/* FUNCTION: CTPCC_DBLIB_ERR::ErrorText
*/

```

```

char* CTPCC_DBLIB_ERR::ErrorText(void)
{
    int i;
    static SERRORMSG errorMsgs[] =
    {
        { ERR_WRONG_SP_VERSION, "wrong
version of stored procs on
database server" },
        { ERR_INVALID_CUST, "Invalid Customer
id.name." },
        { ERR_NO_SUCH_ORDER, "No orders
found for customer." },
        { ERR_RETRIED_TRANS, "Retries
before transaction succeeded." },
        { 0, "" }
    };
};

static char szNotFound[] = "Unknown error number.";
for(i=0; errorMsgs[i].szMsg[0]; i++)
{
    if ( m_errno == errorMsgs[i].iError )
        break;
}
if ( !errorMsgs[i].szMsg[0] )
    return szNotFound;
else
    return errorMsgs[i].szMsg;
}

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

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

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

    m_MaxRetries = 10; // how many retries on
deadlock

    // increase max number of connections if getting close
    if ( dbgetmaxprocs() < (iConnectionCount+5) )
    {
        if ( dbsetmaxprocs(iConnectionCount+10) == FAIL )
            ThrowError(CDBLIBERR::eDbSetMaxProcs);
    }

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

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

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

    DBSETLUSER(login, szuser);
    DBSETLPWD(login, szPassword);
    DBSETHOST(login, szHost);
    DBSETPACKET(login, (unsigned short)DEFCLPACKSIZE);
    DBSETLVERSION(login, DBVER60); // use dblib
ver 6.0 client behavior

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

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

    m_dbproc = dbopen(login, szServer);
}

```

```

// deallocate login structure before checking for success
dbfreelogin( login );
if (m_dbproc == NULL)
    ThrowError(CDBLIBERR::eDbOpen);

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

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

dbcmd(m_dbproc, "set nocount on ");
// do not return row counts
dbcmd(m_dbproc, "set XACT_ABORT ON"); // rollback
transaction on abort

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

DiscardNextResults(2);

// verify that version of stored procs on server is correct
dbrcinit(m_dbproc, "tpcc_version", 0);
if (dbrcexec(m_dbproc) == FAIL)
    ThrowError(CDBLIBERR::eDbRcExec);
if (dbresults(m_dbproc) != SUCCEED)
    ThrowError(CDBLIBERR::eDbResults);
if (dbnextrow(m_dbproc) != REG_ROW)
    ThrowError(CDBLIBERR::eDbNextRow);

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

DiscardNextRows(0);
DiscardNextResults(0);

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

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

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

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

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

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

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

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

```

```

// check for SQL Server error first; if yes, throw it and ignore
any Dblib error
if (m_SqlErr != NULL)
{
    CSQLErr *pSqlErr;
    m_SqlErr = m_SqlErr;
    m_SqlErr = NULL; // clear our pointer to
instance; catch handler will delete
throw pSqlErr;
}
CDblLibErr *pDblLibErr;
if (m_DblLibErr == NULL)
// this case isn't expected to happen, since it means
that an error was returned
// but the error handlers were not called.
pDblLibErr = new CDblLibErr(eAction);
else
{
    pDblLibErr = m_DblLibErr;
    pDblLibErr->m_eAction = eAction;
    m_DblLibErr = NULL; // clear our
pointer to instance; catch handler will delete
}
throw pDblLibErr;
}

// Read and discard rows until no more. Throw an exception if number of rows
read doesn't
// match number of rows expected. The row count will be ignored if the expected
count value
// passed in is negative. A typical use of this routine is to verify that there
are no more
// rows to be read.
void CTPCC_DblLib::DiscardNextRows(int iExpectedCount)
{
    int RETCODE rc;
    iRowsRead = 0;
    while (TRUE)
    {
        rc = dbnextrow(m_dbproc);
        if (rc == NO_MORE_ROWS)
            break;
        if (rc == FAIL)
        {
            if (iExpectedCount >= 0)
                ThrowError(CDblLibErr::eDblNextRow);
            else
                break;
        }
        iRowsRead++;
    }
    if ((iExpectedCount >= 0) &&
        (iExpectedCount != iRowsRead))
        ThrowError(CDblLibErr::eWrongRowCount);
}

// Read and discard results until no more. Throw an exception if number of
result sets read doesn't
// match number expected. The result set count will be ignored if the expected
count value
// passed in is negative. A typical use of this routine is to verify that there
are no more
// result sets to be read.
void CTPCC_DblLib::DiscardNextResults(int iExpectedCount)
{
    int RETCODE rc;
    iResultsRead = 0;
    while (TRUE)
    {
        rc = dbresults(m_dbproc);
        if (rc == NO_MORE_RESULTS)
            break;
        if (rc == FAIL)
        {
            if (iExpectedCount >= 0)
                ThrowError(CDblLibErr::eDbResults);
            else
                break;
        }
        DiscardNextRows(-1);
        iResultsRead++;
    }
    if ((iExpectedCount >= 0) &&
        (iExpectedCount != iResultsRead))
        ThrowError(CDblLibErr::eWrongNumCols);
}

void CTPCC_DblLib::StockLevel()
{
    int const BYTE *pData;
    ResetError();
    while (TRUE)
    {
        try
        {
            dbrpcinit(m_dbproc, "tpcc_stocklevel",
1, -1, (BYTE *) &m_txn.StockLevel.w_id);
            dbrpcparam(m_dbproc, NULL, 0, SQLINT2, -
// @w_id

```

```

smallint dbrpcparam(m_dbproc, NULL, 0, SQLINT1, -
tinyint // @d_id
1, -1, (BYTE *) &m_txn.StockLevel.d_id);
1, -1, (BYTE *) &m_txn.StockLevel.threshold); // @threshold
smallint
if (dbrpcexec(m_dbproc) == FAIL)
    ThrowError(CDblLibErr::eDbRpxExec);
if (dbresults(m_dbproc) != SUCCEEDED)
    ThrowError(CDblLibErr::eDbResults);
if (dbnextrow(m_dbproc) != REG_ROW)
    ThrowError(CDblLibErr::eDbNextRow);
if (pData=dbdata(m_dbproc, 1))
    m_txn.StockLevel.low_stock
= *(long *) pData);
DiscardNextRows(0);
DiscardNextResults(0);
m_txn.StockLevel.exec_status_code = eOK;
return;
} catch (CSQLErr *e)
{
    if ((e->m_msgno == 1205 ||
        (e->m_msgno ==
            strstr(e->m_msgtext,
                (++iTryCount <=
                    // hit deadlock; backoff
                    delete e;
                    sleep(10 * iTryCount);
                    } else
                    throw;
                } // while (TRUE)
                //if (iTryCount
                throw new
CTPCC_DblLib_Err(CTPCC_DblLib_Err::ERR_RETRIED_TRANS, iTryCount);
}
void CTPCC_DblLib::NewOrder()
{
    int DBINT commit_flag;
    DBDATETIME datetime;
    DBDATEREQ datereq;
    int const BYTE *pData;
    ResetError();
    while (TRUE)
    {
        try
        {
            dbrpcinit(m_dbproc, "tpcc_neworder", 0);
            dbrpcparam(m_dbproc, NULL, 0, SQLINT2, -
1, -1, (BYTE *) &m_txn.NewOrder.w_id);
            dbrpcparam(m_dbproc, NULL, 0, SQLINT1, -
1, -1, (BYTE *) &m_txn.NewOrder.d_id);
            dbrpcparam(m_dbproc, NULL, 0, SQLINT4, -
1, -1, (BYTE *) &m_txn.NewOrder.c_id);
            dbrpcparam(m_dbproc, NULL, 0, SQLINT1, -
1, -1, (BYTE *) &m_txn.NewOrder.o_o1_cnt);
            // check whether any order lines are for
            m_txn.NewOrder.o_all_local = 1;
            for (i = 0; i < m_txn.NewOrder.o_o1_cnt;
                i++)
            {
                if
                (m_txn.NewOrder.OL[i].o1_supply_w_id != m_txn.NewOrder.w_id)
                {
                    m_txn.NewOrder.o_all_local = 0; // at least one remote warehouse
                    break;
                }
            }
            dbrpcparam(m_dbproc, NULL, 0, SQLINT1, -
1, -1, (BYTE *) &m_txn.NewOrder.o_all_local);
            for (i = 0; i < m_txn.NewOrder.o_o1_cnt;
                i++)
            {
                dbrpcparam(m_dbproc, NULL,
0, SQLINT4, -1, -1, (BYTE *) &m_txn.NewOrder.OL[i].o1_i_id);
                dbrpcparam(m_dbproc, NULL,
0, SQLINT2, -1, -1, (BYTE *) &m_txn.NewOrder.OL[i].o1_supply_w_id);
                dbrpcparam(m_dbproc, NULL,
0, SQLINT2, -1, -1, (BYTE *) &m_txn.NewOrder.OL[i].o1_quantity);
            }
            if (dbrpcexec(m_dbproc) == FAIL)
                ThrowError(CDblLibErr::eDbRpxExec);

```

```

ThrowError(CDblLibErr::eDbRpxExec);
// Get order line results
m_txn.NewOrder.total_amount = 0;
for (i = 0; i < m_txn.NewOrder.o_o1_cnt;
    i++)
    {
        if (dbresults(m_dbproc) !=
            SUCCEEDED)
            ThrowError(CDblLibErr::eDbResults);
        if (dbnumcols(m_dbproc) !=
            5)
            ThrowError(CDblLibErr::eWrongNumCols);
        if (dbnextrow(m_dbproc) !=
            REG_ROW)
            ThrowError(CDblLibErr::eDbNextRow);
        if (pData=dbdata(m_dbproc,
            1))
            utilStrCpy(m_txn.NewOrder.OL[i].o1_i_name, pData,
            dbdatlen(m_dbproc, 1));
        if (pData=dbdata(m_dbproc,
            2))
            m_txn.NewOrder.OL[i].o1_stock = *(DBSMALLINT *) pData);
        if (pData=dbdata(m_dbproc,
            3))
            utilStrCpy(m_txn.NewOrder.OL[i].o1_brand_generic, pData,
            dbdatlen(m_dbproc, 3));
        if (pData=dbdata(m_dbproc,
            4))
            dbconvert(m_dbproc, SQLNUMERIC, (LPCBYTE)pData,
            dbdatlen(m_dbproc, 4),
            (BYTE *) &m_txn.NewOrder.OL[i].o1_i_price, 8);
            SQLFLT8,
            if (pData=dbdata(m_dbproc,
            5))
            dbconvert(m_dbproc, SQLNUMERIC, (LPCBYTE)pData,
            dbdatlen(m_dbproc, 5),
            (BYTE *) &m_txn.NewOrder.OL[i].o1_amount, 8);
            SQLFLT8,
            m_txn.NewOrder.total_amount = m_txn.NewOrder.total_amount +
            m_txn.NewOrder.OL[i].o1_amount;
            DiscardNextRows(0);
        }
    }
    // get remaining values for w_tax, d_tax,
    o_id, c_last, c_discount, c_credit, o_entry_d, commit_flag
    if (dbresults(m_dbproc) != SUCCEEDED)
        ThrowError(CDblLibErr::eDbResults);
    if (dbnextrow(m_dbproc) != REG_ROW)
        ThrowError(CDblLibErr::eDbNextRow);
    if (dbnumcols(m_dbproc) != 8)
        ThrowError(CDblLibErr::eWrongNumCols);
    if (pData=dbdata(m_dbproc, 1))
        dbconvert(m_dbproc,
        SQLNUMERIC, (LPCBYTE)pData, dbdatlen(m_dbproc, 1), SQLFLT8, (BYTE
        *) &m_txn.NewOrder.w_tax,
        8);
        if (pData=dbdata(m_dbproc, 2))
            dbconvert(m_dbproc,
        SQLNUMERIC, (LPCBYTE)pData, dbdatlen(m_dbproc, 2), SQLFLT8, (BYTE
        *) &m_txn.NewOrder.d_tax,
        8);
        if (pData=dbdata(m_dbproc, 3))
            m_txn.NewOrder.o_id =
        *(DBINT *) pData);
        if (pData=dbdata(m_dbproc, 4))
            utilStrCpy(m_txn.NewOrder.c_last, pData, dbdatlen(m_dbproc, 4));
        if (pData=dbdata(m_dbproc, 5))
            dbconvert(m_dbproc,
        SQLNUMERIC, (LPCBYTE)pData, dbdatlen(m_dbproc, 5), SQLFLT8, (BYTE
        *) &m_txn.NewOrder.c_discount, 8);
        if (pData=dbdata(m_dbproc, 6))
            utilStrCpy(m_txn.NewOrder.c_credit, pData, dbdatlen(m_dbproc, 6));
        if (pData=dbdata(m_dbproc, 7))
            datetime = *(DBDATETIME
        *) pData);
        dbdatecrack(m_dbproc,

```

```

&daterec, &datetime);
    m_txn.NewOrder.o_entry_d.year = daterec.year;
    m_txn.NewOrder.o_entry_d.month = daterec.month;
    m_txn.NewOrder.o_entry_d.day = daterec.day;
    m_txn.NewOrder.o_entry_d.hour = daterec.hour;
    m_txn.NewOrder.o_entry_d.minute = daterec.minute;
    m_txn.NewOrder.o_entry_d.second = daterec.second;
    if (pData=dbdata(m_dbproc, 8))
        commit_flag = (*(DBTINYINT *)
        pData);
    DiscardNextRows(0);
    DiscardNextResults(0);
    if (commit_flag == 1)
    {
        m_txn.NewOrder.total_amount *= ((1 + m_txn.NewOrder.w_tax +
        m_txn.NewOrder.d_tax) ^ (1 -
        m_txn.NewOrder.c_discount));
        m_txn.NewOrder.exec_status_code = eOK;
        else
        m_txn.NewOrder.exec_status_code = eInvalidItem;
    }
    catch (CSQLERR *e)
    {
        if ((e->m_msgno == 1205 ||
        e->m_msgno ==
        1205) &&
        strstr(e->m_msgtext,
        (++iTryCount <=
        iMaxRetries))
        {
            // hit deadlock; backoff
            delete e;
            Sleep(10 * iTryCount);
        }
        else
            throw;
    }
    // while (TRUE)
    if (iTryCount)
        throw new
        CTPCC_DBLIB_ERR(CTPCC_DBLIB_ERR::ERR_RETRIED_TRANS, iTryCount);
}

void CTPCC_DBLIB::Payment()
{
    DBDATETIME datetime;
    DBDATEREK daterec;
    int const BYTE *pData;
    iTryCount = 0;
    ResetError();
    while (TRUE)
    {
        try
        {
            dbrpcinit(m_dbproc, "tpcc_payment", 0);
            dbrpcparam(m_dbproc, NULL, 0, SQLINT2, -
            1, -1, (BYTE *) &m_txn.Payment.w_id);
            dbrpcparam(m_dbproc, NULL, 0, SQLINT2, -
            1, -1, (BYTE *) &m_txn.Payment.c_w_id);
            dbrpcparam(m_dbproc, NULL, 0, SQLFLT8, -
            1, -1, (BYTE *) &m_txn.Payment.h_amount);
            dbrpcparam(m_dbproc, NULL, 0, SQLINT1, -
            1, -1, (BYTE *) &m_txn.Payment.d_id);
            dbrpcparam(m_dbproc, NULL, 0, SQLINT1, -
            1, -1, (BYTE *) &m_txn.Payment.c_d_id);
            dbrpcparam(m_dbproc, NULL, 0, SQLINT4, -
            1, -1, (BYTE *) &m_txn.Payment.c_id);
            // if customer id is zero, then payment
            is by name
            if (m_txn.Payment.c_id == 0)
                dbrpcparam(m_dbproc, NULL,
            0, SQLCHAR, -1, strlen(m_txn.Payment.c_last), (unsigned char
            *)m_txn.Payment.c_last);
            if (dbrpcexec(m_dbproc) == FAIL)
                ThrowError(CDblLibErr::edbRpxExec);
            if (dbresults(m_dbproc) != SUCCEEDED)
                ThrowError(CDblLibErr::edbResults);
            if (dbnextrow(m_dbproc) != REG_ROW)
                ThrowError(CDblLibErr::edbnxtRow);
        }
        catch (CSQLERR *e)
        {
            if ((e->m_msgno == 1205 ||
            e->m_msgno ==
            1205) &&
            strstr(e->m_msgtext,
            (++iTryCount <=
            iMaxRetries))
            {
                // hit deadlock; backoff
                delete e;
                Sleep(10 * iTryCount);
            }
            else
                throw;
        }
        // while (TRUE)
        if (iTryCount)
            throw new
            CTPCC_DBLIB_ERR(CTPCC_DBLIB_ERR::ERR_RETRIED_TRANS, iTryCount);
    }
}

```

```

    if (dbnumcols(m_dbproc) != 27)
        ThrowError(CDblLibErr::ewrongNumCols);
    if (pData=dbdata(m_dbproc, 1))
        m_txn.Payment.c_id =
        *((DBINT *) pData);
    if (pData=dbdata(m_dbproc, 2))
        UtilStrCpy(m_txn.Payment.c_last, pData, dbdatlen(m_dbproc, 2));
    if (pData=dbdata(m_dbproc, 3))
    {
        datetime = *(DBDATETIME
        dbdatecrack(m_dbproc,
        m_txn.Payment.h_date.year
        m_txn.Payment.h_date.month
        m_txn.Payment.h_date.day
        m_txn.Payment.h_date.hour
        m_txn.Payment.h_date.minute = daterec.minute;
        m_txn.Payment.h_date.second = daterec.second;
        if (pData=dbdata(m_dbproc, 4))
            UtilStrCpy(m_txn.Payment.w_street_1, pData, dbdatlen(m_dbproc,
            4));
        if (pData=dbdata(m_dbproc, 5))
            UtilStrCpy(m_txn.Payment.w_street_2, pData, dbdatlen(m_dbproc,
            5));
        if (pData=dbdata(m_dbproc, 6))
            UtilStrCpy(m_txn.Payment.w_city, pData, dbdatlen(m_dbproc, 6));
        if (pData=dbdata(m_dbproc, 7))
            UtilStrCpy(m_txn.Payment.w_state, pData, dbdatlen(m_dbproc, 7));
        if (pData=dbdata(m_dbproc, 8))
            UtilStrCpy(m_txn.Payment.w_zip, pData, dbdatlen(m_dbproc, 8));
        if (pData=dbdata(m_dbproc, 9))
            UtilStrCpy(m_txn.Payment.d_street_1, pData, dbdatlen(m_dbproc,
            9));
        if (pData=dbdata(m_dbproc, 10))
            UtilStrCpy(m_txn.Payment.d_street_2, pData, dbdatlen(m_dbproc,
            10));
        if (pData=dbdata(m_dbproc, 11))
            UtilStrCpy(m_txn.Payment.d_city, pData, dbdatlen(m_dbproc, 11));
        if (pData=dbdata(m_dbproc, 12))
            UtilStrCpy(m_txn.Payment.d_state, pData, dbdatlen(m_dbproc, 12));
        if (pData=dbdata(m_dbproc, 13))
            UtilStrCpy(m_txn.Payment.d_zip, pData, dbdatlen(m_dbproc, 13));
        if (pData=dbdata(m_dbproc, 14))
            UtilStrCpy(m_txn.Payment.c_first, pData, dbdatlen(m_dbproc, 14));
        if (pData=dbdata(m_dbproc, 15))
            UtilStrCpy(m_txn.Payment.c_middle, pData, dbdatlen(m_dbproc, 15));
        if (pData=dbdata(m_dbproc, 16))
            UtilStrCpy(m_txn.Payment.c_street_1, pData, dbdatlen(m_dbproc,
            16));
        if (pData=dbdata(m_dbproc, 17))
            UtilStrCpy(m_txn.Payment.c_street_2, pData, dbdatlen(m_dbproc,
            17));
        if (pData=dbdata(m_dbproc, 18))
            UtilStrCpy(m_txn.Payment.c_city, pData, dbdatlen(m_dbproc, 18));
        if (pData=dbdata(m_dbproc, 19))
            UtilStrCpy(m_txn.Payment.c_state, pData, dbdatlen(m_dbproc, 19));
        if (pData=dbdata(m_dbproc, 20))
            UtilStrCpy(m_txn.Payment.c_zip, pData, dbdatlen(m_dbproc, 20));
        if (pData=dbdata(m_dbproc, 21))
            UtilStrCpy(m_txn.Payment.c_phone, pData, dbdatlen(m_dbproc, 21));
        if (pData=dbdata(m_dbproc, 22))
        {
            datetime = *(DBDATETIME
            dbdatecrack(m_dbproc,
            m_txn.Payment.c_since.year
            m_txn.Payment.c_since.month = daterec.month;
            m_txn.Payment.c_since.day
            m_txn.Payment.c_since.hour
            m_txn.Payment.c_since.minute = daterec.minute;
            m_txn.Payment.c_since.second = daterec.second;
            if (pData=dbdata(m_dbproc, 23))
                UtilStrCpy(m_txn.Payment.c_credit, pData, dbdatlen(m_dbproc, 23));
        }
        datetime = *(DBDATETIME
        dbdatecrack(m_dbproc,
        m_txn.Payment.h_date.year
        m_txn.Payment.h_date.month
        m_txn.Payment.h_date.day
        m_txn.Payment.h_date.hour
        m_txn.Payment.h_date.minute = daterec.minute;
        m_txn.Payment.h_date.second = daterec.second;
        if (pData=dbdata(m_dbproc, 4))
            UtilStrCpy(m_txn.Payment.w_street_1, pData, dbdatlen(m_dbproc,
            4));
        if (pData=dbdata(m_dbproc, 5))
            UtilStrCpy(m_txn.Payment.w_street_2, pData, dbdatlen(m_dbproc,
            5));
        if (pData=dbdata(m_dbproc, 6))
            UtilStrCpy(m_txn.Payment.w_city, pData, dbdatlen(m_dbproc, 6));
        if (pData=dbdata(m_dbproc, 7))
            UtilStrCpy(m_txn.Payment.w_state, pData, dbdatlen(m_dbproc, 7));
        if (pData=dbdata(m_dbproc, 8))
            UtilStrCpy(m_txn.Payment.w_zip, pData, dbdatlen(m_dbproc, 8));
        if (pData=dbdata(m_dbproc, 9))
            UtilStrCpy(m_txn.Payment.d_street_1, pData, dbdatlen(m_dbproc,
            9));
        if (pData=dbdata(m_dbproc, 10))
            UtilStrCpy(m_txn.Payment.d_street_2, pData, dbdatlen(m_dbproc,
            10));
        if (pData=dbdata(m_dbproc, 11))
            UtilStrCpy(m_txn.Payment.d_city, pData, dbdatlen(m_dbproc, 11));
        if (pData=dbdata(m_dbproc, 12))
            UtilStrCpy(m_txn.Payment.d_state, pData, dbdatlen(m_dbproc, 12));
        if (pData=dbdata(m_dbproc, 13))
            UtilStrCpy(m_txn.Payment.d_zip, pData, dbdatlen(m_dbproc, 13));
        if (pData=dbdata(m_dbproc, 14))
            UtilStrCpy(m_txn.Payment.c_first, pData, dbdatlen(m_dbproc, 14));
        if (pData=dbdata(m_dbproc, 15))
            UtilStrCpy(m_txn.Payment.c_middle, pData, dbdatlen(m_dbproc, 15));
        if (pData=dbdata(m_dbproc, 16))
            UtilStrCpy(m_txn.Payment.c_street_1, pData, dbdatlen(m_dbproc,
            16));
        if (pData=dbdata(m_dbproc, 17))
            UtilStrCpy(m_txn.Payment.c_street_2, pData, dbdatlen(m_dbproc,
            17));
        if (pData=dbdata(m_dbproc, 18))
            UtilStrCpy(m_txn.Payment.c_city, pData, dbdatlen(m_dbproc, 18));
        if (pData=dbdata(m_dbproc, 19))
            UtilStrCpy(m_txn.Payment.c_state, pData, dbdatlen(m_dbproc, 19));
        if (pData=dbdata(m_dbproc, 20))
            UtilStrCpy(m_txn.Payment.c_zip, pData, dbdatlen(m_dbproc, 20));
        if (pData=dbdata(m_dbproc, 21))
            UtilStrCpy(m_txn.Payment.c_phone, pData, dbdatlen(m_dbproc, 21));
        if (pData=dbdata(m_dbproc, 22))
        {
            datetime = *(DBDATETIME
            dbdatecrack(m_dbproc,
            m_txn.Payment.c_since.year
            m_txn.Payment.c_since.month = daterec.month;
            m_txn.Payment.c_since.day
            m_txn.Payment.c_since.hour
            m_txn.Payment.c_since.minute = daterec.minute;
            m_txn.Payment.c_since.second = daterec.second;
            if (pData=dbdata(m_dbproc, 23))
                UtilStrCpy(m_txn.Payment.c_credit, pData, dbdatlen(m_dbproc, 23));
        }
    }
}

```

```

    if (pData=dbdata(m_dbproc, 24))
        dbconvert(m_dbproc,
        SQLNUMERIC, (LPCBYTE)pData, dbdatlen(m_dbproc, 24), SQLFLT8, (BYTE
        *)&m_txn.Payment.c_credit_lim, 8);
    if (pData=dbdata(m_dbproc, 25))
        dbconvert(m_dbproc,
        SQLNUMERIC, (LPCBYTE)pData, dbdatlen(m_dbproc, 25), SQLFLT8, (BYTE
        *)&m_txn.Payment.c_discount, 8);
    if (pData=dbdata(m_dbproc, 26))
        dbconvert(m_dbproc,
        SQLNUMERIC, (LPCBYTE)pData, dbdatlen(m_dbproc, 26), SQLFLT8, (BYTE
        *)&m_txn.Payment.c_balance, 8);
    if (pData=dbdata(m_dbproc, 27))
        UtilStrCpy(m_txn.Payment.c_data, pData, dbdatlen(m_dbproc, 27));
    DiscardNextRows(0);
    DiscardNextResults(0);
    if (m_txn.Payment.c_id == 0)
        throw new
        CTPCC_DBLIB_ERR(CTPCC_DBLIB_ERR::ERR_INVALID_CUST);
    else
        m_txn.Payment.exec_status_code = eOK;
    return;
}
catch (CSQLERR *e)
{
    if ((e->m_msgno == 1205 ||
    e->m_msgno ==
    1205) &&
    strstr(e->m_msgtext,
    (++iTryCount <=
    iMaxRetries))
    {
        // hit deadlock; backoff
        delete e;
        Sleep(10 * iTryCount);
    }
    else
        throw;
}
// while (TRUE)
if (iTryCount)
    throw new
    CTPCC_DBLIB_ERR(CTPCC_DBLIB_ERR::ERR_RETRIED_TRANS, iTryCount);
}

void CTPCC_DBLIB::OrderStatus()
{
    int DBDATETIME datetime;
    DBDATEREK daterec;
    int RETCODE rc;
    const BYTE *pData;
    iTryCount = 0;
    ResetError();
    while (TRUE)
    {
        try
        {
            dbrpcinit(m_dbproc, "tpcc_orderstatus",
            0);
            dbrpcparam(m_dbproc, NULL, 0, SQLINT2, -
            1, -1, (BYTE *) &m_txn.OrderStatus.w_id);
            dbrpcparam(m_dbproc, NULL, 0, SQLINT1, -
            1, -1, (BYTE *) &m_txn.OrderStatus.d_id);
            dbrpcparam(m_dbproc, NULL, 0, SQLINT4, -
            1, -1, (BYTE *) &m_txn.OrderStatus.c_id);
            // if customer id is zero, then order
            is by name
            if (m_txn.OrderStatus.c_id == 0)
                dbrpcparam(m_dbproc, NULL,
            0, SQLCHAR, -1, strlen(m_txn.OrderStatus.c_last), (unsigned char
            *)m_txn.OrderStatus.c_last);
            if (dbrpcexec(m_dbproc) == FAIL)
                ThrowError(CDblLibErr::edbRpxExec);
            // Get order lines
            if (dbresults(m_dbproc) != SUCCEEDED)
                if ((m_DblLibErr == NULL)
                throw new
                CTPCC_DBLIB_ERR(CTPCC_DBLIB_ERR::ERR_NO_SUCH_ORDER);
            else
                ThrowError(CDblLibErr::edbResults);
            if (dbnumcols(m_dbproc) != 5)

```

```

ThrowError(CDBLIBERR::ewrongNumCols);
        i = 0;
        while (TRUE)
        {
            rc = dbnextrow(m_dbproc);
            if (rc == NO_MORE_ROWS)
                break;
            if (rc != REG_ROW)
                ThrowError(CDBLIBERR::eDBNextRow);

            if(pData=dbdata(m_dbproc,
1))
                m_txn.OrderStatus.OL[i].ol_supply_w_id = (*DBSMALLINT *) pData;
            if(pData=dbdata(m_dbproc,
2))
                m_txn.OrderStatus.OL[i].ol_i_id = (*DBINT *) pData;
            if(pData=dbdata(m_dbproc,
3))
                m_txn.OrderStatus.OL[i].ol_quantity = (*DBSMALLINT *) pData;
            if(pData=dbdata(m_dbproc,
4))
                dbconvert(m_dbproc, SQLNUMERIC, (LPCBYTE)pData,
                    dbdatlen(m_dbproc,4),
                    SQLFLT8, (BYTE *)&m_txn.OrderStatus.OL[i].ol_amount, 8);
            if(pData=dbdata(m_dbproc,
5))
                {
                    datetime =
                    *((DBDATETIME *) pData);
                    dbdatecrack(m_dbproc, &daterec, &datetime);
                    m_txn.OrderStatus.OL[i].ol_delivery_d.year = daterec.year;
                    m_txn.OrderStatus.OL[i].ol_delivery_d.month = daterec.month;
                    m_txn.OrderStatus.OL[i].ol_delivery_d.day = daterec.day;
                    m_txn.OrderStatus.OL[i].ol_delivery_d.hour = daterec.hour;
                    m_txn.OrderStatus.OL[i].ol_delivery_d.minute = daterec.minute;
                    m_txn.OrderStatus.OL[i].ol_delivery_d.second = daterec.second;
                    i++;
                }
            m_txn.OrderStatus.o_ol_cnt = i;

            if (dbresults(m_dbproc) != SUCCEEDED)
                ThrowError(CDBLIBERR::eDBResults);
            if (dbnextrow(m_dbproc) != REG_ROW)
                ThrowError(CDBLIBERR::eDBNextRow);
            if (dbnumcols(m_dbproc) != 8)
                ThrowError(CDBLIBERR::ewrongNumCols);

            if(pData=dbdata(m_dbproc, 1))
                m_txn.OrderStatus.c_id =
            if(pData=dbdata(m_dbproc, 2))
                UtilStrCpy(m_txn.OrderStatus.c_last, pData, dbdatlen(m_dbproc,2));
            if(pData=dbdata(m_dbproc, 3))
                UtilStrCpy(m_txn.OrderStatus.c_first, pData,
                    dbdatlen(m_dbproc,3));
            if(pData=dbdata(m_dbproc, 4))
                UtilStrCpy(m_txn.OrderStatus.c_middle, pData, dbdatlen(m_dbproc,
4));
            if(pData=dbdata(m_dbproc, 5))
                {
                    datetime = *((DBDATETIME
                    &daterec, &datetime);
                    dbdatecrack(m_dbproc,
                    m_txn.OrderStatus.o_entry_d.year = daterec.year;
                    m_txn.OrderStatus.o_entry_d.month = daterec.month;
                    m_txn.OrderStatus.o_entry_d.day = daterec.day;
                    m_txn.OrderStatus.o_entry_d.hour = daterec.hour;
                    m_txn.OrderStatus.o_entry_d.minute = daterec.minute;
                    m_txn.OrderStatus.o_entry_d.second = daterec.second;
                    if(pData=dbdata(m_dbproc, 6))
                        m_txn.OrderStatus.o_carrier_id = (*DBSMALLINT *) pData;
                    if(pData=dbdata(m_dbproc, 7))
                        dbconvert(m_dbproc,
                    SQLNUMERIC, (LPCBYTE)pData, dbdatlen(m_dbproc,7),
                    SQLFLT8, (BYTE *)&m_txn.OrderStatus.c_balance, 8);
                    if(pData=dbdata(m_dbproc, 8))
                        m_txn.OrderStatus.o_id =
                    (*DBINT *) pData);
                }
        }
    }
}

```

```

        DiscardNextRows(0);
        DiscardNextResults(0);

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

        return;
    }
    catch (CSQLERR *e)
    {
        if ((e->m_msgno == 1205 ||
            (e->m_msgno ==
            iErrorDbProvider &&
            sErrTimeoutExpired) != NULL)) &&
            (iMaxRetries))
        {
            // hit deadlock; backoff
            delete e;
            Sleep(10 * iTryCount);
        }
        else
            throw;
    }
}
// while (TRUE)
{
    if (iTryCount)
        throw new
        CTPCC_DBLIB_ERR(CTPCC_DBLIB_ERR::ERR_RETRIED_TRANS, iTryCount);
}

void CTPCC_DBLIB::Delivery()
{
    int
    int
    const BYTE *pData;
    iTryCount = 0;
    ResetError();
    while (TRUE)
    {
        try
        {
            dbrpcinit(m_dbproc, "tpcc_delivery", 0);
            dbrpcparam(m_dbproc, NULL, 0, SQLINT2, -
            1, -1, (BYTE *) &m_txn.Delivery.w_id);
            dbrpcparam(m_dbproc, NULL, 0, SQLINT1, -
            1, -1, (BYTE *) &m_txn.Delivery.o_carrier_id);

            if (dbrpcexec(m_dbproc) == FAIL)
                ThrowError(CDBLIBERR::eDBRpcExec);
            if (dbresults(m_dbproc) != SUCCEEDED)
                ThrowError(CDBLIBERR::eDBResults);
            if (dbnextrow(m_dbproc) != REG_ROW)
                ThrowError(CDBLIBERR::eDBNextRow);
            if (dbnumcols(m_dbproc) != 10)
                ThrowError(CDBLIBERR::ewrongNumCols);

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

                DiscardNextRows(0);
                DiscardNextResults(0);

                m_txn.Delivery.exec_status_code = eOK;
                return;
            }
            catch (CSQLERR *e)
            {
                if ((e->m_msgno == 1205 ||
                    (e->m_msgno ==
                    iErrorDbProvider &&
                    sErrTimeoutExpired) != NULL)) &&
                    (iMaxRetries))
                {
                    // hit deadlock; backoff
                    delete e;
                    Sleep(10 * iTryCount);
                }
                else
                    throw;
            }
        }
    }
}
// while (TRUE)

```

```

// if (iTryCount)
// throw new
// CTPCC_DBLIB_ERR(CTPCC_DBLIB_ERR::ERR_RETRIED_TRANS, iTryCount);
}
void CTPCC_DBLIB::ResetError()
{
    if (m_DbLibErr != NULL)
    {
        delete m_DbLibErr;
        m_DbLibErr = (CDBLIBERR*)NULL;
    }
    if (m_SqlErr != NULL)
    {
        delete m_SqlErr;
        m_SqlErr = (CSQLERR*)NULL;
    }
    return;
}
}

db_dblib_dll/src/tpcc_dblib.h
/* FILE: TPCC_DBLIB.H Microsoft TPC-C Kit Ver.
4.20.000 Copyright Microsoft, 1999
All Rights Reserved Version 4.10.000 audited
by Richard Gimarc, Performance Metrics, 3/17/99
PURPOSE: Header file for TPC-C txn class implementation.
Change history: 4.20.000 - updated rev number to match kit
#pragma once
#ifndef PDBPROCESS
#define DBPROCESS void // dbprocess structure type
typedef DBPROCESS * PDBPROCESS;
#endif
// need to declare functions for import, unless define has already been created
// by the DLL's .cpp module for export.
#ifdef DllDecl
#define DllDecl __declspec( dllimport )
#endif
class CSQLERR : public CBaseErr
{
public:
    CSQLERR(void)
    {
        m_msgno = 0;
        m_msgstate = 0;
        m_severity = 0;
        m_msgtext = NULL;
    };
    ~CSQLERR()
    {
        delete [] m_msgtext;
    };
    int m_msgno;
    int m_msgstate;
    int m_severity;
    char *m_msgtext;
    int ErrorType() {return ERR_TYPE_SQL;};
    int ErrorNum() {return m_msgno;};
    char *ErrorText() {return m_msgtext;};
};
class CDBLIBERR : public CBaseErr
{
public:
    enum ACTION
    {
        eNone,
        eUnknown,
        eLogin,
        // error from dblogin
        eDbOpen,
        // error from dbopen
        eDbUse,
        // error from dbuse
        eDbSqlExec,
        // error from dbsqlexec
        eDbSet,
        // error from one of the dbset* routines
        eDbNextRow,
        // error from dbnextrow
        eWrongRowCount,
        // more or less rows returned than expected
        eWrongNumCols,
        // more or less columns returned than expected
        eDBResults,
        // error from dbresults
        eDBRpcExec,
        // error from dbrpcexec
        eDbSetMaxProcs,
        // error from dbsetmaxprocs
    };
};

```

```

// error from dbsetmaxprocs
edbProcHandler
// error from either dbprocerrhandle or dbprocmsgandle
};

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

    m_dberrstr = NULL;
    m_oserrstr = NULL;
};

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

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

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

class CTPCC_DBLIB_ERR : public CBaseErr
{
public:
    enum CTPCC_DBLIB_ERRS
    {
        ERR_WRONG_SP_VERSION = 1, // "wrong
        version of stored procs on database server"
        ERR_INVALID_CUST,
        // "Invalid Customer id,name"
        ERR_NO_SUCH_ORDER,
        // "No orders found for customer"
        ERR_RETRIED_TRANS,
        // "Retries before transaction succeeded."
    };

    CTPCC_DBLIB_ERR( int iErr ) { m_errno = iErr;

m_iTryCount = 0; };

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

    int m_errno;
    int m_iTryCount;

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

    char *ErrorText();
};

class DllDecl1 CTPCC_DBLIB : public CTPCC_BASE
{
private:
    // declare variables and private functions here...
    PDBPROCESS m_dbproc;
    CDBLIBERR *m_DBLIBerr; // not
    CSQLErr *m_SqlErr;
    // not allocated until needed (maybe never)
    int m_MaxRetries;
    // retry count on deadlock

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

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

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

    inline PNEW_ORDER_DATA { return
&m_txn.NewOrder; };
    inline PPAYMENT_DATA { return
BuffAddr_Payment(); }
    inline PDELIVERY_DATA { return
BuffAddr_Delivery(); }
    inline PSTOCK_LEVEL_DATA { return
&m_txn.StockLevel; };
    inline PORDER_STATUS_DATA { return
BuffAddr_OrderStatus(); }
};

```

```

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

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

extern "C" dllDecl1 CTPCC_DBLIB* CTPCC_DBLIB_new
(LPCSTR szServer, LPCSTR szUser, LPCSTR szPassword, LPCSTR szHost,
LPCSTR szDatabase );

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

```

db_odbc_dll/db_odbc_dll.dsp

```

# Microsoft Developer Studio Project File - Name="db_odbc_dll" - Package
Owner=<4>
# Microsoft Developer Studio Generated Build File, Format Version 6.00
# ** DO NOT EDIT **

# TARGETTYPE "win32 (x86) Dynamic-Link Library" 0x0102

CFG=db_odbc_dll - win32 IceCAP
!MESSAGE This is not a valid makefile. To build this project using NMAKE,
!MESSAGE use the Export Makefile command and run
!MESSAGE
!MESSAGE NMAKE /f "db_odbc_dll.mak".
!MESSAGE
!MESSAGE You can specify a configuration when running NMAKE
!MESSAGE by defining the macro CFG on the command line. For example:
!MESSAGE
!MESSAGE NMAKE /f "db_odbc_dll.mak" CFG="db_odbc_dll - win32 IceCAP"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "db_odbc_dll - win32 Release" (based on "win32 (x86) Dynamic-Link
Library")
!MESSAGE "db_odbc_dll - win32 Debug" (based on "win32 (x86) Dynamic-Link
Library")
!MESSAGE "db_odbc_dll - win32 IceCAP" (based on "win32 (x86) Dynamic-Link
Library")
!MESSAGE

# Begin Project
# PROP AllowPerConfigDependencies 0
# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CP=cl.exe
MTL=midl.exe
RSC=rc.exe

!IF "$CFG" == "db_odbc_dll - win32 Release"
# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir "Release"
# PROP BASE Intermediate_Dir "Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MT /w3 /GX /O2 /D "WIN32" /D "NDEBUG" /D "_WINDOWS" /YX
/ FD /C
# ADD CPP /nologo /MD /w3 /GX /O2 /D "WIN32" /D "NDEBUG" /D "_WINDOWS" /YX /FD
/C
# ADD BASE MTL /nologo /D "NDEBUG" /mktyp1ib203 /o /win32 "NUL"
# ADD MTL /nologo /D "NDEBUG" /mktyp1ib203 /o /win32 "NUL"
# ADD BASE RSC /I 0x409 /d "NDEBUG"
# ADD RSC /I 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kerne132.lib user32.lib gdi32.lib winspool.lib cmd1g32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib

odbc32.lib odbccp32.lib /nologo /subsystem:windows /d11 /machine:I386
# ADD LINK32 kerne132.lib user32.lib gdi32.lib winspool.lib cmd1g32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib

odbccp32.lib /nologo /subsystem:windows /d11 /machine:I386
/out:".bin\tpcc_odbc_dll"

!ELSEIF "$CFG" == "db_odbc_dll - win32 Debug"
# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "Debug"
# PROP BASE Intermediate_Dir "Debug"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"

```

```

# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MTD /w3 /Gm /GX /ZI /Od /D "WIN32" /D "_DEBUG" /D
"_WINDOWS" /YX /FD /C
# ADD CPP /nologo /MDD /w3 /GX /ZI /Od /D "WIN32" /D "_DEBUG" /D "_WINDOWS" /YX
/ FD /C
# ADD BASE MTL /nologo /D "DEBUG" /mktyp1ib203 /o /win32 "NUL"
# ADD MTL /nologo /D "DEBUG" /mktyp1ib203 /o /win32 "NUL"
# ADD BASE RSC /I 0x409 /d "DEBUG"
# ADD RSC /I 0x409 /d "DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kerne132.lib user32.lib gdi32.lib winspool.lib cmd1g32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib

odbc32.lib odbccp32.lib /nologo /subsystem:windows /d11 /debug /machine:I386
/pdbtype:sept
# ADD LINK32 kerne132.lib user32.lib gdi32.lib winspool.lib cmd1g32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib

odbccp32.lib /nologo /subsystem:windows /d11 /debug /machine:I386
/out:".bin\tpcc_odbc_dll" /pdbtype:sept

!ELSEIF "$CFG" == "db_odbc_dll - win32 IceCAP"
# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "db_odbc_"
# PROP BASE Intermediate_Dir "db_odbc_"
# PROP BASE Ignore_Export_Lib 0
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MDD /w3 /Gm /GX /ZI /Od /D "WIN32" /D "_DEBUG" /D
"_WINDOWS" /YX /FD /Gh /C
# ADD CPP /nologo /MD /w3 /Gm /GX /ZI /O2 /D "WIN32" /D "NDEBUG" /D "_WINDOWS"
/D "ICECAP" /YX /FD /Gh /C
# ADD BASE MTL /nologo /D "DEBUG" /mktyp1ib203 /o /win32 "NUL"
# ADD MTL /nologo /D "DEBUG" /mktyp1ib203 /o /win32 "NUL"
# ADD BASE RSC /I 0x409 /d "DEBUG"
# ADD RSC /I 0x409 /d "DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kerne132.lib user32.lib gdi32.lib winspool.lib cmd1g32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib

odbc32.lib odbccp32.lib /nologo /subsystem:windows /d11 /debug /machine:I386
/out:".bin\tpcc_odbc_dll" /pdbtype:sept
# ADD LINK32 icap.lib kerne132.lib user32.lib gdi32.lib winspool.lib
cmd1g32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib

odbc32.lib odbccp32.lib /nologo /subsystem:windows /d11 /debug /machine:I386
/out:".bin\tpcc_odbc_dll" /pdbtype:sept

!ENDIF

# Begin Target

# Name "db_odbc_dll - win32 Release"
# Name "db_odbc_dll - win32 Debug"
# Name "db_odbc_dll - win32 IceCAP"
# Begin Group "Source"
# PROP Default_Filter "*.cpp"
# Begin Source File
SOURCE=.\src\tpcc_odbc.cpp
# End Source File
# End Group
# Begin Group "Header"
# PROP Default_Filter "*.h"
# Begin Source File
SOURCE=.\common\src\error.h
# End Source File
# Begin Source File
SOURCE=.\src\tpcc_odbc.h
# End Source File
# Begin Source File
SOURCE=.\common\src\trans.h
# End Source File
# Begin Source File
SOURCE=.\common\src\txn_base.h
# End Source File
# End Group
# End Target
# End Project

```

db_odbc_dll/src/tpcc_odbc.cpp

```

/* FILE: TPCC_ODBC.CPP Microsoft TPC-C Kit Ver.
4.20.000 Copyright Microsoft, 1999
*
* All Rights Reserved

```

```

*
* by Richard Gimarc, Performance Metrics, 3/17/99      Version 4.10.000 audited
*
* PURPOSE:      Implements ODBC calls for TPC-C txns.
* Contact:      Charles Levine (clevine@microsoft.com)
*
* Change history:
*               4.20.000 - updated rev number to match kit
*               4.10.001 - not deleting error class in catch handler
*
* on deadlock retry;
*
* but a memory leak
*/

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

#define DBNTWIN32
#include <sqltypes.h>
#include <sql.h>
#include <sqltext.h>
#include <odbc.h>
#include <odbcss.h>

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

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

#include "..\..\common\src\error.h"
#include "..\..\common\src\trans.h"
#include "..\..\common\src\txn_base.h"
#include "tpcc_odbc.h"

// version string; must match return value from tpcc_version stored proc
const char sversion[] = "4.10.000";

const iMaxRetries = 10;      // how many retries on deadlock

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

static SQLHENV henv = SQL_NULL_HENV;
// ODBC environment handle

BOOL WINAPIENTRY DllMain(HMODULE hModule, DWORD ul_reason_for_call, LPVOID lpReserved)
{
    switch( ul_reason_for_call )
    {
        case DLL_PROCESS_ATTACH:
            DisableThreadLibraryCalls(hModule);
            if ( SQLAllocHandle(Std(SQL_HANDLE_ENV,
SQL_NULL_HANDLE, &henv) != SQL_SUCCESS )
                break;      return FALSE;

        case DLL_PROCESS_DETACH:
            if ( henv != NULL )
                SQLFreeEnv(henv);
                break;

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

/* FUNCTION: CTPCC_ODBC_ERR::ErrorText
*/
char* CTPCC_ODBC_ERR::ErrorText(void)
{
    int i;
    static SERRMSG errorMsgs[] =
    {
        { ERR_WRONG_SP_VERSION,      "wrong
version of stored procs on
database server" },
        { ERR_INVALID_CUST,          "Invalid customer id,name." },
        { ERR_NO_SUCH_ORDER,         "No orders
found for customer." },
        { ERR_RETRIED_TRANS,         "Retries
before transaction succeeded." },
        { 0,
        }
    };

    static char szNotFound[] = "Unknown error number.";
    for(i=0; errorMsgs[i].szMsg[0]; i++)
    {
        if ( m_errno == errorMsgs[i].iError )
            break;
    }
    if ( !errorMsgs[i].szMsg[0] )
        return szNotFound;
    else
        return errorMsgs[i].szMsg;
}

```

```

// wrapper routine for class constructor
__declspec(dllexport) CTPCC_ODBC* CTPCC_ODBC_new(
LPCSTR szServer,      // name of SQL server
LPCSTR szUser,        // user name
for login
LPCSTR szPassword,    // password for login
LPCSTR szHost,        // not used
LPCSTR szDatabase )   // name of database to use
{
    return new CTPCC_ODBC( szServer, szUser, szPassword, szHost,
szDatabase );
}

CTPCC_ODBC::CTPCC_ODBC (
LPCSTR szServer,
// name of SQL server
LPCSTR szUser,
// user name for login
LPCSTR szPassword,
// password for login
LPCSTR szHost,
// not used
LPCSTR szDatabase
// name of database to use
)
{
    RETCODE          rc;

    // initialization
    m_hdbc = SQL_NULL_HDBC;
    m_hstmt = SQL_NULL_HSTMT;

    m_hstmtNewOrder = SQL_NULL_HSTMT;
    m_hstmtPayment = SQL_NULL_HSTMT;
    m_hstmtDelivery = SQL_NULL_HSTMT;
    m_hstmtOrderStatus = SQL_NULL_HSTMT;
    m_hstmtStockLevel = SQL_NULL_HSTMT;

    m_descNewOrderCol1 = SQL_NULL_HDESC;
    m_descNewOrderCol2 = SQL_NULL_HDESC;
    m_descOrderStatusCol1 = SQL_NULL_HDESC;
    m_descOrderStatusCol2 = SQL_NULL_HDESC;

SQL_SUCCESS )
    if ( SQLAllocHandle(SQL_HANDLE_DBC, henv, &m_hdbc) !=
        ThrowError(COBCERR::eAllocHandle);

SQL_SUCCESS )
    if ( SQLSetConnectOption(m_hdbc, SQL_PACKET_SIZE, 4096) !=
        ThrowError(COBCERR::eConnOption);
    {
        char
        szConnectStr[256];
        char
        szOutStr[1024];
        SQLSMALLINT
        iOutStrLen;

        sprintf( szConnectStr, "DRIVER=SQL
Server;SERVER=%s;UID=%s;PWD=%s;DATABASE=%s",
szServer, szUser, szPassword,
szDatabase );

        rc = SQLDriverConnect(m_hdbc, NULL,
(SQLCHAR*)szConnectStr, sizeof(szConnectStr),
(SQLCHAR*)szOutStr, sizeof(szOutStr),
&iOutStrLen, SQL_DRIVER_NOPROMPT );

        if ( rc != SQL_SUCCESS && rc != SQL_SUCCESS_WITH_INFO )
            ThrowError(COBCERR::eConnect);
    }

SQL_SUCCESS )
    if ( SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc, &m_hstmt) !=
        ThrowError(COBCERR::eAllocHandle);
    {
        char
        buffer[128];

        // set some options affecting connection behavior
        strcpy(buffer, "set nocount on set XACT_ABORT ON");
        rc = SQLExecDirect(m_hstmt, (unsigned char *)buffer,
SQL_NTS);

        if ( rc != SQL_SUCCESS && rc != SQL_SUCCESS_WITH_INFO )
            ThrowError(COBCERR::eExecDirect);

        // verify that version of stored procs on server is
        correct
        char db_sp_version[10];
        strcpy(buffer, "call tpcc_version");
        rc = SQLExecDirect(m_hstmt, (unsigned char *)buffer,
SQL_NTS);

        if ( rc != SQL_SUCCESS && rc != SQL_SUCCESS_WITH_INFO )
            ThrowError(COBCERR::eExecDirect);

        if ( SQLBindCol(m_hstmt, 1, SQL_C_CHAR,
&db_sp_version, sizeof(db_sp_version), NULL) != SQL_SUCCESS )
            ThrowError(COBCERR::eBindCol);
        if ( SQLFetch(m_hstmt) == SQL_ERROR )
            ThrowError(COBCERR::eFetch);
        if ( strcmp(db_sp_version,sversion)
            throw new
CTPCC_ODBC_ERR( CTPCC_ODBC_ERR::ERR_WRONG_SP_VERSION );
    }

    SQLFreeHandle(SQL_HANDLE_STMT, m_hstmt);

    // Bind parameters for each of the transactions
    InitNewOrderParams();
    InitPaymentParams();
    InitOrderStatusParams();

```

```

    InitDeliveryParams();
    InitStockLevelParams();
}

CTPCC_ODBC::~CTPCC_ODBC( void )
{
    // note: descriptors are automatically released when the
connection is dropped
    SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtNewOrder);
    SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtPayment);
    SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtDelivery);
    SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtOrderStatus);
    SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtStockLevel);

    SQLDisconnect(m_hdbc);
    SQLFreeHandle(SQL_HANDLE_DBC, m_hdbc);
}

void CTPCC_ODBC::ThrowError( COBCERR::ACTION eAction )
{
    RETCODE          rc;
    SWORD            iNativeError;
    char             szState[6];
    char             szMsg[SQL_MAX_MESSAGE_LENGTH];
    char             szTmp[6*SQL_MAX_MESSAGE_LENGTH];
    COBCERR          *pOdbcErr;
    allocated until needed (maybe never)

    pOdbcErr = new COBCERR();
    pOdbcErr->m_NativeError = 0;
    pOdbcErr->m_eAction = eAction;
    pOdbcErr->m_bBeadLock = FALSE;

    szTmp[0] = 0;
    while (TRUE)
    {
        rc = SQLError(henv, m_hdbc, m_hstmt, (BYTE *)&szState,
&iNativeError,
        (BYTE
        *)&szMsg, sizeof(szMsg), NULL);
        if (rc == SQL_NO_DATA)
            break;

        // check for deadlock
        if (!NativeError == 1205 || (!NativeError ==
iErrOleDbProvider &&
NULL))
            pOdbcErr->m_bBeadLock = TRUE;

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

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

        // include line break after first error msg
        if (szTmp[0] != 0)
            strcat( szTmp, "\n");
        strcat( szTmp, szMsg );
    }
    if (pOdbcErr->m_odbcerrstr != NULL)
    {
        delete [] pOdbcErr->m_odbcerrstr;
        pOdbcErr->m_odbcerrstr = NULL;
    }
    if (strlen(szTmp) > 0)
    {
        pOdbcErr->m_odbcerrstr = new char[ strlen(szTmp)+1 ];
        strcpy( pOdbcErr->m_odbcerrstr, szTmp );
    }

    SQLFreeStmt(m_hstmt, SQL_CLOSE);
    throw pOdbcErr;
}

void CTPCC_ODBC::InitStockLevelParams()
{
    if ( SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc,
&m_hstmtStockLevel) != SQL_SUCCESS )
        ThrowError(COBCERR::eAllocHandle);

    m_hstmt = m_hstmtStockLevel;

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

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

```



```

&m_txn.Payment.w_street_1, sizeof(m_txn.Payment.w_street_1), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_street_2, sizeof(m_txn.Payment.w_street_2), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_city, sizeof(m_txn.Payment.w_city), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_state, sizeof(m_txn.Payment.w_state), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.w_zip, sizeof(m_txn.Payment.w_zip), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_street_1, sizeof(m_txn.Payment.d_street_1), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_street_2, sizeof(m_txn.Payment.d_street_2), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_city, sizeof(m_txn.Payment.d_city), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_state, sizeof(m_txn.Payment.d_state), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.d_zip, sizeof(m_txn.Payment.d_zip), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_first, sizeof(m_txn.Payment.c_first), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_middle, sizeof(m_txn.Payment.c_middle), NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_street_1, sizeof(m_txn.Payment.c_street_1), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_street_2, sizeof(m_txn.Payment.c_street_2), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_city, sizeof(m_txn.Payment.c_city), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_state, sizeof(m_txn.Payment.c_state), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_zip, sizeof(m_txn.Payment.c_zip), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_phone, sizeof(m_txn.Payment.c_phone), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_TYPE_TIMESTAMP,
&m_txn.Payment.c_since, 0, NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_credit, sizeof(m_txn.Payment.c_credit), NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.Payment.c_credit_lim, 0, NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.Payment.c_discount, 0, NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.Payment.c_balance, 0, NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.Payment.c_data, sizeof(m_txn.Payment.c_data), NULL) !=
SQL_SUCCESS
    )
    ThrowError(CODBCERR::eBindCol);
}

void CTPCC_ODBC::Payment()
{
    RETCODE rc;
    int iTryCount = 0;
    m_hstmt = m_hstmtPayment;
    if (m_txn.Payment.c_id != 0)
        m_txn.Payment.c_last[0] = 0;
    while (TRUE)
    {
        try
        {
            rc = SQLExecDirectW(m_hstmt,
(SQLWCHAR*)"L'{call tpcc_payment(?,?,?,?)}", SQL_NTS);
            if (rc == SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)
                ThrowError(CODBCERR::eExecDirect);
            if (SQLFetch(m_hstmt) == SQL_ERROR)
                ThrowError(CODBCERR::eFetch);
            SQLFreeStmt(m_hstmt, SQL_CLOSE);
            if (m_txn.Payment.c_id == 0)
                throw new
CTPCC_ODBC_ERR( CTPCC_ODBC_ERR::ERR_INVALID_CUST );
            else

```

```

        m_txn.Payment.exec_status_code = eOK;
        break;
    } catch (CODBCERR *e)
    {
        if ((!e->m_bDeadLock) || (++iTryCount >
iMaxRetries))
            throw;
        // hit deadlock; backoff for
        increasingly longer period
        delete e;
        Sleep(10 * iTryCount);
    }
}

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

void CTPCC_ODBC::InitOrderStatusParams()
{
    if ( SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc,
&m_hstmtOrderStatus) != SQL_SUCCESS
    || SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descOrderStatusCols1) != SQL_SUCCESS
    || SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descOrderStatusCols2) != SQL_SUCCESS
    )
        ThrowError(CODBCERR::eAllocHandle);
    m_hstmt = m_hstmtOrderStatus;
    if ( SQLSetStmtAttrW(m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descOrderStatusCols1, SQL_IS_POINTER) != SQL_SUCCESS )
        ThrowError(CODBCERR::eSetStmtAttr);
    int i = 0;
    if ( SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SSHORT, SQL_SMALLINT, 0, 0, &m_txn.OrderStatus.w_id, 0, NULL) !=
SQL_SUCCESS
    || SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_UTINYINT, SQL_TINYINT, 0, 0, &m_txn.OrderStatus.d_id, 0, NULL) !=
SQL_SUCCESS
    || SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SLONG, SQL_INTEGER, 0, 0, &m_txn.OrderStatus.c_id, 0, NULL) !=
SQL_SUCCESS
    || SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_CHAR, SQL_CHAR, sizeof(m_txn.OrderStatus.c_last), 0,
&m_txn.OrderStatus.c_last, sizeof(m_txn.OrderStatus.c_last), NULL) !=
SQL_SUCCESS
    )
        ThrowError(CODBCERR::eBindParam);
    // configure block cursor
    if ( SQLSetStmtAttrW(m_hstmt, SQL_ATTR_ROW_BIND_TYPE,
(SQL_POINTER)sizeof(m_txn.OrderStatus.oL[0]), 0) != SQL_SUCCESS
    || SQLSetStmtAttrW(m_hstmt, SQL_ATTR_ROWS_FETCHED_PTR,
&m_RowsFetched, 0) != SQL_SUCCESS
    )
        ThrowError(CODBCERR::eSetStmtAttr);
    i = 0;
    if ( SQLBindCol(m_hstmt, ++i, SQL_C_SSHORT,
&m_txn.OrderStatus.oL[0].oL_supply_w_id, 0, NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_SLONG,
&m_txn.OrderStatus.oL[0].oL_i_id, 0, NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_SSHORT,
&m_txn.OrderStatus.oL[0].oL_quantity, 0, NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.OrderStatus.oL[0].oL_amount, 0, NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_TYPE_TIMESTAMP,
&m_txn.OrderStatus.oL[0].oL_delivery_d, 0, NULL) != SQL_SUCCESS
    )
        ThrowError(CODBCERR::eBindCol);
    if ( SQLSetStmtAttrW(m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descOrderStatusCols2, SQL_IS_POINTER) != SQL_SUCCESS )
        ThrowError(CODBCERR::eSetStmtAttr);
    i = 0;
    if ( SQLBindCol(m_hstmt, ++i, SQL_C_SLONG,
&m_txn.OrderStatus.c_id, 0, NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.OrderStatus.c_last, sizeof(m_txn.OrderStatus.c_last), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.OrderStatus.c_first, sizeof(m_txn.OrderStatus.c_first), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.OrderStatus.c_middle, sizeof(m_txn.OrderStatus.c_middle), NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_TYPE_TIMESTAMP,
&m_txn.OrderStatus.o_entry_d, 0, NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_SSHORT,
&m_txn.OrderStatus.o_carrier_id, 0, NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE,
&m_txn.OrderStatus.c_balance, 0, NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt, ++i, SQL_C_SLONG,
&m_txn.OrderStatus.o_id, 0, NULL) != SQL_SUCCESS
    )
        ThrowError(CODBCERR::eBindCol);
}

```

```

void CTPCC_ODBC::OrderStatus()
{
    int
    iTryCount = 0;
    RETCODE
    rc;
    m_hstmt = m_hstmtOrderStatus;
    if ( SQLSetStmtAttrW(m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descOrderStatusCols1, SQL_IS_POINTER) != SQL_SUCCESS )
        ThrowError(CODBCERR::eSetStmtAttr);
    if (m_txn.OrderStatus.c_id == 0)
        m_txn.OrderStatus.c_last[0] = 0;
    while (TRUE)
    {
        try
        {
            // configure block cursor
            if ( SQLSetStmtAttrW(m_hstmt,
SQL_ATTR_ROW_ARRAY_SIZE, (SQL_POINTER)1, 0) != SQL_SUCCESS )
                ThrowError(CODBCERR::eSetStmtAttr);
            rc = SQLExecDirectW(m_hstmt,
(SQLWCHAR*)"L'{call tpcc_orderstatus(?,?,?)}", SQL_NTS);
            if ( ((rc == SQL_SUCCESS_WITH_INFO) &&
(m_RowsFetched != 0)) || (rc == SQL_ERROR) )
                ThrowError(CODBCERR::eExecDirect);
            // configure block cursor
            if ( SQLSetStmtAttrW(m_hstmt,
SQL_ATTR_ROW_ARRAY_SIZE, (SQL_POINTER)MAX_ORDER_STATUS_ITEMS, 0) !=
SQL_SUCCESS )
                ThrowError(CODBCERR::eSetStmtAttr);
            rc = SQLFetchScroll(m_hstmt,
SQL_FETCH_NEXT, 0 );
            if ( ((rc == SQL_SUCCESS_WITH_INFO) &&
(m_RowsFetched != 0)) || (rc == SQL_ERROR) )
                ThrowError(CODBCERR::eFetchScroll);
            m_txn.OrderStatus.o_oL_cnt =
            if (m_txn.OrderStatus.o_oL_cnt != 0)
                if ( SQLSetStmtAttrW(m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descOrderStatusCols2,
SQL_IS_POINTER) != SQL_SUCCESS )
                    ThrowError(CODBCERR::eSetStmtAttr);
            if ( SQLMoreResults(m_hstmt) == SQL_ERROR )
                ThrowError(CODBCERR::eMoreResults);
            if ( rc =
SQLFetch(m_hstmt) == SQL_ERROR )
                ThrowError(CODBCERR::eFetch);
            SQLFreeStmt(m_hstmt, SQL_CLOSE);
            if (m_txn.OrderStatus.o_oL_cnt == 0)
                throw new
CTPCC_ODBC_ERR( CTPCC_ODBC_ERR::ERR_NO_SUCH_ORDER );
            else if (m_txn.OrderStatus.c_id == 0 &&
m_txn.OrderStatus.c_last[0] == 0)
                throw new
CTPCC_ODBC_ERR( CTPCC_ODBC_ERR::ERR_INVALID_CUST );
            else
                m_txn.OrderStatus.exec_status_code = eOK;
            break;
        } catch (CODBCERR *e)
        {
            if ((!e->m_bDeadLock) || (++iTryCount >
iMaxRetries))
                throw;
            // hit deadlock; backoff for
            increasingly longer period
            delete e;
            Sleep(10 * iTryCount);
        }
    }
    // if (iTryCount)
    // throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_RETRIED_TRANS, iTryCount);
}

void CTPCC_ODBC::InitDeliveryParams()
{
    if ( SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc,
&m_hstmtDelivery) != SQL_SUCCESS )
        ThrowError(CODBCERR::eAllocHandle);
    m_hstmt = m_hstmtDelivery;
    int i = 0;
    if ( SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,

```



```

SQL_C_SSHORT, SQL_SMALLINT, 0, 0, &m_txn.Delivery.w_id, 0, NULL) != SQL_SUCCESS
|| SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SSHORT, SQL_SMALLINT, 0, 0, &m_txn.Delivery.o_carrier_id, 0, NULL) !=
SQL_SUCCESS
    )
    ThrowError(COdbcCerr::eBindParam);
    for (i=0;i<10;i++)
    {
        if ( SQLBindCol(m_hstmt, (UWORD)(i+1), SQL_C_SLONG,
&m_txn.Delivery.o_id[i], 0, NULL) != SQL_SUCCESS )
            ThrowError(COdbcCerr::eBindCol);
    }
}

void CTPCC_ODBC::Delivery()
{
    RETCODE          rc;          iTryCount = 0;
    int
    m_hstmt = m_hstmtDelivery;
    while (TRUE)
    {
        try
        {
            rc = SQLExecDirectW(m_hstmt,
(SQLWCHAR*)"CALL tpcc_delivery(?,?)", SQL_NTS);
            if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)
                ThrowError(COdbcCerr::eExecDirect);

            if ( SQLFetch(m_hstmt) == SQL_ERROR )
                ThrowError(COdbcCerr::eFetch);

            SQLFreeStmt(m_hstmt, SQL_CLOSE);
            m_txn.Delivery.exec_status_code = eOK;
            break;
        }
        catch (COdbcCerr *e)
        {
            if ((!e->m_bDeadLock) || (++iTryCount >
iMaxRetries))
                throw;

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

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

```

db_odbc_dll/src/tpcc_odbc.h

```

/* FILE: TPCC_ODBC.H Microsoft TPC-C Kit Ver.
4.20.000 Copyright Microsoft, 1999
* All Rights Reserved
* Version 4.10.000 audited
by Richard Gimarc, Performance Metrics, 3/17/99
* PURPOSE: Header file for TPC-C txn class implementation.
* Change history: 4.20.000 - updated rev number to match kit
*/
#pragma once

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

class COdbcCerr : public CBaseErr
{
public:
    enum ACTION
    {
        eNone,
        eUnknown,
        eAllocConn, // error from SQLAllocConnect
        eAllocHandle, // error from
SQLAllocHandle
        eConnOption, // error from
SQLSetConnectOption
        eConnect, // error from SQLConnect
        eAllocStmnt, // error from SQLAllocStmnt
        eExecDirect, // error from
SQLExecDirect
        eBindParam, // error from SQLBindParameter
        eBindCol, // error from SQLBindCol
    };
};

```

```

// error from SQLFetch
SQLFetchScroll
SQLMoreResults
// error from SQLPrepare
ePrepare,
// error from SQLExecute
eExecute,
SQLSetEnvAttr
eSetEnvAttr, // error from
SQLSetStmntAttr
eSetStmntAttr // error from
};
COdbcCerr(void)
{
    m_eAction = eNone;
    m_NativeError = 0;
    m_bDeadLock = FALSE;
    m_odbcerrstr = NULL;
};
~COdbcCerr()
{
    if (m_odbcerrstr != NULL)
        delete [] m_odbcerrstr;
};
ACTION m_eAction;
int m_bDeadLock;
BOOL *m_odbcerrstr;

int ErrorType() {return ERR_TYPE_ODBC;};
int ErrorNum() {return m_NativeError;};
char *ErrorText() {return m_odbcerrstr;};
};

class CTPCC_ODBC_ERR : public CBaseErr
{
public:
    enum TPCC_ODBC_ERRS
    {
        ERR_WRONG_SP_VERSION = 1, // "wrong
version of stored procs on database server"
        ERR_INVALID_CUST,
        // "Invalid Customer id,name."
        ERR_NO_SUCH_ORDER,
        // "No orders found for customer."
        ERR_RETRIED_TRANS,
        // "Retries before transaction succeeded."
    };
};

CTPCC_ODBC_ERR( int iErr ) { m_errno = iErr;
m_iTryCount = 0; };

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

int m_errno;
int m_iTryCount;

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

class DllDecl CTPCC_ODBC : public CTPCC_BASE
{
private:
    // declare variables and private functions here...
    BOOL m_bDeadLock;
    // transaction was selected as deadlock victim
    int m_MaxRetries;
    // retry count on deadlock

    SQLHENV m_henv;
    // ODBC environment handle
    SQLHDBC m_hdbc;
    SQLHSTMT m_hstmt;
    // the current hstmt

    SQLHSTMT m_hstmtNewOrder;
    SQLHSTMT m_hstmtPayment;
    SQLHSTMT m_hstmtDelivery;
    SQLHSTMT m_hstmtOrderStatus;
    SQLHSTMT m_hstmtStockLevel;

    SQLHDESC m_descNewOrderCols1;
    SQLHDESC m_descNewOrderCols2;
    SQLHDESC m_descOrderStatusCols1;
    SQLHDESC m_descOrderStatusCols2;

    // new-order specific fields
    SQLINTEGER m_bindOffset;
    SQLINTEGER m_rowsFetched;
    int m_no_commit_Flag;

    void ThrowError( COdbcCerr::ACTION eAction );
    void InitNewOrderParams();
    void InitPaymentParams();
    void InitDeliveryParams();
    void InitStockLevelParams();
    void InitOrderStatusParams();
};
union

```

```

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

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

    inline PNEW_ORDER_DATA { return
BuffAddr_NewOrder() }
    inline PPAYMENT_DATA { return
BuffAddr_Payment() }
    inline PDELIVERY_DATA { return
BuffAddr_Delivery() }
    inline PSTOCK_LEVEL_DATA { return
BuffAddr_StockLevel() }
    inline PORDER_STATUS_DATA { return
BuffAddr_OrderStatus() }

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

// wrapper routine for class constructor
extern "C" DllDecl CTPCC_ODBC* CTPCC_ODBC_new
(LPCSTR szServer, LPCSTR szUser, LPCSTR szPassword, LPCSTR szHost,
LPCSTR szDatabase);

typedef CTPCC_ODBC* (TYPE_CTPCC_ODBC)(LPCSTR, LPCSTR, LPCSTR, LPCSTR, LPCSTR);

```

install/install.dsp

```

# Microsoft Developer Studio Project File - Name="install" - Package Owner=<4>
# Microsoft Developer Studio Generated Build File, Format Version 6.00
# ** DO NOT EDIT **

# TARGETTYPE "win32 (x86) Application" 0x0101

CFG=install - win32 Release
MESSAGE This is not a valid makefile. To build this project using NMAKE,
MESSAGE use the Export Makefile command and run
MESSAGE
MESSAGE NMAKE /f "install.mak".
MESSAGE
MESSAGE You can specify a configuration when running NMAKE
MESSAGE by defining the macro CFG on the command line. For example:
MESSAGE
MESSAGE NMAKE /f "install.mak" CFG="install - win32 Release"
MESSAGE
MESSAGE Possible choices for configuration are:
MESSAGE
MESSAGE "install - win32 Release" (based on "win32 (x86) Application")
MESSAGE "install - win32 Debug" (based on "win32 (x86) Application")
MESSAGE

# Begin Project
# PROP AllowPerConfigDependencies 0
# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CPP=cl.exe
MTL=midl.exe
RSC=rc.exe

!IF "$(CFG)" == "install - win32 Release"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir ".\Release"
# PROP BASE Intermediate_Dir ".\Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /w3 /GX /O2 /D "WIN32" /D "NDEBUG" /D "_WINDOWS" /YX /C /c
# ADD CPP /nologo /w3 /GX /O2 /D "WIN32" /D "NDEBUG" /D "_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "NDEBUG" /win32
# ADD MTL /nologo /D "NDEBUG" /mktyplib203 /win32
# ADD BASE RSC /l 0x409 /d "NDEBUG"
# ADD RSC /l 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib

odbc32.lib odbccp32.lib /nologo /subsystem:windows /machine:I386
# ADD LINK32 version.lib comctl32.lib kernel32.lib user32.lib gdi32.lib
winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib

```

```

oleaut32.lib uuid.lib odbccp32.lib odbccp32.lib /nologo /subsystem:windows
/machine:I386 /out:"..\bin\install.exe"

!ELSEIF "$(CFG)" == "install - win32 Debug"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir ".\Debug"
# PROP BASE Intermediate_Dir ".\Debug"
# PROP BASE Target_Dir "."
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir "."
# ADD BASE CPP /nologo /w3 /Gm /GX /ZI /Od /D "WIN32" /D "_DEBUG" /D "_WINDOWS"
/YX /c
# ADD CPP /nologo /w3 /Gm /GX /ZI /Od /D "WIN32" /D "_DEBUG" /D "_WINDOWS" /YX
/FD /c
# ADD BASE MTL /nologo /D "_DEBUG" /win32
# ADD MTL /nologo /D "_DEBUG" /mkyp11b203 /win32
# ADD BASE RSC /I 0x409 /d "_DEBUG"
# ADD RSC /I 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib

odbccp32.lib odbccp32.lib /nologo /subsystem:windows /debug /machine:I386
# ADD LINK32 version1.lib comctl32.lib kernel32.lib user32.lib gdi32.lib
winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib

oleaut32.lib uuid.lib odbccp32.lib odbccp32.lib /nologo /subsystem:windows /debug
/machine:I386 /out:"..\bin\install.exe"

!ENDIF

# Begin Target

# Name "install - win32 Release"
# Name "install - win32 Debug"
# Begin Group "Source Files"

# PROP Default_Filter "cpp;c;ccx;rc;def;rc;odl;h;hpp;bat;for;f90"
# Begin Source File

SOURCE=.\src\install.c
# End Source File
# Begin Source File

SOURCE=.\src\install.rc
# ADD BASE RSC /I 0x409 /i "src"
# ADD RSC /I 0x409 /i "src" /i "..\src"
# End Source File
# Begin Source File

SOURCE=.\src\install.com.cpp
# End Source File
# End Group
# Begin Group "Header Files"

# PROP Default_Filter "h;hpp;hxx;hm;inl;fi;fd"
# End Group
# Begin Group "Resource Files"

# PROP Default_Filter "ico;cur;bmp;dib;rc2;rct;bin;cnt;rtf;gif;jpg;jpeg;jpe"
# Begin Source File

SOURCE=.\SRC\ICON1.ICO
# End Source File
# Begin Source File

SOURCE=.\SRC\ICON2.ICO
# End Source File
# End Group
# Begin Source File

SOURCE=.\SRC\LICENSE.TXT
# End Source File
# Begin Source File

SOURCE=.\isapi_d11\bin\tpcc.d11
# End Source File
# Begin Source File

SOURCE=.\tm_com_d11\bin\tpcc.com.d11
# End Source File
# Begin Source File

SOURCE=.\tpcc_com_all\bin\tpcc.com.all.d11
# End Source File
# Begin Source File

SOURCE=.\tpcc_com_ps\bin\tpcc.com.ps.d11
# End Source File
# Begin Source File

SOURCE=.\db_db1b_d11\bin\tpcc.db1b.d11
# End Source File
# Begin Source File

SOURCE=.\db_odbcd11\bin\tpcc.odbcd11
# End Source File
# Begin Source File

SOURCE=.\tm_tuxedo_d11\bin\tpcc.tuxedo.d11
# End Source File
# Begin Source File

```

```

SOURCE=.\tuxapp\bin\tuxapp.exe
# End Source File
# End Target
# End Project

install/src/install.c

/*
 * FILE: INSTALL.C Microsoft TPC-C Kit Ver.
 *
 * 4.20.000 Copyright Microsoft, 1999
 *
 * All Rights Reserved
 *
 * not audited
 *
 * PURPOSE: Automated installation application for TPC-C web kit
 * Contact: Charles Levine (clevine@microsoft.com)
 *
 * Change history:
 * 4.20.000 - added COM installation steps
 */

#include <windows.h>
#include <direct.h>
#include <io.h>
#include <stdlib.h>
#include <stdio.h>
#include <commctrl.h>
#include "resource.h"

#define WM_INITTEXT WM_USER+100

HICON hInst;
HINSTANCE hInstance;

DWORD versionExeMS;
DWORD versionExLS;
DWORD versionExMM;
DWORD versionD11MS;
DWORD versionD11LS;

// TPC-C registry settings
TPCCREGISTRYDATA Reg;

static int iPoolThreadLimit;
static int iThreadTimeout;
static int iListenBackLog;
static int iAcceptExOutstanding;

static int iMaxPhysicalMemory; // last file
static char szLastFileName[64];
static int iMaxPhysicalMemory; // last file
we worked on (for error reporting)

BOOL CALLBACK LicenseDlgProc(HWND hwnd, UINT uMsg, WPARAM wParam,
LPARAM lParam);
BOOL CALLBACK UpdatedDlgProc(HWND hwnd, UINT uMsg, WPARAM wParam,
LPARAM lParam);
BOOL CALLBACK MainDlgProc(HWND hwnd, UINT uMsg, WPARAM wParam,
LPARAM lParam);
BOOL CALLBACK CopyDlgProc(HWND hwnd, UINT uMsg, WPARAM wParam,
LPARAM lParam);
static void ProcessOK(HWND hwnd, char *szDllPath);
static void ReadRegistrySettings(void);
static void WriteRegistrySettings(char *szDllPath);
static BOOL RegisterDLL(char *szFileName);
static int CopyFiles(HWND hDlg, char *szDllPath);
static BOOL GetInstallPath(char *szDllPath);
static void GetVersionInfo(char *szDllPath, char *szExePath);
static BOOL CheckWebService(void);
static BOOL StartWebService(void);
static BOOL StopWebService(void);
static void UpdateDialog(HWND hDlg);

BOOL install_com(char *szDllPath);
#include "...\common\src\ReadRegistry.cpp"

int WINAPI WinMain(HINSTANCE hInstance, HINSTANCE hPrevInstance, LPSTR
lpCmdLine, int nCmdShow)
{
    int iRC;
    hInst = hInstance;
    InitCommonControls();
    hIcon = LoadIcon(hInstance, MAKEINTRESOURCE(IDI_ICON1));
    iRC = DialogBox(hInstance, MAKEINTRESOURCE(IDD_DIALOG4),
GetDesktopWindow(), LicenseDlgProc);
    if (iRC)
    {
        iRC = DialogBox(hInstance,
MAKEINTRESOURCE(IDD_DIALOG1), GetDesktopWindow(), MainDlgProc);
        if (iRC)
        {
            DialogBoxParam(hInstance,
MAKEINTRESOURCE(IDD_DIALOG2), GetDesktopWindow(), UpdatedDlgProc, (LPARAM)iRC);
        }
    }
}

```

```

DestroyIcon(hIcon);
return 0;
}

BOOL CALLBACK LicenseDlgProc(HWND hwnd, UINT uMsg, WPARAM wParam, LPARAM lParam)
{
    HGLOBAL hRes;
    HRSRC hResInfo;
    BYTE *pSrc, *pDst;
    DWORD dwSize;
    static HFONT hFont;

    switch(uMsg)
    {
        case WM_INITDIALOG:
            hFont = CreateFont(-12, 0, 0, 0, 0, 400, 0,
0, 0, 0, 0, 0, 0, "Arial");
            SendMessage(GetDlgItem(hwnd,
IDR_LICENSE1), WM_SETFONT, (WPARAM)hFont, MAKELPARAM(0, 0));
            PostMessage(hwnd, WM_INITTEXT, (WPARAM)0,
(LPARAM)0);
            return TRUE;
        case WM_INITTEXT:
            hResInfo = FindResource(hInst,
hResInfo);
            dwSize = sizeofResource(hInst,
hResInfo);
            hRes = LoadResource(hInst, hResInfo);
            pSrc = (BYTE *)LockResource(hRes);
            pDst = (unsigned char *)malloc(dwSize+1);
            if (pDst)
            {
                memcpy(pDst, pSrc,
dwSize);
                pDst[dwSize] = 0;
                SetDlgItemText(hwnd,
IDC_LICENSE, (const char *)pDst);
            }
            else
                SetDlgItemText(hwnd,
IDC_LICENSE, (const char *)pSrc);
            return TRUE;
        case WM_DESTROY:
            DeleteObject(hFont);
            return TRUE;
        case WM_COMMAND:
            if (wParam == IDOK)
                EndDialog(hwnd, TRUE);
            if (wParam == IDCANCEL)
                EndDialog(hwnd, FALSE);
            default:
                break;
    }
    return FALSE;
}

BOOL CALLBACK UpdatedDlgProc(HWND hwnd, UINT uMsg, WPARAM wParam, LPARAM lParam)
{
    switch(uMsg)
    {
        case WM_INITDIALOG:
            switch(lParam)
            {
                case 1:
                case 2:
                    SetDlgItemText(hwnd, IDC_RESULTS, "TPC-C web client installed");
                    break;
            }
            return TRUE;
        case WM_COMMAND:
            if (wParam == IDOK)
                EndDialog(hwnd, TRUE);
            default:
                break;
    }
    return FALSE;
}

BOOL CALLBACK MainDlgProc(HWND hwnd, UINT uMsg, WPARAM wParam, LPARAM lParam)
{
    PAINTSTRUCT ps;
    MEMORYSTATUS memoryStatus;
    OSVERSIONINFOV;
    char szTmp[256];
    static char szDllPath[256];
    static char szExePath[256];

    switch(uMsg)
    {
        case WM_INITDIALOG:
            GlobalMemoryStatus(&memoryStatus);
            iMaxPhysicalMemory =
(memoryStatus.dwTotalPhys/ 1048576);
            if (GetInstallPath(szDllPath))
            {
                MessageBox(hwnd, "Error
internet service inetrv is not installed.", NULL, MB_ICONSTOP | MB_OK);
                EndDialog(hwnd, FALSE);
                return TRUE;
            }
            // set default values
            ZeroMemory(&Reg, sizeof(Reg));
            Reg.dwNumberOfDeliveryThreads = 4;
            Reg.dwMaxConnections = 100;
            Reg.dwMaxPendingDeliveries = 100;
            Reg.edb_protocol = DBLIB;
    }
}

```



```

    if ( RegCreateKeyEx(HKEY_LOCAL_MACHINE,
"SOFTWARE\\Microsoft\\TPCC", 0, NULL, REG_OPTION_NON_VOLATILE, KEY_ALL_ACCESS,
NULL, &hkey,
&dwDisposition) == ERROR_SUCCESS )
    {
        strcpy(szTmp, szDllPath);
        ptr = strstr(szTmp, "tpcc");
        if ( ptr )
            *ptr = 0;

        RegSetValueEx(hkey, "Path", 0, REG_SZ, szTmp,
strlen(szTmp)+1);

        RegSetValueEx(hkey, "NumberOfDeliveryThreads", 0,
REG_DWORD, (char *)&Reg.dwNumberOfDeliveryThreads,
sizeof(Reg.dwNumberOfDeliveryThreads));
        RegSetValueEx(hkey, "MaxConnections", 0, REG_DWORD,
(char *)&Reg.dwMaxConnections, sizeof(Reg.dwMaxConnections));
        RegSetValueEx(hkey, "MaxPendingDeliveries", 0,
REG_DWORD, (char *)&Reg.dwMaxPendingDeliveries,
sizeof(Reg.dwMaxPendingDeliveries));

        RegSetValueEx(hkey, "DB_Protocol", 0, REG_SZ,
szDBNames[Reg.edb_Protocol], strlen(szDBNames[Reg.edb_Protocol])+1);
        RegSetValueEx(hkey, "TxnMonitor", 0, REG_SZ,
szTxnMonNames[Reg.etxnMon], strlen(szTxnMonNames[Reg.etxnMon])+1);

        RegSetValueEx(hkey, "DbServer", 0, REG_SZ,
Reg.szDbServer, strlen(Reg.szDbServer)+1);
        RegSetValueEx(hkey, "DbName", 0, REG_SZ, Reg.szDbName,
strlen(Reg.szDbName)+1);
        RegSetValueEx(hkey, "DbUser", 0, REG_SZ, Reg.szDbUser,
strlen(Reg.szDbUser)+1);
        RegSetValueEx(hkey, "DbPassword", 0, REG_SZ,
Reg.szDbPassword, strlen(Reg.szDbPassword)+1);

        strcpy(szTmp, "YES");
        RegSetValueEx(hkey, "COM_SinglePool", 0, REG_SZ,
szTmp, strlen(szTmp)+1);

        RegFlushKey(hkey);
        RegCloseKey(hkey);
    }

    if ( (irc=RegCreateKeyEx(HKEY_LOCAL_MACHINE,
"SYSTEM\\CurrentControlSet\\Services\\InetInfo\\Parameters", 0, NULL,
REG_OPTION_NON_VOLATILE, KEY_ALL_ACCESS, NULL, &hkey, &dwDisposition)) ==
ERROR_SUCCESS )
    {
        RegSetValueEx(hkey, "PoolThreadLimit", 0, REG_DWORD,
sizeof(iPoolThreadLimit));
        RegSetValueEx(hkey, "ThreadTimeout", 0, REG_DWORD,
(sizeof(iThreadTimeout));
        RegSetValueEx(hkey, "ListenBackLog", 0, REG_DWORD,
(sizeof(iListenBackLog));

        RegFlushKey(hkey);
        RegCloseKey(hkey);
    }

    if ( (irc=RegCreateKeyEx(HKEY_LOCAL_MACHINE,
"SYSTEM\\CurrentControlSet\\Services\\W3SVC\\Parameters", 0, NULL,
REG_OPTION_NON_VOLATILE, KEY_ALL_ACCESS, NULL, &hkey, &dwDisposition)) ==
ERROR_SUCCESS )
    {
        RegSetValueEx(hkey, "AcceptExOutstanding", 0,
REG_DWORD, (char *)&iAcceptExOutstanding, sizeof(iAcceptExOutstanding));

        RegFlushKey(hkey);
        RegCloseKey(hkey);
    }

    return;
}

BOOL CALLBACK CopyDlgProc(HWND hwnd, UINT uMsg, WPARAM wParam, LPARAM lParam)
{
    if ( uMsg == WM_INITDIALOG )
    {
        SendDlgItemMessage(hwnd, IDC_PROGRESS1, PBM_SETRANGE,
0, MAKELPARAM(0, 16));
        SendDlgItemMessage(hwnd, IDC_PROGRESS1, PBM_SETPSTEP,
(WPARAM)1, 0);
        return TRUE;
    }
    return FALSE;
}

BOOL RegisterDLL(char *szFileName)
{
    HINSTANCE hLib;
    FARPROC lpDllEntryPoint;

    hLib = LoadLibrary(szFileName);
    if ( hLib == NULL )
        return FALSE;
    // Find the entry point.
    lpDllEntryPoint = GetProcAddress(hLib, "DllRegisterserver");
    if (lpDllEntryPoint != NULL)
    {
        return ((*lpDllEntryPoint)()) == S_OK;
    }
    else
        return FALSE; //unable to locate entry point
}

BOOL FileFromResource( char *szResourceName, int iResourceId, char *szDllPath,

```

```

char *szFileName )
{
    HGLOBAL hDLL;
    HRSRC hResInfo;
    HANDLE hFile;
    DWORD dwSize;
    BYTE *pSrc;
    DWORD d;
    char szFullName[256];

    hResInfo = FindResource(hInst, MAKEINTRESOURCE(iResourceId),
szResourceName);

    strcpy(szFullName, szDllPath);
    strcat(szFullName, szFileName);

    dwSize = sizeofResource(hInst, hResInfo);
    hDLL = LoadResource(hInst, hResInfo );
    pSrc = (BYTE *)LockResource(hDLL);
    remove(szFullName);

    if ( ! (hFile = CreateFile(szFullName, GENERIC_WRITE, 0, NULL,
CREATE_ALWAYS, FILE_ATTRIBUTE_NORMAL, NULL)) )
        return FALSE;

    if ( !writeFile(hFile, pSrc, dwSize, &d, NULL) )
        return FALSE;

    CloseHandle(hFile);
    unlockResource(hDLL);
    FreeResource(hDLL);
    return TRUE;
}

static int CopyFiles(HWND hDlg, char *szDllPath)
{
    BOOL bSvcRunning;

    bSvcRunning = CheckWebService();
    if ( bSvcRunning )
    {
        SetDlgItemText(hDlg, IDC_STATUS, "Stopping web
Service.");
        SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0,
0);
        UpdateDialog(hDlg);

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

    SetDlgItemText(hDlg, IDC_STATUS, "Copying Files...");
    SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0, 0);
    UpdateDialog(hDlg);

    // install TPCC_DLL
    strcpy( szLastFileName, "tpcc.dll" );
    if ( !FileFromResource( "TPCCDLL", IDR_TPCCDLL, szDllPath,
szLastFileName ) )
        return 0;
    SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0, 0);
    UpdateDialog(hDlg);

    // install tpcc_dblib.dll
    strcpy( szLastFileName, "tpcc_dblib.dll" );
    if ( !FileFromResource( "DBLIB_DLL", IDR_DBLIB_DLL, szDllPath,
szLastFileName ) )
        return 0;
    SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0, 0);
    UpdateDialog(hDlg);

    // install tpcc_odbc.dll
    strcpy( szLastFileName, "tpcc_odbc.dll" );
    if ( !FileFromResource( "ODBC_DLL", IDR_ODBC_DLL, szDllPath,
szLastFileName ) )
        return 0;
    SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0, 0);
    UpdateDialog(hDlg);

    // install tuxapp.exe
    strcpy( szLastFileName, "tuxapp.exe" );
    if ( !FileFromResource( "TUXEDO_APP", IDR_TUXEDO_APP, szDllPath,
szLastFileName ) )
        return 0;
    SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0, 0);
    UpdateDialog(hDlg);

    // install tpcc_tuxedo.dll
    strcpy( szLastFileName, "tpcc_tuxedo.dll" );
    if ( !FileFromResource( "TUXEDO_DLL", IDR_TUXEDO_DLL, szDllPath,
szLastFileName ) )
        return 0;
    SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0, 0);
    UpdateDialog(hDlg);

    // install tpcc_com.dll
    strcpy( szLastFileName, "tpcc_com.dll" );
    if ( !FileFromResource( "COM_DLL", IDR_COM_DLL, szDllPath,
szLastFileName ) )
        return 0;
    SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0, 0);
    UpdateDialog(hDlg);

    // install tpcc_com_all.tlb
    strcpy( szLastFileName, "tpcc_com_all.tlb" );
    if ( !FileFromResource( "COM_TYPLIB", IDR_COMTYPLIB_DLL, szDllPath,
szLastFileName ) )
        return 0;
    SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0, 0);
}

```

```

    UpdateDialog(hDlg);

    // install tpcc_com_ps.dll
    strcpy( szLastFileName, "tpcc_com_ps.dll" );
    if ( !FileFromResource( "COM_PS_DLL", IDR_COMPS_DLL, szDllPath,
szLastFileName ) )
        return 0;
    SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0, 0);
    UpdateDialog(hDlg);

    // install tpcc_com_all.dll
    strcpy( szLastFileName, "tpcc_com_all.dll" );
    if ( !FileFromResource( "COM_ALL_DLL", IDR_COMALL_DLL, szDllPath,
szLastFileName ) )
        return 0;
    SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0, 0);
    UpdateDialog(hDlg);

    //if we stopped service restart it.
    if ( bSvcRunning )
    {
        SetDlgItemText(hDlg, IDC_STATUS, "Starting web
Service.");
        SendDlgItemMessage(hDlg, IDC_PROGRESS1, PBM_STEPIT, 0,
0);
        UpdateDialog(hDlg);
        StartWebService();

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

    return 1;
}

static BOOL GetInstallPath(char *szDllPath)
{
    HKEY hkey;
    BYTE szData[256];
    DWORD sv;
    BOOL bRC;
    int len;
    int iRC;

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

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

    return bRC;
}

static void GetVersionInfo(char *szDLLPath, char *szExePath)
{
    DWORD d;
    DWORD dwSize;
    DWORD dwBytes;
    char *ptr;
    VS_FIXEDFILEINFO *vs;

    versionDllMS = 0;
    versionDllLS = 0;
    if ( _access(szDllPath, 0) == 0 )
    {
        dwSize = GetFileVersionInfoSize(szDLLPath, &d);
        if ( dwSize )
        {
            ptr = (char *)malloc(dwSize);
            GetFileVersionInfo(szDLLPath, 0, dwSize,
ptr);
            VerQueryValue(ptr, "\\&vs", &dwBytes);
            versionDllMS = vs->dwProductVersionMS;
            versionDllLS = vs->dwProductVersionLS;
            Free(ptr);
        }
    }

    versionExeMS = 0x7FFF;
    versionExeLS = 0x7FFF;
    dwSize = GetFileVersionInfoSize(szExePath, &d);
    if ( dwSize )
    {
        ptr = (char *)malloc(dwSize);
        GetFileVersionInfo(szExePath, 0, dwSize, ptr);
        VerQueryValue(ptr, "\\&vs", &dwBytes);
        versionExeMS = vs->dwProductVersionMS;
        versionExeLS = LOWORD(vs->dwProductVersionLS);
    }
}

```

```

        versionExeMM = HIWORD(vs->dwProductVersionLS);
        Free(ptr);
    }
    return;
}
static BOOL CheckWebService(void)
{
    SC_HANDLE schSCManager;
    SC_HANDLE schService;
    SERVICE_STATUS ssStatus;

    schSCManager = OpenSCManager(NULL, NULL, SC_MANAGER_ALL_ACCESS);
    schService = OpenService(schSCManager, TEXT("w3svc"),
SERVICE_ALL_ACCESS);
    if (schService == NULL)
        return FALSE;

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

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

    CloseServiceHandle(schService);
    return TRUE;
}
ServiceNotRunning:
    CloseServiceHandle(schService);
    return FALSE;
}
static BOOL StartWebService(void)
{
    SC_HANDLE schSCManager;
    SC_HANDLE schService;
    SERVICE_STATUS ssStatus;
    DWORD dwOldCheckPoint;

    schSCManager = OpenSCManager(NULL, NULL, SC_MANAGER_ALL_ACCESS);
    schService = OpenService(schSCManager, TEXT("w3svc"),
SERVICE_ALL_ACCESS);
    if (schService == NULL)
        return FALSE;

    if (!StartService(schService, 0, NULL))
        goto StartWebWebErr;
    //start service pending, Check the status until the service is
running.
    if (!QueryServiceStatus(schService, &ssStatus))
        goto StartWebWebErr;
    while( ssStatus.dwCurrentState != SERVICE_RUNNING)
    {
        dwOldCheckPoint = ssStatus.dwCheckPoint;
        //Save the current checkpoint.
        Sleep(ssStatus.dwWaitHint);
    }
    //wait for
the specified interval.
    if (!QueryServiceStatus(schService, &ssStatus))
        //check the status again. break;
        //Break if the checkpoint has not been incremented.
        break;
    if (ssStatus.dwCurrentState == SERVICE_RUNNING)
        goto StartWebWebErr;

    CloseServiceHandle(schService);
    return TRUE;
}
StartWebWebErr:
    CloseServiceHandle(schService);
    return FALSE;
}
static BOOL StopWebService(void)
{
    SC_HANDLE schSCManager;
    SC_HANDLE schService;
    SERVICE_STATUS ssStatus;
    DWORD dwOldCheckPoint;

    schSCManager = OpenSCManager(NULL, NULL, SC_MANAGER_ALL_ACCESS);
    schService = OpenService(schSCManager, TEXT("w3svc"),
SERVICE_ALL_ACCESS);
    if (schService == NULL)
        return FALSE;

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

    if (!ControlService(schService, SERVICE_CONTROL_STOP,
&ssStatus))
        goto StopWebWebErr;
    //start service pending, Check the status until the service is
running.
    if (!QueryServiceStatus(schService, &ssStatus))
        goto StopWebWebErr;
    while( ssStatus.dwCurrentState == SERVICE_RUNNING)
    {
        dwOldCheckPoint = ssStatus.dwCheckPoint;
        //Save the current checkpoint.

```

```

        Sleep(ssStatus.dwWaitHint);
    }
    //wait for
the specified interval.
    if (!QueryServiceStatus(schService, &ssStatus))
        //check the status again. break;
        //Break if the checkpoint has not been incremented.
        break;
    if (ssStatus.dwCurrentState == SERVICE_RUNNING)
        goto StopWebWebErr;

    CloseServiceHandle(schService);
    return TRUE;
}
StopWebWebErr:
    CloseServiceHandle(schService);
    return FALSE;
}
static void UpdateDialog(HWND hDlg)
{
    MSG msg;

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

```

install/src/install.h

```

//{{NO_DEPENDENCIES}}
// Microsoft Developer Studio generated include file.
// Used by install.rc

#define IDD_DIALOG1 101
#define IDI_ICON1 102
#define IDR_TPCDLL 103
#define IDD_DIALOG2 105
#define IDI_ICON2 106
#define IDR_DELIVERY 107
#define IDD_DIALOG3 108

#define BN_LOG 1001
#define ED_KEEP 1002
#define ED_THREADS 1003
#define ED_THREADS2 1004
#define IDC_PATH 1007
#define IDC_VERSION 1009
#define IDC_RESULTS 1010
#define IDC_PROGRESS1 1011
#define IDC_STATUS 1012
#define IDC_BUTTON1 1013
#define ED_MAXCONNECTION 1014
#define ED_IIS_MAX_THREAD_POOL_LIMIT 1015
#define ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE 1017
#define ED_IIS_THREAD_TIMEOUT 1018
#define ED_IIS_LISTEN_BACKLOG 1019
#define IDC_DBLIB 1021
#define IDC_ODBC 1022

#define ED_USER_CONNECT_DELAY_TIME 1024

// Next default values for new objects

```

install/src/install.rc

```

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

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

// English (U.S.) resources
#ifdef _WIN32
LANGUAGE LANG_ENGLISH, SUBLANG_ENGLISH_US
#pragma code_page(1252)
#endif // _WIN32

```

```

// Dialog
IDD_DIALOG1 DIALOGEX 0, 0, 219, 351
STYLE DS_MODALFRAME | DS_CENTER | WS_MINIMIZEBOX | WS_POPUP | WS_CAPTION |
WS_SYSCAPTION
CAPTION "TPC-C Web Client Installation Utility"
FONT 8, "MS Sans Serif"
BEGIN
    EDITTEXT    ED_THREADS,164,45,34,12,ES_RIGHT | ES_NUMBER,
WS_EX_RTLREADING
    EDITTEXT    ED_MAXDELIVERIES,164,59,34,12,ES_RIGHT | ES_NUMBER,
WS_EX_RTLREADING
    EDITTEXT    ED_MAXCONNECTION,164,73,34,12,ES_RIGHT | ES_NUMBER,
WS_EX_RTLREADING
    CONTROL     "None",IDC_TM_NONE,"Button",BS_AUTORADIOBUTTON |
WS_GROUP | WS_TABSTOP,43,100,33,10
    CONTROL     "COM",IDC_TM_MTS,"Button",BS_AUTORADIOBUTTON |
WS_TABSTOP,43,113,32,10
    CONTROL     "TUXEDO",IDC_TM_TUXEDO,"Button",BS_AUTORADIOBUTTON |
WS_TABSTOP,106,100,46,10
    CONTROL     "ENCINA",IDC_TM_ENCINA,"Button",BS_AUTORADIOBUTTON |
WS_DISABLED | WS_TABSTOP,106,113,43,10
    EDITTEXT    ED_DB_SERVER,131,152,67,12,ES_AUTOHSCROLL
    EDITTEXT    ED_DB_USER_ID,131,165,67,12,ES_AUTOHSCROLL
    EDITTEXT    ED_DB_PASSWORD,131,178,67,12,ES_AUTOHSCROLL
    EDITTEXT    ED_DB_NAME,131,191,67,12,ES_AUTOHSCROLL
    CONTROL     "DBLIB",IDC_DBLIB,"Button",BS_AUTORADIOBUTTON | WS_GROUP |
WS_TABSTOP,45,219,39,12
    CONTROL     "ODBC",IDC_ODBC,"Button",BS_AUTORADIOBUTTON | WS_TABSTOP,
91,219,39,12
    EDITTEXT    ED_IIS_MAX_THREAD_POOL_LIMIT,164,263,34,12,ES_RIGHT |
ES_NUMBER,WS_EX_RTLREADING
    EDITTEXT    ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE,164,277,34,12,ES_RIGHT |
ES_NUMBER,WS_EX_RTLREADING
    EDITTEXT    ED_IIS_THREAD_TIMEOUT,164,291,34,12,ES_RIGHT | ES_NUMBER,
WS_EX_RTLREADING
    EDITTEXT    ED_IIS_LISTEN_BACKLOG,164,305,34,12,ES_RIGHT | ES_NUMBER,
WS_EX_RTLREADING
    DEFPUSHBUTTON "OK",IDOK,53,331,50,14
    PUSHBUTTON   "Cancel",IDCANCEL,119,331,50,14
    EDITTEXT    IDC_PATH,106,26,91,13,ES_AUTOHSCROLL | ES_READONLY
    LTEXT        "Number of Delivery Threads:",IDC_STATIC,35,45,115,12
    LTEXT        "Max Number of Connections:",IDC_STATIC,35,73,115,12
    RTEXT        "Version 4.11",IDC_VERSION,120,4,89,9
    LTEXT        "IIS Max Thread Pool Limit:",IDC_STATIC,36,263,115,12
    LTEXT        "Web Service Backlog Queue Size:",IDC_STATIC,36,277,115,
12
    LTEXT        "IIS Thread Timeout (seconds):",IDC_STATIC,36,291,115,12
    LTEXT        "IIS Listen Backlog:",IDC_STATIC,36,307,115,10
    GROUPBOX    "Database Interface",IDC_STATIC,35,208,163,27,WS_GROUP
    LTEXT        "Installation directory:",IDC_STATIC,35,29,71,10
    GROUPBOX    "Transaction Monitor",IDC_STATIC,33,90,165,37
    LTEXT        "Server Name:",IDC_STATIC,35,155,56,8
    LTEXT        "User ID:",IDC_STATIC,35,168,60,8
    LTEXT        "User Password:",IDC_STATIC,35,181,83,8
    LTEXT        "Database Name:",IDC_STATIC,35,194,54,8
    GROUPBOX    "SQL Server Connection Properties",IDC_STATIC,22,139,187,
102
    GROUPBOX    "Web Client Properties",IDC_STATIC,22,15,187,118
    GROUPBOX    "IIS Settings",IDC_STATIC,22,247,187,79
    LTEXT        "Max Pending Deliveries:",IDC_STATIC,35,59,115,12
END

IDD_DIALOG2 DIALOGEX 0, 0, 117, 62
STYLE DS_SETFOREGROUND | DS_3DLOOK | DS_CENTER | WS_POPUP | WS_BORDER
EXSTYLE WS_EX_STATICEDGE
FONT 12, "MS Sans Serif", 0, 0, 0x1
BEGIN
    DEFPUSHBUTTON "OK",IDOK,33,45,50,9
    CTEXT        "HTML TPC-C Installation Successful",IDC_RESULTS,7,22,
102,18,0,WS_EX_CLIENTEDGE
    ICON         IDI_ICON2,IDC_STATIC,50,7,18,20,SS_REALSIZEIMAGE,
WS_EX_TRANSPARENT
END

IDD_DIALOG3 DIALOG DISCARDABLE 0, 0, 91, 40
STYLE DS_SYSMODAL | DS_MODALFRAME | DS_3DLOOK | DS_CENTER | WS_CAPTION
CAPTION "Installing TPC-C web client"
FONT 12, "Arial Black"
BEGIN
    CONTROL     "Progress1",IDC_PROGRESS1,"msctl_progress32",WS_BORDER,
7,20,77,13
    CTEXT        "Static",IDC_STATUS,7,7,77,12,SS_SUNKEN
END

IDD_DIALOG4 DIALOG DISCARDABLE 0, 0, 291, 202
STYLE DS_MODALFRAME | DS_CENTER | WS_POPUP | WS_CAPTION | WS_SYSCAPTION
CAPTION "Client End User License"
FONT 8, "MS Sans Serif"
BEGIN
    EDITTEXT    IDC_LICENSE,7,7,271,167,ES_MULTILINE | ES_AUTOVSCROLL |
ES_AUTOHSCROLL | ES_READONLY | WS_VSCROLL | WS_HSCROLL
    DEFPUSHBUTTON "Agree",IDOK,87,181,50,14
    PUSHBUTTON   "&Cancel",IDCANCEL,153,181,50,14
END

//
//
// DESIGNINFO
//
#ifdef APSTUDIO_INVOKED
GUIDELINES DESIGNINFO DISCARDABLE
BEGIN
    IDD_DIALOG1, DIALOG
    BEGIN
        LEFTMARGIN, 22
        RIGHTMARGIN, 209
        VERTGUIDE, 35
        VERTGUIDE, 198
    END
END

```

```

TOPMARGIN, 4
BOTTOMMARGIN, 345
END
IDD_DIALOG2, DIALOG
BEGIN
LEFTMARGIN, 7
RIGHTMARGIN, 109
TOPMARGIN, 7
BOTTOMMARGIN, 54
END
IDD_DIALOG3, DIALOG
BEGIN
LEFTMARGIN, 7
RIGHTMARGIN, 84
TOPMARGIN, 7
BOTTOMMARGIN, 33
END
IDD_DIALOG4, DIALOG
BEGIN
LEFTMARGIN, 7
RIGHTMARGIN, 278
TOPMARGIN, 7
BOTTOMMARGIN, 195
END
END
#endif // APSTUDIO_INVOKED

#ifdef APSTUDIO_INVOKED
//
// TEXTINCLUDE
//
1 TEXTINCLUDE DISCARDABLE
BEGIN
"resource.h\0"
END
2 TEXTINCLUDE DISCARDABLE
BEGIN
"#include ""afxres.h""\r\n"
"\0"
END
3 TEXTINCLUDE DISCARDABLE
BEGIN
"\r\n"
"\0"
END
#endif // APSTUDIO_INVOKED

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

//
// TPCDLL
//
IDR_TPCDLL TPCDLL DISCARDABLE
"..\\..\\isapi_d11\\bin\\tpcc.d11"

#ifdef _MAC
//
// Version
//
VS_VERSION_INFO VERSIONINFO
FILEVERSION 0,4,20,0
PRODUCTVERSION 0,4,20,0
FILEFLAGSMASK 0x3fL
#define _DEBUG
FILEFLAGS 0x1L
#else
FILEFLAGS 0x0L
#endif
FILES 0x40004L
FILETYPE 0x1L
FILESUBTYPE 0x0L
BEGIN
BLOCK "StringFileInfo"
BEGIN
BLOCK "040904b0"
BEGIN
VALUE "Comments", "TPC-C Web Client Installer\0"
VALUE "CompanyName", "Microsoft\0"
VALUE "FileDescription", "install\0"
VALUE "FileVersion", "0,4,20,0\0"
VALUE "InternalName", "install\0"
VALUE "LegalCopyright", "Copyright © 1999\0"
VALUE "OriginalFilename", "install.exe\0"
VALUE "ProductName", "Microsoft install\0"
VALUE "ProductVersion", "0,4,20,0\0"
END
END
BLOCK "VarFileInfo"
BEGIN
VALUE "Translation", 0x409, 1200

```

```

END
#endif // !_MAC

//
// LICENSE
//
IDR_LICENSE1 LICENSE DISCARDABLE "license.txt"

//
// DBLIB_DLL
//
IDR_DBLIB_DLL DBLIB_DLL DISCARDABLE
"..\\..\\db_dblib_d11\\bin\\tpcc_dblib.d11"

//
// ODBC_DLL
//
IDR_ODBC_DLL ODBC_DLL DISCARDABLE
"..\\..\\db_odbc_d11\\bin\\tpcc_odbc.d11"

//
// TUXEDO_APP
//
IDR_TUXEDO_APP TUXEDO_APP DISCARDABLE
"..\\..\\tuxapp\\bin\\tuxapp.exe"

//
// TUXEDO_DLL
//
IDR_TUXEDO_DLL TUXEDO_DLL DISCARDABLE
"..\\..\\tm_tuxedo_d11\\bin\\tpcc_tuxedo.d11"

//
// COM_DLL
//
IDR_COM_DLL COM_DLL DISCARDABLE
"..\\..\\tm_com_d11\\bin\\tpcc_com.d11"

//
// COM_PS_DLL
//
IDR_COMPS_DLL COM_PS_DLL DISCARDABLE
"..\\..\\tpcc_com_ps\\bin\\tpcc_com_ps.d11"

//
// COM_ALL_DLL
//
IDR_COMALL_DLL COM_ALL_DLL DISCARDABLE
"..\\..\\tpcc_com_all\\bin\\tpcc_com_all.d11"

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

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

#ifdef APSTUDIO_INVOKED
//
// Generated from the TEXTINCLUDE 3 resource.
//
#endif // not APSTUDIO_INVOKED

```

install/src/install_com.cpp

```

/*
 * FILE: INSTALL_COM.CPP
 * Microsoft TPC-C Kit Ver.
 * 4.20.000
 * Copyright Microsoft, 1999
 * All Rights Reserved
 * not audited
 *
 * PURPOSE: installation code for COM application for TPC-C web
 * Kit
 * Contact: Charles Levine (clevine@microsoft.com)
 */

```

```

* Change history:
* 4.20.000 - first version
*/

#define _WIN32_WINNT 0x0500

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

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

BOOL install_com(char *szDllPath)
{
    ICOMAdminCatalog* pCOMAdminCat = NULL;
    ICatalogCollection* pCatalogCollectionApp = NULL;
    ICatalogCollection* pCatalogCollectionCo = NULL;
    ICatalogCollection* pCatalogCollectionIf = NULL;
    ICatalogCollection* pCatalogCollectionMethod = NULL;

    ICatalogObject* pCatalogObjectApp =
    NULL;
    ICatalogObject* pCatalogObjectCo =
    NULL;
    ICatalogObject* pCatalogObjectIf =
    NULL;
    ICatalogObject* pCatalogObjectMethod =
    NULL;

    bstrTemp,
    bstrTemp2, bstrTemp3, bstrTemp4;
    szDllPath;
    _variant_t VTmp, vKey;
    ICount, ICountCo, ICountIf, ICountMethod;
    bool bTmp;

    CoInitializeEx(NULL, COINIT_MULTITHREADED);
    HRESULT hr = CoCreateInstance(CLSID_COMAdminCatalog,
    NULL,
    CLSCTX_INPROC_SERVER,
    IID_ICOMAdminCatalog,
    (void**) &pCOMAdminCat);

    if (!SUCCEEDED(hr)) goto Error;

    bstrTemp = "Applications";
    // Attempt to connect to "Applications" in the Catalog
    hr = pCOMAdminCat->GetCollection(bstrTemp,
    (IDispatch**) &pCatalogCollectionApp);
    if (!SUCCEEDED(hr)) goto Error;
    // Attempt to load the "Applications" collection
    hr = pCatalogCollectionApp->Populate();
    if (!SUCCEEDED(hr)) goto Error;
    hr = pCatalogCollectionApp->get_Count(&ICount);
    if (!SUCCEEDED(hr)) goto Error;
    // iterate through applications to delete existing "TPC-C"
    application (if any)
    while (ICount > 0)
    {
        hr = pCatalogCollectionApp->get_Item(ICount - 1,
        (IDispatch**) &pCatalogObjectApp);
        if (!SUCCEEDED(hr)) goto Error;
        hr = pCatalogObjectApp->get_Name(&vTmp);
        if (!SUCCEEDED(hr)) goto Error;
        if (wcsncmp(vTmp.bstrVal, L"TPC-C")
        {
            ICount--;
            continue;
        }
        else
        {
            hr = pCatalogCollectionApp->
            Remove(ICount - 1);
            if (!SUCCEEDED(hr)) goto Error;
            break;
        }
    }

    hr = pCatalogCollectionApp->SaveChanges(&IActProp);
    if (!SUCCEEDED(hr)) goto Error;
    // add the new application
    hr = pCatalogCollectionApp->Add((IDispatch**) &pCatalogObjectApp);
    if (!SUCCEEDED(hr)) goto Error;
    // set properties
    bstrTemp = "Name";
    VTmp = "TPC-C";
    hr = pCatalogObjectApp->put_Value(bstrTemp, VTmp);
    if (!SUCCEEDED(hr)) goto Error;
    // set as a library (in process) application
    bstrTemp = "Activation";

```

```

IactProp = COMAdminActivationInProc;
vTmp = IactProp;
hr = pCatalogObjectApp->put_Value(bstrTemp, vTmp);
if (!SUCCEEDED(hr)) goto Error;

// set security level to process
bstrTemp = "AccessChecksLevel1";
IactProp = COMAdminAccessChecksApplicationLevel;
vTmp = IactProp;
hr = pCatalogObjectApp->put_Value(bstrTemp, vTmp);
if (!SUCCEEDED(hr)) goto Error;

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

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

pCatalogObjectApp->Release();
pCatalogObjectApp = NULL;

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

hr = pCOMAdminCat->InstallComponent(bstrTemp,
                                     bstrTemp2,
                                     bstrTemp3,
                                     bstrTemp4);

if (!SUCCEEDED(hr)) goto Error;

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

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

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

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

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

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

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

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

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

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

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

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

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

hr = pCatalogCollectionIf->get_Count(&lCountIf);

```

```

if (!SUCCEEDED(hr)) goto Error;

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

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

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

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

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

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

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

Error;

>Release();
pCatalogObjectMethod->
NULL;
pCatalogObjectMethod =

lCountMethod--;

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

pCatalogObjectIf->Release();
pCatalogObjectIf = NULL;

lCountIf--;

}

pCatalogObjectCo->Release();
pCatalogObjectCo = NULL;

lCountCo--;

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

pCatalogCollectionApp->Release();
pCatalogCollectionApp = NULL;

pCatalogCollectionCo->Release();
pCatalogCollectionCo = NULL;

pCatalogCollectionIf->Release();
pCatalogCollectionIf = NULL;

pCatalogCollectionMethod->Release();
pCatalogCollectionMethod = NULL;

Error:
CoInitialize();
if (!SUCCEEDED(hr))
{
LPTSTR lpBuf;
DWORD dwRes =
FormatMessage(FORMAT_MESSAGE_ALLOCATE_BUFFER | FORMAT_MESSAGE_FROM_SYSTEM,
NULL,
hr,
SUBLANG_DEFAULT),
MAKELANGID(LANG_NEUTRAL,
(LPTSTR) &lpBuf,
0,
NULL);
_tprintf(_T("Error adding components. HRESULT:
0x%x\n%s"), hr, lpBuf);

```

```

}
else
return TRUE;
return FALSE;
}

```

install/src/RESOURCE.H

```

//{{NO_DEPENDENCIES}}
// Microsoft Developer Studio generated include file.
// Used by install.rc
//
#define IDD_DIALOG1 101
#define IDI_ICON1 102
#define IDR_TPCDLL 103
#define IDD_DIALOG2 105
#define IDI_ICON2 106
#define IDR_DELIVERY 107
#define IDD_DIALOG3 108
#define IDR_LICENSE1 112
#define IDD_DIALOG4 113
#define IDR_TPCOBJ1 117
#define IDR_TPCSTUB1 118
#define IDR_DBLB_DLL 122
#define IDR_ODBC_DLL 123
#define IDR_TUXEDO_APP 124
#define IDR_TUXEDO_DLL 125
#define IDR_COM_DLL 126
#define IDR_COMPS_DLL 127
#define IDR_COMALL_DLL 128
#define IDR_COMTYPLIB_DLL 129
#define BN_LOG 1001
#define ED_KEEP 1002
#define ED_THREADS 1003
#define ED_THREADS2 1004
#define IDC_PATH 1007
#define IDC_VERSION 1009
#define IDC_RESULTS 1010
#define IDC_PROGRESS1 1011
#define IDC_STATUS 1012
#define IDC_BUTTON1 1013
#define ED_MAXCONNECTION 1014
#define ED_IIS_MAX_THREAD_POOL_LIMIT 1015
#define ED_MAXDELIVERIES 1016
#define ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE 1017
#define ED_IIS_THREAD_TIMEOUT 1018
#define ED_IIS_LISTEN_BACKLOG 1019
#define IDC_DBLIB 1021
#define IDC_LICENSE 1022
#define IDC_ODBC 1022
#define IDC_CONNECT_POOL 1023
#define ED_DB_SERVER 1023
#define ED_USER_CONNECT_DELAY_TIME 1024
#define ED_DB_USER_ID 1024
#define IDC_MTS 1025
#define IDC_TM_MTS 1025
#define IDC_TM_TUXEDO 1026
#define IDC_TM_NONE 1027
#define ED_DB_PASSWORD 1028
#define ED_DB_NAME 1029
#define IDC_TM_ENCINA 1030

// Next default values for new objects
//
#ifdef APSTUDIO_INVOKED
#ifndef APSTUDIO_READONLY_SYMBOLS
#define _APS_NEXT_RESOURCE_VALUE 130
#define _APS_NEXT_COMMAND_VALUE 40001
#define _APS_NEXT_CONTROL_VALUE 1031
#define _APS_NEXT_SYMED_VALUE 101
#endif
#endif

```

isapi_dll/isapi_dll.dsp

```

# Microsoft Developer Studio Project File - Name="isapi_dll" - Package Owner=-c4
# Microsoft Developer Studio Generated Build File, Format Version 6.00
# ** DO NOT EDIT **

# TARGETTYPE "win32 (x86) Dynamic-Link Library" 0x0102

CFG=isapi_dll - win32 IceCAP
!MESSAGE This is not a valid makefile. To build this project using NMAKE,
!MESSAGE use the Export Makefile command and run
!MESSAGE
!MESSAGE NMAKE /f "isapi_dll.mak".
!MESSAGE
!MESSAGE You can specify a configuration when running NMAKE
!MESSAGE by defining the macro CFG on the command line. For example:
!MESSAGE
!MESSAGE NMAKE /f "isapi_dll.mak" CFG="isapi_dll - win32 IceCAP"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE "isapi_dll - win32 Release" (based on "win32 (x86) dynamic-link
!MESSAGE Library")
!MESSAGE "isapi_dll - win32 Debug" (based on "win32 (x86) dynamic-link Library")
!MESSAGE "isapi_dll - win32 IceCAP" (based on "win32 (x86) dynamic-link
!MESSAGE Library")
!MESSAGE

# Begin Project
# PROP AllowPerConfigDependencies 0

```

```

# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CPP=c1.exe
MTL=mdl.exe
RSC=rc.exe

IF "$(CFG) == "isapi_dll - Win32 Release"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir "Release"
# PROP BASE Intermediate_Dir "Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MT /W3 /GX /O2 /D "WIN32" /D "NDEBUG" /D "_WINDOWS" /YX /FD /c
# ADD CPP /nologo /MD /W3 /GX /O2 /D "NDEBUG" /D "WIN32" /D "_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "NDEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD MTL /nologo /D "NDEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD BASE RSC /1 0x409 /d "NDEBUG"
# ADD RSC /1 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel132.lib user32.lib gdi32.lib winspool.lib cmdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib

odbc32.lib odbccp32.lib /nologo /subsystem:windows /dll /machine:I386
# ADD
LINK32 ..\common\txnlog\lib\release\rtetime.lib ..\common\txnlog\lib\release\spino
ck.lib ..\common\txnlog\lib\release\error.lib

..\common\txnlog\lib\release\txnlog.lib wsock32.lib kernel132.lib user32.lib
gdi32.lib winspool.lib cmdlg32.lib advapi32.lib shell32.lib

ole32.lib oleaut32.lib uuid.lib odbc32.lib odbccp32.lib /nologo
/subsystem:windows /dll /machine:I386 /nodefaultlib:"LIBCMT"

/out:".bin\tpcc.dll"
# SUBTRACT LINK32 /nodefaultlib

!ELSEIF "$(CFG) == "isapi_dll - Win32 Debug"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "Debug"
# PROP BASE Intermediate_Dir "Debug"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MTD /W3 /Gm /GX /ZI /Od /D "WIN32" /D "_DEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD CPP /nologo /MDd /W3 /GX /ZI /Od /D "NDEBUG" /D "WIN32" /D "_WINDOWS" /FR
/YX /FD /c
# ADD BASE MTL /nologo /D "DEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD MTL /nologo /D "DEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD BASE RSC /1 0x409 /d "DEBUG"
# ADD RSC /1 0x409 /d "DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel132.lib user32.lib gdi32.lib winspool.lib cmdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib

odbc32.lib odbccp32.lib /nologo /subsystem:windows /dll /debug /machine:I386
/pdbtype:sept
# ADD
LINK32 ..\common\txnlog\lib\debug\rtetime.lib ..\common\txnlog\lib\debug\spino
ck.lib ..\common\txnlog\lib\debug\error.lib

..\common\txnlog\lib\debug\txnlog.lib wsock32.lib kernel132.lib user32.lib
gdi32.lib winspool.lib cmdlg32.lib advapi32.lib shell32.lib

ole32.lib oleaut32.lib uuid.lib odbc32.lib odbccp32.lib /nologo
/subsystem:windows /dll /debug /machine:I386 /nodefaultlib:"LIBCMTD"

/out:".bin\tpcc.dll" /pdbtype:sept
# SUBTRACT LINK32 /profile /pdb:none /nodefaultlib

!ELSEIF "$(CFG) == "isapi_dll - Win32 IceCAP"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "isapi_dll"
# PROP BASE Intermediate_Dir "isapi_dll"
# PROP BASE Ignore_Export_Lib 0
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MDd /W3 /GX /ZI /Od /D "DEBUG" /D "WIN32" /D "_WINDOWS"
/FR /YX /FD /Gh /c
# ADD CPP /nologo /MDd /W3 /GX /ZI /Od /D "NDEBUG" /D "ICECAP" /D "WIN32" /D
"_WINDOWS" /FR /YX /FD /Gh /c
# ADD BASE MTL /nologo /D "DEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD MTL /nologo /D "DEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD BASE RSC /1 0x409 /d "DEBUG"

```

```

# ADD RSC /1 0x409 /d "DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel132.lib user32.lib gdi32.lib winspool.lib cmdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib

odbc32.lib odbccp32.lib /nologo /subsystem:windows /dll /debug /machine:I386
/out:".bin\tpcc.dll" /pdbtype:sept
# SUBTRACT LINK32 /profile /pdb:none

!ENDIF

# Begin Target

# Name "isapi_dll - Win32 Release"
# Name "isapi_dll Win32 Debug"
# Name "isapi_dll - Win32 IceCAP"
# Begin Group "Source"

# PROP Default_Filter "*.cpp, *.def, *.rc"
# Begin Source File

SOURCE=.\src\tpcc.cpp
# End Source File
# Begin Group

SOURCE=.\src\tpcc.def
# End Source File
# Begin Group

SOURCE=.\src\tpcc.rc
# End Source File
# End Group
# Begin Group "Header Files"

# PROP Default_Filter "*.h, *.hpp"
# Begin Source File

SOURCE=.\common\src\error.h
# End Source File
# Begin Group

SOURCE=.\common\src\ReadRegistry.h
# End Source File
# Begin Group

SOURCE=.\src\tpcc.h
# End Source File
# Begin Group

SOURCE=.\db_dblib_dll\src\tpcc_dblib.h
# End Source File
# Begin Group

SOURCE=.\db_odbc_dll\src\tpcc_odbc.h
# End Source File
# Begin Group

SOURCE=.\tm_tuxedo_dll\src\tpcc_tux.h
# End Source File
# Begin Group

SOURCE=.\common\src\trans.h
# End Source File
# Begin Group

SOURCE=.\common\src\txn_base.h
# End Source File
# End Target
# End Project

```

isapi_dll/src/resource.h

```

//{{NO_DEPENDENCIES}}
// Microsoft Developer Studio generated include file.
// Used by tpcc.rc
#define IDD_DIALOG1 101
// Next default values for new objects
#define APSTUDIO_INVOKED
#define APSTUDIO_READONLY_SYMBOLS
#define _APS_NEXT_RESOURCE_VALUE 102
#define _APS_NEXT_COMMAND_VALUE 40001
#define _APS_NEXT_CONTROL_VALUE 1000
#define _APS_NEXT_SYMED_VALUE 101
#endif

```

isapi_dll/src/tpcc.cpp

```

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

#include <windows.h>
#include <process.h>
#include <tchar.h>
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <malloc.h>
#include <time.h>
#include <sys/timeb.h>
#include <iio.h>
#include <assert.h>

#include <sqltypes.h>

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

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

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

// Database layer includes
#include "..\..\db_dblib_dll\src\tpcc_dblib.h" // DBLIB
implementation of TPC-C txns
#include "..\..\db_odbc_dll\src\tpcc_odbc.h" // ODBC
implementation of TPC-C txns

// Txn monitor layer includes
#include "..\..\tm_com_dll\src\tpcc_com.h"
// COM Services implementation on TPC-C txns
#include "..\..\tm_tuxedo_dll\src\tpcc_tux.h" // interface
to Tuxedo libraries
#include "..\..\tm_encina_dll\src\tpcc_enc.h" // interface
to Encina libraries

#include "httpext.h" //ISAPI DLL
information header
#include "tpcc.h" //this dlls specific structure, value e.t. header.

#define LEN_ERR_STRING 256

// defines for MakeTxn>Form calls to distinguish input and output flavors
#define OUTPUT_FORM 0
#define INPUT_FORM 1

char szMyComputerName[MAX_COMPUTERNAME_LENGTH+1];

//Terminal client id structure
TERM Term = { 0, 0, 0, NULL };

// The WEBCLIENT_VERSION string specifies the version level of this web client
interface.
// The RTE must be synchronized with the interface level on login, otherwise the
login
// will fail. This is a sanity check to catch problems resulting from
mismatched versions
// of the RTE and web client.
#define WEBCLIENT_VERSION "410"

static CRITICAL_SECTION TermCriticalSection;

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

TYPE_TPCC_DBLIB *pCTPCC_DBLIB_new;
TYPE_TPCC_ODBC *pCTPCC_ODBC_new;
TYPE_TPCC_TUXEDO *pCTPCC_TUXEDO_new;
TYPE_TPCC_ENCINA *pCTPCC_ENCINA_new;
TYPE_TPCC_ENCINA *pCTPCC_ENCINA_post_init;
TYPE_TPCC_COM *pCTPCC_COM_new;

// For deferred delivery txns:
CTxnLog *TxnLog; //used to log delivery transaction
NULL;
Information
HANDLE hWorkerSemaphore = INVALID_HANDLE_VALUE;

```



```

HANDLE = INVALID_HANDLE_VALUE;          hDoneEvent
HANDLE = NULL;                          *pDelihandles

// configuration settings from registry
TPCCREGISTRYDATA Reg;

DWORD dwNumDeliveryThreads = 4;
CRITICAL_SECTION delBuffCriticalSection;
//critical section for delivery transactions cache
DELIVERY_TRANSACTION *pDelBuff = NULL;
DWORD dwDelBuffSize = 100; // size of circular buffer for delivery txns
DWORD dwDelBuffFreeCount; // number of buffers free
DWORD dwDelBuffBusyIndex = 0; // index position of entry waiting to be delivered
DWORD dwDelBuffFreeIndex = 0; // index position of unused entry
#include "..\..\common\src\ReadRegistry.cpp"
/* FUNCTION: DllMain
 * PURPOSE: This function is the entry point for the DLL. This implementation is based on the fact that DLL_PROCESS_ATTACH is only called from the inet service once.
 * ARGUMENTS: HANDLE hModule module handle
 * ul_reason_for_call reason for call LPVOID lpReserved reserved for future use
 * RETURNS: BOOL FALSE errors occurred in initialization TRUE successfully initialized DLL
 */
BOOL WINAPI DllMain(HANDLE hModule, DWORD ul_reason_for_call, LPVOID lpReserved)
{
    DWORD i;
    char szEvent[LEN_ERR_STRING] = "\0";
    char szLogFile[128];
    char szDllName[128];

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

    try
    {
        switch( ul_reason_for_call )
        {
            case DLL_PROCESS_ATTACH:
                DWORD dwSize = MAX_COMPUTERNAME_LENGTH+1;
                GetComputerName(szMyComputerName, &dwSize);
                szMyComputerName[dwSize] = 0;

                DisableThreadLibraryCalls((HMODULE)hModule);
                InitializeCriticalSection(&TermCriticalSection);

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

                dwDelBuffSize = min( Reg.dwMaxPendingDeliveries, 10000 ); // min with 10000 as a sanity constraint
                dwNumDeliveryThreads = min( Reg.dwNumberOfDeliveryThreads, 100 ); // min with 100 as a sanity constraint

                TermInit();
                // load DLL for txn
                monitor if (Reg.eTxnMon == TUXEDO)
                {
                    strcpy( szDllName, Reg.szPath );
                    strcat( szDllName, "tpcc_tuxedo.dll" );
                    hLibInstanceTm = LoadLibrary( szDllName );
                    if (hLibInstanceTm == NULL)
                        throw new CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );
                }
                // get function pointer to wrapper for class constructor
            }
        }
    }
}

```

```

pCTPCC_TUXEDO_new = (TYPE_CTPCC_TUXEDO*)
GetProcAddress(hLibInstanceTm, "CTPCC_TUXEDO_new");
if (pCTPCC_TUXEDO_new == NULL)
    throw new CWEBCLNT_ERR( ERR_GETPROCADDR_FAILED, szDllName, GetLastError() );
}
else if (Reg.eTxnMon == ENCINA)
{
    strcpy( szDllName, Reg.szPath );
    strcat( szDllName, "tpcc_encina.dll" );
    hLibInstanceTm = LoadLibrary( szDllName );
    if (hLibInstanceTm == NULL)
        throw new CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );
    // get function pointer to wrapper for class constructor
    pCTPCC_ENCINA_new = (TYPE_CTPCC_ENCINA*)
    GetProcAddress(hLibInstanceTm, "CTPCC_ENCINA_new");
    pCTPCC_ENCINA_post_init = (TYPE_CTPCC_ENCINA*)
    GetProcAddress(hLibInstanceTm, "CTPCC_ENCINA_post_init");
    if (pCTPCC_ENCINA_new == NULL)
        throw new CWEBCLNT_ERR( ERR_GETPROCADDR_FAILED, szDllName, GetLastError() );
    }
    else if (Reg.eTxnMon == COM)
    {
        strcpy( szDllName, Reg.szPath );
        strcat( szDllName, "tpcc_com.dll" );
        hLibInstanceTm = LoadLibrary( szDllName );
        if (hLibInstanceTm == NULL)
            throw new CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );
        // get function pointer to wrapper for class constructor
        pCTPCC_COM_new = (TYPE_CTPCC_COM*)
        GetProcAddress(hLibInstanceTm, "CTPCC_COM_new");
        if (pCTPCC_COM_new == NULL)
            throw new CWEBCLNT_ERR( ERR_GETPROCADDR_FAILED, szDllName, GetLastError() );
        }
        // load DLL for database
        || (dwNumDeliveryThreads > 0)
        if ((Reg.eTxnMon == None)
        {
            if (Reg.eDB_Protocol == DBLIB)
            {
                strcpy( szDllName, Reg.szPath );
                strcat( szDllName, "tpcc_dblib.dll" );
                hLibInstanceDb = LoadLibrary( szDllName );
                if (hLibInstanceDb == NULL)
                    throw new CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );
                // get function pointer to wrapper for class constructor
                pCTPCC_DBLIB_new = (TYPE_CTPCC_DBLIB*)
                GetProcAddress(hLibInstanceDb, "CTPCC_DBLIB_new");
                if (pCTPCC_DBLIB_new == NULL)
                    throw new CWEBCLNT_ERR( ERR_GETPROCADDR_FAILED, szDllName, GetLastError() );
                }
                else if (Reg.eDB_Protocol == ODBC)
                {
                    strcpy( szDllName, Reg.szPath );
                    strcat( szDllName, "tpcc_odbc.dll" );
                    hLibInstanceDb = LoadLibrary( szDllName );
                    if (hLibInstanceDb == NULL)
                        throw new CWEBCLNT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );
                }
            }
        }
    }
}
// get function pointer to wrapper for class constructor

```

```

pCTPCC_ODBC_new = (TYPE_CTPCC_ODBC*)
GetProcAddress(hLibInstanceDb, "CTPCC_ODBC_new");
if (pCTPCC_ODBC_new == NULL)
    throw new CWEBCLNT_ERR( ERR_GETPROCADDR_FAILED, szDllName, GetLastError() );
}
}
if (dwNumDeliveryThreads)
{
    deferred delivery txns:
    CreateEvent( NULL, TRUE /* manual reset */, FALSE /* initially not signalled */, NULL );
    InitializeCriticalSection(&delBuffCriticalSection);
    hWorkerSemaphore = CreateSemaphore( NULL, 0, dwDelBuffSize, NULL );
    dwDelBuffFreeCount = dwDelBuffSize;
    InitJulianTime(NULL);
    // create unique log file name based on delilog-yymmdd-hhmm.log
    SYSTEMTIME Time;
    GetLocalTime( &Time );
    wsprintf( szLogFile, "%sdelivery-%2.2d%2.2d-%2.2d%2.2d.log", Reg.szPath, Time.wYear % 100, Time.wMonth, Time.wDay, Time.wMinute );
    txndelilog = new CTxnLog(szLogFile, TXN_LOG_WRITE);
    //write event into txn log for START
    txndelilog->writeCtrlRectoLog(TXN_EVENT_START, szMyComputerName, sizeof(szMyComputerName));
    // allocate structures for delivery buffers and thread mgmt
    pDelihandles = new HANDLE[dwNumDeliveryThreads];
    pDelibuff = new DELIVERY_TRANSACTION[dwDelBuffSize];
    // launch deliveryworkerThread to perform actual delivery txns
    for(i=0; i<dwNumDeliveryThreads; i++)
    {
        pDelihandles[i] = (HANDLE) _beginthread( DeliveryworkerThread, 0, NULL );
        if (pDelihandles[i] == INVALID_HANDLE_VALUE)
            throw new CWEBCLNT_ERR( ERR_DELIVERY_THREAD_FAILED );
        }
        case DLL_PROCESS_DETACH:
        {
            if (dwNumDeliveryThreads)
            {
                //write event into txn log for STOP
                txndelilog->writeCtrlRectoLog(TXN_EVENT_STOP, szMyComputerName, sizeof(szMyComputerName));
                // This will do a clean shutdown of the delivery log file
                CTxnLog *txndelilogLocal = txndelilog;
                txndelilog = NULL;
                delete txndelilogLocal;
            }
            delete [] pDelihandles;
            delete [] pDelibuff;
            CloseHandle( hWorkerSemaphore );
            CloseHandle( hDoneEvent );
            DeleteCriticalSection(&delBuffCriticalSection);
            DeleteCriticalSection(&TermCriticalSection);
            if (hLibInstanceTm != NULL)

```

```

FreeLibrary( hLibInstanceTm );
NULL)
FreeLibrary( hLibInstanceDb );

hLibInstanceTm = NULL;
if (hLibInstanceDb !=
hLibInstanceDb = NULL;
sleep(500);
break;

default: /* nothing */;
}
}
catch (CBaseErr *e)
{
writeMessageToEventLog( e->ErrorText() );
delete e;
TerminateExtension(0);
return FALSE;
}
catch (...)
{
writeMessageToEventLog(TEXT("Unhandled exception.
DLL could not load."));
TerminateExtension(0);
return FALSE;
}
return TRUE;
}

/* FUNCTION: GetExtensionVersion
* PURPOSE: This function is called by the inet service when the DLL is first
loaded.
* ARGUMENTS: HSE_VERSION_INFO *pVer passed in structure in
which to place expected version number.
* RETURNS: TRUE inet service expected return value.
*/
BOOL WINAPI GetExtensionVersion(HSE_VERSION_INFO *pVer)
{
pVer->dwExtensionVersion = MAKELONG(HSE_VERSION_MINOR,
HSE_VERSION_MAJOR);
lstrcpy(pVer->pszExtensionDesc, "TPC-C Server.",
HSE_MAX_EXT_DLL_NAME_LEN);

// TODO: why do we need this here instead of in the DLL attach?
if (Reg_ExtNMon == ENCINA)
pTPCC_ENCINA_post_init();

return TRUE;
}

/* FUNCTION: TerminateExtension
* PURPOSE: This function is called by the inet service when the DLL is about
to be unloaded. Release all resources in anticipation of
being unloaded.
* RETURNS: TRUE inet service expected return value.
*/
BOOL WINAPI TerminateExtension( DWORD dwFlags )
{
if (pDelHandles)
{
SetEvent( hDoneEvent );
for(DWORD i=0; i<dwNumDeliveryThreads; i++)
waitForSingleObject( pDelHandles[i],
INFINITE );
}
TermDeleteAll();
return TRUE;
}

/* FUNCTION: HttpExtensionProc
* PURPOSE: This function is the main entry point for the TPCC DLL. The
internet service calls this function passing in the http
string.
* ARGUMENTS: EXTENSION_CONTROL_BLOCK *pECB structure pointer to
passed in internet
* service information.
* RETURNS: DWORD HSE_STATUS_SUCCESS
connection can be dropped if error
HSE_STATUS_SUCCESS_AND_KEEP_CONN keep connect valid comment
* COMMENTS: None
*/
DWORD WINAPI HttpExtensionProc(EXTENSION_CONTROL_BLOCK *pECB)
{
iSyncId; int iCmd, FormId, TermId,

```

```

char szBuffer[4096];
int szHeader[] = "200 OK"; 1pbSize;
static char szHeader1[4096]; // initial
value is strlen(szHeader)
char szHeader1[4096];

#ifdef ICECAP
StartCAP();
#endif

try
{
//process http query
ProcessQueryString(pECB, &iCmd, &FormId, &TermId,
&iSyncId);

if (TermId != 0)
{
if (TermId < 0 || TermId >=
Term.iNumEntries || Term.pClientData[TermId].iNextFree != -1)
{
// debugging...
char szTmp[128];
wsprintf( szTmp, "Invalid
term ID; TermId = %d", TermId );
writeMessageToEventLog( szTmp );
throw new
CWEBCLNT_ERR( ERR_INVALID_TERMID );
}
//must have a valid syncid here since
termid is valid
if (iSyncId !=
Term.pClientData[TermId].iSyncId)
throw new
CWEBCLNT_ERR( ERR_INVALID_SYNC_CONNECTION );
//set use time
Term.pClientData[TermId].iTickCount =
GetTickCount();
}

switch(iCmd)
{
case 0:
welcomeForm(pECB, szBuffer);
break;
case 1:
switch( FormId )
{
case WELCOME_FORM:
case MAIN_MENU_FORM:
break;
case NEW_ORDER_FORM:
ProcessNewOrderForm(pECB, TermId, szBuffer); break;
case PAYMENT_FORM:
ProcessPaymentForm(pECB, TermId, szBuffer); break;
case DELIVERY_FORM:
ProcessDeliveryForm(pECB, TermId, szBuffer); break;
case ORDER_STATUS_FORM:
ProcessOrderStatusForm(pECB, TermId, szBuffer); break;
case STOCK_LEVEL_FORM:
ProcessStockLevelForm(pECB, TermId, szBuffer); break;
}
break;
case 2:
// new-order selected from menu; display
new-order input form
INPUT_FORM, szBuffer);
MakeNewOrderForm(TermId, NULL,
break;
case 3:
// payment selected from menu; display
payment input form
MakePaymentForm(TermId, NULL, INPUT_FORM,
szBuffer);
break;
case 4:
// delivery selected from menu; display
delivery input form
MakeDeliveryForm(TermId, NULL,
INPUT_FORM, szBuffer);
break;
case 5:
// order-status selected from menu;
display order-status input form
MakeOrderStatusForm(TermId, NULL,
INPUT_FORM, szBuffer);
break;
case 6:
// stock-level selected from menu;
display stock-level input form
MakeStockLevelForm(TermId, NULL,
INPUT_FORM, szBuffer);
break;
case 7:

```

```

// ExitCmd
TermDelete(TermId);
WelcomeForm(pECB, szBuffer);
break;
case 8:
SubmitCmd(pECB, szBuffer);
break;
case 9:
// menu
MakeMainMenuForm(TermId,
Term.pClientData[TermId].iSyncId, szBuffer);
break;
case 10:
// CMD=Clear
// resets all connections; should only
be used when no other connections are active
TermDeleteAll();
TermInit();
WelcomeForm(pECB, szBuffer);
break;
case 11:
// CMD=Stats
StatsCmd(pECB, szBuffer);
break;
}
}
catch (CBaseErr *e)
{
ErrorForm( pECB, e->ErrorType(), e->ErrorNum(),
TermId, iSyncId, e->ErrorText(), szBuffer );
delete e;
}
catch (...)
{
ErrorForm( pECB, ERR_TYPE_WEBDLL, 0, TermId, iSyncId,
"Error: Unhandled exception in web client.", szBuffer );
}
#ifdef ICECAP
StopCAP();
#endif

1pbSize = strlen(szBuffer);
wsprintf(szHeader1,
"Content-Type: text/html\r\n"
"Content-Length: %d\r\n"
"Connection: Keep-Alive\r\n\r\n",
1pbSize);
strcat( szHeader1, szBuffer );
(*pECB->ServerSupportFunction)(pECB->ConnID,
HSE_REQ_SEND_RESPONSE_HEADER, szHeader, (LPDWORD)&dwSize, (LPDWORD)szHeader1);

//finish up and keep connection
pECB->dwHttpStatusCode = 200;
return HSE_STATUS_SUCCESS_AND_KEEP_CONN;
}

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

// Use event logging to log the error.
hEventSource = RegisterEventSource(NULL, TEXT("TPCC.DLL"));
_wsprintf(szMsg, TEXT("Error in TPCC.DLL: "));
lpszStrings[0] = szMsg;
lpszStrings[1] = lpszMsg;
if (hEventSource != NULL)
{
ReportEvent(hEventSource, // handle of event source
EVENTLOG_ERROR_TYPE, // event type
0, // event category
0, // event ID
NULL, // current user's SID
2, // strings in lpszStrings
0, // no bytes of raw data
0, // array of error strings
(LPCTSTR *)lpszStrings, // no raw data
NULL);
(VOID) DeregisterEventSource(hEventSource);
}
}

/* FUNCTION: DeliveryworkerThread
* PURPOSE: This function processes deferred delivery txns. There are
typically several threads running this routine. The
number of threads is determined by an entry
read from the registry. The thread
waits for work by waiting on semaphore. When a delivery txn is posted, the
semaphore is released. After processing the delivery txn, information is logged
to record the txn status and execution time.
*/
/*static*/ void DeliveryworkerThread(void *ptr)
{
CTPCC_BASE *pTxn = NULL;
DELIVERY_TRANSACTION delivery;
PDELIVERY_DATA pDeliveryData;

```

```

TXN_RECORD_TPCC_DELIV_DEF txnDelivRec;
DWORD
index;
HANDLE
handles[2];
SYSTEMTIME trans_end; //delivery
finished time SYSTEMTIME
start time SYSTEMTIME trans_start; //delivery transaction

assert(txnDelilog != NULL);
try
{
    if (Reg.eDB_Protocol == ODBC)
    {
        pTxn = pCTPCC_ODBC_new( Reg.szDbServer,
        Reg.szDbUser, Reg.szDbPassword, szMComputerName, Reg.szDbName );
    }
    else if (Reg.eDB_Protocol == DBLIB)
    {
        pTxn = pCTPCC_DBLIB_new( Reg.szDbServer,
        Reg.szDbUser, Reg.szDbPassword, szMComputerName, Reg.szDbName );
    }
    pDeliveryData = pTxn->BuffAddr_Delivery();
}
catch (CBaseErr *e)
{
    char szTmp[1024];
    sprintf( szTmp, "Error in Delivery Txn thread.
    Could not connect to database. "
    Password=%s, database=%s", "%s. Server=%s, User=%s,
    Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword, Reg.szDbName );
    writeMessageToEventLog( szTmp );
    delete e;
    goto ErrorExit;
}
catch (...)
{
    writeMessageToEventLog(TEXT("Unhandled exception
    caught in DeliveryworkerThread."));
    goto ErrorExit;
}

while (TRUE)
{
    try
    {
        //while delivery thread running, i.e.
        user has not requested termination
        while (TRUE)
        {
            // need to wait for
            multiple objects: program exit or worker semaphore;
            handles[0] = hDoneEvent;
            handles[1] =
            hWorkerSemaphore;
            index =
            WaitForMultipleObjects( 2, &handles[0], FALSE, INFINITE );
            WAIT_OBJECT_0
            if (index ==
            ErrorExit;
            goto
            ZeroMemory(&txnDelivRec,
            sizeof(txnDelivRec));
            txnDelivRec.TxnType =
            TXN_REC_TYPE_TPCC_DELIV_DEF;

            // make a local copy of
            current entry from delivery buffer and increment buffer index
            EnterCriticalSection(&DelBuffCriticalSection);
            delivery =
            *(pDelBuff+dwDelBuffBusyIndex);
            dwDelBuffFreeCount++;
            dwDelBuffBusyIndex++;
            if (dwDelBuffBusyIndex ==
            dwDelBuffSize) // wrap-around if at end of buffer
            dwDelBuffBusyIndex = 0;

            LeaveCriticalSection(&DelBuffCriticalSection);

            pDeliveryData->w_id =
            pDeliveryData->
            >o_carrier_id = delivery.o_carrier_id;

            txnDelivRec.w_id =
            txnDelivRec.o_carrier_id =
            pDeliveryData->w_id;
            pDeliveryData->o_carrier_id;
            txnDelivRec.TxnStartT0 =
            Get64BitTime(&delivery.queue);

            GetLocalTime( &trans_start );
            pTxn->Delivery();

            GetLocalTime( &trans_end );

            //log txn
            txnDelivRec.TxnStatus =
            ERR_SUCCESS;
            for (int i=0; i<10; i++)
            {
                txnDelivRec.o_id[i] = pDeliveryData->o_id[i];
                txnDelivRec.DeltaT4 =
            }
            (int)Get64BitTime(&trans_end) - txnDelivRec.TxnStartT0);
            txnDelivRec.DeltaTxnExec =

```

```

(int)Get64BitTime(&trans_end) - Get64BitTime(&trans_start));
if (txnDelilog != NULL)
    txnDelilog->
    writeToLog(&txnDelivRec);
}
catch (CBaseErr *e)
{
}
}
char szTmp[1024];
sprintf( szTmp, "Error in Delivery Txn
thread. %s", e->ErrorText() );
writeMessageToEventLog( szTmp );
// log the error txn
txnDelivRec.TxnStatus = e->ErrorType();
if (txnDelilog != NULL)
    txnDelilog->
    writeToLog(&txnDelivRec);
}
delete e;
}
catch (...)
{
}
// unhandled exception; shouldn't
happen; not much we can do...
writeMessageToEventLog(TEXT("Unhandled
exception caught in DeliveryworkerThread."));
}
}
ErrorExit:
delete pTxn;
_endthread();
}
}
/* FUNCTION: PostDeliveryInfo
* * PURPOSE: This function enters the delivery txn into the deferred delivery
buffer.
* * RETURNS:
posted successfully BOOL FALSE delivery information
*/ TRUE error cannot post delivery info
}
}
BOOL PostDeliveryInfo(short w_id, short o_carrier_id)
{
    BOOL bError;
    EnterCriticalSection(&DelBuffCriticalSection);
    if (dwDelBuffFreeCount > 0)
    {
        bError = FALSE;
        (pDelBuff+dwDelBuffFreeIndex)->w_id
        = w_id;
        (pDelBuff+dwDelBuffFreeIndex)->o_carrier_id
        = o_carrier_id;
        GetLocalTime(&(pDelBuff+dwDelBuffFreeIndex)->queue);
        dwDelBuffFreeCount--;
        dwDelBuffFreeIndex++;
        if (dwDelBuffFreeIndex == dwDelBuffSize)
            dwDelBuffFreeIndex = 0;
        // wrap-around if at end of buffer
    }
    else
        // No free buffers. Return an error, which indicates
        that the delivery buffer is full
        // Most likely, the number of delivery worker threads
        needs to be increased to keep up
        // with the txn rate.
        bError = TRUE;
    LeaveCriticalSection(&DelBuffCriticalSection);
    if (bError)
        // increment worker semaphore to wake up a worker
        thread
        ReleaseSemaphore( hWorkerSemaphore, 1, NULL );
    return bError;
}
}
/* FUNCTION: ProcessQueryString
* * PURPOSE: This function extracts the relevant information out of the http
command passed in from the browser.
* * COMMENTS: If this is the initial connection i.e. client is at welcome screen
then there will not be a
terminal id or current form id. If this is the case then the pTermid and
pFormid return values are undefined.
*/
void ProcessQueryString(EXTENSION_CONTROL_BLOCK *pECB, int *pCmd, int *pFormId,
int *pTermId, int *pSyncId)
{
    char *ptr = pECB->lpszQueryString;
    char szBuffer[25];
    int i;
    //allowable client command strings i.e. CMD=command
    static char *szCmds[] =
    {
        "Process", ".NewOrder..", ".Payment..",
        ".Delivery..", ".Order-Status..", ".Stock-Level..",
        ".Exit..", "Submit", "Menu", "Clear", "Stats", ""
    };
}

```

```

screen *pCmd = 0; // default is the login
*TermId = 0;
screen // if no params (i.e., empty query string), then return login
if (strlen(pECB->lpszQueryString) == 0)
    return;
// parse FORMID, TERMID, and SYNCID
*pFormId = GetIntKeyValue(&ptr, "FORMID", NO_ERR, NO_ERR);
*pTermId = GetIntKeyValue(&ptr, "TERMID", NO_ERR, NO_ERR);
*pSyncId = GetIntKeyValue(&ptr, "SYNCID", NO_ERR, NO_ERR);
// parse CMD
GetKeyValue(&ptr, "CMD", szBuffer, sizeof(szBuffer),
ERR_COMMAND_UNDEFINED);
// see which command it matches
for(i=0; i++;)
{
    if (szCmds[i][0] == 0)
        // no more; no match; return error
        throw new
        GWEBCLNT_ERR( ERR_COMMAND_UNDEFINED );
    if ( !strcmp(szCmds[i], szBuffer) )
    {
        *pCmd = i+1;
        break;
    }
}
}
/* FUNCTION: void welcomeForm
* *
void welcomeForm(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer)
{
    char szTmp[1024];
    //welcome to tpc-c html form buffer, this is first form client
    sees.
    strcpy( szBuffer, "<HTML><HEAD><TITLE>TPC-C Web
Client</TITLE></HEAD><BODY>"
    "<B><BIG>Microsoft TPC-C Web Client (ver 4.20)</BIG></B> <BR>"
    "<font face=\"Courier New\"><PRE>"
    "Compiled: \"__DATE__\", \"__TIME__\" <BR>"
    "Source: \"__FILE__\" (\"__TIMESTAMP__\") <BR>"
    "</PRE></font>"
    "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
    "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\" VALUE=\"0\">"
    "<INPUT TYPE=\"hidden\" NAME=\"ERROR\" VALUE=\"0\">"
    "<INPUT TYPE=\"hidden\" NAME=\"FORMID\" VALUE=\"1\">"
    "<INPUT TYPE=\"hidden\" NAME=\"TERMID\" VALUE=\"0\">"
    "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\" VALUE=\"0\">"
    "<INPUT TYPE=\"hidden\" NAME=\"VERSION\" VALUE=\"\">"
    WEBCIENT_VERSION ">" );
    printf( szTmp, "Configuration Settings: <BR><font
face=\"Courier New\" color=\"blue\"><PRE>"
    = <B>%s</B><BR>" "Txn Monitor
    protocol = <B>%d</B><BR>" "Database
    Connections = <B>%d</B><BR>" "Max
    Delivery Threads = <B>%d</B><BR>" "# of
    Deliveries = <B>%d</B><BR>" "Max Pending
    szBNames[Reg.eDB_Protocol], Reg.dwMaxConnections,
    dwNumDeliveryThreads, dwDelBuffSize );
    strcat( szBuffer, szTmp);
    if (Reg.eTxnMon == COM)
    {
        printf( szTmp, "COM Single Pool =
        <B>%s</B><BR>",
        Reg.bCOM_SinglePool ? "YES" : "NO" );
        strcat( szBuffer, szTmp);
    }
    strcat( szBuffer, "</PRE></font>");
    if (Reg.eTxnMon == None)
        // connection options may be specified when not using
        a txn monitor
        printf( szTmp, "Please enter your
        database options for this connection:<BR>"
        "<font face=\"Courier New\" color=\"blue\"><PRE>"
        "DB Server = <INPUT NAME=\"db_server\" SIZE=20
        VALUE=\"%s\"><BR>"

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"DB User ID = <INPUT NAME="db_user" SIZE=20 VALUE="%s"><BR>
VALUE="%s"><BR>
"DB Password = <INPUT NAME="db_passwd" SIZE=20
VALUE="%s"><BR>
"DB Name = <INPUT NAME="db_name" SIZE=20 VALUE="%s"><BR>
"</PRE></font>
Reg.szDbUser, Reg.szDbPassword, Reg.szDbName );
else
    // if using a txn monitor, connection options are
determined from registry; can't
    // set per user. show options fyi
    sprintf( szTmp, "Database options which
will be used by the transaction monitor:<BR>"
" <font face="Courier New" color="blue"><PRE>
"DB Server
= <B>%s</B><BR>"
"DB User ID
= <B>%s</B><BR>"
"DB Password
= <B>%s</B><BR>"
"DB Name
= <B>%s</B><BR>"
"</PRE></font>"
Reg.szDbUser, Reg.szDbPassword, Reg.szDbName );
strcat( szBuffer, szTmp);
District for sprintf( szTmp, "Please enter your warehouse and
this session:<BR>" " <font
face="Courier New" color="blue"><PRE> );
strcat( szBuffer, szTmp);
strcat( szBuffer, "warehouse ID = <INPUT NAME="w_id"
SIZE=4><BR>"
"District ID = <INPUT NAME="d_id" SIZE=2><BR>"
"</PRE></font><HR>"
"<INPUT TYPE="submit" NAME="CMD" VALUE="Submit">"
"</FORM></BODY></HTML>");
}
/* FUNCTION: SubmitCmd
* PURPOSE: This function allocated a new terminal id in the Term structure
array.
*/
void SubmitCmd(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer)
{
    int iNewTerm;
    char *ptr = pECB->pszQueryString;
    char szVersion[32] = { 0 };
    char szServer[32] = { 0 };
    char szUser[32] = "sa";
    char szPassword[32] = { 0 };
    char szDatabase[32] = "tpcc";
    // validate version field; the version field ensures that the RTE
is synchronized with the web client
    GetKeyValue(&ptr, "VERSION", szVersion, sizeof(szVersion),
ERR_VERSION_MISMATCH);
    if ( strcmp( szVersion, WEBCLIENT_VERSION ) )
        throw new CWEBCLNT_ERR( ERR_VERSION_MISMATCH );
    if ( Reg.eTxnMon == None )
    {
        // parse Server name
        GetKeyValue(&ptr, "db_server", szServer,
sizeof(szServer), ERR_NO_SERVER_SPECIFIED);
        // parse user name
        GetKeyValue(&ptr, "db_user", szUser, sizeof(szUser),
NO_ERR);
        // parse Password
        GetKeyValue(&ptr, "db_passwd", szPassword,
sizeof(szPassword), NO_ERR);
        // parse Database name
        GetKeyValue(&ptr, "db_name", szDatabase,
sizeof(szDatabase), NO_ERR);
    }
    // parse warehouse ID
    int w_id = GetIntKeyValue(&ptr, "w_id", ERR_HTML_ILL_FORMED,
ERR_W_ID_INVALID);
    if ( w_id < 1 )
        throw new CWEBCLNT_ERR( ERR_W_ID_INVALID );
    // parse district ID
    int d_id = GetIntKeyValue(&ptr, "d_id", ERR_HTML_ILL_FORMED,
ERR_D_ID_INVALID);
    if ( d_id < 1 || d_id > 10 )
        throw new CWEBCLNT_ERR( ERR_D_ID_INVALID );
    iNewTerm = TermAdd();
    Term.pClientData[iNewTerm].w_id = w_id;
    Term.pClientData[iNewTerm].d_id = d_id;
    try
    {
        if ( Reg.eTxnMon == TUXEDO )
            Term.pClientData[iNewTerm].pTxn =

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pCTPCC_TUXEDO_new();
else if ( Reg.eTxnMon == ENCINA )
    Term.pClientData[iNewTerm].pTxn =
pCTPCC_ENCINA_new();
else if ( Reg.eTxnMon == COM )
    Term.pClientData[iNewTerm].pTxn =
pCTPCC_COM_new( Reg.bCOM_SinglePool );
else if ( Reg.eDB_Protocol == ODBC )
    Term.pClientData[iNewTerm].pTxn =
pCTPCC_ODBC_new( szServer, szUser, szPassword, szMyComputerName, szDatabase );
else if ( Reg.eDB_Protocol == DBLIB )
    Term.pClientData[iNewTerm].pTxn =
pCTPCC_DBLIB_new( szServer, szUser, szPassword, szMyComputerName, szDatabase );
}
catch (...)
{
    TermDelete(iNewTerm);
    // pass exception upward
    throw;
}
MakeMainMenuForm(iNewTerm, Term.pClientData[iNewTerm].iSyncId,
szBuffer);
/* FUNCTION: StatsCmd
* PURPOSE: This function returns to the browser the total number of active
terminal ids. This routine is for
development/debugging purposes.
*/
void StatsCmd(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer)
{
    int i;
    int iTotals;
    EnterCriticalSection(&TermCriticalSection);
    iTotals = 0;
    for(i=0; i<Term.iNumEntries; i++)
    {
        if (Term.pClientData[i].iNextFree == -1)
            iTotals++;
    }
    LeaveCriticalSection(&TermCriticalSection);
    wsprintf( szBuffer,
" <HTML><HEAD><TITLE>TPC-C Web Client
</HEAD>"
" <BODY><B><BIG> Total Active
Connections: %d </BIG></B><BR></BODY></HTML>"
, iTotals );
}
char *CWEBCLNT_ERR::ErrorText()
{
    static SERRORMSG errorMsgs[] =
    {
        { ERR_COMMAND_UNDEFINED,
"Command undefined." },
        { ERR_D_ID_INVALID,
"Invalid District ID Must
be 1 to 10." },
        { ERR_DELIVERY_CARRIER_ID_RANGE,
"Delivery Carrier ID out of range must be 1 - 10." },
        { ERR_DELIVERY_CARRIER_INVALID,
"Delivery Carrier ID invalid must be numeric 1 - 10." },
        { ERR_DELIVERY_MISSING_OCD_KEY,
"Delivery missing Carrier ID key \"OCD\"." },
        { ERR_DELIVERY_THREAD_FAILED,
"Could not start delivery worker
thread." },
        { ERR_GETPROCADDR_FAILED,
"Could not map proc in DLL. GetProcAddr
error. DLL="
string." },
        { ERR_HTML_ILL_FORMED,
"Required key field is missing from HTML
string." },
        { ERR_INVALID_SYNC_CONNECTION,
"Invalid Terminal Sync ID." },
        { ERR_INVALID_TERMINID,
"Invalid Terminal ID." }
    }
}

```

```

},
{
    ERR_LOADDLL_FAILED,
    "Load of DLL failed.
DLL="
},
{
    ERR_MAX_CONNECTIONS_EXCEEDED,
    "No connections available. Max Connections is
probably too low." },
{
    ERR_MISSING_REGISTRY_ENTRIES,
    "Required registry entries are missing. Rerun
INSTALL to correct."
},
{
    ERR_NEWORDER_CUSTOMER_INVALID,
    "New Order customer id invalid data type, range = 1
to 3000."
},
{
    ERR_NEWORDER_CUSTOMER_KEY,
    "New Order missing customer key \"CID\"."
},
{
    ERR_NEWORDER_DISTRICT_INVALID,
    "New Order District ID Invalid range 1 - 10."
},
{
    ERR_NEWORDER_FORM_MISSING_DID,
    "New Order missing District key \"DID\"."
},
{
    ERR_NEWORDER_ITEMID_INVALID,
    "New Order Item Id is wrong data type, must be
numeric."
},
{
    ERR_NEWORDER_ITEMID_RANGE,
    "New Order Item ID is out of range. Range = 1 to
999999."
},
{
    ERR_NEWORDER_ITEMID_WITHOUT_SUPPW,
    "New Order Item_Id field entered without a corresponding Supp_w."
},
{
    ERR_NEWORDER_MISSING_TID_KEY,
    "New Order missing Item Id key \"TID\"."
},
{
    ERR_NEWORDER_MISSING_QTY_KEY,
    "New Order Missing Qty key \"Qty#\"."
},
{
    ERR_NEWORDER_MISSING_SUPPW_KEY,
    "New Order missing Supp_w key \"SP#\"."
},
{
    ERR_NEWORDER_NOITEMS_ENTERED,
    "New Order No order lines entered."
},
{
    ERR_NEWORDER_QTY_INVALID,
    "New Order Qty invalid must be numeric range 1 - 99."
},
{
    ERR_NEWORDER_QTY_RANGE,
    "New Order Qty is out of range. Range =
1 to 99."
},
{
    ERR_NEWORDER_QTY_WITHOUT_SUPPW,
    "New Order Qty field entered without a corresponding
Supp_w."
},
{
    ERR_NEWORDER_SUPPW_INVALID,
    "New Order Supp_w invalid data type must
be numeric."
},
{
    ERR_NO_SERVER_SPECIFIED,
    "No Server name specified."
},
{
    ERR_ORDERSTATUS_CID_AND_CLT,
    "Order Status Only Customer ID or Last Name may be
entered, not both."
},
{
    ERR_ORDERSTATUS_CID_INVALID,
    "Order Status Customer ID invalid, range must be
numeric 1 - 3000."
},
{
    ERR_ORDERSTATUS_CLT_RANGE,
    "Order Status Customer last name longer than 16
characters."
},
{
    ERR_ORDERSTATUS_DID_INVALID,
    "Order Status District invalid, value must be numeric

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```

1 - 10."
},
{
    ERR_ORDERSTATUS_MISSING_CID_CLT,
    "Order Status Either Customer ID or Last Name must be entered."
},
{
    ERR_ORDERSTATUS_MISSING_CID_KEY,
    "Order Status missing Customer key \"CID*\"."
},
{
    ERR_ORDERSTATUS_MISSING_CLT_KEY,
    "Order Status missing Customer Last Name key \"CLT*\"."
},
{
    ERR_ORDERSTATUS_MISSING_DID_KEY,
    "Order Status missing District key \"DID*\"."
},
{
    ERR_PAYMENT_CDI_INVALID,
    "Payment Customer district invalid must be numeric."
},
{
    ERR_PAYMENT_CID_AND_CLT,
    "Payment Only Customer ID or Last Name may be entered,
not
both."
},
{
    ERR_PAYMENT_CUSTOMER_INVALID,
    "Payment Customer data type invalid, must be
numeric."
},
{
    ERR_PAYMENT_CWI_INVALID,
    "Payment Customer warehouse invalid, must be
numeric."
},
{
    ERR_PAYMENT_DISTRICT_INVALID,
    "Payment District ID is invalid, must be 1 - 10."
},
{
    ERR_PAYMENT_HAM_INVALID,
    "Payment Amount invalid data type must be numeric."
},
{
    ERR_PAYMENT_HAM_RANGE,
    "Payment Amount out of range, 0 -
9999.99."
},
{
    ERR_PAYMENT_LAST_NAME_TO_LONG,
    "Payment Customer last name longer than 16
characters."
},
{
    ERR_PAYMENT_MISSING_CDI_KEY,
    "Payment missing Customer district key \"CDI*\"."
},
{
    ERR_PAYMENT_MISSING_CID_CLT,
    "Payment Either Customer ID or Last Name must be
entered."
},
{
    ERR_PAYMENT_MISSING_CID_KEY,
    "Payment missing Customer key \"CID*\"."
},
{
    ERR_PAYMENT_MISSING_CLT_KEY,
    "Payment missing Customer Last Name key \"CLT*\"."
},
{
    ERR_PAYMENT_MISSING_CWI_KEY,
    "Payment missing Customer warehouse key \"CWI*\"."
},
{
    ERR_PAYMENT_MISSING_DID_KEY,
    "Payment missing District key \"DID*\"."
},
{
    ERR_PAYMENT_MISSING_HAM_KEY,
    "Payment missing Amount key \"HAM*\"."
},
{
    ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY,
    "Stock Level; missing Threshold key \"TT*\"."
},
{
    ERR_STOCKLEVEL_THRESHOLD_INVALID,
    "Stock Level; Threshold value must be in the range = 1 - 99."
},
},
{
    ERR_STOCKLEVEL_THRESHOLD_RANGE,
    "Stock Level Threshold out of range, range must be 1
- 99."
}

```

```

},
{
    ERR_VERSION_MISMATCH,
    "Invalid version field. RTE and web
Client are probably out of
sync."
},
{
    ERR_W_ID_INVALID,
    "Invalid warehouse ID."
},
},
{
    0,
    ""
},
};
};
char szTmp[256];
int i = 0;
while (TRUE)
{
    if (errorMsgs[i].szMsg[0] == 0)
    {
        strcpy( szTmp, "Unknown error
number." );
        break;
    }
    if (m_Error == errorMsgs[i].iError)
    {
        strcpy( szTmp, errorMsgs[i].szMsg );
        break;
    }
    i++;
}
if (m_szTextDetail)
    strcat( szTmp, m_szTextDetail );
if (m_SystemErr)
    sprintf( szTmp+strlen(szTmp), " Error=%d",
m_SystemErr );
m_szErrorText = new char[strlen(szTmp)+1];
strcpy( m_szErrorText, szTmp );
return m_szErrorText;
}
/* FUNCTION: GetValue
*
* PURPOSE: This function parses a http formatted string for specific key
values.
*
* ARGUMENTS: char *pQueryStringhttp string
from client browser
*
* *pkey
char
key value to look for
*
* *pValue
char
character array into which
to place key's value
*
* iMax
int
maximum
length of key value array.
*
* err
WEBERROR
error value
to throw
*
* RETURNS: nothing.
*
* ERROR: if (the pkey value is not found) then if (err == 0)
*
* return (empty string)
*
* else
*
* throw CWBCLNT_ERR(err)
*
* COMMENTS: http keys are formatted either KEY=value& or KEY=value\0. This DLL
formats
*
* a manner that the keys can be extracted in the TPC-C input fields in such
above manner.
*/
void GetValue(char *pQueryString, char *pkey, char *pValue, int iMax,
WEBERROR err)
{
    char *ptr;
    if ( ! (ptr=strstr(pQueryString, pkey)) )
        goto ErrorExit;
    ptr += strlen(pkey);
    if ( *ptr != '=' )
        goto ErrorExit;
    ptr++;
    iMax--; // one position is for terminating null
    while( *ptr && *ptr != '&' && iMax )
    {
        *pValue++ = *ptr++;
        iMax--;
    }
    *pValue = 0; // terminating null
    *pQueryString = ptr;
    return;
ErrorExit:
    if (err != NO_ERR)

```

```

}
    *pValue = 0; // return empty result string
}
/* FUNCTION: GetIntKeyValue
*
* PURPOSE: This function parses a http formatted string for a specific key
value.
*
* ARGUMENTS: char *pQueryStringhttp string
from client browser
*
* *pkey
char
key value to look for
*
* NoKeyErr
error value to throw if key not found
*
* NotIntErr
error value to throw if value not
numeric
*
* RETURNS: integer
*
* ERROR: if (the pkey value is not found) then if
(NoKeyErr != NO_ERR)
*
* throw CWBCLNT_ERR(err)
*
* else
*
* return 0
*
* else if (non-numeric char
found) then
*
* if
(NotIntErr != NO_ERR) then
*
* throw CWBCLNT_ERR(err)
*
* else
*
* return 0
*
* COMMENTS: http keys are formatted either KEY=value& or KEY=value\0. This DLL
formats
*
* a manner that the keys can be extracted in the TPC-C input fields in such
above manner.
*/
int GetIntKeyValue(char *pQueryString, char *pkey, WEBERROR NoKeyErr, WEBERROR
NotIntErr)
{
    char *ptr0;
    char *ptr;
    if ( ! (ptr=strstr(pQueryString, pkey)) )
        goto ErrorNoKey;
    ptr += strlen(pkey);
    if ( *ptr != '=' )
        goto ErrorNoKey;
    ptr++;
    ptr0 = ptr; // remember starting point
    // scan string until a terminator (null or &) or a non-digit
    while( *ptr && *ptr != '&' && isdigit(*ptr) )
        ptr++;
    // make sure we stopped scanning for the right reason
    if ((ptr0 == ptr) || (*ptr && *ptr != '&'))
    {
        if (NotIntErr != NO_ERR)
            throw new CWBCLNT_ERR( NoKeyErr );
        return 0;
    }
    *pQueryString = ptr;
    return atoi(ptr0);
ErrorNoKey:
    if (NoKeyErr != NO_ERR)
        throw new CWBCLNT_ERR( NoKeyErr );
    return 0;
}
/* FUNCTION: TermInit
*
* PURPOSE: This function initializes the client terminal structure; it is
called when the TPCC.DLL
*
* is first loaded by the inet service.
*
*/
void TermInit(void)
{
    EnterCriticalSection(&TermCriticalSection);
    Term.iMasterSyncId = 1;
    Term.iNumEntries = Reg.dwMaxConnections+1;
    Term.pClientData = NULL;
    Term.pClientData = (PCLIENTDATA)malloc(Term.iNumEntries *
sizeof(CLIENTDATA));
    if (Term.pClientData == NULL)
    {
        LeaveCriticalSection(&TermCriticalSection);
        throw new CWBCLNT_ERR( ERR_MEM_ALLOC_FAILED );
    }
    ZeroMemory( Term.pClientData, Term.iNumEntries *
sizeof(CLIENTDATA) );
    Term.iFreeList = Term.iNumEntries-1;
    // build free list
    // note: Term.pClientData[0].iNextFree gets set to -1, which marks
it as "in use".
}

```



```

    pDelivery->o_carrier_id = GetIntKeyValue(&ptr, "ocd*",
ERR_DELIVERY_MISSING_OCD_KEY, ERR_DELIVERY_CARRIER_INVALID);
    if ( pDelivery->o_carrier_id > 10 || pDelivery->o_carrier_id < 1 )
        throw new
CWEBClntErr( ERR_DELIVERY_CARRIER_ID_RANGE );
    if ( dwNumDeliveryThreads )
    {
        //post delivery info
        if ( PostDeliveryInfo(pDelivery->w_id, pDelivery->
>o_carrier_id )
        {
            pDelivery->exec_status_code =
eDeliveryFailed;
        }
        else
            pDelivery->exec_status_code = eOK;
    }
    else // delivery is done synchronously if no delivery threads
        configured
            Term.pClientData[iTermId].pTxn->Delivery();

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

/* FUNCTION: ProcessStockLevelForm
* PURPOSE: This function gets and validates the input data from the Stock
Level
* variables. It then calls the form filling in the required input
the output form and writes it SQLStockLevel transaction, constructs
* back to client browser.
* ARGUMENTS: EXTENSION_CONTROL_BLOCK *pECB passed in structure
pointer from inetrv.
int iTermId client
browser terminal id
*/
void ProcessStockLevelForm(EXTENSION_CONTROL_BLOCK *pECB, int iTermId, char
*szBuffer)
{
    char *ptr = pECB->lpszQueryString;
    PSTOCK_LEVEL_DATA pStockLevel;
    pStockLevel = Term.pClientData[iTermId].pTxn-
>BuffAddr_StockLevel();
    ZeroMemory( pStockLevel, sizeof(STOCK_LEVEL_DATA) );
    pStockLevel->w_id = Term.pClientData[iTermId].w_id;
    pStockLevel->d_id = Term.pClientData[iTermId].d_id;
    pStockLevel->threshold = GetIntKeyValue(&ptr, "IT*",
ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY, ERR_STOCKLEVEL_THRESHOLD_INVALID);
    if ( pStockLevel->threshold >= 100 || pStockLevel->threshold < 0 )
        throw new
CWEBClntErr( ERR_STOCKLEVEL_THRESHOLD_RANGE );
    Term.pClientData[iTermId].pTxn->StockLevel();
    pStockLevel = Term.pClientData[iTermId].pTxn-
>BuffAddr_StockLevel();
    MakeStockLevelForm(iTermId, pStockLevel, OUTPUT_FORM, szBuffer);
}

/* FUNCTION: GetNewOrderData
* PURPOSE: This function extracts and validates the new order form data from
an http command string.
* ARGUMENTS: LPSTR lpszQueryString
Client browser http command string NEW_ORDER_DATA
*pNewOrderData pointer to new order data
structure
*/
void GetNewOrderData(LPSTR lpszQueryString, NEW_ORDER_DATA *pNewOrderData)
{
    char szTmp[26];
    int i;
    short items;
    int o1_i_id, o1_quantity;
    char *ptr = lpszQueryString;

    static char szSP[MAX_OL_NEW_ORDER_ITEMS][6] =
    { "SP00*", "SP01*", "SP02*", "SP03*", "SP04*",
    "SP05*", "SP06*", "SP07*", "SP08*", "SP09*",
    "SP10*", "SP11*", "SP12*", "SP13*", "SP14*",
    "SP15*", "SP16*", "SP17*", "SP18*", "SP19*",
    "SP20*", "SP21*", "SP22*", "SP23*", "SP24*",
    "SP25*", "SP26*", "SP27*", "SP28*", "SP29*",
    "SP30*", "SP31*", "SP32*", "SP33*", "SP34*",
    "SP35*", "SP36*", "SP37*", "SP38*", "SP39*",
    "SP40*", "SP41*", "SP42*", "SP43*", "SP44*",
    "SP45*", "SP46*", "SP47*", "SP48*", "SP49*",
    "SP50*", "SP51*", "SP52*", "SP53*", "SP54*",
    "SP55*", "SP56*", "SP57*", "SP58*", "SP59*",
    "SP60*", "SP61*", "SP62*", "SP63*", "SP64*",
    "SP65*", "SP66*", "SP67*", "SP68*", "SP69*",
    "SP70*", "SP71*", "SP72*", "SP73*", "SP74*",
    "SP75*", "SP76*", "SP77*", "SP78*", "SP79*",
    "SP80*", "SP81*", "SP82*", "SP83*", "SP84*",
    "SP85*", "SP86*", "SP87*", "SP88*", "SP89*",
    "SP90*", "SP91*", "SP92*", "SP93*", "SP94*",
    "SP95*", "SP96*", "SP97*", "SP98*", "SP99*" };

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

    for(i=0, items=0; i<MAX_OL_NEW_ORDER_ITEMS; i++)
    {
        GetKeyValue(&ptr, szSP[i], szTmp, sizeof(szTmp),

```

```

ERR_NEWORDER_MISSING_SUPPW_KEY);
        if ( !szTmp[0] )
            throw new
CWEBClntErr( ERR_NEWORDER_SUPPW_INVALID );
    }
    pNewOrderData->ol_items.ol_supply_w_id
= (short)atoi(szTmp);

    o1_i_id = pNewOrderData-
>ol_items.ol_i_id =
    GetIntKeyValue(&ptr,
szIID[i], ERR_NEWORDER_MISSING_IID_KEY, ERR_NEWORDER_ITEMID_INVALID);
    if ( o1_i_id > 999999 || o1_i_id < 1 )
        throw new
CWEBClntErr( ERR_NEWORDER_ITEMID_RANGE );

    o1_quantity = pNewOrderData-
>ol_items.ol_quantity =
    GetIntKeyValue(&ptr,
szQty[i], ERR_NEWORDER_MISSING_QTY_KEY, ERR_NEWORDER_QTY_INVALID);
    if ( o1_quantity > 99 || o1_quantity <
1 )
        throw new
CWEBClntErr( ERR_NEWORDER_QTY_RANGE );

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

        GetKeyValue(&ptr, szQty[i], szTmp,
sizeof(szTmp), ERR_NEWORDER_MISSING_QTY_KEY);
        if ( !szTmp[0] )
            throw new
CWEBClntErr( ERR_NEWORDER_QTY_WITHOUT_SUPPW );
    }
    }
    if ( items == 0 )
        throw new
CWEBClntErr( ERR_NEWORDER_NOITEMS_ENTERED );
    pNewOrderData->o1_cnt = items;
}

/* FUNCTION: GetPaymentData
* PURPOSE: This function extracts and validates the payment form data from an
http command string.
* ARGUMENTS: LPSTR lpszQueryString
Client browser http command string PAYMENT_DATA *pPaymentData
pointer to payment data structure
*/
void GetPaymentData(LPSTR lpszQueryString, PAYMENT_DATA *pPaymentData)
{
    char szTmp[26];
    char *ptr = lpszQueryString;
    BOOL bcustIdBlank;

    pPaymentData->d_id = GetIntKeyValue(&ptr, "DID*",
ERR_PAYMENT_MISSING_DID_KEY, ERR_PAYMENT_DISTRICT_INVALID);
    GetKeyValue(&ptr, "CID*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_CID_KEY);
    if ( !szTmp[0] )
    {
        bcustIdBlank = TRUE;
        pPaymentData->c_id = 0;
    }
    else
    {
        // parse customer id and verify that last name was
        bcustIdBlank = FALSE;
        if ( !IsNumeric(szTmp) )
            throw new
CWEBClntErr( ERR_PAYMENT_CUSTOMER_INVALID );
        pPaymentData->c_id = atoi(szTmp);
    }

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

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

    strcpy( szTmp );
    if ( strlen(pPaymentData->c_last) > LAST_NAME_LEN )
        throw new
CWEBClntErr( ERR_PAYMENT_LAST_NAME_TOO_LONG );
    strcpy(pPaymentData->c_last, szTmp);
    }
    else
        // parse customer id and verify that last name was
        GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_CLT_KEY);

```

```

        if ( !szTmp[0] )
            throw new
CWEBClntErr( ERR_PAYMENT_CID_AND_CLT );

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

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

    pOrderStatusData->d_id = GetIntKeyValue(&ptr, "DID*",
ERR_ORDERSTATUS_MISSING_DID_KEY, ERR_ORDERSTATUS_DID_INVALID);
    GetKeyValue(&ptr, "CID*", szTmp, sizeof(szTmp),
ERR_ORDERSTATUS_MISSING_CID_KEY);
    if ( !szTmp[0] )
    {
        // customer id is blank, so last name must be entered
        pOrderStatusData->c_id = 0;
        GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_ORDERSTATUS_MISSING_CLT_KEY);
        if ( !szTmp[0] )
            throw new
CWEBClntErr( ERR_ORDERSTATUS_MISSING_CID_CLT );
    }
    strcpy( szTmp );
    if ( strlen(pOrderStatusData->c_last) >
LAST_NAME_LEN )
        throw new
CWEBClntErr( ERR_ORDERSTATUS_CLT_RANGE );
    strcpy(pOrderStatusData->c_last, szTmp);
    }
    else
    {
        // parse customer id and verify that last name was
        if ( !IsNumeric(szTmp) )
            throw new
CWEBClntErr( ERR_ORDERSTATUS_CID_INVALID );
        pOrderStatusData->c_id = atoi(szTmp);
        GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_ORDERSTATUS_MISSING_CLT_KEY);
        if ( !szTmp[0] )
            throw new
CWEBClntErr( ERR_ORDERSTATUS_CID_AND_CLT );
    }
}

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

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

```

```

BOOL bvalid;
if ( *ptr == 0 )
    return FALSE;

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

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

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

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

```

isapi_dll/src/tpcc.def

LIBRARY TPCC.DLL

EXPORTS

```

GetExtensionVersion @1
HttpExtensionProc @2
TerminateExtension @3

```

isapi_dll/src/tpcc.h

```

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

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

#define TP_MAX_RETRIES 50

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

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

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

```

```

//district id assigned at welcome form
int iSyncId;
int iTickCount;
CTPCC_BASE *pTxn;
} CLIENTDATA, *PCLIENTDATA;

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

typedef TERM *PTERM;

enum WEBERROR
{
    NO_ERR,
    ERR_COMMAND_UNDEFINED,
    ERR_D_ID_INVALID,
    ERR_DELIVERY_CARRIER_ID_RANGE,
    ERR_DELIVERY_CARRIER_INVALID,
    ERR_DELIVERY_MISSING_OCD_KEY,
    ERR_DELIVERY_THREAD_FAILED,
    ERR_GETPROCADDR_FAILED,
    ERR_HTML_TAG_FORMED,
    ERR_INVALID_SYNC_CONNECTION,
    ERR_INVALID_TERMID,
    ERR_LOADLL_FAILED,
    ERR_MAX_CONNECTIONS_EXCEEDED,
    ERR_MEM_ALLOC_FAILED,
    ERR_MISSING_REGISTRY_ENTRIES,
    ERR_NEWORDER_CUSTOMER_INVALID,
    ERR_NEWORDER_CUSTOMER_KEY,
    ERR_NEWORDER_DISTRICT_INVALID,
    ERR_NEWORDER_FORM_MISSING_DID,
    ERR_NEWORDER_ITEMID_INVALID,
    ERR_NEWORDER_QTY_RANGE,
    ERR_NEWORDER_ITEMID_WITHOUT_SUPPW,
    ERR_NEWORDER_MISSING_ID_KEY,
    ERR_NEWORDER_MISSING_QTY_KEY,
    ERR_NEWORDER_MISSING_SUPPW_KEY,
    ERR_NEWORDER_NOTITEMS_ENTERED,
    ERR_NEWORDER_QTY_INVALID,
    ERR_NEWORDER_QTY_RANGE,
    ERR_NEWORDER_QTY_WITHOUT_SUPPW,
    ERR_NEWORDER_SUPPW_INVALID,
    ERR_NO_SERVER_SPECIFIED,
    ERR_ORDERSTATUS_CID_AND_CLT,
    ERR_ORDERSTATUS_CID_INVALID,
    ERR_ORDERSTATUS_CLT_RANGE,
    ERR_ORDERSTATUS_DID_INVALID,
    ERR_ORDERSTATUS_MISSING_CID_CLT,
    ERR_ORDERSTATUS_MISSING_CID_KEY,
    ERR_ORDERSTATUS_MISSING_CLT_KEY,
    ERR_ORDERSTATUS_MISSING_DID_KEY,
    ERR_PAYMENT_CDI_INVALID,
    ERR_PAYMENT_CID_AND_CLT,
    ERR_PAYMENT_CUSTOMER_INVALID,
    ERR_PAYMENT_CWI_INVALID,
    ERR_PAYMENT_DISTRICT_INVALID,
    ERR_PAYMENT_HAM_INVALID,
    ERR_PAYMENT_HAM_RANGE,
    ERR_PAYMENT_LAST_NAME_TO_LONG,
    ERR_PAYMENT_MISSING_CDI_KEY,
    ERR_PAYMENT_MISSING_CID_CLT,
    ERR_PAYMENT_MISSING_CID_KEY,
    ERR_PAYMENT_MISSING_CLT,
    ERR_PAYMENT_MISSING_CLT_KEY,
    ERR_PAYMENT_MISSING_CWI_KEY,
    ERR_PAYMENT_MISSING_DID_KEY,
    ERR_PAYMENT_MISSING_HAM_KEY,
    ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY,
    ERR_STOCKLEVEL_THRESHOLD_INVALID,
    ERR_STOCKLEVEL_THRESHOLD_RANGE,
    ERR_VERSION_MISMATCH,
    ERR_W_ID_INVALID
};

class CWEBCLNT_ERR : public CBaseErr
{
public:
    CWEBCLNT_ERR(WEBERROR Err)
    {
        m_Error = Err;
        m_szTextDetail = NULL;
        m_SystemErr = 0;
        m_szErrorText = NULL;
    };
    CWEBCLNT_ERR(WEBERROR Err, char *szTextDetail, DWORD
dwSystemErr)
    {
        m_Error = Err;
        m_szTextDetail = new

```

```

char[strlen(szTextDetail)+1];
strcpy(m_szTextDetail, szTextDetail);
m_SystemErr = dwSystemErr;
m_szErrorText = NULL;
};
~CWEBCLNT_ERR()
{
    if (m_szTextDetail != NULL)
        delete [] m_szTextDetail;
    if (m_szErrorText != NULL)
        delete [] m_szErrorText;
};
WEBERROR m_Error; //m_szTextDetail;
char //
DWORD // m_SystemErr;
int ErrorType() {return ERR_TYPE_WEBDLL;};
int ErrorNum() {return m_Error;};
char *ErrorText();

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

//function prototypes
BOOL WINAPI TryDllMain(HANDLE hModule, DWORD ul_reason_for_call, LPVOID
lpReserved);
void WriteMessageToEventLog(LPCTSTR lpszMsg);
void ProcessQueryString(EXTENSION_CONTROL_BLOCK *pECB, int *pCmd, int *pFormId,
int *pTermId, int *pSyncId);
void WelcomeForm(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer);
void SubmitCmd(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer);
void BeginCmd(EXTENSION_CONTROL_BLOCK *pECB, int iFormId, int iTermId);
void ProcessCmd(EXTENSION_CONTROL_BLOCK *pECB, int iFormId, int iTermId);
void StatusCmd(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer);
void ErrorMessage(EXTENSION_CONTROL_BLOCK *pECB, int iError, int iErrorType,
char *szMsg, int iTermId);
void GetKeyValue(char **pQueryString, char *pKey, char *pValue, int iMax,
WEBERROR err);
int GetIntKeyValue(char **pQueryString, char *pKey, WEBERROR noKeyErr, WEBERROR
NoIntErr);
void Terminate(int iTermId);
void TerminateAll(void);
int Terminate(void);
void Terminate(int iTermId);
void ErrorForm(EXTENSION_CONTROL_BLOCK *pECB, int iType, int iErrorNum, int
iTermId, int iSyncId, char *szErrorText, char *szBuffer);
void MakeMainMenuForm(int iTermId, int iSyncId, char *szForm);
void MakeStockLevelForm(int iTermId, STOCK_LEVEL_DATA *pStockLevelData, BOOL
bInput, char *szForm);
void MakeNewOrderForm(int iTermId, NEW_ORDER_DATA *pNewOrderData, BOOL bInput,
char *szForm);
void MakePaymentForm(int iTermId, PAYMENT_DATA *pPaymentData, BOOL bInput, char
*szForm);
void MakeOrderStatusForm(int iTermId, ORDER_STATUS_DATA *pOrderStatusData, BOOL
bInput, char *szForm);
void MakeDeliveryForm(int iTermId, DELIVERY_DATA *pDeliveryData, BOOL bInput,
char *szForm);
void ProcessNewOrderForm(EXTENSION_CONTROL_BLOCK *pECB, int iTermId, char
*szBuffer);
void ProcessPaymentForm(EXTENSION_CONTROL_BLOCK *pECB, int iTermId, char
*szBuffer);
void ProcessOrderStatusForm(EXTENSION_CONTROL_BLOCK *pECB, int iTermId, char
*szBuffer);
void ProcessDeliveryForm(EXTENSION_CONTROL_BLOCK *pECB, int iTermId, char
*szBuffer);
void ProcessStockLevelForm(EXTENSION_CONTROL_BLOCK *pECB, int iTermId, char
*szBuffer);
void GetNewOrderData(LPSTR lpszQueryString, NEW_ORDER_DATA *pNewOrderData);
void GetPaymentData(LPSTR lpszQueryString, PAYMENT_DATA *pPaymentData);
void GetOrderStatusData(LPSTR lpszQueryString, ORDER_STATUS_DATA
*pOrderStatusData);
BOOL PostDeliveryInfo(short w_id, short o_carrier_id);
BOOL IsNumeric(char *ptr);
BOOL IsDecimal(char *ptr);
void DeliveryWorkerThread(void *ptr);

isapi_dll/src/tpcc.rc
//Microsoft Developer Studio generated resource script.
#include "resource.h"

#define APSTUDIO_READONLY_SYMBOLS
// Generated from the TEXTINCLUDE 2 resource.
#include "afxres.h"
// End of APSTUDIO_READONLY_SYMBOLS
// English (U.S.) resources
#if !defined(AFX_RESOURCE_DLL) || defined(AFX_TARG_ENU)

```

```

#ifdef _WIN32
LANGUAGE LANG_ENGLISH, SUBLANG_ENGLISH_US
#pragma code_page(1252)
#endif // _WIN32

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

VS_VERSION_INFO VERSIONINFO
FILEVERSION 0,4,0,0
PRODUCTVERSION 0,4,0,0
FILEFLAGSMASK 0x3fL
#ifdef _DEBUG
FILEFLAGS 0x1L
#else
FILEFLAGS 0x0L
#endif
FILES 0x40004L
FILETYPE 0x2L
FILESUBTYPE 0x0L
BEGIN
    BLOCK "StringFileInfo"
    BEGIN
        BLOCK "040904b0"
        BEGIN
            VALUE "Comments", "TPC-C HTML DLL Server (DBLIB)\0"
            VALUE "CompanyName", "Microsoft\0"
            VALUE "FileDescription", "TPC-C HTML DLL Server (DBLIB)\0"
            VALUE "FileVersion", "0, 4, 0, 0\0"
            VALUE "InternalName", "tpcc0"
            VALUE "LegalCopyright", "Copyright © 1997\0"
            VALUE "OriginalFilename", "tpcc.dll\0"
            VALUE "ProductName", "Microsoft tpcc\0"
            VALUE "ProductVersion", "0, 4, 0, 0\0"
        END
    END
    BLOCK "VarFileInfo"
    BEGIN
        VALUE "Translation", 0x409, 1200
    END
END

#endif // !_MAC

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

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

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

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

#endif // APSTUDIO_INVOKED

////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
// Dialog
//

IDD_DIALOG1 DIALOG DISCARDABLE 0, 0, 186, 95
STYLE DS_MODALFRAME | WS_POPUP | WS_CAPTION | WS_SYSMENU
CAPTION "Dialog"
FONT 8 "MS Sans Serif"
BEGIN
    DEFPUSHBUTTON "OK",IDOK,129,7,50,14
    PUSHBUTTON "Cancel",IDCANCEL,129,24,50,14
END

////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
// DESIGNINFO
//

#ifdef APSTUDIO_INVOKED
GUIDELINES DESIGNINFO DISCARDABLE
BEGIN
    IDD_DIALOG1, DIALOG
    BEGIN
        LEFTMARGIN, 7
        RIGHTMARGIN, 179
        TOPMARGIN, 7
        BOTTOMMARGIN, 88
    END
END
#endif // APSTUDIO_INVOKED

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

```

```

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

#endif // not APSTUDIO_INVOKED

////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
// Microsoft Developer Studio Project File - Name="tm_com_dll" - Package
// Owner=<4>
// Microsoft Developer Studio Generated Build File, Format Version 6.00
// ** DO NOT EDIT **

# TARGETTYPE "win32 (x86) Dynamic-Link Library" 0x0102

CFG=tm_com_dll - win32 Debug
!MESSAGE This is not a valid makefile. To build this project using NMAKE,
!MESSAGE use the Export Makefile command and run
!MESSAGE
!MESSAGE NMAKE /f "tm_com_dll.mak".
!MESSAGE
!MESSAGE You can specify a configuration when running NMAKE
!MESSAGE by defining the macro CFG on the command line. For example:
!MESSAGE NMAKE /f "tm_com_dll.mak" CFG="tm_com_dll - win32 Debug"
!MESSAGE Possible choices for configuration are:
!MESSAGE "tm_com_dll - win32 Release" (based on "win32 (x86) Dynamic-Link
!MESSAGE Library")
!MESSAGE "tm_com_dll - win32 Debug" (based on "win32 (x86) Dynamic-Link
!MESSAGE Library")

# Begin Project
# PROP AllowPerConfigDependencies 0
# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CPP=c:\exe
MTL=midl.exe
RSC=rc.exe

!IF "$(CFG)" == "tm_com_dll - win32 Release"
# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir "Release"
# PROP BASE Intermediate_Dir "Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MT /w3 /GX /O2 /D "WIN32" /D "NDEBUG" /D "_WINDOWS" /YX
/FD /c
# ADD CPP /nologo /MD /w3 /GX /O2 /D "WIN32" /D "NDEBUG" /D "_WINDOWS" /YX /FD
/c
# ADD BASE MTL /nologo /D "NDEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD MTL /nologo /D "NDEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "NDEBUG"
# ADD RSC /l 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib
odb32.lib odbccp32.lib /nologo /subsystem:windows /dll /machine:I386
# ADD LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odb32.lib
odbccp32.lib /nologo /subsystem:windows /dll /machine:I386
/out:".bin\tpcc_com.dll"
!ELSEIF "$(CFG)" == "tm_com_dll - win32 Debug"
# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "Debug"
# PROP BASE Intermediate_Dir "Debug"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MTd /w3 /Gm /GX /ZI /od /D "WIN32" /D "_DEBUG" /D
"_WINDOWS" /YX /FD /c
# ADD CPP /nologo /Mdd /w3 /Gm /GX /ZI /od /D "WIN32" /D "_DEBUG" /D "_WINDOWS"
/YX /FD /c
# ADD BASE MTL /nologo /D "_DEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD MTL /nologo /D "_DEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "DEBUG"
# ADD RSC /l 0x409 /d "DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe

```

tm_com_dll/tm_com_dll.dsp

```

# ADD BASE LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib
odb32.lib odbccp32.lib /nologo /subsystem:windows /dll /debug /machine:I386
/pdbtype:sept
# ADD LINK32 kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odb32.lib
odbccp32.lib /nologo /subsystem:windows /dll /debug /machine:I386
/out:".bin\tpcc_com.dll" /pdbtype:sept

!ENDIF

# Begin Target

# Name "tm_com_dll - win32 Release"
# Name "tm_com_dll - win32 Debug"
# Begin Source File

SOURCE=.\src\tpcc_com.cpp
# End Source File
# Begin Source File

SOURCE=.\src\tpcc_com.h
# End Source File
# End Target
# End Project

```

tm_com_dll/src/tpcc_com.cpp

```

/* FILE: TPCC_COM.CPP Microsoft TPC-C Kit Ver.
4.20.000 Copyright Microsoft, 1999
* All Rights Reserved
* not yet audited
* PURPOSE: Source file for TPC-C COM+ class implementation.
* Contact: Charles Levine (clevine@microsoft.com)
* Change history: 4.20.000 - first version
*/

// needed for CoInitializeEx
#define _WIN32_WINNT 0x0400

#include <windows.h>

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

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

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

// wrapper routine for class constructor
__declspec( dllexport ) CTPCC_COM+ CTPCC_COM_new(BOOL bsinglePool)
{
    return new CTPCC_COM(bsinglePool);
}

CTPCC_COM+::CTPCC_COM(BOOL bsinglePool)
{
    HRESULT hr = NULL;
    LONG lret = 0;
    ULONG ulTmpSize = 0;

    m_pTnx = NULL;
    m_pNewOrder = NULL;
    m_pPayment = NULL;
    m_pStockLevel = NULL;
    m_pOrderStatus = NULL;

    m_bSinglePool = bsinglePool;

    ulTmpSize = (ULONG) sizeof(COM_DATA);
    VariantInit(&m_VTnx);
    m_VTnx.vt = VT_SAFEARRAY;

    m_VTnx.parray = SafeArrayCreateVector(VT_UI1, ulTmpSize,
    ulTmpSize);
    if (!m_VTnx.parray)
        throw new CCOMERR( E_FAIL );

    memset( (void*)m_VTnx.parray->pvData, 0, ulTmpSize);
    m_pTnx = (COM_DATA*)m_VTnx.parray->pvData;

    hr = CoInitializeEx(NULL, COINIT_MULTITHREADED);
    if (FAILED(hr))
    {
        throw new CCOMERR( hr );
    }

    // create components
    if (m_bSinglePool)
    {
        hr = CoCreateInstance(CLSID_TPCC, NULL, CLSCTX_SERVER,
        IID_ITPCC, (void **)&m_pNewOrder);
        if (FAILED(hr))
            throw new CCOMERR(hr);
    }
}

```

```

// all txns will use same component
m_pPayment = m_pNewOrder;
m_pStockLevel = m_pNewOrder;
m_pOrderStatus = m_pNewOrder;
}
else
{
// use different components for each txn
CL SCTX_SERVER, IID_ITPCC, hr = CoCreateInstance(CLSID_NewOrder, NULL,
(void **)&m_pNewOrder);
if (FAILED(hr))
throw new CCOMERR(hr);

CL SCTX_SERVER, IID_ITPCC, hr = CoCreateInstance(CLSID_Payment, NULL,
(void **)&m_pPayment);
if (FAILED(hr))
throw new CCOMERR(hr);

CL SCTX_SERVER, IID_ITPCC, hr = CoCreateInstance(CLSID_StockLevel, NULL,
(void **)&m_pStockLevel);
if (FAILED(hr))
throw new CCOMERR(hr);

CL SCTX_SERVER, IID_ITPCC, hr = CoCreateInstance(CLSID_OrderStatus, NULL,
(void **)&m_pOrderStatus);
if (FAILED(hr))
throw new CCOMERR(hr);
}

// call setcomplete to release each component back into pool
hr = m_pNewOrder->CallSetComplete();
if (FAILED(hr))
throw new CCOMERR(hr);

if (!m_bSinglePool)
{
hr = m_pPayment->CallSetComplete();
if (FAILED(hr))
throw new CCOMERR(hr);

hr = m_pStockLevel->CallSetComplete();
if (FAILED(hr))
throw new CCOMERR(hr);

hr = m_pOrderStatus->CallSetComplete();
if (FAILED(hr))
throw new CCOMERR(hr);
}
}

CTPCC_COM::~CTPCC_COM()
{
if (m_pTxn)
SafeArrayDestroy(m_VTxn.parray);

ReleaseInterface(m_pNewOrder);
if (!m_bSinglePool)
{
ReleaseInterface(m_pPayment);
ReleaseInterface(m_pStockLevel);
ReleaseInterface(m_pOrderStatus);
}
CoInitialize();
}

void CTPCC_COM::NewOrder()
{
VARIANT vTxn_out;
HRESULT hr = m_pNewOrder->NewOrder(m_VTxn, &vTxn_out);
if (FAILED(hr))
throw new CCOMERR( hr );
memcpy(m_pTxn, (void *)vTxn_out.parray->pvData, vTxn_out.parray->rgsabound[0].cElements);
SafeArrayDestroy(vTxn_out.parray);

if ( m_pTxn->ErrorType != ERR_SUCCESS )
throw new CCOMERR( m_pTxn->ErrorType, m_pTxn-
>error );
}

void CTPCC_COM::Payment()
{
VARIANT vTxn_out;
HRESULT hr = m_pPayment->Payment(m_VTxn, &vTxn_out);
if (FAILED(hr))
throw new CCOMERR( hr );
memcpy(m_pTxn, (void *)vTxn_out.parray->pvData, vTxn_out.parray->rgsabound[0].cElements);
SafeArrayDestroy(vTxn_out.parray);

if ( m_pTxn->ErrorType != ERR_SUCCESS )
throw new CCOMERR( m_pTxn->ErrorType, m_pTxn-
>error );
}

void CTPCC_COM::StockLevel()
{
VARIANT vTxn_out;
HRESULT hr = m_pStockLevel->StockLevel(m_VTxn, &vTxn_out);
if (FAILED(hr))
throw new CCOMERR( hr );
memcpy(m_pTxn, (void *)vTxn_out.parray->pvData, vTxn_out.parray->rgsabound[0].cElements);
SafeArrayDestroy(vTxn_out.parray);

if ( m_pTxn->ErrorType != ERR_SUCCESS )
throw new CCOMERR( m_pTxn->ErrorType, m_pTxn-
>error );
}

```

```

>error );
}

void CTPCC_COM::OrderStatus()
{
VARIANT vTxn_out;
HRESULT hr = m_pOrderStatus->OrderStatus(m_VTxn, &vTxn_out);
if (FAILED(hr))
throw new CCOMERR( hr );
memcpy(m_pTxn, (void *)vTxn_out.parray->pvData, vTxn_out.parray->rgsabound[0].cElements);
SafeArrayDestroy(vTxn_out.parray);

if ( m_pTxn->ErrorType != ERR_SUCCESS )
throw new CCOMERR( m_pTxn->ErrorType, m_pTxn-
>error );
}

```

tm_com_dll/src/tpcc_com.h

```

/* FILE: TPCC_COM.H Microsoft TPC-C Kit Ver.
4.20.000 Copyright Microsoft, 1999
* All Rights Reserved
* not yet audited
* PURPOSE: Header file for TPC-C COM+ class implementation.
* change history: 4.20.000 - first version
*/

#pragma once
#include <stdio.h>
#include "..\..\tpcc_com_ps\src\tpcc_com_ps.h"

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

class CCOMERR : public CBaseErr
{
private:
char m_szErrorText[64];

public:
// use this interface for genuine COM errors
CCOMERR( HRESULT hr )
{
m_hr = hr;
m_iErrorType = 0;
m_iError = 0;
}

// use this interface to impersonate a non-COM error
CCOMERR( int iErrorType, int iError )
{
m_iErrorType = iErrorType;
m_iError = iError;
m_hr = S_OK;
}

int m_hr;
int m_iErrorType;
int m_iError;

// A CCOMERR class can impersonate another class,
// was not actually a COM Services error, but was
// simply transmitted back via COM.
int iErrorType()
{
if (m_iErrorType == 0)
return ERR_TYPE_COM;
else
return m_iErrorType;
}

int ErrorNum() {return m_hr;}
char *ErrorText()
{
if (m_hr == S_OK)
sprintf( m_szErrorText,
"Error: Class %d, error %d", m_iErrorType, m_iError );
else
sprintf( m_szErrorText,
"Error: COM HRESULT %x", m_hr );
return m_szErrorText;
}
};

class DllDecl CTPCC_COM : public CTPCC_BASE
{
private:
BOOL m_bSinglePool;

// COM Interface pointers
ITPCC* m_pNewOrder;
ITPCC* m_pPayment;
}

```

```

ITPCC* m_pStockLevel;
ITPCC* m_pOrderStatus;

struct COM_DATA
{
int ErrorType;
int error;
union
{
NEW_ORDER_DATA
PAYMENT_DATA
DELIVERY_DATA
STOCK_LEVEL_DATA
ORDER_STATUS_DATA
} *m_pTxn;
};

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

inline PNEW_ORDER_DATA { return &m_pTxn-
>u.NewOrder;
};
inline PPAYMENT_DATA { return &m_pTxn-
>u.Payment;
};
inline PDELIVERY_DATA { return &m_pTxn-
>u.Delivery;
};
inline PSTOCK_LEVEL_DATA { return &m_pTxn->u.StockLevel; };
inline PORDER_STATUS_DATA { return &m_pTxn->u.OrderStatus; };

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

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

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

typedef CTPCC_COM* (TYPE_CTPCC_COM)(BOOL);

```

tpcc_com_all/tpcc_com_all.dsp

```

# Microsoft Developer Studio Project File - Name="tpcc_com_all" - Package
Owner=<4>
# Microsoft Developer Studio Generated Build File, Format Version 6.00
# ** DO NOT EDIT **

# TARGETTYPE "win32 (x86) Dynamic-Link Library" 0x0102

CFG=tpcc_com_all - win32 Debug
!MESSAGE This is not a valid makefile. To build this project using NMAKE,
!MESSAGE use the Export Makefile command and run
!MESSAGE
!MESSAGE NMAKE /f "tpcc_com_all.mak".
!MESSAGE
!MESSAGE You can specify a configuration when running NMAKE
!MESSAGE by defining the macro CFG on the command line. For example:
!MESSAGE NMAKE /f "tpcc_com_all.mak" CFG="tpcc_com_all - win32 Debug"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE "tpcc_com_all - win32 Release" (based on "win32 (x86) Dynamic-Link
!MESSAGE Library")
!MESSAGE "tpcc_com_all - win32 Debug" (based on "win32 (x86) Dynamic-Link
!MESSAGE Library")
!MESSAGE

# Begin Project
# PROP AllowPerConfigDependencies 0
# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CPP=c.exe
MTL=midl.exe
RSC=rc.exe

!IF "$(CFG)" == "tpcc_com_all - win32 Release"
# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0

```

```

# PROP BASE Output_Dir "Release"
# PROP BASE Intermediate_Dir "Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MT /w3 /GX /O2 /D "WIN32" /D "NDEBUG" /D "_WINDOWS" /YX /FD /c
# ADD CPP /nologo /MT /w3 /GX /O2 /D "WIN32" /D "NDEBUG" /D "_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "NDEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD MTL /nologo /D "NDEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "NDEBUG"
# ADD RSC /l 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kerne132.lib user32.lib gdi32.lib winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib
odbc32.lib odbccp32.lib /nologo /subsystem:windows /dll /machine:I386
# ADD LINK32 ..\db_db1ib_dll\bin\tpcc_db1ib.lib ..\db_odbc_dll\bin\tpcc_odbc.lib
kerne132.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib odbccp32.lib /nologo /subsystem:windows /dll /machine:I386
!ELSEIF "$(CFG) == "tpcc_com_all - win32 Debug"
# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "Debug"
# PROP BASE Intermediate_Dir "Debug"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /MTd /w3 /Gm /GX /ZI /od /D "WIN32" /D "_DEBUG" /D "_WINDOWS" /YX /FD /c
# ADD CPP /nologo /MTd /w3 /Gm /GX /ZI /od /D "WIN32" /D "_DEBUG" /D "_WINDOWS" /YX /FD /c
# ADD BASE MTL /nologo /D "_DEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD MTL /nologo /D "_DEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "_DEBUG"
# ADD RSC /l 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kerne132.lib user32.lib gdi32.lib winspool.lib comdlg32.lib advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib
odbc32.lib odbccp32.lib /nologo /subsystem:windows /dll /debug /machine:I386
/pdbtype:sept
# ADD LINK32 ..\db_db1ib_dll\bin\tpcc_db1ib.lib ..\db_odbc_dll\bin\tpcc_odbc.lib
kerne132.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbc32.lib odbccp32.lib /nologo /subsystem:windows /dll /debug /machine:I386
/pdbtype:sept
!ENDIF
# Begin Target
# Name "tpcc_com_all - win32 Release"
# Name "tpcc_com_all - win32 Debug"
# Begin Group "Source"
# PROP Default_Filter "*.cpp, *.c"
# Begin Source File
SOURCE=.\src\tpcc_com_all.cpp
# SUBTRACT CPP /YX
# End Source File
# Begin Source File
SOURCE=.\src\tpcc_com_all.def
# End Source File
# Begin Source File
SOURCE=.\src\tpcc_com_all.idl
!IF "$(CFG) == "tpcc_com_all - win32 Release"
# PROP Ignore_Default_Tool 1
# Begin Custom Build - Performing MIDL step
InputPath=.\src\tpcc_com_all.idl
BuildCmds= \
midl /oicf /h "tpcc_com_all.h" /iid "tpcc_com_all.i.c"
".\src\tpcc_com_all.idl" /out ".\src"
".\src\tpcc_com_all.tlb" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
$(BuildCmds)
".\src\tpcc_com_all.h" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
$(BuildCmds)
".\src\tpcc_com_all.i.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
$(BuildCmds)
# End Custom Build
!ELSEIF "$(CFG) == "tpcc_com_all - win32 Debug"

```

```

# PROP Ignore_Default_Tool 1
# Begin Custom Build - Performing MIDL step
InputPath=.\src\tpcc_com_all.idl
BuildCmds= \
midl /oicf /h "tpcc_com_all.h" /iid "tpcc_com_all.i.c"
".\src\tpcc_com_all.idl" /out ".\src"
".\src\tpcc_com_all.tlb" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
$(BuildCmds)
".\src\tpcc_com_all.h" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
$(BuildCmds)
".\src\tpcc_com_all.i.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
$(BuildCmds)
# End Custom Build
!ENDIF
# End Source File
# End Group
# Begin Group "Header"
# PROP Default_Filter "*.h"
# Begin Source File
SOURCE=.\src\Methods.h
# End Source File
# Begin Source File
SOURCE=.\src\resource.h
# End Source File
# End Group
# Begin Source File
SOURCE=.\src\tpcc_com_all.rc
# End Source File
# End Target
# End Project

```

tpcc_com_all/src/Methods.h

```

/*
*
* 4.20.000
*
* All Rights Reserved
*
* Copyright Microsoft, 1999
*
* not yet audited
*
*
* PURPOSE: Header file for COM components.
*
* Change history:
* 4.20.000 - first version
*/

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

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

    CCOMPONENT_ERR(COMPONENT_ERROR Err, char
    *szTextDetail, DWORD dwSystemErr)
    {
        m_Error = Err;
        m_szTextDetail = new
        strcpyp( m_szTextDetail, szTextDetail );
        m_SystemErr = dwSystemErr;
        m_szErrorText = NULL;
    };

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

    COMPONENT_ERROR m_Error;
    char *m_szTextDetail;
    char *m_szErrorText;
    DWORD m_SystemErr;

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

```

```

};

static void WriteMessageToEventLog(LPCTSTR lpszMsg);

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

    CTPCC_Common();
    ~CTPCC_Common();

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

// IObjectContext
    STDMETHODCALLTYPE CanBePooled() { return m_bCanBePooled; };
    STDMETHODCALLTYPE Activate() { return S_OK; }; // we don't
support COM Services transactions (no enlistment)
    STDMETHODCALLTYPE Deactivate() { /* nothing to do */ };

// IObjectConstruct
    STDMETHODCALLTYPE Construct(IDispatch * punk);

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

    struct COM_DATA
    {
        int retval;
        int error;
        union
        {
            NEW_ORDER_DATA
            PAYMENT_DATA Payment;
            DELIVERY_DATA Delivery;
            STOCK_LEVEL_DATA StockLevel;
            ORDER_STATUS_DATA OrderStatus;
        };
    };

};

////////////////////////////////////
// CTPCC
class CTPCC :
public CTPCC_Common,
public CComCoClass<CTPCC, &CLS_ID_TPCC>
{
public:
    DECLARE_REGISTRY_RESOURCEID(IDR_TPCC)
    BEGIN_COM_MAP(CTPCC)
        COM_INTERFACE_ENTRY2(IUnknown, CComObjectRootEx)
        COM_INTERFACE_ENTRY_CHAIN(CTPCC_Common)
    END_COM_MAP()
};

////////////////////////////////////
// CNewOrder
class CNewOrder :
public CTPCC_Common,
public CComCoClass<CNewOrder, &CLS_ID_NewOrder>
{
public:
    DECLARE_REGISTRY_RESOURCEID(IDR_NEWORDER)
    BEGIN_COM_MAP(CNewOrder)
        COM_INTERFACE_ENTRY2(IUnknown, CComObjectRootEx)
        COM_INTERFACE_ENTRY_CHAIN(CTPCC_Common)
    END_COM_MAP()

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

```

```

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

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

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

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

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

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

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

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

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

```

tpcc_com_all/src/resource.h

```

//{{NO_DEPENDENCIES}}
// Microsoft Developer Studio generated include file.
// Used by tpcc_com_all.rc

#define IDS_PROJNAME 100
#define IDR_TPCC 101
#define IDR_NEWORDER 102
#define IDR_ORDERSTATUS 103
#define IDR_PAYMENT 104
#define IDR_STOCKLEVEL 105

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

```

tpcc_com_all/src/tpcc_com_all.cpp

```

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

#define STRICT
#define _WIN32_WINNT 0x0400
#define _ATL_APARTMENT_THREADED

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

#include <atlcom.h>
#include <intguid.h>
#include <transact.h>
#include <atlimp1.cpp>
#include <comsvcs.h>

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

#include "tpcc_com_ps.h"
#include "..\..\common\src\trans.h"
// tpckit transaction header contains definitions of structures
specific
to TPC-C
#include "..\..\common\src\txn_base.h"
#include "..\..\common\src\error.h"
#include "..\..\common\src\ReadRegistry.h"
#include "..\..\db_dblib_d11\src\tpcc_dblib.h" // DBLIB
// implementation of TPC-C txns
#include "..\..\db_odbc_d11\src\tpcc_odbc.h" // ODBC
// implementation of TPC-C txns

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

CComModule _Module;

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

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

static HINSTANCE hLibInstanceDb = NULL;
TYPE_TPCC_DBLIB *pCTPCC_DBLIB_new;
TYPE_TPCC_ODBC *pCTPCC_ODBC_new;

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

extern "C"
BOOL WINAPI DllMain(HINSTANCE hInstance, DWORD dwReason, LPVOID /**lpReserved*/)
{
char szDllName[128];
try
{
if (dwReason == DLL_PROCESS_ATTACH)
{
_Module.Init(ObjectMap, hInstance);
DisableThreadLibraryCalls(hInstance);

DWORD dwSize =
GetComputerName(szMyComputerName,
&dwSize);
szMyComputerName[dwSize] = 0;
if ( ReadTPCCRegistrySettings( &Reg ) )
throw new
CCOMPONENT_ERR( ERR_MISSING_REGISTRY_ENTRIES );
if (Reg.eDb_Protocol == DBLIB)
{

```

```

strcpy( szDllName,
Reg.szPath );
strcat( szDllName,
"tpcc_dblib.d11");
hLibInstanceDb =
LoadLibrary( szDllName );
if (hLibInstanceDb ==
NULL)
throw new
CCOMPONENT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );
// get function pointer to
wrapper for class constructor
pCTPCC_DBLIB_new =
(TYPE_TPCC_DBLIB*) GetProcAddress(hLibInstanceDb, "pCTPCC_DBLIB_new");
if (pCTPCC_DBLIB_new ==
NULL)
throw new
CCOMPONENT_ERR( ERR_GETPROCADDR_FAILED, szDllName, GetLastError() );
else if (Reg.eDb_Protocol == ODBC)
{
strcpy( szDllName,
"tpcc_odbc.d11");
strcat( szDllName,
"tpcc_odbc.d11");
hLibInstanceDb =
LoadLibrary( szDllName );
if (hLibInstanceDb ==
NULL)
throw new
CCOMPONENT_ERR( ERR_LOADDLL_FAILED, szDllName, GetLastError() );
// get function pointer to
wrapper for class constructor
pCTPCC_ODBC_new =
(TYPE_TPCC_ODBC*) GetProcAddress(hLibInstanceDb, "pCTPCC_ODBC_new");
if (pCTPCC_ODBC_new ==
NULL)
throw new
CCOMPONENT_ERR( ERR_GETPROCADDR_FAILED, szDllName, GetLastError() );
else
throw new
CCOMPONENT_ERR( ERR_UNKNOWN_DB_PROTOCOL );
else if (dwReason == DLL_PROCESS_DETACH)
_Module.Term();
}
catch (CBaseErr *e)
{
writeMessageToEventLog(e->ErrorText());
delete e;
return FALSE;
}
catch (...)
{
writeMessageToEventLog(TEXT("Unhandled exception in
object DllMain"));
return FALSE;
}
return TRUE; // OK
}

////////////////////////////////////
// Used to determine whether the DLL can be unloaded by OLE
STDAPI DllCanUnloadNow(void)
{
return (_Module.GetLockCount()==0) ? S_OK : S_FALSE;
}

////////////////////////////////////
// Returns a class factory to create an object of the requested type
STDAPI DllGetClassObject(REFCLSID rclsid, REFIID riid, LPVOID* ppv)
{
return _Module.GetClassObject(rclsid, riid, ppv);
}

////////////////////////////////////
// DllRegisterServer - Adds entries to the system registry
STDAPI DllRegisterServer(void)
{
// registers object, typelib and all interfaces in typelib
return _Module.RegisterServer(TRUE);
}

////////////////////////////////////
// DllUnregisterServer - Removes entries from the system registry
STDAPI DllUnregisterServer(void)
{
return _Module.UnregisterServer();
}

static void writeMessageToEventLog(LPTSTR lpszMsg)
{
TCHAR szMsg[256];
HANDLE hEventSource;
LPTSTR lpszStrings[2];
// use event logging to log the error.
hEventSource = RegisterEventSource(NULL, TEXT("tpcc_com_all.d11"));
_lprintf(szMsg, TEXT("Error in COM+ TPC-C Component: "));
}

```

```

lpszStrings[0] = szMsg;
lpszStrings[1] = lpszMsg;
if (hEventSource != NULL)
{
    ReportEvent(hEventSource, // handle of event source
               EVENTLOG_ERROR_TYPE, // event type
               0, // event category
               0, // event ID
               NULL, // current user's SID
               2, // strings in lpszStrings
               0, // no bytes of raw data
               (LPCTSTR *)lpszStrings, // array of error strings
               NULL); // no raw data
}
(VOID) DeregisterEventSource(hEventSource);
}
}

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

/* FUNCTION: CCOMPONENT_ERR::ErrorText
*/
char* CCOMPONENT_ERR::ErrorText(void)
{
    static SERRORMSG errorMsgs[] =
    {
        { ERR_MISSING_REGISTRY_ENTRIES, "Required
        entries missing from registry." },
        { ERR_LOADDLL_FAILED, "Load of DLL
        failed. DLL=" },
    },
    { ERR_GETPROCADDR_FAILED, "Could not
    map proc in DLL. GetProcAddress error. DLL=" },
    { ERR_UNKNOWN_DB_PROTOCOL, "Unknown
    database protocol specified in registry." },
    { 0, "" }
};

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

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

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

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

CTPCC_Common::~CTPCC_Common()
{
    if (m_pTxn) delete m_pTxn;
}

HRESULT CTPCC_Common::CallSetComplete()
{
    IObjectContext* pObjContext = NULL;
    // get our object context
    HRESULT hr = CoGetObjectContext( IID_IObjectContext, (void
    **)&pObjContext );
    pObjContext->SetComplete();
    ReleaseInterface(pObjContext);
    return hr;
}

//
// called by the ctor activator

```

```

STDMETHODIMP CTPCC_Common::Construct(IDispatch * punk)
{
    // Code to access construction string, if needed later...
    if (!punk)
        return E_UNEXPECTED;
    IObjectConstructString * pString = NULL;
    HRESULT hr = punk->QueryInterface(IID_IObjectConstructString, (void **)&pString);
    pString->Release();
    try
    {
        if (Reg.eDB_Protocol == ODBC)
            m_pTxn = pCTPCC_ODBC_new( Reg.szDbServer,
            Reg.szDbuser, Reg.szDbPassword, szMyComputerName, Reg.szDbName );
        else if (Reg.eDB_Protocol == DBLIB)
            m_pTxn = pCTPCC_DBLIB_new( Reg.szDbServer, Reg.szDbuser, Reg.szDbPassword,
            szMyComputerName, Reg.szDbName );
    }
    catch (CBaseErr *e)
    {
        WriteMessageToEventLog(e->ErrorText());
        delete e;
        return E_FAIL;
    }
    catch (...)
    {
        WriteMessageToEventLog(TEXT("Unhandled exception in
        object ::Construct"));
        return E_FAIL;
    }
    return S_OK;
}

HRESULT CTPCC_Common::NewOrder(VARIANT txn_in, VARIANT* txn_out)
{
    PNEW_ORDER_DATA pNewOrder;
    COM_DATA *pData;
    try
    {
        pData = (COM_DATA*)txn_in.parray->pvData;
        pNewOrder = m_pTxn->BuffAddr_NewOrder();
        memcpy(pNewOrder, &pData->u.NewOrder,
        sizeof(NEW_ORDER_DATA));
        m_pTxn->NewOrder(); // do the
        actual txn
        VariantInit(txn_out);
        txn_out->vt = VT_SAFEARRAY;
        txn_out->parray = SafeArrayCreateVector(VT_UI1,
        txn_in.parray->rgsabound->cElements,
        txn_in.parray->rgsabound->cElements);
        pData = (COM_DATA*) txn_out->parray->pvData;
        memcpy( &pData->u.NewOrder, pNewOrder,
        sizeof(NEW_ORDER_DATA));
        pData->retval = ERR_SUCCESS;
        pData->error = 0;
        return S_OK;
    }
    catch (CBaseErr *e)
    {
        // check for lost database connection; if yes,
        component is toast if ( ((e->ErrorType() == ERR_TYPE_DBLIB) && (e-
        >ErrorNum() == 10005)) || ((e->ErrorType() == ERR_TYPE_ODBC) &&
        (e->ErrorNum() == 10054)) )
            m_bCanBePooled = FALSE;
        pData->retval = e->ErrorType();
        pData->error = e->ErrorNum();
        delete e;
        return E_FAIL;
    }
    catch (...)
    {
        WriteMessageToEventLog(TEXT("Unhandled exception."));
        pData->retval = ERR_TYPE_LOGIC;
        pData->error = 0;
        m_bCanBePooled = FALSE;
        return E_FAIL;
    }
}

HRESULT CTPCC_Common::Payment(VARIANT txn_in, VARIANT* txn_out)
{
    PPAYMENT_DATA pPayment;
    COM_DATA *pData;
    try
    {
        pData = (COM_DATA*)txn_in.parray->pvData;
        pPayment = m_pTxn->BuffAddr_Payment();
        memcpy(pPayment, &pData->u.Payment,
        sizeof(PAYMENT_DATA));
        m_pTxn->Payment(); // do the
        actual txn
        VariantInit(txn_out);
        txn_out->vt = VT_SAFEARRAY;
        txn_out->parray = SafeArrayCreateVector( VT_UI1,
        txn_in.parray->rgsabound->cElements,

```

```

        txn_in.parray->rgsabound->cElements);
        pData = (COM_DATA*) txn_out->parray->pvData;
        memcpy( &pData->u.Payment, pPayment,
        sizeof(PAYMENT_DATA));
        pData->retval = ERR_SUCCESS;
        pData->error = 0;
        return S_OK;
    }
    catch (CBaseErr *e)
    {
        // check for lost database connection; if yes,
        component is toast if ( ((e->ErrorType() == ERR_TYPE_DBLIB) && (e-
        >ErrorNum() == 10005)) || ((e->ErrorType() == ERR_TYPE_ODBC) &&
        (e->ErrorNum() == 10054)) )
            m_bCanBePooled = FALSE;
        pData->retval = e->ErrorType();
        pData->error = e->ErrorNum();
        delete e;
        return E_FAIL;
    }
    catch (...)
    {
        WriteMessageToEventLog(TEXT("Unhandled exception."));
        pData->retval = ERR_TYPE_LOGIC;
        pData->error = 0;
        m_bCanBePooled = FALSE;
        return E_FAIL;
    }
}

HRESULT CTPCC_Common::StockLevel(VARIANT txn_in, VARIANT* txn_out)
{
    PSTOCK_LEVEL_DATA pStockLevel;
    COM_DATA *pData;
    try
    {
        pData = (COM_DATA*)txn_in.parray->pvData;
        pStockLevel = m_pTxn->BuffAddr_StockLevel();
        memcpy(pStockLevel, &pData->u.StockLevel,
        sizeof(STOCK_LEVEL_DATA));
        m_pTxn->StockLevel();
        VariantInit(txn_out);
        txn_out->vt = VT_SAFEARRAY;
        txn_out->parray = SafeArrayCreateVector( VT_UI1,
        txn_in.parray->rgsabound->cElements,
        txn_in.parray->rgsabound->cElements);
        pData = (COM_DATA*) txn_out->parray->pvData;
        memcpy( &pData->u.StockLevel, pStockLevel,
        sizeof(STOCK_LEVEL_DATA));
        pData->retval = ERR_SUCCESS;
        pData->error = 0;
        return S_OK;
    }
    catch (CBaseErr *e)
    {
        // check for lost database connection; if yes,
        component is toast if ( ((e->ErrorType() == ERR_TYPE_DBLIB) && (e-
        >ErrorNum() == 10005)) || ((e->ErrorType() == ERR_TYPE_ODBC) &&
        (e->ErrorNum() == 10054)) )
            m_bCanBePooled = FALSE;
        pData->retval = e->ErrorType();
        pData->error = e->ErrorNum();
        delete e;
        return E_FAIL;
    }
    catch (...)
    {
        WriteMessageToEventLog(TEXT("Unhandled exception."));
        pData->retval = ERR_TYPE_LOGIC;
        pData->error = 0;
        m_bCanBePooled = FALSE;
        return E_FAIL;
    }
}

HRESULT CTPCC_Common::OrderStatus(VARIANT txn_in, VARIANT* txn_out)
{
    PORDER_STATUS_DATA pOrderStatus;
    COM_DATA *pData;
    try
    {
        pData = (COM_DATA*)txn_in.parray->pvData;
        pOrderStatus = m_pTxn->BuffAddr_OrderStatus();
        memcpy(pOrderStatus, &pData->u.OrderStatus,
        sizeof(ORDER_STATUS_DATA));
        m_pTxn->OrderStatus();
        VariantInit(txn_out);
        txn_out->vt = VT_SAFEARRAY;
        txn_out->parray = SafeArrayCreateVector( VT_UI1,
        txn_in.parray->rgsabound->cElements,

```

```

    txn_in.parray->rgsabound->cElements);
    pdata = (COM_DATA*)txn_out->parray->pvData;
    memcpy(&pdata->u.OrderStatus, pOrderStatus,
sizeof(ORDER_STATUS_DATA));

    pdata->retval = ERR_SUCCESS;
    pdata->error = 0;
    return S_OK;
}
catch (CBaseErr *e)
{
// check for lost database connection; if yes,
component is toast
    if ( ((e->ErrorType() == ERR_TYPE_DBLIB) && (e-
>ErrorNum() == 10005)) ||
        ((e->ErrorType() == ERR_TYPE_ODBC) &&
(e->ErrorNum() == 10054)) )
        m_bCanBePooled = FALSE;

    pdata->retval = e->ErrorType();
    pdata->error = e->ErrorNum();
    delete e;
    return E_FAIL;
}
}
catch (...)
{
    writeMessageToEventLog(TEXT("Unhandled exception.));
    pdata->retval = ERR_TYPE_LOGIC;
    pdata->error = 0;
    m_bCanBePooled = FALSE;
    return E_FAIL;
}
}
}
}

```

tpcc_com_all/src/tpcc_com_all.def

; tpcc_com_all.def : Declares the module parameters.

```

LIBRARY "tpcc_com_all.dll"

EXPORTS
    DllCanUnloadNow @1 PRIVATE
    DllGetClassObject @2 PRIVATE
    DllRegisterServer @3 PRIVATE
    DllUnregisterServer @4 PRIVATE

```

tpcc_com_all/src/tpcc_com_all.h

```

#pragma warning( disable: 4049 ) /* more than 64k source lines */
/* this ALWAYS GENERATED file contains the definitions for the interfaces */

/* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:14 2001 */
/* Compiler settings for .\src\tpcc_com_all.idl:
  oicf (OptLev=12), w1, Zp8, env=win32 (32b run), ms_ext, c_ext
  error checks: allocation ref bounds_check enum stub_data
  VC__declspec() decoration level:
    __declspec(uuid()), __declspec(selectany), __declspec(novtable)
    DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING( )

/* verify that the <rpcndr.h> version is high enough to compile this file*/
#ifdef _REQUIRED_RPCNDR_H_VERSION_
#define _REQUIRED_RPCNDR_H_VERSION_ 440
#endif

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

#ifdef __tpcc_com_all_h__
#define __tpcc_com_all_h__

/* Forward Declarations */

#ifdef __TPCC_FWD_DEFINED__
#define __TPCC_FWD_DEFINED__

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

#ifdef __NewOrder_FWD_DEFINED__
#define __NewOrder_FWD_DEFINED__

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

```

```

#endif /* __NewOrder_FWD_DEFINED__ */

#ifdef __OrderStatus_FWD_DEFINED__
#define __OrderStatus_FWD_DEFINED__

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

#ifdef __Payment_FWD_DEFINED__
#define __Payment_FWD_DEFINED__

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

#ifdef __StockLevel_FWD_DEFINED__
#define __StockLevel_FWD_DEFINED__

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

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

#ifdef __cplusplus
extern "C" {
#endif

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

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

extern RPC_IF_HANDLE __MIDL_itf_tpcc_com_all_0000_v0_0_c_ifspec;
extern RPC_IF_HANDLE __MIDL_itf_tpcc_com_all_0000_v0_0_s_ifspec;

#ifdef __TPCCLib_LIBRARY_DEFINED__
#define __TPCCLib_LIBRARY_DEFINED__

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

EXTERN_C const IID LIBID_TPCCLib;
EXTERN_C const CLSID CLSID_TPCC;

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

EXTERN_C const CLSID CLSID_NewOrder;

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

EXTERN_C const CLSID CLSID_OrderStatus;

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

EXTERN_C const CLSID CLSID_Payment;

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

EXTERN_C const CLSID CLSID_StockLevel;

#ifdef __cplusplus
class DECLSPEC_UUID("2668369E-A50D-11D2-BA4E-00C04FBFE08B")
StockLevel;

```

```

#endif
#endif /* __TPCCLib_LIBRARY_DEFINED__ */

/* Additional Prototypes for ALL interfaces */
/* end of Additional Prototypes */

#ifdef __cplusplus
}
#endif
#endif

tpcc_com_all/src/tpcc_com_all.idl

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

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

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

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

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

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

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

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

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

```



```

#endif // __IID_DEFINED__

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

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

#endif !MIDL_USE_GUIDDEF

MIDL_DEFINE_GUID(IID,
LISID_TPCCClb,0x122a3117,0x2520,0x11d3,0xba,0x71,0x00,0xc0,0x4f,0xbf,0xe0,0x8b);

MIDL_DEFINE_GUID(CLSID,
CLSID_TPCC,0x122a3128,0x2520,0x11d3,0xba,0x71,0x00,0xc0,0x4f,0xbf,0xe0,0x8b);

MIDL_DEFINE_GUID(CLSID,
CLSID_NewOrder,0x975baabf,0x84a7,0x11d2,0xba,0x4e,0x00,0xc0,0x4f,0xbf,0xe0,0x8b);

MIDL_DEFINE_GUID(CLSID,
CLSID_OrderStatus,0x266836ad,0xa50d,0x11d2,0xba,0x4e,0x00,0xc0,0x4f,0xbf,0xe0,0x8b);

MIDL_DEFINE_GUID(CLSID,
CLSID_Payment,0xcd02f7ef,0xa4fa,0x11d2,0xba,0x4e,0x00,0xc0,0x4f,0xbf,0xe0,0x8b);

MIDL_DEFINE_GUID(CLSID,
CLSID_StockLevel,0x2668369e,0xa50d,0x11d2,0xba,0x4e,0x00,0xc0,0x4f,0xbf,0xe0,0x8b);

#undef MIDL_DEFINE_GUID

#ifdef __cplusplus
}
#endif

#endif /* defined(C_MIA64) || defined(C_M_AMP64) */

```

tpcc_com_all/src/tpcc_com_no.rgs

```

HKCR
{
    TPCC.NewOrder.1 = s 'NewOrder Class'
    {
        CLSID = s '{975baabf-84a7-11d2-ba47-00c04fbfe08b}'
    }
    TPCC.NewOrder = s 'NewOrder Class'
    {
        CurVer = s 'TPCC.NewOrder.1'
    }
    NoRemove CLSID
    {
        ForceRemove {975baabf-84a7-11d2-ba47-00c04fbfe08b} =
        {
            ProgID = s 'TPCC.NewOrder.1'
            VersionIndependentProgID = s
        }
    }
    'TPCC.NewOrder'
    {
        InprocServer32 = s '%MODULE%'
        {
            val ThreadingModel = s
        }
    }
    'Both'
    {
    }
}

```

tpcc_com_all/src/tpcc_com_os.rgs

```

HKCR
{
    TPCC.OrderStatus.1 = s 'OrderStatus Class'
    {
        CLSID = s '{266836ad-a50d-11d2-ba4e-00c04fbfe08b}'
    }
    TPCC.OrderStatus = s 'OrderStatus Class'
    {
        CurVer = s 'TPCC.OrderStatus.1'
    }
    NoRemove CLSID
    {
        ForceRemove {266836ad-a50d-11d2-ba4e-00c04fbfe08b} =
        {
            ProgID = s 'TPCC.OrderStatus.1'
            VersionIndependentProgID = s
        }
    }
    'TPCC.orderStatus'
    {
        InprocServer32 = s '%MODULE%'
        {
            val ThreadingModel = s
        }
    }
    'Both'
    {
    }
}

```

tpcc_com_all/src/tpcc_com_pay.rgs

```

HKCR
{
    TPCC.Payment.1 = s 'Payment Class'
    {
        CLSID = s '{cd02f7ef-a4fa-11d2-ba4e-00c04fbfe08b}'
    }
    TPCC.Payment = s 'Payment Class'
    {
        CurVer = s 'TPCC.Payment.1'
    }
    NoRemove CLSID
    {
        ForceRemove {cd02f7ef-a4fa-11d2-ba4e-00c04fbfe08b} =
        {
            ProgID = s 'TPCC.Payment.1'
            VersionIndependentProgID = s
        }
    }
    'TPCC.Payment'
    {
        InprocServer32 = s '%MODULE%'
        {
            val ThreadingModel = s
        }
    }
    'Both'
    {
    }
}

```

tpcc_com_all/src/tpcc_com_ps.h

```

#pragma warning( disable: 4049 ) /* more than 64k source lines */
/* this ALWAYS GENERATED file contains the definitions for the interfaces */

/* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:08 2001 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
Oicf (OptLev=12), w1, 2p8, env=win32 (32b run), ms_ext, c_ext
error checks: allocation ref bounds_check enum stub_data
VC _declspec() decoration level:
#define __declspec(uuid()), __declspec(selectany), __declspec(nottable)
DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING( )

/* verify that the <rpcndr.h> version is high enough to compile this file*/
#ifdef _REQUIRED_RPCNDR_H_VERSION__
#define _REQUIRED_RPCNDR_H_VERSION__ 440
#endif

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

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

#ifdef COM_NO_WINDOWS_H
#include "windows.h"
#include "ole2.h"
#endif /* COM_NO_WINDOWS_H */

#ifdef _tpcc_com_ps_h__
#define _tpcc_com_ps_h__

/* Forward Declarations */

#ifdef __ITPCC_FWD_DEFINED__
#define __ITPCC_FWD_DEFINED__
typedef interface ITPCC ITPCC;
#endif /* __ITPCC_FWD_DEFINED__ */

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

#ifdef __cplusplus
extern "C" {
#endif

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

/* interface __MIDL_itf_tpcc_com_ps_0000 */
/* [local] */

extern RPC_IF_HANDLE __MIDL_itf_tpcc_com_ps_0000_v0_0_c_ifspec;
extern RPC_IF_HANDLE __MIDL_itf_tpcc_com_ps_0000_v0_0_s_ifspec;

```

```

#ifdef __ITPCC_INTERFACE_DEFINED__
#define __ITPCC_INTERFACE_DEFINED__

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

EXTERN_C const IID IID_ITPCC;

#if defined(__cplusplus) && !defined(CINTERFACE)
MIDL_INTERFACE("FEE6AA2-84B1-11d2-BA47-00C04FBFE08B")
ITPCC : public IUnknown
{
public:
    virtual HRESULT __stdcall NewOrder(
        /* [in] */ VARIANT txn_in,
        /* [out] */ VARIANT __RPC_FAR *txn_out) = 0;

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

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

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

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

    virtual HRESULT __stdcall CallSetComplete( void) = 0;
};
#else /* C style interface */
typedef struct ITPCCVtbl
{
    BEGIN_INTERFACE

    HRESULT ( STDMETHODCALLTYPE ) __RPC_FAR *QueryInterface (
        /* [in] */ REFIID riid,
        /* [iid_is][out] */ void __RPC_FAR *ppvObject);

    ULONG ( STDMETHODCALLTYPE ) __RPC_FAR *AddRef (
        /* [in] */ void __RPC_FAR *This);

    ULONG ( STDMETHODCALLTYPE ) __RPC_FAR *Release (
        /* [in] */ void __RPC_FAR *This);

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

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

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

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

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

    HRESULT ( STDMETHODCALLTYPE ) __RPC_FAR *CallSetComplete (
        /* [in] */ void __RPC_FAR *This);

    END_INTERFACE
} ITPCCVtbl;

interface ITPCC
{
    CONST_VTBL struct ITPCCVtbl __RPC_FAR *lpVtbl;
};

#ifdef COBJMACROS

#define ITPCC_QueryInterface(This,riid,ppvObject) \
    (This->lpVtbl->QueryInterface(This,riid,ppvObject))

#define ITPCC_AddRef(This) \
    (This->lpVtbl->AddRef(This))

#define ITPCC_Release(This) \
    (This->lpVtbl->Release(This))

#define ITPCC_NewOrder(This,txn_in,txn_out) \
    (This->lpVtbl->NewOrder(This,txn_in,txn_out))

#define ITPCC_Payment(This,txn_in,txn_out) \
    (This->lpVtbl->Payment(This,txn_in,txn_out))

```

```

#define ITPCC_Delivery(This,txn_in,txn_out) \
(This)->lpvtbl -> Delivery(This,txn_in,txn_out) \

#define ITPCC_StockLevel(This,txn_in,txn_out) \
(This)->lpvtbl -> StockLevel(This,txn_in,txn_out) \

#define ITPCC_OrderStatus(This,txn_in,txn_out) \
(This)->lpvtbl -> OrderStatus(This,txn_in,txn_out) \

#define ITPCC_CallSetComplete(This) \
(This)->lpvtbl -> CallSetComplete(This) \

#endif /* COBJMACROS */

#endif /* C style interface */

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

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

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

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

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

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

HRESULT __stdcall ITPCC_StockLevel_Proxy(
    ITPCC_RPC_FAR * This,
    /* [in] */ VARIANT txn_in,
    /* [out] */ VARIANT __RPC_FAR *txn_out);

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

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

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

HRESULT __stdcall ITPCC_CallSetComplete_Proxy(
    ITPCC_RPC_FAR * This);

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

#endif /* __ITPCC_INTERFACE_DEFINED__ */

/* Additional Prototypes for ALL interfaces */
unsigned long __RPC_USER VARIANT_UserSize( unsigned long
__RPC_FAR *, unsigned long __RPC_USER VARIANT __RPC_FAR * );
unsigned char __RPC_FAR * __RPC_USER VARIANT_UserMarshal( unsigned long
__RPC_FAR *, unsigned char __RPC_FAR *, VARIANT __RPC_FAR * );
unsigned char __RPC_FAR * __RPC_USER VARIANT_UserUnmarshal( unsigned long
__RPC_FAR *, unsigned char __RPC_FAR *, VARIANT __RPC_FAR * );
void __RPC_USER VARIANT_UserFree( unsigned long
__RPC_FAR *, VARIANT __RPC_FAR * );

```

```

#ifdef __cplusplus
}
#endif
#endif

tpcc_com_all/src/tpcc_com_sl.rgs
HKCR
{
    TPCC.StockLevel.1 = s 'StockLevel Class'
    {
        CLSID = s '{2668369E-A50D-11D2-BA4E-00C04FBFE08B}'
    }
    TPCC.StockLevel = s 'StockLevel Class'
    {
        CurVer = s 'TPCC.StockLevel.1'
    }
    NRemove CLSID
    {
        ForceRemove {2668369E-A50D-11D2-BA4E-00C04FBFE08B} =
s 'StockLevel Class'
        {
            ProgID = s 'TPCC.StockLevel.1'
            VersionIndependentProgID = s
'TPCC.StockLevel'
            InprocServer32 = s '%MODULE%'
            {
                val ThreadingModel = s
'Both'
            }
        }
    }
}

tpcc_com_ps/tpcc_com_ps.dsp
# Microsoft Developer Studio Project File - Name="tpcc_com_ps" - Package
Owner=<4>
# Microsoft Developer Studio Generated Build File, Format Version 6.00
# ** DO NOT EDIT **

# TARGETTYPE "win32 (x86) Application" 0x0101

CFG=tpcc_com_ps - win32 Debug
!MESSAGE This is not a valid makefile. To build this project using NMAKE,
!MESSAGE use the Export Makefile command and run
!MESSAGE
!MESSAGE NMAKE /f "tpcc_com_ps.mak".
!MESSAGE
!MESSAGE You can specify a configuration when running NMAKE
!MESSAGE by defining the macro CFG on the command line. For example:
!MESSAGE
!MESSAGE NMAKE /f "tpcc_com_ps.mak" CFG="tpcc_com_ps - win32 Debug"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "tpcc_com_ps - win32 Release" (based on "win32 (x86) Application")
!MESSAGE "tpcc_com_ps - win32 Debug" (based on "win32 (x86) Application")
!MESSAGE

# Begin Project
# PROP AllowPerConfigDependencies 0
# PROP Scc_ProjName ""
# PROP Scc_LocalPath ""
CPPcl.exe
MTL=midl.exe
RSC=rc.exe

!IF "$(CFG)" == "tpcc_com_ps - win32 Release"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 0
# PROP BASE Output_Dir "Release"
# PROP BASE Intermediate_Dir "Release"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 0
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /w3 /gx /o2 /d "WIN32" /d "NDEBUG" /d "_WINDOWS" /YX /FD
/c
# ADD CPP /nologo /w3 /gx /o2 /d "WIN32" /d "NDEBUG" /d "_WIN32_WINNT=0x0400" /D
"REGISTER_PROXY_DLL" /FD /C
# SUBTRACT CPP /YX
# ADD BASE MTL /nologo /d "NDEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD MTL /nologo /d "NDEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "NDEBUG"
# ADD RSC /l 0x409 /d "NDEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kerne132.lib user32.lib gdi32.lib winspool.lib cmdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib

odbc32.lib odbccp32.lib /nologo /subsystem:windows /machine:I386

```

```

# ADD LINK32 kerne132.lib rpcndr.lib rpcns4.lib rpcrt4.lib oleaut32.lib uuid.lib
/nologo /entry:"D11Main" /subsystem:windows /d11 /pdb:none

/machine:I386 /def:".src\tpcc_com_ps.def"
# Begin Custom Build - Copying tpcc_com_ps.h
InputPath=. \bin\tpcc_com_ps.d11
SOURCE=%$(InputPath)

".\tpcc_com_all\src\tpcc_com_ps.h" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
copy .\src\tpcc_com_ps.h .\tpcc_com_all\src\

# End Custom Build

!ELSEIF "$(CFG)" == "tpcc_com_ps - win32 Debug"

# PROP BASE Use_MFC 0
# PROP BASE Use_Debug_Libraries 1
# PROP BASE Output_Dir "Debug"
# PROP BASE Intermediate_Dir "Debug"
# PROP BASE Target_Dir ""
# PROP Use_MFC 0
# PROP Use_Debug_Libraries 1
# PROP Output_Dir ".\bin"
# PROP Intermediate_Dir ".\obj"
# PROP Ignore_Export_Lib 0
# PROP Target_Dir ""
# ADD BASE CPP /nologo /w3 /gm /Gx /Zi /od /d "WIN32" /d "_DEBUG" /d "_WINDOWS"
/YX /FD /C
# ADD CPP /nologo /ZI /od /d "WIN32" /d "_DEBUG" /d "_WIN32_WINNT=0x0400" /D
"REGISTER_PROXY_DLL" /FD /C
# ADD BASE MTL /nologo /d "_DEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD MTL /nologo /d "_DEBUG" /mktyp1ib203 /o "NUL" /win32
# ADD BASE RSC /l 0x409 /d "_DEBUG"
# ADD RSC /l 0x409 /d "_DEBUG"
BSC32=bscmake.exe
# ADD BASE BSC32 /nologo
# ADD BSC32 /nologo
LINK32=link.exe
# ADD BASE LINK32 kerne132.lib user32.lib gdi32.lib winspool.lib cmdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib

odbc32.lib odbccp32.lib /nologo /subsystem:windows /debug /machine:I386
/pdbtype:sept

# ADD LINK32 kerne132.lib rpcndr.lib rpcns4.lib rpcrt4.lib oleaut32.lib uuid.lib
/nologo /entry:"D11Main" /d11 /debug /machine:I386

/def:".src\tpcc_com_ps.def" /pdbtype:sept
# SUBTRACT LINK32 /pdb:none
# Begin Custom Build - Copying tpcc_com_ps.h
InputPath=. \bin\tpcc_com_ps.d11
SOURCE=%$(InputPath)

".\tpcc_com_all\src\tpcc_com_ps.h" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
copy .\src\tpcc_com_ps.h .\tpcc_com_all\src\

# End Custom Build

!ENDIF

# Begin Target

# Name "tpcc_com_ps - win32 Release"
# Name "tpcc_com_ps - win32 Debug"
# Begin Group "Source"

# PROP Default_Filter ""
# Begin Source File

SOURCE=. \src\d11data.c
# End Source File
# Begin Source File

SOURCE=. \src\tpcc_com_ps.def
# PROP Exclude_From_Build 1
# End Source File
# Begin Source File

SOURCE=. \src\tpcc_com_ps.idl

!IF "$(CFG)" == "tpcc_com_ps - win32 Release"

# PROP Ignore_Default_Tool 1
# Begin Custom Build
InputPath=. \src\tpcc_com_ps.idl

BuildCmds= \
midl /oicf /h "tpcc_com_ps.h" /iid "tpcc_com_ps.i.c"
".\src\tpcc_com_ps.idl" /out ".\src"

".\src\tpcc_com_ps.i.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
$(BuildCmds)

".\src\d11data.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
$(BuildCmds)

".\src\tpcc_com_ps.p.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
$(BuildCmds)
# End Custom Build

!ELSEIF "$(CFG)" == "tpcc_com_ps - win32 Debug"

# PROP Ignore_Default_Tool 1
# Begin Custom Build
InputPath=. \src\tpcc_com_ps.idl

BuildCmds= \
midl /oicf /h "tpcc_com_ps.h" /iid "tpcc_com_ps.i.c"
".\src\tpcc_com_ps.idl" /out ".\src"

```

```

"\src\tpcc_com_ps.h" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
$(BuildCmnds)

"\src\tpcc_com_ps_i.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
$(BuildCmnds)

"\src\dlldata.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
$(BuildCmnds)

"\src\tpcc_com_ps_p.c" : $(SOURCE) "$(INTDIR)" "$(OUTDIR)"
$(BuildCmnds)
# End Custom Build

!ENDIF

# End Source File
# Begin Source File

SOURCE=\src\tpcc_com_ps_i.c
# End Source File
# Begin Source File

SOURCE=\src\tpcc_com_ps_p.c
# End Source File
# End Group
# End Target
# End Project

```

tpcc_com_ps/src/dlldata.c

```

/*****
DLLData file -- generated by MIDL compiler

DO NOT ALTER THIS FILE

This file is regenerated by MIDL on every IDL file compile.

To completely reconstruct this file, delete it and rerun MIDL
on all the IDL files in this DLL, specifying this file for the
/dlldata command line option

*****/

#include <rpcproxy.h>

#ifdef _cplusplus
extern "C" {
#endif

EXTERN_PROXY_FILE( tpcc_com_ps )

PROXYFILE_LIST_START
/* Start of list */
REFERENCE_PROXY_FILE( tpcc_com_ps ),
/* End of list */
PROXYFILE_LIST_END

DLLDATA_ROUTINES( aProxyFileList, GET_DLL_CLSID )

#ifdef _cplusplus
} /*extern "C" */
#endif

/* end of generated dlldata file */

```

tpcc_com_ps/src/tpcc_com_ps.def

```

LIBRARY "tpcc_com_ps"
DESCRIPTION 'Proxy/Stub DLL'

EXPORTS
    dllGetClassObject @1 PRIVATE
    dllCanUnloadNow @2 PRIVATE
    GetProxyDllInfo @3 PRIVATE
    dllRegistersServer @4 PRIVATE
    dllUnregistersServer @5 PRIVATE

```

tpcc_com_ps/src/tpcc_com_ps.h

```

#pragma warning( disable: 4049 ) /* more than 64k source lines */
/* this ALWAYS GENERATED file contains the definitions for the interfaces */

/* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:08 2001 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf (OptLev=12), W1, Zp8, env=win32 (32b run), ms_ext, c_ext
    error_checks: allocation ref bounds_check enum stub_data
    VC_declspec() decoration level:

```

```

__declspec(uuid()), __declspec(selectany), __declspec(novtable)
DECLSPEC_UUID(), MIDL_INTERFACE()
//@@MIDL_FILE_HEADING( )

/* verify that the <rpcndr.h> version is high enough to compile this file*/
#ifndef _REQUIRED_RPCNDR_H_VERSION__
#define _REQUIRED_RPCNDR_H_VERSION__ 440
#endif

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

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

#ifndef COM_NO_WINDOWS_H
#include "windows.h"
#include "ole2.h"
#endif /*COM_NO_WINDOWS_H*/

#ifndef tpcc_com_ps_h_
#define tpcc_com_ps_h_

/* Forward Declarations */

#ifndef __ITPCC_FWD_DEFINED__
#define __ITPCC_FWD_DEFINED__
typedef interface ITPCC ITPCC;
#endif /* __ITPCC_FWD_DEFINED__ */

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

#ifdef _cplusplus
extern "C" {
#endif

void __RPC_FAR * __RPC_USER Midl_user_allocate(size_t);
void __RPC_USER Midl_user_free( void __RPC_FAR * );

/* interface __MIDL_itf_tpcc_com_ps_0000 */
/* [local] */

extern RPC_IF_HANDLE __MIDL_itf_tpcc_com_ps_0000_v0_0_c_ifspec;
extern RPC_IF_HANDLE __MIDL_itf_tpcc_com_ps_0000_v0_0_s_ifspec;

#ifndef __ITPCC_INTERFACE_DEFINED__
#define __ITPCC_INTERFACE_DEFINED__

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

EXTERN_C const IID IID_ITPCC;

#if defined(_cplusplus) && !defined(CINTERFACE)
MIDL_INTERFACE("FEE6AA2-84B1-11d2-BA47-00C04FBE08B")
ITPCC : public IUnknown
{
public:
    virtual HRESULT STDMETHODCALLTYPE NewOrder(
        /* [in] */ VARIANT txn_in,
        /* [out] */ VARIANT __RPC_FAR *txn_out) = 0;

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

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

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

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

    virtual HRESULT STDMETHODCALLTYPE CallSetComplete( void ) = 0;
};
#else /* C style interface */
typedef struct ITPCCVtbl
{
    BEGIN_INTERFACE

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

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

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

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

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

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

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

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

    HRESULT ( STDMETHODCALLTYPE __RPC_FAR *CallSetComplete )(
        /* [out] */ VARIANT __RPC_FAR *txn_out);

    END_INTERFACE
} ITPCCVtbl;

interface ITPCC
{
    CONST_VTBL struct ITPCCVtbl __RPC_FAR *lpVtbl;
};

#ifdef COBJMACROS

#define ITPCC_QueryInterface(This,riid,ppvObject) \
    (This->lpVtbl->QueryInterface(This,riid,ppvObject))
#define ITPCC_AddRef(This) \
    (This->lpVtbl->AddRef(This))
#define ITPCC_Release(This) \
    (This->lpVtbl->Release(This))

#define ITPCC_NewOrder(This,txn_in,txn_out) \
    (This->lpVtbl->NewOrder(This,txn_in,txn_out))
#define ITPCC_Payment(This,txn_in,txn_out) \
    (This->lpVtbl->Payment(This,txn_in,txn_out))
#define ITPCC_Delivery(This,txn_in,txn_out) \
    (This->lpVtbl->Delivery(This,txn_in,txn_out))
#define ITPCC_StockLevel(This,txn_in,txn_out) \
    (This->lpVtbl->StockLevel(This,txn_in,txn_out))
#define ITPCC_OrderStatus(This,txn_in,txn_out) \
    (This->lpVtbl->OrderStatus(This,txn_in,txn_out))
#define ITPCC_CallSetComplete(This) \
    (This->lpVtbl->CallSetComplete(This))

#endif /* COBJMACROS */

#endif /* C style interface */

```

```

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

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

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

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

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

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

END_INTERFACE
} ITPCCVtbl;

interface ITPCC
{
    CONST_VTBL struct ITPCCVtbl __RPC_FAR *lpVtbl;
};

#ifdef COBJMACROS

#define ITPCC_QueryInterface(This,riid,ppvObject) \
    (This->lpVtbl->QueryInterface(This,riid,ppvObject))
#define ITPCC_AddRef(This) \
    (This->lpVtbl->AddRef(This))
#define ITPCC_Release(This) \
    (This->lpVtbl->Release(This))

#define ITPCC_NewOrder(This,txn_in,txn_out) \
    (This->lpVtbl->NewOrder(This,txn_in,txn_out))
#define ITPCC_Payment(This,txn_in,txn_out) \
    (This->lpVtbl->Payment(This,txn_in,txn_out))
#define ITPCC_Delivery(This,txn_in,txn_out) \
    (This->lpVtbl->Delivery(This,txn_in,txn_out))
#define ITPCC_StockLevel(This,txn_in,txn_out) \
    (This->lpVtbl->StockLevel(This,txn_in,txn_out))
#define ITPCC_OrderStatus(This,txn_in,txn_out) \
    (This->lpVtbl->OrderStatus(This,txn_in,txn_out))
#define ITPCC_CallSetComplete(This) \
    (This->lpVtbl->CallSetComplete(This))

#endif /* COBJMACROS */

#endif /* C style interface */

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

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

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

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

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

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

```

```

HRESULT __stdcall ITPCC_StockLevel_Proxy(
    ITPCC_RPC_FAR * This,
    /* [in] */ VARIANT txn_in,
    /* [out] */ VARIANT __RPC_FAR *txn_out);

void __RPC_STUB ITPCC_StockLevel_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *pRpcChannelBuffer,
    PRPC_MESSAGE pRpcMessage,
    DWORD *pdwStubPhase);

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

void __RPC_STUB ITPCC_OrderStatus_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *pRpcChannelBuffer,
    PRPC_MESSAGE pRpcMessage,
    DWORD *pdwStubPhase);

HRESULT __stdcall ITPCC_CallSetComplete_Proxy(
    ITPCC_RPC_FAR * This);

void __RPC_STUB ITPCC_CallSetComplete_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *pRpcChannelBuffer,
    PRPC_MESSAGE pRpcMessage,
    DWORD *pdwStubPhase);

#endif /* __ITPCC_INTERFACE_DEFINED__ */

/* Additional Prototypes for ALL interfaces */

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

/* end of Additional Prototypes */

#ifdef __cplusplus
}
#endif
#endif

```

tpcc_com_ps/src/tpcc_com_ps.idl

```

/* FILE: ITPCC.IDL Microsoft TPC-C Kit ver.
4.20.000 Copyright Microsoft, 1999
* All Rights Reserved
* not yet audited
* PURPOSE: Defines the interface used by TPCC. This interface
can be implemented by C++ components.
* Change history: 4.20.000 - first version
*/

// Forward declare all types defined
interface ITPCC;
import "oidl.idl";
import "ocidl.idl";

[
    object,
    oleautomation,
    uuid(FE6E6AA2-8481-11d2-BA47-00C04FBFE08B),
    helpstring("ITPCC Interface"),
    pointer_default(unique)
]
interface ITPCC : IUnknown
{
    HRESULT __stdcall NewOrder(
    (
        [in] VARIANT txn_in,
        [out] VARIANT *txn_out
    );
    HRESULT __stdcall Payment

```

```

(
    [in] VARIANT txn_in,
    [out] VARIANT *txn_out
);
HRESULT __stdcall Delivery(
    (
        [in] VARIANT txn_in,
        [out] VARIANT *txn_out
    );
HRESULT __stdcall StockLevel(
    (
        [in] VARIANT txn_in,
        [out] VARIANT *txn_out
    );
HRESULT __stdcall OrderStatus(
    (
        [in] VARIANT txn_in,
        [out] VARIANT *txn_out
    );
HRESULT __stdcall CallSetComplete(
    (
    );
);
}; // interface ITPCC

```

tpcc_com_ps/src/tpcc_com_ps_i.c

```

#pragma warning( disable: 4049 ) /* more than 64k source lines */
/* this ALWAYS GENERATED file contains the IIDs and CLSIDs */
/* link this file in with the server and any clients */

/* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:08 2001
*/
/* Compiler settings for .\src\tpcc_com_ps.idl:
Oicf (OptLev=12), w1, 2p8, env=win32 (32b run), ms_ext, c_ext
error checks: allocation ref bounds_check enum stub_data
VC __declspec( decoration level:
__declspec(uuid()), __declspec(selectany), __declspec(novtable)
DECLSPEC_UUID(), MIDL_INTERFACE())
*/
//@@MIDL_FILE_HEADING( )

#ifdef __cplusplus
extern "C" {
#endif

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

#ifdef _MIDL_USE_GUIDDEF_

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

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

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

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

#endif // __IID_DEFINED__

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

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

#endif // !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
IID_ITPCC,0xF6EE6AA2,0x8481,0x11d2,0xBA,0x47,0x00,0xC0,0x4F,0xBF,0xE0,0x8B);

#ifdef __cplusplus
}
#endif

#endif /* defined(_M_IA64) || defined(_M_AXP64) */

#endif // __IID_DEFINED__

```

```

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

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

#endif // !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
IID_ITPCC,0xF6EE6AA2,0x8481,0x11d2,0xBA,0x47,0x00,0xC0,0x4F,0xBF,0xE0,0x8B);

#ifdef __cplusplus
}
#endif

#endif /* defined(_M_IA64) || defined(_M_AXP64) */

#pragma warning( disable: 4049 ) /* more than 64k source lines */
/* this ALWAYS GENERATED file contains the IIDs and CLSIDs */
/* link this file in with the server and any clients */

/* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:08 2001
*/
/* Compiler settings for .\src\tpcc_com_ps.idl:
Oicf (OptLev=12), w1, 2p8, env=win64 (32b run,appending), ms_ext, c_ext,
robust
error checks: allocation ref bounds_check enum stub_data
VC __declspec( decoration level:
__declspec(uuid()), __declspec(selectany), __declspec(novtable)
DECLSPEC_UUID(), MIDL_INTERFACE())
*/
//@@MIDL_FILE_HEADING( )

#ifdef __cplusplus
extern "C" {
#endif

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

#ifdef _MIDL_USE_GUIDDEF_

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

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

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

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

#endif // __IID_DEFINED__

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

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

#endif // !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
IID_ITPCC,0xF6EE6AA2,0x8481,0x11d2,0xBA,0x47,0x00,0xC0,0x4F,0xBF,0xE0,0x8B);

#ifdef __cplusplus
}
#endif

#endif /* defined(_M_IA64) || defined(_M_AXP64) */

```



```

#else
size/offset = 8 */
NdrFcShort( 0x8 ), /* PPC Stack
#endif
#else
Stack size/offset = 8 */
NdrFcShort( 0x8 ), /* Alpha
#endif
/* 54 */ NdrFcShort( 0x3c8 ), /* Type Offset=968 */
/* Parameter txn_out */
/* 56 */ NdrFcShort( 0x4113 ), /* Flags: must size, must free, out,
simple_ref, srv alloc size=16 */
#ifndef ALPHA
#ifndef PPC
#ifdef MIPS
/* 58 */ NdrFcShort( 0x14 ), /* x86 Stack size/offset = 20 */
NdrFcShort( 0x18 ), /* MIPS
Stack size/offset = 24 */
NdrFcShort( 0x18 ), /* PPC Stack
#endif
#else
size/offset = 24 */
NdrFcShort( 0x18 ), /* Alpha
Stack size/offset = 24 */
NdrFcShort( 0x3da ), /* Type Offset=986 */
/* Return value */
/* 62 */ NdrFcShort( 0x70 ), /* Flags: out, return, base type, */
#ifndef ALPHA
#ifndef PPC
#ifdef MIPS
/* 64 */ NdrFcShort( 0x18 ), /* x86 Stack size/offset = 24 */
NdrFcShort( 0x1c ), /* MIPS
Stack size/offset = 28 */
NdrFcShort( 0x1c ), /* PPC Stack
#endif
#else
size/offset = 28 */
NdrFcShort( 0x20 ), /* Alpha
Stack size/offset = 32 */
NdrFcShort( 0x8 ), /* FC_LONG */
/* 0 */
/* Procedure delivery */
/* 68 */ 0x33, /* FC_AUTO_HANDLE */
/* Old Flags:
object, 0i2 */
/* 70 */ NdrFCLong( 0x0 ), /* 0 */
/* 74 */ NdrFcShort( 0x5 ), /* 5 */
#ifndef ALPHA
#ifndef PPC
#ifdef MIPS
/* 76 */ NdrFcShort( 0x1c ), /* x86 Stack size/offset = 28 */
NdrFcShort( 0x20 ), /* MIPS
Stack size/offset = 32 */
NdrFcShort( 0x20 ), /* PPC Stack
#endif
#else
size/offset = 32 */
NdrFcShort( 0x28 ), /* Alpha
Stack size/offset = 40 */
NdrFcShort( 0x0 ), /* 0 */
/* 80 */ NdrFcShort( 0x8 ), /* 8 */
/* 82 */ 0x7, /* 0i2 Flags: srv must size, clt must
size, has return, */
/* 3 */
/* Parameter txn_in */
/* 84 */ NdrFcShort( 0x8b ), /* Flags: must size, must free, in, by
val, */
#ifndef ALPHA
#ifndef PPC
#ifdef MIPS
/* 86 */ NdrFcShort( 0x4 ), /* x86 Stack size/offset = 4 */
NdrFcShort( 0x8 ), /* MIPS
Stack size/offset = 8 */
NdrFcShort( 0x8 ), /* PPC Stack
#endif
#else
size/offset = 8 */
NdrFcShort( 0x8 ), /* Alpha
Stack size/offset = 8 */
NdrFcShort( 0x3c8 ), /* Type Offset=968 */
/* Parameter txn_out */
/* 88 */ NdrFcShort( 0x3c8 ), /* Type Offset=968 */
/* Parameter txn_out */
/* 90 */ NdrFcShort( 0x4113 ), /* Flags: must size, must free, out,
simple_ref, srv alloc size=16 */
#ifndef ALPHA
#ifndef PPC
#ifdef MIPS

```

```

/* 92 */ NdrFcShort( 0x14 ), /* x86 Stack size/offset = 20 */
#else
Stack size/offset = 24 */
NdrFcShort( 0x18 ), /* MIPS
#endif
#else
size/offset = 24 */
NdrFcShort( 0x18 ), /* PPC Stack
#endif
Stack size/offset = 24 */
NdrFcShort( 0x3da ), /* Type Offset=986 */
/* Return value */
/* 96 */ NdrFcShort( 0x70 ), /* Flags: out, return, base type, */
#ifndef ALPHA
#ifndef PPC
#ifdef MIPS
/* 98 */ NdrFcShort( 0x18 ), /* x86 Stack size/offset = 24 */
NdrFcShort( 0x1c ), /* MIPS
Stack size/offset = 28 */
NdrFcShort( 0x1c ), /* PPC Stack
#endif
#else
size/offset = 28 */
NdrFcShort( 0x20 ), /* Alpha
Stack size/offset = 32 */
NdrFcShort( 0x8 ), /* FC_LONG */
/* 0 */
/* Procedure StockLevel */
/* 102 */ 0x33, /* FC_AUTO_HANDLE */
/* Old Flags:
object, 0i2 */
/* 104 */ NdrFCLong( 0x0 ), /* 0 */
/* 108 */ NdrFcShort( 0x6 ), /* 6 */
#ifndef ALPHA
#ifndef PPC
#ifdef MIPS
/* 110 */ NdrFcShort( 0x1c ), /* x86 Stack size/offset = 28 */
NdrFcShort( 0x20 ), /* MIPS
Stack size/offset = 32 */
NdrFcShort( 0x20 ), /* PPC Stack
#endif
#else
size/offset = 32 */
NdrFcShort( 0x28 ), /* Alpha
Stack size/offset = 40 */
NdrFcShort( 0x0 ), /* 0 */
/* 114 */ NdrFcShort( 0x8 ), /* 8 */
/* 116 */ 0x7, /* 0i2 Flags: srv must size, clt must
size, has return, */
/* 3 */
/* Parameter txn_in */
/* 118 */ NdrFcShort( 0x8b ), /* Flags: must size, must free, in, by
val, */
#ifndef ALPHA
#ifndef PPC
#ifdef MIPS
/* 120 */ NdrFcShort( 0x4 ), /* x86 Stack size/offset = 4 */
NdrFcShort( 0x8 ), /* MIPS
Stack size/offset = 8 */
NdrFcShort( 0x8 ), /* PPC Stack
#endif
#else
size/offset = 8 */
NdrFcShort( 0x8 ), /* Alpha
Stack size/offset = 8 */
NdrFcShort( 0x3c8 ), /* Type Offset=968 */
/* Parameter txn_out */
/* 124 */ NdrFcShort( 0x4113 ), /* Flags: must size, must free, out,
simple_ref, srv alloc size=16 */
#ifndef ALPHA
#ifndef PPC
#ifdef MIPS
/* 126 */ NdrFcShort( 0x14 ), /* x86 Stack size/offset = 20 */
NdrFcShort( 0x18 ), /* MIPS
Stack size/offset = 24 */
NdrFcShort( 0x18 ), /* PPC Stack
#endif
#else
size/offset = 24 */
NdrFcShort( 0x18 ), /* Alpha
Stack size/offset = 24 */
NdrFcShort( 0x3da ), /* Type Offset=986 */
/* Return value */

```

```

/* 130 */ NdrFcShort( 0x70 ), /* Flags: out, return, base type, */
#ifndef ALPHA
#ifndef PPC
#ifdef MIPS
/* 132 */ NdrFcShort( 0x18 ), /* x86 Stack size/offset = 24 */
NdrFcShort( 0x1c ), /* MIPS
Stack size/offset = 28 */
NdrFcShort( 0x1c ), /* PPC Stack
#endif
#else
size/offset = 28 */
NdrFcShort( 0x20 ), /* Alpha
Stack size/offset = 32 */
NdrFcShort( 0x8 ), /* FC_LONG */
/* 0 */
/* Procedure OrderStatus */
/* 136 */ 0x33, /* FC_AUTO_HANDLE */
/* Old Flags:
object, 0i2 */
/* 138 */ NdrFCLong( 0x0 ), /* 0 */
/* 142 */ NdrFcShort( 0x7 ), /* 7 */
#ifndef ALPHA
#ifndef PPC
#ifdef MIPS
/* 144 */ NdrFcShort( 0x1c ), /* x86 Stack size/offset = 28 */
NdrFcShort( 0x20 ), /* MIPS
Stack size/offset = 32 */
NdrFcShort( 0x20 ), /* PPC Stack
#endif
#else
size/offset = 32 */
NdrFcShort( 0x28 ), /* Alpha
Stack size/offset = 40 */
NdrFcShort( 0x0 ), /* 0 */
/* 146 */ NdrFcShort( 0x8 ), /* 8 */
/* 150 */ 0x7, /* 0i2 Flags: srv must size, clt must
size, has return, */
/* 3 */
/* Parameter txn_in */
/* 152 */ NdrFcShort( 0x8b ), /* Flags: must size, must free, in, by
val, */
#ifndef ALPHA
#ifndef PPC
#ifdef MIPS
/* 154 */ NdrFcShort( 0x4 ), /* x86 Stack size/offset = 4 */
NdrFcShort( 0x8 ), /* MIPS
Stack size/offset = 8 */
NdrFcShort( 0x8 ), /* PPC Stack
#endif
#else
size/offset = 8 */
NdrFcShort( 0x8 ), /* Alpha
Stack size/offset = 8 */
NdrFcShort( 0x3c8 ), /* Type Offset=968 */
/* Parameter txn_out */
/* 158 */ NdrFcShort( 0x4113 ), /* Flags: must size, must free, out,
simple_ref, srv alloc size=16 */
#ifndef ALPHA
#ifndef PPC
#ifdef MIPS
/* 160 */ NdrFcShort( 0x14 ), /* x86 Stack size/offset = 20 */
NdrFcShort( 0x18 ), /* MIPS
Stack size/offset = 24 */
NdrFcShort( 0x18 ), /* PPC Stack
#endif
#else
size/offset = 24 */
NdrFcShort( 0x18 ), /* Alpha
Stack size/offset = 24 */
NdrFcShort( 0x3da ), /* Type Offset=986 */
/* Return value */
/* 164 */ NdrFcShort( 0x70 ), /* Flags: out, return, base type, */
#ifndef ALPHA
#ifndef PPC
#ifdef MIPS
/* 166 */ NdrFcShort( 0x18 ), /* x86 Stack size/offset = 24 */
NdrFcShort( 0x1c ), /* MIPS
Stack size/offset = 28 */
NdrFcShort( 0x1c ), /* PPC Stack
#endif
#else
size/offset = 28 */
NdrFcShort( 0x20 ), /* Alpha
Stack size/offset = 32 */

```

```

/* 168 */ OX8, /* FC_LONG */ /* 0 */
/* Procedure CallsetComplete */
/* 170 */ OX33, /* FC_AUTO_HANDLE */ /* Old Flags:
object, oi2 */
/* 172 */ NdrFCLong( 0x0 ), /* 0 */
/* 176 */ NdrFCShort( 0x8 ), /* 8 */
#ifdef ALPHA
/* 178 */ NdrFCShort( 0x8 ), /* x86, MIPS, PPC Stack size/offset = 8
#else
NdrFCShort( 0x10 ), /* Alpha
Stack size/offset = 16 */
#endif
/* 180 */ NdrFCShort( 0x0 ), /* 0 */
/* 182 */ NdrFCShort( 0x8 ), /* 8 */
/* 184 */ OX4, /* OI2 Flags: has return, */
/* Return value */
/* 186 */ NdrFCShort( 0x70 ), /* Flags: out, return, base type, */
#ifdef ALPHA
/* 188 */ NdrFCShort( 0x4 ), /* x86, MIPS, PPC Stack size/offset = 4
#else
NdrFCShort( 0x8 ), /* Alpha
Stack size/offset = 8 */
#endif
/* 190 */ OX8, /* FC_LONG */ /* 0 */
OX0, /* 0 */
};
static const MIDL_TYPE_FORMAT_STRING __MIDL_TypeFormatString =
{
0,
NdrFCShort( 0x0 ), /* 0 */
/* 2 */ OX12, OX0, /* FC_UP */
/* 4 */ NdrFCShort( 0x3B0 ), /* Offset= 944 (948) */
/* 6 */ OX2b, /*
FC_NON_ENCAPSULATED_UNION */
OX9, /* FC_ULONG
/* 8 */ OX7, /* Corr desc: FC_USHORT */
OX0, /* 8 */
/* 10 */ NdrFCShort( 0xffff8 ), /* 8 */
/* 12 */ NdrFCShort( 0x2 ), /* Offset= 2 (14) */
/* 14 */ NdrFCShort( 0x10 ), /* 16 */
/* 16 */ NdrFCShort( 0x20 ), /* 43 */
/* 18 */ NdrFCShort( 0x3 ), /* 3 */
/* 22 */ NdrFCShort( 0x8008 ), /* Simple arm type: FC_LONG */
/* 24 */ NdrFCLong( 0x11 ), /* 17 */
/* 28 */ NdrFCShort( 0x8001 ), /* Simple arm type: FC_BYTE */
/* 30 */ NdrFCLong( 0x2 ), /* 2 */
/* 34 */ NdrFCShort( 0x8006 ), /* Simple arm type: FC_SHORT */
/* 36 */ NdrFCLong( 0x4 ), /* 4 */
/* 40 */ NdrFCShort( 0x800a ), /* Simple arm type: FC_FLOAT */
/* 42 */ NdrFCLong( 0x5 ), /* 5 */
/* 46 */ NdrFCShort( 0x800c ), /* Simple arm type: FC_DOUBLE */
/* 48 */ NdrFCLong( 0xb ), /* 11 */
/* 52 */ NdrFCShort( 0x8006 ), /* Simple arm type: FC_SHORT */
/* 54 */ NdrFCLong( 0xa ), /* 10 */
/* 58 */ NdrFCShort( 0x8008 ), /* Simple arm type: FC_LONG */
/* 60 */ NdrFCLong( 0x6 ), /* 6 */
/* 64 */ NdrFCShort( 0x6 ), /* Offset= 214 (278) */
/* 66 */ NdrFCLong( 0x7 ), /* 7 */
/* 70 */ NdrFCShort( 0x800c ), /* Simple arm type: FC_DOUBLE */
/* 72 */ NdrFCLong( 0x8 ), /* 8 */
/* 76 */ NdrFCShort( 0xd0 ), /* Offset= 208 (284) */
/* 78 */ NdrFCLong( 0xd ), /* 13 */
/* 82 */ NdrFCShort( 0xe2 ), /* Offset= 226 (308) */
/* 84 */ NdrFCLong( 0x9 ), /* 9 */
/* 88 */ NdrFCShort( 0xee ), /* Offset= 238 (326) */
/* 90 */ NdrFCLong( 0x2000 ), /* 8192 */
/* 94 */ NdrFCShort( 0xfa ), /* Offset= 250 (344) */
/* 96 */ NdrFCLong( 0x24 ), /* 36 */
/* 100 */ NdrFCShort( 0x30 ), /* Offset= 776 (876) */
/* 102 */ NdrFCLong( 0x4024 ), /* 16420 */
/* 106 */ NdrFCShort( 0x302 ), /* Offset= 770 (876) */
/* 108 */ NdrFCLong( 0x4011 ), /* 16401 */
/* 112 */ NdrFCShort( 0x300 ), /* Offset= 768 (880) */
/* 114 */ NdrFCLong( 0x4002 ), /* 16386 */
/* 118 */ NdrFCShort( 0x2fe ), /* Offset= 766 (884) */
/* 120 */ NdrFCLong( 0x4003 ), /* 16387 */
/* 124 */ NdrFCShort( 0x2fc ), /* Offset= 764 (888) */
/* 126 */ NdrFCLong( 0x4004 ), /* 16388 */
/* 130 */ NdrFCShort( 0x2fa ), /* Offset= 762 (892) */
/* 132 */ NdrFCLong( 0x4005 ), /* 16389 */
/* 136 */ NdrFCShort( 0x2f8 ), /* Offset= 760 (896) */
/* 138 */ NdrFCLong( 0x400b ), /* 16395 */
/* 142 */ NdrFCShort( 0x2e6 ), /* Offset= 742 (884) */
/* 144 */ NdrFCLong( 0x400a ), /* 16394 */
/* 148 */ NdrFCShort( 0x2e4 ), /* Offset= 740 (888) */
/* 150 */ NdrFCLong( 0x4006 ), /* 16390 */
/* 154 */ NdrFCShort( 0x2ea ), /* Offset= 746 (900) */
/* 156 */ NdrFCLong( 0x4007 ), /* 16391 */
/* 160 */ NdrFCShort( 0x2e0 ), /* Offset= 736 (896) */
/* 162 */ NdrFCLong( 0x4008 ), /* 16392 */
/* 166 */ NdrFCShort( 0x2e2 ), /* Offset= 738 (904) */
/* 168 */ NdrFCLong( 0x4009 ), /* 16393 */
/* 172 */ NdrFCShort( 0x2e0 ), /* Offset= 736 (908) */
/* 174 */ NdrFCLong( 0x400d ), /* 16393 */
/* 178 */ NdrFCShort( 0x2de ), /* Offset= 734 (912) */
NdrFCLong( 0x6000 ), /* 24576 */
NdrFCShort( 0x2dc ), /* Offset= 732 (916) */
NdrFCLong( 0x400c ), /* 16396 */
NdrFCShort( 0x2da ), /* Offset= 730 (920) */
NdrFCLong( 0x10 ), /* 16 */
NdrFCShort( 0x8002 ), /* Simple arm type: FC_CHAR */
NdrFCLong( 0x12 ), /* 18 */
NdrFCShort( 0x8006 ), /* Simple arm type: FC_SHORT */
NdrFCLong( 0x13 ), /* 19 */
NdrFCShort( 0x8008 ), /* Simple arm type: FC_LONG */
NdrFCLong( 0x16 ), /* 22 */
NdrFCShort( 0x8008 ), /* Simple arm type: FC_LONG */
NdrFCLong( 0x17 ), /* 23 */
NdrFCShort( 0x8008 ), /* Simple arm type: FC_LONG */
NdrFCLong( 0x12 ), /* 18 */
NdrFCShort( 0x2be ), /* Offset= 702 (928) */
NdrFCLong( 0x400e ), /* 16398 */
NdrFCShort( 0x2c4 ), /* Offset= 708 (940) */
NdrFCLong( 0x4010 ), /* 16400 */
NdrFCShort( 0x2c2 ), /* Offset= 706 (944) */
NdrFCLong( 0x4012 ), /* 16402 */
NdrFCShort( 0x280 ), /* Offset= 640 (884) */
NdrFCLong( 0x4013 ), /* 16403 */
NdrFCShort( 0x27e ), /* Offset= 638 (888) */
NdrFCLong( 0x4016 ), /* 16406 */
NdrFCShort( 0x278 ), /* Offset= 632 (888) */
NdrFCLong( 0x4017 ), /* 16407 */
NdrFCShort( 0x272 ), /* Offset= 626 (888) */
NdrFCLong( 0x0 ), /* 0 */
NdrFCShort( 0x0 ), /* Offset= 0 (268) */
NdrFCLong( 0x1 ), /* 1 */
NdrFCShort( 0x0 ), /* Offset= 0 (274) */
NdrFCShort( 0xfffffff ), /* Offset= -1 (275) */
OX15, /* FC_STRUCTURE
OX7, /* 7 */
OXb, /* FC_HYPER */
OX5b, /* FC_END */
OX12, OX0, /* FC_UP */
/* Offset= 12 (298) */
OX1b, /* FC_CARRAY
OX1, /* 1 */
/* Corr desc: FC_ULONG */
OX0, /* 0 */
/* FC_SHORT */
OX5b, /* FC_END */
OX17, /* FC_CSTRUCT
OX3, /* 3 */
/* 5 */
/* Offset= -14 (288) */
OX8, /* FC_LONG */
OX8, /* FC_PAD */
OX5b, /* FC_END */
OX2f, /* FC_IP */
OX5a, /*
/* 310 */ NdrFCLong( 0x0 ), /* 0 */
/* 314 */ NdrFCShort( 0x0 ), /* 0 */
/* 316 */ NdrFCShort( 0x0 ), /* 0 */
/* 318 */ OXC0, /* 192 */
OX0, /* 0 */
OX0, /* 0 */
OX0, /* 0 */
OX46, /* 70 */
OX2f, /* FC_IP */
OX5a, /*
/* 328 */ NdrFCLong( 0x20400 ), /* 132096 */
/* 332 */ NdrFCShort( 0x0 ), /* 0 */
/* 334 */ NdrFCShort( 0x0 ), /* 0 */
/* 336 */ OXC0, /* 192 */
OX0, /* 0 */
OX0, /* 0 */
OX0, /* 0 */
OX0, /* 0 */
OX46, /* 70 */
OX12, OX10, /* FC_UP [pointer_deref]
OX2a, /*
OX49, /* 73 */
/* 24 */ NdrFCShort( 0xa ), /* 10 */
NdrFCLong( 0x8 ), /* 8 */
NdrFCShort( 0x58 ), /* Offset= 88 (450) */
NdrFCLong( 0xd ), /* 13 */
NdrFCShort( 0x78 ), /* Offset= 120 (488) */
NdrFCLong( 0x9 ), /* 9 */
NdrFCShort( 0x94 ), /* Offset= 148 (522) */
/* 376 */ NdrFCLong( 0xc ), /* 12 */
NdrFCShort( 0x1bc ), /* Offset= 188 (568) */
NdrFCLong( 0x24 ), /* 36 */
NdrFCShort( 0x114 ), /* Offset= 276 (662) */
NdrFCLong( 0x800d ), /* 32781 */
/* 392 */ NdrFCShort( 0x130 ), /* Offset= 304 (696) */
NdrFCLong( 0x10 ), /* 16 */
NdrFCShort( 0x148 ), /* Offset= 328 (726) */
/* 400 */ NdrFCShort( 0x2 ), /* 2 */
/* 404 */ NdrFCShort( 0x160 ), /* Offset= 352 (756) */
/* 406 */ NdrFCLong( 0x3 ), /* 3 */
/* 410 */ NdrFCShort( 0x178 ), /* Offset= 376 (786) */
/* 412 */ NdrFCLong( 0x14 ), /* 20 */
/* 416 */ NdrFCShort( 0x130 ), /* Offset= 400 (816) */
/* 418 */ NdrFCShort( 0xffffffff ), /* Offset= -1 (417) */
OX1b, /* FC_CARRAY
OX3, /* 3 */
/* Corr desc: field pointer, FC_ULONG
OX0, /* 0 */
/* 4 */
/* FC_PP */
OX4b, /* FC_PAD */
OX5c, /*
OX48, /*
FC_VARIABLE_REPEAT */
OX49, /*
FC_FIXED_OFFSET */
/* 432 */ NdrFCShort( 0x4 ), /* 4 */
/* 434 */ NdrFCShort( 0x1 ), /* 0 */
/* 436 */ NdrFCShort( 0x1 ), /* 1 */
/* 438 */ NdrFCShort( 0x0 ), /* 0 */
/* 440 */ NdrFCShort( 0x0 ), /* 0 */
/* 442 */ OX12, OX0, /* FC_UP */
/* 444 */ NdrFCShort( 0xffffffe ), /* Offset= -146 (298) */
/* 446 */
OX5b, /* FC_END */
OX8, /* FC_LONG */
OX5b, /* FC_END */
OX16, /* FC_PSTRUCT
OX3, /* 3 */
OX8, /* FC_PP */
OX5c, /* FC_PAD */
OX46, /*
OX5c, /* FC_PAD */
/* 458 */ NdrFCShort( 0x4 ), /* 4 */
/* 460 */ NdrFCShort( 0x4 ), /* 4 */
/* 462 */ OX11, OX0, /* FC_PP */
/* 464 */ NdrFCShort( 0xffffffd4 ), /* Offset= -44 (420) */
/* 466 */
OX5b, /* FC_END */
OX8, /* FC_LONG */
OX5b, /* FC_END */
OX21, /*
OX3, /* 3 */
NdrFCShort( 0x0 ), /* 0 */
/* Corr desc: field pointer, FC_ULONG
OX0, /* 0 */
/* 1 */
/* FC_EMBEDDED_COMPLEX */
OX4c, /*
OX48, /* NdrFCShort( 0xfffff50 ), /* Offset= -176 (308) */
OX5c, /* FC_PAD */
OX5b, /* FC_END */
OX1a, /*
FC_BOGUS_STRUCT */
OX3, /* 3 */
/* 8 */
/* 9 */
/* Offset= 6 (500) */
/* FC_LONG */
OX36, /* FC_POINTER
OX5c, /* FC_PAD */
OX5b, /* FC_END */
OX11, OX0, /* FC_PP */
/* Offset= -32 (470) */
OX21, /*
/* 506 */ NdrFCShort( 0x0 ), /* 0 */
/* 508 */ OX19, /* Corr desc: field pointer, FC_ULONG
OX0, /* 0 */
/* 1 */
/* FC_EMBEDDED_COMPLEX */
OX4c, /*
OX0, /* 0 */
/* Offset= -192 (326) */
OX5c, /* FC_PAD */
OX5b, /* FC_END */

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/* 850 */ NdrFcShort( 0xfdd8 ), /* -40 */
/* 852 */ 0x4c, /* FC_EMBEDDED_COMPLEX */ /* 0 */
/* 854 */ NdrFcShort( 0xfffffee ), /* Offset= -18 (836) */
/* 856 */ 0x5c, /* FC_PAD */ /* FC_END */
/* 858 */
FC_BOGUS_STRUCT /*
/* 860 */ NdrFcShort( 0x28 ), /* 40 */
/* 862 */ NdrFcShort( 0xfffffee ), /* Offset= -18 (844) */
/* 864 */ NdrFcShort( 0x0 ), /* Offset= 0 (864) */
/* 866 */ 0x6, /* FC_SHORT
*/
/* 868 */ 0x38, /* FC_ALIGNM4 */
/* 870 */ 0x8, /* FC_LONG */
FC_EMBEDDED_COMPLEX /*
/* 872 */ 0x0, NdrFcShort( 0xfffffd7 ), /* Offset= -
521 (352) */
/* 876 */ 0x5b, /* FC_END */
/* 878 */ NdrFcShort( 0xfffffef6 ), /* 0x12, 0x0, /* FC_UP */
/* 880 */ /* Offset= -266 (612) */
/* 882 */ 0x1, /* FC_BYTE */
/* 884 */ 0x5c, /* FC_PAD */
/* 886 */ 0x12, 0x8, /* FC_UP [simple_pointer]
*/
/* 888 */ 0x6, /* FC_SHORT */
/* 890 */ 0x8, /* FC_LONG */
/* 892 */ 0x5c, /* FC_PAD */
/* 894 */ 0xa, /* FC_UP [simple_pointer]
*/
/* 896 */ 0xc, /* FC_FLOAT */
/* 898 */ 0xc, /* FC_DOUBLE */
/* 900 */ 0x12, 0x0, /* FC_UP */
/* 902 */ NdrFcShort( 0xfffffd90 ), /* Offset= -624 (278) */
/* 904 */ 0x12, 0x10, /* FC_UP [pointer_deref]
*/
/* 906 */ NdrFcShort( 0xfffffd92 ), /* Offset= -622 (284) */
/* 908 */ 0x12, 0x10, /* FC_UP [pointer_deref]
*/
/* 910 */ NdrFcShort( 0xffffda6 ), /* Offset= -602 (308) */
/* 912 */ 0x12, 0x10, /* FC_UP [pointer_deref]
*/
/* 914 */ NdrFcShort( 0xffffdb4 ), /* Offset= -588 (326) */
/* 916 */ 0x12, 0x10, /* FC_UP [pointer_deref]
*/
/* 918 */ NdrFcShort( 0xffffdc2 ), /* Offset= -574 (344) */
/* 920 */ 0x12, 0x10, /* FC_UP [pointer_deref]
*/
/* 922 */ NdrFcShort( 0x2 ), /* Offset= 2 (924) */
/* 924 */ 0x12, 0x0, /* FC_UP */
/* 926 */ NdrFcShort( 0x16 ), /* Offset= 22 (946) */
/* 928 */ 0x15, /* FC_STRUCT
*/
/* 930 */ NdrFcShort( 0x10 ), /* 16 */
/* 932 */ 0x6, /* FC_SHORT */
/* 934 */ 0x1, /* FC_BYTE */
/* 936 */ 0x8, /* FC_LONG */
/* 938 */ 0xb, /* FC_HYPER */
/* 940 */ 0x5b, /* FC_END */
/* 942 */ NdrFcShort( 0xfffffd2 ), /* 0x12, 0x0, /* FC_UP */
/* 944 */ /* Offset= -14 (928) */
/* 946 */ 0x2, /* FC_CHAR */
/* 948 */ 0x5c, /* FC_PAD */
FC_BOGUS_STRUCT /*
/* 950 */ NdrFcShort( 0x20 ), /* 32 */
/* 952 */ NdrFcShort( 0x0 ), /* 0 */
/* 954 */ NdrFcShort( 0x0 ), /* Offset= 0 (954) */
/* 956 */ 0x8, /* FC_LONG */
/* 958 */ 0x6, /* FC_SHORT */

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0x6, /* FC_SHORT
*/
/* 960 */ 0x6, /* FC_SHORT */
/* 962 */ 0x4c, /* FC_EMBEDDED_COMPLEX */ /* 0 */
/* 964 */ NdrFcShort( 0xfffffc42 ), /* Offset= -958 (6) */
/* 966 */ 0x5c, /* FC_PAD */ /* FC_END */
/* 968 */ 0xb4, /* FC_USER_MARSHAL */
/* 970 */ NdrFcShort( 0x0 ), /* 0 */
/* 972 */ NdrFcShort( 0x10 ), /* 16 */
/* 974 */ NdrFcShort( 0x0 ), /* 0 */
/* 976 */ NdrFcShort( 0xfffffc32 ), /* Offset= -974 (2) */
/* 978 */
[allocated_on_stack] /*
/* 980 */ NdrFcShort( 0x6 ), /* Offset= 6 (986) */
/* 982 */
/* 984 */ NdrFcShort( 0xfffffd4 ), /* 0x13, 0x0, /* FC_OP */
/* 986 */ 0xb4, /* Offset= -36 (948) */
/* 988 */ NdrFcShort( 0x0 ), /* 0 */
/* 990 */ NdrFcShort( 0x10 ), /* 16 */
/* 992 */ NdrFcShort( 0x0 ), /* 0 */
/* 994 */ NdrFcShort( 0xfffffd4 ), /* Offset= -12 (982) */
0x0
};
}
const CInterfaceProxyVtbl * _tpcc_com_ps_ProxyVtblList[] =
{
(CInterfaceProxyVtbl *) &ITPCProxyVtbl,
};
const CInterfaceStubVtbl * _tpcc_com_ps_StubVtblList[] =
{
(CInterfaceStubVtbl *) &ITPCStubVtbl,
};
PCInterfaceName const _tpcc_com_ps_InterfaceNamesList[] =
{
"ITPCC",
};
#define _tpcc_com_ps_CHECK_IID(n) IID_GENERIC_CHECK_IID( _tpcc_com_ps,
pIID, n)
int _stdcall _tpcc_com_ps_IID_Lookup( const IID * pIID, int * pIndex )
{
if(!_tpcc_com_ps_CHECK_IID(0))
{
*pIndex = 0;
return 1;
}
return 0;
}
const ExtendedProxyFileInfo tpcc_com_ps_ProxyFileInfo =
{
(PCInterfaceProxyVtblList *) &_tpcc_com_ps_ProxyVtblList,
(PCInterfaceStubVtblList *) &_tpcc_com_ps_StubVtblList,
(const PCInterfaceName *) &_tpcc_com_ps_InterfaceNamesList,
0, // no delegation
&_tpcc_com_ps_IID_Lookup,
1,
2,
0, /* table of [async_uid] interfaces */
0, /* Filler1 */
0, /* Filler2 */
0, /* Filler3 */
};
#endif /* !defined(_M_IA64) && !defined(_M_IX86) */
#pragma warning( disable: 4049 ) /* more than 64k source lines */
/* this ALWAYS GENERATED file contains the proxy stub code */
/* File created by MIDL compiler version 5.03.0280 */
/* at Thu Dec 13 23:13:08 2001 */
/* Compiler settings for .\src\tpcc_com.ps.idl:
Oicf (OptLev=12), Wl, Zp8, env=win64 (32b run,appending), ms_ext, c_ext,
robust
error checks: allocation ref bounds_check enum stub_data
VC _declspec() decoration level:
_declspec(uuid()), _declspec(selectany), _declspec(novtable)
DECLSPEC_UUID(), MIDL_INTERFACE()
//@@MIDL_FILE_HEADER( )
#if defined(_M_IA64) || defined(_M_IX86)
#define USE_STUBLESS_PROXY
/* verify that the <rpcproxy.h> version is high enough to compile this file*/
#ifndef _REQUIRED_RPCPROXY_H_VERSION
#define _REQUIRED_RPCPROXY_H_VERSION__ 475

```

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#endif
#include "rpcproxy.h"
#ifdef __RPCPROXY_H_VERSION__
#error this stub requires an updated version of <rpcproxy.h>
#endif // __RPCPROXY_H_VERSION__
#include "tpcc_com.ps.h"
#define TYPE_FORMAT_STRING_SIZE 979
#define PROC_FORMAT_STRING_SIZE 253
#define TRANSMIT_AS_TABLE_SIZE 0
#define WIRE_MARSHAL_TABLE_SIZE 1
typedef struct _MIDL_TYPE_FORMAT_STRING
{
short Pad;
unsigned char Format[ TYPE_FORMAT_STRING_SIZE ];
} MIDL_TYPE_FORMAT_STRING;
typedef struct _MIDL_PROC_FORMAT_STRING
{
short Pad;
unsigned char Format[ PROC_FORMAT_STRING_SIZE ];
} MIDL_PROC_FORMAT_STRING;
extern const MIDL_TYPE_FORMAT_STRING _MIDL_TypeFormatString;
extern const MIDL_PROC_FORMAT_STRING _MIDL_ProcFormatString;
/* Standard interface: _MIDL_itf_tpcc_com_ps_0000, ver. 0.0,
GUID={0x00000000,0x0000,0x0000,{0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00}} */
/* Object interface: IUnknown, ver. 0.0,
GUID={0x00000000,0x0000,0x0000,{0xc0,0x00,0x00,0x00,0x00,0x00,0x46}} */
/* Object interface: ITPCC, ver. 0.0,
GUID={0xf0ee6aa2,0x8481,0x11d2,{0xba,0x47,0x00,0xc0,0x4f,0xbf,0xe0,0x88}} */
extern const MIDL_STUB_DESC Object_StubDesc;
extern const MIDL_SERVER_INFO ITPCC_ServerInfo;
#pragma code_seg("orpc")
static const unsigned short ITPCC_FormatStringOffsetTable[] =
{
0,
44,
88,
176,
220
};
static const MIDL_SERVER_INFO ITPCC_ServerInfo =
{
&Object_StubDesc,
_MIDL_ProcFormatString.Format,
&ITPCC_FormatStringOffsetTable[-3],
0,
0,
0,
0,
};
static const MIDL_STUBLESS_PROXY_INFO ITPCC_ProxyInfo =
{
&Object_StubDesc,
_MIDL_ProcFormatString.Format,
&ITPCC_FormatStringOffsetTable[-3],
0,
0,
0,
};
CINTERFACE_PROXY_VTABLE(9) _ITPCCProxyVtbl =
{
&ITPCC_ProxyInfo,
&IID_ITPCC,
IUnknown_QueryInterface_Proxy,
IUnknown_AddRef_Proxy,
IUnknown_Release_Proxy,
(void *)-1 /* ITPCC::NewOrder */ ,
(void *)-1 /* ITPCC::Payment */ ,
(void *)-1 /* ITPCC::Delivery */ ,
(void *)-1 /* ITPCC::StockLevel */ ,
(void *)-1 /* ITPCC::OrderStatus */ ,
(void *)-1 /* ITPCC::CallSetComplete */
};
const CInterfaceStubVtbl _ITPCCStubVtbl =
{
&IID_ITPCC,
&ITPCC_ServerInfo,
9,
0, /* pure interpreted */
CStdStubBuffer_METHODS
};
extern const USER_MARSHAL_ROUTINE_QUADRUPLE
UserMarshalRoutines[ WIRE_MARSHAL_TABLE_SIZE ];
static const MIDL_STUB_DESC Object_StubDesc =
{

```



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/* 208 */ NdrFcShort( 0x6113 ), /* Flags: must size, must free, out,
simple_ref, srv alloc size=24 */
/* #endif ALPH */
/* 210 */ NdrFcShort( 0x28 ), /* ia64 Stack size/offset = 40 */
#else NdrFcShort( 0x20 ), /* xpp64
Stack size/offset = 32 */
#endif
/* 212 */ NdrFcShort( 0x3c8 ), /* Type Offset=968 */
/* Return value */
/* 214 */ NdrFcShort( 0x70 ), /* Flags: out, return, base type, */
/* #ifndef ALPH */ /* ia64 Stack size/offset = 48 */
/* 216 */ NdrFcShort( 0x30 ), /*
Stack size/offset = 40 */
#endif
/* 218 */ 0x8, /* FC_LONG */
/* 0x0, /* 0 */
/* Procedure callsetComplete */
/* 220 */ 0x33, /* FC_AUTO_HANDLE */ /* Old Flags:
0x6c,
object, 012 */
/* 222 */ NdrFCLong( 0x0 ), /* 0 */
/* 226 */ NdrFcShort( 0x8 ), /* 8 */
/* 228 */ NdrFcShort( 0x10 ), /* ia64, xpp64 Stack size/offset = 16 */
/* 230 */ NdrFcShort( 0x0 ), /* 0 */
/* 232 */ NdrFcShort( 0x8 ), /* 8 */
/* 234 */ 0x44, /* 012 Flags: has return, has ext, */
/* 236 */ 0xa, /* 10 */ /* Ext Flags:
0x1,
new corr desc, */
/* 238 */ NdrFcShort( 0x0 ), /* 0 */
/* 240 */ NdrFcShort( 0x0 ), /* 0 */
/* 242 */ NdrFcShort( 0x0 ), /* 0 */
/* 244 */ NdrFcShort( 0x0 ), /* 0 */
/* Return value */
/* 246 */ NdrFcShort( 0x70 ), /* Flags: out, return, base type, */
/* 248 */ NdrFcShort( 0x8 ), /* ia64, xpp64 Stack size/offset = 8 */
/* 250 */ 0x8, /* FC_LONG */
/* 0x0, /* 0 */
/* 0x0
};
static const MIDL_TYPE_FORMAT_STRING __MIDL_TypeFormatString =
{
0,
/* 2 */ NdrFcShort( 0x0 ), /* 0 */
/* 4 */ NdrFcShort( 0x39e ), /* 0x12, 0x0, /* FC_UP */
/* 6 */ /* Offsets= 926 (930) */
/* 8 */ 0x7, /* Correlation desc: FC_USHORT */ /* 8 */
/* 10 */ NdrFcShort( 0xffff8 ), /* -8 */
/* 12 */ NdrFcShort( 0x1 ), /* Correlation flags: early, */
/* 14 */ NdrFcShort( 0x2 ), /* Offsets= 2 (16) */
/* 16 */ NdrFcShort( 0x10 ), /* 16 */
/* 18 */ NdrFcShort( 0x2b ), /* 43 */
/* 20 */ NdrFCLong( 0x3 ), /* 3 */
/* 24 */ NdrFcShort( 0x8008 ), /* Simple arm type: FC_LONG */
/* 26 */ NdrFCLong( 0x11 ), /* 11 */
/* 30 */ NdrFcShort( 0x8001 ), /* Simple arm type: FC_BYTE */
/* 32 */ NdrFCLong( 0x2 ), /* 2 */
/* 36 */ NdrFcShort( 0x8006 ), /* Simple arm type: FC_SHORT */
/* 38 */ NdrFCLong( 0x4 ), /* 4 */
/* 42 */ NdrFcShort( 0x800a ), /* Simple arm type: FC_FLOAT */
/* 44 */ NdrFCLong( 0x5 ), /* 5 */
/* 48 */ NdrFcShort( 0x800c ), /* Simple arm type: FC_DOUBLE */
/* 50 */ NdrFCLong( 0xb ), /* 11 */
/* 54 */ NdrFcShort( 0x8006 ), /* Simple arm type: FC_SHORT */
/* 56 */ NdrFCLong( 0x3 ), /* 3 */
/* 60 */ NdrFcShort( 0x8008 ), /* Simple arm type: FC_LONG */
/* 62 */ NdrFCLong( 0x6 ), /* 6 */
/* 66 */ NdrFcShort( 0xd6 ), /* Offsets= 214 (280) */
/* 68 */ NdrFCLong( 0x7 ), /* 7 */
/* 72 */ NdrFcShort( 0x800c ), /* Simple arm type: FC_DOUBLE */
/* 74 */ NdrFCLong( 0x8 ), /* 8 */
/* 78 */ NdrFcShort( 0xd0 ), /* Offsets= 208 (286) */
/* 80 */ NdrFCLong( 0x2 ), /* 2 */
/* 84 */ NdrFcShort( 0x2 ), /* Offsets= 228 (312) */
/* 86 */ NdrFCLong( 0x9 ), /* 9 */
/* 90 */ NdrFcShort( 0xf0 ), /* Offsets= 240 (330) */
/* 92 */ NdrFCLong( 0x200 ), /* 812 */
/* 96 */ NdrFcShort( 0xf5 ), /* Offsets= 252 (348) */
/* 98 */ NdrFCLong( 0x24 ), /* 36 */
/* 102 */ NdrFcShort( 0x2f4 ), /* Offsets= 756 (858) */
/* 104 */ NdrFCLong( 0x4024 ), /* 1640 */
/* 108 */ NdrFcShort( 0x2ee ), /* Offsets= 750 (858) */
/* 110 */ NdrFCLong( 0x4011 ), /* 16401 */
/* 114 */ NdrFcShort( 0x26c ), /* Offsets= 748 (862) */
/* 116 */ NdrFCLong( 0x4002 ), /* 16386 */
/* 120 */ NdrFcShort( 0x2ea ), /* Offsets= 746 (866) */
/* 122 */ NdrFCLong( 0x4003 ), /* 16387 */
/* 126 */ NdrFcShort( 0x2e8 ), /* Offsets= 744 (870) */
/* 128 */ NdrFCLong( 0x4004 ), /* 16388 */
/* 132 */ NdrFcShort( 0x2e6 ), /* Offsets= 742 (874) */
/* 134 */ NdrFCLong( 0x4005 ), /* 16389 */
/* 138 */ NdrFcShort( 0x2e4 ), /* Offsets= 740 (878) */
/* 140 */ NdrFCLong( 0x400b ), /* 16395 */
/* 144 */ NdrFcShort( 0x2d2 ), /* Offsets= 722 (866) */
/* 146 */ NdrFCLong( 0x400a ), /* 16394 */
/* 150 */ NdrFcShort( 0x2d0 ), /* Offsets= 720 (870) */
/* 152 */ NdrFCLong( 0x4009 ), /* 16390 */
/* 156 */ NdrFcShort( 0x2d6 ), /* Offsets= 726 (882) */
/* 158 */ NdrFCLong( 0x4007 ), /* 16391 */
/* 162 */ NdrFcShort( 0x2cc ), /* Offsets= 716 (878) */
/* 164 */ NdrFCLong( 0x4008 ), /* 16392 */
/* 168 */ NdrFcShort( 0x2ce ), /* Offsets= 718 (886) */
/* 170 */ NdrFCLong( 0x400d ), /* 16397 */
/* 174 */ NdrFcShort( 0x2cc ), /* Offsets= 716 (890) */
/* 176 */ NdrFCLong( 0x4009 ), /* 16393 */
/* 180 */ NdrFcShort( 0x2ca ), /* Offsets= 714 (894) */
/* 182 */ NdrFCLong( 0x6000 ), /* 24576 */
/* 186 */ NdrFcShort( 0x2c8 ), /* Offsets= 712 (898) */
/* 188 */ NdrFCLong( 0x400c ), /* 16396 */
/* 192 */ NdrFcShort( 0x2c6 ), /* Offsets= 710 (902) */
/* 194 */ NdrFCLong( 0x10 ), /* 16 */
/* 198 */ NdrFcShort( 0x8002 ), /* Simple arm type: FC_CHAR */
/* 200 */ NdrFCLong( 0x12 ), /* 18 */
/* 204 */ NdrFcShort( 0x8006 ), /* Simple arm type: FC_SHORT */
/* 206 */ NdrFCLong( 0x13 ), /* 19 */
/* 210 */ NdrFcShort( 0x8008 ), /* Simple arm type: FC_LONG */
/* 212 */ NdrFCLong( 0x16 ), /* 22 */
/* 216 */ NdrFcShort( 0x8008 ), /* Simple arm type: FC_LONG */
/* 218 */ NdrFCLong( 0x17 ), /* 23 */
/* 222 */ NdrFcShort( 0x8008 ), /* Simple arm type: FC_LONG */
/* 224 */ NdrFCLong( 0xe3 ), /* 14 */
/* 228 */ NdrFcShort( 0xe3 ), /* Offsets= 682 (910) */
/* 230 */ NdrFCLong( 0x400e ), /* 16398 */
/* 234 */ NdrFcShort( 0x2b0 ), /* Offsets= 688 (922) */
/* 236 */ NdrFCLong( 0x4010 ), /* 16400 */
/* 240 */ NdrFcShort( 0x2ae ), /* Offsets= 686 (926) */
/* 242 */ NdrFCLong( 0x4012 ), /* 16402 */
/* 246 */ NdrFcShort( 0x26c ), /* Offsets= 620 (866) */
/* 248 */ NdrFCLong( 0x4013 ), /* 16403 */
/* 252 */ NdrFcShort( 0x26a ), /* Offsets= 618 (870) */
/* 254 */ NdrFCLong( 0x4016 ), /* 16406 */
/* 258 */ NdrFcShort( 0x264 ), /* Offsets= 612 (870) */
/* 260 */ NdrFCLong( 0x4017 ), /* 16407 */
/* 264 */ NdrFcShort( 0x25e ), /* Offsets= 606 (870) */
/* 266 */ NdrFCLong( 0x0 ), /* 0 */
/* 270 */ NdrFcShort( 0x0 ), /* Offsets= 0 (270) */
/* 272 */ NdrFCLong( 0x1 ), /* 1 */
/* 276 */ NdrFcShort( 0x0 ), /* Offsets= 0 (276) */
/* 278 */ NdrFCLong( 0xffffffff ), /* Offsets= -1 (277) */
/* 280 */
/* 282 */ NdrFcShort( 0x8 ), /* 8 */
/* 284 */ 0xb, /* FC_HYPER */
/* 286 */
/* 288 */ NdrFcShort( 0xe ), /* 0x12, 0x0, /* FC_UP */
/* 290 */ /* Offsets= 14 (302) */
/* 292 */ NdrFcShort( 0x2 ), /* 0x1b, /* FC_CARRY */
/* 294 */ 0x9, /* Correlation desc: FC_LONG */
/* 296 */ NdrFcShort( 0xfffffc ), /* 4 */
/* 298 */ NdrFcShort( 0x1 ), /* Correlation flags: early, */
/* 300 */ 0x6, /* FC_SHORT */
/* 302 */
/* 304 */ NdrFcShort( 0x8 ), /* 8 */
/* 306 */ NdrFcShort( 0xffffffff ), /* Offsets= -16 (290) */
/* 308 */ 0x8, /* FC_LONG */
/* 310 */ 0x5c, /* FC_PAD */
/* 312 */ 0x8, /* FC_END */
/* 314 */ 0x2f, /* FC_IP */
/* 316 */ 0x5a,
FC_CONSTANT_ID */
/* 318 */ NdrFCLong( 0x0 ), /* 314 */
/* 320 */ NdrFcShort( 0x0 ), /* 318 */
/* 322 */ NdrFcShort( 0x0 ), /* 322 */
/* 324 */ 0x0, /* 324 */
/* 326 */ 0x0, /* 326 */
/* 328 */ 0x0, /* 328 */
/* 330 */ 0x0, /* 330 */
FC_CONSTANT_ID */
/* 332 */ NdrFCLong( 0x20400 ), /* 132096 */
/* 336 */ NdrFcShort( 0x0 ), /* 336 */
/* 338 */ NdrFcShort( 0x0 ), /* 338 */
/* 340 */ 0xc0, /* 192 */
/* 342 */ 0x0, /* 0 */
/* 344 */ 0x0, /* 0 */
/* 346 */ 0x0, /* 0 */
/* 348 */ 0x0, /* 0 */
/* 350 */ 0x46, /* 70 */
0x12, 0x10, /* FC_UP [pointer_deref]
/* 350 */ NdrFcShort( 0x2 ), /* Offsets= 2 (352) */
/* 352 */
/* 354 */ NdrFcShort( 0x1e6 ), /* 0x12, 0x0, /* FC_UP */
/* 356 */ /* Offsets= 486 (840) */
/* 0x2a, /*
FC_ENCAPSULATED_UNION */
/* 358 */ NdrFcShort( 0x20 ), /* 32 */
/* 360 */ NdrFcShort( 0xa ), /* 10 */
/* 362 */ NdrFCLong( 0x8 ), /* 8 */
/* 366 */ NdrFcShort( 0x50 ), /* Offsets= 80 (446) */
/* 368 */ NdrFCLong( 0xd ), /* 13 */
/* 372 */ NdrFcShort( 0x70 ), /* Offsets= 112 (484) */
/* 374 */ NdrFCLong( 0x9 ), /* 9 */
/* 378 */ NdrFcShort( 0x90 ), /* Offsets= 144 (522) */
/* 380 */ NdrFCLong( 0x2c ), /* 12 */
/* 384 */ NdrFcShort( 0xb0 ), /* Offsets= 176 (560) */
/* 386 */ NdrFCLong( 0x24 ), /* 36 */
/* 390 */ NdrFcShort( 0x104 ), /* Offsets= 260 (650) */
/* 392 */ NdrFCLong( 0x80d ), /* 32781 */
/* 396 */ NdrFcShort( 0x120 ), /* Offsets= 288 (684) */
/* 398 */ NdrFCLong( 0x10 ), /* 16 */
/* 402 */ NdrFcShort( 0x13a ), /* Offsets= 314 (716) */
/* 404 */ NdrFCLong( 0x2 ), /* 2 */
/* 408 */ NdrFcShort( 0x150 ), /* Offsets= 336 (744) */
/* 410 */ NdrFCLong( 0x3 ), /* 3 */
/* 414 */ NdrFcShort( 0x166 ), /* Offsets= 358 (772) */
/* 416 */ NdrFCLong( 0x14 ), /* 20 */
/* 420 */ NdrFcShort( 0x17 ), /* Offsets= 420 (840) */
/* 422 */ NdrFcShort( 0xffffffff ), /* Offsets= -1 (421) */
/* 424 */
FC_BOGUS_ARRAY */
/* 426 */ NdrFcShort( 0x0 ), /* 0x21, /*
/* 428 */ 0x19, /* Correlation desc: field pointer, FC_ULONG
/* 430 */ NdrFcShort( 0x0 ), /* 0 */
/* 432 */ NdrFcShort( 0x1 ), /* Correlation flags: early, */
/* 434 */ NdrFCLong( 0xffffffff ), /* -1 */
/* 438 */ NdrFcShort( 0x0 ), /* Correlation flags:
/* 440 */
/* 442 */ NdrFcShort( 0xffffffff7 ), /* 0x12, 0x0, /* FC_UP */
/* 444 */ 0x5c, /* Offsets= -140 (302) */
/* 446 */ 0x5b, /* FC_PAD */
/* 448 */ 0x1a, /* FC_END */
FC_BOGUS_STRUCT */
/* 448 */ NdrFcShort( 0x10 ), /* 0x3, /*
/* 450 */ NdrFcShort( 0x0 ), /* 450 */
/* 452 */ NdrFcShort( 0x6 ), /* Offsets= 6 (458) */
/* 454 */ 0x8, /* FC_LONG */
/* 456 */ 0x36, /* FC_ALIGNM8
/* 458 */ 0x5b, /* FC_POINTER */
/* 460 */ NdrFcShort( 0xffffffffdc ), /* 0x11, 0x0, /* FC_RP */
/* 462 */ /* Offsets= -36 (424) */
FC_BOGUS_ARRAY */
/* 464 */ NdrFcShort( 0x0 ), /* 0x21, /*
/* 466 */ 0x19, /* Correlation desc: field pointer, FC_ULONG
/* 468 */ NdrFcShort( 0x0 ), /* 0 */
/* 470 */ NdrFcShort( 0x1 ), /* Correlation flags: early, */
/* 472 */ NdrFCLong( 0xffffffff ), /* -1 */
/* 476 */ NdrFcShort( 0x0 ), /* Correlation flags:
/* 478 */ 0x4c, /* FC_EMBEDDED_COMPLEX */
/* 480 */ NdrFcShort( 0xffffffff58 ), /* 0x0, /*
/* 482 */ 0x5c, /* Offsets= -168 (312) */
/* 484 */ 0x5b, /* FC_PAD */
/* 486 */ 0x1a, /* FC_END */
FC_BOGUS_STRUCT */
/* 486 */ NdrFcShort( 0x10 ), /* 0x3, /*
/* 488 */ NdrFcShort( 0x0 ), /* 488 */
/* 490 */ NdrFcShort( 0x6 ), /* Offsets= 6 (496) */
/* 492 */ 0x8, /* FC_LONG */
/* 494 */ 0x36, /* FC_ALIGNM8
/* 496 */ 0x5b, /* FC_POINTER */
/* 498 */ NdrFcShort( 0xffffffffdc ), /* 0x11, 0x0, /* FC_RP */
/* 500 */ /* Offsets= -36 (462) */
FC_BOGUS_ARRAY */
/* 502 */ NdrFcShort( 0x0 ), /* 0x21, /*
/* 504 */ 0x19, /* Correlation desc: field pointer, FC_ULONG
/* 506 */ NdrFcShort( 0x0 ), /* 0 */
/* 508 */ NdrFcShort( 0x1 ), /* Correlation flags: early, */
/* 510 */ NdrFCLong( 0xffffffff ), /* -1 */
/* 514 */ NdrFcShort( 0x0 ), /* Correlation flags:
/* 516 */ 0x4c, /* FC_EMBEDDED_COMPLEX */
/* 518 */ NdrFcShort( 0xffffffff44 ), /* 0x0, /*
/* 520 */ 0x5c, /* Offsets= -188 (330) */
/* 522 */ 0x5b, /* FC_PAD */
/* 524 */ 0x5b, /* FC_END */

```



```

/* 874 */
/*
/* 876 */ 0xa, /* FC_FLOAT */
/* 878 */ 0x12, 0x8, /* FC_UP [simple_pointer]
/*
/* 880 */ 0xc, /* FC_DOUBLE */
/* 882 */ 0x5c, /* FC_PAD */
/* 884 */ NdrFcShort( 0xffffda4 ), /* 0x12, 0x0, /* FC_UP */
/* 886 */ /* Offset= -604 (280) */
/* 888 */ NdrFcShort( 0xffffda6 ), /* 0x12, 0x10, /* FC_UP [pointer_deref]
/* 890 */ /* Offset= -602 (286) */
/* 892 */ NdrFcShort( 0xffffdbc ), /* 0x12, 0x10, /* FC_UP [pointer_deref]
/* 894 */ /* Offset= -580 (312) */
/* 896 */ NdrFcShort( 0xffffdca ), /* 0x12, 0x10, /* FC_UP [pointer_deref]
/* 898 */ /* Offset= -566 (330) */
/* 900 */ NdrFcShort( 0xffffdd8 ), /* 0x12, 0x10, /* FC_UP [pointer_deref]
/* 902 */ /* Offset= -552 (348) */
/* 904 */ NdrFcShort( 0x2 ), /* 0x12, 0x0, /* FC_UP */
/* 906 */ /* Offset= 2 (906) */
/* 908 */ NdrFcShort( 0x16 ), /* 0x12, 0x0, /* FC_UP */
/* 910 */ /* Offset= 22 (930) */
/*
/* 912 */ NdrFcShort( 0x10 ), /* 0x15, /* FC_STRUCTURE
/* 914 */ 0x6, /* 0x7, /* 7 */
/* 916 */ 0x1, /* 0x16 */
/* 918 */ 0x8, /* 0x1, /* FC_SHORT */
/* 920 */ 0xb, /* 0x1, /* FC_BYTE */
/* 922 */ /* 0x38, /* FC_ALIGNM4
/* 924 */ NdrFcShort( 0xfffffd2 ), /* 0x8, /* FC_LONG */
/* 926 */ /* 0x39, /* FC_ALIGNM8
/* 928 */ 0x2, /* 0x12, 0x0, /* FC_UP */
/* 930 */ /* Offset= -14 (910) */
/* 932 */ 0x1a, /* 0x12, 0x8, /* FC_UP [simple_pointer]
/* 934 */ /* FC_CHAR */
/* 936 */ /* FC_PAD */
/* 938 */ 0x1a, /* FC_PAD */
/* 940 */ 0x6, /* 0x7, /* 7 */
/* 942 */ 0x6, /* 0x32 */
/* 944 */ 0x4c, /* 0x0, /* FC_LONG */
/* 946 */ NdrFcShort( 0xfffffc54 ), /* 0x8, /* FC_LONG */
/* 948 */ 0x5c, /* 0x8, /* FC_SHORT */
/* 950 */ 0xb4, /* 0x6, /* FC_SHORT */
/* 952 */ NdrFcShort( 0x0 ), /* 0x6, /* FC_SHORT */
/* 954 */ NdrFcShort( 0x18 ), /* 0x6, /* FC_SHORT */
/* 956 */ NdrFcShort( 0x0 ), /* 0x6, /* FC_SHORT */
/* 958 */ NdrFcShort( 0xfffffc44 ), /* 0x6, /* FC_SHORT */
/* 960 */ /* Offset= -956 (2) */
/* 962 */ NdrFcShort( 0x6 ), /* 0x11, 0x4, /* FC_RP
/* 964 */ /* Offset= 6 (968) */
/* 966 */ NdrFcShort( 0xfffffdc ), /* 0x13, 0x0, /* FC_OP */
/* 968 */ 0xb4, /* 0x13, 0x0, /* FC_OP */
/* 970 */ NdrFcShort( 0x0 ), /* 0x83, /* FC_USER_MARSHAL */
/* 972 */ NdrFcShort( 0x18 ), /* 0x83, /* FC_USER_MARSHAL */
/* 974 */ NdrFcShort( 0x0 ), /* 0x83, /* FC_USER_MARSHAL */
/* 976 */ NdrFcShort( 0xffffff4 ), /* 0x83, /* FC_USER_MARSHAL */
/* Offset= -12 (964) */
0x0
}
};

```

```

const CInterfaceProxyVtbl * _tpcc_com_ps_ProxyVtblList[] =
{
    ( CInterfaceProxyVtbl *) &ITPCCProxyVtbl,
};
const CInterfaceStubVtbl * _tpcc_com_ps_StubVtblList[] =
{
    ( CInterfaceStubVtbl *) &ITPCCStubVtbl,
};

```

```

0
};
PCInterfaceName const _tpcc_com_ps_InterfaceNamesList[] =
{
    "ITPCC",
    0
};
#define _tpcc_com_ps_CHECK_IID(n) IID_GENERIC_CHECK_IID( _tpcc_com_ps,
pIID, n)
int _stdcall _tpcc_com_ps_IID_Lookup( const IID * pIID, int * pIndex )
{
    if(!_tpcc_com_ps_CHECK_IID(0))
    {
        *pIndex = 0;
        return 1;
    }
    return 0;
}
const ExtendedProxyFileInfo tpcc_com_ps_ProxyFileInfo =
{
    (CInterfaceProxyVtblList *) &_tpcc_com_ps_ProxyVtblList,
    (CInterfaceStubVtblList *) &_tpcc_com_ps_StubVtblList,
    (const PCInterfaceName *) &_tpcc_com_ps_InterfaceNamesList,
    0, // no delegation
    &_tpcc_com_ps_IID_Lookup,
    1,
    2,
    0, /* table of [async_uid] interfaces */
    0, /* Filler1 */
    0, /* Filler2 */
    0 /* Filler3 */
};
#endif /* defined(_M_IA64) || defined(_M_AXP64) */

```

Appendix B : Database Design

Build Scripts

setup.cmd

```
::@ECHO OFF
*****
@ECHO *
*
@ECHO * Microsoft TPC-C V3 Benchmark Kit Ver. IA-64
*
@ECHO *
*
@ECHO *****
*****

@rem if not "%PROCESSOR_ARCHITECTURE%" == 'IA64' goto wrongOS

@if '%1'==' ' goto usage
@if '%2'==' ' goto usage
@if '%3'==' ' goto usage
@if not '%4'==' ' if not '%4' == 'normal' if not '%4' == 'scale_down' goto usage

:: Cleanup any old .err files
@if exist logs\*.err del logs\*.err
>nul

@if '%3'=='full' goto start
@if '%3'=='bulddb' goto bulddb
@if '%3'=='objects' goto objects
@if '%3'=='bulkload' goto bulkload
@if '%3'=='objectsfull' goto objects
@if '%3'=='bulkloadfull' goto bulkload
@if '%3'=='backup' goto backup
goto usage

:start
:: Cleanup the logs directory...
@if exist logs\version.log del logs\version.log
>nul
@if exist logs\db.log del logs\db.log
>nul
@if exist logs\objects.log del logs\objects.log
>nul
@if exist logs\objects.log del logs\objects.log
>nul
@if exist logs\bulkload.log del logs\bulkload.log
>nul
@if exist logs\backup.log del logs\backup.log
>nul

@osql -usa -P -S%1 -Q"select @@version"
> logs\version.log
@osql -usa -P -S%1 -Q"select getdate()"
>> logs\version.log

:bulddb
@if exist logs\db.log del logs\db.log
>nul
@ECHO Removing any existing TPC-C database and backup devices...
@osql -usa -P -S%1 -usa -P < scripts\%2.war\database\removedb.sql >
logs\db.log
@ECHO Creating Backup Device(s)...
@osql -usa -P -S%1 -usa -P < scripts\%2.war\database\backupdev.sql >>
logs\db.log
@if errorlevel 1 goto CREATE_ERROR
@ECHO Building database files and database...
@osql -usa -P -S%1 -b -usa -P < scripts\%2.war\database\createdb.sql
>> logs\db.log
@if errorlevel 1 goto CREATE_ERROR
@ECHO Database build complete.
@if '%3'=='full' goto objects
```

```
goto end

:objects
@if exist logs\objects.log del logs\objects.log
>nul
@ECHO Creating TPC-C database tables...
@osql -usa -P -S%1 -b -usa -P < scripts\%2.war\ddl\tables.sql
> logs\objects.log
@if errorlevel 1 goto TABLES_ERROR
@ECHO Creating database objects...
@osql -usa -P -S%1 -b -usa -P < scripts\dm1\neword.sql
>> logs\objects.log
@if errorlevel 1 goto NEWORDER_ERROR
@osql -usa -P -S%1 -b -usa -P < scripts\dm1\payment.sql
>> logs\objects.log
@if errorlevel 1 goto PAYMENT_ERROR
@osql -usa -P -S%1 -b -usa -P < scripts\dm1\ordstat.sql
>> logs\objects.log
@if errorlevel 1 goto ORDERSTATUS_ERROR
@osql -usa -P -S%1 -b -usa -P < scripts\dm1\delivery.sql
>> logs\objects.log
@if errorlevel 1 goto DELIVERY_ERROR
@osql -usa -P -S%1 -b -usa -P < scripts\dm1\stocklev.sql
>> logs\objects.log
@if errorlevel 1 goto STOCKLEVEL_ERROR
@osql -usa -P -S%1 -usa -P < scripts\dm1\version.sql
>> logs\objects.log
@ECHO Database object creation complete.
@if '%3'=='full' goto bulkload
@if '%3'=='objectsfull' goto bulkload
goto end

:bulkload
@if exist logs\bulkload.log del logs\bulkload.log
>nul
@ECHO Setting database options before load...
@osql -usa -P -S%1 -b -usa -P < scripts\utility\dbopt1.sql
>> logs\objects.log
@if errorlevel 1 goto DBOPT1_ERROR
@ECHO Beginning data load and index creation...
@osql -usa -P -S%1 -b -usa -P < scripts\%2.war\ddl\idxhisc1.sql
> logs\idxhisc1.log
@if '%4'==' ' loader\IA64\bin\tpccldr -S%1 -W%2 -flogs\bulkload.log -
dscripts\%2.war\ddl -c0
@if errorlevel 1 goto END
@if '%4'=='normal' loader\IA64\bin\tpccldr -S%1 -W%2 -flogs\bulkload.log -
dscripts\%2.war\ddl -c0
@if errorlevel 1 goto END
@if '%4'=='scale_down' loader\IA64\bin\tpccldr -S%1 -W%2 -flogs\bulkload.log -
dscripts\%2.war\ddl -c1
@if errorlevel 1 goto END
goto bulkloaddone
:bulkloaddone
@ECHO Setting database options after load...
@osql -usa -P -S%1 -b -usa -P < scripts\utility\dbopt2.sql
>> logs\bulkload.log
@if errorlevel 1 goto DBOPT2_ERROR
@ECHO Data load and index creation complete.

@ECHO.
@ECHO Calculating initial database space usage...
@cd.. \acid\space
@call space.cmd %1
@cd.. \.. \setup

@if '%3'=='full' goto backup
@if '%3'=='objectsfull' goto backup
@if '%3'=='bulkloadfull' goto backup
goto end

:backup
@if exist logs\backup.log del logs\backup.log
>nul
@ECHO Backing up database...
@osql -usa -P -S%1 -b -usa -P < scripts\%2.war\database\backup.sql >
logs\backup.log
@if errorlevel 1 goto BACKUP_ERROR
@ECHO Database backup complete.
@if '%3'=='full' goto verifyload
@if '%3'=='objectsfull' goto verifyload
@if '%3'=='bulkloadfull' goto verifyload
goto complete

:verifyload
```

```
@if exist logs\verifyload.log del logs\verifyload.log
>nul
@ECHO Verifying TPC-C database load...
@osql -usa -P -S%1 -b -usa -P < scripts\utility\verifytpccload.sql
> logs\verifyload.log
@if errorlevel 1 goto VERIFY_ERROR
@ECHO Check logs\verifyload.log to verify database load.

:complete
@ECHO
*****
@ECHO *
*
@ECHO * TPC-C V3 build complete. Check logs directory for setup errors.
*
@ECHO *
*
@ECHO *****
*****

goto end

:usage
@ECHO *****
@ECHO *
@ECHO * The TPC-C setup command file requires the following parameters:
@ECHO *
@ECHO * setup SERVER NUMWAR BLDLOPT VERSION DBTYPE
@ECHO *
@ECHO * SERVER = machine name of server (use "" for local server)
@ECHO * NUMWAR = number of warehouses
@ECHO * BLDLOPT = full, bulddb, objects, objectsfull, bulkload,
@ECHO * bulkloadfull, or backup
@ECHO * DBTYPE = normal or scale_down
@ECHO *
@ECHO * Note #1: the BLDLOPT and VERSION parameters are case sensitive.
@ECHO *
@ECHO * Note #2: the DBTYPE is optional. If no DBTYPE is specified, SETUP
@ECHO * will default to NORMAL.
@ECHO *
@ECHO * Example:
@ECHO *
@ECHO * The following command would be used to build a complete 200
@ECHO * warehouse database on SQL Server 7.0 running on server \\myserver.
@ECHO *
@ECHO * SETUP myserver 200 full
@ECHO *
@ECHO * NOTE 1: This command file does a backup of the database by default
@ECHO * after the database build process is complete. If you do not wish
@ECHO * to make a backup (strongly discouraged), you must edit this file
@ECHO * and comment that section out. Also, if you need to run the dbcheck
@ECHO * and the dbtables scripts on the fresh database load for an audit,
@ECHO * you must either run them manually or edit this file to include them.
@ECHO *
@ECHO * NOTE 2: The TPC-C setup program supports both Intel and Alpha
@ECHO * systems. It queries the %PROCESSOR_ARCHITECTURE% environment
@ECHO * variable and runs the appropriate executables.
@ECHO *
@ECHO *****
@goto end

:CREATE_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error in the database/backup device creation.
@echo.
@echo Check your CREATEDB.SQL, BACKUPDEV.SQL, LOGS\DB.LOG, and the
@echo SQL Server errorlog (PROGRAM FILES\MICROSOFT SQL
SERVER\MSSQL\LOG\ERRORLOG) for details.
@goto END

:TABLES_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error in the table creation.
@echo.
@echo Verify that the FileGroup names specified in CREATEDB.SQL
@echo match those specified in SCRIPTS\DDL\TABLES.SQL.
@echo.
@goto END
```

```

:NEWORDER_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error in the creation of the New Order stored procedure.
@echo.
@echo Check your LOGS\OBJECTS.LOG, SCRIPTS\DML\NEWORD.SQL and the
@echo SQL Server errorlog (PROGRAM FILES\MICROSOFT SQL
SERVER\MSSQL\LOG\ERRORLOG) for details.
@echo.
@goto END

:PAYMENT_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error in the creation of the Payment stored procedure.
@echo.
@echo Check your LOGS\OBJECTS.LOG, SCRIPTS\DML\PAYMENT.SQL and the
@echo SQL Server errorlog (PROGRAM FILES\MICROSOFT SQL
SERVER\MSSQL\LOG\ERRORLOG) for details.
@echo.
@goto END

:ORDERSTATUS_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error in the creation of the Order Status stored procedure.
@echo.
@echo Check your LOGS\OBJECTS.LOG, SCRIPTS\DML\ORDSTAT.SQL and the
@echo SQL Server errorlog (PROGRAM FILES\MICROSOFT SQL
SERVER\MSSQL\LOG\ERRORLOG) for details.
@echo.
@goto END

:DELIVERY_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error in the creation of the Delivery stored procedure.
@echo.
@echo Check your LOGS\OBJECTS.LOG, SCRIPTS\DML\DELIVERY.SQL and the
@echo SQL Server errorlog (PROGRAM FILES\MICROSOFT SQL
SERVER\MSSQL\LOG\ERRORLOG) for details.
@echo.
@goto END

:STOCKLEVEL_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error in the creation of the Stock Level stored procedure.
@echo.
@echo Check your LOGS\OBJECTS.LOG, SCRIPTS\DML\STOCKLEV.SQL and the
@echo SQL Server errorlog (PROGRAM FILES\MICROSOFT SQL
SERVER\MSSQL\LOG\ERRORLOG) for details.
@echo.
@goto END

:DBOPT1_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error setting the database options before load.
@echo.
@echo Check your LOGS\OBJECTS.LOG and the SQL Server errorlog
@echo (PROGRAM FILES\MICROSOFT SQL SERVER\MSSQL\LOG\ERRORLOG) for details.
@echo.
@goto END

:DBOPT2_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error setting the database options after load.
@echo.
@echo Check your LOGS\OBJECTS.LOG and the SQL Server errorlog
@echo (MSSQL7\LOG\ERRORLOG) for details.
@echo.
@goto END

:BACKUP_ERROR

```

```

@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error backing up the database after load.
@echo.
@echo Check your LOGS\BACKUP.LOG and the SQL Server errorlog
@echo (PROGRAM FILES\MICROSOFT SQL SERVER\MSSQL\LOG\ERRORLOG) for details.
@echo.
@goto END

:VERIFY_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error performing TPC-C database verification.
@echo.
@echo Check your LOGS\VERIFYLOAD.LOG and the SQL Server errorlog
@echo (MSSQL7\LOG\ERRORLOG) for details.
@echo.
@goto END

:WRONGOS
@echo.
@echo BUILD ABORTED!
@echo.
@echo This version of the Microsoft TPC-C kit is for use with SQL Server IA-64
ONLY!
@echo Please check http://msqlperf.rte.microsoft.com for the latest Microsoft
TPC-C
@echo kit for use on non IA-64 systems.
@echo.
@goto END

:end

echo on

```

backup.sql

```

dump database tpcc to
tpccback01,
tpccback02,
tpccback03,
tpccback04,
tpccback05,
tpccback06,
tpccback07,
tpccback08,
tpccback09,
tpccback10,
tpccback11,
tpccback12,
tpccback13,
tpccback14,
tpccback15,
tpccback16,
tpccback17,
tpccback18,
tpccback19,
tpccback20,
tpccback21,
tpccback22,
tpccback23,
tpccback24,
tpccback25,
tpccback26,
tpccback27
with init, stats=1

dump database tpcc to
tpccback28,
tpccback29,
tpccback30,
tpccback31,
tpccback32,
tpccback33,
tpccback34,
tpccback35,
tpccback36,
tpccback37,
tpccback38,
tpccback39,

```

```

tpccback40,
tpccback41,
tpccback42,
tpccback43,
tpccback44,
tpccback45,
tpccback46,
tpccback47,
tpccback48,
tpccback49,
tpccback50,
tpccback51,
tpccback52,
tpccback53,
tpccback54
with init, stats = 1
go

dump database tpcc to
tpccback55,
tpccback56,
tpccback57,
tpccback58,
tpccback59,
tpccback60,
tpccback61,
tpccback62,
tpccback63,
tpccback64,
tpccback65,
tpccback66,
tpccback67,
tpccback68,
tpccback69,
tpccback70,
tpccback71,
tpccback72,
tpccback73,
tpccback74,
tpccback75,
tpccback76,
tpccback77,
tpccback78,
tpccback79,
tpccback80
with init, stats = 1
go

-- File: BACKUPDEV.B
-- Microsoft TPC-C Benchmark Kit Ver. 4.41
-- Copyright Microsoft, 2001
-- Purpose: Creates tpcc database Backup Devices

use master
go

-- create backup devices

exec sp_addumpdevice 'disk', 'tpccback01', 'z:\dev\b001\tpccback01.dmp'
exec sp_addumpdevice 'disk', 'tpccback02', 'z:\dev\b002\tpccback02.dmp'
exec sp_addumpdevice 'disk', 'tpccback03', 'z:\dev\b003\tpccback03.dmp'
exec sp_addumpdevice 'disk', 'tpccback04', 'z:\dev\b004\tpccback04.dmp'
exec sp_addumpdevice 'disk', 'tpccback05', 'z:\dev\b005\tpccback05.dmp'
exec sp_addumpdevice 'disk', 'tpccback06', 'z:\dev\b006\tpccback06.dmp'
exec sp_addumpdevice 'disk', 'tpccback07', 'z:\dev\b007\tpccback07.dmp'
exec sp_addumpdevice 'disk', 'tpccback08', 'z:\dev\b008\tpccback08.dmp'
exec sp_addumpdevice 'disk', 'tpccback09', 'z:\dev\b009\tpccback09.dmp'
exec sp_addumpdevice 'disk', 'tpccback10', 'z:\dev\b010\tpccback10.dmp'
exec sp_addumpdevice 'disk', 'tpccback11', 'z:\dev\b011\tpccback11.dmp'
exec sp_addumpdevice 'disk', 'tpccback12', 'z:\dev\b012\tpccback12.dmp'
exec sp_addumpdevice 'disk', 'tpccback13', 'z:\dev\b013\tpccback13.dmp'
exec sp_addumpdevice 'disk', 'tpccback14', 'z:\dev\b014\tpccback14.dmp'
exec sp_addumpdevice 'disk', 'tpccback15', 'z:\dev\b015\tpccback15.dmp'
exec sp_addumpdevice 'disk', 'tpccback16', 'z:\dev\b016\tpccback16.dmp'
exec sp_addumpdevice 'disk', 'tpccback17', 'z:\dev\b017\tpccback17.dmp'
exec sp_addumpdevice 'disk', 'tpccback18', 'z:\dev\b018\tpccback18.dmp'
exec sp_addumpdevice 'disk', 'tpccback19', 'z:\dev\b019\tpccback19.dmp'
exec sp_addumpdevice 'disk', 'tpccback20', 'z:\dev\b020\tpccback20.dmp'

```

backupdev.sql


```
(NAME=MSSQL_cs66, FILENAME='z:\dev\c066', SIZE=30000MB, FILEGROWTH=0),
(NAME=MSSQL_cs67, FILENAME='z:\dev\c067', SIZE=30000MB, FILEGROWTH=0),
(NAME=MSSQL_cs68, FILENAME='z:\dev\c068', SIZE=30000MB, FILEGROWTH=0),
(NAME=MSSQL_cs69, FILENAME='z:\dev\c069', SIZE=30000MB, FILEGROWTH=0),
(NAME=MSSQL_cs70, FILENAME='z:\dev\c070', SIZE=30000MB, FILEGROWTH=0),
(NAME=MSSQL_cs71, FILENAME='z:\dev\c071', SIZE=30000MB, FILEGROWTH=0),
(NAME=MSSQL_cs72, FILENAME='z:\dev\c072', SIZE=30000MB, FILEGROWTH=0),
(NAME=MSSQL_cs73, FILENAME='z:\dev\c073', SIZE=30000MB, FILEGROWTH=0),
(NAME=MSSQL_cs74, FILENAME='z:\dev\c074', SIZE=30000MB, FILEGROWTH=0),
(NAME=MSSQL_cs75, FILENAME='z:\dev\c075', SIZE=30000MB, FILEGROWTH=0),
(NAME=MSSQL_cs76, FILENAME='z:\dev\c076', SIZE=30000MB, FILEGROWTH=0),
(NAME=MSSQL_cs77, FILENAME='z:\dev\c077', SIZE=30000MB, FILEGROWTH=0),
(NAME=MSSQL_cs78, FILENAME='z:\dev\c078', SIZE=30000MB, FILEGROWTH=0),
(NAME=MSSQL_cs79, FILENAME='z:\dev\c079', SIZE=30000MB, FILEGROWTH=0),
(NAME=MSSQL_cs80, FILENAME='z:\dev\c080', SIZE=30000MB, FILEGROWTH=0)
LOG ON
(NAME=MSSQL_tpcc_log, FILENAME='z:\dev\log\', SIZE=200000MB, FILEGROWTH=0),
(NAME=MSSQL_tpcc_log2, FILENAME='z:\dev\log2\', SIZE=200000MB, FILEGROWTH=0)
COLLATE Latin1_General_BIN
go

-- Store ending time
update tpcc_timer
set end_date = (select convert(char(30), getdate(),9))
go

select "Elapsed time (in seconds): ", datediff(second,(select start_date from
tpcc_timer),(select end_date from tpcc_timer))

-- remove temporary table

if exists ( select name from sysobjects where name = 'tpcc_timer' )
drop table tpcc_timer
go
```

dbopt1.sql

```
-- File: DBOPT1.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.41
-- Copyright Microsoft, 2001
-- Purpose: Sets database options for data load
```

```
use master
go

exec sp_dboption tpcc,'select into/bulkcopy',true
exec sp_dboption tpcc,'trunc. log on chkpt.',true
exec sp_dboption tpcc,'torn page detection',false
go

use tpcc
go

checkpoint
go
```

dbopt2.sql

```
-- File: DBOPT2.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.41
-- Copyright Microsoft, 2001
-- Purpose: Resets database options after data load
```

```
exec sp_dboption tpcc,'select into/bulkcopy',false
exec sp_dboption tpcc,'trunc. log on chkpt.',false
exec sp_dboption tpcc,'torn page detection',false
go
```

```
USE tpcc
GO
```

```
CHECKPOINT
GO

sp_configure 'allow updates',1
go

RECONFIGURE WITH OVERRIDE
GO

DECLARE @msg varchar(50)

--
-- OPTIONS FOR SQL SERVER 2000
-- Set option values for user-defined indexes --
--

SET @msg = ' '
PRINT @msg
SET @msg = 'Setting SQL Server indexoptions'
PRINT @msg
SET @msg = ' '
PRINT @msg

EXEC sp_indexoption 'customer', 'DisallowPageLocks', TRUE
EXEC sp_indexoption 'district', 'DisallowPageLocks', TRUE
EXEC sp_indexoption 'warehouse', 'DisallowPageLocks', TRUE
EXEC sp_indexoption 'stock', 'DisallowPageLocks', TRUE
EXEC sp_indexoption 'order_line', 'DisallowRowLocks', TRUE
EXEC sp_indexoption 'orders', 'DisallowRowLocks', TRUE
EXEC sp_indexoption 'new_order', 'DisallowRowLocks', TRUE
EXEC sp_indexoption 'item', 'DisallowRowLocks', TRUE
EXEC sp_indexoption 'item', 'DisallowPageLocks', TRUE
GO
```

```
Print ' '
Print '*****'
Print 'Pre-specified Locking Hierarchy:'
Print ' LockFlag = 0 ==> No pre-specified hierarchy'
Print ' LockFlag = 1 ==> Lock at Page-level then Table-level'
Print ' LockFlag = 2 ==> Lock at Row-level then Table-level'
Print ' LockFlag = 3 ==> Lock at Table-level'
Print ' '
```

```
SELECT name,lockflags
FROM sysindexes
WHERE object_id('warehouse') = id OR
object_id('district') = id OR
object_id('customer') = id OR
object_id('stock') = id OR
object_id('orders') = id OR
object_id('order_line') = id OR
object_id('history') = id OR
object_id('new_order') = id OR
object_id('item') = id
```

```
ORDER BY lockflags asc
GO
```

```
sp_configure 'allow updates',0
go
```

```
RECONFIGURE WITH OVERRIDE
GO

EXEC sp_dboption tpcc, 'auto update statistics', FALSE
EXEC sp_dboption tpcc, 'auto create statistics', FALSE
go
```

```
EXEC sp_tableoption 'district', 'pintable',true
EXEC sp_tableoption 'warehouse', 'pintable',true
EXEC sp_tableoption 'new_order', 'pintable',true
EXEC sp_tableoption 'item', 'pintable',true
go
```

idxcuscl.sql

```
-- File: IDXCUSCL.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.41
-- Copyright Microsoft, 2001
-- Purpose: Creates clustered index on customer table
```

```
use tpcc
go

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

if exists ( select name from sysindexes where name = 'customer_c1' )
drop index customer.customer_c1

create unique clustered index customer_c1 on customer(c_w_id, c_d_id, c_id)
on MSSQL_cs_fg

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

go
```

idxcusnc.sql

```
-- File: IDXCUSNC.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.41
-- Copyright Microsoft, 2001
-- Purpose: Creates non-clustered index on customer table
```

```
use tpcc
go

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

if exists ( select name from sysindexes where name = 'customer_nc1' )
drop index customer.customer_nc1

create unique nonclustered index customer_nc1 on customer(c_w_id, c_d_id, c_last,
c_first, c_id)
on MSSQL_cs_fg

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

go
```

idxdiscl.sql

```
-- File: IDXDISCL.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.41
-- Copyright Microsoft, 2001
-- Purpose: Creates clustered index on district table
```

```
use tpcc
go

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

if exists ( select name from sysindexes where name = 'district_c1' )
drop index district.district_c1

create unique clustered index district_c1 on district(d_w_id, d_id)
with fillfactor=100 on MSSQL_misc_fg

select @enddate = getdate()
```

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

go
```

idxhiscl.sql

```
-- File:      IDXHISCL.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.41
--           Copyright Microsoft, 2001
-- Purpose:   Creates clustered index on history table
--
-- CAUTION:  *****
-- CAUTION:  This index is only beneficial for systems
-- CAUTION:  with 8 or more processors.
-- CAUTION:  It may negatively impact performance on
-- CAUTION:  on systems with less than 8 processors.
-- CAUTION:  *****
```

```
use tpcc
go

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

```
if exists ( select name from sysindexes where name = 'history_c1' )
drop index history.history_c1
```

```
create unique clustered index history_c1 on history(h_c_w_id, h_date, h_c_d_id,
h_c_id, h_amount)
on MSSQL_misc_fg
```

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

go
```

idxitmcl.sql

```
-- File:      IDXITMCL.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.41
--           Copyright Microsoft, 2001
-- Purpose:   Creates clustered index on item table
```

```
use tpcc
go

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

```
if exists ( select name from sysindexes where name = 'item_c1' )
drop index item.item_c1
```

```
create unique clustered index item_c1 on item(i_id)
on MSSQL_misc_fg
```

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

go
```

idxnodcl.sql

```
-- File:      IDXNODCL.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.41
--           Copyright Microsoft, 2001
-- Purpose:   Creates clustered index on new_order table
```

```
use tpcc
go

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

```
if exists ( select name from sysindexes where name = 'new_order_c1' )
drop index new_order.new_order_c1
```

```
create unique clustered index new_order_c1 on new_order(no_w_id, no_d_id,
no_o_id)
on MSSQL_misc_fg
```

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

go
```

idxodlcl.sql

```
-- File:      IDXODLCL.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.41
--           Copyright Microsoft, 2001
-- Purpose:   Creates clustered index on order_line table
```

```
use tpcc
go

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

```
if exists ( select name from sysindexes where name = 'order_line_c1' )
drop index order_line.order_line_c1
```

```
create unique clustered index order_line_c1 on order_line(o_l_w_id, o_l_d_id,
o_l_o_id, o_l_number)
on MSSQL_misc_fg
```

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

go
```

idxordcl.sql

```
-- File:      IDXORDCL.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.41
--           Copyright Microsoft, 2001
-- Purpose:   Creates clustered index on orders table
```

```
use tpcc
go

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

```
if exists ( select name from sysindexes where name = 'orders_c1' )
drop index orders.orders_c1
```

```
create unique clustered index orders_c1 on orders(o_w_id, o_d_id, o_id)
on MSSQL_misc_fg
```

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

go
```

idxordnc.sql

```
-- File:      IDXORDNC.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.41
--           Copyright Microsoft, 2001
-- Purpose:   Creates non-clustered index on orders table
```

```
use tpcc
go

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

```
if exists ( select name from sysindexes where name = 'orders_nc1' )
drop index orders.orders_nc1
```

```
create index orders_nc1 on orders(o_w_id, o_d_id, o_c_id, o_id)
on MSSQL_misc_fg
```

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

go
```

idxstkcl.sql

```
-- File:      IDXSTKCL.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.41
--           Copyright Microsoft, 2001
-- Purpose:   Creates clustered index on stock table
```

```
use tpcc
go

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

```
if exists ( select name from sysindexes where name = 'stock_c1' )
drop index stock.stock_c1
```

```
create unique clustered index stock_c1 on stock(s_i_id, s_w_id)
on MSSQL_cs_fg
```

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

go
```

idxwarcl.sql

```
-- File:      IDXWARCL.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.41
--           Copyright Microsoft, 2001
-- Purpose:   Creates clustered index on warehouse table

use tpcc
go

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

if exists ( select name from sysindexes where name = 'warehouse_c1' )
    drop index warehouse.warehouse_c1

create unique clustered index warehouse_c1 on warehouse(w_id)
    with fillfactor=100 on MSSQL_misc_fg

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

go
```

removedb.sql

```
-- File:      REMOVEDB.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.41
--           Copyright Microsoft, 2001
-- Purpose:   Removes tpcc database and backup files

use master
go

-- remove any existing database and backup files

exec sp_dbrremove tpcc, dropdev
go

exec sp_dropdevice 'tpccback01'
exec sp_dropdevice 'tpccback02'
exec sp_dropdevice 'tpccback03'
exec sp_dropdevice 'tpccback04'
exec sp_dropdevice 'tpccback05'
exec sp_dropdevice 'tpccback06'
exec sp_dropdevice 'tpccback07'
exec sp_dropdevice 'tpccback08'
exec sp_dropdevice 'tpccback09'
exec sp_dropdevice 'tpccback10'
exec sp_dropdevice 'tpccback11'
exec sp_dropdevice 'tpccback12'
exec sp_dropdevice 'tpccback13'
exec sp_dropdevice 'tpccback14'
exec sp_dropdevice 'tpccback15'
exec sp_dropdevice 'tpccback16'
exec sp_dropdevice 'tpccback17'
exec sp_dropdevice 'tpccback18'
exec sp_dropdevice 'tpccback19'
exec sp_dropdevice 'tpccback20'
exec sp_dropdevice 'tpccback21'
exec sp_dropdevice 'tpccback22'
exec sp_dropdevice 'tpccback23'
exec sp_dropdevice 'tpccback24'
exec sp_dropdevice 'tpccback25'
exec sp_dropdevice 'tpccback26'
exec sp_dropdevice 'tpccback27'
exec sp_dropdevice 'tpccback28'
exec sp_dropdevice 'tpccback29'
exec sp_dropdevice 'tpccback30'
exec sp_dropdevice 'tpccback31'
exec sp_dropdevice 'tpccback32'
exec sp_dropdevice 'tpccback33'
```

```
exec sp_dropdevice 'tpccback34'
exec sp_dropdevice 'tpccback35'
exec sp_dropdevice 'tpccback36'
exec sp_dropdevice 'tpccback37'
exec sp_dropdevice 'tpccback38'
exec sp_dropdevice 'tpccback39'
exec sp_dropdevice 'tpccback40'
exec sp_dropdevice 'tpccback41'
exec sp_dropdevice 'tpccback42'
exec sp_dropdevice 'tpccback43'
exec sp_dropdevice 'tpccback44'
exec sp_dropdevice 'tpccback45'
exec sp_dropdevice 'tpccback46'
exec sp_dropdevice 'tpccback47'
exec sp_dropdevice 'tpccback48'
exec sp_dropdevice 'tpccback49'
exec sp_dropdevice 'tpccback50'
exec sp_dropdevice 'tpccback51'
exec sp_dropdevice 'tpccback52'
exec sp_dropdevice 'tpccback53'
exec sp_dropdevice 'tpccback54'
exec sp_dropdevice 'tpccback55'
exec sp_dropdevice 'tpccback56'
exec sp_dropdevice 'tpccback57'
exec sp_dropdevice 'tpccback58'
exec sp_dropdevice 'tpccback59'
exec sp_dropdevice 'tpccback60'
exec sp_dropdevice 'tpccback61'
exec sp_dropdevice 'tpccback62'
exec sp_dropdevice 'tpccback63'
exec sp_dropdevice 'tpccback64'
exec sp_dropdevice 'tpccback65'
exec sp_dropdevice 'tpccback66'
exec sp_dropdevice 'tpccback67'
exec sp_dropdevice 'tpccback68'
exec sp_dropdevice 'tpccback69'
exec sp_dropdevice 'tpccback70'
exec sp_dropdevice 'tpccback71'
exec sp_dropdevice 'tpccback72'
exec sp_dropdevice 'tpccback73'
exec sp_dropdevice 'tpccback74'
exec sp_dropdevice 'tpccback75'
exec sp_dropdevice 'tpccback76'
exec sp_dropdevice 'tpccback77'
exec sp_dropdevice 'tpccback78'
exec sp_dropdevice 'tpccback79'
exec sp_dropdevice 'tpccback80'

go
```

tables.sql

```
-- File:      TABLES.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.42
--           Copyright Microsoft, 2002
-- Purpose:   Creates TPC-C tables

SET ANSI_NULL_DFLT_OFF ON
go

use tpcc
go

-- Remove all existing TPC-C tables

if exists ( select name from sysobjects where name = 'warehouse' )
    drop table warehouse
go
if exists ( select name from sysobjects where name = 'district' )
    drop table district
go
if exists ( select name from sysobjects where name = 'customer' )
    drop table customer
go
if exists ( select name from sysobjects where name = 'history' )
    drop table history
go
if exists ( select name from sysobjects where name = 'new_order' )
    drop table new_order
go
```

```
if exists ( select name from sysobjects where name = 'orders' )
    drop table orders
go
if exists ( select name from sysobjects where name = 'order_line' )
    drop table order_line
go
if exists ( select name from sysobjects where name = 'item' )
    drop table item
go
if exists ( select name from sysobjects where name = 'stock' )
    drop table stock
go

--
-- Create new tables
--

create table warehouse
(
    w_id int,
    w_name char(10),
    w_street_1 char(20),
    w_street_2 char(20),
    w_city char(20),
    w_state char(2),
    w_zip char(9),
    w_tax numeric(4,4),
    w_ytd numeric(12,2)
) on MSSQL_misc_fg
go

create table district
(
    d_id tinyint,
    d_w_id int,
    d_name char(10),
    d_street_1 char(20),
    d_street_2 char(20),
    d_city char(20),
    d_state char(2),
    d_zip char(9),
    d_tax numeric(4,4),
    d_ytd numeric(12,2),
    d_next_o_id int
) on MSSQL_misc_fg
go

create table customer
(
    c_id int,
    c_d_id tinyint,
    c_w_id int,
    c_first char(16),
    c_middle char(2),
    c_last char(16),
    c_street_1 char(20),
    c_street_2 char(20),
    c_city char(20),
    c_state char(2),
    c_zip char(9),
    c_phone char(16),
    c_since datetime,
    c_credit char(2),
    c_credit_lim numeric(12,2),
    c_discount numeric(4,4),
    c_balance numeric(12,2),
    c_ytd_payment numeric(12,2),
    c_payment_cnt smallint,
    c_delivery_cnt smallint,
    c_data char(500)
) on MSSQL_cs_fg
go

create table history
(
    h_c_id int,
    h_c_d_id tinyint,
    h_c_w_id int,
    h_d_id tinyint,
    h_w_id int,
    h_date datetime,
    h_amount numeric(6,2),
    h_data char(24)
) on MSSQL_misc_fg
```

```

go
create table new_order
(
    no_o_id          int,
    no_d_id          tinyint,
    no_w_id          int
) on MSSQL_misc_fg
go
create table orders
(
    o_id            int,
    o_d_id          tinyint,
    o_w_id          int,
    o_c_id          int,
    o_entry_d       datetime,
    o_carrier_id    tinyint,
    o_ol_cnt        tinyint,
    o_all_local     tinyint
) on MSSQL_misc_fg
go
create table order_line
(
    ol_o_id         int,
    ol_d_id         tinyint,
    ol_w_id         int,
    ol_number       tinyint,
    ol_i_id         int,
    ol_supply_w_id  int,
    ol_delivery_d   datetime,
    ol_quantity     smallint,
    ol_amount       numeric(6,2),
    ol_dist_info    char(24)
) on MSSQL_misc_fg
go
create table item
(
    i_id            int,
    i_im_id         int,
    i_name          char(24),
    i_price         numeric(5,2),
    i_data          char(50)
) on MSSQL_misc_fg
go
create table stock
(
    s_i_id         int,
    s_w_id         int,
    s_quantity     smallint,
    s_dist_01      char(24),
    s_dist_02      char(24),
    s_dist_03      char(24),
    s_dist_04      char(24),
    s_dist_05      char(24),
    s_dist_06      char(24),
    s_dist_07      char(24),
    s_dist_08      char(24),
    s_dist_09      char(24),
    s_dist_10      char(24),
    s_ytd          int,
    s_order_cnt    smallint,
    s_remote_cnt   smallint,
    s_data         char(50)
) on MSSQL_cs_fg
go

```

VerifyTpccLoad.sql

```

-- File:      VERIFYTPCCLOAD.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.41
--           Copyright Microsoft, 2001
-- Purpose:   Performs series of TPCC database checks to verify
--           that database load completed correctly

print      " "
select    convert(char(30), getdate(),9)
print      " "

```

```

use tpcc
go
-- *****
--
-- Check rows per table from SYSINDEXES
--
-- *****

print      'WAREHOUSE TABLE'

select    rowcnt
from      sysindexes
where     id = object_id("warehouse")
go

print      'DISTRICT TABLE = (10 * No of warehouses)'

select    rowcnt
from      sysindexes
where     id =object_id("district")
go

print      'ITEM TABLE = 100,000'

select    rowcnt
from      sysindexes
where     id =object_id("item")
go

print      'CUSTOMER TABLE = (30,000 * No of warehouses)'

select    rowcnt
from      sysindexes
where     id =object_id("customer")
go

print      'ORDERS TABLE = (30,000 * No of warehouses)'

select    rowcnt
from      sysindexes
where     id =object_id("orders")
go

print      'HISTORY TABLE = (30,000 * No of warehouses)'

select    rowcnt
from      sysindexes
where     id =object_id("history")
go

print      'STOCK TABLE = (100,000 * No of warehouses)'

select    rowcnt
from      sysindexes
where     id =object_id("stock")
go

print      'ORDER_LINE TABLE = (300,000 * No of warehouses + some change)'

select    rowcnt
from      sysindexes
where     id =object_id("order_line")
go

print      'NEW_ORDER TABLE = (9000 * No of warehouses)'

select    rowcnt
from      sysindexes
where     id =object_id("new_order")
go

-- *****
--
-- Check indices
--
-- *****

print      '*****Index Check*****'

use tpcc
go

```

```

sp_helpindex customer
go
sp_helpindex stock
go
sp_helpindex district
go
sp_helpindex item
go
sp_helpindex new_order
go
sp_helpindex orders
go
sp_helpindex order_line
go
sp_helpindex warehouse
go
sp_helpindex history
go

```

Stored Procedures

delivery.sql

```

-- File:      DELIVERY.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.42
--           Copyright Microsoft, 2002
-- Purpose:   Creates delivery transaction stored procedure
--
--           Interface Level: 4.10.000

use tpcc
go

if exists (select name from sysobjects where name = 'tpcc_delivery' )
drop procedure tpcc_delivery

create proc tpcc_delivery @w_id          int,
                        @o_carrier_id  smallint
as

declare @d_idtinyint,
        @o_id int,
        @c_id int,
        @total numeric(12,2),
        @oid1 int,
        @oid2 int,
        @oid3 int,
        @oid4 int,
        @oid5 int,
        @oid6 int,
        @oid7 int,
        @oid8 int,
        @oid9 int,
        @oid10 int

select @d_id = 0

begin tran d
    while (@@trancount < 10)
        begin
            select
                @d_id = @d_id + 1,
                @total = 0,
                @o_id = 0

            select top 1

```

```

        @o_id      = no_o_id
        new_order (serializable uplock)
    where
        no_w_id    = @w_id and
        no_d_id    = @d_id and
        no_o_id    = @o_id
    order
        by no_o_id asc

    if (@@rowcount <> 0)
    begin

-- claim the order for this district

        delete      new_order
        where
            no_w_id = @w_id and
            no_d_id = @d_id and
            no_o_id = @o_id

-- set carrier_id on this order (and get customer id)

        update      orders
        set
            o_carrier_id =

@o_carrier_id,

            @c_id

        where
            o_w_id = @w_id and
            o_d_id = @d_id and
            o_id   = @o_id

-- set date in all lineitems for this order (and sum amounts)

        update      order_line
        set
            ol_delivery_d= getdate(),
            @total

= @total + ol_amount

        where
            ol_w_id = @w_id and
            ol_d_id = @d_id and
            ol_o_id = @o_id

-- accumulate lineitem amounts for this order into customer

        update      customer
        set
            c_balance = c_balance +

@total,

            C_delivery_cnt

= c_delivery_cnt + 1

        where
            C_w_id = @w_id and
            C_d_id = @d_id and
            C_id   = @c_id

    end

    select @oid1 = case @d_id when 1 then @o_id else @oid1 end,
           @oid2 = case @d_id when 2 then @o_id else @oid2 end,
           @oid3 = case @d_id when 3 then @o_id else @oid3 end,
           @oid4 = case @d_id when 4 then @o_id else @oid4 end,
           @oid5 = case @d_id when 5 then @o_id else @oid5 end,
           @oid6 = case @d_id when 6 then @o_id else @oid6 end,
           @oid7 = case @d_id when 7 then @o_id else @oid7 end,
           @oid8 = case @d_id when 8 then @o_id else @oid8 end,
           @oid9 = case @d_id when 9 then @o_id else @oid9 end,
           @oid10 = case @d_id when 10 then @o_id else @oid10 end

    end

commit tran d

-- return delivery data to client

select @oid1,
       @oid2,
       @oid3,
       @oid4,
       @oid5,
       @oid6,
       @oid7,
       @oid8,

```

```

        @oid9,
        @oid10

    go

neword.sql

-- File:      NEWORD.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.42
--           Copyright Microsoft, 2002
-- Purpose:   Creates new order transaction stored procedure
--
--           Interface Level: 4.10.000

use tpcc
go

if exists ( select name from sysobjects where name = 'tpcc_neworder' )
drop procedure tpcc_neworder
go

create proc tpcc_neworder

@w_id
int,
@d_id
tinyint,
@c_id
int,
@o_o1_cnt
tinyint,
@o_all_local
tinyint,
@i_id1 int =
0, @s_w_id1 int = 0, @o1_qty1 smallint = 0,
@i_id2 int =
0, @s_w_id2 int = 0, @o1_qty2 smallint = 0,
@i_id3 int =
0, @s_w_id3 int = 0, @o1_qty3 smallint = 0,
@i_id4 int =
0, @s_w_id4 int = 0, @o1_qty4 smallint = 0,
@i_id5 int =
0, @s_w_id5 int = 0, @o1_qty5 smallint = 0,
@i_id6 int =
0, @s_w_id6 int = 0, @o1_qty6 smallint = 0,
@i_id7 int =
0, @s_w_id7 int = 0, @o1_qty7 smallint = 0,
@i_id8 int =
0, @s_w_id8 int = 0, @o1_qty8 smallint = 0,
@i_id9 int =
0, @s_w_id9 int = 0, @o1_qty9 smallint = 0,
@i_id10 int =
0, @s_w_id10 int = 0, @o1_qty10 smallint = 0,
@i_id11 int =
0, @s_w_id11 int = 0, @o1_qty11 smallint = 0,
@i_id12 int =
0, @s_w_id12 int = 0, @o1_qty12 smallint = 0,
@i_id13 int =
0, @s_w_id13 int = 0, @o1_qty13 smallint = 0,
@i_id14 int =
0, @s_w_id14 int = 0, @o1_qty14 smallint = 0,
@i_id15 int =
0, @s_w_id15 int = 0, @o1_qty15 smallint = 0

as
declare @w_tax numeric(4,4),
        @d_tax numeric(4,4),
        @c_last char(16),
        @c_credit char(2),
        @c_discount numeric(4,4),
        @i_price numeric(5,2),
        @i_name char(24),
        @i_data char(50),
        @o_entry_d datetime,
        @remote_flag int,
        @s_quantity smallint,
        @s_data char(50),
        @s_dist char(24),
        @li_no int,
        @o_id int,
        @commit_flag tinyint,

```

```

        @li_id      int,
        @li_s_w_id  int,
        @li_qty     smallint,
        @o1_number  int,
        @c_id_local int

begin

begin transaction n

-- get district tax and next available order id and update
-- plus initialize local variables

        update      district
        set
            @d_tax      = d_tax,
            @o_id      = d_next_o_id,
            d_next_o_id = d_next_o_id + 1,
            @o_entry_d = getdate(),
            @li_no     = 0,
            @commit_flag = 1

        where
            d_w_id = @w_id and
            d_id   = @d_id

-- process orderlines

        while (@li_no < @o_o1_cnt)
        begin

-- set i_id, s_w_id, and qty for this lineitem

            select @li_no = @li_no + 1

            select      @li_id = case @li_no
                when 1 then @i_id1
                when 2 then @i_id2
                when 3 then @i_id3
                when 4 then @i_id4
                when 5 then @i_id5
                when 6 then @i_id6
                when 7 then @i_id7
                when 8 then @i_id8
                when 9 then @i_id9
                when 10 then @i_id10
                when 11 then @i_id11
                when 12 then @i_id12
                when 13 then @i_id13
                when 14 then @i_id14
                when 15 then @i_id15
            end,

                @li_s_w_id = case @li_no
                when 1 then @s_w_id1
                when 2 then @s_w_id2
                when 3 then @s_w_id3
                when 4 then @s_w_id4
                when 5 then @s_w_id5
                when 6 then @s_w_id6
                when 7 then @s_w_id7
                when 8 then @s_w_id8
                when 9 then @s_w_id9
                when 10 then
                when 11 then
                when 12 then
                when 13 then
                when 14 then
                when 15 then

            end,

                @li_qty = case @li_no
                when 1 then @o1_qty1
                when 2 then @o1_qty2
                when 3 then @o1_qty3
                when 4 then @o1_qty4
                when 5 then @o1_qty5
                when 6 then @o1_qty6
                when 7 then @o1_qty7
                when 8 then @o1_qty8
                when 9 then @o1_qty9

```

```

        when 10 then @o1_qty10
        when 11 then @o1_qty11
        when 12 then @o1_qty12
        when 13 then @o1_qty13
        when 14 then @o1_qty14
        when 15 then @o1_qty15
    end

-- get item data (no one updates item)

        select      @i_price = i_price,
                   @i_name = i_name,
                   @i_data = i_data
        from        item (tablock repeatableread)
        where      i_id = @i_id

-- update stock values

        update      stock
        set         s_ytd          = s_ytd +
                   @s_quantity   = s_quantity - @i_qty +
                   @s_quantity   = s_quantity

@i1_qty,
s_quantity - @i1_qty +

case when (s_quantity - @i1_qty < 10) then 91 else 0 end,
s_order_cnt = s_order_cnt + 1,
s_remote_cnt = s_remote_cnt + case when

(@i1_s_w_id = @w_id) then 0 else 1 end,
@s_data     = s_data,
@s_dist    = case @d_id
              when 1
            then s_dist_01
            when 2
            then s_dist_02
            when 3
            then s_dist_03
            when 4
            then s_dist_04
            when 5
            then s_dist_05
            when 6
            then s_dist_06
            when 7
            then s_dist_07
            when 8
            then s_dist_08
            when 9
            then s_dist_09
            when 10
            then s_dist_10
            end
        where      s_i_id      = @i1_id and
                   s_w_id    = @i1_s_w_id

-- if there actually is a stock (and item) with these ids, go to work

        if (@@rowcount > 0)
        begin

-- insert order_line data (using data from item and stock)

            insert into order_line values(@o_id,

@d_id,
@w_id,
@i1_no,
@i1_id,
@i1_s_w_id,
'dec 31, 1899',
@i1_qty,
@i_price * @i1_qty,
@s_dist)

-- send line-item data to client

        select      @i_name,

```

```

@s_quantity,
b_g = case when

( (patindex('%ORIGINAL%',@i_data) > 0) and

(patindex('%ORIGINAL%',@s_data) > 0) )

then 'B' else 'G'

end,

@s_quantity,
@i_price,
@i_price * @i1_qty

        end
        else
        begin

-- no item (or stock) found - triggers rollback condition

        select '',0,'',0,0
        select @commit_flag = 0

        end

-- get customer last name, discount, and credit rating

        select      @c_last   = c_last,
                   @c_discount = c_discount,
                   @c_credit  = c_credit,
                   @c_id_local = c_id
        from        customer (repeatableread)
        where      c_id      = @c_id and
                   c_w_id    = @w_id and
                   c_d_id    = @d_id

-- insert fresh row into orders table

        insert into orders values (

@o_id,
@d_id,
@w_id,
@c_id_local,
@o_entry_d,
0,
@o1_cnt,
@o_all_local)

-- insert corresponding row into new-order table

        insert into new_order values (

@o_id,
@d_id,
@w_id)

-- select warehouse tax

        select      @w_tax     = w_tax
        from        warehouse (repeatableread)
        where      w_id      = @w_id

        if (@commit_flag = 1)

            commit transaction n
        else

            rollback transaction n

-- all that work for nuthin!!!

-- return order data to client

        select      @w_tax,
                   @d_tax,
                   @o_id,
                   @c_last,
                   @c_discount,
                   @c_credit,
                   @o_entry_d,
                   @commit_flag

        end

go

```

ordstat.sql

```

-- File:      ORDSTAT.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.42
--           Copyright Microsoft, 2002
-- Purpose:   Creates order status transaction stored procedure
--
--           Interface Level: 4.10.000

use tpcc
go

if exists ( select name from sysobjects where name = 'tpcc_orderstatus' )
drop procedure tpcc_orderstatus
go

create proc tpcc_orderstatus @w_id int,
                             @d_id tinyint,
                             @c_id int,
                             @c_last char(16) = ''

as

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

begin tran o

if (@c_id = 0)
begin

-- get customer id and info using last name

        select      @cnt      = (count(*)+1)/2
        from        customer (repeatableread)
        where      c_last    = @c_last and
                   c_w_id    = @w_id and
                   c_d_id    = @d_id

        set         @rowcount @cnt

        select      @c_id      = c_id,
                   @c_balance = c_balance,
                   @c_first   = c_first,
                   @c_last    = c_last,
                   @c_middle = c_middle
        from        customer (repeatableread)
        where      c_last    = @c_last and
                   c_w_id    = @w_id and
                   c_d_id    = @d_id

        order      by c_w_id, c_d_id, c_last, c_first

        set         @rowcount 0

        end
    else

        begin

-- get customer info if by id

        select      @c_balance = c_balance,
                   @c_first   = c_first,
                   @c_middle = c_middle,
                   @c_last    = c_last
        from        customer (repeatableread)
        where      c_id      = @c_id and
                   c_d_id    = @d_id and
                   c_w_id    = @w_id

        select      @cnt      = @@rowcount

        end

-- if no such customer

```

```

        if (@cnt = 0)
        begin
            raiserror('Customer not found',18,1)
            goto custnotfound
        end
    -- get order info
    select
        @o_id = o_id,
        @o_entry_d = o_entry_d,
        @o_carrier_id = o_carrier_id
    from
        orders (serializable)
    where
        o_c_id = @c_id and
        o_d_id = @d_id and
        o_w_id = @w_id
    order
        by o_id asc
    -- select order lines for the current order
    select
        ol_supply_w_id,
        ol_i_id,
        ol_quantity,
        ol_amount,
        ol_delivery_d
    from
        order_line (repeatable read)
    where
        ol_o_id = @o_id and
        ol_d_id = @d_id and
        ol_w_id = @w_id
custnotfound:
commit tran o
-- return data to client
select
    @c_id,
    @c_last,
    @c_first,
    @c_middle,
    @o_entry_d,
    @o_carrier_id,
    @c_balance,
    @o_id
go

```

payment.sql

```

-- File: PAYMENT.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.42
-- Copyright Microsoft, 2002
-- Purpose: Creates payment transaction stored procedure
-- Interface Level: 4.10.000
use tpcc
go
if exists (select name from sysobjects where name = 'tpcc_payment')
    drop procedure tpcc_payment
go
create proc tpcc_payment @w_id int,
                        @c_w_id int,
                        @h_amount numeric(6,2),
                        @d_id tinyint,
                        @c_d_id tinyint,
                        @c_id int,
                        @c_last char(16) =
                        ..
as
declare @w_street_1 char(20),
        @w_street_2 char(20),
        @w_city char(20),
        @w_state char(2),
        @w_zip char(9),
        @w_name char(10),

```

```

        @d_street_1 char(20),
        @d_street_2 char(20),
        @d_city char(20),
        @d_state char(2),
        @d_zip char(9),
        @d_name char(10),
        @c_first char(16),
        @c_middle char(2),
        @c_street_1 char(20),
        @c_street_2 char(20),
        @c_city char(20),
        @c_state char(2),
        @c_zip char(9),
        @c_phone char(16),
        @c_since datetime,
        @c_credit char(2),
        @c_credit_lim numeric(12,2),
        @c_balance numeric(12,2),
        @c_discount numeric(4,4),
        @data char(500),
        @c_data char(500),
        @datetime datetime,
        @w_ytd numeric(12,2),
        @d_ytd numeric(12,2),
        @cnt smallint,
        @val smallint,
        @screen_data char(200),
        @d_id_local tinyint,
        @w_id_local int,
        @c_id_local int
select @screen_data = ''
begin tran p
-- get payment date
select @datetime = getdate()
if (@c_id = 0)
begin
-- get customer id and info using last name
select @cnt = count(*)
from customer (repeatable read)
where c_last = @c_last and
c_w_id = @c_w_id and
c_d_id = @c_d_id
select @val = (@cnt + 1) / 2
rowcount @val
select @c_id = c_id
from customer (repeatable read)
where c_last = @c_last and
c_w_id = @c_w_id and
c_d_id = @c_d_id
order by c_last, c_first
set rowcount 0
end
-- get customer info and update balances
update customer
set @c_balance = c_balance - @h_amount,
    c_payment_cnt = c_payment_cnt + 1,
    c_ytd_payment = c_ytd_payment + @h_amount,
    @c_first = c_first,
    @c_middle = c_middle,
    @c_last = c_last,
    @c_street_1 = c_street_1,
    @c_street_2 = c_street_2,
    @c_city = c_city,
    @c_state = c_state,
    @c_zip = c_zip,
    @c_phone = c_phone,
    @c_credit = c_credit,
    @c_credit_lim = c_credit_lim,
    @c_discount = c_discount,
    @c_since = c_since,
    @data = c_data,

```

```

        @c_id_local = c_id
    where
        c_id = @c_id and
        c_w_id = @c_w_id and
        c_d_id = @c_d_id
    -- if customer has bad credit get some more info
    if (@c_credit = 'BC')
    begin
    -- compute new info
        select @c_data = convert(char(5),@c_id) +
            convert(char(4),@c_d_id)
        +
            convert(char(5),@c_w_id)
        +
            convert(char(4),@d_id) +
            convert(char(5),@w_id) +
            convert(char(19),@h_amount) +
            substring(@data, 1, 458)
    -- update customer info
    update customer
    set c_data = @c_data
    where
        c_id = @c_id and
        c_w_id = @c_w_id and
        c_d_id = @c_d_id
    end
    select @screen_data = substring (@c_data,1,200)
end
-- get district data and update year-to-date
update district
set d_ytd = d_ytd + @h_amount,
    @d_street_1 = d_street_1,
    @d_street_2 = d_street_2,
    @d_city = d_city,
    @d_state = d_state,
    @d_zip = d_zip,
    @d_name = d_name,
    @d_id_local = d_id
where
    d_w_id = @w_id and
    d_id = @d_id
-- get warehouse data and update year-to-date
update warehouse
set w_ytd = w_ytd + @h_amount,
    @w_street_1 = w_street_1,
    @w_street_2 = w_street_2,
    @w_city = w_city,
    @w_state = w_state,
    @w_zip = w_zip,
    @w_name = w_name,
    @w_id_local = w_id
where
    w_id = @w_id
-- create history record
insert into history values (@c_id_local,
                            @c_d_id,
                            @c_w_id,
                            @d_id_local,
                            @w_id_local,
                            @datetime,
                            @h_amount,
                            @w_name +
                            ' + @d_name)
commit tran p
-- return data to client
select
    @c_id,
    @c_last,
    @datetime,
    @w_street_1,
    @w_street_2,
    @w_city,
    @w_state,

```



```
@w_zip,
@d_street_1,
@d_street_2,
@d_city,
@d_state,
@d_zip,
@c_first,
@c_middle,
@c_street_1,
@c_street_2,
@c_city,
@c_state,
@c_zip,
@c_phone,
@c_since,
@c_credit,
@c_credit_lim,
@c_discount,
@c_balance,
@screen_data
```

go

stocklev.sql

```
-- File: STOCKLEV.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.42
-- Copyright Microsoft, 2002
-- Purpose: Creates stock level transaction stored procedure
--
-- Interface Level: 4.10.000

use tpcc
go

if exists (select name from sysobjects where name = 'tpcc_stocklevel')
drop procedure tpcc_stocklevel
go

create proc tpcc_stocklevel @w_id int,
                           @d_id tinyint,
                           @threshold smallint
as

declare @o_id_low int,
        @o_id_high int

select @o_id_low = (d_next_o_id - 20),
       @o_id_high = (d_next_o_id - 1)
from district
where d_w_id = @w_id and
      d_id = @d_id

select count(distinct(s_i_id))
from stock, order_line
where o1_w_id = @w_id and
      o1_d_id = @d_id and
      o1_o_id between @o_id_low and
                @o_id_high and
      s_w_id = o1_w_id and
      s_i_id = o1_i_id and
      s_quantity < @threshold

go
```

Loader Source Code

./buildia64.cmd

```
@if "%ECHOOON%"=="" echo off

setlocal

REM
REM Setup environment variables
```

```
REM

if /I "%DRIVE%" == "" set DRIVE=d:
if /I "%ROOT%" == "" set ROOT=%DRIVE%
if /I "%SPHINX%" == "" set SPHINX=%ROOT%\shloh
if /I "%SQLTOOLS%" == "" set SQLTOOLS=%ROOT%\sqltools
if /I "%MSVC%" == "" set MSVC=SQLTOOLS\msdev\vc98
if /I "%SHAREDIDE%" == "" set SHAREDIDE=SQLTOOLS\msdev\common\msdev98
if /I "%COMMON%" == "" set COMMON=%SPHINX%\common
if /I "%MSSDK%" == "" set MSSDK=%DRIVE%\mssdk

REM Sanity checks
if not exist %SPHINX% echo %SPHINX% cannot be found&goto usage
if not exist %MSSDK%\bin\win64\cl.exe echo 64-bit compiler cannot be found
in %MSSDK%\bin\win64&goto usage
if not exist %SQLTOOLS% echo SQLTOOLS not found in %SQLTOOLS%&goto usage
if not exist %MSVC% echo Visual C not found in %MSVC%&goto usage
if not exist %SHAREDIDE% echo Visual Studio Common Files not found
in %SHAREDIDE%&goto usage

set BUILDCFGDEBUG="tpccldr - win64 Debug"
set BUILDCFGRELEASE="tpccldr - win64 Release"

REM Set some defaults
set BUILDCFG=%BUILDCFGRELEASE%
set MFLAGS=

:nextparm
if "%1" == "" goto noparm
if "%1" == "-" goto usage
if "%1" == "/" goto usage
if "%1" == "debug" set BUILDCFG=%BUILDCFGDEBUG% & goto shift
if "%1" == "DEBUG" set BUILDCFG=%BUILDCFGDEBUG% & goto shift
if "%1" == "normal" set BUILDCFG=%BUILDCFGRELEASE% & goto shift
if "%1" == "NORMAL" set BUILDCFG=%BUILDCFGRELEASE% & goto shift
if "%1" == "-a" set MFLAGS=%1
if "%1" == "clean" set MFLAGS=%1
if "%1" == "CLEAN" set MFLAGS=%1

:shift
shift
goto nextparm

:noparm

pushd %MSSDK%
call Setwin64.bat
popd

REM Override Important Stuff...
set Include=%COMMON%\include;%include%
set Lib=%COMMON%\CPU\lib\retail;%lib%

call nmake -f tpccldr.mak CFG=%BUILDCFG% %MFLAGS%

goto leave

:usage
echo
echo Usage: %0 [type] [flags]
echo
echo 'type' is one of:
echo          debug
echo          normal
echo
echo 'flags' is zero or more of:
echo          -a      build all
echo          -clean  cleans up crufty bits
echo          -?      display this message
echo

:leave
endlocal
```

./tpccldr.mak

```
# Microsoft Developer Studio Generated NMAKE File, Based on tpccldr.dsp
!IF "$(CFG)" == ""
CFG=tpccldr - win64 Debug
CFG=tpccldr - win64 Release
!MESSAGE No configuration specified. Defaulting to tpccldr - win64 Release.
!ENDIF

!IF "$(CFG)" != "tpccldr - win64 Release" && "$(CFG)" != "tpccldr - win64 Debug"
!MESSAGE Invalid configuration "$(CFG)" specified.
!MESSAGE You can specify a configuration when running NMAKE
!MESSAGE by defining the macro CFG on the command line. For example:
!MESSAGE
!MESSAGE NMAKE /f "tpccldr.mak" CFG="tpccldr - win64 Release"
!MESSAGE
!MESSAGE Possible choices for configuration are:
!MESSAGE
!MESSAGE "tpccldr - win64 Release" (based on "win64 (IA64) Console Application")
!MESSAGE "tpccldr - win64 Debug" (based on "win64 (IA64) Console Application")
!MESSAGE
!ERROR An invalid configuration is specified.
!ENDIF

!IF "$(OS)" == "windows_NT"
NULL=
!ELSE
NULL=nul
!ENDIF

!IF "$(CFG)" == "tpccldr - win64 Release"

OUTDIR=.bin
```

```
INTDIR=.objects
# Begin Custom Macros
OUTDIR=.bin
# End Custom Macros

ALL : "$(OUTDIR)\tpccldr.exe"

CLEAN :
-@erase "$(INTDIR)\getargs.obj"
-@erase "$(INTDIR)\random.obj"
-@erase "$(INTDIR)\strings.obj"
-@erase "$(INTDIR)\time.obj"
-@erase "$(INTDIR)\tpccldr.obj"
-@erase "$(OUTDIR)\tpccldr.exe"

"$$(OUTDIR)" :
if not exist "$$(OUTDIR)/$(NULL)" mkdir "$$(OUTDIR)"

"$$(INTDIR)" :
if not exist "$$(INTDIR)/$(NULL)" mkdir "$$(INTDIR)"

CPP=c1.exe
CPP_PROJ=/nologo /MD /Zep8 /wp64 /w3 /O2 /D "NDEBUG" /D "WIN32" /D "_WIN32" /D "IA64=1" /DWIN64 /DWIN64 /D "_CONSOLE" /D "DBNTWIN32" /Fo"$$(INTDIR)\\" /Fd"$$(INTDIR)\\" /c

.c{$$(INTDIR)}.obj::
$(CPP) @<<
$(CPP_PROJ) <<

.cpp{$$(INTDIR)}.obj::
$(CPP) @<<
$(CPP_PROJ) <<

.cxx{$$(INTDIR)}.obj::
$(CPP) @<<
$(CPP_PROJ) <<

.c{$$(INTDIR)}.sbr::
$(CPP) @<<
$(CPP_PROJ) <<

.cpp{$$(INTDIR)}.sbr::
$(CPP) @<<
$(CPP_PROJ) <<

.cxx{$$(INTDIR)}.sbr::
$(CPP) @<<
$(CPP_PROJ) <<

RSC=rc.exe
BSC32=bscmake.exe
BSC32_FLAGS=/nologo /o"$$(OUTDIR)\tpccldr.bsc"
BSC32_SBR= \

LINK32=link.exe
LINK32_FLAGS=kernel32.lib user32.lib gdi32.lib winspool.lib cmdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbccp32.lib
odbc32.lib /nologo /subsystem:console /machine:IA64
/out:"$$(OUTDIR)\tpccldr.exe"
LINK32_OBJS= \
"$$(INTDIR)\getargs.obj" \
"$$(INTDIR)\random.obj" \
"$$(INTDIR)\strings.obj" \
"$$(INTDIR)\time.obj" \
"$$(INTDIR)\tpccldr.obj"

"$$(OUTDIR)\tpccldr.exe" : "$(OUTDIR)" $(DEF_FILE) $(LINK32_OBJS)
$(LINK32) @<<
$(LINK32_FLAGS) $(LINK32_OBJS)
<<

!ELSEIF "$(CFG)" == "tpccldr - win64 Debug"

OUTDIR=.bin
INTDIR=.objects
# Begin Custom Macros
OUTDIR=.bin
# End Custom Macros

ALL : "$(OUTDIR)\tpccldr.exe" "$(OUTDIR)\tpccldr.bsc"

CLEAN :
-@erase "$(INTDIR)\getargs.obj"
-@erase "$(INTDIR)\getargs.sbr"
-@erase "$(INTDIR)\random.obj"
-@erase "$(INTDIR)\random.sbr"
-@erase "$(INTDIR)\strings.obj"
-@erase "$(INTDIR)\strings.sbr"
-@erase "$(INTDIR)\time.obj"
-@erase "$(INTDIR)\time.sbr"
-@erase "$(INTDIR)\tpccldr.obj"
-@erase "$(INTDIR)\tpccldr.sbr"
-@erase "$(INTDIR)\vc70.pdb"
-@erase "$(OUTDIR)\tpccldr.bsc"
-@erase "$(OUTDIR)\tpccldr.exe"

"$$(OUTDIR)" :
if not exist "$$(OUTDIR)/$(NULL)" mkdir "$$(OUTDIR)"

"$$(INTDIR)" :
if not exist "$(INTDIR)/$(NULL)" mkdir "$$(INTDIR)"

CPP=c1.exe
```

```

CPP_PROJ=/nologo /MD /Zep8 /wp64 /w3 /Gx /Zi /Od /D "_DEBUG" /D "WIN32" /D
"/D "WIN32" /D "IA64_1" /D "WIN64" /D "CONSOLE" /D "DBNTWIN32"
/FR "$(INTDIR)\\" /Fo "$(INTDIR)\\" /Fd "$(INTDIR)\\" /C

.c{$(INTDIR)}.obj:
$(CPP) @<<
$(CPP_PROJ) $<

.cpp{$(INTDIR)}.obj:
$(CPP) @<<
$(CPP_PROJ) $<

.cxx{$(INTDIR)}.obj:
$(CPP) @<<
$(CPP_PROJ) $<

.c{$(INTDIR)}.sbr:
$(CPP) @<<
$(CPP_PROJ) $<

.cpp{$(INTDIR)}.sbr:
$(CPP) @<<
$(CPP_PROJ) $<

.cxx{$(INTDIR)}.sbr:
$(CPP) @<<
$(CPP_PROJ) $<

RSC=rc.exe
BSC32=bscmake.exe
BSC32_FLAGS=/nologo /o "$(OUTDIR)\tpccldr.bsc"
BSC32_SBRS= \
    "$(INTDIR)\getargs.sbr" \
    "$(INTDIR)\random.sbr" \
    "$(INTDIR)\strings.sbr" \
    "$(INTDIR)\time.sbr" \
    "$(INTDIR)\tpccldr.sbr"

"$$(OUTDIR)\tpccldr.bsc" : "$$(OUTDIR)" $(BSC32_SBRS)
    $(BSC32) @<< $(BSC32_FLAGS) $(BSC32_SBRS)
<<

LINK32=link.exe
LINK32_FLAGS=kernel32.lib user32.lib gdi32.lib winspool.lib comdlg32.lib
advapi32.lib shell32.lib ole32.lib oleaut32.lib uuid.lib odbccp32.lib
odbc32.lib /nologo /subsystem:console /debug /machine:IA64
/out: "$(OUTDIR)\tpccldr.exe"
LINK32_OBJS= \
    "$(INTDIR)\getargs.obj" \
    "$(INTDIR)\random.obj" \
    "$(INTDIR)\strings.obj" \
    "$(INTDIR)\time.obj" \
    "$(INTDIR)\tpccldr.obj"

"$$(OUTDIR)\tpccldr.exe" : "$$(OUTDIR)" $(DEF_FILE) $(LINK32_OBJS)
    $(LINK32) @<<
    $(LINK32_FLAGS) $(LINK32_OBJS)
<<

!ENDIF

!IF "$$(CFG)" == "tpccldr - win64 Release" || "$$(CFG)" == "tpccldr - win64 Debug"
SOURCE=. \src\getargs.c
!IF "$$(CFG)" == "tpccldr - win64 Release"

"$$(INTDIR)\getargs.obj" : $(SOURCE) "$(INTDIR)"
$(CPP) $(CPP_PROJ) $(SOURCE)

!ELSEIF "$$(CFG)" == "tpccldr - win64 Debug"

"$$(INTDIR)\getargs.obj" "$(INTDIR)\getargs.sbr" : $(SOURCE) "$(INTDIR)"
$(CPP) $(CPP_PROJ) $(SOURCE)

!ENDIF
SOURCE=. \src\random.c
!IF "$$(CFG)" == "tpccldr - win64 Release"

"$$(INTDIR)\random.obj" : $(SOURCE) "$(INTDIR)"
$(CPP) $(CPP_PROJ) $(SOURCE)

!ELSEIF "$$(CFG)" == "tpccldr - win64 Debug"

"$$(INTDIR)\random.obj" "$(INTDIR)\random.sbr" : $(SOURCE) "$(INTDIR)"
$(CPP) $(CPP_PROJ) $(SOURCE)

!ENDIF
SOURCE=. \src\strings.c
!IF "$$(CFG)" == "tpccldr - win64 Release"

"$$(INTDIR)\strings.obj" : $(SOURCE) "$(INTDIR)"

```

```

$(CPP) $(CPP_PROJ) $(SOURCE)

!ELSEIF "$$(CFG)" == "tpccldr - win64 Debug"

"$$(INTDIR)\strings.obj" "$(INTDIR)\strings.sbr" : $(SOURCE) "$(INTDIR)"
$(CPP) $(CPP_PROJ) $(SOURCE)

!ENDIF
SOURCE=. \src\time.c
!IF "$$(CFG)" == "tpccldr - win64 Release"

"$$(INTDIR)\time.obj" : $(SOURCE) "$(INTDIR)"
$(CPP) $(CPP_PROJ) $(SOURCE)

!ELSEIF "$$(CFG)" == "tpccldr - win64 Debug"

"$$(INTDIR)\time.obj" "$(INTDIR)\time.sbr" : $(SOURCE) "$(INTDIR)"
$(CPP) $(CPP_PROJ) $(SOURCE)

!ENDIF
SOURCE=. \src\tpccldr.c
!IF "$$(CFG)" == "tpccldr - win64 Release"

"$$(INTDIR)\tpccldr.obj" : $(SOURCE) "$(INTDIR)"
$(CPP) $(CPP_PROJ) $(SOURCE)

!ELSEIF "$$(CFG)" == "tpccldr - win64 Debug"

"$$(INTDIR)\tpccldr.obj" "$(INTDIR)\tpccldr.sbr" : $(SOURCE) "$(INTDIR)"
$(CPP) $(CPP_PROJ) $(SOURCE)

!ENDIF
!ENDIF

./src/getargs.c
// File: GETARGS.C Microsoft TPC-C Kit Ver.
// 4.20 Copyright Microsoft, 1996,
// 1997, 1998, 1999
// Purpose: Source file for command line processing

// Includes
#include "tpcc.h"

// Function name: GetArgsLoader

void GetArgsLoader(int argc, char **argv, TPCC_LD_ARGS *pargs)
{
    int char *ptr; i;

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

    /* init args struct with some useful values */
    pargs->server = SERVER;
    pargs->user = USER;
    pargs->password = PASSWORD;
    pargs->database = DATABASE;
    pargs->batch = BATCH;
    pargs->num_warehouses = UNDEF;
    pargs->tables_all = TRUE;
    pargs->table_item = FALSE;
    pargs->table_warehouse = FALSE;
    pargs->table_customer = FALSE;
    pargs->table_orders = FALSE;
    pargs->loader_res_file = LOADER_RES_FILE;
    pargs->pack_size = DEF_LD_PACK_SIZE;
    pargs->starting_warehouse = DEF_STARTING_WAREHOUSE;
    pargs->build_index =

BUILD_INDEX;
INDEX_ORDER;
SCALE_DOWN;

    pargs->index_order =
    pargs->index_script_path = INDEX_SCRIPT_PATH;
    pargs->scale_down =

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

```

```

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

    ptr = argv[i];
    switch (ptr[1])
    {
        case 'h': /* Fall through */
        case 'H':
            GetArgsLoaderUsage();
            break;

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

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

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

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

        case 'b':
            pargs->batch =
            break;

        case 'w':
            pargs->num_warehouses =
            break;

        case 's':
            pargs->starting_warehouse
            break;

        case 't':
            {
                pargs-
                if

                pargs->table_item = TRUE;
            }
            else if
            (strcmp(ptr+2,"warehouse") == 0)
                pargs->table_warehouse = TRUE;
            else if
            (strcmp(ptr+2,"customer") == 0)
                pargs->table_customer = TRUE;
            else if
            (strcmp(ptr+2,"orders") == 0)
                pargs->table_orders = TRUE;
            else
            {
                printf("\nUnrecognized command");
                GetArgsLoaderUsage();
                exit(1);
            }
            break;

        case 'f':
            pargs->loader_res_file =
            break;

        case 'p':
            pargs->pack_size =
            break;

        case 'i':
            pargs->build_index =
            break;

        case 'o':
            pargs->index_order =
            break;

        case 'c':
            pargs->scale_down =
            break;

        case 'd':
            pargs->index_script_path =
            break;

        default:
    }
}

```

```

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

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

return;
}

//=====
// Function name: GetArgsLoaderUsage
//=====
void GetArgsLoaderUsage()
{
#ifdef DEBUG
    printf("[%d]DBG: Entering GetArgsLoaderUsage()\n", (int)
    GetCurrentThreadId());
#endif

    printf("TPCCLDR:\n\n");
    printf("Parameter
    default\n");
    printf("-----\n");
    printf("-----\n");
    printf("-w Number of Warehouses to Load          Required \n");
    printf("-s Server                                     %s\n",
    SERVER);
    printf("-u Username                                     %s\n", USER);
    printf("-p Password                                    %s\n",
    PASSWORD);
    printf("-d Database                                     %s\n",
    DATABASE);
    printf("-b Batch                                     %ld\n", (long) BATCH);
    size    printf("-p TDS packet                       %ld\n", (long) DEFLDPACKSIZE);
    size    printf("-f Loader Results Output File         %s\n",
    Filename);
    printf("-s Starting                                     %ld\n", (long)
    Warehouse
    DEF_STARTING_WAREHOUSE);
    printf("-i Build Option (data = 0, data and index =
    1) %ld\n", (long) BUILD_INDEX);
    printf("-o Cluster Index Build Order (before = 1, after =
    0) %ld\n", (long) INDEX_ORDER);
    printf("-c Build scaled database (normal = 0, tiny =
    1) %ld\n", (long) SCALE_DOWN);
    printf("-d Index Script
    Path %s\n", INDEX_SCRIPT_PATH);
    printf("-t Table to Load                               all
    tables \n");
    printf(" [item|warehouse|customer|orders]\n");
    printf(" Notes: \n");
    printf(" - the '+t' parameter may be included multiple times to \n");
    printf(" specify multiple tables to be loaded \n");
    printf(" - 'item' loads ITEM table \n");
    printf(" - 'warehouse' loads WAREHOUSE, DISTRICT, and STOCK tables \n");
    printf(" - 'customer' loads CUSTOMER and HISTORY tables \n");
    printf(" - 'orders' load NEW-ORDER, ORDERS, ORDER-LINE tables \n");
    printf("\nNote: Command line switches are case sensitive.\n");

    exit(0);
}

```

./src/random.c

```

// File: RANDOM.C Microsoft TPC-C Kit Ver.
4.20 Copyright Microsoft, 1996,
1997, 1998, 1999 Purpose: Random number generation routines for database loader

// Includes
#include "tpcc.h"
#include "math.h"

// Defines
#define A 16807
#define M 2147483647
#define Q 127773 /* M div A */
#define R 2836 /* M mod A */
#define Thread __dec1spec(thread)

// Globals
long Thread Seed = 0; /* thread local seed */

/* random -

```

```

* Implements a GOOD pseudo random number generator. This generator
* will/should? run the complete period before repeating.
*
* Copied from:
* Random Numbers Generators: Good Ones Are Hard to Find.
* Communications of the ACM - October 1988 Volume 31 Number 10
*
* Machine Dependencies:
* Long must be 2 ^ 31 - 1 or greater.
*
* =====
* seed - Load the Seed value used in irand and drand. Should be used before
* first call to irand or drand.
* =====

void seed(long val)
{
#ifdef DEBUG
    printf("[%d]DBG: Entering seed()...\n", (int) GetCurrentThreadId());
    printf("Old Seed %ld New Seed %ld\n", Seed, val);
#endif

    if ( val < 0 )
        val = abs(val);

    Seed = val;
}

/* =====
* irand - returns a 32 bit integer pseudo random number with a period of
* 1 to 2 ^ 32 - 1.
*
* parameters:
* none.
*
* returns:
* 32 bit integer - defined as long ( see above ).
*
* side effects:
* seed get recomputed.
* =====

long irand()
{
    register long s; /* copy of seed */
    register long test; /* test flag */
    register long hi; /* tmp value for speed */
    register long lo; /* tmp value for speed */

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

    s = Seed;
    hi = s / Q;
    lo = s % Q;

    test = A * lo - R * hi;
    if ( test > 0 )
        Seed = test;
    else
        Seed = test + M;

    return( Seed );
}

/* =====
* drand - returns a double pseudo random number between 0.0 and 1.0.
* See irand.
* =====

double drand()
{
#ifdef DEBUG
    printf("[%d]DBG: Entering drand()...\n", (int) GetCurrentThreadId());
#endif

    return( (double)irand() / 2147483647.0);
}

//=====
// Function : RandomNumber
// Description:
//=====
long RandomNumber(long lower, long upper)
{
    long rand_num;

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

    if ( upper == lower ) /* pgd 08-13-96 perf enhancement */
        return lower;

    upper++;

    if ( upper <= lower )
        rand_num = upper;
    else
        rand_num = lower + irand() % (upper - lower); /* pgd

```

```

08-13-96 perf enhancement */

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

    return rand_num;
}

#if 0
//Original code pgd 08/13/96
long RandomNumber(long lower, long upper)
{
    long rand_num;

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

    upper++;

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

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

    return rand_num;
}
#endif

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

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

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

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

    return rand_num;
}

```

./src/strings.c

```

// File: STRINGS.C Microsoft TPC-C Kit Ver.
4.20 Copyright Microsoft, 1996,
1997, 1998, 1999 Purpose: Source file for database loader string functions

// Includes
#include "tpcc.h"
#include <string.h>
#include <ctype.h>

//=====
// Function name: MakeAddress
//=====
void MakeAddress(char *street_1, char *street_2,
char *city,
char *state,
char *zip)
{
#ifdef DEBUG
    printf("[%d]DBG: Entering MakeAddress()\n", (int) GetCurrentThreadId());
#endif

```

```

MakeAlphaString(10, 20, ADDRESS_LEN, street_1);
MakeAlphaString(10, 20, ADDRESS_LEN, street_2);
MakeAlphaString(10, 20, ADDRESS_LEN, city);
MakeAlphaString(2, 2, STATE_LEN, state);
MakeZipNumberString(9, 9, ZIP_LEN, zip);

#ifdef DEBUG
printf("[%d]DBG: MakeAddress: street_1: %s, street_2: %s, city: %s,
state: %s, zip: %s\n",
(int) GetCurrentThreadId(), street_1,
street_2, city, state, zip);
#endif

return;
}

//=====
// Function name: LastName
//=====
void LastName(int num, char *name)
{
static char *n[] =
{
"BAR", "OUGHT", "ABLE", "PRI", "PRES",
"ESE", "ANTI", "CALLY", "ATION", "EING"
};

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

if ((num >= 0) && (num < 1000))
{
strcpy(name, n[(num/100)%10]);
strcat(name, n[(num/10)%10]);
strcat(name, n[(num/1)%10]);

if (strlen(name) < LAST_NAME_LEN)
{
PaddString(LAST_NAME_LEN, name);
}

}
else
{
printf("\nError in LastName()... num < %d> out of
range (0,999)\n", num);
exit(-1);
}

#ifdef DEBUG
printf("[%d]DBG: LastName: num = [%d] ==> [%d][%d][%d]\n",
(int) GetCurrentThreadId(), num, num/100,
(num/10)%10, num%10);
printf("[%d]DBG: LastName: String = %s\n", (int)
GetCurrentThreadId(), name);
#endif

return;
}

//=====
// Function name: MakeAlphaString
//=====

//philipdu 08/13/96 Changed MakeAlphaString to use A-Z, a-z, and 0-9 in
//accordance with spec see below:
//The spec says:
//4.3.2.2 The notation random a-string [x..y]
//respectively, n-string [x..y] represents a string of random alphanumeric
//respectively, numeric characters of a random length of minimum x, maximum y,
//and mean (y+x)/2. Alphanumerics are A..Z, a..z, and 0..9. The only other
//requirement is that the character set used "must be able to represent a
//minimum
//of 128 different characters". We are using 8-bit chars, so this is a non
//issue.
//It is completely unreasonable to stuff non-printing chars into the text fields.
//-Clevine 08/13/96

int MakeAlphaString(int x, int y, int z, char *str)
{
int len;
int i;
char cc = 'a';
static char chArray[] =
"0123456789ABCDEFGHIJKLMNQRSTUWXYZabcdefghijklmnopqrstuvwxyz";
static int chArrayMax = 61;

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

len = RandomNumber(x, y);
for (i=0; i<len; i++)
{
str[i] = cc;
cc = chArray[RandomNumber(0, chArrayMax)];
}
}

```

```

if (len < z)
memset(str+len, ' ', z - len);
str[len] = 0;
}
return len;
}

//=====
// Function name: MakeOriginalAlphaString
//=====
int MakeOriginalAlphaString(int x,
int y,
int z,
char *str,
int percent)
{
int len;
int val;
int start;

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

// verify percentage is valid
if ((percent < 0) || (percent > 100))
{
printf("MakeOriginalAlphaString: Invalid
percentage: %d\n", percent);
exit(-1);
}

// verify string is at least 8 chars in length
if ((x + y) <= 8)
{
printf("MakeOriginalAlphaString: string length must
be >= 8\n");
exit(-1);
}

// Make Alpha String
len = MakeAlphaString(x, y, z, str);
val = RandomNumber(1,100);
if (val <= percent)
{
start = RandomNumber(0, len - 8);
strcpy(str + start, "ORIGINAL", 8);
}

#ifdef DEBUG
printf("[%d]DBG: MakeOriginalAlphaString: : %s\n",
(int) GetCurrentThreadId(), str);
#endif

return (int)strlen(str);
}

//=====
// Function name: MakeNumberString
//=====
int MakeNumberString(int x, int y, int z, char *str)
{
char tmp[16];

//MakeNumberString is always called MakeZipNumberString(16, 16, 16,
string)

memset(str, '0', 16);
_itoa(RandomNumber(0, 99999999), tmp, 10);
memcpy(str, tmp, strlen(tmp));

_itoa(RandomNumber(0, 99999999), tmp, 10);
memcpy(str+8, tmp, strlen(tmp));

str[16] = 0;

return 16;
}

//=====
// Function name: MakeZipNumberString
//=====
int MakeZipNumberString(int x, int y, int z, char *str)
{
char tmp[16];

//MakeZipNumberString is always called MakeZipNumberString(9, 9, 9,
string)

strcpy(str, "000011111");
_itoa(RandomNumber(0, 9999), tmp, 10);
memcpy(str, tmp, strlen(tmp));

return 9;
}

```

```

}

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

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

//=====
// Function name: InitAddress
// Description:
//=====
void InitAddress(char *street_1, char *street_2, char *city, char *state, char *zip)
{
memset(street_1, ' ', ADDRESS_LEN+1);
memset(street_2, ' ', ADDRESS_LEN+1);
memset(city, ' ', ADDRESS_LEN+1);

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

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

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

//=====
// Function name: PaddString
//=====
void PaddString(int max, char *name)
{
size_t len;

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

return;
}

./src/time.c

// File: TIME.C Microsoft TPC-C Kit Ver.
// 4.20 Copyright Microsoft, 1996,
// 1997, 1998, 1999 Copyright Microsoft, 1996,
// Purpose: Source file for time functions

// Includes
#include "tpcc.h"

// Globals
static time_t start_sec;

//=====
// Function name: TimeNow
//=====
time_t TimeNow()
{
time_t time_now;
struct _timeb e1_time;

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

ftime(&e1_time);

time_now = ((e1_time.time - start_sec) * 1000) + e1_time.millitm;

return time_now;
}

```

./src/tpcc.h

```
// File: TPCC.H Microsoft TPC-C Kit Ver.
// 4.20 Copyright Microsoft, 1996,
// 1997, 1998, 1999 Purpose: Header file for TPC-C database loader

// Build number of TPC Benchmark kit
#define TPCKIT_VER "4.20"

// General headers
#include <windows.h>
#include <winbase.h>
#include <stdlib.h>
#include <stdio.h>
#include <process.h>
#include <stddef.h>
#include <stdarg.h>
#include <string.h>
#include <time.h>
#include <sys/timeb.h>
#include <sys/types.h>

// ODBC headers
#include <sql.h>
#include <sqlext.h>
#include <odbc.h>

// General constants
#define MILLI 1000
#define FALSE 0
#define TRUE 1
#define UNDEF -1
#define MINPRINTASCII 32
#define MAXPRINTASCII 126

// Default environment constants
#define SERVER ""
#define DATABASE "tpcc"
#define USER "sa"
#define PASSWORD ""

// Default loader arguments
#define BATCH 10000
#define DEFLDPACKSIZE 32768
#define LOADER_RES_FILE "logs\\load.out"
#define LOADER_NURAND_C 123
#define DEF_STARTING_WAREHOUSE 1
#define BUILD_INDEX

// build both data and indexes
#define INDEX_ORDER 1 // build indexes before load
#define SCALE_DOWN 0 // build a normal scale database
#define INDEX_SCRIPT_PATH "scripts"

typedef struct
{
    char *server;
    char *database;
    char *user;
    char *password;

    BOOL // set if loading all tables
    table_all;
    BOOL // set if loading ITEM table specifically
    table_item;
    BOOL // set if loading WAREHOUSE, DISTRICT,
    table_warehouse;
    and STOCK
    BOOL // set if loading CUSTOMER
    table_customer;
    and HISTORY
    BOOL // set if loading NEW-ORDER, ORDERS, ORDER-LINE
    table_orders;
    long num_warehouses;
    long batch;
    long verbose;
    long pack_size;
    char *loader_res_file;
    char *synch_servername;
    long case_sensitivity;
    long starting_warehouse;
    long build_index;
    long index_order;
    long scale_down;
    char *i_index_script_path;
} TPCCDR_ARGS;

// String length constants
#define SERVER_NAME_LEN 20
#define DATABASE_NAME_LEN 20
#define USER_NAME_LEN 20
#define PASSWORD_LEN 20
#define TABLE_NAME_LEN 20
#define I_DATA_LEN 50
#define I_NAME_LEN 24
#define BRAND_LEN 1
#define LAST_NAME_LEN 16
#define W_NAME_LEN 10
#define ADDRESS_LEN 20
#define STATE_LEN 2
#define ZIP_LEN 9
```

```
#define S_DIST_LEN 24
#define S_DATA_LEN 50
#define D_NAME_LEN 10
#define FIRST_NAME_LEN 16
#define MIDDLE_NAME_LEN 2
#define PHONE_LEN 16
#define CREDIT_LEN 2
#define C_DATA_LEN 500
#define H_DATA_LEN 24
#define DIST_INFO_LEN 24
#define MAX_OI_NEW_ORDER_ITEMS 15
#define MAX_OI_ORDER_STATUS_ITEMS 15
#define STATUS_LEN 25
#define OI_DIST_INFO_LEN 24
#define C_SINCE_LEN 23

#define H_DATE_LEN 23
#define OI_DELIVERY_D_LEN 23
#define O_ENTRY_D_LEN 23

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

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

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

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

./src/tpccldr.c

```
// File: TPCCDR.C Microsoft TPC-C Kit Ver.
// 4.20 Copyright Microsoft, 1996,
// 1997, 1998, 1999 Purpose: Source file for TPC-C database loader

// Includes
#include "tpcc.h"
#include "search.h"

// Defines
#define MAXITEMS 100000
#define MAXITEMS_SCALE_DOWN 100
#define CUSTOMERS_PER_DISTRICT 3000
#define CUSTOMERS_SCALE_DOWN 30
#define DISTRICT_PER_WAREHOUSE 10
#define ORDERS_PER_DISTRICT 3000
#define ORDERS_SCALE_DOWN 30
#define MAX_CUSTOMER_THREADS 2
#define MAX_ORDER_THREADS 3
#define MAX_MAIN_THREADS 4

// Functions declarations
void HandleErrorDBC (SQLHDBC hdbc1);
void CheckSQL();
void CheckDataBase();
long NURand();
void LoadItem();
void LoadWarehouse();
void Stock();
void District();
void LoadCustomer();
void CustomerBufInit();
void CustomerBufLoad();
void LoadCustomerTable();
void LoadHistoryTable();
void LoadOrders();
void OrdersBufInit();
void OrdersBufLoad();
void LoadOrderTable();
void LoadNewOrderTable();
void LoadOrderLineTable();
void GetPermutation();
void CheckForCommit();
void OpenConnections();
void BuildIndex();
void FormatDate ();

// Shared memory structures
```

```
typedef struct
{
    long o1;
    long o1_id;
    short o1_supply_w_id;
    short o1_quantity;
    double o1_amount;
    char o1_dist_info[OI_DIST_INFO_LEN+1];
} ORDER_LINE_STRUCT;

typedef struct
{
    long o_id;
    short o_d_id;
    short o_w_id;
    long o_c_id;
    short o_carrier_id;
    short o_o1_cnt;
    short o_all_total;
    ORDER_LINE_STRUCT o_o1[15];
} ORDERS_STRUCT;

typedef struct
{
    long c_id;
    short c_d_id;
    short c_w_id;
    char c_first[FIRST_NAME_LEN+1];
    char c_middle[MIDDLE_NAME_LEN+1];
    char c_last[LAST_NAME_LEN+1];
    char c_street_1[ADDRESS_LEN+1];
    char c_street_2[ADDRESS_LEN+1];
    char c_city[ADDRESS_LEN+1];
    char c_state[STATE_LEN+1];
    char c_zip[ZIP_LEN+1];
    char c_phone[PHONE_LEN+1];
    double c_credit[RECENT_LEN+1];
    double c_credit_lim;
    double c_discount;
    double c_balance;
    char c_balance[6];
    double c_ytd_payment;
    short c_payment_cnt;
    short c_delivery_cnt;
    char c_data[C_DATA_LEN+1];
    double h_amount;
    char h_data[H_DATA_LEN+1];
} CUSTOMER_STRUCT;

typedef struct
{
    long c_id;
    long c_first[FIRST_NAME_LEN+1];
} CUSTOMER_SORT_STRUCT;

typedef struct
{
    size_t time_start;
} LOADER_TIME_STRUCT;

// Global variables
char szLastError[300];
HENV henv;
HDBC v_hdbc;
// for SQL Server version verification
HDBC i_hdbc1;
// for ITEM table
HDBC w_hdbc1;
// for WAREHOUSE, DISTRICT, STOCK
HDBC c_hdbc1;
// for CUSTOMER
HDBC c_hdbc2;
// for HISTORY
HDBC o_hdbc1;
// for ORDERS
HDBC o_hdbc2;
// for NEW-ORDER
HDBC o_hdbc3;
// for ORDER-LINE
HSTMT v_hstmt;
// for SQL Server version verification
HSTMT i_hstmt1;
HSTMT w_hstmt1;
HSTMT c_hstmt2;
HSTMT o_hstmt1, o_hstmt2, o_hstmt3;

ORDERS_STRUCT orders_buf[ORDERS_PER_DISTRICT];
CUSTOMER_STRUCT customer_buf[CUSTOMERS_PER_DISTRICT];
long orders_rows_loaded;
long new_order_rows_loaded;
long order_line_rows_loaded;
long history_rows_loaded;
long customer_rows_loaded;
long stock_rows_loaded;
```

```

long      district_rows_loaded;
long      item_rows_loaded;
long      warehouse_rows_loaded;
time_t    main_time_start;
time_t    main_time_end;
long      max_items;
long      customers_per_district;
long      orders_per_district;
long      first_new_order;
long      last_new_order;

TPCCLDR_ARGS  *aptr, args;

//=====
// Function name: main
//=====

int main(int argc, char **argv)
{
    DWORD      dwThreadId[MAX_MAIN_THREADS];
    HANDLE      hThread[MAX_MAIN_THREADS];
    FILE        *fLoader;
    char        buffer[255];
    int         i;

    for (i=0; i<MAX_MAIN_THREADS; i++)
        hThread[i] = NULL;

    printf("\n*****\n");
    printf("\n* Microsoft SQL Server          *\n");
    printf("\n* Microsoft SQL Server          *\n");
    printf("\n* TPC-C BENCHMARK KIT: Database loader *\n");
    printf("\n* Version %s                      *\n");
    TPCKIT_VER);
    printf("\n*****\n");

    // process command line arguments
    aptr = &args;
    GetArgsLoader(argc, argv, aptr);

    // verify correct SQL Server version in use
    // you must be using SQL Server 7.00.623 or better to load
    CheckSQL();
    // verify database and tables exist before attempting to load
    CheckDataBase();
    printf("Build interface is ODBC.\n");
    if (aptr->build_index == 0)
        printf("Data load only - no index creation.\n");
    else
        printf("Data load and index creation.\n");
    if (aptr->index_order == 0)
        printf("Clustered indexes will be created after bulk
load.\n");
    else
        printf("Clustered indexes will be created before bulk
load.\n");

    // set database scale values
    if (aptr->scale_down == 1)
    {
        printf("*** Scaled Down Database ***\n");
        max_items = MAXITEMS_SCALE_DOWN;
        customers_per_district = CUSTOMERS_SCALE_DOWN;
        orders_per_district = ORDERS_SCALE_DOWN;
        first_new_order = 0;
        last_new_order = 30;
    }
    else
    {
        max_items = MAXITEMS;
        customers_per_district = CUSTOMERS_PER_DISTRICT;
        orders_per_district = ORDERS_PER_DISTRICT;
        first_new_order = 2100;
        last_new_order = 3000;
    }

    // open connections to SQL Server
    openConnections();

    // open file for loader results
    fLoader = fopen(aptr->loader_res_file, "w");
    if (fLoader == NULL)
    {
        printf("Error, loader result file open failed.");
        exit(-1);
    }

    // start loading data
    sprintf(buffer, "TPC-C load started for %ld warehouses.\n", aptr-
>num_warehouses);
    printf("%s", buffer);
    fprintf(fLoader, "%s", buffer);

```

```

main_time_start = (TimeNow() / MILLI);
// start parallel load threads

if (aptr->tables_all || aptr->table_item)
{
    fprintf(fLoader, "\nStarting loader threads for:
item\n");

    hThread[0] = CreateThread(NULL,
0,
(LPTHREAD_START_ROUTINE) LoadItem,
NULL,
0,
&dwThreadId[0]);

    if (hThread[0] == NULL)
    {
        printf("Error, failed in creating
creating thread = 0.\n");
        exit(-1);
    }

    if (aptr->tables_all || aptr->table_warehouse)
    {
        fprintf(fLoader, "Starting loader threads for:
warehouse\n");

        hThread[1] = CreateThread(NULL,
0,
(LPTHREAD_START_ROUTINE) LoadWarehouse,
NULL,
0,
&dwThreadId[1]);

        if (hThread[1] == NULL)
        {
            printf("Error, failed in creating
creating thread = 1.\n");
            exit(-1);
        }

        if (aptr->tables_all || aptr->table_customer)
        {
            fprintf(fLoader, "Starting loader threads for:
customer\n");

            hThread[2] = CreateThread(NULL,
0,
(LPTHREAD_START_ROUTINE) LoadCustomer,
NULL,
0,
&dwThreadId[2]);

            if (hThread[2] == NULL)
            {
                printf("Error, failed in creating
creating main thread = 2.\n");
                exit(-1);
            }

            if (aptr->tables_all || aptr->table_orders)
            {
                fprintf(fLoader, "Starting loader threads for:
orders\n");

                hThread[3] = CreateThread(NULL,
0,
(LPTHREAD_START_ROUTINE) LoadOrders,
NULL,
0,
&dwThreadId[3]);

                if (hThread[3] == NULL)
                {
                    printf("Error, failed in creating
creating main thread = 3.\n");
                    exit(-1);
                }

                // wait for threads to finish...
                for (i=0; i<MAX_MAIN_THREADS; i++)
                {
                    if (hThread[i] != NULL)
                    {
                        WaitForSingleObject( hThread[i],

```

```

INFINITE );
        }
        closeHandle(hThread[i]);
        hThread[i] = NULL;
    }

    main_time_end = (TimeNow() / MILLI);
    sprintf(buffer, "\nTPC-C load completed successfully in %ld minutes.\n",
(main_time_end - main_time_start)/60);

    printf("%s", buffer);
    fprintf(fLoader, "%s", buffer);
    fclose(fLoader);
    SQLFreeEnv(henv);

    exit(0);
    return 0;
}

//=====
// Function name: LoadItem
//=====

void LoadItem()
{
    long      i_id;
    char      i_im_id;
    char      i_name[I_NAME_LEN+1];
    double    i_price;
    char      i_data[I_DATA_LEN+1];
    char      name[20];
    time_t    time_start;
    RETCODE   rc;
    DBINT     rcint;
    char      bcphint[128];

    // Seed with unique number
    seed(1);
    printf("Loading item table...\n");

    // if build index before load
    if ((aptr->build_index == 1) && (aptr->index_order == 1))
        BuildIndex("idxtblcl");

    InitString(i_name, I_NAME_LEN+1);
    InitString(i_data, I_DATA_LEN+1);
    sprintf(name, "%s.%s", aptr->database, "item");
    rc = bcp_init(i_hdbc1, name, NULL, "logs\\item.err", DB_IN);
    if (rc != SUCCEEDED)
        HandleErrorDBC(i_hdbc1);

    if ((aptr->build_index == 1) && (aptr->index_order == 1))
        printf("tablock, order (i_id,
ROWS_PER_BATCH = 100000");
        rc = bcp_control(i_hdbc1, BCP_HINTS, (void*) bcphint);
        if (rc != SUCCEEDED)
            HandleErrorDBC(i_hdbc1);
    }

    rc = bcp_bind(i_hdbc1, (BYTE *) &i_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, 1);
    if (rc != SUCCEEDED)
        HandleErrorDBC(i_hdbc1);

    rc = bcp_bind(i_hdbc1, (BYTE *) &i_im_id, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT4, 2);
    if (rc != SUCCEEDED)
        HandleErrorDBC(i_hdbc1);

    rc = bcp_bind(i_hdbc1, (BYTE *) i_name, 0, I_NAME_LEN, NULL, 0, 0,
3);
    if (rc != SUCCEEDED)
        HandleErrorDBC(i_hdbc1);

    rc = bcp_bind(i_hdbc1, (BYTE *) &i_price, 0, SQL_VARLEN_DATA, NULL,
0, SQLFLT8, 4);
    if (rc != SUCCEEDED)
        HandleErrorDBC(i_hdbc1);

    rc = bcp_bind(i_hdbc1, (BYTE *) i_data, 0, I_DATA_LEN, NULL, 0, 0,
5);
    if (rc != SUCCEEDED)
        HandleErrorDBC(i_hdbc1);

    time_start = (TimeNow() / MILLI);
    item_rows_loaded = 0;
    for (i_id = 1; i_id <= max_items; i_id++)
    {
        i_im_id = RandomNumber(1L, 10000L);
        MakeAlphaString(14, 24, I_NAME_LEN, i_name);
        i_price = ((float) RandomNumber(100L, 10000L))/100.0;
        MakeOriginalAlphaString(26, 50, I_DATA_LEN, i_data,
10);

        rc = bcp_sendrow(i_hdbc1);
        if (rc != SUCCEEDED)

```

```

        HandleErrorDBC(i_hdbc1);
        item_rows_loaded++;
        CheckForCommit(i_hdbc1, i_hstmt1, item_rows_loaded,
"item", &time_start);
    }
    rcint = bcp_done(i_hdbc1);
    if (rcint < 0)
        HandleErrorDBC(i_hdbc1);
    printf("Finished loading item table.\n");
    SQLFreeStmt(i_hstmt1, SQL_DROP);
    SQLDisconnect(i_hdbc1);
    SQLFreeConnect(i_hdbc1);
    // if build index after load
    if ((aptr->build_index == 1) && (aptr->index_order == 0))
        BuildIndex("idxitmc1");
}

// =====
// Function : Loadwarehouse
// Loads WAREHOUSE table and loads Stock and District as warehouses are created
// =====
void Loadwarehouse()
{
    short w_id;
    char w_name[W_NAME_LEN+1];
    char w_street_1[ADDRESS_LEN+1];
    char w_street_2[ADDRESS_LEN+1];
    char w_city[ADDRESS_LEN+1];
    char w_state[STATE_LEN+1];
    char w_zip[ZIP_LEN+1];
    double w_tax;
    double w_ytd;
    char name[20];
    size_t time_start;
    RETCODE rc;
    DBINT rcint;
    char bcphint[128];

    // Seed with unique number
    seed(2);
    printf("Loading warehouse table...\n");
    // if build index before load...
    if ((aptr->build_index == 1) && (aptr->index_order == 1))
        BuildIndex("idxwarc1");
    InitString(w_name, W_NAME_LEN+1);
    InitAddress(w_street_1, w_street_2, w_city, w_state, w_zip);
    sprintf(name, "%s.%s", aptr->database, "warehouse");
    rc = bcp_init(w_hdbc1, name, NULL, "logs\\whouse.err", DB_IN);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    if ((aptr->build_index == 1) && (aptr->index_order == 1))
    {
        sprintf(bcphint, "tablock, order (w_id),
ROWS_PER_BATCH = %d", aptr->num_warehouses);
        rc = bcp_control(w_hdbc1, BCPHINTS, (void*) bcphint);
        if (rc != SUCCEEDED)
            HandleErrorDBC(w_hdbc1);
    }
    rc = bcp_bind(w_hdbc1, (BYTE *) &w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 1);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    2);
    rc = bcp_bind(w_hdbc1, (BYTE *) w_name, 0, W_NAME_LEN, NULL, 0, 0,
0, 0, 3);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    0, 0, 4);
    rc = bcp_bind(w_hdbc1, (BYTE *) w_street_1, 0, ADDRESS_LEN, NULL,
5);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    rc = bcp_bind(w_hdbc1, (BYTE *) w_street_2, 0, ADDRESS_LEN, NULL,
6);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    rc = bcp_bind(w_hdbc1, (BYTE *) w_city, 0, ADDRESS_LEN, NULL, 0, 0,
7);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    rc = bcp_bind(w_hdbc1, (BYTE *) w_state, 0, STATE_LEN, NULL, 0, 0,
8);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    rc = bcp_bind(w_hdbc1, (BYTE *) w_zip, 0, ZIP_LEN, NULL, 0, 0, 7);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    rc = bcp_bind(w_hdbc1, (BYTE *) &w_tax, 0, SQL_VARLEN_DATA, NULL,

```

```

0, SQLFLT8, 8);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    rc = bcp_bind(w_hdbc1, (BYTE *) &w_ytd, 0, SQL_VARLEN_DATA, NULL,
0, SQLFLT8, 9);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    time_start = (TimeNow() / MILLI);
    warehouse_rows_loaded = 0;
    for (w_id = (short)aptr->starting_warehouse; w_id <= aptr-
>num_warehouses; w_id++)
    {
        MakeAlphaString(6,10, W_NAME_LEN, w_name);
        MakeAddress(w_street_1, w_street_2, w_city, w_state,
w_zip);
        w_tax = ((float) RandomNumber(0L,2000L))/10000.00;
        w_ytd = 300000.00;
        rc = bcp_sendrow(w_hdbc1);
        if (rc != SUCCEEDED)
            HandleErrorDBC(w_hdbc1);
        warehouse_rows_loaded++;
        CheckForCommit(i_hdbc1, i_hstmt1,
warehouse_rows_loaded, "warehouse", &time_start);
    }
    rcint = bcp_done(w_hdbc1);
    if (rcint < 0)
        HandleErrorDBC(w_hdbc1);
    printf("Finished loading warehouse table.\n");
    // if build index after load...
    if ((aptr->build_index == 1) && (aptr->index_order == 0))
        BuildIndex("idxwarc1");
    stock_rows_loaded = 0;
    district_rows_loaded = 0;
    District();
    Stock();
}

// =====
// Function : District
// =====
void District()
{
    short d_id;
    short d_w_id;
    char d_name[D_NAME_LEN+1];
    char d_street_1[ADDRESS_LEN+1];
    char d_street_2[ADDRESS_LEN+1];
    char d_city[ADDRESS_LEN+1];
    char d_state[STATE_LEN+1];
    char d_zip[ZIP_LEN+1];
    double d_tax;
    double d_ytd;
    char name[20];
    long d_next_o_id;
    size_t time_start;
    int w_id;
    RETCODE rc;
    DBINT rcint;
    char bcphint[128];

    // Seed with unique number
    seed(4);
    printf("Loading district table...\n");
    // build index before load
    if ((aptr->build_index == 1) && (aptr->index_order == 1))
        BuildIndex("idxdisc1");
    InitString(d_name, D_NAME_LEN+1);
    InitAddress(d_street_1, d_street_2, d_city, d_state, d_zip);
    sprintf(name, "%s.%s", aptr->database, "district");
    rc = bcp_init(w_hdbc1, name, NULL, "logs\\district.err", DB_IN);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    if ((aptr->build_index == 1) && (aptr->index_order == 1))
    {
        sprintf(bcphint, "tablock, order (d_w_id, d_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 10));
        rc = bcp_control(w_hdbc1, BCPHINTS, (void*) bcphint);
        if (rc != SUCCEEDED)
            HandleErrorDBC(w_hdbc1);
    }
    rc = bcp_bind(w_hdbc1, (BYTE *) &d_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 1);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    rc = bcp_bind(w_hdbc1, (BYTE *) &d_w_id, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT2, 2);

```

```

    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    rc = bcp_bind(w_hdbc1, (BYTE *) d_name, 0, D_NAME_LEN, NULL, 0, 0,
3);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    rc = bcp_bind(w_hdbc1, (BYTE *) d_street_1, 0, ADDRESS_LEN, NULL,
0, 0, 4);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    rc = bcp_bind(w_hdbc1, (BYTE *) d_street_2, 0, ADDRESS_LEN, NULL,
0, 0, 5);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    rc = bcp_bind(w_hdbc1, (BYTE *) d_city, 0, ADDRESS_LEN, NULL, 0, 0,
6);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    rc = bcp_bind(w_hdbc1, (BYTE *) d_state, 0, STATE_LEN, NULL, 0, 0,
7);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    rc = bcp_bind(w_hdbc1, (BYTE *) d_zip, 0, ZIP_LEN, NULL, 0, 0, 8);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    rc = bcp_bind(w_hdbc1, (BYTE *) &d_tax, 0, SQL_VARLEN_DATA, NULL,
0, SQLFLT8, 9);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    rc = bcp_bind(w_hdbc1, (BYTE *) &d_ytd, 0, SQL_VARLEN_DATA, NULL,
0, SQLFLT8, 10);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    rc = bcp_bind(w_hdbc1, (BYTE *) &d_next_o_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 11);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
    d_ytd = 30000.00;
    d_next_o_id = orders_per_district+1;
    time_start = (TimeNow() / MILLI);
    for (w_id = aptr->starting_warehouse; w_id <= aptr-
>num_warehouses; w_id++)
    {
        d_w_id = w_id;
        for (d_id = 1; d_id <= DISTRICT_PER_WAREHOUSE;
d_id++)
        {
            MakeAlphaString(6,10,D_NAME_LEN,
d_name);
            MakeAddress(d_street_1, d_street_2,
d_city, d_state, d_zip);
            d_tax = ((float)
RandomNumber(0L,2000L))/10000.00;
            rc = bcp_sendrow(w_hdbc1);
            if (rc != SUCCEEDED)
                HandleErrorDBC(w_hdbc1);
            district_rows_loaded++;
            CheckForCommit(w_hdbc1, w_hstmt1,
district_rows_loaded, "district", &time_start);
        }
    }
    rcint = bcp_done(w_hdbc1);
    if (rcint < 0)
        HandleErrorDBC(w_hdbc1);
    printf("Finished loading district table.\n");
    // if build index after load...
    if ((aptr->build_index == 1) && (aptr->index_order == 0))
        BuildIndex("idxdisc1");
}
return;

// =====
// Function : Stock
// =====
void Stock()
{
    long s_i_id;
    short s_w_id;
    short s_quantity;
    char s_dist_01[S_DIST_LEN+1];
    char s_dist_02[S_DIST_LEN+1];
    char s_dist_03[S_DIST_LEN+1];
    char s_dist_04[S_DIST_LEN+1];
    char s_dist_05[S_DIST_LEN+1];
    char s_dist_06[S_DIST_LEN+1];
    char s_dist_07[S_DIST_LEN+1];

```

```

char      s_dist_08[s_DIST_LEN+1];
char      s_dist_09[s_DIST_LEN+1];
char      s_dist_10[s_DIST_LEN+1];
long      s_ytd;
short     s_order_cnt;
short     s_remote_cnt;
char      s_data[s_DATA_LEN+1];
len;
char      name[20];
char      time_start;
short     rc;
short     RETCODE;
DBINT     rcint;
char      bcphint[128];

// Seed with unique number
seed(3);

// if build index before load...
if ((aptr->build_index == 1) && (aptr->index_order == 1))
    BuildIndex("idxstk1");

sprintf(name, "%s.%s", aptr->database, "stock");
rc = bcp_init(w_hdbc1, name, NULL, "logs\\stock.err", DB_IN);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

if ((aptr->build_index == 1) && (aptr->index_order == 1))
{
    sprintf(bcphint, "tablock, order (s_i_id, s_w_id,
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 10000));
    rc = bcp_control(w_hdbc1, BCPHINTS, (void*) bcphint);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
}

rc = bcp_bind(w_hdbc1, (BYTE *) &s_i_id, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT4, 1);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) &s_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 2);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) &s_quantity, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 3);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_01, 0, S_DIST_LEN, NULL, 0,
0, 4);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_02, 0, S_DIST_LEN, NULL, 0,
0, 5);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_03, 0, S_DIST_LEN, NULL, 0,
0, 6);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_04, 0, S_DIST_LEN, NULL, 0,
0, 7);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_05, 0, S_DIST_LEN, NULL, 0,
0, 8);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_06, 0, S_DIST_LEN, NULL, 0,
0, 9);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_07, 0, S_DIST_LEN, NULL, 0,
0, 10);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_08, 0, S_DIST_LEN, NULL, 0,
0, 11);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_09, 0, S_DIST_LEN, NULL, 0,
0, 12);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_10, 0, S_DIST_LEN, NULL, 0,
0, 13);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) &s_ytd, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT4, 14);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) &s_order_cnt, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 15);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) &s_remote_cnt, 0, SQL_VARLEN_DATA,

```

```

NULL, 0, SQLINT2, 16);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

17);
rc = bcp_bind(w_hdbc1, (BYTE *) s_data, 0, S_DATA_LEN, NULL, 0, 0,
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

s_ytd = s_order_cnt = s_remote_cnt = 0;
time_start = (TimeNow() / MILLI);
printf("...Loading stock table\n");
for (s_i_id=1; s_i_id <= max_items; s_i_id++)
{
    for (s_w_id = (short)aptr->starting_warehouse; s_w_id
<= aptr->num_warehouses; s_w_id++)
    {
        (short)RandomNumber(10L,100L);
        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_DATA_LEN, s_data,10);

        rc = bcp_sendrow(w_hdbc1);
        if (rc != SUCCEEDED)
            HandleErrorDBC(w_hdbc1);

        stock_rows_loaded++;
        CheckForCommit(w_hdbc1, w_hstmt1,
        stock_rows_loaded, "stock", &time_start);
    }
}

rcint = bcp_done(w_hdbc1);
if (rcint < 0)
    HandleErrorDBC(w_hdbc1);

printf("Finished loading stock table.\n");
SQLFreeStmt(w_hstmt1, SQL_DROP);
SQLDisconnect(w_hdbc1);
SQLFreeConnect(w_hdbc1);

// if build index after load...
if ((aptr->build_index == 1) && (aptr->index_order == 0))
    BuildIndex("idxstk1");

return;

//=====
// Function : LoadCustomer
//=====

void LoadCustomer()
{
    LOADER_TIME_STRUCT customer_time_start;
    LOADER_TIME_STRUCT history_time_start;
    short d_id;

    short d_id;

    DWORD dwThreadId[MAX_CUSTOMER_THREADS];
    HANDLE hThread[MAX_CUSTOMER_THREADS];
    char name[20];
    char RETCODE;
    rc;
    DBINT rcint;
    char bcphint[128];
    char cmd[256];
    // SQLRETURN rc1;
    // SQLSMALLINT recnum, MsgLen;
    // SQLCHAR sqlState[6], Msg[SQL_MAX_MESSAGE_LENGTH];
    // SQLINTEGER NativeError;

    // Seed with unique number
    seed(5);
}

```

```

printf("Loading customer and history tables...\n");

// if build index before load...
if ((aptr->build_index == 1) && (aptr->index_order == 1))
    BuildIndex("idxcust1");

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

rc = bcp_init(c_hdbc1, name, NULL, "logs\\customer.err", DB_IN);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

if ((aptr->build_index == 1) && (aptr->index_order == 1))
{
    sprintf(bcphint, "tablock, order (c_w_id, c_d_id,
c_id), ROWS_PER_BATCH = %u", (aptr->num_warehouses * 30000));
    rc = bcp_control(c_hdbc1, BCPHINTS, (void*) bcphint);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);
}

sprintf(name, "%s.%s", aptr->database, "history");
rc = bcp_init(c_hdbc2, name, NULL, "logs\\history.err", DB_IN);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc2);

sprintf(bcphint, "tablock");
rc = bcp_control(c_hdbc2, BCPHINTS, (void*) bcphint);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc2);

customer_rows_loaded = 0;
history_rows_loaded = 0;
CustomerBufInit();
customer_time_start.time_start = (TimeNow() / MILLI);
history_time_start.time_start = (TimeNow() / MILLI);

for (w_id = (short)aptr->starting_warehouse; w_id <= aptr-
>num_warehouses; w_id++)
{
    for (d_id = 1; d_id <= DISTRICT_PER_WAREHOUSE;
d_id++)
    {
        CustomerBufLoad(d_id, w_id);

        // Start parallel loading threads here...
        // Start customer table thread
        printf("...Loading customer table for:
d_id = %d, w_id = %d\n", d_id, w_id);

        hThread[0] = CreateThread(NULL,
0,
(LPTHREAD_START_ROUTINE)
LoadCustomerTable,
&customer_time_start,
0,
&dwThreadId[0]);

        if (hThread[0] == NULL)
        {
            printf("Error, failed in
creating creating thread = 0.\n");
            exit(-1);
        }

        // Start history table thread
        printf("...Loading history table for:
d_id = %d, w_id = %d\n", d_id, w_id);

        hThread[1] = CreateThread(NULL,
0,
(LPTHREAD_START_ROUTINE)
LoadHistoryTable,
&history_time_start,
0,
&dwThreadId[1]);

        if (hThread[1] == NULL)
        {
            printf("Error, failed in
creating creating thread = 1.\n");
            exit(-1);
        }

        WaitForSingleObject( hThread[0],
INFINITE );
        WaitForSingleObject( hThread[1],
INFINITE );

        if (CloseHandle(hThread[0]) == FALSE)
        {
            printf("Error, failed in
closing customer thread handle with errno:
%d\n", GetLastError());
        }
    }
}

```



```

        if (closeHandle(hThread[1]) == FALSE)
        {
            printf("Error, failed in
closing history thread handle with errno: %d\n", GetLastError());
        }
    }

    // flush the bulk connection
    rcint = bcp_done(c_hdbc1);
    if (rcint < 0)
        HandleErrorDBC(c_hdbc1);

    rcint = bcp_done(c_hdbc2);
    if (rcint < 0)
        HandleErrorDBC(c_hdbc2);

    printf("Finished loading customer table.\n");

    // if build index after load...
    if ((aptr->build_index == 1) && (aptr->index_order == 0))
        buildIndex("idxcust1");

    // build non-clustered index
    if (aptr->build_index == 1)
        buildIndex("idxcustnc");

    // Output the NURAND used for the loader into C_FIRST for C_ID = 1,
    // C_W_ID = 1, and C_D_ID = 1
    sprintf(cmd, "osql -S%$ -U%$ -P%$ -d%$ -e -Q"update customer set
C_first = 'C_LOAD = %d' where c_id = 1 and c_w_id = 1 and c_d_id = 1" >
logs\\nurand_load.log",

        aptr->server,
        aptr->user,
        aptr->password,
        aptr->database,
        LOADER_NURAND_C);

    system(cmd);

    SQLFreeStmt(c_hstmt1, SQL_DROP);
    SQLDisconnect(c_hdbc1);
    SQLFreeConnect(c_hdbc1);

    SQLFreeStmt(c_hstmt2, SQL_DROP);
    SQLDisconnect(c_hdbc2);
    SQLFreeConnect(c_hdbc2);

    return;
}

//=====
// Function : CustomerBufInit
//=====

void CustomerBufInit()
{
    int i;

    for (i=0;i<customers_per_district;i++)
    {
        customer_buf[i].c_id = 0;
        customer_buf[i].c_d_id = 0;
        customer_buf[i].c_w_id = 0;

        strcpy(customer_buf[i].c_first,"");
        strcpy(customer_buf[i].c_middle,"");
        strcpy(customer_buf[i].c_last,"");
        strcpy(customer_buf[i].c_street_1,"");
        strcpy(customer_buf[i].c_street_2,"");
        strcpy(customer_buf[i].c_city,"");
        strcpy(customer_buf[i].c_state,"");
        strcpy(customer_buf[i].c_zip,"");
        strcpy(customer_buf[i].c_phone,"");
        strcpy(customer_buf[i].c_credit,"");

        customer_buf[i].c_credit_lim = 0;
        customer_buf[i].c_discount = (float) 0;

        // fix to avoid ODBC float to numeric conversion
        // customer_buf[i].c_balance = 0;
        strcpy(customer_buf[i].c_balance,"");

        customer_buf[i].c_ytd_payment = 0;
        customer_buf[i].c_payment_cnt = 0;
        customer_buf[i].c_delivery_cnt = 0;
        strcpy(customer_buf[i].c_data,"");
        customer_buf[i].h_amount = 0;
        strcpy(customer_buf[i].h_data,"");
    }
}

//=====

```

```

// Function : CustomerBufLoad
// Fills shared buffer for HISTORY and CUSTOMER
//=====
void CustomerBufLoad(int d_id, int w_id)
{
    long
    CUSTOMER_SORT_STRUCT c[CUSTOMERS_PER_DISTRICT];

    for (i=0;i<customers_per_district;i++)
    {
        if (i < 1000)
            LastName(i, c[i].c_last);
        else
            LastName(NURAND(255,0,999,LOADER_NURAND_C), c[i].c_last);

        MakeAlphaString(8,16,FIRST_NAME_LEN, c[i].c_first);
        c[i].c_id = i+1;
    }

    printf("...Loading customer buffer for: d_id = %d, w_id = %d\n",
d_id, w_id);

    for (i=0;i<customers_per_district;i++)
    {
        customer_buf[i].c_d_id = d_id;
        customer_buf[i].c_w_id = w_id;
        customer_buf[i].h_amount = 10.0;
        customer_buf[i].c_ytd_payment = 10.0;
        customer_buf[i].c_payment_cnt = 1;
        customer_buf[i].c_delivery_cnt = 0;
        // Generate CUSTOMER and HISTORY data
        customer_buf[i].c_id = c[i].c_id;
        strcpy(customer_buf[i].c_first, c[i].c_first);
        strcpy(customer_buf[i].c_last, c[i].c_last);

        customer_buf[i].c_middle[0] = '0';
        customer_buf[i].c_middle[1] = 'E';
        MakeAddress(customer_buf[i].c_street_1,
customer_buf[i].c_street_2,
customer_buf[i].c_city,
customer_buf[i].c_state,
customer_buf[i].c_zip);
        MakeNumberString(16, 16, PHONE_LEN,
customer_buf[i].c_phone);
        if (RandomNumber(1L, 100L) > 10)
            customer_buf[i].c_credit[0] = 'G';
        else
            customer_buf[i].c_credit[0] = 'B';
        customer_buf[i].c_credit[1] = 'C';
        customer_buf[i].c_credit_lim = 50000.0;
        customer_buf[i].c_discount = ((float) RandomNumber(0L,
5000L)) / 10000.0;

        // fix to avoid ODBC float to numeric conversion
        // customer_buf[i].c_balance = -10.0;
        strcpy(customer_buf[i].c_balance,"-10.0");
        customer_buf[i].c_data);
        // Generate HISTORY data
        MakeAlphaString(12, 24, H_DATA_LEN,
customer_buf[i].h_data);
    }
}

//=====
// Function : LoadCustomerTable
//=====

void LoadCustomerTable(LOADER_TIME_STRUCT *customer_time_start)
{
    int i;

    long c_id;
    short c_d_id;
    short c_w_id;
    char c_first[FIRST_NAME_LEN+1];
    char c_middle[MIDDLE_NAME_LEN+1];
    char c_last[LAST_NAME_LEN+1];
    char c_street_1[ADDRESS_LEN+1];
    char c_street_2[ADDRESS_LEN+1];
    char c_city[ADDRESS_LEN+1];
    char c_state[STATE_LEN+1];
    char c_zip[ZIP_LEN+1];
    char c_phone[PHONE_LEN+1];
    char c_credit[CREDIT_LEN+1];
    double c_credit_lim;
    double c_discount;
}

```

```

// fix to avoid ODBC float to numeric conversion problem.
// double c_balance;
// char c_balance[6];

double c_ytd_payment;
short c_payment_cnt;
short c_delivery_cnt;
char c_data[C_DATA_LEN+1];
char c_since[C_SINCE_LEN+1];
char RETCODE rc;

rc = bcp_bind(c_hdbc1, (BYTE *) &c_id, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT4,
1);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) &c_d_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 2);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) &c_w_id, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT2, 3);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_first, 0, FIRST_NAME_LEN, NULL, 0, 4);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_middle, 0, MIDDLE_NAME_LEN, NULL, 0, 5);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_last, 0, LAST_NAME_LEN, NULL, 0, 6);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_street_1, 0, ADDRESS_LEN, NULL, 0, 7);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_street_2, 0, ADDRESS_LEN, NULL,0, 8);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_city, 0, ADDRESS_LEN, NULL, 0, 9);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_state, 0, STATE_LEN, NULL, 0, 10);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_zip, 0, ZIP_LEN, NULL, 0, 11);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_phone, 0, PHONE_LEN, NULL, 0, 12);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) &c_since, 0, C_SINCE_LEN, NULL, 0,
SQLCHARACTER, 13);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_credit, 0, CREDIT_LEN, NULL, 0, 14);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) &c_credit_lim, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, 15);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) &c_discount, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, 16);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

// fix to avoid ODBC float to numeric conversion problem.
// rc = bcp_bind(c_hdbc1, (BYTE *) &c_balance, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, 17);
// if (rc != SUCCEEDED)
//     HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_balance, 0, 5, NULL, 0, SQLCHARACTER, 17);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) &c_ytd_payment, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, 18);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) &c_payment_cnt, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 19);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) &c_delivery_cnt, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 20);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

rc = bcp_bind(c_hdbc1, (BYTE *) c_data, 0, 500, NULL, 0, 0, 21);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc1);

```

```

for (i = 0; i < customers_per_district; i++)
{
    c_id = customer_buf[i].c_id;
    c_d_id = customer_buf[i].c_d_id;
    c_w_id = customer_buf[i].c_w_id;

    strcpy(c_first, customer_buf[i].c_first);
    strcpy(c_middle, customer_buf[i].c_middle);
    strcpy(c_last, customer_buf[i].c_last);
    strcpy(c_street_1, customer_buf[i].c_street_1);
    strcpy(c_street_2, customer_buf[i].c_street_2);
    strcpy(c_city, customer_buf[i].c_city);
    strcpy(c_state, customer_buf[i].c_state);
    strcpy(c_zip, customer_buf[i].c_zip);
    strcpy(c_phone, customer_buf[i].c_phone);
    strcpy(c_credit, customer_buf[i].c_credit);

    FormatDate(&c_since);

    c_credit_lim = customer_buf[i].c_credit_lim;
    c_discount = customer_buf[i].c_discount;

    // fix to avoid ODBC float to numeric conversion
    // c_balance = customer_buf[i].c_balance;
    strcpy(c_balance, customer_buf[i].c_balance);

    c_ytd_payment = customer_buf[i].c_ytd_payment;
    c_payment_cnt = customer_buf[i].c_payment_cnt;
    c_delivery_cnt = customer_buf[i].c_delivery_cnt;

    strcpy(c_data, customer_buf[i].c_data);

    // Send data to server
    rc = bcp_sendrow(c_hdbc1);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);

    customer_rows_loaded++;
    CheckForCommit(c_hdbc1, c_hstmt1, c_customer_time_start->time_start);
}

}

//=====
// Function : LoadHistoryTable
//=====

void LoadHistoryTable(LOADER_TIME_STRUCT *history_time_start)
{
    long int i;
    short c_id;
    short c_d_id;
    short c_w_id;
    char double h_amount;
    char h_data[H_DATA_LEN+1];
    char char h_date[H_DATE_LEN+1];
    RETCODE rc;

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_id, 0, SQL_VARCHAR, NULL, 0, SQLINT4, 1);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_d_id, 0, SQL_VARCHAR, NULL, 0, SQLINT2, 2);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_w_id, 0, SQL_VARCHAR, NULL, 0, SQLINT2, 3);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_id, 0, SQL_VARCHAR, NULL, 0, SQLINT2, 4);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_w_id, 0, SQL_VARCHAR, NULL, 0, SQLINT2, 5);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &h_date, 0, H_DATA_LEN, NULL, 0, SQLCHARACTER, 6);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &h_amount, 0, SQL_VARCHAR, NULL, 0, SQLFLT8, 7);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) h_data, 0, H_DATA_LEN, NULL, 0, 0, 8);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    for (i = 0; i < customers_per_district; i++)
    {
        c_id = customer_buf[i].c_id;
        c_d_id = customer_buf[i].c_d_id;
        c_w_id = customer_buf[i].c_w_id;
        h_amount = customer_buf[i].h_amount;
        strcpy(h_data, customer_buf[i].h_data);
    }
}

```

```

FormatDate(&h_date);

// send to server
rc = bcp_sendrow(c_hdbc2);
if (rc != SUCCEEDED)
    HandleErrorDBC(c_hdbc2);

history_rows_loaded++;
CheckForCommit(c_hdbc2, c_hstmt2, history_rows_loaded,
"history", &history_time_start->time_start);
}

//=====
// Function : LoadOrders
//=====

void LoadOrders()
{
    LOADER_TIME_STRUCT orders_time_start;
    LOADER_TIME_STRUCT new_order_time_start;
    LOADER_TIME_STRUCT order_line_time_start;
    short d_id;
    DWORD dwThreadId[MAX_ORDER_THREADS];
    HANDLE hThreadID[MAX_ORDER_THREADS];
    hThread[MAX_ORDER_THREADS];
    char name[20];
    RETCODE rc;
    char bcphint[128];
    // seed with unique number
    seed(6);

    printf("Loading orders...\n");

    // if build index before load...
    if ((aptr->build_index == 1) && (aptr->index_order == 1))
    {
        BuildIndex("idxordc1");
        BuildIndex("idxnodc1");
        BuildIndex("idxod1c1");
    }

    // initialize bulk copy
    sprintf(name, "%s.%s", aptr->database, "orders");
    rc = bcp_init(o_hdbc1, name, NULL, "logs\\orders.err", DB_IN);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc1);

    if ((aptr->build_index == 1) && (aptr->index_order == 1))
    {
        sprintf(bcphint, "tablock, order (o_w_id, o_d_id,
o_id), ROWS_PER_BATCH = %u", (aptr->num_warehouses * 30000));
        rc = bcp_control(o_hdbc1, BCPHINTS, (void*) bcphint);
        if (rc != SUCCEEDED)
            HandleErrorDBC(o_hdbc1);
    }

    sprintf(name, "%s.%s", aptr->database, "new_order");
    rc = bcp_init(o_hdbc2, name, NULL, "logs\\neword.err", DB_IN);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc2);

    if ((aptr->build_index == 1) && (aptr->index_order == 1))
    {
        sprintf(bcphint, "tablock, order (no_w_id, no_d_id,
no_o_id), ROWS_PER_BATCH = %u", (aptr->num_warehouses * 9000));
        rc = bcp_control(o_hdbc2, BCPHINTS, (void*) bcphint);
        if (rc != SUCCEEDED)
            HandleErrorDBC(o_hdbc2);
    }

    sprintf(name, "%s.%s", aptr->database, "order_line");
    rc = bcp_init(o_hdbc3, name, NULL, "logs\\ordline.err", DB_IN);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    if ((aptr->build_index == 1) && (aptr->index_order == 1))
    {
        sprintf(bcphint, "tablock, order (ol_w_id, ol_d_id,
ol_o_id, ol_number), ROWS_PER_BATCH = %u", (aptr->num_warehouses * 30000));
        rc = bcp_control(o_hdbc3, BCPHINTS, (void*) bcphint);
        if (rc != SUCCEEDED)
            HandleErrorDBC(o_hdbc3);
    }

    orders_rows_loaded = 0;
    new_order_rows_loaded = 0;
    order_line_rows_loaded = 0;

    OrdersBufInit();

    orders_time_start.time_start = (TimeNow() / MILLI);
    new_order_time_start.time_start = (TimeNow() / MILLI);
    order_line_time_start.time_start = (TimeNow() / MILLI);

    for (w_id = (short)aptr->starting_warehouse; w_id <= aptr->num_warehouses; w_id++)
    {
        for (d_id = 1; d_id <= DISTRICT_PER_WAREHOUSE;
d_id++)

```

```

{
    ordersBufLoad(d_id, w_id);
    // start parallel loading threads here...
    // start orders table thread
    printf("...Loading Order Table for: d_id
= %d, w_id = %d\n", d_id, w_id);

    hThread[0] = CreateThread(NULL,
0,
(LPTHREAD_START_ROUTINE)
&orders_time_start,
0,
&dwThreadId[0]);

if (hThread[0] == NULL)
{
    printf("Error, failed in
exit(-1);
}

// start NewOrder table thread
printf("...Loading New-Order Table for:
d_id = %d, w_id = %d\n", d_id, w_id);

hThread[1] = CreateThread(NULL,
0,
(LPTHREAD_START_ROUTINE)
LoadNewOrderTable,
&new_order_time_start,
0,
&dwThreadId[1]);

if (hThread[1] == NULL)
{
    printf("Error, failed in
exit(-1);
}

// start Order-Line table thread
printf("...Loading Order-Line Table for:
d_id = %d, w_id = %d\n", d_id, w_id);

hThread[2] = CreateThread(NULL,
0,
(LPTHREAD_START_ROUTINE)
LoadOrderLineTable,
&order_line_time_start,
0,
&dwThreadId[2]);

if (hThread[2] == NULL)
{
    printf("Error, failed in
exit(-1);
}

waitForSingleObject( hThread[0],
INFINITE );
waitForSingleObject( hThread[1],
INFINITE );
waitForSingleObject( hThread[2],
INFINITE );

if (CloseHandle(hThread[0]) == FALSE)
{
    printf("Error, failed in
closing Orders thread handle with errno: %d\n", GetLastError());
}

if (CloseHandle(hThread[1]) == FALSE)
{
    printf("Error, failed in
closing NewOrder thread handle with errno: %d\n", GetLastError());
}

if (CloseHandle(hThread[2]) == FALSE)
{
    printf("Error, failed in
closing OrderLine thread handle with errno: %d\n", GetLastError());
}

}

printf("Finished loading orders.\n");
}

```

```

return;
}

//=====
// Function : OrdersBufInit
// Clears shared buffer for ORDERS, NEWORDER, and ORDERLINE
//=====
void OrdersBufInit()
{
    int i;
    int j;
    for (i=0;i<orders_per_district;i++)
    {
        orders_buf[i].o_id = 0;
        orders_buf[i].o_d_id = 0;
        orders_buf[i].o_w_id = 0;
        orders_buf[i].o_c_id = 0;
        orders_buf[i].o_carrier_id = 0;
        orders_buf[i].o_ol_cnt = 0;
        orders_buf[i].o_all_local = 0;
        for (j=0;j<=14;j++)
        {
            orders_buf[i].o_ol[j].ol = 0;
            orders_buf[i].o_ol[j].ol_i_id = 0;
            orders_buf[i].o_ol[j].ol_supply_w_id = 0;
        }
    }
    0;
    orders_buf[i].o_ol[j].ol_quantity = 0;
    orders_buf[i].o_ol[j].ol_amount = 0;
    strcpy(orders_buf[i].o_ol[j].ol_dist_info,"");
}

//=====
// Function : OrdersBufLoad
// Fills shared buffer for ORDERS, NEWORDER, and ORDERLINE
//=====
void OrdersBufLoad(int d_id, int w_id)
{
    int cust[ORDERS_PER_DISTRICT+1];
    long o_id;
    short ol;
    printf("...Loading Order Buffer for: d_id = %d, w_id = %d\n",
        d_id, w_id);
    GetPermutation(cust, orders_per_district);
    for (o_id=0;o_id<orders_per_district;o_id++)
    {
        // Generate ORDER and NEW-ORDER data
        orders_buf[o_id].o_d_id = d_id;
        orders_buf[o_id].o_w_id = w_id;
        orders_buf[o_id].o_id = o_id+1;
        orders_buf[o_id].o_c_id = cust[o_id+1];
        orders_buf[o_id].o_ol_cnt = (short)RandomNumber(5L,
15L);
        if (o_id < first_new_order)
        {
            orders_buf[o_id].o_carrier_id =
(short)RandomNumber(1L, 10L);
        }
        else
        {
            orders_buf[o_id].o_carrier_id = 0;
            orders_buf[o_id].o_all_local = 1;
        }
        for (ol=0; ol<orders_buf[o_id].o_ol_cnt; ol++)
        {
            orders_buf[o_id].o_ol[ol].ol = ol+1;
            orders_buf[o_id].o_ol[ol].ol_i_id =
RandomNumber(1L, max_items);
            orders_buf[o_id].o_ol[ol].ol_supply_w_id
= w_id;
            orders_buf[o_id].o_ol[ol].ol_quantity =
5;
            MakeAlphaString(24, 24, OL_DIST_INFO_LEN,
&orders_buf[o_id].o_ol[ol].ol_dist_info);
            // Generate ORDER-LINE data
            if (o_id < first_new_order)
            {
                orders_buf[o_id].o_ol[ol].ol_amount = 0;
                // Added to insure
                ol_delivery_d set properly during load
                FormatDate(&orders_buf[o_id].o_ol[ol].ol_delivery_d);
            }
        }
    }
}

```

```

}
else
{
    orders_buf[o_id].o_ol[ol].ol_amount =
RandomNumber(1,999999)/100.0;
    ol_delivery_d set properly during load
    // Added to insure
    // odbc datetime format
    strcpy(orders_buf[o_id].o_ol[ol].ol_delivery_d,"1899-12-31
00:00:00.000");
}
}
}

//=====
// Function : LoadOrderTable
//=====
void LoadOrderTable(LOADER_TIME_STRUCT *orders_time_start)
{
    int i;
    long o_id;
    short o_d_id;
    short o_w_id;
    long o_c_id;
    short o_carrier_id;
    short o_ol_cnt;
    short o_all_local;
    char o_entry_d[O_ENTRY_D_LEN+1];
    RETCODE rc;
    DBINT rcint;
    // bind ORDER data
    rc = bcp_bind(o_hdbc1, (BYTE *) &o_id, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT4,
1);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc1);
    rc = bcp_bind(o_hdbc1, (BYTE *) &o_d_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 2);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc1);
    rc = bcp_bind(o_hdbc1, (BYTE *) &o_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 3);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc1);
    rc = bcp_bind(o_hdbc1, (BYTE *) &o_c_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, 4);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc1);
    rc = bcp_bind(o_hdbc1, (BYTE *) &o_entry_d, 0, O_ENTRY_D_LEN, NULL,
0, SQLCHARACTER, 5);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc1);
    rc = bcp_bind(o_hdbc1, (BYTE *) &o_carrier_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 6);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc1);
    rc = bcp_bind(o_hdbc1, (BYTE *) &o_ol_cnt, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 7);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc1);
    rc = bcp_bind(o_hdbc1, (BYTE *) &o_all_local, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 8);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc1);
    for (i = 0; i < orders_per_district; i++)
    {
        o_id = orders_buf[i].o_id;
        o_d_id = orders_buf[i].o_d_id;
        o_w_id = orders_buf[i].o_w_id;
        o_c_id = orders_buf[i].o_c_id;
        o_carrier_id = orders_buf[i].o_carrier_id;
        o_ol_cnt = orders_buf[i].o_ol_cnt;
        o_all_local = orders_buf[i].o_all_local;
        FormatDate(&o_entry_d);
        // send data to server
        rc = bcp_sendrow(o_hdbc1);
        if (rc != SUCCEEDED)
            HandleErrorDBC(o_hdbc1);
        orders_rows_loaded++;
        CheckForCommit(o_hdbc1, o_hstmt1, orders_rows_loaded,
"orders", &orders_time_start->time_start);
    }
    // rcint = bcp_batch(o_hdbc1);
    // if (rcint < 0)
    //     HandleErrorDBC(o_hdbc1);
    if ((o_w_id == apr->num_warehouses) && (o_d_id == 10))
    {

```

```

rcint = bcp_done(o_hdbc1);
if (rcint < 0)
    HandleErrorDBC(o_hdbc1);
SQLFreeStmt(o_hstmt1, SQL_DROP);
SQLDisconnect(o_hdbc1);
SQLFreeConnect(o_hdbc1);
// if build index after load...
if ((aptr->build_index == 1) && (aptr->index_order ==
0))
    BuildIndex("idxordc1");
// build non-clustered index
if (aptr->build_index == 1)
    BuildIndex("idxordnc");
}
}

//=====
// Function : LoadNewOrderTable
//=====
void LoadNewOrderTable(LOADER_TIME_STRUCT *new_order_time_start)
{
    int i;
    long o_id;
    short o_d_id;
    short o_w_id;
    RETCODE rc;
    DBINT rcint;
    // Bind NEW-ORDER data
    rc = bcp_bind(o_hdbc2, (BYTE *) &o_id, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT4,
1);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc2);
    rc = bcp_bind(o_hdbc2, (BYTE *) &o_d_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 2);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc2);
    rc = bcp_bind(o_hdbc2, (BYTE *) &o_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 3);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc2);
    for (i = first_new_order; i < last_new_order; i++)
    {
        o_id = orders_buf[i].o_id;
        o_d_id = orders_buf[i].o_d_id;
        o_w_id = orders_buf[i].o_w_id;
        rc = bcp_sendrow(o_hdbc2);
        if (rc != SUCCEEDED)
            HandleErrorDBC(o_hdbc2);
        new_order_rows_loaded++;
        CheckForCommit(o_hdbc2, o_hstmt2,
new_order_rows_loaded, "new_order", &new_order_time_start->time_start);
    }
    // rcint = bcp_batch(o_hdbc2);
    // if (rcint < 0)
    //     HandleErrorDBC(o_hdbc2);
    if ((o_w_id == apr->num_warehouses) && (o_d_id == 10))
    {
        rcint = bcp_done(o_hdbc2);
        if (rcint < 0)
            HandleErrorDBC(o_hdbc2);
        SQLFreeStmt(o_hstmt2, SQL_DROP);
        SQLDisconnect(o_hdbc2);
        SQLFreeConnect(o_hdbc2);
        // if build index after load...
        if ((aptr->build_index == 1) && (aptr->index_order ==
0))
            BuildIndex("idxnodc1");
    }
}

//=====
// Function : LoadOrderLineTable
//=====
void LoadOrderLineTable(LOADER_TIME_STRUCT *order_line_time_start)
{
    long i;
    int o_id;
    short o_d_id;
    short o_w_id;
    long ol;
    long ol_i_id;
    short ol_supply_w_id;
    short ol_quantity;
    short ol_amount;
    double ol_dist_info[DIST_INFO_LEN+1];
    char ol_delivery_d[OL_DELIVERY_D_LEN+1];

```

```

        RETCODE          rc;
        DBINT           rcint;

        // bind ORDER-LINE data
    1); rc = bcp_bind(o_hdbc3, (BYTE *) &o_id, 0, SQL_VARCHAR, NULL, 0, SQLINT4,
        if (rc != SUCCEED)
            HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &o_id, 0, SQL_VARCHAR, NULL, 0,
SQLINT2, 2);
        if (rc != SUCCEED)
            HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &o_w_id, 0, SQL_VARCHAR, NULL, 0,
SQLINT2, 3);
        if (rc != SUCCEED)
            HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &o_l_id, 0, SQL_VARCHAR, NULL, 0,
SQLINT4, 4);
        if (rc != SUCCEED)
            HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &o_l_supply_w_id, 0, SQL_VARCHAR, NULL, 0,
SQLINT2, 5);
        if (rc != SUCCEED)
            HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &o_l_delivery_d, 0, SQL_VARCHAR, NULL, 0,
SQLCHARACTER, 6);
        if (rc != SUCCEED)
            HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &o_l_quantity, 0, SQL_VARCHAR, NULL, 0,
SQLINT2, 7);
        if (rc != SUCCEED)
            HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &o_l_amount, 0, SQL_VARCHAR, NULL, 0,
SQLFLT8, 8);
        if (rc != SUCCEED)
            HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &o_l_dist_info, 0, DIST_INFO_LEN, NULL, 0, 0,
SQLINT2, 9);
        if (rc != SUCCEED)
            HandleErrorDBC(o_hdbc3);

    for (i = 0; i < orders_per_district; i++)
    {
        o_id      = orders_buf[i].o_id;
        o_d_id    = orders_buf[i].o_d_id;
        o_w_id    = orders_buf[i].o_w_id;

        for (j=0; j < orders_buf[i].o_l_cnt; j++)
        {
            o_l_id      =
            o_l_supply_w_id =
            o_l_quantity =
            o_l_amount   =

            strcpy(o_l_delivery_d, orders_buf[i].o_l[j].o_l_delivery_d);

            strcpy(o_l_dist_info, orders_buf[i].o_l[j].o_l_dist_info);

            rc = bcp_sendrow(o_hdbc3);
            if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc3);

            order_line_rows_loaded++;
            checkForCommit(o_hdbc3, o_hstmt3,
                order_line_rows_loaded, "order_line", &order_line_time_start->time_start);
        }
    }

    // rcint = bcp_batch(o_hdbc3);
    // if (rcint < 0)
    //     HandleErrorDBC(o_hdbc3);

    if ((o_w_id == apr->num_warehouses) && (o_d_id == 10))
    {
        rcint = bcp_done(o_hdbc3);
        if (rcint < 0)
            HandleErrorDBC(o_hdbc3);

        SQLFreeStmt(o_hstmt3, SQL_DROP);
        SQLDisconnect(o_hdbc3);
        SQLFreeConnect(o_hdbc3);

        // if build index after load...
        // if ((aptr->build_index == 1) && (aptr->index_order ==
            buildIndex("idxod1c1"));
    }
}

```

```

}

//=====
// Function : GetPermutation
//=====

void GetPermutation(int perm[], int n)
{
    int i, r, t;
    for (i=1; i<=n; i++)
        perm[i] = i;

    for (i=1; i<=n; i++)
    {
        r = RandomNumber(i,n);
        t = perm[i];
        perm[i] = perm[r];
        perm[r] = t;
    }
}

//=====
// Function : CheckForCommit
//=====

void CheckForCommit(HDBC hdbc,
                    int rows_loaded,
                    HSTMT hstmt,
                    char *table_name,
                    size_t *time_start)
{
    time_t time_end, time_diff;
    // DBINT rcint;

    if (! (rows_loaded % apr->batch) )
    {
        // rcint = bcp_batch(hdbc);
        // if (rcint < 0)
        //     HandleErrorDBC(hdbc);

        time_end = (TimeNow() / MILLI);
        time_diff = time_end - *time_start;

        printf("-> Loaded %ld rows into %s in %ld sec - Total
= %d (%.2f rps)\n",
            apr->batch,
            table_name,
            time_diff,
            rows_loaded,
            (float) apr->batch /
            (time_diff ? time_diff : 1L));
    }
    *time_start = time_end;
}
return;
}

//=====
// Function : OpenConnections
//=====

void OpenConnections()
{
    RETCODE rc;

    char szDriverString[300];
    char szDriverStringOut[1024];
    SQLSMALLINT cbDriverStringOut;

    SQLAllocHandle(SQL_HANDLE_ENV, SQL_NULL_HANDLE, &henv );
    SQLSetEnvAttr(henv, SQL_ATTR_ODBC_VERSION, (void*)SQL_OV_ODBC3,
    0 );

    SQLAllocHandle(SQL_HANDLE_DBC, henv, &i_hdbc1);
    SQLAllocHandle(SQL_HANDLE_DBC, henv, &w_hdbc1);
    SQLAllocHandle(SQL_HANDLE_DBC, henv, &c_hdbc1);
    SQLAllocHandle(SQL_HANDLE_DBC, henv, &o_hdbc1);
    SQLAllocHandle(SQL_HANDLE_DBC, henv, &o_hdbc2);
    SQLAllocHandle(SQL_HANDLE_DBC, henv, &o_hdbc3);

    SQLSetConnectAttr(i_hdbc1, SQL_COPT_SS_BCP, (SQLPOINTER)
SQL_BCP_ON, SQL_IS_INTEGER);
    SQLSetConnectAttr(w_hdbc1, SQL_COPT_SS_BCP, (SQLPOINTER)
SQL_BCP_ON, SQL_IS_INTEGER);
    SQLSetConnectAttr(c_hdbc1, SQL_COPT_SS_BCP, (SQLPOINTER)
SQL_BCP_ON, SQL_IS_INTEGER);
    SQLSetConnectAttr(o_hdbc1, SQL_COPT_SS_BCP, (SQLPOINTER)
SQL_BCP_ON, SQL_IS_INTEGER);
    SQLSetConnectAttr(o_hdbc2, SQL_COPT_SS_BCP, (SQLPOINTER)
SQL_BCP_ON, SQL_IS_INTEGER);
    SQLSetConnectAttr(o_hdbc3, SQL_COPT_SS_BCP, (SQLPOINTER)
SQL_BCP_ON, SQL_IS_INTEGER);
}

```

```

SQL_BCP_ON, SQL_IS_INTEGER);

// Open connections to SQL Server
// Connection 1
sprintf( szDriverString, "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s",
aptr->server,
aptr->user,
aptr->password,
aptr->database );

>pack_size); rc = SQLSetConnectOption (i_hdbc1, SQL_PACKET_SIZE, apr-
if (rc != SUCCEED)
    HandleErrorDBC(i_hdbc1);
rc = SQLDriverConnect ( i_hdbc1,
NULL,
(SQLCHAR*)&szDriverString[0],
SQL_NTS,
(SQLCHAR*)&szDriverStringOut[0],
sizeof(szDriverStringOut),
&cbDriverStringOut,
SQL_DRIVER_NOPROMPT );
if (rc != SUCCEED)
    HandleErrorDBC(i_hdbc1);

// Connection 2
sprintf( szDriverString, "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s",
aptr->server,
aptr->user,
aptr->password,
aptr->database );

>pack_size); rc = SQLSetConnectOption (w_hdbc1, SQL_PACKET_SIZE, apr-
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);
rc = SQLDriverConnect ( w_hdbc1,
NULL,
(SQLCHAR*)&szDriverString[0],
SQL_NTS,
(SQLCHAR*)&szDriverStringOut[0],
sizeof(szDriverStringOut),
&cbDriverStringOut,
SQL_DRIVER_NOPROMPT );
if (rc != SUCCEED)
    HandleErrorDBC(w_hdbc1);

// Connection 3
sprintf( szDriverString, "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s",
aptr->server,
aptr->user,
aptr->password,
aptr->database );

>pack_size); rc = SQLSetConnectOption (c_hdbc1, SQL_PACKET_SIZE, apr-
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
rc = SQLDriverConnect ( c_hdbc1,
NULL,
(SQLCHAR*)&szDriverString[0],
SQL_NTS,
(SQLCHAR*)&szDriverStringOut[0],
sizeof(szDriverStringOut),
&cbDriverStringOut,
SQL_DRIVER_NOPROMPT );
if (rc != SUCCEED)
    HandleErrorDBC(c_hdbc1);
}

```

```

// Connection 4
sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,
aptr->server,
aptr->user,
aptr->password,
aptr->database );
rc = SQLSetConnectOption ( c_hdbc2, SQL_PACKET_SIZE, aptr-
>pack_size);
if (rc != SUCCEEDED)
HandleErrorDBC(c_hdbc2);
rc = SQLDriverConnect ( c_hdbc2,
NULL,
(SQLCHAR*)&szDriverString[0] ,
SQL_NTS,
(SQLCHAR*)&szDriverStringOut[0],
sizeof(szDriverStringOut),
&cbDriverStringOut,
SQL_DRIVER_NOPROMPT );
if (rc != SUCCEEDED)
HandleErrorDBC(c_hdbc2);
// Connection 5
sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,
aptr->server,
aptr->user,
aptr->password,
aptr->database );
rc = SQLSetConnectOption ( o_hdbc1, SQL_PACKET_SIZE, aptr-
>pack_size);
if (rc != SUCCEEDED)
HandleErrorDBC(o_hdbc1);
rc = SQLDriverConnect ( o_hdbc1,
NULL,
(SQLCHAR*)&szDriverString[0] ,
SQL_NTS,
(SQLCHAR*)&szDriverStringOut[0],
sizeof(szDriverStringOut),
&cbDriverStringOut,
SQL_DRIVER_NOPROMPT );
if (rc != SUCCEEDED)
HandleErrorDBC(o_hdbc1);
// Connection 6
sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,
aptr->server,
aptr->user,
aptr->password,
aptr->database );
rc = SQLSetConnectOption ( o_hdbc2, SQL_PACKET_SIZE, aptr-
>pack_size);
if (rc != SUCCEEDED)
HandleErrorDBC(o_hdbc2);
rc = SQLDriverConnect ( o_hdbc2,
NULL,
(SQLCHAR*)&szDriverString[0] ,
SQL_NTS,
(SQLCHAR*)&szDriverStringOut[0],
sizeof(szDriverStringOut),
&cbDriverStringOut,
SQL_DRIVER_NOPROMPT );
if (rc != SUCCEEDED)
HandleErrorDBC(o_hdbc2);
// Connection 7
sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

```

```

aptr->server,
aptr->user,
aptr->password,
aptr->database );
rc = SQLSetConnectOption ( o_hdbc3, SQL_PACKET_SIZE, aptr-
>pack_size);
if (rc != SUCCEEDED)
HandleErrorDBC(o_hdbc3);
rc = SQLDriverConnect ( o_hdbc3,
NULL,
(SQLCHAR*)&szDriverString[0] ,
SQL_NTS,
(SQLCHAR*)&szDriverStringOut[0],
sizeof(szDriverStringOut),
&cbDriverStringOut,
SQL_DRIVER_NOPROMPT );
if (rc != SUCCEEDED)
HandleErrorDBC(o_hdbc3);
}
//=====
// Function name: BuildIndex
//=====
void BuildIndex(char *index_script)
{
char cmd[256];
printf("Starting index creation: %s\n",index_script);
printf(cmd, "osql -S%s -U%s -P%s -e -i%s\\%s.sql > logs\\%s.log",
aptr->server,
aptr->user,
aptr->password,
aptr->index_script_path,
index_script,
index_script);
system(cmd);
printf("Finished index creation: %s\n",index_script);
}
void HandleErrorDBC (SQLHDBC hdbc1)
{
Msg[SQL_MAX_MESSAGE_LENGTH];
SQLINTEGER NativeError;
SQLSMALLINT i, MsgLen;
SQLRETURN rc2;
char timebuf[128];
char datebuf[128];
FILE *fp1;
i = 1;
while (( rc2 = SQLGetDiagRec(SQL_HANDLE_DBC , hdbc1, i, SqlState ,
&NativeError,
&MsgLen ) != SQL_NO_DATA )
{
printf( szLastError , "%s" , Msg );
_ftime(timebuf);
_ftime(datebuf);
printf( "[%s : %s] %s\n" , datebuf, timebuf,
szLastError);
fp1 = fopen("logs\\tpccldr.err","w");
if (fp1 == NULL)
printf("ERROR: Unable to open errorlog
file.\n");
else
{
fprintf(fp1, "[%s : %s] %s\n" , datebuf,
timebuf, szLastError);
fclose(fp1);
}
i++;
}
}
void HandleErrorSTMT (HSTMT hstmt1)
{
Msg[SQL_MAX_MESSAGE_LENGTH];
SQLINTEGER NativeError;
SQLSMALLINT i, MsgLen;
SQLRETURN rc2;
char timebuf[128];

```

```

char datebuf[128];
FILE *fp1;
i = 1;
while (( rc2 = SQLGetDiagRec(SQL_HANDLE_STMT , hstmt1, i,
SqlState , &NativeError,
&MsgLen ) != SQL_NO_DATA )
{
printf( szLastError , "%s" , Msg );
_ftime(timebuf);
_ftime(datebuf);
printf( "[%s : %s] %s\n" , datebuf, timebuf,
szLastError);
fp1 = fopen("logs\\tpccldr.err","w");
if (fp1 == NULL)
printf("ERROR: Unable to open errorlog
file.\n");
else
{
fprintf(fp1, "[%s : %s] %s\n" , datebuf,
timebuf, szLastError);
fclose(fp1);
}
i++;
}
}
void FormatDate ( char* szTimeCOutput )
{
struct tm when;
time_t now;
time( &now );
when = *localtime( &now );
mktime( &when );
// odbc datetime format
strftime( szTimeCOutput , 30 , "%Y-%m-%d %H:%M:%S.000" , &when );
return;
}
//=====
// Function : CheckSQL
//=====
void CheckSQL()
{
RETCODE rc;
char szDriverString[300];
char szDriverStringOut[1024];
BOOL SQLBuildFlag;
SQLSMALLINT cbDriverStringOut;
SQLCHAR SQLVersion[19];
SQLLEN SQLVersionInd;
SQLAllocHandle(SQL_HANDLE_ENV, SQL_NULL_HANDLE, &henv );
SQLSetEnvAttr(henv, SQL_ATTR_ODBC_VERSION, (void*)SQL_OV_ODBC3,
0 );
SQLAllocHandle(SQL_HANDLE_DBC, henv , &v_hdbc);
SQLSetConnectAttr(v_hdbc, SQL_COPT_SS_BCP, (void *)SQL_BCP_ON,
SQL_IS_INTEGER );
// Open connection to SQL Server
sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s" ,
aptr->server,
aptr->user,
aptr->password );
if ( SQLSetConnectAttr( v_hdbc, SQL_ATTR_PACKET_SIZE,
(SQLPOINTER)(LONG_PTR)aptr->pack_size, SQL_IS_INTEGER ) != SQL_SUCCEEDED )
HandleErrorDBC(v_hdbc);
rc = SQLDriverConnect ( v_hdbc,
NULL,
(SQLCHAR*)&szDriverString[0] ,
SQL_NTS,
(SQLCHAR*)&szDriverStringOut[0],
sizeof(szDriverStringOut),
&cbDriverStringOut,

```



```

District table is missing or damaged.\n");
                                printf("The
                                ExitFlag = 1;
                                }
                                break;
                                case 2:
                                if (TablesBitMap[i] ==
'0')
                                {
                                printf("The
                                ExitFlag = 1;
                                }
                                break;
                                case 3:
                                if (TablesBitMap[i] ==
'0')
                                {
                                printf("The
                                ExitFlag = 1;
                                }
                                break;
                                case 4:
                                if (TablesBitMap[i] ==
'0')
                                {
                                printf("The
                                ExitFlag = 1;
                                }
                                break;
                                case 5:
                                if (TablesBitMap[i] ==
'0')
                                {
                                printf("The
                                ExitFlag = 1;
                                }
                                break;
                                case 6:
                                if (TablesBitMap[i] ==
'0')
                                {
                                printf("The
                                ExitFlag = 1;
                                }
                                break;
                                case 7:
                                if (TablesBitMap[i] ==
'0')
                                {
                                printf("The
                                ExitFlag = 1;
                                }
                                break;
                                case 8:
                                if (TablesBitMap[i] ==
'0')
                                {
                                printf("The
                                ExitFlag = 1;
                                }
                                break;
                                }
                                }
and exit the loader // if one or more tables are missing, display message
if (ExitFlag = 1)
{
    printf("\nExiting TPC-C Loader!\n");
    printf("\nCheck LOGS\ directory for
    printf("or table creation errors.\n");
    // cleanup database connections and
handles
    SQLFreeHandle(SQL_HANDLE_STMT, v_hstmt);
    SQLDisconnect(v_hdbc);
    SQLFreeHandle(SQL_HANDLE_DBC, v_hdbc);
    exit(1);
}
// cleanup database connections and handles
SQLFreeHandle(SQL_HANDLE_STMT, v_hstmt);
SQLDisconnect(v_hdbc);
SQLFreeHandle(SQL_HANDLE_DBC, v_hdbc);
return;
}

```

Appendix C : Tunable Parameters

RTE input parameter

The following parameters were used with Microsoft BenchCraft RTE..

Profile: 29000wh32drv32cl64segDes
File Path: C:\bench\29000wh32drv32cl64segDes.pro
Version: 3

Number of Engines: 32

Name: DRIVER01
Description:
Directory: c:\drv01
Machine: rte01
Parameter Set: TPCC
Index: 0
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER11809672718
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 0

Name: DRIVER02
Description:
Directory: c:\drv02
Machine: rte01
Parameter Set: TPCC
Index: 10000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER21809739671
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 1

Name: DRIVER03
Description:
Directory: c:\drv03
Machine: rte13
Parameter Set: TPCC
Index: 20000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER31809769828
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233

CPU: 0

Name: DRIVER04
Description:
Directory: c:\drv04
Machine: rte02
Parameter Set: TPCC
Index: 30000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER41809841125
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 0

Name: DRIVER05
Description:
Directory: c:\drv05
Machine: rte02
Parameter Set: TPCC
Index: 40000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER51809865937
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 1

Name: DRIVER06
Description:
Directory: c:\drv06
Machine: rte13
Parameter Set: TPCC
Index: 50000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER61809907062
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 1

Name: DRIVER07
Description:
Directory: c:\drv07
Machine: rte03
Parameter Set: TPCC
Index: 60000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER71809924359
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1

Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 0

Name: DRIVER08
Description:
Directory: c:\drv08
Machine: rte03
Parameter Set: TPCC
Index: 70000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER81809949078
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 1

Name: DRIVER09
Description:
Directory: c:\drv09
Machine: rte14
Parameter Set: TPCC
Index: 80000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER91809978500
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 0

Name: DRIVER10
Description:
Directory: c:\drv10
Machine: rte04
Parameter Set: TPCC
Index: 90000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER10-2131595296
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 0

Name: DRIVER11
Description:
Directory: c:\drv11
Machine: rte04
Parameter Set: TPCC
Index: 100000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER11-2131522875
Connect Rate: 1000

Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 1

Name: DRIVER12
Description:
Directory: c:\drv12
Machine: rte14
Parameter Set: TPCC
Index: 110000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER12-2131493640
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 1

Name: DRIVER13
Description:
Directory: c:\drv13
Machine: rte05
Parameter Set: TPCC
Index: 120000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER136238328
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 0

Name: DRIVER14
Description:
Directory: c:\drv14
Machine: rte05
Parameter Set: TPCC
Index: 130000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER146263218
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 1

Name: DRIVER15
Description:
Directory: c:\drv15
Machine: rte15
Parameter Set: TPCC
Index: 140000000
Seed: 1423
Configured Users: 9060

Pipe Name: DRIVER156321281
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 0

Name: DRIVER16
Description:
Directory: c:\drv16
Machine: rte06
Parameter Set: TPCC
Index: 150000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER166360343
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 0

Name: DRIVER17
Description:
Directory: c:\drv17
Machine: rte06
Parameter Set: TPCC
Index: 160000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER176382843
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 1

Name: DRIVER18
Description:
Directory: c:\drv18
Machine: rte07
Parameter Set: TPCC
Index: 170000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER186398578
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 0

Name: DRIVER19
Description:
Directory: c:\drv19
Machine: rte07
Parameter Set: TPCC
Index: 180000000

Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER196464218
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 1

Name: DRIVER20
Description:
Directory: c:\drv20
Machine: rte08
Parameter Set: TPCC
Index: 190000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER206479296
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 0

Name: DRIVER21
Description:
Directory: c:\drv21
Machine: rte08
Parameter Set: TPCC
Index: 200000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER216496562
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 1

Name: DRIVER22
Description:
Directory: c:\drv22
Machine: rte09
Parameter Set: TPCC
Index: 210000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER226570937
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 0

Name: DRIVER23
Description:
Directory: c:\drv23
Machine: rte09

Parameter Set: TPCC
Index: 220000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER236594296
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 1

Name: DRIVER24
Description:
Directory: c:\drv24
Machine: rte10
Parameter Set: TPCC
Index: 230000000
Seed: 1423
Configured Users: 9060
Pipe Name: DRIVER246635125
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 0

Name: DRIVER25
Description:
Directory: c:\drv25
Machine: rte10
Parameter Set: TPCC
Index: 240000000
Seed: 1423
Configured Users: 9070
Pipe Name: DRIVER256696078
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 1

Name: DRIVER26
Description:
Directory: c:\drv26
Machine: rte15
Parameter Set: TPCC
Index: 250000000
Seed: 1423
Configured Users: 9070
Pipe Name: DRIVER266724968
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 1

Name: DRIVER27
Description:

Directory: c:\drv27
Machine: rte11
Parameter Set: TPCC
Index: 260000000
Seed: 1423
Configured Users: 9070
Pipe Name: DRIVER2716782546
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 0

Name: DRIVER28
Description:
Directory: c:\drv28
Machine: rte11
Parameter Set: TPCC
Index: 270000000
Seed: 1423
Configured Users: 9070
Pipe Name: DRIVER2816938953
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 1

Name: DRIVER29
Description:
Directory: c:\drv29
Machine: rte16
Parameter Set: TPCC
Index: 280000000
Seed: 1423
Configured Users: 9070
Pipe Name: DRIVER2917072968
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 0

Name: DRIVER30
Description:
Directory: c:\drv30
Machine: rte12
Parameter Set: TPCC
Index: 290000000
Seed: 1423
Configured Users: 9070
Pipe Name: DRIVER3017124968
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 0

Name: DRIVER31
Description:
Directory: c:\drv31
Machine: rte12
Parameter Set: TPCC
Index: 300000000
Seed: 1423
Configured Users: 9070
Pipe Name: DRIVER3117168734
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 1

Name: DRIVER32
Description:
Directory: c:\drv32
Machine: rte16
Parameter Set: TPCC
Index: 310000000
Seed: 1423
Configured Users: 9070
Pipe Name: DRIVER3217223234
Connect Rate: 1000
Start Rate: 0
Max. Concurrency: -1
Concurrency Rate: 0
CLIENT_NURAND: 233
CPU: 1

Number of User groups: 64

Driver Engine: DRIVER01
IIS Server: acl01
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1 - 453
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER02
IIS Server: acl02
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 454 - 906
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER03
IIS Server: acl03
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 907 - 1359
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER04
IIS Server: acl04
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1360 - 1812
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER05
IIS Server: acl05
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1813 - 2265
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER06
IIS Server: acl06
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2266 - 2718
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER07
IIS Server: acl07
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML

w_id Range: 2719 - 3171
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER08
IIS Server: acl08
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3172 - 3624
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER09
IIS Server: acl09
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3625 - 4077
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER10
IIS Server: acl10
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4078 - 4530
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER11
IIS Server: acl11
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4531 - 4983
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1

Scale Down: No

Driver Engine: DRIVER12
IIS Server: acl12
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4984 - 5436
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER13
IIS Server: acl13
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5437 - 5889
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER14
IIS Server: acl14
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5890 - 6342
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER15
IIS Server: acl15
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 6343 - 6795
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER16
IIS Server: acl16
SQL Server: asama
Database: tpcc

User: sa
Protocol: HTML
w_id Range: 6796 - 7248
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER17
IIS Server: acl17
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 7249 - 7701
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER18
IIS Server: acl18
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 7702 - 8154
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER19
IIS Server: acl19
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 8155 - 8607
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER20
IIS Server: acl20
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 8608 - 9060
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal

User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER21
IIS Server: acl21
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 9061 - 9513
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER22
IIS Server: acl22
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 9514 - 9966
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER23
IIS Server: acl23
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 9967 - 10419
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER24
IIS Server: acl24
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 10420 - 10872
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER25
IIS Server: acl25

SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 10873 - 11325
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER26
IIS Server: acl26
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 11326 - 11778
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER27
IIS Server: acl27
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 11779 - 12231
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER28
IIS Server: acl28
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 12232 - 12684
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER29
IIS Server: acl29
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 12685 - 13137
w_id Min Warehouse: 1

w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER30
IIS Server: acl30
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 13138 - 13590
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER31
IIS Server: acl31
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 13591 - 14043
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER32
IIS Server: acl32
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 14044 - 14496
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER01
IIS Server: acl012
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 14497 - 14949
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER02
IIS Server: acl022
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 14950 - 15402
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER03
IIS Server: acl032
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 15403 - 15855
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER04
IIS Server: ACL042
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 15856 - 16308
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER05
IIS Server: acl052
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 16309 - 16761
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER06
IIS Server: acl062
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML

w_id Range: 16762 - 17214
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER07
IIS Server: acl072
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 17215 - 17667
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER08
IIS Server: acl082
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 17668 - 18120
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER09
IIS Server: acl092
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 18121 - 18573
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1
Scale Down: No

Driver Engine: DRIVER10
IIS Server: acl102
SQL Server: asama
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 18574 - 19026
w_id Min Warehouse: 1
w_id Max Warehouse: 29000
Scale: Normal
User Count: 4530
District id: 1

Scale Down: No

Driver Engine: DRIVER11
 IIS Server: acl112
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 19027 - 19479
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4530
 District id: 1
 Scale Down: No

Driver Engine: DRIVER12
 IIS Server: acl122
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 19480 - 19932
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4530
 District id: 1
 Scale Down: No

Driver Engine: DRIVER13
 IIS Server: acl132
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 19933 - 20385
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4530
 District id: 1
 Scale Down: No

Driver Engine: DRIVER14
 IIS Server: acl142
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 20386 - 20838
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4530
 District id: 1
 Scale Down: No

Driver Engine: DRIVER15
 IIS Server: acl152
 SQL Server: asama
 Database: tpcc

User: sa
 Protocol: HTML
 w_id Range: 20839 - 21291
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4530
 District id: 1
 Scale Down: No

Driver Engine: DRIVER16
 IIS Server: acl162
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 21292 - 21744
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4530
 District id: 1
 Scale Down: No

Driver Engine: DRIVER17
 IIS Server: acl172
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 21745 - 22197
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4530
 District id: 1
 Scale Down: No

Driver Engine: DRIVER18
 IIS Server: acl182
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 22198 - 22650
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4530
 District id: 1
 Scale Down: No

Driver Engine: DRIVER19
 IIS Server: acl192
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 22651 - 23103
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal

User Count: 4530
 District id: 1
 Scale Down: No

Driver Engine: DRIVER20
 IIS Server: acl202
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 23104 - 23556
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4530
 District id: 1
 Scale Down: No

Driver Engine: DRIVER21
 IIS Server: acl212
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 23557 - 24009
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4530
 District id: 1
 Scale Down: No

Driver Engine: DRIVER22
 IIS Server: acl222
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 24010 - 24462
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4530
 District id: 1
 Scale Down: No

Driver Engine: DRIVER23
 IIS Server: acl232
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 24463 - 24915
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4530
 District id: 1
 Scale Down: No

Driver Engine: DRIVER24
 IIS Server: acl242

SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 24916 - 25368
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4530
 District id: 1
 Scale Down: No

Driver Engine: DRIVER25
 IIS Server: acl252
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 25369 - 25822
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4540
 District id: 1
 Scale Down: No

Driver Engine: DRIVER26
 IIS Server: acl262
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 25823 - 26276
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4540
 District id: 1
 Scale Down: No

Driver Engine: DRIVER27
 IIS Server: acl272
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 26277 - 26730
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4540
 District id: 1
 Scale Down: No

Driver Engine: DRIVER28
 IIS Server: acl282
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 26731 - 27184
 w_id Min Warehouse: 1

w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4540
 District id: 1
 Scale Down: No

Driver Engine: DRIVER29
 IIS Server: acl292
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 27185 - 27638
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4540
 District id: 1
 Scale Down: No

Driver Engine: DRIVER30
 IIS Server: acl302
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 27639 - 28092
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4540
 District id: 1
 Scale Down: No

Driver Engine: DRIVER31
 IIS Server: acl312
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 28093 - 28546
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4540
 District id: 1
 Scale Down: No

Driver Engine: DRIVER32
 IIS Server: acl322
 SQL Server: asama
 Database: tpcc
 User: sa
 Protocol: HTML
 w_id Range: 28547 - 29000
 w_id Min Warehouse: 1
 w_id Max Warehouse: 29000
 Scale: Normal
 User Count: 4540
 District id: 1
 Scale Down: No

Number of Parameter Sets: 2

		~Default Default Parameter Set				
		Txn	Think	Key	RT	RT
Menu						
		Weight				Time
Fence	Delay		Time	Time	Delay	
0.10	5.00	New Order	10.00	12.05	18.01	
		0.10				
0.10	5.00	Payment	10.00	12.05	3.01	
		0.10				
0.10	5.00	Delivery	1.00	5.05	2.01	
		0.10				
0.10	20.00	Stock Level	1.00	5.05	2.01	
		0.10				
0.10	5.00	Order Status	1.00	10.05	2.01	
		0.10				
TPCC						
		Txn	Think	Key	RT	RT
Menu						
		Weight				Time
Fence	Delay		Time	Time	Delay	
0.10	5.00	New Order	44.88	12.07	18.01	
		0.10				
0.10	5.00	Payment	43.03	12.07	3.01	
		0.10				
0.10	5.00	Delivery	4.03	5.07	2.01	
		0.10				
0.10	20.00	Stock Level	4.03	5.07	2.01	
		0.10				
0.10	5.00	Order Status	4.03	10.07	2.01	
		0.10				

Boot Device \Device\HarddiskVolume5
 Locale United States
 Hardware Abstraction Layer Version = "5.2.3694.0
 (dmsrv.021010-1930)"
 User Name ASAMA\Administrator
 Time Zone Tokyo Standard Time
 Total Physical Memory 32,762.13 MB
 Available Physical Memory 252.55 GB
 Total Virtual Memory 511.10 GB
 Available Virtual Memory 507.16 GB
 Page File Space 255.10 GB
 Page File C:\pagefile.sys

[Hardware Resources]

[Conflicts/Sharing]

Resource Device
 I/O Port 0x00000000-0x000003AF PCI bus
 I/O Port 0x00000000-0x000003AF Direct memory access controller

 I/O Port 0x00001B00-0x00001BFF PCI bus
 I/O Port 0x00001B00-0x00001BFF QLogic QLA2200 PCI
 Fibre Channel Adapter (011002 enhanced)

 I/O Port 0x000003C0-0x000003DF PCI bus
 I/O Port 0x000003C0-0x000003DF Standard VGA
 Graphics Adapter

 I/O Port 0x00001700-0x000017FF PCI bus
 I/O Port 0x00001700-0x000017FF QLogic QLA2200 PCI Fibre
 Channel Adapter (011002 enhanced)

 I/O Port 0x00001300-0x000014FF PCI bus
 I/O Port 0x00001300-0x000014FF Adaptec SCSI Card 39160 -
 Ultra160 SCSI

 I/O Port 0x00001A00-0x00001AFF PCI bus
 I/O Port 0x00001A00-0x00001AFF QLogic QLA2200 PCI
 Fibre Channel Adapter (011002 enhanced)

 I/O Port 0x00001600-0x000016FF PCI bus
 I/O Port 0x00001600-0x000016FF QLogic QLA2200 PCI Fibre
 Channel Adapter (011002 enhanced)

 I/O Port 0x00001D00-0x00001DFF PCI bus
 I/O Port 0x00001D00-0x00001DFF QLogic QLA2200 PCI
 Fibre Channel Adapter (011002 enhanced)

 I/O Port 0x00001900-0x000019FF PCI bus
 I/O Port 0x00001900-0x000019FF QLogic QLA2200 PCI Fibre
 Channel Adapter (011002 enhanced)

 I/O Port 0x00001500-0x000015FF PCI bus
 I/O Port 0x00001500-0x000015FF QLogic QLA2200 PCI Fibre
 Channel Adapter (011002 enhanced)

 I/O Port 0x00001C00-0x00001CFF PCI bus
 I/O Port 0x00001C00-0x00001CFF QLogic QLA2200 PCI
 Fibre Channel Adapter (011002 enhanced)

I/O Port 0x00001800-0x000018FF PCI bus
 I/O Port 0x00001800-0x000018FF QLogic QLA2200 PCI Fibre
 Channel Adapter (011002 enhanced)

 Memory Address 0xA0000-0xBFFFF PCI bus
 Memory Address 0xA0000-0xBFFFF Standard VGA
 Graphics Adapter

 I/O Port 0x00001200-0x000012FF PCI bus
 I/O Port 0x00001200-0x000012FF QLogic QLA2200 PCI Fibre
 Channel Adapter (011002 enhanced)

 I/O Port 0x000003B0-0x000003BB PCI bus
 I/O Port 0x000003B0-0x000003BB Standard VGA
 Graphics Adapter

 I/O Port 0x00001E00-0x0000FFFF PCI bus
 I/O Port 0x00001E00-0x0000FFFF QLogic QLA2200 PCI Fibre
 Channel Adapter (011002 enhanced)

 I/O Port 0x00000D00-0x000011FF PCI bus
 I/O Port 0x00000D00-0x000011FF Extended IO Bus

[DMA]

Resource Device Status
 Channel 4 Direct memory access controller OK

[Forced Hardware]

Device PNP Device ID

[I/O]

Resource Device Status
 0x00000000-0x000003AF PCI bus OK
 0x00000000-0x000003AF Direct memory access controller
 OK
 0x000003B0-0x000003BB PCI bus OK
 0x000003B0-0x000003BB Standard VGA Graphics Adapter
 OK
 0x000003BC-0x000003BF PCI bus OK
 0x000003C0-0x000003DF PCI bus OK
 0x000003C0-0x000003DF Standard VGA Graphics Adapter
 OK
 0x000003E0-0x00000CF7 PCI bus OK
 0x00000D00-0x000011FF PCI bus OK
 0x00000D00-0x000011FF Extended IO Bus OK
 0x00000080-0x0000008F Direct memory access controller
 OK
 0x000000C0-0x000000DF Direct memory access controller
 OK
 0x00000020-0x00000021 Programmable interrupt controller
 OK
 0x000000A0-0x000000A1 Programmable interrupt controller
 OK
 0x00000040-0x00000043 System timer OK
 0x00000061-0x00000061 System speaker OK
 0x00000070-0x00000071 System CMOS/real time clock
 OK

0x00000F0-0x000000FF Numeric data processor
 OK
 0x000000B2-0x000000B3 Generic Bus OK
 0x00000E00-0x00000E3F Generic Bus OK
 0x00000092-0x00000092 Motherboard resources
 OK
 0x000004D0-0x000004D1 Motherboard resources
 OK
 0x00000D80-0x00000D80 Motherboard resources
 OK
 0x00000D81-0x00000D81 Motherboard resources
 OK
 0x00000CA0-0x00000CA1 Motherboard resources
 OK
 0x00000CA4-0x00000CA7 Motherboard resources
 OK
 0x0000002E-0x0000002F Motherboard resources
 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
 0x000003F8-0x000003FF Communications Port (COM1)
 OK
 0x00000C00-0x00000C03 Extended IO Bus OK
 0x00000F00-0x00000F7F Extended IO Bus OK
 0x00000F80-0x00000FFF Extended IO Bus OK
 0x00000CA2-0x00000CA2 OK
 0x00000CA3-0x00000CA3 OK
 0x00001120-0x0000112F Intel(r) IA64 Bus Master IDE
 Controller OK
 0x000001F0-0x000001F7 Primary IDE Channel OK
 0x000003F6-0x000003F6 Primary IDE Channel OK
 0x00001100-0x0000111F Intel(r) 82372FB PCI to USB
 OK
 0x00001000-0x000010FF Standard VGA Graphics Adapter
 OK
 0x000002F8-0x000002FF Communications Port (COM2)
 OK
 0x00001200-0x000012FF PCI bus OK
 0x00001200-0x000012FF QLogic QLA2200 PCI Fibre
 Channel Adapter (011002 enhanced) OK
 0x00001300-0x000014FF PCI bus OK
 0x00001300-0x000014FF Adaptec SCSI Card 39160 -
 Ultra160 SCSI OK
 0x00001400-0x000014FF Adaptec SCSI Card 39160 -
 Ultra160 SCSI OK
 0x00001500-0x000015FF PCI bus OK
 0x00001500-0x000015FF QLogic QLA2200 PCI Fibre
 Channel Adapter (011002 enhanced) OK
 0x00001600-0x000016FF PCI bus OK
 0x00001600-0x000016FF QLogic QLA2200 PCI Fibre
 Channel Adapter (011002 enhanced) OK
 0x00001700-0x000017FF PCI bus OK
 0x00001700-0x000017FF QLogic QLA2200 PCI Fibre
 Channel Adapter (011002 enhanced) OK
 0x00001800-0x000018FF PCI bus OK
 0x00001800-0x000018FF QLogic QLA2200 PCI Fibre
 Channel Adapter (011002 enhanced) OK
 0x00001900-0x000019FF PCI bus OK
 0x00001900-0x000019FF QLogic QLA2200 PCI Fibre
 Channel Adapter (011002 enhanced) OK

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0x00001A00-0x00001AFF PCI bus OK
0x00001A00-0x00001AFF QLogic QLA2200 PCI Fibre
Channel Adapter (011002 enhanced) OK
0x00001B00-0x00001BFF PCI bus OK
0x00001B00-0x00001BFF QLogic QLA2200 PCI Fibre
Channel Adapter (011002 enhanced) OK
0x00001C00-0x00001CFF PCI bus OK
0x00001C00-0x00001CFF QLogic QLA2200 PCI Fibre
Channel Adapter (011002 enhanced) OK
0x00001D00-0x00001DFF PCI bus OK
0x00001D00-0x00001DFF QLogic QLA2200 PCI Fibre
Channel Adapter (011002 enhanced) OK
0x00001E00-0x0000FFFF PCI bus OK
0x00001E00-0x0000FFFF QLogic QLA2200 PCI Fibre
Channel Adapter (011002 enhanced) OK

```

[IRQs]

Resource	Device	Status
IRQ 9	Microsoft ACPI-Compliant System	OK
IRQ 0	System timer	OK
IRQ 8	System CMOS/real time clock	OK
IRQ 13	Numeric data processor	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 11		OK
IRQ 14	Primary IDE Channel	OK
IRQ 19	Intel(r) 82372FB PCI to USB Universal Host Controller	OK
IRQ 245	Communications Port (COM2)	OK
IRQ 20	QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)	OK
IRQ 68	Adaptec SCSI Card 39160 - Ultra160 SCSI	OK
IRQ 67	Adaptec SCSI Card 39160 - Ultra160 SCSI	OK
IRQ 73	QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)	OK
IRQ 78	Intel(R) PRO/1000 F Server Adapter	OK
IRQ 84	QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)	OK
IRQ 90	QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)	OK
IRQ 100	QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)	OK
IRQ 156	QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)	OK
IRQ 161	QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)	OK
IRQ 166	QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)	OK
IRQ 178	QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)	OK
IRQ 183	QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)	OK
IRQ 188	QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)	OK

[Memory]

Resource	Device	Status
0xA0000-0xBFFFF	PCI bus	OK

```

0xA0000-0xBFFFF Standard VGA Graphics Adapter OK
0xC0000-0xC3FFF PCI bus OK
0xC4000-0xC7FFF PCI bus OK
0xC8000-0xCBFFF PCI bus OK
0xCC000-0xCFFFF PCI bus OK
0xD0000-0xD3FFF PCI bus OK
0xD4000-0xD7FFF PCI bus OK
0xD8000-0xDBFFF PCI bus OK
0xDC000-0xDFFFF PCI bus OK
0xE0000-0xE3FFF PCI bus OK
0xE4000-0xE7FFF PCI bus OK
0xE8000-0xEBFFF PCI bus OK
0xEC000-0xEFFFF PCI bus OK
0xF0000-0xFFFF PCI bus OK
0xFBC00000-0xFDFFFFFF PCI bus OK
0xFC000000-0xFCFFFFFF Standard VGA Graphics Adapter
OK
0xFDFFFFFF00-0xFDFFFFFF Standard VGA Graphics Adapter
OK
0xFB800000-0xFBFFFFFF PCI bus OK
0xFBFFF000-0xFBFFFFFF QLogic QLA2200 PCI Fibre
Channel Adapter (011002 enhanced) OK
0xFB400000-0xFB7FFFFF PCI bus OK
0xFB7FF000-0xFB7FFFFF Adaptec SCSI Card 39160 -
Ultra160 SCSI OK
0xFB7FE000-0xFB7EFFFF Adaptec SCSI Card 39160 -
Ultra160 SCSI OK
0xFB000000-0xFB3FFFFF PCI bus OK
0xFB3FF000-0xFB3FFFFF QLogic QLA2200 PCI Fibre
Channel Adapter (011002 enhanced) OK
0xFAC00000-0xFAFFFFFF PCI bus OK
0xFACF0000-0xFAFDFFFF Intel(R) PRO/1000 F Server
Adapter OK
0xFAFF0000-0xFAFFFFFF Intel(R) PRO/1000 F Server
Adapter OK
0xFA800000-0xFABFFFFF PCI bus OK
0xFABFF000-0xFABFFFFF QLogic QLA2200 PCI Fibre
Channel Adapter (011002 enhanced) OK
0xFA400000-0xFA7FFFFF PCI bus OK
0xFA7FF000-0xFA7FFFFF QLogic QLA2200 PCI Fibre
Channel Adapter (011002 enhanced) OK
0xFA000000-0xFA3FFFFF PCI bus OK
0xFA3FF000-0xFA3FFFFF QLogic QLA2200 PCI Fibre
Channel Adapter (011002 enhanced) OK
0xF9C00000-0xF9FFFFF PCI bus OK
0xF9FFF000-0xF9FFFFF QLogic QLA2200 PCI Fibre
Channel Adapter (011002 enhanced) OK
0xF9800000-0xF9BFFFFF PCI bus OK
0xF9BFF000-0xF9BFFFFF QLogic QLA2200 PCI Fibre
Channel Adapter (011002 enhanced) OK
0xF9400000-0xF97FFFFF PCI bus OK
0xF97FF000-0xF97FFFFF QLogic QLA2200 PCI Fibre
Channel Adapter (011002 enhanced) OK
0xF9000000-0xF93FFFFF PCI bus OK
0xF93FF000-0xF93FFFFF QLogic QLA2200 PCI Fibre
Channel Adapter (011002 enhanced) OK
0xF8C00000-0xF8FFFFF PCI bus OK
0xF8FFF000-0xF8FFFFF QLogic QLA2200 PCI Fibre
Channel Adapter (011002 enhanced) OK
0xF8000000-0xF8BFFFFF PCI bus OK
0xF8BFF000-0xF8BFFFFF QLogic QLA2200 PCI Fibre
Channel Adapter (011002 enhanced) OK

```

[Components]

[Multimedia]

[Audio Codecs]

CODEC	Manufacturer	Description	Status	File
		Version	Size	Creation Date
c:\windows\system32\msgsm32.acm	Microsoft Corporation			
	OK	C:\WINDOWS\system32\MSGSM32.ACM		
	5.2.3694.0 (dnsvr.021010-1930)	66.50 KB (68,096 bytes)		10/11/2002 9:00 PM
c:\windows\system32\msadp32.acm	Microsoft Corporation			
	OK	C:\WINDOWS\system32\MSADP32.ACM		
	5.2.3694.0 (dnsvr.021010-1930)	49.00 KB (50,176 bytes)		10/11/2002 9:00 PM
c:\windows\system32\tsoft32.acm	DSP GROUP, INC.			
	OK	C:\WINDOWS\system32\TSSOFT32.ACM		
	1.01	29.00 KB (29,696 bytes)		10/11/2002 9:00 PM
c:\windows\system32\msg711.acm	Microsoft Corporation			
	OK	C:\WINDOWS\system32\MSG711.ACM		
	5.2.3694.0 (dnsvr.021010-1930)	33.00 KB (33,792 bytes)		10/11/2002 9:00 PM
c:\windows\system32\imaadp32.acm	Microsoft Corporation			
	OK	C:\WINDOWS\system32\IMAADP32.ACM		
	5.2.3694.0 (dnsvr.021010-1930)	55.00 KB (56,320 bytes)		10/11/2002 9:00 PM

[Video Codecs]

CODEC	Manufacturer	Description	Status	File
		Version	Size	Creation Date
c:\windows\system32\msrle32.dll	Microsoft Corporation			
	OK	C:\WINDOWS\system32\MSRLE32.DLL		
	5.2.3694.0 (dnsvr.021010-1930)	24.50 KB (25,088 bytes)		10/11/2002 9:00 PM
c:\windows\system32\msvidc32.dll	Microsoft Corporation			
	OK	C:\WINDOWS\system32\MSVIDC32.DLL		
	5.2.3694.0 (dnsvr.021010-1930)	67.00 KB (68,608 bytes)		10/11/2002 9:00 PM

[CD-ROM]

Item	Value
Drive	D:
Description	CD-ROM Drive
Media Loaded	No
Media Type	CD-ROM
Name	_NEC DVD-ROM DV-5800A
Manufacturer	(Standard CD-ROM drives)
Status	OK
Transfer Rate	Not Available
SCSI Target ID	0
PNP Device ID	IDE\CDROM_NEC_DVD-ROM_DV-5800A
Driver	c:\windows\system32\drivers\cdrom.sys (5.2.3694.0)

(dnsrv.021010-1930), 140.50 KB (143,872 bytes), 10/11/2002 9:00 PM)

[Sound Device]

Item	Value
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[Display]

Item	Value
Name	Standard VGA Graphics Adapter
PNP Device ID	PCI\VEN_1002&DEV_4752&SUBSYS_80EB1033&REV_27\3&267A616A&0&20
Adapter Type	ATI MACH64, (Standard display types) compatible
Adapter Description	Standard VGA Graphics Adapter
Adapter RAM	4.00 MB (4,194,304 bytes)
Installed Drivers	vga.dll,framebuf.dll,vga256,vga64k
Driver Version	5.2.3694.0
INF File	display.inf (vga section)
Color Planes	1
Color Table Entries	65536
Resolution	1024 x 768 x 1 hertz
Bits/Pixel	16
Memory Address	0xFC000000-0xFCFFFFFF
I/O Port	0x00001000-0x000010FF
Memory Address	0xFDFFFFFF-0xFDFFFFFF
I/O Port	0x000003B0-0x000003BB
I/O Port	0x000003C0-0x000003DF
Memory Address	0xA0000-0xBFFFF
Driver	c:\windows\system32\drivers\vgapnp.sys (5.2.3694.0 (dnsrv.021010-1930), 67.38 KB (68,992 bytes), 11/19/2002 6:22 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\2
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 (5.2.3694.0 (dnsrv.021010-1930), 134.25 KB (137,472 bytes), 10/11/2002 9:00 PM)

[Pointing Device]

Item	Value
Hardware Type	PS/2 Compatible Mouse

Number of Buttons	2
Status	OK
PNP Device ID	ACPI\PNP0F13\2
Power Management Supported	No
Double Click Threshold	6
Handedness	Right Handed Operation
IRQ Channel	IRQ 12
Driver	c:\windows\system32\drivers\i8042prt.sys (5.2.3694.0 (dnsrv.021010-1930), 134.25 KB (137,472 bytes), 10/11/2002 9:00 PM)

[Modem]

Item	Value
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[Network]

[Adapter]

Item	Value
Name	[00000001] Intel(R) PRO/1000 F Server Adapter
Adapter Type	Ethernet 802.3
Product Type	Intel(R) PRO/1000 F Server Adapter
Installed	Yes
PNP Device ID	PCI\VEN_8086&DEV_1001&SUBSYS_10038086&REV_02\3&20FEA912&0&10
Last Reset	12/4/2002 1:53 AM
Index	1
Service Name	E1000
IP Address	10.1.1.222
IP Subnet	255.255.255.0
Default IP Gateway	Not Available
DHCP Enabled	No
DHCP Server	Not Available
DHCP Lease Expires	Not Available
DHCP Lease Obtained	Not Available
MAC Address	00:03:47:00:40:A8
Memory Address	0xFAFC0000-0xFAFDFFFF
Memory Address	0xFAFF0000-0xFAFFFFFF
IRQ Channel	IRQ 78
Driver	c:\windows\system32\drivers\le1000645.sys (6.3.4.0 built by: WinDDK, 357.00 KB (365,568 bytes), 11/19/2002 6:22 AM)

Name	[00000002] RAS Async Adapter
Adapter Type	Not Available
Product Type	RAS Async Adapter
Installed	Yes
PNP Device ID	Not Available
Last Reset	12/4/2002 1:53 AM
Index	2
Service Name	AsyncMac
IP Address	Not Available
IP Subnet	Not Available
Default IP Gateway	Not Available
DHCP Enabled	No
DHCP Server	Not Available
DHCP Lease Expires	Not Available
DHCP Lease Obtained	Not Available
MAC Address	Not Available

Name	[00000003] WAN Miniport (L2TP)
Adapter Type	Not Available
Product Type	WAN Miniport (L2TP)
Installed	Yes
PNP Device ID	ROOT\MS_L2TPMINIPORT\0000
Last Reset	12/4/2002 1:53 AM
Index	3
Service Name	Rasl2tp
IP Address	Not Available
IP Subnet	Not Available
Default IP Gateway	Not Available
DHCP Enabled	No
DHCP Server	Not Available
DHCP Lease Expires	Not Available
DHCP Lease Obtained	Not Available
MAC Address	Not Available

Name	[00000004] WAN Miniport (PPTP)
Adapter Type	Wide Area Network (WAN)
Product Type	WAN Miniport (PPTP)
Installed	Yes
PNP Device ID	ROOT\MS_PPTPMINIPORT\0000
Last Reset	12/4/2002 1:53 AM
Index	4
Service Name	PptpMiniport
IP Address	Not Available
IP Subnet	Not Available
Default IP Gateway	Not Available
DHCP Enabled	No
DHCP Server	Not Available
DHCP Lease Expires	Not Available
DHCP Lease Obtained	Not Available
MAC Address	50:50:54:50:30:30

Name	[00000005] WAN Miniport (PPPOE)
Adapter Type	Wide Area Network (WAN)
Product Type	WAN Miniport (PPPOE)
Installed	Yes
PNP Device ID	ROOT\MS_PPPOEMINIPORT\0000
Last Reset	12/4/2002 1:53 AM
Index	5
Service Name	RasPppoe
IP Address	Not Available
IP Subnet	Not Available
Default IP Gateway	Not Available
DHCP Enabled	No
DHCP Server	Not Available
DHCP Lease Expires	Not Available
DHCP Lease Obtained	Not Available
MAC Address	33:50:6F:45:30:30

Name	[00000006] Direct Parallel
Adapter Type	Not Available
Product Type	Direct Parallel
Installed	Yes
PNP Device ID	ROOT\MS_PTMINIPORT\0000
Last Reset	12/4/2002 1:53 AM
Index	6
Service Name	Raspti
IP Address	Not Available
IP Subnet	Not Available

Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available

Name [00000007] WAN Miniport (IP)
Adapter Type Not Available
Product Type WAN Miniport (IP)
Installed Yes
PNP Device ID ROOT\MS_NDISWANIP\0000
Last Reset 12/4/2002 1:53 AM
Index 7

Service Name NdisWan
IP Address Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled No
DHCP Server Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address Not Available

Name [00000008] Intel(R) PRO/1000 F Server Adapter
Adapter Type Not Available
Product Type Intel(R) PRO/1000 F Server Adapter
Installed Yes
PNP Device ID Not Available
Last Reset 12/4/2002 1:53 AM
Index 8

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 [00000009] Intel(R) PRO/1000 F Server Adapter
Adapter Type Not Available
Product Type Intel(R) PRO/1000 F Server Adapter
Installed Yes
PNP Device ID Not Available
Last Reset 12/4/2002 1:53 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] Intel(R) PRO/1000 F Server Adapter
Adapter Type Not Available
Product Type Intel(R) PRO/1000 F Server Adapter
Installed Yes

PNP Device ID Not Available
Last Reset 12/4/2002 1:53 AM
Index 10
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

[Protocol]

Item Value
Name MSAFD Tcpip [TCP/IP]
Connectionless Service No
Guarantees Delivery Yes
Guarantees Sequencing Yes
Maximum Address Size 16 bytes
Maximum Message Size 0 bytes
Message Oriented No
Minimum Address Size 16 bytes

Pseudo Stream Oriented No
Supports Broadcasting No
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data Yes
Supports Graceful Closing Yes
Supports Guaranteed Bandwidth No
Supports Multicasting No

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

Pseudo Stream Oriented No
Supports Broadcasting Yes
Supports Connect Data No
Supports Disconnect Data No
Supports Encryption No
Supports Expedited Data No
Supports Graceful Closing No
Supports Guaranteed Bandwidth No
Supports Multicasting Yes

Name RSVP UDP Service Provider
Connectionless Service Yes
Guarantees Delivery No
Guarantees Sequencing No
Maximum Address Size 16 bytes
Maximum Message Size 63.93 KB (65,467 bytes)
Message Oriented Yes
Minimum Address Size 16 bytes
Pseudo Stream Oriented No
Supports Broadcasting Yes

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

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

[WinSock]

Item Value
File c:\windows\system32\wssock32.dll
Size 23.00 KB (23,552 bytes)
Version 5.2.3694.0 (dnsvr.021010-1930)

[Ports]

[Serial]

Item Value
Name Communications Port (COM2)
Status OK
PNP Device ID ACPI\PNP0501\1
Maximum Input Buffer Size 0
Maximum Output Buffer Size No
Settable Baud Rate Yes
Settable Data Bits Yes
Settable Flow Control Yes
Settable Parity Yes
Settable Parity Check Yes
Settable Stop Bits Yes
Settable RLSD Yes
Supports RLSD Yes
Supports 16 Bit Mode No
Supports Special Characters No
Baud Rate 9600
Bits/Byte 8
Stop Bits 1
Parity None
Busy No
Abort Read/Write on Error No
Binary Mode Enabled Yes

Continue XMit on XOff No
CTS Outflow Control No
Discard NULL Bytes No
DSR Outflow Control 0
DSR Sensitivity 0
DTR Flow Control Type Enable
EOF Character 0
Error Replace Character 0
Error Replacement Enabled No
Event Character 0
Parity Check Enabled No
RTS Flow Control Type Enable
XOff Character 19
XOffXMit Threshold 512
XOn Character 17
XOnXMit Threshold 2048
XOnXOff InFlow Control 0
XOnXOff OutFlow Control 0
I/O Port 0x000002F8-0x000002FF
IRQ Channel IRQ 245
Driver c:\windows\system32\drivers\serial.sys (5.2.3694.0
(dnsrv.021010-1930), 172.25 KB (176,384 bytes), 10/11/2002 9:00
PM)

Name Communications Port (COM1)
Status OK
PNP Device ID ACPI\PNP0501\2
Maximum Input Buffer Size 0
Maximum Output Buffer Size No
Settable Baud Rate Yes
Settable Data Bits Yes
Settable Flow Control Yes
Settable Parity Yes
Settable Parity Check Yes
Settable Stop Bits Yes
Settable RLSD Yes
Supports RLSD Yes
Supports 16 Bit Mode No
Supports Special Characters No
Baud Rate 9600
Bits/Byte 8
Stop Bits 1
Parity None
Busy No
Abort Read/Write on Error No
Binary Mode Enabled Yes
Continue XMit on XOff No
CTS Outflow Control No
Discard NULL Bytes No
DSR Outflow Control 0
DSR Sensitivity 0
DTR Flow Control Type Enable
EOF Character 0
Error Replace Character 0
Error Replacement Enabled No
Event Character 0
Parity Check Enabled No
RTS Flow Control Type Enable
XOff Character 19
XOffXMit Threshold 512
XOn Character 17
XOnXMit Threshold 2048

XOnXOff InFlow Control 0
XOnXOff OutFlow Control 0
I/O Port 0x000003F8-0x000003FF
IRQ Channel IRQ 4
Driver c:\windows\system32\drivers\serial.sys (5.2.3694.0
(dnsrv.021010-1930), 172.25 KB (176,384 bytes), 10/11/2002 9:00
PM)

[Parallel]

Item Value

[Storage]

[Drives]

Item Value
Drive C:
Description Local Fixed Disk
Compressed No
File System NTFS
Size 8.41 GB (9,031,356,416 bytes)
Free Space 2.42 GB (2,593,804,288 bytes)
Volume Name
Volume Serial Number C868EDFC

Drive D:
Description CD-ROM Disc

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

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

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

Drive I:
Description Local Fixed Disk
Compressed Not Available
File System Not Available

Size Not Available
Free Space Not Available
Volume Name Not Available
Volume Serial Number Not Available

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

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

Drive L:
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 M:
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 N:
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 O:
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 P:
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 Q:

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 R:

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 S:

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 T:

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

Drive U:

Description Local Fixed Disk
Compressed 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 33.00 GB (35,434,504,192 bytes)
Free Space 14.25 GB (15,298,310,144 bytes)
Volume Name Junction
Volume Serial Number 047052FE

[Disks]

Item	Value
Description	Disk drive
Manufacturer	(Standard disk drives)
Model	IBM DDYS-T09170M SCSI Disk Device
Bytes/Sector	512
Media Loaded	No
Media Type	Fixed hard disk
Partitions	Not Available
SCSI Bus	0
SCSI Logical Unit	0
SCSI Port	13
SCSI Target ID	10
Sectors/Track	63
Size	8.54 GB (9,171,187,200 bytes)
Total Cylinders	1,115
Total Sectors	17,912,475
Total Tracks	284,325
Tracks/Cylinder	255
Partition Disk #92, Partition #0	
Partition Size	101.94 MB (106,896,384 bytes)
Partition Starting Offset	32,256 bytes
Partition Disk #92, Partition #1	
Partition Size	8.41 GB (9,031,357,440 bytes)
Partition Starting Offset	139,829,760 bytes

Description	Disk drive
Manufacturer	(Standard disk drives)
Model	NEC iStorage 2000 SCSI Disk Device
Bytes/Sector	512
Media Loaded	Yes
Media Type	Fixed hard disk
Partitions	4
SCSI Bus	0
SCSI Logical Unit	0
SCSI Port	4
SCSI Target ID	0
Sectors/Track	63
Size	249.46 GB (267,856,243,200 bytes)
Total Cylinders	32,565
Total Sectors	523,156,725
Total Tracks	8,304,075
Tracks/Cylinder	255
Partition Disk #20, Partition #0	
Partition Size	15.01 GB (16,113,291,264 bytes)
Partition Starting Offset	32,256 bytes
Partition Disk #20, Partition #1	
Partition Size	30.01 GB (32,218,421,760 bytes)
Partition Starting Offset	16,113,323,520 bytes
Partition Disk #20, Partition #2	
Partition Size	30.01 GB (32,218,421,760 bytes)
Partition Starting Offset	48,331,745,280 bytes
Partition Disk #20, Partition #3	
Partition Size	174.43 GB (187,297,850,880 bytes)
Partition Starting Offset	80,550,167,040 bytes

Description	Disk drive
Manufacturer	(Standard disk drives)
Model	NEC iStorage 2000 SCSI Disk Device
Bytes/Sector	512
Media Loaded	Yes
Media Type	Fixed hard disk
Partitions	4

SCSI Bus	0
SCSI Logical Unit	1
SCSI Port	4
SCSI Target ID	0
Sectors/Track	63
Size	249.46 GB (267,856,243,200 bytes)
Total Cylinders	32,565
Total Sectors	523,156,725
Total Tracks	8,304,075
Tracks/Cylinder	255
Partition Disk #21, Partition #0	
Partition Size	15.01 GB (16,113,291,264 bytes)
Partition Starting Offset	32,256 bytes
Partition Disk #21, Partition #1	
Partition Size	30.01 GB (32,218,421,760 bytes)
Partition Starting Offset	16,113,323,520 bytes
Partition Disk #21, Partition #2	
Partition Size	30.01 GB (32,218,421,760 bytes)
Partition Starting Offset	48,331,745,280 bytes
Partition Disk #21, Partition #3	
Partition Size	174.43 GB (187,297,850,880 bytes)
Partition Starting Offset	80,550,167,040 bytes

Description	Disk drive
Manufacturer	(Standard disk drives)
Model	NEC iStorage 2000 SCSI Disk Device
Bytes/Sector	512
Media Loaded	Yes
Media Type	Fixed hard disk
Partitions	4
SCSI Bus	0
SCSI Logical Unit	2
SCSI Port	4
SCSI Target ID	0
Sectors/Track	63
Size	249.46 GB (267,856,243,200 bytes)
Total Cylinders	32,565
Total Sectors	523,156,725
Total Tracks	8,304,075
Tracks/Cylinder	255
Partition Disk #22, Partition #0	
Partition Size	15.01 GB (16,113,291,264 bytes)
Partition Starting Offset	32,256 bytes
Partition Disk #22, Partition #1	
Partition Size	30.01 GB (32,218,421,760 bytes)
Partition Starting Offset	16,113,323,520 bytes
Partition Disk #22, Partition #2	
Partition Size	30.01 GB (32,218,421,760 bytes)
Partition Starting Offset	48,331,745,280 bytes
Partition Disk #22, Partition #3	
Partition Size	174.43 GB (187,297,850,880 bytes)
Partition Starting Offset	80,550,167,040 bytes

Description	Disk drive
Manufacturer	(Standard disk drives)
Model	NEC iStorage 2000 SCSI Disk Device
Bytes/Sector	512
Media Loaded	Yes
Media Type	Fixed hard disk
Partitions	4
SCSI Bus	0
SCSI Logical Unit	3

SCSI Port 4
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #23, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #23, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #23, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #23, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 0
 SCSI Port 4
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #24, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #24, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #24, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #24, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 1
 SCSI Port 4
 SCSI Target ID 1

Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #25, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #25, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #25, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #25, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 2
 SCSI Port 4
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #26, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #26, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #26, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #26, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 3
 SCSI Port 4
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)

Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #27, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #27, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #27, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #27, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 0
 SCSI Port 10
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #74, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #74, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #74, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #74, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 1
 SCSI Port 10
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725

Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #75, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #75, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #75, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #75, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 2
 SCSI Port 10
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #76, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #76, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #76, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #76, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 3
 SCSI Port 10
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255

Partition Disk #77, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #77, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #77, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #77, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 0
 SCSI Port 10
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #78, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #78, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #78, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #78, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 1
 SCSI Port 10
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #79, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)

Partition Starting Offset 32,256 bytes
 Partition Disk #79, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #79, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #79, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 2
 SCSI Port 10
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #80, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #80, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #80, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #80, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 3
 SCSI Port 10
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #81, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #81, Partition #1

Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #81, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #81, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 0
 SCSI Port 8
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #56, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #56, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #56, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #56, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 1
 SCSI Port 8
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #57, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #57, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes

Partition Disk #57, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #57, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 2
 SCSI Port 8
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #58, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #58, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #58, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #58, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 3
 SCSI Port 8
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #59, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #59, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #59, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)

Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #59, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 0
 SCSI Port 8
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #60, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #60, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #60, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #60, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 1
 SCSI Port 8
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #61, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #61, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #61, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #61, Partition #3

Partition Size 174.43 GB (187,297,850,880 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive
Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 2
SCSI Port 8
SCSI Target ID 1
Sectors/Track 63
Size 249.46 GB (267,856,243,200 bytes)
Total Cylinders 32,565
Total Sectors 523,156,725
Total Tracks 8,304,075
Tracks/Cylinder 255
Partition Disk #62, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #62, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #62, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #62, Partition #3
Partition Size 174.43 GB (187,297,850,880 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive
Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 3
SCSI Port 8
SCSI Target ID 1
Sectors/Track 63
Size 249.46 GB (267,856,243,200 bytes)
Total Cylinders 32,565
Total Sectors 523,156,725
Total Tracks 8,304,075
Tracks/Cylinder 255
Partition Disk #63, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #63, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #63, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #63, Partition #3
Partition Size 174.43 GB (187,297,850,880 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive
Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 2
SCSI Target ID 0
Sectors/Track 63
Size 246.47 GB (264,640,158,720 bytes)
Total Cylinders 32,174
Total Sectors 516,875,310
Total Tracks 8,204,370
Tracks/Cylinder 255
Partition Disk #2, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #2, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #2, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #2, Partition #3
Partition Size 171.45 GB (184,089,991,680 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive
Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 1
SCSI Port 2
SCSI Target ID 0
Sectors/Track 63
Size 246.47 GB (264,640,158,720 bytes)
Total Cylinders 32,174
Total Sectors 516,875,310
Total Tracks 8,204,370
Tracks/Cylinder 255
Partition Disk #3, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #3, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #3, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #3, Partition #3
Partition Size 171.45 GB (184,089,991,680 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive

Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 2
SCSI Port 2
SCSI Target ID 0
Sectors/Track 63
Size 246.47 GB (264,640,158,720 bytes)
Total Cylinders 32,174
Total Sectors 516,875,310
Total Tracks 8,204,370
Tracks/Cylinder 255
Partition Disk #4, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #4, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #4, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #4, Partition #3
Partition Size 171.45 GB (184,089,991,680 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive
Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 3
SCSI Port 2
SCSI Target ID 0
Sectors/Track 63
Size 246.47 GB (264,640,158,720 bytes)
Total Cylinders 32,174
Total Sectors 516,875,310
Total Tracks 8,204,370
Tracks/Cylinder 255
Partition Disk #5, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #5, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #5, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #5, Partition #3
Partition Size 171.45 GB (184,089,991,680 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive
Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device

Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 0
 SCSI Port 2
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #6, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #6, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #6, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #6, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 1
 SCSI Port 2
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #7, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #7, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #7, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #7, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes

Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 2
 SCSI Port 2
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #8, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #8, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #8, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #8, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 3
 SCSI Port 2
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #9, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #9, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #9, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #9, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4

SCSI Bus 0
 SCSI Logical Unit 0
 SCSI Port 11
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #83, Partition #0
 Partition Size 15.00 GB (16,105,065,984 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #83, Partition #1
 Partition Size 30.00 GB (32,210,196,480 bytes)
 Partition Starting Offset 16,105,098,240 bytes
 Partition Disk #83, Partition #2
 Partition Size 30.00 GB (32,210,196,480 bytes)
 Partition Starting Offset 48,315,294,720 bytes
 Partition Disk #83, Partition #3
 Partition Size 174.46 GB (187,322,526,720 bytes)
 Partition Starting Offset 80,525,491,200 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 1
 SCSI Port 11
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #84, Partition #0
 Partition Size 15.00 GB (16,105,065,984 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #84, Partition #1
 Partition Size 30.00 GB (32,210,196,480 bytes)
 Partition Starting Offset 16,105,098,240 bytes
 Partition Disk #84, Partition #2
 Partition Size 30.00 GB (32,210,196,480 bytes)
 Partition Starting Offset 48,315,294,720 bytes
 Partition Disk #84, Partition #3
 Partition Size 174.46 GB (187,322,526,720 bytes)
 Partition Starting Offset 80,525,491,200 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 2

SCSI Port 11
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #85, Partition #0
 Partition Size 15.00 GB (16,105,065,984 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #85, Partition #1
 Partition Size 30.00 GB (32,210,196,480 bytes)
 Partition Starting Offset 16,105,098,240 bytes
 Partition Disk #85, Partition #2
 Partition Size 30.00 GB (32,210,196,480 bytes)
 Partition Starting Offset 48,315,294,720 bytes
 Partition Disk #85, Partition #3
 Partition Size 174.46 GB (187,322,526,720 bytes)
 Partition Starting Offset 80,525,491,200 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 3
 SCSI Port 11
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #86, Partition #0
 Partition Size 15.00 GB (16,105,065,984 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #86, Partition #1
 Partition Size 30.00 GB (32,210,196,480 bytes)
 Partition Starting Offset 16,105,098,240 bytes
 Partition Disk #86, Partition #2
 Partition Size 30.00 GB (32,210,196,480 bytes)
 Partition Starting Offset 48,315,294,720 bytes
 Partition Disk #86, Partition #3
 Partition Size 174.46 GB (187,322,526,720 bytes)
 Partition Starting Offset 80,525,491,200 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 0
 SCSI Port 11
 SCSI Target ID 1

Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #87, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #87, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #87, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #87, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 1
 SCSI Port 11
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #88, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #88, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #88, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #88, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 2
 SCSI Port 11
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)

Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #89, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #89, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #89, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #89, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 3
 SCSI Port 11
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #90, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #90, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #90, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #90, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 0
 SCSI Port 3
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725

Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #11, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #11, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #11, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #11, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 1
 SCSI Port 3
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #12, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #12, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #12, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #12, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 2
 SCSI Port 3
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255

Partition Disk #13, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #13, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #13, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #13, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 3
 SCSI Port 3
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #14, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #14, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #14, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #14, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 0
 SCSI Port 3
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #15, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)

Partition Starting Offset 32,256 bytes
 Partition Disk #15, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #15, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #15, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 1
 SCSI Port 3
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #16, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #16, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #16, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #16, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 2
 SCSI Port 3
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #17, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #17, Partition #1

Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #17, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #17, Partition #3
Partition Size 174.43 GB (187,297,850,880 bytes)
Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 3
SCSI Port 3
SCSI Target ID 1
Sectors/Track 63
Size 249.46 GB (267,856,243,200 bytes)
Total Cylinders 32,565
Total Sectors 523,156,725
Total Tracks 8,304,075
Tracks/Cylinder 255
Partition Disk #18, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #18, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #18, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #18, Partition #3
Partition Size 174.43 GB (187,297,850,880 bytes)
Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 9
SCSI Target ID 0
Sectors/Track 63
Size 249.46 GB (267,856,243,200 bytes)
Total Cylinders 32,565
Total Sectors 523,156,725
Total Tracks 8,304,075
Tracks/Cylinder 255
Partition Disk #65, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #65, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes

Partition Disk #65, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #65, Partition #3
Partition Size 174.43 GB (187,297,850,880 bytes)
Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 1
SCSI Port 9
SCSI Target ID 0
Sectors/Track 63
Size 249.46 GB (267,856,243,200 bytes)
Total Cylinders 32,565
Total Sectors 523,156,725
Total Tracks 8,304,075
Tracks/Cylinder 255
Partition Disk #66, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #66, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #66, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #66, Partition #3
Partition Size 174.43 GB (187,297,850,880 bytes)
Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 2
SCSI Port 9
SCSI Target ID 0
Sectors/Track 63
Size 249.46 GB (267,856,243,200 bytes)
Total Cylinders 32,565
Total Sectors 523,156,725
Total Tracks 8,304,075
Tracks/Cylinder 255
Partition Disk #67, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #67, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #67, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)

Partition Starting Offset 48,331,745,280 bytes
Partition Disk #67, Partition #3
Partition Size 174.43 GB (187,297,850,880 bytes)
Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 3
SCSI Port 9
SCSI Target ID 0
Sectors/Track 63
Size 249.46 GB (267,856,243,200 bytes)
Total Cylinders 32,565
Total Sectors 523,156,725
Total Tracks 8,304,075
Tracks/Cylinder 255
Partition Disk #68, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #68, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #68, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #68, Partition #3
Partition Size 174.43 GB (187,297,850,880 bytes)
Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 9
SCSI Target ID 1
Sectors/Track 63
Size 249.46 GB (267,856,243,200 bytes)
Total Cylinders 32,565
Total Sectors 523,156,725
Total Tracks 8,304,075
Tracks/Cylinder 255
Partition Disk #69, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #69, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #69, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #69, Partition #3

Partition Size 174.43 GB (187,297,850,880 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive

Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 1
SCSI Port 9
SCSI Target ID 1
Sectors/Track 63
Size 249.46 GB (267,856,243,200 bytes)
Total Cylinders 32,565
Total Sectors 523,156,725
Total Tracks 8,304,075
Tracks/Cylinder 255
Partition Disk #70, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #70, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #70, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #70, Partition #3
Partition Size 174.43 GB (187,297,850,880 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive

Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 2
SCSI Port 9
SCSI Target ID 1
Sectors/Track 63
Size 249.46 GB (267,856,243,200 bytes)
Total Cylinders 32,565
Total Sectors 523,156,725
Total Tracks 8,304,075
Tracks/Cylinder 255
Partition Disk #71, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #71, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #71, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #71, Partition #3
Partition Size 174.43 GB (187,297,850,880 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive

Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 3
SCSI Port 9
SCSI Target ID 1
Sectors/Track 63
Size 249.46 GB (267,856,243,200 bytes)
Total Cylinders 32,565
Total Sectors 523,156,725
Total Tracks 8,304,075
Tracks/Cylinder 255
Partition Disk #72, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #72, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #72, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #72, Partition #3
Partition Size 174.43 GB (187,297,850,880 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive

Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 2
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 1
SCSI Target ID 0
Sectors/Track 63
Size 233.01 GB (250,196,567,040 bytes)
Total Cylinders 30,418
Total Sectors 488,665,170
Total Tracks 7,756,590
Tracks/Cylinder 255
Partition Disk #0, Partition #0
Partition Size 200.01 GB (214,753,803,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #0, Partition #1
Partition Size 33.00 GB (35,434,506,240 bytes)
Partition Starting Offset 214,753,835,520 bytes

DescriptionDisk drive

Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 2

SCSI Bus 0
SCSI Logical Unit 1
SCSI Port 1
SCSI Target ID 0
Sectors/Track 63
Size 233.01 GB (250,196,567,040 bytes)
Total Cylinders 30,418
Total Sectors 488,665,170
Total Tracks 7,756,590
Tracks/Cylinder 255
Partition Disk #1, Partition #0
Partition Size 200.01 GB (214,753,803,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #1, Partition #1
Partition Size 33.00 GB (35,434,506,240 bytes)
Partition Starting Offset 214,753,835,520 bytes

DescriptionDisk drive

Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 7
SCSI Target ID 0
Sectors/Track 63
Size 246.47 GB (264,640,158,720 bytes)
Total Cylinders 32,174
Total Sectors 516,875,310
Total Tracks 8,204,370
Tracks/Cylinder 255
Partition Disk #47, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #47, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #47, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #47, Partition #3
Partition Size 171.45 GB (184,089,991,680 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive

Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 1
SCSI Port 7
SCSI Target ID 0
Sectors/Track 63
Size 246.47 GB (264,640,158,720 bytes)
Total Cylinders 32,174
Total Sectors 516,875,310

Total Tracks 8,204,370
 Tracks/Cylinder 255
 Partition Disk #48, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #48, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #48, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #48, Partition #3
 Partition Size 171.45 GB (184,089,991,680 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 2
 SCSI Port 7
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #49, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #49, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #49, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #49, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 3
 SCSI Port 7
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255

Partition Disk #50, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #50, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #50, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #50, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 0
 SCSI Port 7
 SCSI Target ID 1
 Sectors/Track 63
 Size 246.47 GB (264,640,158,720 bytes)
 Total Cylinders 32,174
 Total Sectors 516,875,310
 Total Tracks 8,204,370
 Tracks/Cylinder 255
 Partition Disk #51, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #51, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #51, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #51, Partition #3
 Partition Size 171.45 GB (184,089,991,680 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 1
 SCSI Port 7
 SCSI Target ID 1
 Sectors/Track 63
 Size 246.47 GB (264,640,158,720 bytes)
 Total Cylinders 32,174
 Total Sectors 516,875,310
 Total Tracks 8,204,370
 Tracks/Cylinder 255
 Partition Disk #52, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)

Partition Starting Offset 32,256 bytes
 Partition Disk #52, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #52, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #52, Partition #3
 Partition Size 171.45 GB (184,089,991,680 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 2
 SCSI Port 7
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #53, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #53, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #53, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #53, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 3
 SCSI Port 7
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #54, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #54, Partition #1

Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #54, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #54, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 0
 SCSI Port 5
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #29, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #29, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #29, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #29, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 1
 SCSI Port 5
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #30, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #30, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes

Partition Disk #30, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #30, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 2
 SCSI Port 5
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #31, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #31, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #31, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #31, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 3
 SCSI Port 5
 SCSI Target ID 0
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #32, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #32, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #32, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)

Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #32, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 0
 SCSI Port 5
 SCSI Target ID 1
 Sectors/Track 63
 Size 246.47 GB (264,640,158,720 bytes)
 Total Cylinders 32,174
 Total Sectors 516,875,310
 Total Tracks 8,204,370
 Tracks/Cylinder 255
 Partition Disk #33, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #33, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #33, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #33, Partition #3
 Partition Size 171.45 GB (184,089,991,680 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 1
 SCSI Port 5
 SCSI Target ID 1
 Sectors/Track 63
 Size 246.47 GB (264,640,158,720 bytes)
 Total Cylinders 32,174
 Total Sectors 516,875,310
 Total Tracks 8,204,370
 Tracks/Cylinder 255
 Partition Disk #34, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #34, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #34, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #34, Partition #3

Partition Size 171.45 GB (184,089,991,680 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive
Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 2
SCSI Port 5
SCSI Target ID 1
Sectors/Track 63
Size 249.46 GB (267,856,243,200 bytes)
Total Cylinders 32,565
Total Sectors 523,156,725
Total Tracks 8,304,075
Tracks/Cylinder 255
Partition Disk #35, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #35, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #35, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #35, Partition #3
Partition Size 174.43 GB (187,297,850,880 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive
Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 3
SCSI Port 5
SCSI Target ID 1
Sectors/Track 63
Size 246.47 GB (264,640,158,720 bytes)
Total Cylinders 32,174
Total Sectors 516,875,310
Total Tracks 8,204,370
Tracks/Cylinder 255
Partition Disk #36, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #36, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #36, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #36, Partition #3
Partition Size 171.45 GB (184,089,991,680 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive
Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 6
SCSI Target ID 0
Sectors/Track 63
Size 249.46 GB (267,856,243,200 bytes)
Total Cylinders 32,565
Total Sectors 523,156,725
Total Tracks 8,304,075
Tracks/Cylinder 255
Partition Disk #38, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #38, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #38, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #38, Partition #3
Partition Size 174.43 GB (187,297,850,880 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive
Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 1
SCSI Port 6
SCSI Target ID 0
Sectors/Track 63
Size 249.46 GB (267,856,243,200 bytes)
Total Cylinders 32,565
Total Sectors 523,156,725
Total Tracks 8,304,075
Tracks/Cylinder 255
Partition Disk #39, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #39, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #39, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #39, Partition #3
Partition Size 174.43 GB (187,297,850,880 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive

Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 2
SCSI Port 6
SCSI Target ID 0
Sectors/Track 63
Size 249.46 GB (267,856,243,200 bytes)
Total Cylinders 32,565
Total Sectors 523,156,725
Total Tracks 8,304,075
Tracks/Cylinder 255
Partition Disk #40, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #40, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #40, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #40, Partition #3
Partition Size 174.43 GB (187,297,850,880 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive
Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 4
SCSI Bus 0
SCSI Logical Unit 3
SCSI Port 6
SCSI Target ID 0
Sectors/Track 63
Size 249.46 GB (267,856,243,200 bytes)
Total Cylinders 32,565
Total Sectors 523,156,725
Total Tracks 8,304,075
Tracks/Cylinder 255
Partition Disk #41, Partition #0
Partition Size 15.01 GB (16,113,291,264 bytes)
Partition Starting Offset 32,256 bytes
Partition Disk #41, Partition #1
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 16,113,323,520 bytes
Partition Disk #41, Partition #2
Partition Size 30.01 GB (32,218,421,760 bytes)
Partition Starting Offset 48,331,745,280 bytes
Partition Disk #41, Partition #3
Partition Size 174.43 GB (187,297,850,880 bytes)
Partition Starting Offset 80,550,167,040 bytes

DescriptionDisk drive
Manufacturer (Standard disk drives)
Model NEC iStorage 2000 SCSI Disk Device

Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 0
 SCSI Port 6
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #42, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #42, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #42, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #42, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 1
 SCSI Port 6
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #43, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #43, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #43, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #43, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes

Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 2
 SCSI Port 6
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #44, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #44, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #44, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #44, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model NEC iStorage 2000 SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 4
 SCSI Bus 0
 SCSI Logical Unit 3
 SCSI Port 6
 SCSI Target ID 1
 Sectors/Track 63
 Size 249.46 GB (267,856,243,200 bytes)
 Total Cylinders 32,565
 Total Sectors 523,156,725
 Total Tracks 8,304,075
 Tracks/Cylinder 255
 Partition Disk #45, Partition #0
 Partition Size 15.01 GB (16,113,291,264 bytes)
 Partition Starting Offset 32,256 bytes
 Partition Disk #45, Partition #1
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 16,113,323,520 bytes
 Partition Disk #45, Partition #2
 Partition Size 30.01 GB (32,218,421,760 bytes)
 Partition Starting Offset 48,331,745,280 bytes
 Partition Disk #45, Partition #3
 Partition Size 174.43 GB (187,297,850,880 bytes)
 Partition Starting Offset 80,550,167,040 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model QLOGIC PSEUDO DEVICE SCSI Disk Device
 Bytes/Sector 512
 Media Loaded No
 Media Type Fixed hard disk
 Partitions Not Available

SCSI Bus 0
 SCSI Logical Unit 0
 SCSI Port 10
 SCSI Target ID 127
 Sectors/Track 0
 Size 0 bytes
 Total Cylinders 0
 Total Sectors 0
 Total Tracks 0
 Tracks/Cylinder 0

Description Disk drive
 Manufacturer (Standard disk drives)
 Model QLOGIC PSEUDO DEVICE SCSI Disk Device
 Bytes/Sector 512
 Media Loaded No
 Media Type Fixed hard disk
 Partitions Not Available
 SCSI Bus 0
 SCSI Logical Unit 0
 SCSI Port 8
 SCSI Target ID 127
 Sectors/Track 0
 Size 0 bytes
 Total Cylinders 0
 Total Sectors 0
 Total Tracks 0
 Tracks/Cylinder 0

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

Description Disk drive
 Manufacturer (Standard disk drives)
 Model QLOGIC PSEUDO DEVICE SCSI Disk Device
 Bytes/Sector 512
 Media Loaded No
 Media Type Fixed hard disk
 Partitions Not Available
 SCSI Bus 0
 SCSI Logical Unit 0
 SCSI Port 11
 SCSI Target ID 127
 Sectors/Track 0
 Size 0 bytes
 Total Cylinders 0
 Total Sectors 0

Total Tracks 0
Tracks/Cylinder 0

Description Disk drive
Manufacturer (Standard disk drives)
Model QLOGIC PSEUDO DEVICE SCSI Disk Device
Bytes/Sector 512
Media Loaded No
Media Type Fixed hard disk
Partitions Not Available
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 3
SCSI Target ID 127
Sectors/Track 0
Size 0 bytes
Total Cylinders 0
Total Sectors 0
Total Tracks 0
Tracks/Cylinder 0

Description Disk drive
Manufacturer (Standard disk drives)
Model QLOGIC PSEUDO DEVICE SCSI Disk Device
Bytes/Sector 512
Media Loaded No
Media Type Fixed hard disk
Partitions Not Available
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 9
SCSI Target ID 127
Sectors/Track 0
Size 0 bytes
Total Cylinders 0
Total Sectors 0
Total Tracks 0
Tracks/Cylinder 0

Description Disk drive
Manufacturer (Standard disk drives)
Model QLOGIC PSEUDO DEVICE SCSI Disk Device
Bytes/Sector 512
Media Loaded No
Media Type Fixed hard disk
Partitions Not Available
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 7
SCSI Target ID 127
Sectors/Track 0
Size 0 bytes
Total Cylinders 0
Total Sectors 0
Total Tracks 0
Tracks/Cylinder 0

Description Disk drive
Manufacturer (Standard disk drives)
Model QLOGIC PSEUDO DEVICE SCSI Disk Device
Bytes/Sector 512
Media Loaded No

Media Type Fixed hard disk
Partitions Not Available
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 5
SCSI Target ID 127
Sectors/Track 0
Size 0 bytes
Total Cylinders 0
Total Sectors 0
Total Tracks 0
Tracks/Cylinder 0

Description Disk drive
Manufacturer (Standard disk drives)
Model QLOGIC PSEUDO DEVICE SCSI Disk Device
Bytes/Sector 512
Media Loaded No
Media Type Fixed hard disk
Partitions Not Available
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 6
SCSI Target ID 127
Sectors/Track 0
Size 0 bytes
Total Cylinders 0
Total Sectors 0
Total Tracks 0
Tracks/Cylinder 0

Description Disk drive
Manufacturer (Standard disk drives)
Model QLOGIC PSEUDO DEVICE SCSI Disk Device
Bytes/Sector 512
Media Loaded No
Media Type Fixed hard disk
Partitions Not Available
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 4
SCSI Target ID 127
Sectors/Track 0
Size 0 bytes
Total Cylinders 0
Total Sectors 0
Total Tracks 0
Tracks/Cylinder 0

[SCSI]

Item	Value
Name	QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)
Manufacturer	QLogic
Status	OK
PNP Device ID	PCI\VEN_1077&DEV_2200&SUBSYS_00021077&REV_05\3&AD74055&0&10
I/O Port	0x00001200-0x000012FF
Memory Address	0xFBBFF000-0xFBBFFFFFFF
IRQ Channel	IRQ 20

Driver c:\windows\system32\drivers\ql2200.sys (8.1.2 Beta 1 (W2K IP), 521.38 KB (533,888 bytes), 11/19/2002 7:07 PM)

Name Adaptec SCSI Card 39160 - Ultra160 SCSI
Manufacturer Adaptec
Status OK
PNP Device ID PCI\VEN_9005&DEV_00C0&SUBSYS_F6209005&REV_01\3&29E81982&0&10
I/O Port 0x00001300-0x000014FF
Memory Address 0xFB7FF000-0xFB7FFFFFFF
IRQ Channel IRQ 68
Driver c:\windows\system32\drivers\adpu160m.sys (RTC_XP07 (lab01_n(storbuild).010917-1859), 319.88 KB (327,552 bytes), 10/11/2002 9:00 PM)

Name Adaptec SCSI Card 39160 - Ultra160 SCSI
Manufacturer Adaptec
Status OK
PNP Device ID PCI\VEN_9005&DEV_00C0&SUBSYS_F6209005&REV_01\3&29E81982&0&11
I/O Port 0x00001400-0x000014FF
Memory Address 0xFB7FE000-0xFB7FEFFF
IRQ Channel IRQ 67
Driver c:\windows\system32\drivers\adpu160m.sys (RTC_XP07 (lab01_n(storbuild).010917-1859), 319.88 KB (327,552 bytes), 10/11/2002 9:00 PM)

Name QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)
Manufacturer QLogic
Status OK
PNP Device ID PCI\VEN_1077&DEV_2200&SUBSYS_00021077&REV_05\3&474B838&0&10
I/O Port 0x00001500-0x000015FF
Memory Address 0xFB3FF000-0xFB3FFFFFFF
IRQ Channel IRQ 73
Driver c:\windows\system32\drivers\ql2200.sys (8.1.2 Beta 1 (W2K IP), 521.38 KB (533,888 bytes), 11/19/2002 7:07 PM)

Name QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)
Manufacturer QLogic
Status OK
PNP Device ID PCI\VEN_1077&DEV_2200&SUBSYS_00021077&REV_05\3&AD74055&0&10
I/O Port 0x00001600-0x000016FF
Memory Address 0xFABFF000-0xFABFFFFFFF
IRQ Channel IRQ 84
Driver c:\windows\system32\drivers\ql2200.sys (8.1.2 Beta 1 (W2K IP), 521.38 KB (533,888 bytes), 11/19/2002 7:07 PM)

Name QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)
Manufacturer QLogic
Status OK
PNP Device ID PCI\VEN_1077&DEV_2200&SUBSYS_00021077&REV_05\3&1106BFD7&0&10

I/O Port 0x00001700-0x000017FF
Memory Address 0xFA7FF000-0xFA7FFFFF
IRQ Channel IRQ 90
Driver c:\windows\system32\drivers\ql2200.sys (8.1.2 Beta 1 (W2K IP), 521.38 KB (533,888 bytes), 11/19/2002 7:07 PM)

Name QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)
Manufacturer QLogic
Status OK
PNP Device ID PCI\VEN_1077&DEV_2200&SUBSYS_00021077&REV_05\3&39E002BD&0&10
I/O Port 0x00001800-0x000018FF
Memory Address 0xFA3FF000-0xFA3FFFFF
IRQ Channel IRQ 100
Driver c:\windows\system32\drivers\ql2200.sys (8.1.2 Beta 1 (W2K IP), 521.38 KB (533,888 bytes), 11/19/2002 7:07 PM)

Name QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)
Manufacturer QLogic
Status OK
PNP Device ID PCI\VEN_1077&DEV_2200&SUBSYS_00021077&REV_05\3&72AA75C&0&10
I/O Port 0x00001900-0x000019FF
Memory Address 0xF9FFF000-0xF9FFFFF
IRQ Channel IRQ 156
Driver c:\windows\system32\drivers\ql2200.sys (8.1.2 Beta 1 (W2K IP), 521.38 KB (533,888 bytes), 11/19/2002 7:07 PM)

Name QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)
Manufacturer QLogic
Status OK
PNP Device ID PCI\VEN_1077&DEV_2200&SUBSYS_00021077&REV_05\3&2C9E08A6&0&10
I/O Port 0x00001A00-0x00001AFF
Memory Address 0xF9BFF000-0xF9BFFFFF
IRQ Channel IRQ 161
Driver c:\windows\system32\drivers\ql2200.sys (8.1.2 Beta 1 (W2K IP), 521.38 KB (533,888 bytes), 11/19/2002 7:07 PM)

Name QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)
Manufacturer QLogic
Status OK
PNP Device ID PCI\VEN_1077&DEV_2200&SUBSYS_00021077&REV_05\3&36B90202&0&10
I/O Port 0x00001B00-0x00001BFF
Memory Address 0xF97FF000-0xF97FFFFF
IRQ Channel IRQ 166
Driver c:\windows\system32\drivers\ql2200.sys (8.1.2 Beta 1 (W2K IP), 521.38 KB (533,888 bytes), 11/19/2002 7:07 PM)

Name QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)
Manufacturer QLogic
Status OK

PNP Device ID PCI\VEN_1077&DEV_2200&SUBSYS_00021077&REV_05\3&200C0107&0&10
I/O Port 0x00001C00-0x00001CFF
Memory Address 0xF93FF000-0xF93FFFFF
IRQ Channel IRQ 178
Driver c:\windows\system32\drivers\ql2200.sys (8.1.2 Beta 1 (W2K IP), 521.38 KB (533,888 bytes), 11/19/2002 7:07 PM)

Name QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)
Manufacturer QLogic
Status OK
PNP Device ID PCI\VEN_1077&DEV_2200&SUBSYS_00021077&REV_05\3&7B03F9A&0&10
I/O Port 0x00001D00-0x00001DFF
Memory Address 0xF8FFF000-0xF8FFFFF
IRQ Channel IRQ 183
Driver c:\windows\system32\drivers\ql2200.sys (8.1.2 Beta 1 (W2K IP), 521.38 KB (533,888 bytes), 11/19/2002 7:07 PM)

Name QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)
Manufacturer QLogic
Status OK
PNP Device ID PCI\VEN_1077&DEV_2200&SUBSYS_00021077&REV_05\3&1DD7A857&0&10
I/O Port 0x00001E00-0x00001FFF
Memory Address 0xF8BFF000-0xF8BFFFFF
IRQ Channel IRQ 188

[IDE]

Item	Value
Name	Intel(r) IA64 Bus Master IDE Controller
Manufacturer	Intel
Status	OK
PNP Device ID	PCI\VEN_8086&DEV_7601&SUBSYS_01061033&REV_01\3&267A616A&0&11
I/O Port	0x00001120-0x0000112F
Driver	c:\windows\system32\drivers\intelide.sys (5.2.3694.0 (dnsrv.021010-1930), 8.75 KB (8,960 bytes), 10/11/2002 9:00 PM)
Name	Primary IDE Channel
Manufacturer	(Standard IDE ATA/ATAPI controllers)
Status	OK
PNP Device ID	PCI\IDE\IDECHANNEL\4&31FC9C45&0&0
I/O Port	0x000001F0-0x000001F7
I/O Port	0x000003F6-0x000003F6
IRQ Channel	IRQ 14
Driver	c:\windows\system32\drivers\atapi.sys (5.2.3694.0 (dnsrv.021010-1930), 282.00 KB (288,768 bytes), 10/11/2002 9:00 PM)

[Printing]

Name	Driver	Port Name	Server Name
[Problem Devices]			

Device	PNP Device ID	Error Code
System Interrupt Controller	PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_00\3&267A616A&0&08	The drivers for this device are not installed.
Not Available	ACPI\NEC4171\0	The drivers for this device are not installed.
System Interrupt Controller	PCI\VEN_1033&DEV_00FD&SUBSYS_00FD1033&REV_00\3&267A616A&0&70	The drivers for this device are not installed.
System Interrupt Controller	PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_00\3&1070020&0&08	The drivers for this device are not installed.
System Interrupt Controller	PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_00\3&172E68DD&0&08	The drivers for this device are not installed.
System Interrupt Controller	PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_00\3&E44F86D&0&08	The drivers for this device are not installed.
System Interrupt Controller	PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_00\3&33B859B7&0&08	The drivers for this device are not installed.
System Interrupt Controller	PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_00\3&23C0707C&0&08	The drivers for this device are not installed.
System Interrupt Controller	PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_00\3&1B2F0CE&0&08	The drivers for this device are not installed.
System Interrupt Controller	PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_00\3&27265218&0&08	The drivers for this device are not installed.
System Interrupt Controller	PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_00\3&A985F74&0&08	The drivers for this device are not installed.
System Interrupt Controller	PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_00\3&300BC0BE&0&08	The drivers for this device are not installed.
System Interrupt Controller	PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_00\3&19E45801&0&08	The drivers for this device are not installed.
System Interrupt Controller	PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_00\3&3BCEF44&0&08	The drivers for this device are not installed.
System Interrupt Controller	PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_00\3&23FF515D&0&08	The drivers for this device are not installed.
System Interrupt Controller	PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_00\3&D525062&0&08	The drivers for this device are not installed.
System Interrupt Controller	PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_00\3&32C5B1AC&0&08	The drivers for this device are not installed.
System Interrupt Controller	PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_00\3&267A616A&0&08	The drivers for this device are not installed.

00\3&309158FC&0&08 The drivers for this device are not installed.

[USB]

Device PNP Device ID
 Intel(r) 82372FB PCI to USB Universal Host Controller
 PCI\VEN_8086&DEV_7602&SUBSYS_01061033&REV_01\3&267A616A&0&12
 USB Root Hub USB\ROOT_HUB\4&5C3BD33&0

[Software Environment]

[System Drivers]

Name	Description	File	Type	Started	Start Mode
	State	Status	Error Control		Accept
Pause	Accept Stop				
abiosdsk	Abiosdsk	Not Available		Kernel Driver	
	No	Disabled	Stopped	OK	Ignore
	No	No			
acpi	Microsoft ACPI Driver				
Driver	Yes	Boot	Running	OK	Normal
	No	Yes			
acpiec	ACPIEC	c:\windows\system32\drivers\acpiec.sys			Kernel
Kernel Driver	Yes	No	Disabled	Stopped	
	OK	Normal	No	No	
adpu160m	adpu160m	c:\windows\system32\drivers\adpu160m.sys			
Kernel Driver	Yes	Boot	Running		
	OK	Normal	No	Yes	
adpu320	adpu320	Not Available		Kernel Driver	
	No	Disabled	Stopped	OK	Normal
	No	No			
afcnt	afcnt	Not Available		Kernel Driver	
	No	Disabled	Stopped	OK	Normal
	No	No			
afd	AFD Networking Support Environment				
Driver	Yes	Auto	Running	OK	Kernel 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	Alilde	Not Available		Kernel Driver	
	No	Disabled	Stopped	OK	Normal
	No	No			
asynmac	RAS Asynchronous Media Driver				
Driver	No	Manual	Stopped	OK	Kernel Normal
	No	No			
atapi	Standard IDE/ESDI Hard Disk Controller				
Driver	Yes	Boot	Running	OK	Kernel Normal
	No	Yes			
atdisk	Atdisk	Not Available		Kernel Driver	
	No	Disabled	Stopped	OK	Ignore

	No	No			
atmarpc	ATM ARP Client Protocol				
Driver	Yes	Manual	Stopped	OK	Kernel Normal
	No	No			
audstub	Audio Stub Driver				
Driver	Yes	Manual	Running	OK	Kernel Normal
	No	Yes			
beep	Beep	c:\windows\system32\drivers\beep.sys			
Kernel Driver	Yes	System	Running		
	OK	Normal	No	Yes	
cbidf2k	cbidf2k	c:\windows\system32\drivers\cbidf2k.sys			
Kernel Driver	No	Disabled	Stopped		
	OK	Normal	No	No	
cdfs	Cdfs	c:\windows\system32\drivers\cdfs.sys			
File System Driver	Yes	Disabled	Running		
	OK	Normal	No	Yes	
cdrom	CD-ROM Driver				
Driver	Yes	System	Running	OK	Kernel Normal
	No	Yes			
changer	Changer	Not Available		Kernel Driver	
	No	System	Stopped	OK	Ignore
	No	No			
clusdisk	Cluster Disk Driver				
Driver	No	Disabled	Stopped	OK	Kernel Normal
	No	No			
cmdide	CmdIde	Not Available		Kernel Driver	
	No	Disabled	Stopped	OK	Normal
	No	No			
cpqarry2	cpqarry2	Not Available		Kernel Driver	
	No	Disabled	Stopped	OK	Normal
	No	No			
cpqcissm	cpqcissm	Not Available		Kernel Driver	
	No	Disabled	Stopped	OK	Normal
	No	No			
cpqfcalm	cpqfcalm	Not Available		Kernel Driver	
	No	Disabled	Stopped	OK	Normal
	No	No			
crdisk	CRC Disk Filter Driver				
Driver	Yes	Boot	Running	OK	Kernel Normal
	No	Yes			
dfsdriver	DfsDriver	c:\windows\system32\drivers\dfs.sys			
File System Driver	Yes	Boot	Running		
	OK	Normal	No	Yes	
disk	Disk Driver	c:\windows\system32\drivers\disk.sys			
Kernel Driver	Yes	Boot	Running		
	OK	Normal	No	Yes	
dmboot	dmboot	c:\windows\system32\drivers\dmboot.sys			
Kernel Driver	No	Disabled	Stopped		
	OK	Normal	No	No	
dmio	Logical Disk Manager Driver				
Driver	Yes	Boot	Running	OK	Kernel 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
e1000	Intel(R) PRO/1000 Device Driver				
Driver	Yes	Manual	Running	OK	Kernel Normal
	No	Yes			
fastfat	Fastfat	c:\windows\system32\drivers\fastfat.sys			
File System Driver	No	Disabled	Stopped		
	OK	Normal	No	No	
fdc	Fdc	c:\windows\system32\drivers\fdc.sys			
Kernel Driver	No	System	Stopped		
	OK	Ignore	No	No	
fips	Fips	c:\windows\system32\drivers\fips.sys			
Kernel Driver	Yes	System	Running		
	OK	Normal	No	Yes	
flpydisk	Flpydisk	c:\windows\system32\drivers\flpydisk.sys			
Kernel Driver	No	System	Stopped		
	OK	Ignore	No	No	
ftdisk	Volume Manager Driver				
Driver	Yes	Boot	Running	OK	Kernel Normal
	No	Yes			
gpc	Generic Packet Classifier				
Driver	Yes	Manual	Running	OK	Kernel Normal
	No	Yes			
hpn	hpn	Not Available		Kernel Driver	
	No	Disabled	Stopped	OK	Normal
	No	No			
http	HTTP	c:\windows\system32\drivers\http.sys			
Kernel Driver	No	Manual	Stopped		
	OK	Normal	No	No	
i2omgmt	i2omgmt	Not Available		Kernel Driver	
	No	System	Stopped	OK	Normal
	No	No			
i8042prt	i8042 Keyboard and PS/2 Mouse Port Driver				
Driver	Yes	System	Running	OK	Kernel Normal
	No	Yes			
imapi	CD-Burning Filter Driver				
Driver	No	System	Stopped	OK	Kernel Normal
	No	No			
intelide	IntelIde	c:\windows\system32\drivers\intelide.sys			
Kernel Driver	Yes	Boot	Running		
	OK	Normal	No	Yes	
ipfilterdriver	IP Traffic Filter Driver				
Driver	No	Manual	Stopped	OK	Kernel Normal
	No	No			
ipinip	IP in IP Tunnel Driver				
Driver	No	Manual	Stopped	OK	Kernel Normal
	No	No			
ipnat	IP Network Address Translator				
Driver	No	Manual	Stopped	OK	Kernel Normal
	No	No			
ipsec	IPSEC driver				
Driver	Yes	System	Running	OK	Kernel Normal
	No	Yes			

isapnp	PnP ISA/EISA Bus Driver								
Driver	c:\windows\system32\drivers\isapnp.sys	Kernel	Yes	Boot	Running	OK	Critical		
kbdclass	Keyboard Class Driver								
Driver	c:\windows\system32\drivers\kbdclass.sys	Kernel	Yes	System	Running	OK	Normal		
ksecdd	KSecDD	c:\windows\system32\drivers\ksecdd.sys	Kernel Driver	Yes	Boot	Running	OK	Normal	No
ip6nds35	Ip6nds35	Not Available	Kernel Driver	No	Yes				
mnmdd	mnmdd	Not Available	Kernel Driver	No	System	Stopped	OK	Ignore	
modem	Modem	c:\windows\system32\drivers\modem.sys	Kernel Driver	No	Manual	Stopped	OK	Ignore	
mouclass	Mouse Class Driver								
Driver	c:\windows\system32\drivers\mouclass.sys	Kernel	Yes	System	Running	OK	Normal		
mountmgr	Mount Point Manager								
Driver	c:\windows\system32\drivers\mountmgr.sys	Kernel	Yes	Boot	Running	OK	Normal		
mraid35x	mraid35x	Not Available	Kernel Driver	No	Disabled	Stopped	OK	Normal	
mrxdav	WebDav Client Redirector								
System Driver	c:\windows\system32\drivers\mrxdav.sys	File	Normal	No	Manual	Stopped	OK		
mrxsmmb	MRXSMB	c:\windows\system32\drivers\mrxsmmb.sys	File System Driver	Yes	System	Running	OK	Normal	
msfs	Msfs	c:\windows\system32\drivers\msfs.sys	File System Driver	Yes	System	Running	OK	Normal	
mup	Mup	c:\windows\system32\drivers\mup.sys	File System Driver	Yes	Boot	Running	OK	Normal	
ndis	NDIS System Driver								
Driver	c:\windows\system32\drivers\ndis.sys	Kernel	Yes	Boot	Running	OK	Normal		
ndistapi	Remote Access NDIS TAPI Driver								
Driver	c:\windows\system32\drivers\ndistapi.sys	Kernel	Yes	Manual	Running	OK	Normal		
ndisui	NDIS Usermode I/O Protocol								
Driver	c:\windows\system32\drivers\ndisui.sys	Kernel	Yes	Manual	Running	OK	Normal		
ndiswan	Remote Access NDIS WAN Driver								
Driver	c:\windows\system32\drivers\ndiswan.sys	Kernel	Yes	Manual	Running	OK	Normal		
ndproxy	NDIS Proxy								
	c:\windows\system32\drivers\ndproxy.sys	Kernel							

Driver	Yes	Manual	Running	OK	Normal				
netbios	NetBIOS Interface								
System Driver	c:\windows\system32\drivers\netbios.sys	File	Normal	No	Yes				
netbt	NetBios over Tcpip								
Driver	c:\windows\system32\drivers\netbt.sys	Kernel	Yes	System	Running	OK	Normal		
nfrd960	nfrd960	Not Available	Kernel Driver	No	Disabled	Stopped	OK	Normal	
npfs	Npfs	c:\windows\system32\drivers\npfs.sys	File System Driver	Yes	System	Running	OK	Normal	
ntfs	Ntfs	c:\windows\system32\drivers\ntfs.sys	File System Driver	Yes	Disabled	Running	OK	Normal	
null	Null	c:\windows\system32\drivers\null.sys	Kernel Driver	Yes	System	Running	OK	Normal	
partmgr	Partition Manager								
Driver	c:\windows\system32\drivers\partmgr.sys	Kernel	Yes	Boot	Running	OK	Normal		
pci	PCI Bus Driver								
Driver	c:\windows\system32\drivers\pci.sys	Kernel	Yes	Boot	Running	OK	Critical		
pciide	PCIIde	Not Available	Kernel Driver	No	Disabled	Stopped	OK	Normal	
pcmcia	Pcmcia	c:\windows\system32\drivers\pcmcia.sys	Kernel Driver	No	Disabled	Stopped	OK	Normal	
pdcomp	PDCOMP	Not Available	Kernel Driver	No	Manual	Stopped	OK	Ignore	
pdframe	PDFRAME	Not Available	Kernel Driver	No	Manual	Stopped	OK	Ignore	
pdreli	PDRELI	Not Available	Kernel Driver	No	Manual	Stopped	OK	Ignore	
pdrframe	PDRFRAME	Not Available	Kernel	No	Manual	Stopped	OK	Ignore	
pptpminiport	WAN Miniport (PPTP)								
Driver	c:\windows\system32\drivers\raspptp.sys	Kernel	Yes	Manual	Running	OK	Normal		
processor	Processor Driver								
Driver	c:\windows\system32\drivers\processr.sys	Kernel	Yes	Manual	Running	OK	Normal		
ptilink	Direct Parallel Link Driver								
Driver	c:\windows\system32\drivers\ptilink.sys	Kernel	Yes	Manual	Running	OK	Normal		
ql1080	ql1080	Not Available	Kernel Driver	No	Disabled	Stopped	OK	Normal	

ql10wnt	ql10wnt	Not Available	Kernel Driver	No	Disabled	Stopped	OK	Normal	
ql12160	ql12160	Not Available	Kernel Driver	No	Disabled	Stopped	OK	Normal	
ql1240	ql1240	Not Available	Kernel Driver	No	Disabled	Stopped	OK	Normal	
ql1280	ql1280	Not Available	Kernel Driver	No	Disabled	Stopped	OK	Normal	
ql2100	ql2100	Not Available	Kernel Driver	No	Disabled	Stopped	OK	Normal	
ql2200	ql2200	c:\windows\system32\drivers\ql2200.sys	Kernel Driver	Yes	Boot	Running	OK	Normal	
ql2300	ql2300	Not Available	Kernel Driver	No	Disabled	Stopped	OK	Normal	
qldirect	qldirect	c:\windows\system32\drivers\qldirect.sys	Kernel Driver	Yes	Boot	Running	OK	Normal	
rasacd	Remote Access Auto Connection Driver								
Driver	c:\windows\system32\drivers\rasacd.sys	Kernel	Yes	System	Running	OK	Normal		
rasl2tp	WAN Miniport (L2TP)								
Driver	c:\windows\system32\drivers\rasl2tp.sys	Kernel	Yes	Manual	Running	OK	Normal		
raspppoe	Remote Access PPPOE Driver								
Driver	c:\windows\system32\drivers\raspppoe.sys	Kernel	Yes	Manual	Running	OK	Normal		
raspti	Direct Parallel								
Driver	c:\windows\system32\drivers\raspti.sys	Kernel	Yes	Manual	Running	OK	Normal		
rdbss	Rdbss	c:\windows\system32\drivers\rdbss.sys	File System Driver	Yes	System	Running	OK	Normal	
rdpcdd	RDPcDD	c:\windows\system32\drivers\rdpcdd.sys	Kernel Driver	Yes	System	Running	OK	Normal	
rdpdr	Terminal Server Device Redirector Driver								
Driver	c:\windows\system32\drivers\rdpdr.sys	Kernel	Yes	Manual	Running	OK	Normal		
rdpwd	RDPWD	c:\windows\system32\drivers\rdpwd.sys	Kernel Driver	No	Manual	Stopped	OK	Ignore	
redbook	Digital CD Audio Playback Filter Driver								
Driver	c:\windows\system32\drivers\redbook.sys	Kernel	Yes	System	Running	OK	Normal		
serenum	Serenum Filter Driver								
Driver	c:\windows\system32\drivers\serenum.sys	Kernel	Yes	Manual	Running	OK	Normal		

serial	Serial port driver					
Driver	c:\windows\system32\drivers\serial.sys	Kernel	Yes	System	Running	OK
	No	Yes				Ignore
sfloppy	Sfloppy	c:\windows\system32\drivers\sfloppy.sys				
Driver	Kernel Driver	No	System	Stopped		
	OK	Ignore	No	No		
simbad	Simbad	Not Available				
Driver	No	Disabled	Stopped	OK		Normal
	No	No				
srv	Srv	c:\windows\system32\drivers\srv.sys				
Driver	File System Driver	Yes	Manual	Running		
	OK	Normal	No	Yes		
swenum	Software Bus Driver					
Driver	c:\windows\system32\drivers\swenum.sys	Kernel	Yes	Manual	Running	OK
	No	Yes				Normal
symc8xx	symc8xx	Not Available				
Driver	No	Disabled	Stopped	OK		Kernel Driver
	No	No				Normal
symmpi	symmpi	Not Available				
Driver	No	Disabled	Stopped	OK		Kernel Driver
	No	No				Normal
sym_hi	sym_hi	Not Available				
Driver	No	Disabled	Stopped	OK		Kernel Driver
	No	No				Normal
sym_u3	sym_u3	Not Available				
Driver	No	Disabled	Stopped	OK		Kernel Driver
	No	No				Normal
tcpip	TCP/IP Protocol Driver					
Driver	c:\windows\system32\drivers\tcpip.sys	Kernel	Yes	System	Running	OK
	No	Yes				Normal
tdpipe	TDPIPE	c:\windows\system32\drivers\tdpipe.sys				
Driver	Kernel Driver	No	Manual	Stopped		
	OK	Ignore	No	No		
tdtcp	TDTCP	c:\windows\system32\drivers\tdtcp.sys				
Driver	Kernel Driver	No	Manual	Stopped		
	OK	Ignore	No	No		
termdd	Terminal Device Driver					
Driver	c:\windows\system32\drivers\termdd.sys	Kernel	Yes	System	Running	OK
	No	Yes				Normal
toside	Toside	Not Available				
Driver	No	Disabled	Stopped	OK		Kernel Driver
	No	No				Normal
udfs	Udfs	c:\windows\system32\drivers\udfs.sys				
Driver	File System Driver	No	Disabled	Stopped		
	OK	Normal	No	No		
usbhub	USB2 Enabled Hub					
Driver	c:\windows\system32\drivers\usbhub.sys	Kernel	Yes	Manual	Running	OK
	No	Yes				Normal
usbhci	Microsoft USB Universal Host Controller Miniport Driver					
Driver	c:\windows\system32\drivers\usbhci.sys	Kernel	Yes	Manual	Running	OK
	No	Yes				Normal
vga	vga	c:\windows\system32\drivers\vgapnp.sys				
Driver	Kernel Driver	Yes	Manual	Running		
	OK	Ignore	No	Yes		
vgasave	VGA Display Controller.					
Driver	c:\windows\system32\drivers\vga.sys	Kernel				

Driver	No	System	Stopped	OK		Ignore
	No	No				
viaide	Vialde	Not Available				
Driver	No	Disabled	Stopped	OK		Kernel Driver
	No	No				Normal
volsnap	Storage volumes					
Driver	c:\windows\system32\drivers\volsnap.sys	Kernel	Yes	Boot	Running	OK
	No	Yes				Normal
wanarp	Remote Access IP ARP Driver					
Driver	c:\windows\system32\drivers\wanarp.sys	Kernel	Yes	Manual	Running	OK
	No	Yes				Normal
wdica	WDICA	Not Available				
Driver	No	Manual	Stopped	OK		Kernel Driver
	No	No				Ignore
wlbs	Network Load Balancing					
Driver	c:\windows\system32\drivers\wlbs.sys	Kernel	No	Manual	Stopped	OK
	No	No				Normal
	[Signed Drivers]					
	Device Name	Signed	Device Class			Driver
	Version	Driver Date	Manufacturer	INF Name		Driver
	Name	Device ID				
	Not Available	Not Available	Not Available	Not Available		
	Not Available	Not Available	Not Available	Not Available		
	Available	Not Available	Not Available	Not Available		
	HTREE\ROOT\0					
ACPI IA64-based PC	Yes	COMPUTER		5.2.3694.0		10/1/2002
	(Standard computers)					
hal.inf						Not
Available	ROOT\ACPI_HAL\0000					
Microsoft ACPI-Compliant System	Yes	SYSTEM		5.2.3694.0		10/1/2002
	(Standard processor types)					
10/1/2002						Not Available
ACPI_HAL\PNP0C08\0						
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\0					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\1					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\2					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\3					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\4					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\5					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					

Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\6					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\7					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\8					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\9					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\10					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\11					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\12					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\13					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\14					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\15					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\16					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\17					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\18					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\19					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\20					
Processor	Yes	PROCESSOR		5.2.3694.0	10/1/2002	
	(Standard processor types)					
Available	ACPI\GENUINEINTEL_IA64_FAMILY_31_MODEL_0\21					

Processor	Yes	PROCESSOR	5.2.3694.0	10/1/2002	cpu.inf	Not
(Standard processor types)						
Available	ACPIGENUINEINTEL_					
	IA64_FAMILY_31_MODEL_0122					
Processor	Yes	PROCESSOR	5.2.3694.0	10/1/2002	cpu.inf	Not
(Standard processor types)						
Available	ACPIGENUINEINTEL_					
	IA64_FAMILY_31_MODEL_0123					
Processor	Yes	PROCESSOR	5.2.3694.0	10/1/2002	cpu.inf	Not
(Standard processor types)						
Available	ACPIGENUINEINTEL_					
	IA64_FAMILY_31_MODEL_0124					
Processor	Yes	PROCESSOR	5.2.3694.0	10/1/2002	cpu.inf	Not
(Standard processor types)						
Available	ACPIGENUINEINTEL_					
	IA64_FAMILY_31_MODEL_0125					
Processor	Yes	PROCESSOR	5.2.3694.0	10/1/2002	cpu.inf	Not
(Standard processor types)						
Available	ACPIGENUINEINTEL_					
	IA64_FAMILY_31_MODEL_0126					
Processor	Yes	PROCESSOR	5.2.3694.0	10/1/2002	cpu.inf	Not
(Standard processor types)						
Available	ACPIGENUINEINTEL_					
	IA64_FAMILY_31_MODEL_0127					
Processor	Yes	PROCESSOR	5.2.3694.0	10/1/2002	cpu.inf	Not
(Standard processor types)						
Available	ACPIGENUINEINTEL_					
	IA64_FAMILY_31_MODEL_0128					
Processor	Yes	PROCESSOR	5.2.3694.0	10/1/2002	cpu.inf	Not
(Standard processor types)						
Available	ACPIGENUINEINTEL_					
	IA64_FAMILY_31_MODEL_0129					
Processor	Yes	PROCESSOR	5.2.3694.0	10/1/2002	cpu.inf	Not
(Standard processor types)						
Available	ACPIGENUINEINTEL_					
	IA64_FAMILY_31_MODEL_0130					
Processor	Yes	PROCESSOR	5.2.3694.0	10/1/2002	cpu.inf	Not
(Standard processor types)						
Available	ACPIGENUINEINTEL_					
	IA64_FAMILY_31_MODEL_0131					
PCI bus	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
ACPIPNP0A0310						
System Interrupt Controller	Not Available					Not Available
Available	UNKNOWN					Not Available
Available	Not Available					Not Available
Available	PCIIVEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_0013&267A616A&0&08					
Intel 82372FB PCI to ISA Bridge	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	Not Available
Available	PCIIVEN_8086&DEV_7600&SUBSYS_00000000&REV_0113&267A616A&0&10					
Direct memory access controller	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	ACPIPNP02004&22C34DB0&0					
Programmable interrupt controller	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	ACPIPNP00004&22C34DB0&0					
System timer	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)

Not Available	ACPIPNP01004&22C34DB0&0					
System speaker	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	ACPIPNP08004&22C34DB0&0					
System CMOS/real time clock	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	ACPIPNP0B004&22C34DB0&0					
Numeric data processor	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	ACPIPNP0C044&22C34DB0&0					
Generic Bus	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	ACPIPNP0A054&22C34DB0&0					
Extended IO Bus	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	ACPIPNP0A061					
Motherboard resources	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	ACPIPNP0C021					
Extended IO Bus	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	ACPIPNP0A0613					
Motherboard resources	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	ACPIPNP0C0213					
Standard 101/102-Key or Microsoft Natural PS/2 Keyboard	Yes	KEYBOARD	5.2.3694.0	10/1/2002	keyboard.inf	(Standard keyboards)
Available	ACPIPNP030312					
PS/2 Compatible Mouse	Yes	MOUSE	5.2.3694.0	10/1/2002	mmsmouse.inf	Microsoft
Available	ACPIPNP0F1312					
Communications Port	Yes	PORTS	5.2.3694.0	10/1/2002	msports.inf	(Standard port types)
Not Available	ACPIPNP050112					
Extended IO Bus	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	ACPIPNP0A0614					
Not Available	Not Available					Not Available
Not Available	Not Available					Not Available
Available	ACPIINEC417110					
Intel(r) IA64 Bus Master IDE Controller	Yes	HDC	5.2.3694.0	10/1/2002	mshdc.inf	Intel
Available	PCIIVEN_8086&DEV_7601&SUBSYS_01061033&REV_0113&267A616A&0&11					
Primary IDE Channel	Yes	HDC	5.2.3694.0	10/1/2002	mshdc.inf	(Standard IDE ATA/ATAPI controllers)
Not Available	PCIIDEIDECHANNEL4&31FC9C45&0&0					
CD-ROM Drive	Yes	CDROM	5.2.3694.0	10/1/2002	cdrom.inf	(Standard CD-ROM drives)
Available	IDECDROM_NEC_DVD-ROM_DV-5800A_1.42_15&8F26A51&0&0.0.0					
Intel(r) 82372FB PCI to USB Universal Host Controller	Yes	USB	5.2.3694.0	10/1/2002	usbport.inf	Intel
Not Available	PCIIVEN_8086&DEV_7602&SUBSYS_01061033&REV_0113&267A616A&0&12					
USB Root Hub	Yes	USB	5.2.3694.0	10/1/2002	usbport.inf	(Standard USB Host Controller)

Available	USB\ROOT_HUB4&5C3BD33&0					
Standard VGA Graphics Adapter	Yes	DISPLAY	5.2.3694.0	10/1/2002	display.inf	(Standard display types)
Not Available	PCIIVEN_1002&DEV_4752&SUBSYS_80EB1033&REV_2713&267A616A&0&20					
Default Monitor	Yes	MONITOR	5.1.2001.0	6/6/2001	monitor.inf	(Standard monitor types)
Available	DISPLAYDEFAULT_MONITOR4&20D43725&0&12345678&00&04					
System Interrupt Controller	Not Available					UNKNOWN
Available	Not Available					Not Available
Available	PCIIVEN_1033&DEV_00FD&SUBSYS_00FD1033&REV_0013&267A616A&0&70					
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	PCIIVEN_1033&DEV_00F9&SUBSYS_00000000&REV_0213&267A616A&0&78					
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	PCIIVEN_1033&DEV_00F9&SUBSYS_00000000&REV_0213&267A616A&0&80					
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	PCIIVEN_1033&DEV_00F9&SUBSYS_00000000&REV_0213&267A616A&0&88					
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	PCIIVEN_1033&DEV_00F9&SUBSYS_00000000&REV_0213&267A616A&0&90					
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	PCIIVEN_1033&DEV_00F9&SUBSYS_00000000&REV_0213&267A616A&0&98					
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	PCIIVEN_1033&DEV_00F9&SUBSYS_00000000&REV_0213&267A616A&0&A0					
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	PCIIVEN_1033&DEV_00F9&SUBSYS_00000000&REV_0213&267A616A&0&A8					
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	PCIIVEN_1033&DEV_00F9&SUBSYS_00000000&REV_0213&267A616A&0&B0					
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3694.0	10/1/2002	machine.inf	(Standard system devices)
Not Available	PCIIVEN_1033&DEV_00F9&SUBSYS_00000000&REV_0213&267A616A&0&B8					

Communications Port Yes PORTS 5.2.3694.0 10/1/2002
(Standard port types) mports.inf Not Available
ACPIPNP0A0311

PCI bus Yes SYSTEM 5.2.3694.0 10/1/2002 (Standard
system devices) machine.inf Not Available
ACPIPNP0A031

QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)
No SCSIADAPTER 8.1.0.0 10/2/2001
QLogic oem0.inf Not Available
PCI\VEN_1077&DEV_2200&SUBSYS_00021077&REV_
0513&13C0B0C5&0&10

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_NEC&PROD_STORAGE_2000&REV_
W26914&347EB69&0&000

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_NEC&PROD_STORAGE_2000&REV_
W26914&347EB69&0&001

PCI bus Yes SYSTEM 5.2.3694.0 10/1/2002 (Standard
system devices) machine.inf Not Available
ACPIPNP0A0312

System Interrupt Controller Not Available
UNKNOWN Not Available Not
Available Not Available Not Available Not
Available

PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_
0013&1070020&0&08

PCI bus Yes SYSTEM 5.2.3694.0 10/1/2002 (Standard
system devices) machine.inf Not Available
ACPIPNP0A0313

Adaptec SCSI Card 39160 - Ultra160 SCSI Yes
SCSIADAPTER 5.2.3694.0 10/1/2002 Adaptec
pnpscsi.inf Not Available
PCI\VEN_9005&DEV_00C0&SUBSYS_F6209005&REV_
0113&29E81982&0&10

Adaptec SCSI Card 39160 - Ultra160 SCSI Yes
SCSIADAPTER 5.2.3694.0 10/1/2002 Adaptec
pnpscsi.inf Not Available
PCI\VEN_9005&DEV_00C0&SUBSYS_F6209005&REV_
0113&29E81982&0&11

QLogic processor device Yes SYSTEM 5.2.3694.0
10/1/2002 QLOGIC scsudev.inf Not Available
SCSIPROCESSOR&VEN_QLOGIC&PROD_GEM359&R
EV_1.0614&1AF8FFB&0&040

QLogic processor device Yes SYSTEM 5.2.3694.0
10/1/2002 QLOGIC scsudev.inf Not Available
SCSIPROCESSOR&VEN_QLOGIC&PROD_GEM359&R
EV_1.0614&1AF8FFB&0&050

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_IBM&PROD_DDYS-
T09170M&REV_S92A14&1AF8FFB&0&0A0

PCI bus Yes SYSTEM 5.2.3694.0 10/1/2002 (Standard
system devices) machine.inf Not Available
ACPIPNP0A0314

System Interrupt Controller Not Available
UNKNOWN Not Available Not
Available Not Available Not Available Not
Available

PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_
0013&172E68DD&0&08

PCI bus Yes SYSTEM 5.2.3694.0 10/1/2002 (Standard
system devices) machine.inf Not Available
ACPIPNP0A0315

QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)
No SCSIADAPTER 8.1.0.0 10/2/2001
QLogic oem0.inf Not Available
PCI\VEN_1077&DEV_2200&SUBSYS_00021077&REV_
0513&474B838&0&10

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_NEC&PROD_STORAGE_2000&REV_
W26914&154E0541&0&000

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_NEC&PROD_STORAGE_2000&REV_
W26914&154E0541&0&001

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_NEC&PROD_STORAGE_2000&REV_
W26914&154E0541&0&002

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_NEC&PROD_STORAGE_2000&REV_
W26914&154E0541&0&003

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_NEC&PROD_STORAGE_2000&REV_
W26914&154E0541&0&010

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_NEC&PROD_STORAGE_2000&REV_
W26914&154E0541&0&011

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_NEC&PROD_STORAGE_2000&REV_
W26914&154E0541&0&012

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_NEC&PROD_STORAGE_2000&REV_
W26914&154E0541&0&013

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_QLOGIC&PROD_PSEUDO_DEVICE&
REV_14&154E0541&0&07F0

PCI bus Yes SYSTEM 5.2.3694.0 10/1/2002 (Standard
system devices) machine.inf Not Available
ACPIPNP0A0316

System Interrupt Controller Not Available
UNKNOWN Not Available Not
Available Not Available Not Available Not
Available

PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_
0013&E44F86D&0&08

PCI bus Yes SYSTEM 5.2.3694.0 10/1/2002 (Standard
system devices) machine.inf Not Available
ACPIPNP0A0317

Intel(R) PRO/1000 F Server Adapter Yes NET
6.3.4.0 10/1/2002 Intel nete1000.inf
Not Available

PCI\VEN_8086&DEV_1001&SUBSYS_10038086&REV_
0213&20FEA912&0&10

PCI bus Yes SYSTEM 5.2.3694.0 10/1/2002 (Standard

system devices) machine.inf Not Available
ACPIPNP0A0318

System Interrupt Controller Not Available Not
Available Not Available Not Available Not
Available Not Available Not Available
PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_
0013&33B859B7&0&08

PCI bus Yes SYSTEM 5.2.3694.0 10/1/2002 (Standard
system devices) machine.inf Not Available
ACPIPNP0A0319

QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced)
No SCSIADAPTER 8.1.0.0 10/2/2001
QLogic oem0.inf Not Available
PCI\VEN_1077&DEV_2200&SUBSYS_00021077&REV_
0513&AD74055&0&10

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_NEC&PROD_STORAGE_2000&REV_
W26914&2FE37568&0&000

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_NEC&PROD_STORAGE_2000&REV_
W26914&2FE37568&0&001

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_NEC&PROD_STORAGE_2000&REV_
W26914&2FE37568&0&002

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_NEC&PROD_STORAGE_2000&REV_
W26914&2FE37568&0&003

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_NEC&PROD_STORAGE_2000&REV_
W26914&2FE37568&0&010

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_NEC&PROD_STORAGE_2000&REV_
W26914&2FE37568&0&011

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_NEC&PROD_STORAGE_2000&REV_
W26914&2FE37568&0&012

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_NEC&PROD_STORAGE_2000&REV_
W26914&2FE37568&0&013

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
(Standard disk drives) disk.inf Not Available
SCSISIDISK&VEN_QLOGIC&PROD_PSEUDO_DEVICE&
REV_14&2FE37568&0&07F0

PCI bus Yes SYSTEM 5.2.3694.0 10/1/2002 (Standard
system devices) machine.inf Not Available
ACPIPNP0A031A

System Interrupt Controller Not Available Not
Available Not Available Not Available Not
Available Not Available Not Available
PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_
0013&23C0707C&0&08

PCI bus Yes SYSTEM 5.2.3694.0 10/1/2002 (Standard
system devices) machine.inf Not Available
ACPIPNP0A031B

SCSI\DISK&VEN_NEC&PROD_ISTORAGE_2000&REV_ W269\4&12C4C12A&0&011
 Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
 (Standard disk drives) disk.inf Not Available
 SCSI\DISK&VEN_NEC&PROD_ISTORAGE_2000&REV_ W269\4&12C4C12A&0&012
 Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
 (Standard disk drives) disk.inf Not Available
 SCSI\DISK&VEN_NEC&PROD_ISTORAGE_2000&REV_ W269\4&12C4C12A&0&013
 Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
 (Standard disk drives) disk.inf Not Available
 SCSI\DISK&VEN_NEC&PROD_ISTORAGE_2000&REV_ REV_ \4&12C4C12A&0&07F0
 PCI bus Yes SYSTEM 5.2.3694.0 10/1/2002 (Standard system devices) machine.inf Not Available
 ACPI\PNP0A03\1E
 System Interrupt Controller Not Available Not Available
 Available Not Available Not Available Not Available
 Available Not Available Not Available Not Available
 PCI\VEN_1033&DEV_00FE&SUBSYS_00FE1033&REV_00\3&309158FC&0&08
 PCI bus Yes SYSTEM 5.2.3694.0 10/1/2002 (Standard system devices) machine.inf Not Available
 ACPI\PNP0A03\1F
 QLogic QLA2200 PCI Fibre Channel Adapter (011002 enhanced) No SCSI\ADAPTER 8.1.0.0 10/2/2001
 QLogic oem0.inf Not Available
 PCI\VEN_1077&DEV_2200&SUBSYS_00021077&REV_05\3&1DD7A857&0&010
 Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
 (Standard disk drives) disk.inf Not Available
 SCSI\DISK&VEN_NEC&PROD_ISTORAGE_2000&REV_ W269\4&269EC09C&0&000
 Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
 (Standard disk drives) disk.inf Not Available
 SCSI\DISK&VEN_NEC&PROD_ISTORAGE_2000&REV_ W269\4&269EC09C&0&001
 Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
 (Standard disk drives) disk.inf Not Available
 SCSI\DISK&VEN_NEC&PROD_ISTORAGE_2000&REV_ W269\4&269EC09C&0&002
 Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
 (Standard disk drives) disk.inf Not Available
 SCSI\DISK&VEN_NEC&PROD_ISTORAGE_2000&REV_ W269\4&269EC09C&0&003
 Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
 (Standard disk drives) disk.inf Not Available
 SCSI\DISK&VEN_NEC&PROD_ISTORAGE_2000&REV_ W269\4&269EC09C&0&010
 Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
 (Standard disk drives) disk.inf Not Available
 SCSI\DISK&VEN_NEC&PROD_ISTORAGE_2000&REV_ W269\4&269EC09C&0&011
 Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
 (Standard disk drives) disk.inf Not Available
 SCSI\DISK&VEN_NEC&PROD_ISTORAGE_2000&REV_ W269\4&269EC09C&0&012
 Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
 (Standard disk drives) disk.inf Not Available
 SCSI\DISK&VEN_NEC&PROD_ISTORAGE_2000&REV_ W269\4&269EC09C&0&013

Disk drive Yes DISKDRIVE 5.2.3694.0 10/1/2002
 (Standard disk drives) disk.inf Not Available
 SCSI\DISK&VEN_QLOGIC&PROD_PSEUDO_DEVICE& REV_ \4&269EC09C&0&07F0
 ACPI Fixed Feature Button Yes SYSTEM 5.2.3694.0 10/1/2002 (Standard system devices) machine.inf Not Available
 ACPI\FIXEDBUTTON\2&DABA3FF&0
 Logical Disk Manager Yes SYSTEM 5.2.3694.0 10/1/2002
 (Standard system devices) machine.inf Not Available
 ROOT\DMIO\0000
 Volume Manager Yes SYSTEM 5.2.3694.0 10/1/2002
 (Standard system devices) machine.inf Not Available
 ROOT\FDISK\0000
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATUREE0466433OFFSET7E00LENGTH320052FC00
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATUREE0466433OFFSET3200537A00LENGTH8400FA800
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATURE164074C2OFFSET7E00LENGTH320052FC00
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATURE164074C2OFFSET3200537A00LENGTH8400FA800
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&GPTPARTITION{5029E200-8F46-01C2-507B-9E5F8078F531}
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&GPTPARTITION{5077B3E0-8F46-01C2-F1B3-12714F758821}
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&GPTPARTITION{5BBD23C0-8F46-01C2-D931-F8428177D974}
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATURE4E13A3B6OFFSET7E00LENGTH3C06D5000
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATURE4E13A3B6OFFSET3C06DCE00LENGTH7805E1A00
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATURE4E13A3B6OFFSETB40CBE800LENGTH7805E1A00
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATURE4E13A3B6OFFSET12C12A0200LENGTH2ADC9E5A00
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATURE4E13A3B7OFFSET7E00LENGTH3C06D5000

Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATURE4E13A3B7OFFSET3C06DCE00LENGTH7805E1A00
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATURE4E13A3B7OFFSETB40CBE800LENGTH7805E1A00
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATURE4E13A3B7OFFSET12C12A0200LENGTH2ADC9E5A00
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATUREC074C148OFFSET7E00LENGTH3C06D5000
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATUREC074C148OFFSET3C06DCE00LENGTH7805E1A00
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATUREC074C148OFFSETB40CBE800LENGTH7805E1A00
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATUREC074C148OFFSET12C12A0200LENGTH2ADC9E5A00
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATUREC074C149OFFSET7E00LENGTH3C06D5000
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATUREC074C149OFFSET3C06DCE00LENGTH7805E1A00
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATUREC074C149OFFSETB40CBE800LENGTH7805E1A00
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATUREC074C149OFFSET12C12A0200LENGTH2ADC9E5A00
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATUREF4C10E0DOFFSET7E00LENGTH3C06D5000
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATUREF4C10E0DOFFSET3C06DCE00LENGTH7805E1A00
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATUREF4C10E0DOFFSETB40CBE800LENGTH7805E1A00
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available
 STORAGE\VOLUME\1&30A96598&0&SIGNATUREF4C10E0DOFFSET12C12A0200LENGTH2B9BD26600
 Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
 Microsoft volume.inf Not Available

STORAGE\VOLUME\1&30A96598&0&SIGNATURE86F8
EFA1OFFSET12BFB17C00LENGTH2B9D4AEC00
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE86F8
EFA2OFFSET7E00LENGTH3BFCE00
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE86F8
EFA2OFFSET3BFF04C00LENGTH7FE09800
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE86F8
EFA2OFFSETB3FD0E400LENGTH77FE09800
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE86F8
EFA2OFFSET12BFB17C00LENGTH2B9D4AEC00
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE1DC
300A0OFFSET7E00LENGTH3C06D5000
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE1DC
300A0OFFSET3C06DCE00LENGTH7805E1A00
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE1DC
300A0OFFSETB40CBE800LENGTH7805E1A00
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE1DC
300A0OFFSET12C12A0200LENGTH2B9BD26600
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE1DC
300A1OFFSET7E00LENGTH3C06D5000
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE1DC
300A1OFFSET3C06DCE00LENGTH7805E1A00
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE1DC
300A1OFFSETB40CBE800LENGTH7805E1A00
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE1DC
300A1OFFSET12C12A0200LENGTH2B9BD26600
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE1DC
300A2OFFSET7E00LENGTH3C06D5000
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE1DC
300A2OFFSET3C06DCE00LENGTH7805E1A00
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE1DC
300A2OFFSETB40CBE800LENGTH7805E1A00

Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE1DC
300A2OFFSET12C12A0200LENGTH2B9BD26600
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE1DC
300A3OFFSET7E00LENGTH3C06D5000
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE1DC
300A3OFFSET3C06DCE00LENGTH7805E1A00
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE1DC
300A3OFFSETB40CBE800LENGTH7805E1A00
Generic volume Yes VOLUME 5.2.3694.0 10/1/2002
Microsoft volume.inf Not Available
STORAGE\VOLUME\1&30A96598&0&SIGNATURE1DC
300A3OFFSET12C12A0200LENGTH2B9BD26600
AFD Networking Support Environment Not Available
LEGACYDRIVER Not Available Not
Available Not Available Not Available Not
Available ROOTLEGACY_AFD\0000
Beep Not Available LEGACYDRIVER Not
Available Not Available Not Available Not
Available Not Available ROOTLEGACY_BEEP\0000
CRC Disk Filter Driver Not Available LEGACYDRIVER
Not Available Not Available Not
Available Not Available Not Available Not
ROOTLEGACY_CRCDISK\0000
dmboot Not Available LEGACYDRIVER Not
Available Not Available Not Available Not
Available Not Available ROOTLEGACY_DMBOOT\0000
dmlod Not Available LEGACYDRIVER Not
Available Not Available Not Available Not
Available Not Available ROOTLEGACY_DMLoad\0000
Fips Not Available LEGACYDRIVER Not
Available Not Available Not Available Not
Available Not Available ROOTLEGACY_FIPS\0000
Generic Packet Classifier Not Available Not
LEGACYDRIVER Not Available Not
Available Not Available Not Available Not
Available ROOTLEGACY_GPC\0000
IPSEC driver Not Available LEGACYDRIVER
Not Available Not Available Not
Available Not Available Not Available Not
ROOTLEGACY_IPSEC\0000
ksecdd Not Available LEGACYDRIVER Not
Available Not Available Not Available Not
Available Not Available ROOTLEGACY_KSECDD\0000
mountmgr Not Available LEGACYDRIVER Not
Available Not Available Not Available Not
Available Not Available Not Available Not
ROOTLEGACY_MOUNTMGR\0000
NDIS System Driver Not Available LEGACYDRIVER
Not Available Not Available Not
Available Not Available Not Available Not
ROOTLEGACY_NDIS\0000
Remote Access NDIS TAPI Driver Not Available
LEGACYDRIVER Not Available Not
Available Not Available Not Available Not

Available ROOTLEGACY_NDIS\0000
NDIS Usermode I/O Protocol Not Available
LEGACYDRIVER Not Available Not
Available Not Available Not Available Not
Available ROOTLEGACY_NDISUIO\0000
NDProxy Not Available LEGACYDRIVER Not
Available Not Available Not Available Not
Available Not Available ROOTLEGACY_NDPROXY\0000
NetBios over Tcpip Not Available LEGACYDRIVER
Not Available Not Available Not
Available Not Available Not Available Not
ROOTLEGACY_NETBT\0000
Null Not Available LEGACYDRIVER Not
Available Not Available Not Available Not
Available Not Available ROOTLEGACY_NULL\0000
Partition Manager Not Available LEGACYDRIVER
Not Available Not Available Not
Available Not Available Not Available Not
ROOTLEGACY_PARTMGR\0000
qldirect Not Available LEGACYDRIVER Not
Available Not Available Not Available Not
Available Not Available ROOTLEGACY_QLDIRECT\0000
Remote Access Auto Connection Driver Not Available
LEGACYDRIVER Not Available Not
Available Not Available Not Available Not
Available ROOTLEGACY_RASACD\0000
RDPcdd Not Available LEGACYDRIVER Not
Available Not Available Not Available Not
Available Not Available ROOTLEGACY_RDPcdd\0000
sacdrv Not Available LEGACYDRIVER Not
Available Not Available Not Available Not
Available Not Available ROOTLEGACY_SACDRV\0000
TCP/IP Protocol Driver Not Available LEGACYDRIVER
Not Available Not Available Not
Available Not Available Not Available Not
ROOTLEGACY_TCPIP\0000
volsnap Not Available LEGACYDRIVER Not
Available Not Available Not Available Not
Available Not Available ROOTLEGACY_VOLSNAP\0000
Remote Access IP ARP Driver Not Available
LEGACYDRIVER Not Available Not
Available Not Available Not Available Not
Available ROOTLEGACY_WANARP\0000
Audio Codecs Yes MEDIA 5.2.3694.0 10/1/2002
(Standard system devices) wave.inf Not
Available ROOTMEDIAMS_MMACM
Legacy Audio Drivers Yes MEDIA 5.2.3694.0 10/1/2002
(Standard system devices) wave.inf Not
Available ROOTMEDIAMS_MMDRV
Media Control Devices Yes MEDIA 5.2.3694.0 10/1/2002
(Standard system devices) wave.inf Not
Available ROOTMEDIAMS_MMMCI
Legacy Video Capture Devices Yes MEDIA 5.2.3694.0
10/1/2002 (Standard system devices) wave.inf
Not Available ROOTMEDIAMS_MMVCD
Video Codecs Yes MEDIA 5.2.3694.0 10/1/2002
(Standard system devices) wave.inf Not
Available ROOTMEDIAMS_MMVID
WAN Miniport (L2TP) Yes NET 5.2.3694.0 10/1/2002
Microsoft netrasa.inf Not Available
ROOTMS_L2TPMINIPORT\0000
WAN Miniport (IP) Yes NET 5.2.3694.0 10/1/2002

```

Microsoft netrasa.inf Not Available
ROOTMS_NDISWANIP\0000
WAN Miniport (PPPOE) Yes NET 5.2.3694.0
10/1/2002 Microsoft netrasa.inf Not Available
ROOTMS_PPPOEMINIPOINT\0000
WAN Miniport (PPTP) Yes NET 5.2.3694.0 10/1/2002
Microsoft netrasa.inf Not Available
ROOTMS_PPTMINIPOINT\0000
Direct Parallel Yes NET 5.2.3694.0 10/1/2002
Microsoft netrasa.inf Not Available
ROOTMS_PTMINIPOINT\0000
Terminal Server Device Redirector Yes SYSTEM 5.2.3694.0
10/1/2002 (Standard system devices) machine.inf
Not Available ROOT\RD\0000
Terminal Server Keyboard Driver Yes SYSTEM 5.2.3694.0
10/1/2002 (Standard system devices) machine.inf
Not Available ROOT\RD\KBD\0000
Terminal Server Mouse Driver Yes SYSTEM 5.2.3694.0
10/1/2002 (Standard system devices) machine.inf
Not Available ROOT\RD\MOU\0000
Plug and Play Software Device Enumerator Yes SYSTEM
5.2.3694.0 10/1/2002 (Standard system devices)
machine.inf Not Available
ROOT\SYSTEM\0000

```

[Environment Variables]

```

Variable Value User Name
ComSpec %SystemRoot%\system32\cmd.exe
Path
%SystemRoot%\system32;%SystemRoot%
t%\System32\Wbem;C:\Program Files\Microsoft SQL
Server\80\Tools\Binn\;C:\Program Files (x86)\Microsoft SQL
Server\80\Tools\Binn\ <SYSTEM>
windir %SystemRoot% <SYSTEM>
OS Windows_NT <SYSTEM>
PROCESSOR_ARCHITECTURE IA64 <SYSTEM>
PROCESSOR_LEVEL 31 <SYSTEM>
PROCESSOR_IDENTIFIER ia64 Family 31 Model 0 Stepping
7, GenuineIntel <SYSTEM>
PROCESSOR_REVISION 0006 <SYSTEM>
NUMBER_OF_PROCESSORS 32 <SYSTEM>
ClusterLog C:\WINDOWS\Cluster\cluster.log <SYSTEM>
PATHEXT .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH
<SYSTEM>
TEMP %SystemRoot%\TEMP <SYSTEM>
TMP %SystemRoot%\TEMP <SYSTEM>
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
ASAMA\Administrator

```

```

TMP %USERPROFILE%\Local Settings\Temp
ASAMA\Administrator

```

[Print Jobs]

Document	Size	Owner	Notify	Status	Time
Submitted	Start Time	Until Time	Elapsed Time	Pages	Driver
Printed	Job ID	Priority	Parameters	Host Print Queue	Data Type
	Print Processor				
	Name				

[Network Connections]

Local Name	Remote Name	Type	Status
User Name			

[Running Tasks]

Name	Path	Process ID	Priority	Min Working Set	Set
	Max Working Set	Start Time	Version	Size	File Date
system idle process	Not Available	0	0	0	
Available	Not Available	Not Available	Not Available	Not Available	Not Available
Available	Not Available	Not Available	Not Available	Not Available	Not Available
system	Not Available	4	8	0	
	2826240	Not Available	Not Available	Not Available	
	Not Available	Not Available	Not Available	Not Available	
smss.exe	c:\windows\system32\smss.exe	444	11		
	409600	2826240	12/4/2002 1:57 AM	5.2.3694.0	
	(dnsvr.021010-1930)	128.50 KB (131,584 bytes)		10/11/2002	
	9:00 PM				
csrss.exe	Not Available	500	13	Not Available	
Available	Not Available	Not Available	12/4/2002 2:01 AM	Not Available	
Available	Not Available	Not Available	Not Available	Not Available	
winlogon.exe	c:\windows\system32\winlogon.exe				
	524	13	409600	2826240	12/4/2002
2:01 AM	5.2.3694.0	(dnsvr.021010-1930)	614.00 KB (628,736		
bytes)	10/11/2002 9:00 PM				
services.exe	c:\windows\system32\services.exe	568			
	9	409600	2826240	12/4/2002 2:01 AM	
	5.2.3694.0	(dnsvr.021010-1930)	285.50 KB (292,352		
bytes)	10/11/2002 9:00 PM				
lsass.exe	c:\windows\system32\lsass.exe	580	9		
	409600	2826240	12/4/2002 2:01 AM	5.2.3694.0	
	(dnsvr.021010-1930)	15.00 KB (15,360 bytes)		10/11/2002	
	9:00 PM				
svchost.exe	c:\windows\system32\svchost.exe	752			
	8	409600	2826240	12/4/2002 2:01 AM	
	5.2.3694.0	(dnsvr.021010-1930)	32.00 KB (32,768		
bytes)	10/11/2002 9:00 PM				
svchost.exe	c:\windows\system32\svchost.exe	804			
	8	409600	2826240	12/4/2002 2:01 AM	
	5.2.3694.0	(dnsvr.021010-1930)	32.00 KB (32,768		
bytes)	10/11/2002 9:00 PM				
svchost.exe	Not Available	940	8		
	Not Available	Not Available	12/4/2002		
2:01 AM	Not Available	Not Available	Not Available	Not Available	
Available					
svchost.exe	Not Available	988	8		
	Not Available	Not Available	12/4/2002		
2:01 AM	Not Available	Not Available	Not Available	Not Available	

```

Available
svchost.exe c:\windows\system32\svchost.exe 1000
8 409600 2826240 12/4/2002 2:01 AM
5.2.3694.0 (dnsvr.021010-1930) 32.00 KB (32,768
bytes) 10/11/2002 9:00 PM
spoolsv.exe c:\windows\system32\spoolsv.exe 1168
8 409600 2826240 12/4/2002 2:01 AM
5.2.3694.0 (dnsvr.021010-1930) 153.50 KB (157,184
bytes) 10/11/2002 9:00 PM
msdtc.exe Not Available 1208 8 Not
Available Not Available 12/4/2002 2:01 AM Not
Available Not Available Not Available
svchost.exe c:\windows\system32\svchost.exe 1692
8 409600 2826240 12/4/2002 2:01 AM
5.2.3694.0 (dnsvr.021010-1930) 32.00 KB (32,768
bytes) 10/11/2002 9:00 PM
svchost.exe Not Available 1728 8
Not Available Not Available 12/4/2002
2:01 AM Not Available Not Available Not
Available
mssearch.exe c:\program files\common
files\system\mssearch\bin\mssearch.exe 1760 8
409600 2826240 12/4/2002 2:01 AM
9.107.8022.0 459.00 KB (470,016 bytes)
10/16/2002 5:53 PM
dfssvc.exe c:\windows\system32\dfssvc.exe 396 8
409600 2826240 12/4/2002 2:01 AM 5.2.3694.0
(dnsvr.021010-1930) 429.00 KB (439,296 bytes)
10/11/2002
9:00 PM
wmiprvse.exe Not Available 888 8
Not Available Not Available 12/4/2002
2:02 AM Not Available Not Available Not
Available
explorer.exe c:\windows\explorer.exe 2088
8 409600 2826240 12/4/2002 2:03 AM
6.00.3694.0 (dnsvr.021010-1930) 1.62 MB (1,701,376
bytes) 10/11/2002 9:00 PM
svchost.exe c:\windows\system32\svchost.exe 2184
8 409600 2826240 12/4/2002 2:03 AM
5.2.3694.0 (dnsvr.021010-1930) 32.00 KB (32,768
bytes) 10/11/2002 9:00 PM
cmd.exe c:\windows\system32\cmd.exe 2196 8
409600 2826240 12/4/2002 2:03 AM 5.2.3694.0
(dnsvr.021010-1930) 493.00 KB (504,832 bytes)
10/11/2002
9:00 PM
helpctr.exe c:\windows\pchealth\helpctr\binaries\helpctr.exe
2616 8 409600 2826240 12/4/2002
2:03 AM 5.2.3694.0 (dnsvr.021010-1930) 1.97 MB (2,067,456
bytes) 11/19/2002 2:29 PM
wmiprvse.exe Not Available 2664 8
Not Available Not Available 12/4/2002
2:03 AM Not Available Not Available Not
Available
helpsvc.exe
c:\windows\pchealth\helpctr\binaries\helpsvc.exe
2700 8 409600 2826240 12/4/2002
2:03 AM 5.2.3694.0 (dnsvr.021010-1930) 2.18 MB (2,288,640
bytes) 11/19/2002 2:29 PM

```

[Loaded Modules]

Name	Version	Size	File Date	Manufacturer
------	---------	------	-----------	--------------

	Path	
smss	5.2.3694.0 (dnsvr.021010-1930) 128.50 KB (131,584 bytes)	
ntdll	5.2.3694.0 (dnsvr.021010-1930) 1.45 MB (1,523,712 bytes)	
winlogon	5.2.3694.0 (dnsvr.021010-1930) 614.00 KB (628,736 bytes)	
kernel32	5.2.3694.0 (dnsvr.021010-1930) 1.76 MB (1,847,808 bytes)	
msvcrt	5.2.3694.0 (dnsvr.021010-1930) 873.50 KB (894,464 bytes)	
advapi32	5.2.3694.0 (dnsvr.021010-1930) 1.29 MB (1,357,824 bytes)	
rpcrt4	5.2.3694.0 (dnsvr.021010-1930) 1.99 MB (2,086,400 bytes)	
user32	5.2.3694.0 (dnsvr.021010-1930) 1.31 MB (1,372,672 bytes)	
gdi32	5.2.3694.0 (dnsvr.021010-1930) 783.50 KB (802,304 bytes)	
userenv	5.2.3694.0 (dnsvr.021010-1930) 1.46 MB (1,535,488 bytes)	
nddeapi	5.2.3694.0 (dnsvr.021010-1930) 39.50 KB (40,448 bytes)	
crypt32	5.131.3694.0 (dnsvr.021010-1930) 1.53 MB (1,601,024 bytes)	
msasn1	5.2.3694.0 (dnsvr.021010-1930) 154.50 KB (158,208 bytes)	
secur32	5.2.3694.0 (dnsvr.021010-1930) 164.50 KB (168,448 bytes)	
winsta	5.2.3694.0 (dnsvr.021010-1930) 138.50 KB (141,824 bytes)	
netapi32	5.2.3694.0 (dnsvr.021010-1930) 831.50 KB (851,456 bytes)	
profmap	5.2.3694.0 (dnsvr.021010-1930) 55.50 KB (56,832 bytes)	
regapi	5.2.3694.0 (dnsvr.021010-1930) 124.00 KB (126,976 bytes)	
ws2_32	5.2.3694.0 (dnsvr.021010-1930) 236.00 KB (241,664 bytes)	
ws2help	5.2.3694.0 (dnsvr.021010-1930) 49.50 KB (50,688 bytes)	
msgina	5.2.3694.0 (dnsvr.021010-1930) 1.91 MB (2,007,040 bytes)	

bytes)	10/11/2002 9:00 PM Microsoft Corporation	
shsvcs	6.00.3694.0 (dnsvr.021010-1930) 321.50 KB (329,216 bytes)	
shlwapi	6.00.3694.0 (dnsvr.021010-1930) 720.00 KB (737,280 bytes)	
sfc	5.2.3694.0 (dnsvr.021010-1930) 7.50 KB (7,680 bytes)	
sfc_os	5.2.3694.0 (dnsvr.021010-1930) 257.00 KB (263,168 bytes)	
wintrust	5.131.3694.0 (dnsvr.021010-1930) 451.50 KB (462,336 bytes)	
ole32	5.2.3694.0 (dnsvr.021010-1930) 3.38 MB (3,546,112 bytes)	
imagehlp	5.2.3694.0 (dnsvr.021010-1930) 128.00 KB (131,072 bytes)	
comctl32	6.0 (dnsvr.021010-1930) 2.18 MB (2,285,056 bytes)	
controls_6595b64144ccf1df_6.0.100.0_x-ww_b3722bab\comctl32.dll	5.2.3694.0 (dnsvr.021010-1930) 44.00 KB (45,056 bytes)	
winscard	5.2.3694.0 (dnsvr.021010-1930) 291.50 KB (298,496 bytes)	
wtsapi32	5.2.3694.0 (dnsvr.021010-1930) 47.00 KB (48,128 bytes)	
sxs	5.2.3694.0 (dnsvr.021010-1930) 1.77 MB (1,860,096 bytes)	
winmm	5.2.3694.0 (dnsvr.021010-1930) 404.00 KB (413,696 bytes)	
shell32	6.00.3694.0 (dnsvr.021010-1930) 12.35 MB (12,951,040 bytes)	
setupapi	5.2.3694.0 (dnsvr.021010-1930) 1.90 MB (1,993,728 bytes)	
wldap32	5.2.3694.0 (dnsvr.021010-1930) 388.00 KB (397,312 bytes)	
csddl	5.2.3694.0 (dnsvr.021010-1930) 210.50 KB (215,552 bytes)	
wlnotify	5.2.3694.0 (dnsvr.021010-1930) 218.00 KB (223,232 bytes)	
winspool	5.2.3694.0 (dnsvr.021010-1930) 399.00 KB (408,576 bytes)	
mpr	5.2.3694.0 (dnsvr.021010-1930) 163.00 KB (166,912 bytes)	

c:\windows\system32\mpr.dll		
comctl32	5.82 (dnsvr.021010-1930) 1.55 MB (1,621,504 bytes)	
uxtheme	6.00.3694.0 (dnsvr.021010-1930) 527.50 KB (540,160 bytes)	
samlib	5.2.3694.0 (dnsvr.021010-1930) 107.00 KB (109,568 bytes)	
csoui	5.2.3694.0 (dnsvr.021010-1930) 574.00 KB (587,776 bytes)	
oleaut32	5.2.3694.0 3.56 MB (3,730,432 bytes) 10/11/2002 9:00 PM Microsoft Corporation	
ntmarta	5.2.3694.0 (dnsvr.021010-1930) 343.50 KB (351,744 bytes)	
clbcatq	2001.12.4624.0 (dnsvr.021010-1930) 1.23 MB (1,293,312 bytes) 11/19/2002 2:26 PM Microsoft Corporation	
comres	2001.12.4624.0 (dnsvr.021010-1930) 779.50 KB (798,208 bytes) 10/11/2002 9:00 PM Microsoft Corporation	
services	5.2.3694.0 (dnsvr.021010-1930) 285.50 KB (292,352 bytes) 10/11/2002 9:00 PM Microsoft Corporation	
scsvr	5.2.3694.0 (dnsvr.021010-1930) 749.00 KB (766,976 bytes) 10/11/2002 9:00 PM Microsoft Corporation	
authz	5.2.3694.0 (dnsvr.021010-1930) 203.50 KB (208,384 bytes) 10/11/2002 9:00 PM Microsoft Corporation	
umpnprmgr	5.2.3694.0 (dnsvr.021010-1930) 317.00 KB (324,608 bytes) 10/11/2002 9:00 PM Microsoft Corporation	
ncobjapi	5.2.3694.0 (dnsvr.021010-1930) 118.50 KB (121,344 bytes) 10/11/2002 9:00 PM Microsoft Corporation	
msvcp60	6.10.2240.8 941.50 KB (964,096 bytes) 10/11/2002 9:00 PM Microsoft Corporation	
eventlog	5.2.3694.0 (dnsvr.021010-1930) 155.00 KB (158,720 bytes) 10/11/2002 9:00 PM Microsoft Corporation	
psapi	5.2.3694.0 (dnsvr.021010-1930) 48.00 KB (49,152 bytes) 10/11/2002 9:00 PM Microsoft Corporation	
lsass	5.2.3694.0 (dnsvr.021010-1930) 15.00 KB (15,360 bytes) 10/11/2002 9:00 PM Microsoft Corporation	
lsasrv	5.2.3694.0 (dnsvr.021010-1930) 1.95 MB (2,040,832 bytes) 10/11/2002 9:00 PM Microsoft Corporation	
samsrv	5.2.3694.0 (dnsvr.021010-1930) 1.02 MB (1,065,984 bytes) 10/11/2002 9:00 PM Microsoft Corporation	
cryptdll	5.2.3694.0 (dnsvr.021010-1930) 61.00 KB (62,464 bytes) 10/11/2002 9:00 PM Microsoft Corporation	
dnsapi	5.2.3694.0 (dnsvr.021010-1930) 400.50 KB (410,112 bytes) 10/11/2002 9:00 PM Microsoft Corporation	

bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\dnsapi.dll

ntdsapi 5.2.3694.0 (dnsvr.021010-1930) 183.50 KB (187,904
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\ntdsapi.dll

msprivs 5.2.3694.0 (dnsvr.021010-1930) 45.00 KB (46,080
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\msprivs.dll

kerberos 5.2.3694.0 (dnsvr.021010-1930) 866.50 KB (887,296
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\kerberos.dll

msv1_0 5.2.3694.0 (dnsvr.021010-1930) 323.00 KB (330,752
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\msv1_0.dll

netlogon 5.2.3694.0 (dnsvr.021010-1930) 935.50 KB (957,952
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\netlogon.dll

w32time 5.2.3694.0 (dnsvr.021010-1930) 540.50 KB (553,472
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\w32time.dll

iphlpapi 5.2.3694.0 (dnsvr.021010-1930) 222.50 KB (227,840
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\iphlpapi.dll

schannel 5.2.3694.0 (dnsvr.021010-1930) 468.00 KB (479,232
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\schannel.dll

wdigest 5.2.3694.0 (dnsvr.021010-1930) 161.50 KB (165,376
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\wdigest.dll

rsaenh 5.2.3694.0 (dnsvr.021010-1930) 373.13 KB (382,080
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\rsaenh.dll

rassfm 5.2.3694.0 (dnsvr.021010-1930) 56.00 KB (57,344
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\rassfm.dll

kdcsvc 5.2.3694.0 (dnsvr.021010-1930) 577.00 KB (590,848
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\kdcsvc.dll

ntdsa 5.2.3694.0 (dnsvr.021010-1930) 3.65 MB (3,827,200
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\ntdsa.dll

ntdsatq 5.2.3694.0 (dnsvr.021010-1930) 81.00 KB (82,944
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\ntdsatq.dll

mswsock 5.2.3694.0 (dnsvr.021010-1930) 696.00 KB (712,704
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\mswsock.dll

esent 5.2.3694.0 (dnsvr.021010-1930) 2.44 MB (2,563,584
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\esent.dll

scecli 5.2.3694.0 (dnsvr.021010-1930) 467.00 KB (478,208
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\scecli.dll

wshtcpip 5.2.3694.0 (dnsvr.021010-1930) 38.00 KB (38,912
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\wshtcpip.dll

ipsecsvc 5.2.3694.0 (dnsvr.021010-1930) 410.50 KB (420,352
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\ipsecsvc.dll

oakley 5.2.3694.0 (dnsvr.021010-1930) 493.50 KB (505,344
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\oakley.dll

windows 5.2.3694.0 (dnsvr.021010-1930) 78.50 KB (80,384
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\winipsec.dll

pstorsvc 5.2.3694.0 (dnsvr.021010-1930) 57.50 KB (58,880
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\pstorsvc.dll

psbase 5.2.3694.0 (dnsvr.021010-1930) 172.00 KB (176,128
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\psbase.dll

dssenh 5.2.3694.0 (dnsvr.021010-1930) 320.13 KB (327,808
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\dssenh.dll

wlbcctrl 5.2.3694.0 (dnsvr.021010-1930) 194.50 KB (199,168
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\wlbcctrl.dll

svchost 5.2.3694.0 (dnsvr.021010-1930) 32.00 KB (32,768
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\svchost.exe

rpcss 5.2.3694.0 (dnsvr.021010-1930) 643.50 KB (658,944
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\rpcss.dll

termsrv 5.2.3694.0 (dnsvr.021010-1930) 623.00 KB (637,952
bytes) 11/19/2002 2:26 PM Microsoft Corporation
c:\windows\system32\termsrv.dll

icaapi 5.2.3694.0 (dnsvr.021010-1930) 26.50 KB (27,136
bytes) 11/19/2002 2:26 PM Microsoft Corporation
c:\windows\system32\icaapi.dll

mstlsapi 5.2.3694.0 (dnsvr.021010-1930) 311.00 KB (318,464
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\mstlsapi.dll

activeds 5.2.3694.0 (dnsvr.021010-1930) 544.50 KB (557,568
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\activeds.dll

adslidpc 5.2.3694.0 (dnsvr.021010-1930) 312.00 KB (319,488
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\adslidpc.dll

credui 5.2.3694.0 (dnsvr.021010-1930) 288.00 KB (294,912
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\credui.dll

atl 3.00.2240 348.00 KB (356,352 bytes) 10/11/2002
9:00 PM Microsoft Corporation c:\windows\system32\atl.dll

wzcsvc 5.2.3694.0 (dnsvr.021010-1930) 608.50 KB (623,104
bytes) 10/11/2002 10:42 AM Microsoft Corporation
c:\windows\system32\wzcsvc.dll

rtutils 5.2.3694.0 (dnsvr.021010-1930) 81.50 KB (83,456
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\rtutils.dll

wmi 5.2.3694.0 (dnsvr.021010-1930) 5.00 KB (5,120 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\wmi.dll

dhcpcsvc 5.2.3694.0 (dnsvr.021010-1930) 279.50 KB (286,208
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\dhcpcsvc.dll

rastls 5.2.3694.0 (dnsvr.021010-1930) 344.50 KB (352,768
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\rastls.dll

cryptui 5.131.3694.0 (dnsvr.021010-1930) 1.04 MB
(1,094,656 bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\cryptui.dll

mprapi 5.2.3694.0 (dnsvr.021010-1930) 237.50 KB (243,200
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\mprapi.dll

rasapi32 5.2.3694.0 (dnsvr.021010-1930) 585.00 KB (599,040
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\rasapi32.dll

rasman 5.2.3694.0 (dnsvr.021010-1930) 154.50 KB (158,208
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\rasman.dll

tapi32 5.2.3694.0 (dnsvr.021010-1930) 493.00 KB (504,832
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\tapi32.dll

raschap 5.2.3694.0 (dnsvr.021010-1930) 200.00 KB (204,800
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\raschap.dll

schedsvc 5.2.3694.0 (dnsvr.021010-1930) 521.50 KB (534,016
bytes) 11/19/2002 2:28 PM Microsoft Corporation
c:\windows\system32\schedsvc.dll

msidle 6.00.3694.0 (dnsvr.021010-1930) 8.50 KB (8,704 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\msidle.dll

wkssvc 5.2.3694.0 (dnsvr.021010-1930) 304.00 KB (311,296
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\wkssvc.dll

cryptsvc 5.2.3694.0 (dnsvr.021010-1930) 126.00 KB (129,024
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\cryptsvc.dll

certcli 5.2.3694.0 (dnsvr.021010-1930) 582.50 KB (596,480
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\certcli.dll

vssapi 5.2.3694.0 (dnsvr.021010-1930) 1.26 MB (1,325,056
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\vssapi.dll

dmserver 5.2.3694.0 (dnsvr.021010-1930) 45.00 KB (46,080
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\dmserver.dll

es 2001.12.4624.0 (dnsvr.021010-1930) 635.50 KB
(650,752 bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\es.dll

pchsvc 5.2.3694.0 (dnsvr.021010-1930) 94.50 KB (96,768
bytes) 11/19/2002 2:29 PM Microsoft Corporation
c:\windows\system32\phealth\helpctr\binaries\pchsvc.dll

srvsvc 5.2.3694.0 (dnsvr.021010-1930) 187.50 KB (192,000
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\srvsvc.dll

seclogon 5.2.3694.0 (dnsvr.021010-1930) 41.50 KB (42,496
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\seclogon.dll

trkwks 5.2.3694.0 (dnsvr.021010-1930) 245.50 KB (251,392
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\trkwks.dll

wmivsc 5.2.3694.0 (dnsvr.021010-1930) 402.00 KB (411,648
bytes) 11/19/2002 2:25 PM Microsoft Corporation
c:\windows\system32\wbem\wmivsc.dll

wuauerv 5.4.3694.0 (dnsvr.021010-1930) 17.00 KB (17,408
bytes) 11/19/2002 2:26 PM Microsoft Corporation
c:\windows\system32\wuauerv.dll

wuaueng 5.4.3694.0 (dnsvr.021010-1930) 495.50 KB (507,392
bytes) 11/19/2002 2:26 PM Microsoft Corporation
c:\windows\system32\wuaueng.dll

advpack 6.00.3694.0 (dnsvr.021010-1930) 240.00 KB (245,760
bytes) 10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\advpack.dll

wininet 6.00.3694.0 (dnsvr.021010-1930) 1.42 MB (1,492,480
bytes) 10/11/2002 9:00 PM Microsoft Corporation

c:\windows\system32\wininet.dll
sens 5.2.3694.0 (dnsvr.021010-1930) 90.50 KB (92,672 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\sens.dll
comsvcs 2001.12.4624.0 (dnsvr.021010-1930) 2.96 MB (3,103,232 bytes)
11/19/2002 2:26 PM Microsoft Corporation
c:\windows\system32\comsvcs.dll
browser 5.2.3694.0 (dnsvr.021010-1930) 187.00 KB (191,488 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\browser.dll
wiarpc 5.2.3694.0 (dnsvr.021010-1930) 68.00 KB (69,632 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\wiarpc.dll
netrap 5.2.3694.0 (dnsvr.021010-1930) 30.00 KB (30,720 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\netrap.dll
wbemcore 5.2.3694.0 (dnsvr.021010-1930) 1.63 MB (1,708,544 bytes)
11/19/2002 2:25 PM Microsoft Corporation
c:\windows\system32\wbem\wbemcore.dll
esscli 5.2.3694.0 (dnsvr.021010-1930) 911.00 KB (932,864 bytes)
11/19/2002 2:25 PM Microsoft Corporation
c:\windows\system32\wbem\esscli.dll
wbemcomn 5.2.3694.0 (dnsvr.021010-1930) 598.50 KB (612,864 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\wbem\wbemcomn.dll
fastprox 5.2.3694.0 (dnsvr.021010-1930) 1.50 MB (1,574,400 bytes)
11/19/2002 2:25 PM Microsoft Corporation
c:\windows\system32\wbem\fastprox.dll
wmiutils 5.2.3694.0 (dnsvr.021010-1930) 284.00 KB (290,816 bytes)
11/19/2002 2:25 PM Microsoft Corporation
c:\windows\system32\wbem\wmiutils.dll
repdrvfs 5.2.3694.0 (dnsvr.021010-1930) 597.50 KB (611,840 bytes)
11/19/2002 2:25 PM Microsoft Corporation
c:\windows\system32\wbem\repdrvfs.dll
wmiprvsd 5.2.3694.0 (dnsvr.021010-1930) 1.38 MB (1,442,816 bytes)
11/19/2002 2:25 PM Microsoft Corporation
c:\windows\system32\wbem\wmiprvsd.dll
wbemess 5.2.3694.0 (dnsvr.021010-1930) 971.00 KB (994,304 bytes)
11/19/2002 2:25 PM Microsoft Corporation
c:\windows\system32\wbem\wbemess.dll
ncprov 5.2.3694.0 (dnsvr.021010-1930) 133.50 KB (136,704 bytes)
11/19/2002 2:25 PM Microsoft Corporation
c:\windows\system32\wbem\ncprov.dll
wbemsvc 5.2.3694.0 (dnsvr.021010-1930) 62.50 KB (64,000 bytes)
11/19/2002 2:25 PM Microsoft Corporation
c:\windows\system32\wbem\wbemsvc.dll
winhttp 5.2.3694.0 (dnsvr.021010-1930) 876.50 KB (897,536 bytes)
11/19/2002 6:15 AM Microsoft Corporation
c:\windows\winsxs\xia64_microsoft.windows.winhttp_6595b64144ccf1df_5.1.0.0_x-ww_0fbff66winhttp.dll
sensapi 5.2.3694.0 (dnsvr.021010-1930) 11.50 KB (11,776 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\sensapi.dll
actxprxy 6.00.3694.0 (dnsvr.021010-1930) 230.00 KB (235,520 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\actxprxy.dll
netman 5.2.3694.0 (dnsvr.021010-1930) 590.00 KB (604,160 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\netman.dll
wzcsapi 5.2.3694.0 (dnsvr.021010-1930) 49.00 KB (50,176 bytes)
10/11/2002 10:42 AM Microsoft Corporation
c:\windows\system32\wzcsapi.dll

netshell 5.2.3694.0 (dnsvr.021010-1930) 2.65 MB (2,779,136 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\netshell.dll
clusapi 5.2.3694.0 (dnsvr.021010-1930) 165.00 KB (168,960 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\clusapi.dll
netcfgx 5.2.3694.0 (dnsvr.021010-1930) 1.94 MB (2,034,176 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\netcfgx.dll
hnetcfg 5.2.3694.0 (dnsvr.021010-1930) 764.00 KB (782,336 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\hnetcfg.dll
wbemprox 5.2.3694.0 (dnsvr.021010-1930) 46.00 KB (47,104 bytes)
11/19/2002 2:25 PM Microsoft Corporation
c:\windows\system32\wbem\wbemprox.dll
rasmans 5.2.3694.0 (dnsvr.021010-1930) 445.50 KB (456,192 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\rasmans.dll
rastapi 5.2.3694.0 (dnsvr.021010-1930) 137.00 KB (140,288 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\rastapi.dll
rasppp 5.2.3694.0 (dnsvr.021010-1930) 522.50 KB (535,040 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\rasppp.dll
ntlsapi 5.2.3694.0 (dnsvr.021010-1930) 14.00 KB (14,336 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\ntlsapi.dll
ipbootp 5.2.3694.0 (dnsvr.021010-1930) 72.50 KB (74,240 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\ipbootp.dll
rasdlg 5.2.3694.0 (dnsvr.021010-1930) 1.35 MB (1,417,216 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\rasdlg.dll
rasadhlp 5.2.3694.0 (dnsvr.021010-1930) 13.00 KB (13,312 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\rasadhlp.dll
spoolsv 5.2.3694.0 (dnsvr.021010-1930) 153.50 KB (157,184 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\spoolsv.exe
spoolss 5.2.3694.0 (dnsvr.021010-1930) 227.50 KB (232,960 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\spoolss.dll
localspl 5.2.3694.0 (dnsvr.021010-1930) 835.50 KB (855,552 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\localspl.dll
cnbjmon 5.2.3680.0 (Lab03_dev(skatar).020509-1043)99.50 KB (101,888 bytes)
10/11/2002 10:39 AM Microsoft Corporation
c:\windows\system32\cnbjmon.dll
pjlmon 5.2.3694.0 (dnsvr.021010-1930) 37.50 KB (38,400 bytes)
10/11/2002 10:41 AM Microsoft Corporation
c:\windows\system32\pjlmon.dll
tcpmon 5.2.3694.0 (dnsvr.021010-1930) 132.00 KB (135,168 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\tcpmon.dll
usbmon 5.2.3694.0 (dnsvr.021010-1930) 43.50 KB (44,544 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\usbmon.dll
winnr 5.2.3694.0 (dnsvr.021010-1930) 38.00 KB (38,912 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\winnr.dll
win32spl 5.2.3694.0 (dnsvr.021010-1930) 269.00 KB (275,456 bytes)
10/11/2002 9:00 PM Microsoft Corporation

c:\windows\system32\win32spl.dll
inetpp 5.2.3694.0 (dnsvr.021010-1930) 212.00 KB (217,088 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\inetpp.dll
icmp 5.2.3694.0 (dnsvr.021010-1930) 2.50 KB (2,560 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\icmp.dll
ersvc 5.2.3694.0 (dnsvr.021010-1930) 61.00 KB (62,464 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\ersvc.dll
mssearch 9.107.8022.0 459.00 KB (470,016 bytes)
10/16/2002 5:53 PM Microsoft Corporation
c:\program files\common files\system\mssearch\bin\mssearch.exe
mssws 9.107.8022.0 27.00 KB (27,648 bytes)
10/16/2002 5:53 PM Microsoft Corporation
c:\program files\common files\system\mssearch\bin\mssws.dll
mssrch 9.107.8022.0 6.50 MB (6,818,304 bytes)
10/16/2002 5:53 PM Microsoft Corporation
c:\progra~1\common~1\system\mssearch\bin\mssrch.dll
security 5.2.3694.0 (dnsvr.021010-1930) 6.50 KB (6,656 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\security.dll
tquery 9.107.8022.0 5.85 MB (6,132,736 bytes)
10/16/2002 5:53 PM Microsoft Corporation
c:\program files\common files\system\mssearch\bin\tquery.dll
propdefs 9.107.8022.0 888.00 KB (909,312 bytes)
10/16/2002 5:53 PM Microsoft Corporation
c:\progra~1\common~1\system\mssearch\bin\propdefs.dll
srchidx 9.107.8022.0 2.26 MB (2,372,608 bytes)
10/16/2002 5:53 PM Microsoft Corporation
c:\progra~1\common~1\system\mssearch\bin\srchidx.dll
iprop 5.2.3694.0 (dnsvr.021010-1930) 3.00 KB (3,072 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\iprop.dll
dfssvc 5.2.3694.0 (dnsvr.021010-1930) 429.00 KB (439,296 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\dfssvc.exe
resutils 5.2.3694.0 (dnsvr.021010-1930) 147.50 KB (151,040 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\resutils.dll
mfc42u 6.00.2277.0 3.34 MB (3,506,176 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\mfc42u.dll
wsock32 5.2.3694.0 (dnsvr.021010-1930) 23.00 KB (23,552 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\wsock32.dll
explorer 6.00.3694.0 (dnsvr.021010-1930) 1.62 MB (1,701,376 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\explorer.exe
browseui 6.00.3694.0 (dnsvr.021010-1930) 2.42 MB (2,536,960 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\browseui.dll
shdocvw 6.00.3694.0 (dnsvr.021010-1930) 3.19 MB (3,349,504 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\shdocvw.dll
apphelp 5.2.3694.0 (dnsvr.021010-1930) 262.50 KB (268,800 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\apphelp.dll
themeui 6.00.3694.0 (dnsvr.021010-1930) 823.00 KB (842,752 bytes)
10/11/2002 9:00 PM Microsoft Corporation
c:\windows\system32\themeui.dll
msimg32 5.2.3694.0 (dnsvr.021010-1930) 7.00 KB (7,168 bytes)

10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\msimg32.dll
 linkinfo 5.2.3694.0 (dnsvr.021010-1930) 42.00 KB (43,008
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\linkinfo.dll
 ntshui 6.00.3694.0 (dnsvr.021010-1930) 233.00 KB (238,592
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\ntshui.dll
 webcheck 6.00.3694.0 (dnsvr.021010-1930) 665.00 KB (680,960
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\webcheck.dll
 stobject 5.2.3694.0 (dnsvr.021010-1930) 178.00 KB (182,272
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\stobject.dll
 batmeter 6.00.3694.0 (dnsvr.021010-1930) 55.50 KB (56,832
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\batmeter.dll
 powrprof 6.00.3694.0 (dnsvr.021010-1930) 36.00 KB (36,864
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\powrprof.dll
 shdoclc 6.00.3694.0 (dnsvr.021010-1930) 520.50 KB (532,992
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\shdoclc.dll
 printui 5.2.3694.0 (dnsvr.021010-1930) 1.09 MB (1,143,296
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\printui.dll
 cfgmgr32 5.2.3694.0 (dnsvr.021010-1930) 15.50 KB (15,872
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\cfgmgr32.dll
 drprov 5.2.3694.0 (dnsvr.021010-1930) 26.50 KB (27,136
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\drprov.dll
 ntlanman 5.2.3694.0 (dnsvr.021010-1930) 108.00 KB (110,592
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\ntlanman.dll
 netui0 5.2.3694.0 (dnsvr.021010-1930) 181.50 KB (185,856
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\netui0.dll
 netui1 5.2.3694.0 (dnsvr.021010-1930) 482.00 KB (493,568
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\netui1.dll
 davclnt 5.2.3694.0 (dnsvr.021010-1930) 59.00 KB (60,416
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\davclnt.dll
 tapisrv 5.2.3694.0 (dnsvr.021010-1930) 641.00 KB (656,384
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\tapisrv.dll
 unimdm 5.2.3694.0 (dnsvr.021010-1930) 417.50 KB (427,520
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\unimdm.tsp
 uniplat 5.2.3694.0 (dnsvr.021010-1930) 35.50 KB (36,352
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\uniplat.dll
 kmddsp 5.2.3694.0 (dnsvr.021010-1930) 83.00 KB (84,992
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\kmddsp.tsp
 ndptsp 5.2.3694.0 (dnsvr.021010-1930) 128.00 KB (131,072
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\ndptsp.tsp
 ipconf 5.2.3694.0 (dnsvr.021010-1930) 40.50 KB (41,472
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\ipconf.tsp

h323 5.2.3694.0 (dnsvr.021010-1930) 795.50 KB (814,592
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\h323.tsp
 hidphone 5.2.3694.0 (dnsvr.021010-1930) 87.00 KB (89,088
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\hidphone.tsp
 hid 5.2.3694.0 (dnsvr.021010-1930) 44.00 KB (45,056
 bytes) 10/11/2002 10:40 AM Microsoft Corporation
 c:\windows\system32\hid.dll
 cmd 5.2.3694.0 (dnsvr.021010-1930) 493.00 KB (504,832
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\cmd.exe
 helpctr 5.2.3694.0 (dnsvr.021010-1930) 1.97 MB (2,067,456
 bytes) 11/19/2002 2:29 PM Microsoft Corporation
 c:\windows\pchealth\helpctr\binaries\helpctr.exe
 urlmon 6.00.3694.0 (dnsvr.021010-1930) 1.18 MB (1,232,384
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\urlmon.dll
 hcappres 5.2.3694.0 (dnsvr.021010-1930) 6.00 KB (6,144 bytes)
 11/19/2002 2:29 PM Microsoft Corporation
 c:\windows\pchealth\helpctr\binaries\hcappres.dll
 itss 5.2.3694.0 (dnsvr.021010-1930) 349.00 KB (357,376
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\itss.dll
 msxml3 8.40.9127.0 3.41 MB (3,575,296 bytes)
 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\msxml3.dll
 pchshell 5.2.3694.0 (dnsvr.021010-1930) 277.00 KB (283,648
 bytes) 11/19/2002 2:29 PM Microsoft Corporation
 c:\windows\pchealth\helpctr\binaries\pchshell.dll
 mlang 6.00.3694.0 (dnsvr.021010-1930) 799.00 KB (818,176
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\mlang.dll
 mshtml 6.00.3694.0 (dnsvr.021010-1930) 7.82 MB (8,203,776
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\mshtml.dll
 msimtf 5.2.3694.0 (dnsvr.021010-1930) 528.00 KB (540,672
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\msimtf.dll
 msctf 5.2.3694.0 (dnsvr.021010-1930) 924.50 KB (946,688
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\msctf.dll
 jscript 5.6.0.8028 1.21 MB (1,268,736 bytes) 10/11/2002
 9:00 PM Microsoft Corporation c:\windows\system32\jscript.dll
 msls31 3.10.349.0 448.00 KB (458,752 bytes) 10/11/2002
 9:00 PM Microsoft Corporation c:\windows\system32\msls31.dll
 imm32 5.2.3694.0 (dnsvr.021010-1930) 307.50 KB (314,880
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\imm32.dll
 mshtml 6.00.3694.0 (dnsvr.021010-1930) 1.34 MB (1,408,512
 bytes) 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\mshtml.dll
 vbscript 5.6.0.8028 1.06 MB (1,110,016 bytes) 10/11/2002
 9:00 PM Microsoft Corporation c:\windows\system32\vbscript.dll
 mfc42 6.00.2277.0 3.36 MB (3,526,656 bytes)
 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\mfc42.dll
 msinfo 5.2.3694.0 (dnsvr.021010-1930) 1.20 MB (1,257,984
 bytes) 11/19/2002 2:29 PM Microsoft Corporation
 c:\windows\pchealth\helpctr\binaries\msinfo.dll
 comdlg32 6.00.3694.0 (dnsvr.021010-1930) 706.00 KB (722,944
 bytes) 10/11/2002 9:00 PM Microsoft Corporation

c:\windows\system32\comdlg32.dll
 riched32 5.2.3694.0 (dnsvr.021010-1930) 5.00 KB (5,120 bytes)
 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\riched32.dll
 riched20 5.31.23.1218 1.25 MB (1,313,280 bytes)
 10/11/2002 9:00 PM Microsoft Corporation
 c:\windows\system32\riched20.dll
 helpsvc 5.2.3694.0 (dnsvr.021010-1930) 2.18 MB (2,288,640
 bytes) 11/19/2002 2:29 PM Microsoft Corporation
 c:\windows\pchealth\helpctr\binaries\helpsvc.exe

[Services]

Display Name	Name	State	Start Mode	Service
Type	Path	Error Control	Start Name	Tag ID
Alerter	Alerter	Stopped	Disabled	Share Process
	c:\windows\system32\svchost.exe -k localservice	Normal	NT AUTHORITY\LocalService	0
Application Layer Gateway Service	Manual	Own Process	ALG	Stopped
	c:\windows\system32\alg.exe	Normal	NT	
AUTHORITY\LocalService		0		
Application Management	AppMgmt	Stopped	Manual	Share Process
	c:\windows\system32\svchost.exe	Normal	NT AUTHORITY\LocalService	0
-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	Manual	Share Process	BITS	Stopped
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0
Computer Browser	Browser	Running	Auto	Share Process
	c:\windows\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0
Indexing Service	CiSvc	Stopped	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	0	Stopped	Manual
	Own Process			c:\windows\system32\dlhst.exe /processid:{02d4b3f1-fd88-11d1-960d-00805fc79235}
	Normal	LocalSystem	0	
Cryptographic Services	CryptSvc	Running	Auto	Share Process
	c:\windows\system32\svchost.exe	Normal	LocalSystem	0
-k netsvcs	Normal	LocalSystem	0	
Distributed File System	Dfs	Running	Auto	Own Process
	c:\windows\system32\dfssvc.exe	Normal	LocalSystem	0
DHCP Client	Dhcp	Running	Auto	Share Process
	c:\windows\system32\svchost.exe -k networkservice	Normal	NT AUTHORITY\NetworkService	0
Logical Disk Manager Administrative Service	dmdadmin	Stopped	Manual	Share Process
	c:\windows\system32\dmdadmin.exe /com	Normal	LocalSystem	0
Logical Disk Manager dmserver	Running	Auto	Share Process	c:\windows\system32\svchost.exe -k netsvcs
	Normal	LocalSystem	0	

DNS Client Dnscache Running Auto Share Process
 c:\windows\system32\svchost.exe -k networkservice
 Normal NT AUTHORITY\NetworkService 0

Error Reporting Service ERSvc Running Auto
 Share Process c:\windows\system32\svchost.exe

-k winer Ignore LocalSystem 0

Event Log Eventlog Running Auto Share Process
 c:\windows\system32\services.exe Normal
 LocalSystem 0

COM+ Event System EventSystem Running Manual
 Share Process c:\windows\system32\svchost.exe

-k netsvcs Normal LocalSystem 0

Help and Support helpsvc Running Auto Share
 Process c:\windows\system32\svchost.exe -k netsvcs Normal
 LocalSystem 0

Human Interface Device Access HidServ Stopped Disabled
 Share Process c:\windows\system32\svchost.exe

-k netsvcs Normal LocalSystem 0

HTTP SSL HTTPFilter Stopped Manual Share Process
 c:\windows\system32\lsass.exe Normal
 LocalSystem 0

IAS Jet Database Access IASJet Stopped Manual
 Share Process c:\windows\syswow64\svchost.exe

-k iasjet Normal LocalSystem 0

IMAPI CD-Burning COM Service ImapiService Stopped
 Disabled Own Process
 c:\windows\system32\imapi.exe Normal
 LocalSystem 0

Intersite Messaging IsmServ Stopped Disabled Own
 Process c:\windows\system32\ismserv.exe Normal
 LocalSystem 0

Kerberos Key Distribution Center kdc Stopped Disabled
 Share Process c:\windows\system32\lsass.exe
 Normal LocalSystem 0

Server lanmanserver Running Auto Share
 Process c:\windows\system32\svchost.exe -k netsvcs Normal
 LocalSystem 0

Workstation lanmanworkstation Running Auto
 Share Process c:\windows\system32\svchost.exe

-k netsvcs Normal LocalSystem 0

License Logging LicenseService Stopped Disabled
 Own Process c:\windows\system32\lsrv.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

Distributed Transaction Coordinator MSDTC Running
 Auto Own Process
 c:\windows\system32\msdtc.exe Normal NT
 AUTHORITY\NetworkService 0

Windows Installer MSIServer Stopped Manual Share
 Process c:\windows\system32\msiexec.exe /v Normal
 LocalSystem 0

Microsoft Search MSSEARCH Running Auto
 Share Process "c:\program files\common
 files\system\mssearch\bin\mssearch.exe" Normal
 LocalSystem 0

MSSQLSERVER MSSQLSERVER Stopped Manual

Own Process c:\program files\microsoft sql
 server\mssql\binn\sqlservr.exe -smssqlserver Normal
 LocalSystem 0

MSSQLServerADHelper MSSQLServerADHelper
 Stopped Manual Own Process c:\program
 files\microsoft sql server\80\tools\binn\sqladhlp.exe Normal
 LocalSystem 0

MSSQLServerOLAPService MSSQLServerOLAPService
 Stopped Manual Own Process c:\program
 files\microsoft analysis services\bin\msmdsrv.exe Normal
 LocalSystem 0

Network DDE NetDDE Stopped Disabled Share
 Process c:\windows\system32\netdde.exe Normal
 LocalSystem 0

Network DDE DSDM NetDDEdsdm Stopped Disabled
 Share Process c:\windows\system32\netdde.exe
 Normal LocalSystem 0

Net Logon Netlogon Stopped Manual Share Process
 c:\windows\system32\lsass.exe Normal
 LocalSystem 0

Network Connections Netman Running Manual Share
 Process c:\windows\system32\svchost.exe -k netsvcs Normal
 LocalSystem 0

Network Location Awareness (NLA) Nla Running
 Manual Share Process
 c:\windows\system32\svchost.exe -k netsvcs Normal
 LocalSystem 0

File Replication NtFrs Stopped Manual Own
 Process c:\windows\system32\ntfrs.exe Ignore
 LocalSystem 0

NT LM Security Support Provider NtLmSsp Running 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 Running Auto
 Share Process c:\windows\system32\lsass.exe
 Normal LocalSystem 0

Protected Storage ProtectedStorage Running Auto
 Share Process c:\windows\system32\lsass.exe
 Normal LocalSystem 0

Remote Access Auto Connection Manager RasAuto Stopped
 Manual Share Process
 c:\windows\system32\svchost.exe -k netsvcs Normal
 LocalSystem 0

Remote Access Connection Manager RasMan Running
 Manual Share Process
 c:\windows\system32\svchost.exe -k netsvcs Normal
 LocalSystem 0

Remote Desktop Help Session Manager RDSessMgr
 Stopped Manual Own Process
 c:\windows\system32\sessmgr.exe Normal
 LocalSystem 0

Routing and Remote Access RemoteAccess Stopped
 Disabled Share Process
 c:\windows\system32\svchost.exe -k netsvcs Normal
 LocalSystem 0

Remote Registry RemoteRegistry Running Auto

Share Process c:\windows\system32\svchost.exe
 -k regsvc Normal NT AUTHORITY\LocalService 0

Remote Procedure Call (RPC) Locator RpcLocator
 Stopped Manual Own Process
 c:\windows\system32\locator.exe Normal NT
 AUTHORITY\NetworkService 0

Remote Procedure Call (RPC) RpcSs Running Auto
 Share Process c:\windows\system32\svchost -k
 rpcss Normal LocalSystem 0

Resultant Set of Policy Provider RSoPProv Stopped Manual
 Share Process
 c:\windows\system32\rsopprov.exe Normal
 LocalSystem 0

Special Administration Console Helper sacsvr Stopped
 Manual Share Process
 c:\windows\system32\svchost.exe -k netsvcs Normal
 LocalSystem 0

Security Accounts Manager SamSs Running Auto
 Share Process c:\windows\system32\lsass.exe
 Normal LocalSystem 0

Smart CardSCardSvr Stopped Manual Share Process
 c:\windows\system32\scardsvr.exe Ignore
 NT AUTHORITY\LocalService 0

Task Scheduler Schedule Running Auto Share
 Process c:\windows\system32\svchost.exe -k netsvcs Normal
 LocalSystem 0

Secondary Logon seclogon Running Auto Share
 Process c:\windows\system32\svchost.exe -k netsvcs Ignore
 LocalSystem 0

System Event Notification SENS Running Auto
 Share Process c:\windows\system32\svchost.exe
 -k netsvcs Normal LocalSystem 0

Shell Hardware Detection ShellHWDetection Running
 Auto Share Process
 c:\windows\system32\svchost.exe -k netsvcs Ignore
 LocalSystem 0

Print Spooler Spooler Running Auto Own
 Process c:\windows\system32\spoolsv.exe Normal
 LocalSystem 0

SQLSERVERAGENT SQLSERVERAGENT Stopped Manual
 Own Process c:\program files\microsoft sql
 server\mssql\binn\sqlagent.exe -i mssqlserver Normal
 LocalSystem 0

Windows Image Acquisition (WIA) stisvc Stopped Disabled
 Share Process c:\windows\system32\svchost.exe
 -k imgsvc Normal NT AUTHORITY\LocalService 0

Microsoft Software Shadow Copy Provider swprv Stopped
 Manual Own Process
 c:\windows\system32\svchost.exe -k swprv Normal
 LocalSystem 0

Performance Logs and Alerts SysmonLog Stopped
 Manual Own Process
 c:\windows\system32\smlogsvc.exe Normal
 NT Authority\NetworkService 0

Telephony TapiSrv Running Manual Share Process
 c:\windows\system32\svchost.exe -k tapisrv Normal
 LocalSystem 0

Terminal Services TermService Running Manual
 Share Process c:\windows\system32\svchost.exe
 -k termsvcs Normal LocalSystem 0

Telnet TlntSvr Stopped Disabled Own Process
 c:\windows\system32\tlntsvr.exe Normal NT

```

AUTHORITY\LocalService 0
Distributed Link Tracking Server TrkSvr Stopped Disabled
Share Process c:\windows\system32\svchost.exe
-k netsvcs Normal LocalSystem 0
Distributed Link Tracking Client TrkWks Running Auto
Share Process c:\windows\system32\svchost.exe
-k netsvcs Normal LocalSystem 0
Terminal Services Session Directory Tssdis Stopped
Disabled Own Process
c:\windows\system32\tssdis.exe Normal
LocalSystem 0
Upload Manager uploadmgr Stopped Disabled Share
Process c:\windows\system32\svchost.exe -k netsvcs Normal
LocalSystem 0
Uninterruptible Power Supply UPS Stopped Manual
Own Process c:\windows\system32\ups.exe
Normal NT AUTHORITY\LocalService 0
Virtual Disk Service vds Stopped Manual Own
Process c:\windows\system32\vds.exe Normal
LocalSystem 0
Volume Shadow Copy VSS Stopped Manual Own
Process c:\windows\system32\vssvc.exe Normal
LocalSystem 0
Windows Time W32Time Running Auto Share
Process c:\windows\system32\svchost.exe -k netsvcs Normal
LocalSystem 0
WebClient WebClient Stopped Disabled Share Process
c:\windows\system32\svchost.exe -k localservice
Normal NT AUTHORITY\LocalService 0
WinHTTP Web Proxy Auto-Discovery Service WinHttpAutoProxySvc
Stopped Manual Share Process
c:\windows\system32\svchost.exe -k localservice
Normal NT AUTHORITY\LocalService 0
Windows Management Instrumentation winmgmt Running
Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs Ignore
LocalSystem 0
Windows Management Instrumentation Driver Extensions Wmi
Stopped Manual Share Process
c:\windows\system32\svchost.exe -k netsvcs Normal
LocalSystem 0
WMI Performance Adapter WmiApSrv Stopped Manual
Own Process
c:\windows\system32\wbem\wmiapsrv.exe Normal
LocalSystem 0
Automatic Updates wuauclt Running Auto Share
Process c:\windows\system32\svchost.exe -k netsvcs Normal
LocalSystem 0
Wireless Configuration WZC SVC Running Auto Share
Process c:\windows\system32\svchost.exe -k netsvcs Normal
LocalSystem 0

```

[Program Groups]

Group Name	Name	User Name	Default
Accessories	Default User:Accessories		Default
User			
Accessories\Accessibility	Default		
User:Accessories\Accessibility	Default User		
Accessories\Entertainment	Default		
User:Accessories\Entertainment	Default User		
Startup	Default User:Startup	Default User	

```

Accessories All Users:Accessories All Users
Accessories\Accessibility All
Users:Accessories\Accessibility All Users
Accessories\Communications All
Users:Accessories\Communications All Users
Accessories\Entertainment All
Users:Accessories\Entertainment All Users
Accessories\System Tools All Users:Accessories\System
Tools All Users
Administrative Tools All Users:Administrative Tools All Users
Microsoft SQL Server All Users:Microsoft SQL Server All Users
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 ASAMA\Administrator:Accessories
ASAMA\Administrator
Accessories\Accessibility
ASAMA\Administrator:Accessories\Accessibility
ASAMA\Administrator
Accessories\Entertainment
ASAMA\Administrator:Accessories\Entertainment
ASAMA\Administrator
Administrative Tools ASAMA\Administrator:Administrative Tools
ASAMA\Administrator
Startup ASAMA\Administrator:Startup ASAMA\Administrator

```

[Startup Programs]

Program	Command	User Name	Location
desktop	desktop.ini	NT AUTHORITY\SYSTEM	Startup
desktop	desktop.ini	ASAMA\Administrator	Startup
desktop	desktop.ini	.DEFAULT	Startup
desktop	desktop.ini	All Users	Common Startup

[OLE Registration]

Object	Local Server
Sound (OLE2)	sndrec32.exe
Media Clip	mplay32.exe
Video Clip	mplay32.exe /avi
MIDI Sequence	mplay32.exe /mid
Sound	Not Available
Media Clip	Not Available
WordPad Document	"%programfiles%\windows\nlaccessories\wordpad.exe"
Bitmap Image	mspaint.exe

[Windows Error Reporting]

Time	Type	Details
12/4/2002 1:13 AM	Application Hang	Hanging application
		notepad.exe, version 5.2.3694.0, hang module user32.dll, version 5.2.3694.0, hang address 0x00000000004d9d0.

[Internet Settings]

[Internet Explorer]

[Following are sub-categories of this main category]
[Summary]

Item	Value
Version	6.0.3694.0
Build	63694
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	6.0.3694.0	230 KB	10/11/2002 9:00:00 PM	C:\WINDOWS\system32	Microsoft Corporation
advpack.dll	6.0.3694.0	240 KB	10/11/2002 9:00:00 PM	C:\WINDOWS\system32	Microsoft Corporation
asctrls.ocx	6.0.3694.0	219 KB	10/11/2002 9:00:00 PM	C:\WINDOWS\system32	Microsoft Corporation
browseui.dll	6.0.3694.0	2,478 KB	10/11/2002 9:00:00 PM	C:\WINDOWS\system32	Microsoft Corporation
PM	6.0.3694.0	61 KB	10/11/2002 9:00:00 PM	C:\WINDOWS\system32	Microsoft Corporation
PM	6.0.3694.0	2,478 KB	10/11/2002 9:00:00 PM	C:\WINDOWS\system32	Microsoft Corporation
cdfview.dll	6.0.3694.0	292 KB	10/11/2002 9:00:00 PM	C:\WINDOWS\system32	Microsoft Corporation
comctl32.dll	5.82.3694.0	1,584 KB	10/11/2002 9:00:00 PM	C:\WINDOWS\system32	Microsoft Corporation
dxtrans.dll	6.3.3694.0	562 KB	10/11/2002 9:00:00 PM	C:\WINDOWS\system32	Microsoft Corporation
dxtmsft.dll	6.3.3694.0	919 KB	10/11/2002 9:00:00 PM	C:\WINDOWS\system32	Microsoft Corporation
iecont.dll	<File Missing>		Not Available		Not Available
iecontlc.dll	<File Missing>		Not Available		Not Available
iedkcs32.dll	16.0.3694.0	666 KB	10/11/2002 9:00:00 PM	C:\WINDOWS\system32	Microsoft Corporation
iepeers.dll	6.0.3694.0	652 KB	10/11/2002 9:00:00 PM	C:\WINDOWS\system32	Microsoft Corporation
iesetup.dll	6.0.3694.0	83 KB	10/11/2002 9:00:00 PM	C:\WINDOWS\system32	Microsoft Corporation
ieunit.inf	Not Available	19 KB	10/11/2002 9:00:00 PM	C:\WINDOWS\system32	Not Available
ieexplore.exe	6.0.3694.0	102 KB	10/11/2002 9:00:00 PM	C:\Program Files\Internet Explorer	Microsoft Corporation
imgutil.dll	6.0.3694.0	88 KB	10/11/2002 9:00:00 PM	C:\WINDOWS\system32	Microsoft Corporation
inetctl.cpl	6.0.3694.0	574 KB	10/11/2002 9:00:00 PM	C:\WINDOWS\system32	Microsoft Corporation
inetctl.dll	6.0.3694.0	108 KB	10/11/2002 9:00:00 PM	C:\WINDOWS\system32	Microsoft Corporation

inseng.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	212 KB	10/11/2002	9:00:00 PM
mlang.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	799 KB	10/11/2002	9:00:00 PM
msencode.dll	C:\WINDOWS\system32	Microsoft Corporation	<File Missing>			Not Available
	Not Available	Not Available				Not Available

Available

mshta.exe	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	59 KB	10/11/2002	9:00:00 PM
mshtml.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	8,012 KB	10/11/2002	9:00:00 PM
mshtml.tlb	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	1,319 KB	10/11/2002	9:00:00 PM
mshtmlmled.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	1,376 KB	10/11/2002	9:00:00 PM
mshtmlr.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	56 KB	10/11/2002	9:00:00 PM
msident.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	128 KB	10/11/2002	9:00:00 PM
msidntld.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	14 KB	10/11/2002	9:00:00 PM
msieftp.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	536 KB	10/11/2002	9:00:00 PM
msrating.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	379 KB	10/11/2002	9:00:00 PM
msstime.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	1,621 KB	10/11/2002	9:00:00 PM
occache.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	201 KB	10/11/2002	9:00:00 PM
proctexe.ocx	C:\WINDOWS\system32	Microsoft Corporation	<File Missing>			Not Available
	Not Available	Not Available				Not Available

Available

sendmail.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	97 KB	10/11/2002	9:00:00 PM
shdoclc.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	521 KB	10/11/2002	9:00:00 PM
shdocvw.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	3,271 KB	10/11/2002	9:00:00 PM
shfolder.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	37 KB	10/11/2002	9:00:00 PM
shlwapi.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	720 KB	10/11/2002	9:00:00 PM
tdc.ocx	C:\WINDOWS\system32	Microsoft Corporation	1.3.0.3130	177 KB	10/11/2002	9:00:00 PM
url.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	45 KB	10/11/2002	9:00:00 PM
urlmon.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	1,204 KB	10/11/2002	9:00:00 PM
webcheck.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	665 KB	10/11/2002	9:00:00 PM
wininet.dll	C:\WINDOWS\system32	Microsoft Corporation	6.0.3694.0	1,458 KB	10/11/2002	9:00:00 PM

[Connectivity]

Item	Value
Connection Preference	Never dial

LAN Settings

AutoConfigProxy	Not Available
-----------------	---------------

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\NetworkService\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	Value
No publisher information available	

[Security]

Zone	Security Level
My Computer	Custom
Local intranet	Medium-low
Trusted sites	Low
Internet	Medium
Restricted sites	High

<Client Configuration>

COM+ Application Configuration

-- COM+ Settings (properties of component TPCC.ALLTxns)
-- for each 32 frontends

Transactions: not supported

Enable object pooling
- Minimum pool size: 23
- Maximum pool size: 23
- Creation timeout (ms): 1200000

Enable object construction
- Constructor string: "dummy string (do not remove)"

Enable just in time activation
Component supports events and statistics

Concurrency: required

TPCC Application Registry

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\TPCC]
"Path"="C:\inetpub\wwwroot\\"
"NumberOfDeliveryThreads"=dword:00000004
"MaxConnections"=dword:00003a98
"MaxPendingDeliveries"=dword:00000bb8
"DB_Protocol"="DBLIB"
"TxnMonitor"="COM"
"DbServer"="asama"
"DbName"="tpcc"
"DbUser"="sa"
"DbPassword"=""
"COM_SinglePool"="YES"
```

InetInfo Registry

```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Inet
Info]
```

```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Inet
Info\Parameters]
"ListenBackLog"=dword:000000fa
"DispatchEntries"=hex(7):4c,00,44,00,41,00,50,00,53,00,56,00,43,00,
,00,00,53,00,\
4d,00,54,00,50,00,53,00,56,00,43,00,00,00,00,00,00
"PoolThreadLimit"=dword:000007fc
"ThreadTimeout"=dword:00015180
```

```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Inet
Info\Performance]
"Library"="infectrs.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:fc,c0,18,b6,a8,43,c2,01,10,25,00,00,00,00,00,00
"WbemAdapFileTime"=hex:00,c3,bb,02,47,d4,c0,01
"WbemAdapFileSize"=dword:00002510
"WbemAdapStatus"=dword:00000000

WWW Service Registry

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3
SVC]

"Type"=dword:00000020
"Start"=dword:00000002
"ErrorControl"=dword:00000001
"ImagePath"=hex(2):43,00,3a,00,5c,00,5f,00,49,00,4e,00,54,0
0,5c,00,53,00,\

79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,69,00,6e,00,65,00,
74,00,73,\

00,72,00,76,00,5c,00,69,00,6e,00,65,00,74,00,69,00,6e,00,66,00,6f,
00,2e,00,\

65,00,78,00,65,00,00,00
"DisplayName"="World Wide Web Publishing Service"
"DependOnService"=hex(7):49,00,49,00,53,00,41,00,44,00,4d,00,49,
00,4e,00,00,00,\

00,00
"DependOnGroup"=hex(7):00,00
"ObjectName"="LocalSystem"
"Description"="Provides Web connectivity and administration through
the Internet Information Services snap-in."

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3
SVC\ASP]

"NOTE"="This is for backward compatibility only."

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3
SVC\ASP\Parameters]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3
SVC\Parameters]

"MajorVersion"=dword:00000005
"MinorVersion"=dword:00000000
"InstallPath"="C:\WINNT\System32\inetrv"
"CertMapList"="C:\WINNT\System32\inetrv\iisrmap.dll"
"AccessDeniedMessage"="Error: Access is Denied."
"Filter DLLs"=""
"LogFileDirectory"="C:\WINNT\System32\LogFiles"
"AcceptExOutstanding"=dword:000003e8

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3
SVC\Parameters\ADCLaunch]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3
SVC\Parameters\ADCLaunch\AdvancedDataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3
SVC\Parameters\ADCLaunch\RDSServer.DataFactory]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3
SVC\Parameters\Script Map]

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3
SVC\Parameters\Virtual Roots]

"r"="c:\inetpub\wwwroot,,205"
"/Scripts"="c:\inetpub\scripts,,204"
"/IISHelp"="c:\winnt\help\iishelp,,201"
"/IISAdmin"="C:\WINNT\System32\inetrv\iisadmin,,201"
"/IISSamples"="c:\inetpub\iissamples,,201"
"/MSADC"="c:\program files\common files\system\msadc,,205"
"/_vti_bin"="C:\Program Files\Common Files\Microsoft
Shared\Web Server Extensions\40\isapi,,205"
"/Printers"="C:\WINNT\web\printers,,201"

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3
SVC\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:14,28,0a,b9,a8,43,c2,01,10,3d,00,00,00,00,00,00
"WbemAdapFileTime"=hex:00,c3,bb,02,47,d4,c0,01
"WbemAdapFileSize"=dword:00001d10
"WbemAdapStatus"=dword:00000000

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3
SVC\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,
1,00,00,\

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,
,00,05,\

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,\

00,05,20,00,00,00,23,02,00,00,72,00,73,00,01,01,00,00,00,00,05,
12,00,00,\

00,01,01,00,00,00,00,05,12,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3
SVC\Enum]

"0"="Root\LEGACY_W3SVC\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001

System Information

System Information report written at: 12/06/2002 16:12:59
[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	ACL15
System Manufacturer	NEC
System Model	Express5800/120Rd-2 [N8100-756]
System Type	X86-based PC
Processor	x86 Family 6 Model 11 Stepping 1 GenuineIntel ~1263 Mhz
Processor	x86 Family 6 Model 11 Stepping 1 GenuineIntel ~1263 Mhz
BIOS Version	SCB20 v2.00
Windows Directory	C:\WINNT
System Directory	C:\WINNT\System32
Boot Device	\Device\Harddisk0\Partition1
Locale	United States
User Name	ACL15\Administrator
Total Physical Memory	1,047,852 KB
Available Physical Memory	887,352 KB
Total Virtual Memory	3,569,096 KB
Available Virtual Memory	3,338,696 KB
Page File Space	2,521,244 KB
Page File	C:\pagefile.sys

[Hardware Resources]

[Following are sub-categories of this main category]

[Conflicts/Sharing]

Resource	Device
IRQ 10	Standard OpenHCD USB Host Controller
IRQ 10	PCI standard host CPU bridge

[DMA]

Channel	Device	Status
4	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
0x0000-0x03AF	PCI bus	OK
0x0000-0x03AF	Direct memory access controller	OK
0x03B0-0x03DF	PCI bus	OK
0x03B0-0x03DF	ATI Technologies Inc. RAGE XL PCI	

OK
0x03E0-0x0CF7 PCI bus OK
0x0D00-0x0FFF PCI bus OK
0x1000-0x1FFF PCI bus OK
0x1000-0x1FFF ATI Technologies Inc. RAGE XL PCI
OK
0x1400-0x143F Intel 8255x-based PCI Ethernet Adapter (10/100) OK
0x1440-0x147F Intel 8255x-based PCI Ethernet Adapter (10/100) #2
0x03C0-0x03DF ATI Technologies Inc. RAGE XL PCI
OK
0x0A79-0x0A79 ISAPNP Read Data Port OK
0x0279-0x0279 ISAPNP Read Data Port OK
0x02F4-0x02F7 ISAPNP Read Data Port OK
0x04D0-0x04D1 Motherboard resources OK
0x0010-0x001F Motherboard resources OK
0x040B-0x040B Motherboard resources OK
0x04D6-0x04D6 Motherboard resources OK
0x0C14-0x0C14 Motherboard resources OK
0x0C49-0x0C49 Motherboard resources OK
0x0C52-0x0C52 Motherboard resources OK
0x0C6C-0x0C6C Motherboard resources OK
0x0C6F-0x0C6F Motherboard resources OK
0x0F50-0x0F57 Motherboard resources OK
0x0C00-0x0C01 Motherboard resources OK
0x0C98-0x0C98 Motherboard resources OK
0x0CD6-0x0CD7 Motherboard resources OK
0x002E-0x002F Motherboard resources OK
0x0530-0x0531 Motherboard resources OK
0x0500-0x051F Motherboard resources OK
0x0540-0x055F Motherboard resources OK
0x0580-0x058F Motherboard resources OK
0x0020-0x0021 Programmable interrupt controller
OK
0x00A0-0x00A1 Programmable interrupt controller
OK
0x0081-0x0083 Direct memory access controller
OK
0x0087-0x0087 Direct memory access controller
OK
0x0089-0x008B Direct memory access controller
OK
0x008F-0x008F Direct memory access controller
OK
0x00C0-0x00DF Direct memory access controller
OK
0x0040-0x0043 System timer OK
0x0070-0x0071 System CMOS/real time clock OK
0x0061-0x0061 System speaker OK
0x00F0-0x00FF Numeric data processor 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
0x03F2-0x03F3 Standard floppy disk controller OK
0x03F4-0x03F5 Standard floppy disk controller OK
0x03F7-0x03F7 Standard floppy disk controller OK
0x03F8-0x03FF Communications Port (COM1) OK
0x02F8-0x02FF Communications Port (COM2) OK
0x03A0-0x03AF Standard Dual Channel PCI IDE Controller

OK
0x1FFC-0x1FFF 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
0x2000-0x3FFF PCI bus OK
0x2000-0x3FFF Adaptec AIC-7899 - Ultra160 SCSI
OK
0x2400-0x24FF Adaptec AIC-7899 - Ultra160 SCSI
OK
0x2800-0x283F Intel(R) PRO/100 S Server Adapter
OK

[IRQs]

IRQ Number Device
9 Microsoft ACPI-Compliant System
21 Intel 8255x-based PCI Ethernet Adapter (10/100)
20 Intel 8255x-based PCI Ethernet Adapter (10/100) #2
18 ATI Technologies Inc. RAGE XL PCI
8 System CMOS/real time clock
13 Numeric data processor
12 Microsoft PS/2 Mouse
1 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
6 Standard floppy disk controller
4 Communications Port (COM1)
3 Communications Port (COM2)
14 Primary IDE Channel
10 Standard OpenHCD USB Host Controller
10 PCI standard host CPU bridge
27 Adaptec AIC-7899 - Ultra160 SCSI
26 Adaptec AIC-7899 - Ultra160 SCSI
31 Intel(R) PRO/100 S Server Adapter

[Memory]

Range Device Status
0xA0000-0xBFFFF PCI bus OK
0xA0000-0xBFFFF ATI Technologies Inc. RAGE XL PCI
OK
0xFC800000-0xFE9FFFFF PCI bus OK
0xFE3E0000-0xFE3E0FFF Intel 8255x-based PCI Ethernet Adapter (10/100) OK
0xFE3A0000-0xFE3BFFFF Intel 8255x-based PCI Ethernet Adapter (10/100) OK
0xFE390000-0xFE390FFF Intel 8255x-based PCI Ethernet Adapter (10/100) #2 OK
0xFE360000-0xFE37FFFF Intel 8255x-based PCI Ethernet Adapter (10/100) #2 OK
0xFD000000-0xFDFFFFFF ATI Technologies Inc. RAGE XL PCI OK
0xFE3F0000-0xFE3F0FFF ATI Technologies Inc. RAGE XL PCI OK
0xFE380000-0xFE380FFF Standard OpenHCD USB Host Controller OK
0xFEAE0000-0xFEBFFFFF PCI bus OK
0xFEBE0000-0xFEBE0FFF Adaptec AIC-7899 - Ultra160 SCSI OK

0xFEBF0000-0xFEBF0FFF Adaptec AIC-7899 - Ultra160 SCSI OK
0xFEB90000-0xFEB90FFF Intel(R) PRO/100 S Server Adapter OK
0xFEB60000-0xFEB7FFFF Intel(R) PRO/100 S Server Adapter 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\msg723.acm Microsoft Corporation
OK C:\WINNT\System32\MSG723.ACM
4.4.3385 106.77 KB (109,328 bytes) 8/14/2002
15:42:53
c:\winnt\system32\lhacm.acm Microsoft Corporation
OK C:\WINNT\System32\LHACM.ACM
4.4.3385 33.27 KB (34,064 bytes) 8/14/2002
15:42:54
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) 12/8/1999 5:00:00
c:\winnt\system32\tssoft32.acm DSP GROUP, INC.
OK C:\WINNT\System32\TSSOFT32.ACM
1.01 9.27 KB (9,488 bytes) 12/8/1999 5:00:00
c:\winnt\system32\msadp32.acm Microsoft Corporation
OK
C:\WINNT\System32\MSADP32.ACM
5.00.2134.1 14.77 KB (15,120 bytes)
12/8/1999 5:00:00
c:\winnt\system32\imaadp32.acm Microsoft Corporation
OK
C:\WINNT\System32\IMAADP32.ACM
5.00.2134.1 16.27 KB (16,656 bytes)
12/8/1999 5:00:00
c:\winnt\system32\msgsm32.acm Microsoft Corporation
OK
C:\WINNT\System32\MSGSM32.ACM
5.00.2134.1 22.27 KB (22,800 bytes)
12/8/1999 5:00:00
c:\winnt\system32\msg711.acm Microsoft Corporation
OK C:\WINNT\System32\MSG711.ACM
5.00.2134.1 10.27 KB (10,512 bytes)
12/8/1999 5:00:00

[Video Codecs]

Codec Manufacturer Description Status
File Version Size Creation Date
c:\winnt\system32\msh263.drv Microsoft Corporation
OK C:\WINNT\System32\MSH263.DRV
4.4.3385 252.27 KB (258,320 bytes) 8/14/2002

15:42:26
 c:\winnt\system32\msh261.drv Microsoft Corporation
 OK C:\WINNT\System32\MSH261.DRV
 4.4.3385 163.77 KB (167,696 bytes) 8/14/2002

15:42:53
 c:\winnt\system32\msrle32.dll Microsoft Corporation
 OK C:\WINNT\System32\MSRLE32.DLL
 5.00.2134.1 10.77 KB (11,024 bytes)
 12/8/1999 5:00:00

c:\winnt\system32\ir32.dll Intel(R) Corporation
 OK C:\WINNT\System32\IR32_32.DLL
 Not Available 194.50 KB (199,168 bytes)
 12/8/1999 5:00:00

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)
 12/8/1999 5:00:00

c:\winnt\system32\iccvid.dll Radius Inc.
 OK C:\WINNT\System32\ICCVID.DLL
 1.10.0.6 108.00 KB (110,592 bytes) 12/8/1999

5:00:00
 c:\winnt\system32\msvidc32.dll Microsoft Corporation
 OK C:\WINNT\System32\MSVIDC32.DLL
 5.00.2134.1 27.27 KB (27,920 bytes)
 12/8/1999 5:00:00

[CD-ROM]

Item	Value
Drive	D:
Description	CD-ROM Drive
Media Loaded	False
Media Type	CD-ROM
Name	MATSHITA CD-ROM CR-177
Manufacturer	(Standard CD-ROM drives)
Status	OK
Transfer Rate	Not Available
SCSI Target ID	0
PNP Device ID	IDE\CDROMMATSHITA_CD-ROM_CR-177_7N05_15&569CEF7&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_81641033&REV_2713&267A616A&0&60
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	1024 x 768 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&32BA4B66&0
NumberOfFunctionKeys	12

[Pointing Device]

Item	Value
Hardware Type	Microsoft PS/2 Mouse
Number of Buttons	5
Status	OK
PNP Device ID	ACPI\PNP0F03\4&32BA4B66&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	Not Available
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_L2TPMINIPOINT\0000
Last Reset	Not Available

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_PPTPMINIPOINT\0000
Last Reset	Not Available

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_PTMINIPOINT\0000
Last Reset	Not Available

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 ResetNot Available

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] Intel 8255x-based PCI Ethernet Adapter (10/100)
 Adapter Type Ethernet 802.3
 Product Name Intel 8255x-based PCI Ethernet Adapter (10/100)
 Installed True
 PNP Device ID PCI\VEN_8086&DEV_1229&SUBSYS_81641033&REV_0D\3&267A616A&0&18
 Last ResetNot Available
 Index 5
 Service Name E100B
 IP Address 10.1.1.15
 IP Subnet 255.255.255.0
 Default IP Gateway Not Available
 DHCP Enabled False
 DHCP Server Not Available
 DHCP Lease Expires Not Available
 DHCP Lease Obtained Not Available
 MAC Address 00:03:47:D5:A5:53
 Service Name E100B
 IRQ Number 21
 I/O Port 0x1400-0x143F
 Driver c:\winnt\system32\drivers\le100bnt5.sys (104720, 5.00.67.0000)

Name [00000006] Intel 8255x-based PCI Ethernet Adapter (10/100)
 Adapter Type Ethernet 802.3
 Product Name Intel 8255x-based PCI Ethernet Adapter (10/100)
 Installed True
 PNP Device ID PCI\VEN_8086&DEV_1229&SUBSYS_81641033&REV_0D\3&267A616A&0&20

Last ResetNot Available
 Index 6
 Service Name E100B
 IP Address 10.10.15.250
 IP Subnet 255.255.255.0
 Default IP Gateway Not Available
 DHCP Enabled False
 DHCP Server Not Available
 DHCP Lease Expires Not Available
 DHCP Lease Obtained Not Available
 MAC Address 00:03:47:D5:A5:54
 Service Name E100B
 IRQ Number 20
 I/O Port 0x1440-0x147F
 Driver c:\winnt\system32\drivers\le100bnt5.sys (104720, 5.00.67.0000)

Name [0000011] Intel(R) PRO/100 S Server Adapter
 Adapter Type Ethernet 802.3
 Product Name Intel(R) PRO/100 S Server Adapter
 Installed True
 PNP Device ID PCI\VEN_8086&DEV_1229&SUBSYS_10408086&REV_0C\3&13C0B0C5&0&40
 Last ResetNot Available
 Index 11
 Service Name E100B
 IP Address 10.10.115.250
 IP Subnet 255.255.255.0
 Default IP Gateway Not Available
 DHCP Enabled False
 DHCP Server Not Available
 DHCP Lease Expires Not Available
 DHCP Lease Obtained Not Available
 MAC Address 00:02:B3:B9:21:B4
 Service Name E100B
 IRQ Number 31
 I/O Port 0x2800-0x283F
 Driver c:\winnt\system32\drivers\le100bnt5.sys (104720, 5.00.67.0000)

[Protocol]

Item	Value
Name	MSAFD Tcpip [TCP/IP]
ConnectionlessService	False
GuaranteesDelivery	True
GuaranteesSequencing	True
MaximumAddressSize	16 bytes
MaximumMessageSize	0 bytes
MessageOriented	False
MinimumAddressSize	16 bytes
PseudoStreamOriented	False
SupportsBroadcasting	False
SupportsConnectData	False
SupportsDisconnectData	False
SupportsEncryption	False
SupportsExpeditedData	True
SupportsGracefulClosing	True
SupportsGuaranteedBandwidth	False

SupportsMulticastingFalse
 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
 SupportsMulticastingTrue

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
 SupportsMulticastingTrue

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
 SupportsMulticastingFalse

Name MSAFD NetBIOS [Device\NetBT_Tcpip_{4CCF07EF-551F-47E3-A07B-32448DCB8A7A}] SEQUENCEPACKET 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
 SupportsMulticastingFalse

Name MSAFD NetBIOS [Device\NetBT_Tcpip_{4CCF07EF-551F-47E3-A07B-32448DCB8A7A}] 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
 SupportsMulticastingFalse

Name MSAFD NetBIOS [Device\NetBT_Tcpip_{C26351A6-BEBA-4A8B-ACA9-DE2DF3EBA5C4}] 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
 SupportsMulticastingFalse

Name MSAFD NetBIOS [Device\NetBT_Tcpip_{C26351A6-BEBA-4A8B-ACA9-DE2DF3EBA5C4}] 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
 SupportsMulticastingFalse

Name MSAFD NetBIOS [Device\NetBT_Tcpip_{61CEFC04-F55B-45AB-8EDC-31238922E0B0}] 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
 SupportsMulticastingFalse

Name MSAFD NetBIOS [Device\NetBT_Tcpip_{61CEFC04-F55B-45AB-8EDC-31238922E0B0}] 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
 SupportsMulticastingFalse

Name MSAFD NetBIOS [Device\NetBT_Tcpip_{48A1B6E2-8B20-4B70-8C0C-431573B8B961}] 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
 SupportsMulticastingFalse

Name MSAFD NetBIOS [Device\NetBT_Tcpip_{48A1B6E2-8B20-4B70-8C0C-431573B8B961}] 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
 SupportsMulticastingFalse

Name MSAFD NetBIOS [Device\NetBT_Tcpip_{E3A054DB-9B49-4D4B-BACC-C6E33BB3DAB1}] 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
 SupportsMulticastingFalse

Name MSAFD NetBIOS [Device\NetBT_Tcpip_{E3A054DB-9B49-4D4B-BACC-C6E33BB3DAB1}] 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

SupportsMulticastingFalse

[WinSock]

Item	Value
File	c:\winnt\system32\winsock.dll
Version	3.10
Size	2.80 KB (2,864 bytes)
File	c:\winnt\system32\wsock32.dll
Version	5.00.2195.2871
Size	21.27 KB (21,776 bytes)

[Ports]

[Following are sub-categories of this main category]

[Serial]

Item	Value
Name	COM1
Status	OK
PNP Device ID	ACPI\PNP0501\1
Maximum Input Buffer Size	0
Maximum Output Buffer Size	False
Settable Baud Rate	True
Settable Data Bits	True
Settable Flow Control	True
Settable Parity	True
Settable Parity Check	True
Settable Stop Bits	True
Settable RLSD	True
Supports RLSD	True
Supports 16 Bit Mode	False
Supports Special Characters	False
Baud Rate	9600
Bits/Byte	8
Stop Bits	1
Parity	None
Busy	0
Abort Read/Write on Error	0
Binary Mode Enabled -1	0
Continue Xmit on XOff	0
CTS Outflow Control	0
Discard NULL Bytes	0
DSR Outflow Control	0
DSR Sensitivity	0
DTR Flow Control Type	Enable
EOF Character	0
Error Replace Character	0
Error Replacement Enabled	0
Event Character	0
Parity Check Enabled	0
RTS Flow Control Type	Enable
XOff Character	19
XOffXmit Threshold	512
XOn Character	17
XOnXmit Threshold	2048
XOnXOff InFlow Control	0

XOnXOff OutFlow Control	0
IRQ Number	4
I/O Port	0x03F8-0x03FF
Driver	c:\winnt\system32\drivers\serial.sys (62416, 5.00.2195.2780)
Name	COM2
Status	OK
PNP Device ID	ACPI\PNP0501\2
Maximum Input Buffer Size	0
Maximum Output Buffer Size	False
Settable Baud Rate	True
Settable Data Bits	True
Settable Flow Control	True
Settable Parity	True
Settable Parity Check	True
Settable Stop Bits	True
Settable RLSD	True
Supports RLSD	True
Supports 16 Bit Mode	False
Supports Special Characters	False
Baud Rate	9600
Bits/Byte	8
Stop Bits	1
Parity	None
Busy	0
Abort Read/Write on Error	0
Binary Mode Enabled -1	0
Continue Xmit on XOff	0
CTS Outflow Control	0
Discard NULL Bytes	0
DSR Outflow Control	0
DSR Sensitivity	0
DTR Flow Control Type	Enable
EOF Character	0
Error Replace Character	0
Error Replacement Enabled	0
Event Character	0
Parity Check Enabled	0
RTS Flow Control Type	Enable
XOff Character	19
XOffXmit Threshold	512
XOn Character	17
XOnXmit Threshold	2048
XOnXOff InFlow Control	0
XOnXOff OutFlow Control	0
IRQ Number	3
I/O Port	0x02F8-0x02FF
Driver	c:\winnt\system32\drivers\serial.sys (62416, 5.00.2195.2780)

[Parallel]

Item	Value
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	16.93 GB (18,177,835,008 bytes)
Free Space	6.77 GB (7,270,662,144 bytes)
Volume Name	
Volume Serial Number	4016B739
Partition	Disk #0, Partition #0
Partition Size	16.93 GB (18,177,836,544 bytes)
Starting Offset	32256 bytes
Drive Description	Disk drive
Drive Manufacturer	(Standard disk drives)
Drive Model	QUANTUM ATLAS10K3_18_SCA SCSI Disk Device
Drive BytesPerSector	512
Drive MediaLoaded	True
Drive MediaType	Fixed hard disk media
Drive Partitions	1
Drive SCSI Bus	0
Drive SCSI Logical Unit	0
Drive SCSI Port	3
Drive SCSI Target ID	0
Drive SectorsPerTrack	63
Drive Size	18186094080 bytes
Drive Total Cylinders	2211
Drive Total Sectors	35519715
Drive Total Tracks	563805
Drive TracksPerCylinder	255

[SCSI]

Item	Value
Name	Adaptec AIC-7899 - Ultra160 SCSI
Caption	Adaptec AIC-7899 - Ultra160 SCSI
Driver	adpu160m
Status	OK
PNP Device ID	PCI\VEN_9005&DEV_00CF&SUBSYS_81641033&REV_01\3&13C0B0C5&0&38
Device ID	PCI\VEN_9005&DEV_00CF&SUBSYS_81641033&REV_01\3&13C0B0C5&0&38
Device Map	Not Available
Index	Not Available
Max Number Controlled	Not Available
IRQ Number	27
I/O Port	0x2400-0x24FF
Driver	c:\winnt\system32\drivers\adpu160m.sys (81776, d4.0S2 (4.10.4000))
Name	Adaptec AIC-7899 - Ultra160 SCSI
Caption	Adaptec AIC-7899 - Ultra160 SCSI
Driver	adpu160m

Status OK
 PNP Device ID
 PCI\VEN_9005&DEV_00CF&SUBSYS_81641033&REV_01\3&13C0B0C5&0&39
 Device ID
 PCI\VEN_9005&DEV_00CF&SUBSYS_81641033&REV_01\3&13C0B0C5&0&39
 Device Map Not Available
 Index Not Available
 Max Number Controlled Not Available
 IRQ Number 26
 I/O Port 0x2000-0x3FFF
 Driver c:\winnt\system32\drivers\adpu160m.sys (81776, d4.0S2 (4.10.4000))

[Printing]

Name Port Name Server Name
 No printing information

[Problem Devices]

Device PNP Device ID Error Code
 No Problem Devices

[USB]

Device PNP Device ID
 Standard OpenHCD USB Host Controller
 PCI\VEN_1166&DEV_0220&SUBSYS_81641033&REV_05\3&267A616A&0&7A
 USB Root Hub USB\ROOT_HUB\4&35479919&0

[Software Environment]

[Following are sub-categories of this main category]

[Drivers]

Name	Description	File	Type	Started
Control	Accept Pause	Accept Stop	State	Status
abiosdsk	Abiosdsk	Not Available	Kernel Driver	
	False	Disabled	Stopped	OK
	False	False		Ignore
abp480n5	abp480n5	Not Available	Kernel Driver	
	False	Disabled	Stopped	OK
	False	False		Normal
acpi	Microsoft ACPI Driver			
Driver	True	Boot	Running	OK
	False	True		Normal
acpiec	ACPIEC	c:\winnt\system32\drivers\acpiec.sys	Kernel Driver	
	OK	Normal	False	Disabled
	OK	Normal	False	Stopped
adptsf	Adaptec DuraLAN PCI Ethernet/Fast Ethernet driver for Windows NT	c:\winnt\system32\drivers\adptsf50.sys	Kernel Driver	
	OK	Normal	False	Manual
	OK	Normal	False	Stopped
adpu160m	adpu160m	c:\winnt\system32\drivers\adpu160m.sys	Kernel Driver	

Kernel Driver	True	Boot	Running
afd	OK	Normal	False
Driver	True	Auto	Running
	False	True	
aha154x	Aha154x	Not Available	Kernel Driver
	False	Disabled	Stopped
	False	False	
aic116x	aic116x	Not Available	Kernel Driver
	False	Disabled	Stopped
	False	False	
aic78u2	aic78u2	Not Available	Kernel Driver
	False	Disabled	Stopped
	False	False	
aic78xx	aic78xx	Not Available	Kernel Driver
	False	Disabled	Stopped
	False	False	
ami0nt	ami0nt	Not Available	Kernel Driver
	False	Disabled	Stopped
	False	False	
amsint	amsint	Not Available	Kernel Driver
	False	Disabled	Stopped
	False	False	
asc	asc	Not Available	Kernel Driver
	False	Disabled	Stopped
	False	False	
asc3350p	asc3350p	Not Available	Kernel Driver
	False	Disabled	Stopped
	False	False	
asc3550	asc3550	Not Available	Kernel Driver
	False	Disabled	Stopped
	False	False	
asynctac	RAS Asynchronous Media Driver		
Driver	False	Manual	Stopped
	False	False	
atapi	Standard IDE/ESDI Hard Disk Controller		
Driver	True	Boot	Running
	False	True	
atdisk	Atdisk	Not Available	Kernel Driver
	False	Disabled	Stopped
	False	False	
atirage3	atirage3	c:\winnt\system32\drivers\atimpab.sys	Kernel Driver
	OK	Ignore	False
	OK	Ignore	False
atmarpc	ATM ARP Client Protocol		
Driver	False	Manual	Stopped
	False	False	
audstub	Audio Stub Driver		
Driver	True	Manual	Running
	False	True	
beep	Beep	c:\winnt\system32\drivers\beep.sys	Kernel Driver
	OK	Normal	False
	OK	Normal	False
buslogic	BusLogic	Not Available	Kernel Driver
	False	Disabled	Stopped
	False	False	

cd20xrnt	cd20xrnt	Not Available	Kernel Driver
	False	Disabled	Stopped
	False	False	
cdaudio	Cdaudio	c:\winnt\system32\drivers\cdaudio.sys	Kernel Driver
	OK	Ignore	False
	OK	Ignore	False
cdfs	Cdfs	c:\winnt\system32\drivers\cdfs.sys	Kernel Driver
	File System Driver	True	Disabled
	OK	Normal	False
cdrom	CD-ROM Driver		
Driver	True	System	Running
	False	True	
changer	Changer	Not Available	Kernel Driver
	False	System	Stopped
	False	False	
cpqarray	Cpqarray	Not Available	Kernel Driver
	False	Disabled	Stopped
	False	False	
cpqarray2	cpqarray2	Not Available	Kernel Driver
	False	Disabled	Stopped
	False	False	
cpqfcalm	cpqfcalm	Not Available	Kernel Driver
	False	Disabled	Stopped
	False	False	
cpqfws2e	cpqfws2e	Not Available	Kernel Driver
	False	Disabled	Stopped
	False	False	
dac960nt	dac960nt	Not Available	Kernel Driver
	False	Disabled	Stopped
	False	False	
deckzpsx	deckzpsx	Not Available	Kernel Driver
	False	Disabled	Stopped
	False	False	
dfsdriver	DfsDriver	c:\winnt\system32\drivers\dfs.sys	Kernel Driver
	File System Driver	True	Boot
	OK	Normal	False
disk	Disk Driver		
Driver	True	Boot	Running
	False	True	
diskperf	Diskperf	c:\winnt\system32\drivers\diskperf.sys	Kernel Driver
	OK	Normal	False
	OK	Normal	False
dmboot	dmboot	c:\winnt\system32\drivers\dmboot.sys	Kernel Driver
	OK	Normal	False
	OK	Normal	False
dmio	Logical Disk Manager Driver		
Driver	True	Boot	Running
	False	True	
dmload	dmload	c:\winnt\system32\drivers\dmload.sys	Kernel Driver
	OK	Normal	False
	OK	Normal	False
e100b	Intel(R) PRO Adapter Driver		
Driver	True	Manual	Running
	False	True	
efs	EFS	c:\winnt\system32\drivers\efs.sys	Kernel Driver
	File System Driver	True	Disabled
	OK	Normal	False

explog	ExpLog	c:\winnt\system32\drivers\explog.sys	Kernel Driver	True	System	Running	OK	Normal	Driver	True	Boot	Running	OK	Normal																											
fastfat	Fastfat	c:\winnt\system32\drivers\fastfat.sys	File System Driver	True	Disabled	Running	OK	Normal	isapnp	PnP ISA/EISA Bus Driver				ndistapi	Remote Access NDIS TAPI Driver	c:\winnt\system32\drivers\ndistapi.sys	Kernel																								
fd16_700	Fd16_700	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	Driver	True	Boot	Running	OK	Normal	Driver	True	Manual	Running	OK	Normal																					
fdc	Floppy Disk Controller Driver	c:\winnt\system32\drivers\fdc.sys	Kernel Driver	True	Manual	Running	OK	Normal	kbdclass	Keyboard Class Driver	c:\winnt\system32\drivers\kbdclass.sys	Kernel Driver	True	System	Running	OK	Normal	ndiswan	Remote Access NDIS WAN Driver	c:\winnt\system32\drivers\ndiswan.sys	Kernel																				
fips	Fips	c:\winnt\system32\drivers\fips.sys	Kernel Driver	True	Auto	Running	OK	Normal	Driver	True	System	Running	OK	Normal	ndproxy	NDIS Proxy	c:\winnt\system32\drivers\ndproxy.sys	Kernel																							
fireport	fireport	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	Driver	True	System	Running	OK	Normal	Driver	True	Manual	Running	OK	Normal																					
flashpnt	flashpnt	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	lbrtfdc	Not Available	Kernel Driver	False	System	Stopped	OK	Ignore	nechwid	nechwid	c:\winnt\system32\drivers\nechwid.sys	Kernel Driver	False	Manual	Stopped																		
flpydisk	Floppy Disk Driver	c:\winnt\system32\drivers\flpydisk.sys	Kernel Driver	True	Manual	Running	OK	Normal	False	System	Stopped	OK	Ignore	ip6nds35	Ip6nds35	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	netbios	NetBIOS Interface	c:\winnt\system32\drivers\netbios.sys	File															
ftdisk	Volume Manager Driver	c:\winnt\system32\drivers\ftdisk.sys	Kernel Driver	True	Boot	Running	OK	Normal	mnmdd	mnmdd	c:\winnt\system32\drivers\mnmdd.sys	Kernel Driver	True	System	Running	OK	Ignore	False	True	netbt	NetBios over Tcpip	c:\winnt\system32\drivers\netbt.sys	Kernel	Driver	True	System	Running	OK	Normal												
gpc	Generic Packet Classifier	c:\winnt\system32\drivers\msgpc.sys	Kernel Driver	True	Manual	Running	OK	Normal	modem	Modem	c:\winnt\system32\drivers\modem.sys	Kernel Driver	False	Manual	Stopped	OK	Ignore	False	False	netdetect	NetDetect	c:\winnt\system32\drivers\netdetect.sys	Kernel Driver	False	Manual	Stopped	OK	Normal													
i8042prt	i8042 Keyboard and PS/2 Mouse Port Driver	c:\winnt\system32\drivers\i8042prt.sys	Kernel Driver	True	System	Running	OK	Normal	mouclass	Mouse Class Driver	c:\winnt\system32\drivers\mouclass.sys	Kernel Driver	True	System	Running	OK	Ignore	False	True	npfs	Npfs	c:\winnt\system32\drivers\npfs.sys	File System Driver	True	System	Running	OK	Normal	ntfs	Ntfs	c:\winnt\system32\drivers\ntfs.sys	File System Driver	True	Disabled	Running	OK	Normal				
ini910u	ini910u	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	mountmgr	MountMgr	c:\winnt\system32\drivers\mountmgr.sys	Kernel Driver	True	Boot	Running	OK	Normal	False	True	null	Null	c:\winnt\system32\drivers\null.sys	Kernel Driver	True	System	Running	OK	Normal	False	True	nwlnkft	IPX Traffic Filter Driver	c:\winnt\system32\drivers\nwlnkft.sys	Kernel							
intelide	IntelIde	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	System	Running	OK	Normal	msfs	Msfs	c:\winnt\system32\drivers\msfs.sys	File System Driver	True	System	Running	OK	Normal	False	True	nwlnkft	IPX Traffic Filter Driver	c:\winnt\system32\drivers\nwlnkft.sys	Kernel													
ipfilterdriver	IP Traffic Filter Driver	c:\winnt\system32\drivers\ipfltdrv.sys	Kernel Driver	False	Manual	Stopped	OK	Normal	mskssrv	Microsoft Streaming Service Proxy	c:\winnt\system32\drivers\mskssrv.sys	Kernel Driver	False	Manual	Stopped	OK	Normal	False	True	Driver	False	Manual	Stopped	OK	Normal	False	True	nwlnkft	IPX Traffic Filter Driver	c:\winnt\system32\drivers\nwlnkft.sys	Kernel										
ipinip	IP in IP Tunnel Driver	c:\winnt\system32\drivers\ipinip.sys	Kernel Driver	False	Manual	Stopped	OK	Normal	mspclock	Microsoft Streaming Clock Proxy	c:\winnt\system32\drivers\mspclock.sys	Kernel Driver	False	Manual	Stopped	OK	Normal	False	True	Driver	False	Manual	Stopped	OK	Normal	False	True	nwlnkft	IPX Traffic Forwarder Driver	c:\winnt\system32\drivers\nwlnkft.sys	Kernel										
ipnat	IP Network Address Translator	c:\winnt\system32\drivers\ipnat.sys	Kernel Driver	False	Manual	Stopped	OK	Normal	mspqm	Microsoft Streaming Quality Manager Proxy	c:\winnt\system32\drivers\mspqm.sys	Kernel Driver	False	Manual	Stopped	OK	Normal	False	True	Driver	False	Manual	Stopped	OK	Normal	False	True	openhci	Microsoft USB Open Host Controller Driver	c:\winnt\system32\drivers\openhci.sys	Kernel										
ipsec	IPSEC driver	c:\winnt\system32\drivers\ipsec.sys	Kernel Driver	True	Manual	Running	OK	Normal	mup	Mup	c:\winnt\system32\drivers\mup.sys	File System Driver	True	Boot	Running	OK	Normal	False	True	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
ipsraidn	ipsraidn	Not Available	Kernel Driver	False	True	Running	OK	Normal	nrcr710	Nrcr710	Not Available	Kernel Driver	False	Disabled	Stopped	OK	Normal	False	True	partmgr	PartMgr	c:\winnt\system32\drivers\partmgr.sys	Kernel Driver	True	Boot	Running	OK	Ignore	False	False	partmgr	PartMgr	c:\winnt\system32\drivers\partmgr.sys	Kernel Driver	True	Boot	Running	OK	Ignore	False	False

parvdm	OK	Normal	False	True	
	ParVdm	c:\winnt\system32\drivers\parvdm.sys			
	Kernel Driver	False	Auto	Stopped	
pci	OK	Ignore	False	False	
	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	
Driver	False	Manual	Stopped	OK	Ignore
	False	False			
pptpminiport	WAN Miniport (PPTP)				
	c:\winnt\system32\drivers\rasppptp.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			
q11080	q11080	Not Available		Kernel Driver	
	False	Disabled	Stopped	OK	Normal
	False	False			
q110wnt	Q110wnt	Not Available		Kernel Driver	
	False	Disabled	Stopped	OK	Normal
	False	False			
q11240	q11240	Not Available		Kernel Driver	
	False	Disabled	Stopped	OK	Normal
	False	False			
q12100	q12100	Not Available		Kernel Driver	
	False	Disabled	Stopped	OK	Normal
	False	False			
q12300	q12300	c:\winnt\system32\drivers\q12300.sys			
	Kernel Driver	True	Boot	Running	
	OK	Normal	False	True	
qlvika	qlvika	c:\winnt\system32\drivers\qlvika.sys			
	Kernel Driver	False	Auto	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	
rdpwd	RDPWD	c:\winnt\system32\drivers\rdpwd.sys			
	Kernel Driver	False	Manual	Stopped	
	OK	Ignore	False	False	
redbook	Digital CD Audio Playback Filter Driver				
	c:\winnt\system32\drivers\redbook.sys			Kernel	
Driver	False	System	Stopped	OK	Normal
	False	False			
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				

Driver	c:\winnt\system32\drivers\tcpip.sys	Kernel			
	True	System	Running	OK	Normal
	False	True			
tdasync	TDASYNC	c:\winnt\system32\drivers\tdasync.sys			
	Kernel Driver	False	Manual	Stopped	
	OK	Ignore	False	False	
tdipx	TDIPX	c:\winnt\system32\drivers\tdipx.sys			
	Kernel Driver	False	Manual	Stopped	
	OK	Ignore	False	False	
tdnetb	TDNETB	c:\winnt\system32\drivers\tdnetb.sys			
	Kernel Driver	False	Manual	Stopped	
	OK	Ignore	False	False	
tdpipe	TDPIPE	c:\winnt\system32\drivers\tdpipe.sys			
	Kernel Driver	False	Manual	Stopped	
	OK	Ignore	False	False	
tdspx	TDSPX	c:\winnt\system32\drivers\tdspx.sys			
	Kernel Driver	False	Manual	Stopped	
	OK	Ignore	False	False	
tdtcp	TDTCP	c:\winnt\system32\drivers\tdtcp.sys			
	Kernel Driver	False	Manual	Stopped	
	OK	Ignore	False	False	
termdd	Terminal Device Driver				
	c:\winnt\system32\drivers\termdd.sys			Kernel	
Driver	False	Disabled	Stopped	OK	Normal
	False	False			
tga	tga	Not Available		Kernel Driver	
	False	System	Stopped	OK	Ignore
	False	False			
udfs	Udfs	c:\winnt\system32\drivers\udfs.sys			
	File System Driver	False	Disabled	Stopped	
	OK	Normal	False	False	
ultra66	ultra66	Not Available		Kernel Driver	
	False	Disabled	Stopped	OK	Normal
	False	False			
update	Microcode Update Driver				
	c:\winnt\system32\drivers\update.sys			Kernel	
Driver	True	Manual	Running	OK	Normal
	False	True			
usbhub	Microsoft USB Standard Hub Driver				
	c:\winnt\system32\drivers\usbhub.sys			Kernel	
Driver	True	Manual	Running	OK	Normal
	False	True			
vgasave	VgaSave	c:\winnt\system32\drivers\vga.sys			
	Kernel Driver	True	System	Running	
	OK	Ignore	False	True	
wanarp	Remote Access IP ARP Driver				
	c:\winnt\system32\drivers\wanarp.sys			Kernel	
Driver	True	Manual	Running	OK	Normal
	False	True			
wdica	WDICA	Not Available		Kernel Driver	
	False	Manual	Stopped	OK	Ignore
	False	False			
[Environment Variables]					
Variable	Value	User Name			
ComSpec	%SystemRoot%\system32\cmd.exe				
	<SYSTEM>				
Os2LibPath	%SystemRoot%\system32\os2dll;				
	<SYSTEM>				
Path					

```

oot%\SystemRoot%\system32;%SystemRoot%;%SystemR
oot%\System32\Wbem;C:\Program Files\Microsoft SQL
Server\80\Tools\BINN<SYSTEM>
windir %SystemRoot% <SYSTEM>
OS Windows_NT <SYSTEM>
PROCESSOR_ARCHITECTURE x86 <SYSTEM>
PROCESSOR_LEVEL 6 <SYSTEM>
PROCESSOR_IDENTIFIER x86 Family 6 Model 11 Stepping
1, GenuineIntel <SYSTEM>
PROCESSOR_REVISION 0b01 <SYSTEM>
NUMBER_OF_PROCESSORS 2 <SYSTEM>
PATHEXT

```

```

.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WS
<SYSTEM>
TEMP %SystemRoot%\TEMP <SYSTEM>
TMP %SystemRoot%\TEMP <SYSTEM>
TEMP %USERPROFILE%\Local Settings\Temp
ACL15\Administrator
TMP %USERPROFILE%\Local Settings\Temp
ACL15\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
No print jobs				

[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
	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	204800	1413120	12/6/2002 12:11:38
	5.00.2195.2901	44.27 KB	(45,328 bytes)	
	12/8/1999 5:00:00			
csrss.exe	Not Available	192	13	Not
Available	Not Available	12/6/2002 12:11:42	Unknown	
	Unknown	Unknown		

```

winlogon.exe c:\winnt\system32\winlogon.exe 188
13 204800 1413120 12/6/2002 12:11:45
5.00.2195.2953 173.77 KB (177,936 bytes)
12/8/1999 5:00:00
services.exe c:\winnt\system32\services.exe 240
9 204800 1413120 12/6/2002 12:11:46
5.00.2195.2780 86.77 KB (88,848 bytes)
12/8/1999 5:00:00
lsass.exe c:\winnt\system32\lsass.exe 252 9
204800 1413120 12/6/2002 12:11:46
5.00.2195.2964 32.77 KB (33,552 bytes)
12/8/1999 5:00:00
svchost.exe c:\winnt\system32\svchost.exe 416
8 204800 1413120 12/6/2002 12:11:48
5.00.2134.1 7.77 KB (7,952 bytes) 12/8/1999
5:00:00
spoolsv.exe c:\winnt\system32\spoolsv.exe 448
8 204800 1413120 12/6/2002 12:11:48
5.00.2161.1 43.77 KB (44,816 bytes)
8/15/2002 0:25:24
msdtc.exe c:\winnt\system32\msdtc.exe 476 8
204800 1413120 12/6/2002 12:11:48
1999.9.3421.3 6.77 KB (6,928 bytes) 8/15/2002
0:38:24
svchost.exe c:\winnt\system32\svchost.exe 600
8 204800 1413120 12/6/2002 12:11:49
5.00.2134.1 7.77 KB (7,952 bytes) 12/8/1999
5:00:00
llssrv.exe c:\winnt\system32\llssrv.exe 624 9
204800 1413120 12/6/2002 12:11:50
5.00.2195.2649 114.27 KB (117,008 bytes)
5/4/2001 12:05:02
regsvc.exe c:\winnt\system32\regsvc.exe 676
8 204800 1413120 12/6/2002 12:11:50
5.00.2195.2104 65.27 KB (66,832 bytes)
8/15/2002 14:12:39
rsys.exe Not Available 748 8 Not
Available Not Available 12/6/2002 12:11:51 Unknown
Unknown Unknown
mstask.exe c:\winnt\system32\mstask.exe 792
8 204800 1413120 12/6/2002 12:12:00
4.71.2195.1 115.27 KB (118,032 bytes)
8/15/2002 14:12:34
winmgmt.exe c:\winnt\system32\wbem\winmgmt.exe
836 8 204800 1413120 12/6/2002
12:12:00 1.50.1085.0029 192.08 KB (196,685 bytes)
8/15/2002 14:12:48
inetinfo.exe c:\winnt\system32\inetrv\inetinfo.exe
872 8 204800 1413120 12/6/2002
12:12:00 5.00.0984 14.27 KB (14,608 bytes) 8/15/2002
14:13:24
dfssvc.exec c:\winnt\system32\dfssvc.exe 964 8
204800 1413120 12/6/2002 12:12:02
5.00.2195.2841 88.27 KB (90,384 bytes)
8/15/2002 14:12:24
svchost.exe c:\winnt\system32\svchost.exe 1112
8 204800 1413120 12/6/2002 12:12:32
5.00.2134.1 7.77 KB (7,952 bytes) 12/8/1999
5:00:00
explorer.exe c:\winnt\explorer.exe 1184 8
204800 1413120 12/6/2002 16:06:01

```

```

5.00.3315.2846 237.27 KB (242,960 bytes)
8/15/2002 14:12:44
internat.exe c:\winnt\system32\internat.exe 1016
8 204800 1413120 12/6/2002 16:06:02
5.00.2920.0000 20.27 KB (20,752 bytes)
12/8/1999 5:00:00
mmc.exe c:\winnt\system32\mmc.exe 1256 8
204800 1413120 12/6/2002 16:10:17
5.00.2195.2301 589.27 KB (603,408 bytes)
8/15/2002 14:12:29
rsvp.exe c:\winnt\system32\rsvp.exe 1324 8
204800 1413120 12/6/2002 16:12:45
5.00.2167.1 172.77 KB (176,912 bytes)
12/8/1999 5:00:00

```

[Loaded Modules]

Name	Version	Size	File Date	Manufacturer
Path				
traffic.dll	5.00.2139.1	30.77 KB (31,504 bytes)	12/8/1999 5:00:00	Microsoft Corporation
				c:\winnt\system32\traffic.dll
rsvp.exe	5.00.2167.1	172.77 KB (176,912 bytes)	12/8/1999 5:00:00	Microsoft Corporation
				c:\winnt\system32\rsvp.exe
wbemprox.dll	1.50.1085.0045	40.08 KB (41,040 bytes)	8/15/2002 14:12:48	Microsoft Corporation
				c:\winnt\system32\wbem\wbemprox.dll
mlang.dll	5.00.3103.1000	510.77 KB (523,024 bytes)	8/15/2002 14:12:29	Microsoft Corporation
				c:\winnt\system32\mlang.dll
rassapi.dll	5.00.2188.1	14.27 KB (14,608 bytes)	12/8/1999 5:00:00	Microsoft Corporation
				c:\winnt\system32\rassapi.dll
adsnt.dll	5.00.2195.2778	195.27 KB (199,952 bytes)	8/15/2002 14:12:19	Microsoft Corporation
				c:\winnt\system32\adsnt.dll
dbghelp.dll	5.00.2195.2104	159.27 KB (163,088 bytes)	5/4/2001 12:05:02	Microsoft Corporation
				c:\winnt\system32\dbghelp.dll
localec.dll	5.00.2195.2130	230.27 KB (235,792 bytes)	8/15/2002 14:12:29	Microsoft Corporation
				c:\winnt\system32\localec.dll
devmgr.dll	5.00.2166.1	215.77 KB (220,944 bytes)	12/8/1999 5:00:00	Microsoft Corporation
				c:\winnt\system32\devmgr.dll
filemgmt.dll	5.00.2195.2165	287.27 KB (294,160 bytes)	8/15/2002 14:12:26	Microsoft Corporation
				c:\winnt\system32\filemgmt.dll
pdh.dll	5.00.2195.2739	147.77 KB (151,312 bytes)	8/15/2002 14:12:39	Microsoft Corporation
				c:\winnt\system32\pdh.dll
smlogcfg.dll	5.00.2195.2485	273.27 KB (279,824 bytes)	8/15/2002 14:12:41	Microsoft Corporation
				c:\winnt\system32\smlogcfg.dll
cabinet.dll	5.00.2147.1	54.77 KB (56,080 bytes)	12/8/1999 5:00:00	Microsoft Corporation
				c:\winnt\system32\cabinet.dll
msinfo32.dll	5.00.2177.1	312.27 KB (319,760 bytes)	8/14/2002 15:42:50	Microsoft Corporation
				c:\program files\common files\microsoft

shared\msinfo\msinfo32.dll
riched20.dll 5.30.23.1205 421.27 KB (431,376 bytes) 8/15/2002 14:12:39 Microsoft Corporation
c:\winnt\system32\riched20.dll
riched32.dll 5.00.2134.1 3.77 KB (3,856 bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\riched32.dll
els.dll 5.00.2175.1 151.27 KB (154,896 bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\els.dll
ntmsmgr.dll 1,0,0,1 427.77 KB (438,032 bytes) 12/8/1999 5:00:00 Microsoft Corporation and
HighGround Systems, Inc. c:\winnt\system32\ntmsmgr.dll
mmfutil.dll 1.50.1085.0000 32.06 KB (32,829 bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\mmfutil.dll
logdrive.dll 1.50.1085.0000 200.06 KB (204,863 bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\logdrive.dll
dfrgres.dll 5.00.2150.1 27.50 KB (28,160 bytes) 12/8/1999 5:00:00 Executive Software
International, Inc. c:\winnt\system32\dfrgres.dll
dfrgsnap.dll 5.00.2195.2104 41.77 KB (42,768 bytes) 8/15/2002 14:12:24 Executive Software
International, Inc. c:\winnt\system32\dfrgsnap.dll
dmdskres.dll 2195.2104.297.3 119.50 KB (122,368 bytes) 8/15/2002 14:12:24 Microsoft Corp., VERITAS
Software c:\winnt\system32\dmdskres.dll
dmutil.dll 2195.2104.297.3 42.27 KB (43,280 bytes) 8/15/2002 14:12:24 VERITAS Software Corp.
c:\winnt\system32\dmutil.dll
ntmsapi.dll 5.00.1948.1 51.77 KB (53,008 bytes) 8/15/2002 14:12:36 Microsoft Corporation
c:\winnt\system32\ntmsapi.dll
dmdskmgr.dll 2215.2215.297.3 160.27 KB (164,112 bytes) 8/15/2002 14:12:24 Microsoft Corp., VERITAS
Software c:\winnt\system32\dmdskmgr.dll
mycomput.dll 5.00.2134.1 107.77 KB (110,352 bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\mycomput.dll
comdlg32.dll 5.00.3103.1000 236.77 KB (242,448 bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\comdlg32.dll
mmcndmgr.dll 5.00.2178.1 815.27 KB (834,832 bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\mmcndmgr.dll
mmc.exe 5.00.2195.2301 589.27 KB (603,408 bytes) 8/15/2002 14:12:29 Microsoft Corporation
c:\winnt\system32\mmc.exe
internat.exe 5.00.2920.0000 20.27 KB (20,752 bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\internat.exe
shdoclc.dll 5.00.3315.2879 324.50 KB (332,288 bytes) 8/15/2002 14:12:41 Microsoft Corporation
c:\winnt\system32\shdoclc.dll
mfc42.dll 6.00.8665.0 972.05 KB (995,383 bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\mfc42.dll
adptsf50.cpl 5, 0, 0, 0 24.00 KB (24,576 bytes) 9/20/2002 16:42:14 Adaptec, Inc.
c:\winnt\system32\adptsf50.cpl

ccfapi32.dll 5.00.2134.1 48.77 KB (49,936 bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\ccfapi32.dll
liccpa.cpl 5.00.2195.2104 52.27 KB (53,520 bytes) 5/4/2001 12:05:02 Microsoft Corporation
c:\winnt\system32\liccpa.cpl
powercfg.cpl 5.00.3103.1000 88.77 KB (90,896 bytes) 8/15/2002 14:12:39 Microsoft Corporation
c:\winnt\system32\powercfg.cpl
wininet.dll 5.00.3315.1000 456.77 KB (467,728 bytes) 8/15/2002 14:12:44 Microsoft Corporation
c:\winnt\system32\wininet.dll
indicdl.dll 5.00.2920.0000 11.27 KB (11,536 bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\indicdl.dll
urlmon.dll 5.00.3315.1000 441.27 KB (451,856 bytes) 8/15/2002 14:12:43 Microsoft Corporation
c:\winnt\system32\urlmon.dll
linkinfo.dll 5.00.2134.1 15.77 KB (16,144 bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\linkinfo.dll
msi.dll 2.0.2600.0 1.90 MB (1,991,168 bytes) 8/15/2002 14:12:31 Microsoft Corporation
c:\winnt\system32\msi.dll
powrprof.dll 5.00.3103.1000 13.27 KB (13,584 bytes) 8/15/2002 14:12:39 Microsoft Corporation
c:\winnt\system32\powrprof.dll
batmeter.dll 5.00.3103.1000 20.27 KB (20,752 bytes) 8/15/2002 14:12:20 Microsoft Corporation
c:\winnt\system32\batmeter.dll
stobject.dll 5.00.2195.2780 79.27 KB (81,168 bytes) 8/15/2002 14:12:42 Microsoft Corporation
c:\winnt\system32\stobject.dll
webcheck.dll 5.00.3315.1000 251.77 KB (257,808 bytes) 8/15/2002 14:12:43 Microsoft Corporation
c:\winnt\system32\webcheck.dll
browserc.dll 5.00.3315.2846 34.50 KB (35,328 bytes) 8/15/2002 14:12:20 Microsoft Corporation
c:\winnt\system32\browserc.dll
ntshrui.dll 5.00.2134.1 46.77 KB (47,888 bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\ntshrui.dll
mydocs.dll 5.00.2920.0000 55.77 KB (57,104 bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\mydocs.dll
browseui.dll 5.00.3315.2846 788.77 KB (807,696 bytes) 8/15/2002 14:12:20 Microsoft Corporation
c:\winnt\system32\browseui.dll
shdocvw.dll 5.00.3315.2879 1.05 MB (1,104,144 bytes) 8/15/2002 14:12:41 Microsoft Corporation
c:\winnt\system32\shdocvw.dll
explorer.exe 5.00.3315.2846 237.27 KB (242,960 bytes) 8/15/2002 14:12:44 Microsoft Corporation
c:\winnt\explorer.exe
tapisrv.dll 5.00.2195.2955 169.27 KB (173,328 bytes) 8/15/2002 14:12:42 Microsoft Corporation
c:\winnt\system32\tapisrv.dll
dfssvc.exe 5.00.2195.2841 88.27 KB (90,384 bytes) 8/15/2002 14:12:24 Microsoft Corporation
c:\winnt\system32\dfssvc.exe
iislog.dll 5.00.0984 75.27 KB (77,072 bytes) 8/15/2002

14:13:24 Microsoft Corporation
c:\winnt\system32\iislog.dll
ntfsdrv.dll 5.00.0984 36.77 KB (37,648 bytes) 8/15/2002
14:13:25 Microsoft Corporation
c:\winnt\system32\ntfsdrv.dll
ntlsapi.dll 5.00.2134.1 6.77 KB (6,928 bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\ntlsapi.dll
httpext.dll 0.9.3940.21 435.27 KB (445,712 bytes) 8/15/2002 14:13:24 Microsoft Corporation
c:\winnt\system32\httpext.dll
fpexedll.dll 4.0.2.4324 20.06 KB (20,541 bytes) 8/15/2002 14:13:17 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) 8/15/2002 14:13:25 Microsoft Corporation
c:\winnt\system32\md5filt.dll
aqueue.dll 5.00.0984 312.77 KB (320,272 bytes) 8/15/2002 14:13:18 Microsoft Corporation
c:\winnt\system32\aqueue.dll
gzip.dll 5.00.0984 30.27 KB (30,992 bytes) 8/15/2002 14:13:24 Microsoft Corporation
c:\winnt\system32\gzip.dll
compfilt.dll 5.00.0984 22.77 KB (23,312 bytes) 8/15/2002 14:13:23 Microsoft Corporation
c:\winnt\system32\compfilt.dll
seo.dll 5.00.0984 229.27 KB (234,768 bytes) 8/15/2002 14:13:25 Microsoft Corporation
c:\winnt\system32\seo.dll
sspifilt.dll 5.00.0984 43.27 KB (44,304 bytes) 8/15/2002 14:13:26 Microsoft Corporation
c:\winnt\system32\sspifilt.dll
iscomlog.dll 5.00.0984 24.77 KB (25,360 bytes) 8/15/2002 14:13:24 Microsoft Corporation
c:\winnt\system32\iscomlog.dll
lonsint.dll 5.00.0984 11.77 KB (12,048 bytes) 8/15/2002 14:13:25 Microsoft Corporation
c:\winnt\system32\lonsint.dll
inetsloc.dll 5.00.0984 20.27 KB (20,752 bytes) 8/15/2002 14:12:28 Microsoft Corporation
c:\winnt\system32\inetsloc.dll
w3svc.dll 5.00.0984 343.27 KB (351,504 bytes) 8/15/2002 14:13:26 Microsoft Corporation
c:\winnt\system32\w3svc.dll
staxmem.dll 5.00.0984 8.27 KB (8,464 bytes) 8/15/2002 0:39:01 Microsoft Corporation
c:\winnt\system32\staxmem.dll
exstrace.dll 5.00.0984 13.77 KB (14,096 bytes) 8/15/2002 0:39:03 Microsoft Corporation
c:\winnt\system32\exstrace.dll
rwnh.dll 5.00.0984 10.77 KB (11,024 bytes) 8/15/2002 0:40:24 Microsoft Corporation
c:\winnt\system32\rwnh.dll
fcachdll.dll 5.00.0984 43.77 KB (44,816 bytes) 8/15/2002 0:40:24 Microsoft Corporation
c:\winnt\system32\fcachdll.dll
iisfecnv.dll 5.00.0984 7.27 KB (7,440 bytes) 8/15/2002 0:39:01 Microsoft Corporation
c:\winnt\system32\iisfecnv.dll
isatq.dll 5.00.0984 60.27 KB (61,712 bytes) 8/15/2002

14:13:24 Microsoft Corporation
c:\winnt\system32\inetrv\isatq.dll
infocomm.dll 5.00.0984 238.27 KB (243,984 bytes)
8/15/2002 14:13:24 Microsoft Corporation
c:\winnt\system32\inetrv\infocomm.dll
smtpsvc.dll 5.00.0984 420.27 KB (430,352 bytes)
8/15/2002 14:13:25 Microsoft Corporation
c:\winnt\system32\inetrv\smtpsvc.dll
security.dll 5.00.2154.1 5.77 KB (5,904 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\security.dll
svcext.dll 5.00.0984 39.77 KB (40,720 bytes) 8/15/2002
14:13:26 Microsoft Corporation
c:\winnt\system32\inetrv\svcext.dll
admexs.dll 5.00.0984 27.77 KB (28,432 bytes)
8/15/2002 14:13:23 Microsoft Corporation
c:\winnt\system32\inetrv\admexs.dll
wamreg.dll 5.00.0984 45.77 KB (46,864 bytes)
8/15/2002 14:13:26 Microsoft Corporation
c:\winnt\system32\inetrv\wamreg.dll
metadata.dll 5.00.0984 68.77 KB (70,416 bytes)
8/15/2002 14:13:25 Microsoft Corporation
c:\winnt\system32\inetrv\metadata.dll
iismap.dll 5.00.0984 55.77 KB (57,104 bytes) 8/15/2002
14:12:27 Microsoft Corporation
c:\winnt\system32\iismap.dll
nsepm.dll 5.00.0984 43.27 KB (44,304 bytes) 8/15/2002
14:13:25 Microsoft Corporation
c:\winnt\system32\inetrv\nsepm.dll
admwprox.dll 5.00.0984 31.77 KB (32,528 bytes)
8/15/2002 0:39:02 Microsoft Corporation
c:\winnt\system32\admwprox.dll
coadmin.dll 5.00.0984 39.27 KB (40,208 bytes)
8/15/2002 14:13:23 Microsoft Corporation
c:\winnt\system32\inetrv\coadmin.dll
iisadmin.dll 5.00.0984 15.27 KB (15,632 bytes)
8/15/2002 14:13:24 Microsoft Corporation
c:\winnt\system32\inetrv\iisadmin.dll
rpcpref.dll 5.00.0984 4.27 KB (4,368 bytes) 8/15/2002 14:13:25
Microsoft Corporation
c:\winnt\system32\inetrv\rpcpref.dll
iisrtl.dll 5.00.0984 119.77 KB (122,640 bytes) 8/15/2002
14:12:27 Microsoft Corporation
c:\winnt\system32\iisrtl.dll
inetinfo.exe 5.00.0984 14.27 KB (14,608 bytes)
8/15/2002 14:13:24 Microsoft Corporation
c:\winnt\system32\inetrv\inetinfo.exe
netui1.dll 5.00.2134.1 210.27 KB (215,312 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\netui1.dll
netui0.dll 5.00.2134.1 70.27 KB (71,952 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\netui0.dll
ntlanman.dll 5.00.2157.1 35.27 KB (36,112
bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\ntlanman.dll
perfos.dll 5.00.2155.1 21.27 KB (21,776 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\perfos.dll
wshnetbs.dll 5.00.2134.1 7.77 KB (7,952 bytes)
12/8/1999 5:00:00 Microsoft Corporation

c:\winnt\system32\wshnetbs.dll
ntmarta.dll 5.00.2195.2862 98.77 KB (101,136
bytes) 8/15/2002 14:12:36 Microsoft Corporation
c:\winnt\system32\ntmarta.dll
provthrd.dll 1.50.1085.0000 68.07 KB (69,708
bytes) 8/14/2002 15:42:41 Microsoft Corporation
c:\winnt\system32\wbem\provthrd.dll
ntevt.dll 1.50.1085.0000 192.06 KB (196,669 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\wbem\ntevt.dll
psapi.dll 5.00.2134.1 28.27 KB (28,944 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\psapi.dll
framedyn.dll 1.50.1085.0000 164.05 KB (167,992
bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\wbem\framedyn.dll
cimwin32.dll 1.50.1085.0038 1.02 MB (1,073,232
bytes) 8/15/2002 14:12:47 Microsoft Corporation
c:\winnt\system32\wbem\cimwin32.dll
wbemsvc.dll 1.50.1085.0007 40.07 KB (41,036
bytes) 8/15/2002 14:12:48 Microsoft Corporation
c:\winnt\system32\wbem\wbemsvc.dll
wbemess.dll 1.50.1085.0039 364.07 KB (372,804
bytes) 8/15/2002 14:12:48 Microsoft Corporation
c:\winnt\system32\wbem\wbemess.dll
fastprox.dll 1.50.1085.0037 144.08 KB (147,536
bytes) 8/15/2002 14:12:47 Microsoft Corporation
c:\winnt\system32\wbem\fastprox.dll
wbemcore.dll 1.50.1085.0036 628.07 KB (643,140
bytes) 8/15/2002 14:12:48 Microsoft Corporation
c:\winnt\system32\wbem\wbemcore.dll
wbemcomn.dll 1.50.1085.0021 692.07 KB (708,675
bytes) 8/15/2002 14:12:47 Microsoft Corporation
c:\winnt\system32\wbem\wbemcomn.dll
winmgmt.exe 1.50.1085.0029 192.08 KB (196,685
bytes) 8/15/2002 14:12:48 Microsoft Corporation
c:\winnt\system32\wbem\winmgmt.exe
msidle.dll 5.00.2920.0000 6.27 KB (6,416 bytes) 12/8/1999
5:00:00 Microsoft Corporation
c:\winnt\system32\msidle.dll
mstask.exe 4.71.2195.1 115.27 KB (118,032
bytes) 8/15/2002 14:12:34 Microsoft Corporation
c:\winnt\system32\mstask.exe
regsvc.exe 5.00.2195.2104 65.27 KB (66,832
bytes) 8/15/2002 14:12:39 Microsoft Corporation
c:\winnt\system32\regsvc.exe
llsrpc.dll 5.00.2149.1 45.77 KB (46,864 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\llsrpc.dll
llsrv.exe 5.00.2195.2649 114.27 KB (117,008 bytes)
5/4/2001 12:05:02 Microsoft Corporation
c:\winnt\system32\llsrv.exe
wmi.dll 5.00.2191.1 6.27 KB (6,416 bytes) 12/8/1999
5:00:00 Microsoft Corporation
c:\winnt\system32\wmi.dll
netshell.dll 5.00.2195.2779 457.27 KB (468,240
bytes) 8/15/2002 14:12:35 Microsoft Corporation
c:\winnt\system32\netshell.dll
netman.dll 5.00.2195.2779 89.27 KB (91,408 bytes)
8/15/2002 14:12:35 Microsoft Corporation
c:\winnt\system32\netman.dll

ntmsdba.dll 5.00.2195.2779 167.27 KB (171,280
bytes) 8/15/2002 14:12:36 Microsoft Corporation
c:\winnt\system32\ntmsdba.dll
rasdlg.dll 5.00.2195.2671 514.27 KB (526,608 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\rasdlg.dll
netcfgx.dll 5.00.2195.2228 534.77 KB (547,600 bytes)
8/15/2002 14:12:35 Microsoft Corporation
c:\winnt\system32\netcfgx.dll
rasmans.dll 5.00.2195.2728 147.27 KB (150,800
bytes) 8/15/2002 14:12:39 Microsoft Corporation
c:\winnt\system32\rasmans.dll
sens.dll 5.00.2163.1 36.77 KB (37,648 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\sens.dll
ntmssvc.dll 5.00.2195.2779 391.27 KB (400,656
bytes) 8/15/2002 14:12:36 Microsoft Corporation
c:\winnt\system32\ntmssvc.dll
es.dll 2000.2.3471.1 222.27 KB (227,600 bytes)
8/15/2002 14:12:25 Microsoft Corporation
c:\winnt\system32\es.dll
mtxoci.dll 2000.2.3471.1 101.77 KB (104,208 bytes)
8/15/2002 14:12:35 Microsoft Corporation
c:\winnt\system32\mtxoci.dll
resutils.dll 5.00.2195.2787 39.77 KB (40,720 bytes)
8/15/2002 14:12:39 Microsoft Corporation
c:\winnt\system32\resutils.dll
clusapi.dll 5.00.2195.2104 54.27 KB (55,568 bytes)
8/15/2002 14:12:22 Microsoft Corporation
c:\winnt\system32\clusapi.dll
msvcpx50.dll 5.00.7051 552.50 KB (565,760 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\msvcpx50.dll
xolehlp.dll 1999.9.3421.3 17.27 KB (17,680 bytes)
8/15/2002 0:38:24 Microsoft Corporation
c:\winnt\system32\xolehlp.dll
msdtclog.dll 1999.9.3421.3 89.77 KB (91,920
bytes) 8/15/2002 0:38:24 Microsoft Corporation
c:\winnt\system32\msdtclog.dll
mtxclu.dll 2000.2.3471.1 51.27 KB (52,496 bytes)
8/15/2002 14:12:35 Microsoft Corporation
c:\winnt\system32\mtxclu.dll
msdtcprx.dll 2000.2.3471.1 665.77 KB (681,744
bytes) 8/15/2002 14:12:30 Microsoft Corporation
c:\winnt\system32\msdtcprx.dll
txfaux.dll 2000.2.3471.1 374.27 KB (383,248 bytes)
8/15/2002 14:12:43 Microsoft Corporation
c:\winnt\system32\txfaux.dll
msdtctm.dll 2000.2.3471.1 1.07 MB (1,120,528
bytes) 8/15/2002 14:12:30 Microsoft Corporation
c:\winnt\system32\msdtctm.dll
msdtc.exe 1999.9.3421.3 6.77 KB (6,928 bytes) 8/15/2002
0:38:24 Microsoft Corporation
c:\winnt\system32\msdtc.exe
inetpp.dll 5.00.2195.2842 65.27 KB (66,832 bytes)
8/15/2002 14:12:27 Microsoft Corporation
c:\winnt\system32\inetpp.dll
win32spl.dll 5.00.2195.2780 92.27 KB (94,480
bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\win32spl.dll
usbmon.dll 5.00.2195.2780 11.27 KB (11,536

bytes) 8/15/2002 14:12:43 Microsoft Corporation
c:\winnt\system32\usbmon.dll
tcpmon.dll 5.00.2195.2780 40.77 KB (41,744 bytes)
8/15/2002 14:12:42 Microsoft Corporation
c:\winnt\system32\tcpmon.dll
pjimon.dll 5.00.2165.1 12.77 KB (13,072 bytes)
12/1/1999 8:39:36 Microsoft Corporation
c:\winnt\system32\pjimon.dll
cnbjmon.dll 5.00.2134.1 43.77 KB (44,816
bytes) 12/1/1999 8:38:48 Microsoft Corporation
c:\winnt\system32\cnbjmon.dll
localspl.dll 5.00.2195.2793 246.77 KB (252,688
bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\localspl.dll
spoolss.dll 5.00.2161.1 61.77 KB (63,248
bytes) 8/15/2002 0:25:24 Microsoft Corporation
c:\winnt\system32\spoolss.dll
spoolsv.exe 5.00.2161.1 43.77 KB (44,816
bytes) 8/15/2002 0:25:24 Microsoft Corporation
c:\winnt\system32\spoolsv.exe
rpcss.dll 5.00.2195.2815 231.27 KB (236,816 bytes)
8/15/2002 14:12:40 Microsoft Corporation
c:\winnt\system32\rpcss.dll
svchost.exe 5.00.2134.1 7.77 KB (7,952 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\svchost.exe
dssenh.dll 5.00.2195.2228 142.77 KB (146,192 bytes)
8/15/2002 14:13:20 Microsoft Corporation
c:\winnt\system32\dssenh.dll
oakley.dll 5.00.2195.2785 378.77 KB (387,856 bytes)
8/15/2002 14:12:36 Microsoft Corporation
c:\winnt\system32\oakley.dll
mfc42u.dll 6.00.8665.0 972.05 KB (995,384 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\mfc42u.dll
polagent.dll 5.00.2183.1 108.27 KB (110,864
bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\polagent.dll
scecli.dll 5.00.2195.2780 105.27 KB (107,792 bytes)
8/15/2002 14:12:40 Microsoft Corporation
c:\winnt\system32\scecli.dll
atl.dll 3.00.8449 57.56 KB (58,938 bytes) 12/8/1999
5:00:00 Microsoft Corporation
c:\winnt\system32\atl.dll
certcli.dll 5.00.2195.2778 130.77 KB (133,904 bytes)
8/15/2002 14:12:22 Microsoft Corporation
c:\winnt\system32\certcli.dll
esent.dll 6.0.3940.13 1.08 MB (1,135,376 bytes)
8/15/2002 14:12:26 Microsoft Corporation
c:\winnt\system32\esent.dll
ntdsatq.dll 5.00.2195.2878 31.27 KB (32,016 bytes)
8/15/2002 14:12:36 Microsoft Corporation
c:\winnt\system32\ntdsatq.dll
ntdsa.dll 5.00.2195.2899 990.77 KB (1,014,544 bytes)
8/15/2002 14:12:35 Microsoft Corporation
c:\winnt\system32\ntdsa.dll
kdcsvc.dll 5.00.2195.2878 137.77 KB (141,072 bytes)
8/15/2002 14:12:29 Microsoft Corporation
c:\winnt\system32\kdcsvc.dll
sfmapi.dll 5.00.2134.1 38.77 KB (39,696 bytes)
12/8/1999 5:00:00 Microsoft Corporation

c:\winnt\system32\sfmapi.dll
rassfm.dll 5.00.2195.2671 21.27 KB (21,776 bytes)
8/15/2002 14:12:39 Microsoft Corporation
c:\winnt\system32\rassfm.dll
mpr.dll 5.00.2195.2779 53.27 KB (54,544 bytes)
8/15/2002 14:12:29 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 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 Microsoft Corporation
c:\winnt\system32\schannel.dll
netlogon.dll 5.00.2195.2865 357.77 KB (366,352
bytes) 8/15/2002 14:12:35 Microsoft Corporation
c:\winnt\system32\netlogon.dll
msv1_0.dll 5.00.2195.2900 111.77 KB (114,448 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\msv1_0.dll
kerberos.dll 5.00.2195.2913 198.77 KB (203,536
bytes) 8/15/2002 14:12:29 Microsoft Corporation
c:\winnt\system32\kerberos.dll
msprivs.dll 5.00.2154.1 41.50 KB (42,496
bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\msprivs.dll
samsrv.dll 5.00.2195.2918 369.77 KB (378,640 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\samsrv.dll
lsasrv.dll 5.00.2195.2964 492.77 KB (504,592 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\lsasrv.dll
lsass.exe 5.00.2195.2964 32.77 KB (33,552 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\lsass.exe
xactsrv.dll 5.00.2134.1 90.27 KB (92,432 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\xactsrv.dll
wmiocore.dll 5.00.2195.2842 72.27 KB (74,000
bytes) 8/15/2002 14:12:44 Microsoft Corporation
c:\winnt\system32\wmiocore.dll
rasadhlp.dll 5.00.2168.1 7.27 KB (7,440 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\rasadhlp.dll
winrnr.dll 5.00.2160.1 18.77 KB (19,216 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\winrnr.dll
rnr20.dll 5.00.2195.2871 35.77 KB (36,624 bytes)
8/15/2002 14:12:40 Microsoft Corporation
c:\winnt\system32\rnr20.dll
wshtcpip.dll 5.00.2195.2104 17.27 KB (17,680
bytes) 8/15/2002 14:12:44 Microsoft Corporation
c:\winnt\system32\wshtcpip.dll
msafdd.dll 5.00.2195.2779 106.77 KB (109,328 bytes)
8/15/2002 14:12:30 Microsoft Corporation
c:\winnt\system32\msafdd.dll
mswsock.dll 5.00.2195.2871 62.77 KB (64,272
bytes) 8/15/2002 14:12:34 Microsoft Corporation
c:\winnt\system32\mswsock.dll
msgsvc.dll 5.00.2195.2939 34.27 KB (35,088
bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\msgsvc.dll

browser.dll 5.00.2195.2778 48.27 KB (49,424
bytes) 8/15/2002 14:12:20 Microsoft Corporation
c:\winnt\system32\browser.dll
alrsvc.dll 5.00.2134.1 17.77 KB (18,192 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\alrsvc.dll
trkwks.dll 5.00.2166.1 88.77 KB (90,896 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\trkwks.dll
seclogon.dll 5.00.2135.1 15.77 KB (16,144
bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\seclogon.dll
psbase.dll 5.00.2195.2779 111.77 KB (114,448 bytes)
8/15/2002 14:12:39 Microsoft Corporation
c:\winnt\system32\psbase.dll
cryptsvc.dll 5.00.2181.1 61.77 KB (63,248
bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\cryptsvc.dll
cryptdll.dll 5.00.2135.1 41.27 KB (42,256 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\cryptdll.dll
wkssvc.dll 5.00.2195.2780 95.27 KB (97,552 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\wkssvc.dll
srvsvc.dll 5.00.2195.2904 79.27 KB (81,168 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\srvsvc.dll
cfgmgr32.dll 5.00.2134.1 16.77 KB (17,168
bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\cfgmgr32.dll
dmserver.dll 2195.2778.297.3 11.77 KB (12,048
bytes) 8/15/2002 14:12:24 VERITAS Software Corp.
c:\winnt\system32\dmserver.dll
winsta.dll 5.00.2195.2386 36.77 KB (37,648 bytes)
8/15/2002 14:12:44 Microsoft Corporation
c:\winnt\system32\winsta.dll
lmhsvc.dll 5.00.2195.2778 9.77 KB (10,000 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\lmhsvc.dll
dnssrslvr.dll 5.00.2195.2778 88.77 KB (90,896
bytes) 8/15/2002 14:12:25 Microsoft Corporation
c:\winnt\system32\dnssrslvr.dll
tapi32.dll 5.00.2182.1 123.27 KB (126,224 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\tapi32.dll
rasman.dll 5.00.2195.2780 54.77 KB (56,080 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\rasman.dll
rasapi32.dll 5.00.2195.2671 189.77 KB (194,320
bytes) 12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\rasapi32.dll
rtutils.dll 5.00.2168.1 43.77 KB (44,816 bytes)
12/8/1999 5:00:00 Microsoft Corporation
c:\winnt\system32\rtutils.dll
adslpcc.dll 5.00.2195.2842 127.27 KB (130,320
bytes) 8/15/2002 14:12:19 Microsoft Corporation
c:\winnt\system32\adslpcc.dll
activeds.dll 5.00.2195.2778 174.77 KB (178,960
bytes) 8/15/2002 14:12:16 Microsoft Corporation
c:\winnt\system32\activeds.dll
mprapi.dll 5.00.2181.1 79.27 KB (81,168 bytes)

12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\mprapi.dll
 iphlpapi.dll 5.00.2173.2 67.77 KB (69,392 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\iphlpapi.dll
 icmp.dll 5.00.2134.1 7.27 KB (7,440 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\icmp.dll
 dhcpcsvc.dll 5.00.2195.2778 88.77 KB (90,896 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\dhcpcsvc.dll
 eventlog.dll 5.00.2178.1 43.77 KB (44,816 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\eventlog.dll
 ntdsapi.dll 5.00.2195.2661 55.77 KB (57,104 bytes) 8/15/2002 14:12:36 Microsoft Corporation
 c:\winnt\system32\ntdsapi.dll
 scesrv.dll 5.00.2195.2780 226.27 KB (231,696 bytes) 8/15/2002 14:12:40 Microsoft Corporation
 c:\winnt\system32\scesrv.dll
 umpnpgm.dll 5.00.2182.1 86.27 KB (88,336 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\umpnpgm.dll
 services.exe 5.00.2195.2780 86.77 KB (88,848 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\services.exe
 clbcatq.dll 2000.2.3471.1 496.77 KB (508,688 bytes) 8/15/2002 14:12:22 Microsoft Corporation
 c:\winnt\system32\clbcatq.dll
 oleaut32.dll 2.40.4517 612.27 KB (626,960 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\oleaut32.dll
 cscur.dll 5.00.2195.2959 228.27 KB (233,744 bytes) 8/15/2002 14:12:23 Microsoft Corporation
 c:\winnt\system32\cscur.dll
 winspool.drv 5.00.2195.2780 109.77 KB (112,400 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\winspool.drv
 winscard.dll 5.00.2134.1 77.27 KB (79,120 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\winscard.dll
 wlnotify.dll 5.00.2195.2780 53.77 KB (55,056 bytes) 8/15/2002 14:12:44 Microsoft Corporation
 c:\winnt\system32\wlnotify.dll
 csddl.dll 5.00.2195.2401 98.27 KB (100,624 bytes) 8/15/2002 14:12:23 Microsoft Corporation
 c:\winnt\system32\csddl.dll
 lz32.dll 5.00.2134.1 9.77 KB (10,000 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\lz32.dll
 version.dll 5.00.2134.1 15.77 KB (16,144 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\version.dll
 rsaenh.dll 5.00.2195.2228 130.77 KB (133,904 bytes) 8/15/2002 14:13:20 Microsoft Corporation
 c:\winnt\system32\rsaenh.dll
 mscat32.dll 5.131.2134.1 7.77 KB (7,952 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\mscat32.dll
 ole32.dll 5.00.2195.2887 969.77 KB (993,040 bytes) 8/15/2002 14:12:38 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 Microsoft Corporation
 c:\winnt\system32\imagehlp.dll
 msasn1.dll 5.00.2134.1 51.27 KB (52,496 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\msasn1.dll
 crypt32.dll 5.131.2195.2833 451.27 KB (462,096 bytes) 8/15/2002 14:12:23 Microsoft Corporation
 c:\winnt\system32\crypt32.dll
 wintrust.dll 5.131.2195.2779 162.27 KB (166,160 bytes) 8/15/2002 14:12:44 Microsoft Corporation
 c:\winnt\system32\wintrust.dll
 setupapi.dll 5.00.2195.2663 555.77 KB (569,104 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\setupapi.dll
 winmm.dll 5.00.2161.1 184.77 KB (189,200 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\winmm.dll
 comctl32.dll 5.81 537.77 KB (550,672 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\comctl32.dll
 shlwapi.dll 5.00.3315.1000 282.77 KB (289,552 bytes) 8/15/2002 14:12:41 Microsoft Corporation
 c:\winnt\system32\shlwapi.dll
 shell32.dll 5.00.3315.2902 2.25 MB (2,359,056 bytes) 8/15/2002 14:12:41 Microsoft Corporation
 c:\winnt\system32\shell32.dll
 msgina.dll 5.00.2195.2779 324.27 KB (332,048 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\msgina.dll
 imm32.dll 5.00.2195.2821 94.27 KB (96,528 bytes) 8/15/2002 14:12:27 Microsoft Corporation
 c:\winnt\system32\imm32.dll
 wsock32.dll 5.00.2195.2871 21.27 KB (21,776 bytes) 8/15/2002 14:12:44 Microsoft Corporation
 c:\winnt\system32\wsock32.dll
 dnsapi.dll 5.00.2195.2785 130.77 KB (133,904 bytes) 8/15/2002 14:12:24 Microsoft Corporation
 c:\winnt\system32\dnsapi.dll
 wldap32.dll 5.00.2195.2797 125.27 KB (128,272 bytes) 8/15/2002 14:12:44 Microsoft Corporation
 c:\winnt\system32\wldap32.dll
 ws2help.dll 5.00.2134.1 17.77 KB (18,192 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\ws2help.dll
 ws2_32.dll 5.00.2195.2780 67.77 KB (69,392 bytes) 8/15/2002 14:12:44 Microsoft Corporation
 c:\winnt\system32\ws2_32.dll
 samlib.dll 5.00.2195.2780 49.77 KB (50,960 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\samlib.dll
 netrap.dll 5.00.2134.1 11.27 KB (11,536 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\netrap.dll
 netapi32.dll 5.00.2195.2808 303.77 KB (311,056 bytes) 8/15/2002 14:12:35 Microsoft Corporation
 c:\winnt\system32\netapi32.dll
 profmap.dll 5.00.2181.1 29.27 KB (29,968 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\profmap.dll

secur32.dll 5.00.2195.2862 46.77 KB (47,888 bytes) 8/15/2002 14:12:40 Microsoft Corporation
 c:\winnt\system32\secur32.dll
 sfc.dll 5.00.2195.2896 92.11 KB (94,320 bytes) 8/15/2002 14:12:40 Microsoft Corporation
 c:\winnt\system32\sfc.dll
 nddeapi.dll 5.00.2137.1 15.27 KB (15,632 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\nddeapi.dll
 userenv.dll 5.00.2195.2780 361.77 KB (370,448 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\userenv.dll
 user32.dll 5.00.2195.2821 392.77 KB (402,192 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\user32.dll
 gdi32.dll 5.00.2195.2778 228.77 KB (234,256 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\gdi32.dll
 rpcrt4.dll 5.00.2195.2832 437.27 KB (447,760 bytes) 8/15/2002 14:12:40 Microsoft Corporation
 c:\winnt\system32\rpcrt4.dll
 advapi32.dll 5.00.2195.2867 351.77 KB (360,208 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\advapi32.dll
 kernel32.dll 5.00.2195.2778 714.77 KB (731,920 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\kernel32.dll
 msvcrt.dll 6.10.8924.0 284.05 KB (290,869 bytes) 5/4/2001 12:05:02 Microsoft Corporation
 c:\winnt\system32\msvcrt.dll
 winlogon.exe 5.00.2195.2953 173.77 KB (177,936 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\winlogon.exe
 sfcfiles.dll 5.00.2195.2967 948.27 KB (971,024 bytes) 8/15/2002 14:12:40 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 Microsoft Corporation
 c:\winnt\system32\ntdll.dll
 smss.exe 5.00.2195.2901 44.27 KB (45,328 bytes) 12/8/1999 5:00:00 Microsoft Corporation
 c:\winnt\system32\smss.exe

[Services]

Display Name	Name	State	Start Mode
	Service Type	Path	Error Control
	Start Name	Tag ID	
Alerter	Alerter	Running	Share Process
	c:\winnt\system32\services.exe	0	Normal
Application Management	AppMgmt	Stopped	Manual
	Share Process	c:\winnt\system32\services.exe	0
Computer Browser	Browser	Running	Auto Share
Process	c:\winnt\system32\services.exe	0	Normal
Indexing Service	cisvc	Stopped	Manual Share
Process	c:\winnt\system32\cisvc.exe	0	Normal
ClipBook	ClipSrv	Stopped	Manual Own Process

	c:\winnt\system32\clipsrv.exe	Normal			
	LocalSystem	0			
Distributed File System	Dfs	Running	Auto		
Own Process	c:\winnt\system32\dfssvc.exe				
	Normal	LocalSystem	0		
DHCP Client	Dhcp	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	Running	Auto	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\inetrv\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	Running			
Auto	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	Running	Auto		
Share Process	c:\winnt\system32\services.exe				
	Normal	LocalSystem	0		
NetMeeting Remote Desktop Sharing	mnmsrv	Stopped			
Manual	Own	Process			
	c:\winnt\system32\mnmsrv.exe	Normal			
	LocalSystem	0			
Distributed Transaction Coordinator	MSDTC	Running			
Auto	Own	Process			
	c:\winnt\system32\msdtc.exe	Normal			
	LocalSystem	0			

Windows Installer	MSIServer	Stopped	Manual	Share	
Process	c:\winnt\system32\msiexec.exe	/v	Normal		
	LocalSystem	0			
Network DDE	NetDDE	Stopped	Manual	Share	
Process	c:\winnt\system32\netdde.exe	Normal			
	LocalSystem	0			
Network DDE DSDM	NetDDEdsdm	Stopped	Manual		
Share Process	c:\winnt\system32\netdde.exe				
	Normal	LocalSystem	0		
Net Logon	Netlogon	Stopped	Manual	Share	Process
	c:\winnt\system32\lsass.exe	Normal			
	LocalSystem	0			
Network Connections	Netman	Running	Manual		
Share Process	c:\winnt\system32\svchost.exe				
k netsvcs	Normal	LocalSystem	0		
File Replication	NtFrs	Stopped	Manual	Own	
Process	c:\winnt\system32\ntfrs.exe	Ignore			
	LocalSystem	0			
NT LM Security Support Provider			NtLmSsp	Stopped	
Manual	Share	Process			
	c:\winnt\system32\lsass.exe	Normal			
	LocalSystem	0			
Removable Storage	NtmsSvc	Running	Auto	Share	
Process	c:\winnt\system32\svchost.exe	-k netsvcs	Normal		
	LocalSystem	0			
Plug and Play	PlugPlay	Running	Auto	Share	
Process	c:\winnt\system32\services.exe	Normal			
	LocalSystem	0			
IPSEC Policy Agent	PolicyAgent	Running	Auto		
Share Process	c:\winnt\system32\lsass.exe				
	Normal	LocalSystem	0		
Protected Storage	ProtectedStorage	Running	Auto		
Share Process	c:\winnt\system32\services.exe				
	Normal	LocalSystem	0		
PsShutdown	PsShutdownSvc	Stopped	Manual		
Own	Process				
	c:\winnt\system32\pssdsvc.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	.Administrator	0		
Remote Procedure Call (RPC) Locator	RpcLocator	Stopped	Manual	Own	Process
	c:\winnt\system32\locator.exe	Normal			
	LocalSystem	0			

Remote Procedure Call (RPC)	RpcSs	Running	Auto		
Share	Process	c:\winnt\system32\svchost.exe			
Normal	LocalSystem	0			
QoS RSVP	RSVP	Running	Manual	Own	Process
	c:\winnt\system32\rsvp.exe	-s	Normal		
	LocalSystem	0			
Security Accounts Manager	SamSs	Running	Auto		
Share Process	c:\winnt\system32\lsass.exe				
	Normal	LocalSystem	0		
Smart Card Helper	SCardDrv	Stopped	Manual	Share	
Process	c:\winnt\system32\scardsvr.exe	Ignore			
	LocalSystem	0			
Smart Card	SCardSvr	Stopped	Manual	Share	
Process	c:\winnt\system32\scardsvr.exe	Ignore			
	LocalSystem	0			
Task Scheduler	Schedule	Running	Auto	Share	
Process	c:\winnt\system32\lsmstask.exe	Normal			
	LocalSystem	0			
RunAs Service	seclogon	Running	Auto	Share	
Process	c:\winnt\system32\services.exe	Ignore			
	LocalSystem	0			
System Event Notification	SENS	Running	Auto		
Share Process	c:\winnt\system32\svchost.exe				
k netsvcs	Normal	LocalSystem	0		
Internet Connection Sharing	SharedAccess	Stopped			
Manual	Share	Process			
	c:\winnt\system32\svchost.exe	-k netsvcs	Normal		
	LocalSystem	0			
Simple Mail Transport Protocol (SMTP)	SMTPSVC	Running			
Auto	Share	Process			
	c:\winnt\system32\inetrv\inetinfo.exe	Normal			
	LocalSystem	0			
Print Spooler	Spooler	Running	Auto	Own	
Process	c:\winnt\system32\spoolsv.exe	Normal			
	LocalSystem	0			
Performance Logs and Alerts	SysmonLog	Stopped			
Manual	Own	Process			
	c:\winnt\system32\smlogsvc.exe	Normal			
	LocalSystem	0			
Telephony Tapisrv	Running	Manual	Share	Process	
	c:\winnt\system32\svchost.exe	-k tapisrv	Normal		
	LocalSystem	0			
Terminal Services	TermService	Stopped	Disabled		
Own	Process	c:\winnt\system32\termsrv.exe			
	Normal	LocalSystem	0		
Telnet	TintSvr	Stopped	Manual	Own	Process
	c:\winnt\system32\tintsvr.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\inetrv\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	Default
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	
Accessories	All Users:Accessories		All Users
Accessories\Accessibility	All Users:Accessories\Accessibility	All Users	
Accessories\Communications	All Users:Accessories\Communications	All Users	
Accessories\Entertainment	All Users:Accessories\Entertainment	All Users	
Accessories\Games	All Users:Accessories\Games	All Users	
Accessories\Microsoft Script Debugger	All Users:Accessories\Microsoft Script Debugger	All Users	
Accessories\System Tools	All Users:Accessories\System Tools	All Users	
Administrative Tools	All Users:Administrative Tools	All Users	
Microsoft SQL Server	All Users:Microsoft SQL Server	All Users	
Startup	All Users:Startup	All Users	
Accessories	ACL15\Administrator:Accessories		ACL15\Administrator
Accessories\Accessibility	ACL15\Administrator:Accessories\Accessibility		ACL15\Administrator
Accessories\Entertainment	ACL15\Administrator:Accessories\Entertainment		ACL15\Administrator
Accessories\System Tools	ACL15\Administrator:Accessories\System Tools		ACL15\Administrator
Administrative Tools	ACL15\Administrator:Administrative Tools		ACL15\Administrator
SANblade Control VIX	ACL15\Administrator:SANblade Control VIX		ACL15\Administrator
SANbox Manager	ACL15\Administrator:SANbox Manager		ACL15\Administrator
Startup	ACL15\Administrator:Startup		ACL15\Administrator

[Startup Programs]

Program	Command	User Name	Location
internat.exe	internat.exe	ACL15\Administrator	HKU\S-1-5-21-1343024091-1645522239-1417001333-500\SOFTWARE\Microsoft\Windows\CurrentVersion\Run
internat.exe	internat.exe	.DEFAULT	HKU\DEFAULT\SOFTWARE\Microsoft\Windows\CurrentVersion\Run

[OLE Registration]

Object	Local Server
Sound (OLE2)	sndrec32.exe
Media Clip	mplay32.exe
Video Clip	mplay32.exe /avi
MIDI Sequence	mplay32.exe /mid
Sound	Not Available
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	51876-335-3394097-05979
Application Path	C:\Program Files\Internet Explorer
Language	English (United States)
Active Printer	Not Available

Cipher Strength	168-bit
Content Advisor	Disabled
IEAK Install	No

[File Versions]

File	Version	Size	Date	Path	Company
advapi32.dll	5.0.2195.2867	352 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
advpack.dll	5.0.3103.1000	87 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
browsei.dll	5.0.3315.2846	35 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
browseui.dll	5.0.3315.2846	789 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
ckcnv.exe	5.0.2189.1	9 KB	12/8/1999 5:00:00	C:\WINNT\system32	Microsoft Corporation
comctl32.dll	5.81.3103.1000	538 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation

crypt32.dll	5.131.2195.2833	451 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
enhsg.dll	<File Missing>	Not Available	Not Available		
iemigrat.dll	<File Missing>	Not Available	Not Available		
iesetup.dll	5.0.3103.1000	57 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
iexplore.exe	5.0.2920.0	59 KB	12/8/1999 5:00:00	C:\Program Files\Internet Explorer	Microsoft Corporation
imagehlp.dll	5.0.2195.2778	126 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
imghelp.dll	<File Missing>	Not Available	Not Available		
inseng.dll	5.0.3103.1000	72 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
jobexec.dll	5.0.0.1	47 KB	12/8/1999 5:00:00	C:\WINNT\system32	Microsoft Corporation
jscrip.dll	5.1.0.5907	476 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
jsproxy.dll	5.0.2920.0	13 KB	12/8/1999 5:00:00	C:\WINNT\system32	Microsoft Corporation
msahtml.dll	<File Missing>	Not Available	Not Available		
mshtml.dll	5.0.3315.2870	2290 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
msjava.dll	5.0.3802.0	923 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
msoss.dll	<File Missing>	Not Available	Not Available		
msxml.dll	8.0.5718.1	493 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
occache.dll	5.0.3103.1000	86 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
ole32.dll	5.0.2195.2887	970 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
oleaut32.dll	2.40.4517.0	612 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
olepro32.dll	5.0.4517.0	160 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
rsabase.dll	5.0.2195.2228	128 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
rsaenh.dll	5.0.2195.2228	131 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
rsapi32.dll	<File Missing>	Not Available	Not Available		
rsasig.dll	<File Missing>	Not Available	Not Available		
schannel.dll	5.1.2195.0	138 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
shdoc401.dll	<File Missing>	Not Available	Not Available		
shdocvw.dll	5.0.3315.2879	1078 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation
shell32.dll	5.0.3315.2902	2304 KB	5/4/2001 12:05:02	C:\WINNT\system32	Microsoft Corporation

```

shlwapi.dll          5.0.3315.1000      283 KB   5/4/2001
12:05:02 C:\WINNT\system32 Microsoft Corporation
url.dll             5.0.2920.0 82 KB   12/8/1999 5:00:00
C:\WINNT\system32 Microsoft Corporation
urlmon.dll          5.0.3315.1000      441 KB   5/4/2001 12:05:02
C:\WINNT\system32 Microsoft Corporation
vbscript.dll        5.1.0.5907 428 KB  5/4/2001 12:05:02
C:\WINNT\system32 Microsoft Corporation
webcheck.dll        5.0.3315.1000      252 KB   5/4/2001
12:05:02 C:\WINNT\system32 Microsoft Corporation
win.com             5.0.2134.1 24 KB   12/8/1999 5:00:00
C:\WINNT\system32 Microsoft Corporation
wininet.dll         5.0.3315.1000      457 KB   5/4/2001 12:05:02
C:\WINNT\system32 Microsoft Corporation
winsock.dll         3.10.0.103 3 KB    12/8/1999 5:00:00
C:\WINNT\system32 Microsoft Corporation
wintrust.dll        5.131.2195.2779    162 KB   5/4/2001
12:05:02 C:\WINNT\system32 Microsoft Corporation
wsock.vxd<File Missing> Not Available Not
Available Not Available Not Available
wsock32.dll         5.0.2195.2871      21 KB    5/4/2001
12:05:02 C:\WINNT\system32 Microsoft Corporation
wsock32n.dll        <File Missing> Not Available
Not Available Not Available Not
Available

```

[Connectivity]

```

Item      Value
Connection Preference      Never dial
EnableHttp1.1      1
ProxyHttp1.1      0

```

LAN Settings

```

AutoConfigProxy      wininet.dll
AutoProxyDetectMode      Disabled
AutoConfigURL
Proxy      Disabled
ProxyServer
ProxyOverride

```

[Cache]

[Following are sub-categories of this main category]

[Summary]

```

Item      Value
Page Refresh Type      Automatic
Temporary Internet Files Folder C:\Documents and
Settings\Administrator\Local Settings\Temporary Internet Files
Total Disk Space      17335 MB
Available Disk Space 6933 MB
Maximum Cache Size541 MB
Available Cache Size 542 MB

```

[List of Objects]

```

Program File      Status      CodeBase
No cached object information available

```

[Content]

[Following are sub-categories of this main category]

[Summary]

```

Item      Value
Content Advisor      Disabled

```

[Personal Certificates]

```

Issued To Issued By Validity      Signature Algorithm
Administrator Administrator      8/14/2002 to
7/21/2102 sha1RSA

```

[Other People Certificates]

```

Issued To Issued By Validity      Signature Algorithm
No other people certificate information available

```

[Publishers]

```

Name
No publisher information available

```

[Security]

```

Zone      Security Level
Local intranet      Medium-low
Trusted sites      Low
Internet Medium
Restricted sites      High

```

<Microsoft SQL Server setting>

Startup Parameters

sqlservr -c -x -T3502 -T3428

- c Sart SQL Server independently of the Microsoft Windows NT Service Control Manager.
- x Disable the keeping of CPU time and cache-hit ration statistics.
- T3502 Prints a message to the log at the beginning and end of each checkpoint.
- T3428 Use half of the memory available on the system during the recovery process to keep a hash table which enables recovery to proceed smoothly.

Microsoft SQL Server Configuration Parameters

```
1> 2> 3> 4> 5> 6> 7> 8> 9> 10> 11>
-- File:      VERSION.SQL
--           Microsoft TPC-C Benchmark Kit Ver. IA-64
--           Copyright Microsoft, 2000,2001
-- Purpose:   Returns SQL Server version string
```

```
print " "
select convert(char(30), getdate(),9)
print " "
```

```
-----
Dec 3 2002 2:11:52:620AM
```

(1 row affected)

```
1> 2> 3>
select @@version
```

```
-----
-----
-----
-----
Microsoft SQL Server 2000 - 8.00.731 (Intel IA-64)
Oct 30 2002 17:22:04
C
opyright (c) 1988-2002 Microsoft Corporation
Enterprise Edition (64-bit) on windows NT 5.2 (Build 3694: )
```

```
(1 row affected)
1> 2>
1> 2> 3> 4> 5> 6> 7> 8> 9> 10>
-- File:      CONFIG.SQL
--           Microsoft TPC-C Benchmark Kit Ver. IA-64
--           Copyright Microsoft, 2000,2001
-- Purpose:   Collects SQL Server configuration parameters
```

```
print " "
select convert(char(30), getdate(),9)
print " "
```

```
-----
Dec 3 2002 2:11:53:030AM
```

(1 row affected)

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

```
sp_configure "show advanced",1
1> 2> reconfigure with override
1> 2> sp_configure
```

name	minimum	maximum	config_value	run_value
affinity mask	-2147483648	2147483647	-1	-
affinity64 mask	-2147483648	2147483647	0	0
allow updates	0	1	0	0
awe enabled	0	1	0	0
c2 audit mode	0	1	0	0
cost threshold for parallelism	0	32767	5	5
Cross DB Ownership Chaining	0	1	0	0
cursor threshold	-1	2147483647	-1	-
default full-text language	0	2147483647	1033	1033
default language	0	9999	0	0
fill factor (%)	0	100	0	0
index create memory (KB)	704	2147483647	0	0
lightweight pooling	0	1	1	1
locks	5000	2147483647	0	0
max degree of parallelism	0	32	1	1
max server memory (MB)	4	2147483647	250000	250000
max text repl size (B)	0	2147483647	65536	65536
max worker threads	32	32767	896	896
media retention	0	365	0	0
min memory per query (KB)	512	2147483647	1024	1024
min server memory (MB)	0	2147483647	0	0

nested triggers	0	1	1	
1 network packet size (B)	512	65536	4096	
4096 open objects	0	2147483647	0	
0 priority boost	0	1	1	
1 query governor cost limit	0	2147483647	0	
0 query wait (s)	-1	2147483647	-1	-
1 recovery interval (min)	0	32767	119	
119 remote access	0	1	1	
1 remote login timeout (s)	0	2147483647	20	
20 remote proc trans	0	1	0	
0 remote query timeout (s)	0	2147483647	600	
600 scan for startup procs	0	1	0	
0 set working set size	0	1	0	
0 show advanced options	0	1	1	
1 two digit year cutoff	1753	9999	2049	
2049 user connections	0	32767	0	
0 user options	0	32767	0	
0				
1>				

Appendix D : Space Calculation

60 Day Space

Note : Numbers are in KBytes unless otherwise specified

Warehouses 29000 tpmC 342746.25 tpmC/W 11.82

Table	Rows	Data	Index	5% Space	8H Space	Total Space
Warehouse	29,000	3,136	440	179		3,755
District	290,000	32,680	712	1,670		35,062
Item	100,000	9,528	656	234		10,418
New-order	261,000,000	4,650,336	12,360		2,320,000	6,982,696
History	870,000,000	51,940,304	201,968		8,186,109	60,328,381
Orders	870,000,000	28,408,168	13,858,912		6,635,747	48,902,827
Customer	870,000,000	632,727,280	39,484,616	15,460,874		687,672,770
Order-line	8,699,958,798	579,997,256	1,373,080		91,272,609	672,642,945
Stock	2,900,000,000	928,000,000	1,964,528	21,389,184		951,353,712
Totals		2,225,768,688	56,897,272	36,852,140	108,414,466	2,427,932,566

DB File Group	Count	Size	Needed	Overhead	Not Needed
MSSQL_misc_fg	80	1,228,800,000	796,795,146	7,967,951	424,036,903
MSSQL_cs_fg	80	2,457,600,000	1,655,416,747	16,554,167	785,629,086
Totals		3,686,400,000	2,452,211,892	24,522,119	1,209,665,989

Dynamic space 642,516,393 Sum of Data for Order, Order-Line and History (excluding free extents)

Static space 1,701,523,826 Data + Index + 5% Space + Overhead - Dynamic space

Free space 132,693,792 Total Seg. Size - Dynamic Space - Static Space - Not Needed

Daily growth 121,500,736 (Dynamic space/W * 62.5)* tpmC

Daily spread (49,557,313) Free space - 1.5 * Daily growth (zero if negative)

60 day (KB) 8,991,567,999 Static space + 60 (daily growth + daily spread)

60 day (GB) 8575.03 Excludes OS, Paging and RDBMS Logs

Log size (MB) 400000.00 Total size of log file

% Log used 77.81% of log file used during entire run

Total N-O Txn 68330250 Total count of N-O transactions during entire run

Log per N-O txn 4.66 Number of Kbytes per New-Order transaction

8 Hour Log (GB) 731.82 need double for mirroring

os, file sys, swap 16.00

	Disk size (GB)	Priced Qty	Priced (GB)	Needed(GB)	Extra (GB)
Database, Sys	16.629	1200	19954.80	8,591.03	11,380.40
	16.629	1	16.63		
Mirrored Log	33.287	56	1864.07	1,463.65	400.43

Appendix E : Price Quotation

Microsoft Corporation
 One Microsoft Way
 Redmond, WA 98052-6399
 Tel 425 882 8080
 Fax 425 936 7329
<http://www.microsoft.com/>

Microsoft

December 5, 2002

NEC Corporation
 Keiichi Yamada
 1-10 Nisshin-cho, Fuchu-shi
 Tokyo, 1838501

Yamada-san:

Here is the information you requested regarding pricing for several Microsoft products to be used in conjunction with your TPC-C benchmark testing.

All pricing shown is in US Dollars (\$).

Part Number	Description	Unit Price	Quantity	Price
810-00560	SQL Server 2000 Enterprise Edition (64-bit) <i>Per processor licensing Discount Schedule: Open Program Level C Unit Price reflects a 17% discount from the retail unit price of \$19,999.</i>	\$16,541	32	\$529,312
C11-00821	Windows 2000 Server <i>Server license only - No CALs Discount Schedule: Open Program - No Level Unit Price reflects a 8% discount from the retail unit price of \$799.</i>	\$738	32	\$23,616
254-00170	Visual C++ .Net Standard <i>No discounts applied</i>	\$109	1	\$109
PRO-PRRS-16U-01	Database Server Support Package <i>1 Year Term</i>	\$1,950	3	\$5,850

Some products may not be currently orderable but will be available through Microsoft's normal distribution channels by February 12, 2003.

This quote is valid for the next 90 days.

If we can be of any further assistance, please contact Jamie Reding at (425) 703-0510 or jamiere@microsoft.com.

Reference ID: PCkeya0205127956
 Please include this Reference ID in any correspondence regarding this price quote.

Allied Telesyn

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SHOPPING BASKET

Qty	Product	Description	In Stock	Price	Total
<input type="text" value="3"/>	AT-A15/SX CTLR	SX fiber module for the 8224XL	Yes	\$325.00	\$975.00
<input type="text" value="3"/>	AT-8224XL-10 PERP	24 port managed Fast Ethernet switch with two expansion bays. Module choices include low cost 100FX, 10/100/1000T, 1000SX, and 1000LX	Yes	\$649.00	\$1,947.00
<input type="text" value="6"/>	AT-FS716-10 PERP	16 port unmanaged Fast Ethernet switch	Yes	\$115.00	\$690.00

UPDATE QUANTITY CLEAR BASKET CHECKOUT

Sub Total: \$3,612.00

To calculate Shipping & Handling, enter your zip code:

Products shipped to US addresses only.



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Quantity	Product	CDW	Usually Ships	Price	Ext. Price
<input type="text" value="110"/>	AESP CAT5 RJ-45M to RJ-45M Molded 25' Patch cable gray	126706	Same Day	\$10.83	\$1,191.30
<input type="text" value="1"/>	Intel PRO/100 S Server Adapter	250851	Same Day	\$68.14	\$68.14
<input type="text" value="7"/>	Intel PRO/100 S Server Adapter, 5-pack	250852	4-6 Days	\$276.24	\$1,933.68
<input type="text" value="33"/>	NEC AccuSync 50	192126	Same Day	\$134.99	\$4,454.67
<input type="text" value="13"/>	QLogic SANblade 2200, QLA2200F-CK	279821	Same Day	\$1,059.52	\$13,773.76
				Sub-Total	\$21,421.55

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