TPC Benchmark™ C

Full Disclosure Report for

FUJITSU COMPUTERS SIEMENS

PRIMERGY TX300

Using Microsoft SQL Server 2000 Enterprise Edition SP3

and Microsoft Windows Server 2003 Enterprise Edition

August 13, 2003

First Edition

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Fujitsu Siemens Computers GmbH believes that the information in this document is accurate as of the publication date. The information in this document is subject to change without notice. We assume no responsibility for any errors that may appear in this document. The pricing information in this document is believed to accurately reflect the current prices as of the publication date. However, we provide no warranty of the pricing information in this document.

Benchmark results are highly dependent upon workload, specific application requirements, 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 contemlated.

All performance data contained in this report were obtained in a rigorously controlled environment. Results obtained in other operating environments may vary significantly. We do 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.

Preface

The Transaction Processing Performance Council (TPC), of which Fujitsu Siemens Computers GmbH is a member, is an organization of computer companies, dedicated to the development of objective, industry-wide performance metrics in the area of transaction processing. Fujitsu Siemens Computers GmbH is involved in this effort, participating on the council and utilizing TPC benchmarks in performance evaluation.

The TPC Benchmark™ C Standard Specification was developed by the Transaction Processing Performance Council. This benchmark exercises the system components necessary to perform tasks associated with that class of on-line transaction processing (OLTP) environments emphasizing a mixture of read-only and update intensive transactions. This is a complex OLTP application environment exercising a breadth of system components associated by such environments 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

This benchmark defines four on-line transactions and one deferred transaction, intended to emulate functions that are common to many OLTP applications. However, this benchmark does not reflect the entire range of OLTP requirements. The extent to which a customer can achieve the results reported by a vendor is highly dependent on how closely TPC-C approximates the customer application. The relative performance of systems derived from this benchmark does not necessarily hold for other workloads or environments. Extrapolations to any other environment are not recommended.

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

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 subjected 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.

Summary

This report documents the TPC Benchmark™ C results achieved by the Fujitsu Siemens Computers GmbH using Microsoft SQL Server 2000 Enterprise Edition SP3 .

The TPC Benchmark™ C tests were run on a PRIMERGY TX300 system using the Microsoft Windows Server 2003 Enterprise Edition operating system.

The results, summarized below, show the number of TPC Benchmark™ C transactions per minute (tpmC) and the price per tpmC ($/tpmC).

Hardware	Software	Total System Cost	tpmC	$/tpmC	Availability Date
Fujitsu Siemens Computers GmbH PRIMERGY TX300	Microsoft SQL Server 2000 Enterprise Edition SP3 Microsoft Windows Server 2003 Enterprise Edition	$ 205,056	53,691.33	$ 3.82	September 1, 2003

PRIMERGY TX300

C/S with 2 PRIMERGY C200

TPC-C REV 5.1
EXECUTIVE SUMMARY

Report Date: August 13, 2003

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
$ 205,056	**53,691.33 tpmC**	**$ 3.82/tpmC**	**September 1, 2003**

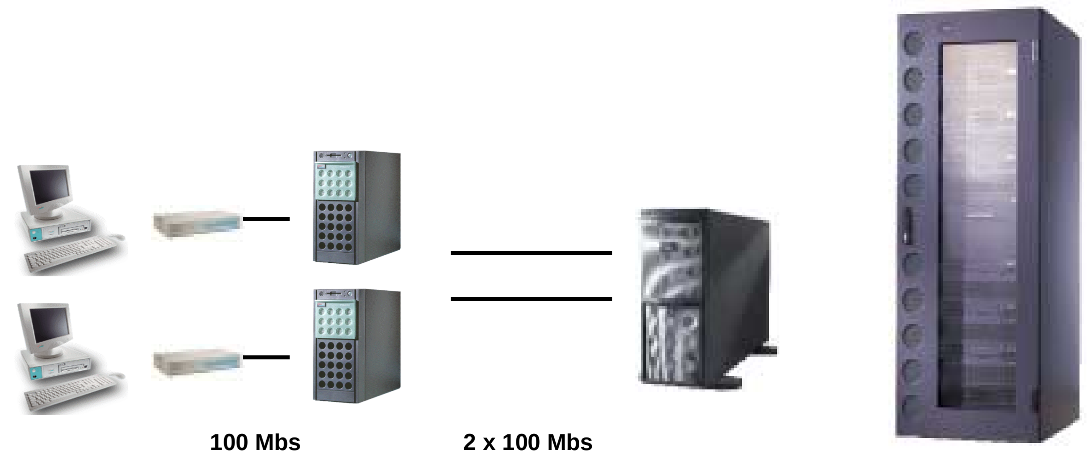
Processors	Database Manager	Operating System	Other Software	Number of Users
Server 2 Intel Xeon™ 3.06 GHz with 1M iL3 Cache Client 2 x 2 Intel Pentium® III 1400 MHz with 512 KB SLC	**Microsoft SQL Server 2000 Enterprise Edition SP3**	**Microsoft Windows Server 2003 Enterprise Edition**	**Microsoft Windows 2003 Server w/ IIS 6.0 and COM+ Microsoft Visual C++**	**42800**

Terminals:
42800 Users

Client:
2 x PRIMERGY C200
21400 users per client

Server:
PRIMERGY TX300
12 GB Memory
5 SCSI Controller

Storage:
15 x PRIMERGY S30
210 disks 18GB



System Components	Qty/Srv.	1 PRIMERGY TX300	Qty/Client	2 PRIMERGY C200
Processors	2	Intel Xeon™ 3.06 GHz with 1M iL3 Cache	2	Intel Pentium® III 1400 MHz with512 KB SLC
Memory	12	GB	512	MB
Disk Controller	5	Mylex eXtremeRAID 2000	1	SCSI Controller
Disk Drives	211	18 GB	1	18 GB
Total GB of Storage	1	3,311 GB		
Tape Drive	1	20 GB DAT		

FUJITSU COMPUTERS SIEMENS

PRIMERGY TX300

C/S with 2 PRIMERGY C200

TPC-C REV 5.1
EXECUTIVE SUMMARY

Report Date: August 13, 2003

Description	Part Number	Third Party Brand Pricing	Unit Price	Qty.	Extended Price	3yr Maint. Price
PRIMERGY PY TX300f X/3.06/1M 512M	S26361-K881-V135	1	3,471 $	1	3,471 $	
Processor XEON DP 3.06GHz/1M/533MHz	S26361-F2827-E800	1	1,569 $	1	1,569 $	
Memory 2x2GB DDR-RAM PC2100 ECC	S26361-F2762-E526	1	4,033 $	3	12,099 $	
Tape DAT DDS4 20GB	S26361- F2233- E3	1	682 $	1	682 $	
HDD U320 10k 36GB hot plug 1"	S26361-F2764-E136	1	286 $	1	286 $	
Mylex eXtremeRAID 2000 4x U160 SCSI, BBU	S26361- F2190- E128	1	2,102 $	5	10,510 $	
PRIMERGY S30 GE RH 2-Ch	SNP:SY-K638V210-P	1	2,374 $	1	2,374 $	
Mountingkit 19" Racks f. S30 / S60	S26361-F2734-E20	1	180 $	1	180 $	
SCSI Cable UHD68 (S)	SNP: SY- F2365L20- P	1	138 $	2	276 $	
Keybord KBPC P2	S26381-K240-V122	1	34 $	1	34 $	
Monitor CRT 15" 151E	S26361- K819- V150	1	135 $	1	135 $	
3 Year Maintenance High End Server, 7x24, 4hr Resp.	FPC58-0731-01	1	1,375 $			1,375 $
	Server Hardware Subtotal				31,616 $	
DataCenter Rack 46 HU	SNP: SY- K614V104- P	1	2,143 $	1	2,143 $	
APC-USV 3000VA Floorstand	FPCUPS0005	1	1,157 $	1	1,157 $	
18GB, 15k, U160, Hot plug, 1"	S26361-F2336-E518	1	323 $	210	67,830 $	
18GB, 15k, U160, Hot plug, 1" (spare)	S26361-F2336-E518	1	323 $	21		6,783 $
PRIMERGY SX30 GE RH 1-Ch	SNP:SY-K638V230-P	1	2,374 $	14	33,236 $	
PRIMERGY SX30 GE RH 1-Ch (spare)	SNP:SY-K638V230-P	1	2,374 $	2		4,748 $
Mountingkit 19" Racks f. S30 / S60	S26361-F2734-E20	1	180 $	14	2,520 $	
Mountingkit 19" Racks f. S30 / S60 (spare)	S26361-F2734-E20	1	180 $	2		360 $
SCSI Cable UHD68 (S)	SNP: SY- F2365L20- P	1	138 $	14	1,932 $	
SCSI Cable UHD68 (S) (spare)	SNP: SY- F2365L20- P	1	138 $	2		276 $
	Storage Subtotal				108,818 $	12,167 $
	Maint. Server + Storage					13,542 $
PRIMERGY C200 GE FS PIII 1,4GHz/512KB	S26361-K836-V134	1	1,148 $	2	2,296 $	
Pentium III Processor 1.4GHz 512kB	S26361-F2599-E140	1	572 $	2	1,144 $	
Memory 512MB SDRAM PC133 ECC	S26361-F2306-E523	1	290 $	2	580 $	
Hard Disk 18GB, 10k, U160, hot plug, 1"	SNP:SY-F2336E118-P	1	295 $	2	590 $	
Fast Ethernet Adapter 10/100TX	S26361-F2643-E1	1	79 $	2	158 $	
CD- ROM, ATAPI	SNP:SY-F2240E1-A	1	37 $	2	74 $	
Monitor CRT 15" 151E	S26361- K819- V150	1	135 $	2	270 $	
Keybord KBPC P2	S26381-K240-V122	1	34 $	2	68 $	
3 Year Maintenance Low End Server, 7x24, 4hr Resp.	FPC58-0731-01	1	750 $	2		1,500 $
	Client Hardware Subtotal				5,180 $	1,500 $
Microsoft Windows Server 2003 Enterprise Edition	P72-00264	2	2,399 $	1	2,399 $	
Microsoft SQL Server 2000 Enterprise Edition (per proc license)	810-00845	2	17,279 $	2	34,558 $	
	Server Software Subtotal				36,957 $	
Microsoft Windows Server 2003 Standard Edition	P73-00295	2	738 $	2	1,476 $	
Visual C++ Standard	254-00170	2	109 $	1	109 $	
	Client Software Subtotal				1,585 $	
Database Server Support Package 1 year	PRO-PRORS-16U-01	2				5,850 $
Crossover cable	CBLC5C7	3	2 $	4	8 $	
	User Connectivity Subtotal				8 $	
	Total				184,164 $	20,892 $

1=Fujitsu-Siemens, 2=Microsoft, 3=Lan Adapters

Prices used in TPC bechmarks 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 section of the TPC benchmark pricing specifications. If you find that the stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org. Thank you.

3 -Year Cost of Ownership:	$ 205,056
tpmC Rating:	53,691.33
$ / tpmC:	3.82

Note: The benchmark results and test methodology were audited by Francois Raab and Bradley Askins of InfoSizing

Numerical Quantities Summary

MQTh, computed Maximum Qualified Throughput	53,691.33 tpmC

Response Times (in seconds)	90th percentile	Average	Maximum
- New-Order	0.60	0.35	6.42
- Payment	0.53	0.28	1.87
- Order-Status	0.55	0.30	8.21
- Delivery (interactive portion)	0.12	0.11	1.12
- Delivery (deferred portion)	0.32	0.18	1.11
- Stock-Level	1.60	1.09	3.46
- Menu	0.12	0.12	1.47

Transaction Mix, in percent of total transactions	
- New-Order	44.93 %
- Payment	43.00 %
- Order-Status	4.02 %
- Delivery	4.01 %
- Stock-Level	4.03 %

Emulation Delay (in seconds)	Response Time	Menu
- New-Order	0.1	0.1
- Payment	0.1	0.1
- Order-Status	0.1	0.1
- Delivery (interactive)	0.1	0.1
- Stock-Level	0.1	0.1

Keying/Think Times (in seconds)	Minimum	Average	Maximum
- New-Order	18.00/0.000	18.01/12.05	18.03/120.51
- Payment	3.00/0.000	3.01/12.04	3.04/120.51
- Order-Status	2.00/0.000	2.01/10.02	2.03/100.50
- Delivery (interactive)	2.00/0.000	2.01/ 5.05	2.03/ 50.50
- Stock-Level	2.00/0.000	2.01/ 5.06	2.03/ 50.50

Test Duration and Checkpointing	
- Ramp-up time	37 minutes
- Measurement interval	120 minutes
- Number of checkpoints	4
- Checkpoint interval	30 minutes
- Transactions during measurement interval (all types)	14,916,494

Contents

Introduction

This is the Full Disclosure Report for the TPC Benchmark™ C running on the Fujitsu Siemens Computers system PRIMERGY TX300. It meets the requirements of the TPC Benchmark™ C Standard Revision 5.1.

System Overview

This report documents the compliance of the Fujitsu Siemens Computers GmbH TPC Benchmark™ C tests using Microsoft SQL Server 2000 Enterprise Edition SP3 Relational Database Management System.

The TPC Benchmark™ C tests were carried out on a PRIMERGY TX300. The PRIMERGY TX300 is a powerful Server with a motherboard based on the ServerWorks chipset that holds up to 2 Intel Xeon™ 3.06 GHz processors with 1M iL3 L2 cache. The Intel® Xeon™ Processor family with the Intel® NetBurst™ micro-architecture uses Hyper-Threading Technology to provide additional performance and application scalability to multi-processor servers. Hyper-Threading Technology enables multi-threaded software to execute tasks in parallel within each processor. The system was equipped with 12 GB of ECC DDR RAM memory. 5 PCI slots were used for SCSI RAID controllers and 2 onboard ethernet adapters.

The client machines were 2 PRIMERGY C200 with 2 Intel Pentium® III 1400 MHz. They all included 512 MB ECC SDRAM memory, onboard ethernet adapter and one additional ethernet adapter card.

The server operating system was Microsoft Windows Server 2003 Enterprise Edition . The client operating system was Microsoft Windows Server 2003 Standard Edition.

Full Disclosure

From Clause 8.1 of the TPC Benchmark™ C Standard Specification:

> The intent of this disclosure is for a customer to be able to replicate the results of this benchmark given the appropriate documentation and products.

Fujitsu Siemens Computers believes that this full disclosure report meets the stated intention. Fujitsu Siemens Computers has strived to maintain the integrity of the Specification by adhering not only to the letter of the Specification, but also to its spirit.

Report Format

*The format of this document follows Clause 8 of the TPC Benchmark™ C specification (*TPC Benchmark™ C Standard Specification*, Revision 5.1, Transaction Processing Performance Council) which describes the full disclosure report requirements for the test.*

Each section of this report begins with the specification requirement printed in *italic type*. It is followed by plain type text that explains how the test complies with the requirement. Sections which require extensive listings reference appropriate appendices.

Report organization**:**

- General Items
- Clause 1 Related Items - Logical Database Design
- Clause 2 Related Items - Transaction and Terminal Profiles
- Clause 3 Related Items - Transaction and System Properties
- Clause 4 Related Items - Scaling and Database Population
- Clause 5 Related Items - Performance Metrics and Response Time
- Clause 6 Related Items - SUT, Driver, and Communication Definition
- Clause 7 Related Items - Pricing
- Clause 8 Related Items - Audit
- Appendix A - Application Source Code
- Appendix B - Database Details
- Appendix C - Tunable Parameters and Options
- Appendix D – Space Calculation
- Appendix E - Price Quotations
- Appendix F - Attestation Letter

Additional Copies	*Additional copies of this report are available upon request from Fujitsu Siemens Computers GmbH:* *Fujitsu Siemens Computers* *ES PS DS 3* *PRIMERGY Server Performance Lab* *Mr. Simon* *Heinz-Nixdorf-Ring 1* *33106 Paderborn* Germany

1. General Items

1.1 Application Code

The application program (as defined in Clause 2.1.7) must be disclosed. This includes, but is not limited to, the code implementing the five transactions and the terminal input and output functions. [Clause 8.1.1.4]

The source code of the application program is provided in Appendix A - Application Source Code.

1.2 Benchmark Sponsor

A statement identifying the benchmark sponsor(s) and other participating companies must be provided. [Clause 8.1.1.5]

This benchmark was sponsored and executed by Fujitsu Siemens Computers GmbH.
The benchmark was developed and engineered by Fujitsu Siemens Computers GmbH and Microsoft Corporation.
Testing took place at Fujitsu Siemens Computers PRIMERGY benchmark laboratories in Paderborn, Germany.

1.3 Parameter Settings

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

- *Database tuning options.*
- *Recovery/commit options.*
- *Consistency/locking options.*
- *Operating system and application configuration parameters.*

[Clause 8.1.1.6]

The significant parameters and system configuration files are provided in Appendix C - Tunable Parameters and Options.

1.4 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.).*

[Clause 8.1.1.7]

Table 1: SUT Configuration PRIMERGY TX300

2	Intel Xeon™ 3.06 GHz with 1M iL3 Cache
12	GB memory
5	Mylex eXtremRAID 2000 SCSI controllers
0	disks 9 GB measured
211	disks 18 GB measured
0	disks 36 GB measured
0	disks 9 GB priced
211	disks 18 GB priced
0	disks 36 GB priced
2	Onboard network adapters

Table 2: Client Configuration PRIMERGY C200

2	Intel Pentium® III 1400 MHz with 512 KB Second Level Cache
512	MB memory
1	SCSI controller
1	disk 18 GB
1	Onboard network adapter
1	network adapter

The benchmarked and priced system configurations are shown in Figure 1 and Figure 2 in accordance with Clause 8.1.1.7.

Figure 1: Benchmark System Configuration PRIMERGY TX300

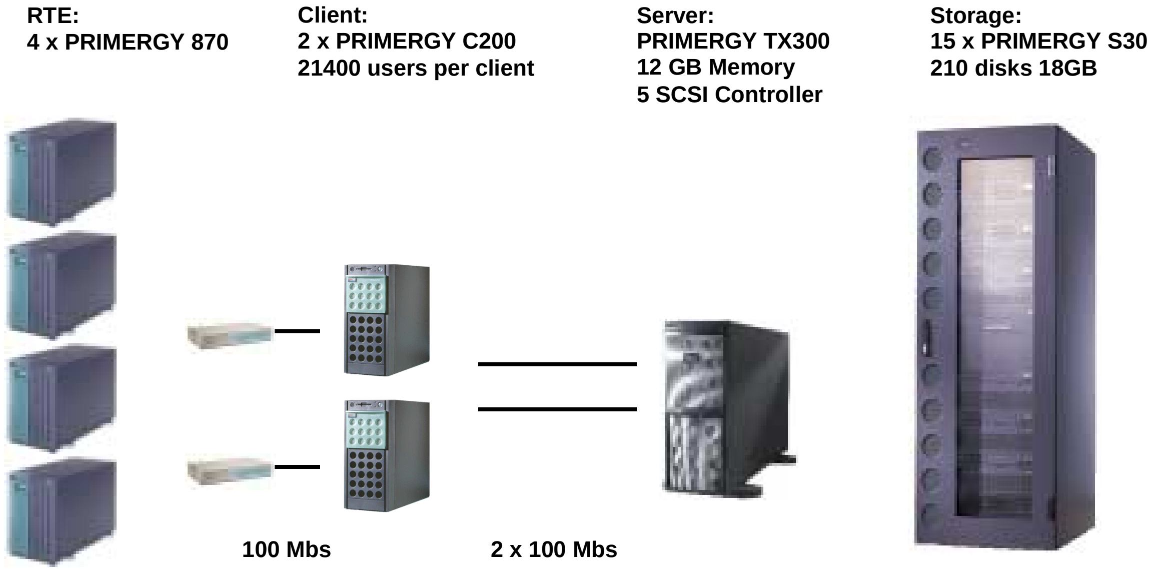
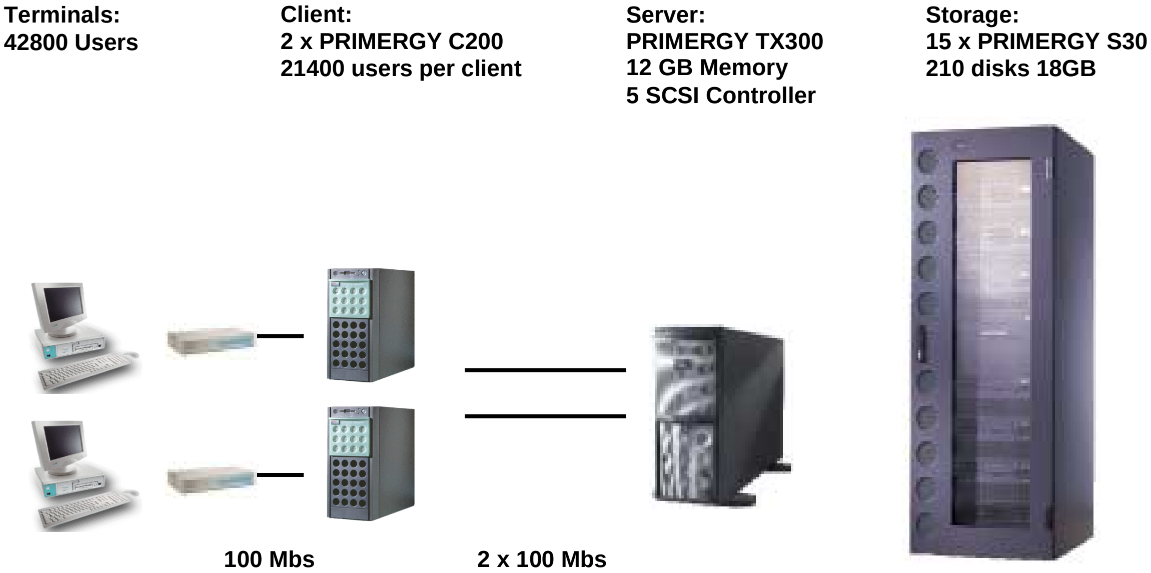


Figure 2: Priced System Configuration PRIMERGY TX300



2. Clause 1 Related Items - Logical Database Design

2.1 **Table Definitions**	*Listings must be provided for all table definition statements and all other statements used to set-up the database. [Clause 8.1.2.1]*

The programs that defined, created, and populated the Microsoft SQL Server 2000 Enterprise Edition SP3 database for this TPC benchmark™ C are listed in Appendix B - Database Details.

2.2 **Physical Organization of Database**	*The physical organization of tables and indices, within the database, must be disclosed. [Clause 8.1.2.2]*

Table 3: Physical Organization of the Database

Controller	Channel 0	Channel 1	Channel 2	Channel 3	RAID	Drive
eXtremeRAID 2000 #0	0-0 1-0 2-0 3-0 4-0 5-0 6-0 7-0	0-1 1-1 2-1 3-1 4-1 5-1 6-1 7-1	2-0 2-1 2-2 2-3 2-4 2-5 2-6 2-8 2-9 2-10 2-11 2-12 2-13 2-14	3-0 3-1 3-2 3-3 3-4 3-5 3-6 3-8 3-9 3-10 3-11 3-12 3-13 3-14	SPAN 0 to 1 RAID1 SPAN 2 to 3 RAID0	L: N:
eXtremeRAID 2000 #1	0-0 0-1 0-2 0-3 0-4 0-5 0-6 0-8 0-9 0-10 0-11 0-12 0-13 0-14	1-0 1-1 1-2 1-3 1-4 1-5 1-6 1-8 1-9 1-10 1-11 1-12 1-13 1-14	2-0 2-1 2-2 2-3 2-4 2-5 2-6 2-8 2-9 2-10 2-11 2-12 2-13 2-14		SPAN 0 to 2 RAID0	E: X:
eXtremeRAID 2000 #2	0-0 0-1 0-2	1-0 1-1 1-2	2-0 2-1 2-2		SPAN 0 to 2 RAID0	F: Y:

	0-3	1-3	2-3			
	0-4	1-4	2-4			
	0-5	1-5	2-5			
	0-6	1-6	2-6			
	0-8	1-8	2-8			
	0-9	1-9	2-9			
	0-10	1-10	2-10			
	0-11	1-11	2-11			
	0-12	1-12	2-12			
	0-13	1-13	2-13			
	0-14	1-14	2-14			
eXtremeRAID	0-0	1-0	2-0		SPAN 0 to 2	G:
2000 #3	0-1	1-1	2-1		RAID0	Z:
	0-2	1-2	2-2			
	0-3	1-3	2-3			
	0-4	1-4	2-4			
	0-5	1-5	2-5			
	0-6	1-6	2-6			
	0-8	1-8	2-8			
	0-9	1-9	2-9			
	0-10	1-10	2-10			
	0-11	1-11	2-11			
	0-12	1-12	2-12			
	0-13	1-13	2-13			
	0-14	1-14	2-14			
eXtremeRAID	0-0	1-0	2-0		SPAN 0 to 2	H:
2000 #4	0-1	1-1	2-1		RAID0	W:
	0-2	1-2	2-2			
	0-3	1-3	2-3			
	0-4	1-4	2-4			
	0-5	1-5	2-5			
	0-6	1-6	2-6			
	0-8	1-8	2-8			
	0-9	1-9	2-9			
	0-10	1-10	2-10			
	0-11	1-11	2-11			
	0-12	1-12	2-12			
	0-13	1-13	2-13			
	0-14	1-14	2-14			

All controllers were configured with write cache disabled. Write cache was enabled on the log drives and disabled on the data drives. Disk types were SCSI 18 GB 15000 rpm.

Space was allocated to Microsoft SQL Server 2000 Enterprise Edition SP3 on SUT disks according to the data in section 5.2. The size of the datafile on each disk drive was calculated to provide even distribution on load across the disk drives. The Windows Disk Manager was used to create raw devices for data/log and NTFS partitions for dump devices. For further information see Appendix B (Disk Usage) and Figure 4 in 5.2 (Distribution of Tables and Log). No attempt was made to alter the default physical organization of the database tables and indices chosen by Microsoft SQL Server 2000 Enterprise Edition SP3 .

2.3 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. [Clause 8.1.2.3]

There were no restrictions on insert and delete operations to any tables.

2.4 Database Partitioning

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

There was no partitioning used in this implementation.

2.5 Replication of Tables

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

Replication of tables was not used in this implementation.

2.6 Additional and/or Duplicated Attributes

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

No additional and/or duplicated attributes were used.

3. Clause 2 Related Items - Transaction and Terminal Profiles

3.1 **Random Number Generator**	*The method of verification for the random number generation must be described. [Clause 8.1.3.1]*

The random number generation was done in Microsoft BenchCraft, which was audited independently.

3.2 **Input/Output Screen Layout**	*The actual layouts of the terminal input/output screens must be disclosed. [Clause 8.1.3.2]*

The screen layout corresponded exactly to those of the TPC-C Standard Specification (specified in Clause 2.4.3, 2.5.3, 2.6.3, 2.7.3, and 2.8.3).

3.3 **Configured Terminal Features**	*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). [Clause 8.1.3.3]*

All of the requirements in clause 2.2.2.4. are supported. This was verified by manually exercising each specification on a PRIMERGY 870.

3.4 **Presentation Managers or Intelligent Terminals**	*Any usage of presentation managers or intelligent terminals must be explained. [Clause 8.1.3.4]*

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

3.5 **Transaction Statistics**	*The numerical quantities which are required are listed in the following table. [Clause 8.1.3.5 to 8.1.3.11]*

Table 4: Transaction Statistics

	Statistics	Percentage
New-Order	Home order-lines	99.00%
	Remote order-lines	1.00%
	Rolled back transactions	0.99%
	Average items per order	10.00
Payment	Home transactions	85.02%
	Remote transactions	14.98%
	Non-primary key access	60.00%
Order-Status	Non-primary key access	60.03
Delivery	Skipped transactions	0
Transaction Mix	New-Order	44.93 %
	Payment	43.00 %
	Order-Status	4.02 %
	Delivery	4.01 %
	Stock-Level	4.03 %

3.6 Queueing Mechanism

The queuing mechanism used to defer the execution of the Delivery transaction must be disclosed. [Clause 8.1.12]

Deferred deliveries are queued by making an entry in an array within the client application process (tpcc.dll). The queued delivery transactions are processed and logged asynchronously by background threads within the application.
The source code is listed in Appendix A - Application Source Code.

4. Clause 3 Related Items - Transaction and System Properties

ACID Tests	*The results of the ACID tests must 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. [Clause 8.1.4.1]*

All ACID tests were performed successfully. The following sections describe the requirements of each of the tests as described in Clause 3 and the approach used to satisfy them.

All ACID tests were performed on the PRIMERGY TX300 system using the fully scaled database, except for the test of durable media failure. This durability test was performed on a database scaled to 450 warehouses. This test would also pass on a fully scaled database.

4.1 **Atomicity**	*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. [Clause 3.2.1]*

Commit Transaction	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. [Clause 3.2.2.1]

The following steps demonstrated atomicity for completed (COMMIT) transactions:

- A row was randomly selected from the warehouse, district and customer table.
- the current balance was noted.
- A payment transaction was executed with the above identifiers and a known amount.
- The transaction was committed.
- It was verified, that the rows contain the correct updated balances.

Rollback Transaction	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 the CUSTOMER, DISTRICT, and WAREHOUSE tables have NOT been changed. [Clause 3.2.2.2]

The following steps demonstrated atomicity for aborted (ROLLBACK) transactions:

- A row was randomly selected from the warehouse, district and customer table.
- the current balance was noted.
- A payment transaction was executed with the above identifiers and a known amount.
- The transaction was rolled back.
- It was verified, that the rows contain the original balances.

4.2 Consistency

Consistency is the property of the application that requires any execution of a database transaction to take the database from one consistent state to another, assuming that the database is initially in a consistent state. [Clause 3.3.1]

Consistency conditions 1 - 4 were tested by issuing queries to the database. The results of the queries verified that the database was consistent for all these tests. The tests were performed before and after the performance run on the same database that was used for the benchmark.

4.3 Isolation

Operations of concurrent transactions must yield results which are indistinguishable from the results which would be obtained by forcing each transaction to be serially executed to completion in some order.

We ran all of the seven isolation tests as described in clause 3.4.2.1 to 3.4.2.7 and additionally the two phantom protection tests. The tests were executed using shell scripts to issue queries to the database. The results of the queries verified that the required isolation had been met.

4.4 Durability

The tested system must guarantee durability: the ability to preserve the effects of committed transactions and insure database consistency after recovery from any one of the failures listed in Clause 3.5.3. [Clause 3.5]

List of single failures

1 Permanent irrecoverable failure of any single durable medium containing TPC-C database tables or recovery log data

2 Instantaneous interruption (system crash / system hang) in processing which requires system reboot to recover

3 Failure of all or part of memory (loss of contents).

[Clause 3.5.3]

The intent of these tests is to demonstrate that all transactions whose output messages have been received at the terminal or RTE have in fact been committed in spite of any single failure from the list in Clause 3.5.3 and that all consistency conditions are still met after the database is recovered.

It is required that the system crash test(s) and the loss of memory test(s) described in Clause 3.5.3.2 and 3.5.3.3 be performed under full terminal load and a fully scaled database. The durable media failure test(s) described in Clause 3.5.3.1 may be performed on a subset of the SUT configuration and database. For the SUT subset, all multiple hardware components, such as processors and disk / controllers in the full SUT configuration, must be represented by the greater of 10% of the configuration or two of each of the multiple hardware components. The database must be scaled to at least 10% of the fully scaled database, with a minimum of two warehouses. ... Furthermore, the standard driving mechanism must be used in this test. The test sponsor must state that to the best of their knowledge, a fully scaled test would also pass all durability tests. [Clause 3.5.4]

The failure of all or part of memory test and the system crash test were combined with the loss of log disk and performed under full load and by using a fully scaled database.

The full hardware configuration of the SUT (in accordance with Clause 3.5.4) and the same test procedure was used during all durability tests, except the test for loss of data.

- The current count of the total number of orders was determined by summing up the D_NEXT_O_ID fields of all rows in the DISTRICT table.

A test was started under full load and a checkpoint executed.

- After 5 min in steady state we pulled off one of the log disks. As we use hardware-mirrored diskpairs with the SCSI-controller, execution continued.
- After additional 5 min we powered of the server to emulate the loss of memory. After server system reboot, SQL-Server was started with flag –T3428 to recover the database tpcc. After completion, we computed the sum of D_NEXT_O_ID from district. Client and RTE systems were interrupted and evaluation started on the RTE. The difference of all D_NEXT_O_ID between RTE an server was in the permitted scope.

The durable media failure test for loss of data disk was performed with 42 of the 196 data disks and a database scaled to 450 warehouses under the load of 4500 users. We used one RTE and all client systems. To the best of the test sponsor's knowledge, a fully loaded and fully scaled database would also pass this durability test.

- The database was backed up.
- The current count of the total number of orders was determined by summing up the D_NEXT_O_ID fields of all rows in the DISTRICT table before the test.
- After 8 min in steady state we pulled of one of the data disks.
- SQL-Server recognized the loss of a device. We dumped the transaction log and removed the database with dropdevice. Then we shut down SQL-Server and the system.
- We replaced the disk and made it online.
- We restarted SQL-Server, no tpcc database and none of its devices were present. We recreated the database, loaded dump and load transaction log
- After completion, we computed the sum of D_NEXT_O_ID from district.
- Client and RTE systems were interrupted and evaluation started on the RTE. The difference of all D_NEXT_O_ID between RTE an server was in the permitted scope.

5. Clause 4 Related Items - Scaling and Database Population

5.1 **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. [Clause 8.1.5.1]*

The database for the PRIMERGY TX300 system was scaled for 4,280 warehouses. The performance run used 4,280 warehouses. In accordance with Clause 4.2, the following number of records were loaded in the specified tables:

Table 5: Number of Rows

Table	Number of Records
Warehouse	4,280
District	42,800
Customer	128,400,000
History	128,400,001
Order	128,400,000
New-Order	38,520,000
Order-Line	1,283,995,844
Stock	528,000,000
Item	100,000
Deleted Warehouses	00

The following constant values were used during the database build and benchmark test for the NURand function:

Table 6: C_LAST value

Constant C	Value
C_LAST (build)	123
C_LAST (run)	233

5.2 **Distribution of Tables and Log**	*The distribution of tables and logs across all media must be explicitly depicted for the tested and priced systems. [Clause 8.1.5.2]*

Table 7: Logical Organization of the Database

Disk	Controller	Disktype	RAID Configuration	Drive Letter	Size MB	Filegroup or Filesystem
0	Onboard SCSI	18 GB	-	System C:	17000	NTFS
1	eXtremeRAID 2000 #0	14 x 18 GB 28 x 18 GB	RAID 1 RAID 0	L: N:	90000 130000	log misc1
2	eXtremeRAID 2000 #1	42 x 18 GB	RAID 0	E: X	61000 250000	cs1 backup1
3	eXtremeRAID 2000 #2	42 x 18 GB	RAID 0	F: Y:	61000 250000	cs2 backup2
4	eXtremeRAID 2000 #3	42 x 18 GB	RAID 0	G: Z:	61000 250000	cs3 backup3
5	eXtremeRAID 2000 #4	42 x 18 GB	RAID 0	H: W:	61000 250000	cs4 backup4

5.3 **Database Model, Interface, and Access Language**	*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/1, 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.* *[Clause 8.1.5.3]*

Microsoft SQL Server 2000 Enterprise Edition SP3 is a Relational DataBase Management System. The interface used was Microsoft SQL Server 2000 Enterprise Edition SP3 stored procedures accessed with Remote Procedure Calls embedded in C code.

5.4 **Database Partitions/Replications Mapping**	*The mapping of database partitions/replications must be explicitly described. [Clause 8.1.5.4]*

There was no partitioning and/or replication used in this implementation.

5.5 **60 day space Calculation**	*Details of the 60-day space computations along with proof that the database is configured to subtain 8 hours of growth for the dynamic tables (Order, Order-Line, and History) must be disclosed (see Clause 4.2.3). [Clause 8.1.5.5]*

Calculations of space requirements in the priced configurations for the 60-day period are provided in Appendix D – Space Calculation.

6. Clause 5 Related Items - Performance Metrics and Response Time

6.1 **Measured tpmC**	*Measured tpmC must be reported. [Clause 8.1.6.1]*

During the 120 minutes measurement period on the PRIMERGY TX300 the throughput measured was 53,691.33 tpmC.

6.2 **Response Times**	*Ninetieth percentile, maximum and average response times must be reported for all transaction types as well as for the Menu response time. [Clause 8.1.6.2]*

Table 8: Response Times

Type	Average	Maximum	90 Percentile
New-Order	0.35	6.42	0.60
Payment	0.28	1.87	0.53
Order-Status	0.30	8.21	0.55
Interactive Delivery	0.11	1.12	0.12
Deferred Delivery	0.18	1.11	0.32
Stock-Level	1.09	3.46	1.60
Menu	0.12	1.47	0.12

6.3 **Keying and Think Times**	*The minimum, the average, and the maximum keying and think times must be reported for each transaction type. [Clause 8.1.6.3]*

Table 9: Keying Times

Keying Times			
Type	**Average**	**Maximum**	**Minimum**
New-Order	18.01	18.03	18.00
Payment	3.01	3.04	3.00
Order-Status	2.01	2.03	2.00
Delivery	2.01	2.03	2.00
Stock-Level	2.01	2.03	2.00

Table 10: Think Times

Think Times			
Type	**Average**	**Maximum**	**Minimum**
New-Order	12.05	120.51	0.000
Payment	12.04	120.51	0.000
Order-Status	10.02	100.50	0.000
Delivery	5.05	50.50	0.000
Stock-Level	5.06	50.50	0.000

6.4 Graphs

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

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

Think Time frequency distribution curves (see Clause 5.6.3) must be reported for each transaction type. [Clause 8.1.6.6]

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

Figure 3: New-Order Response Time Distribution

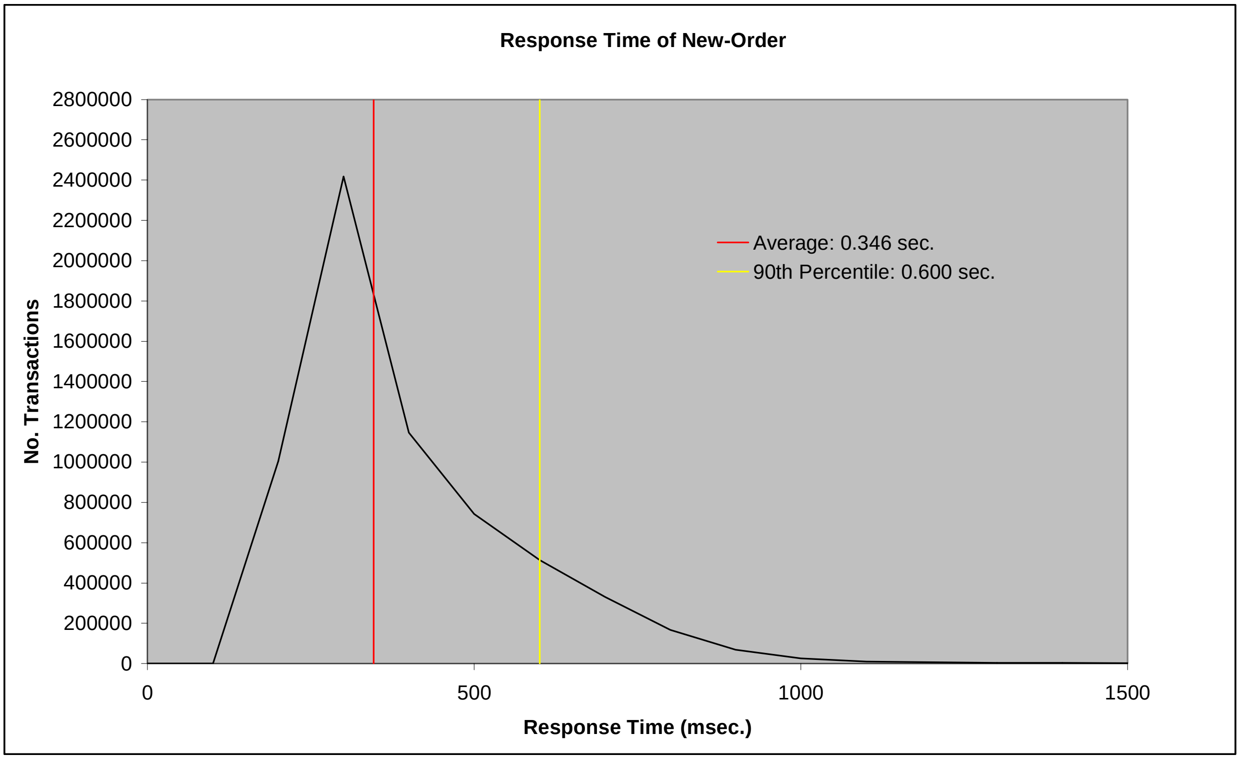


FIGURE 4:PAYMENT RESPONSE TIME DISTRIBUTION

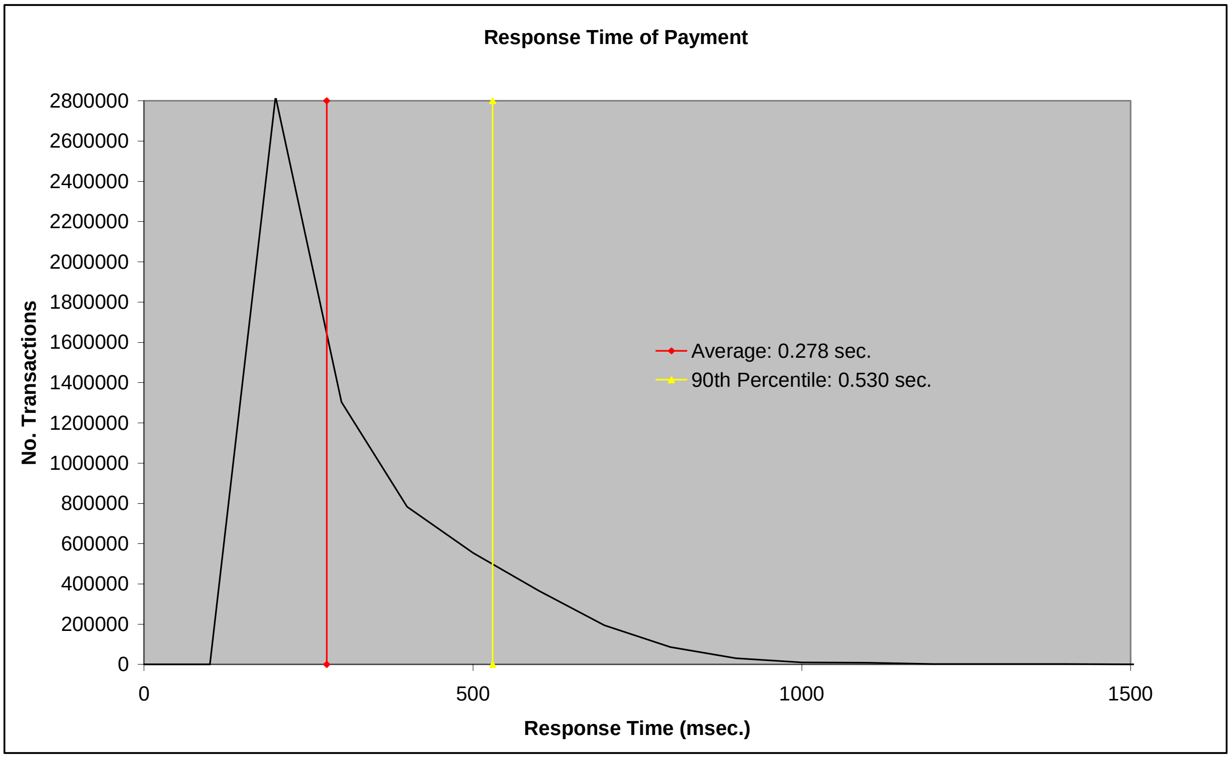


Figure 5:Order-Status Response Time Distribution

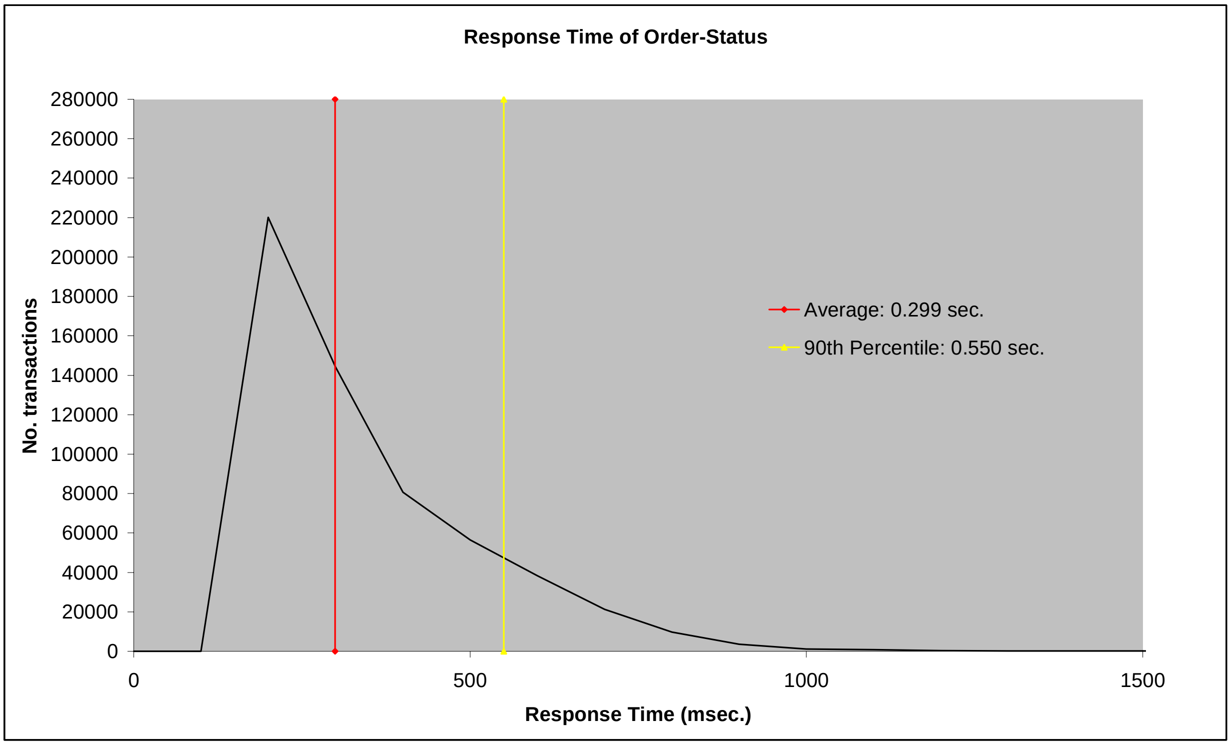


Figure 6: Delivery Response Time Distribution

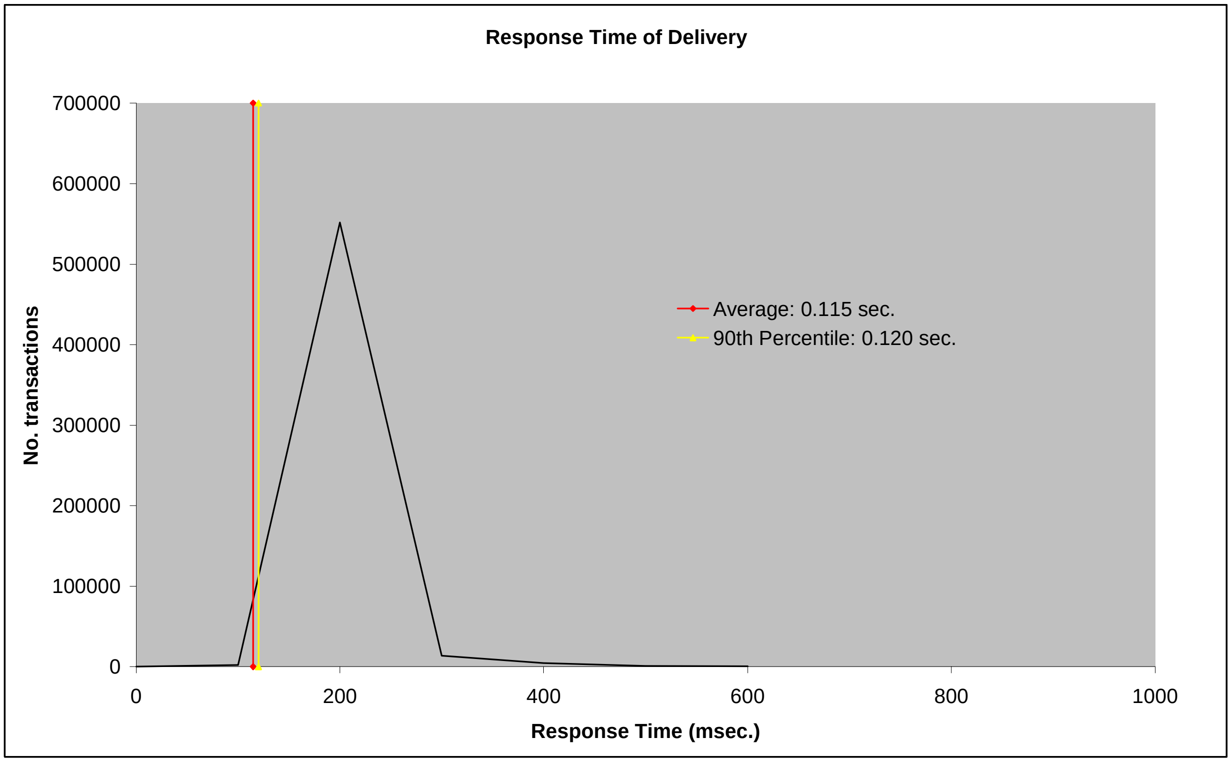


Figure 7: Stock-Level Response Time Distribution

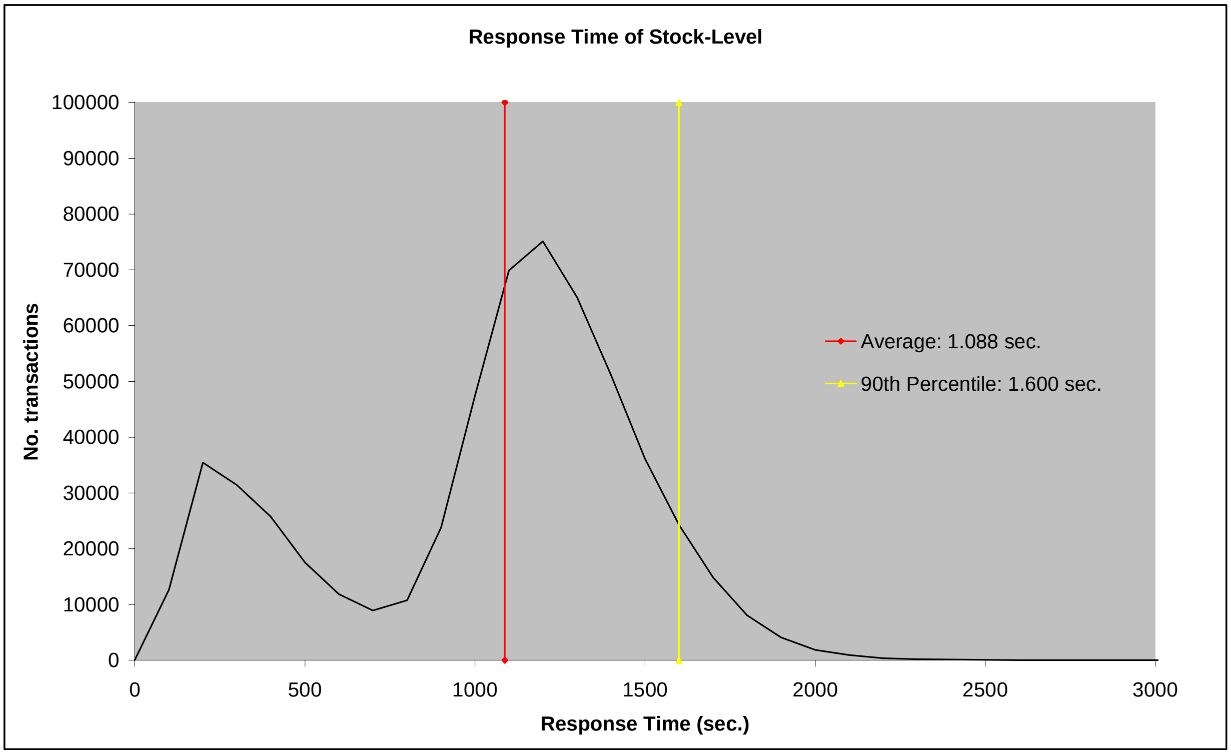


Figure 8: Response Time Versus Throughput

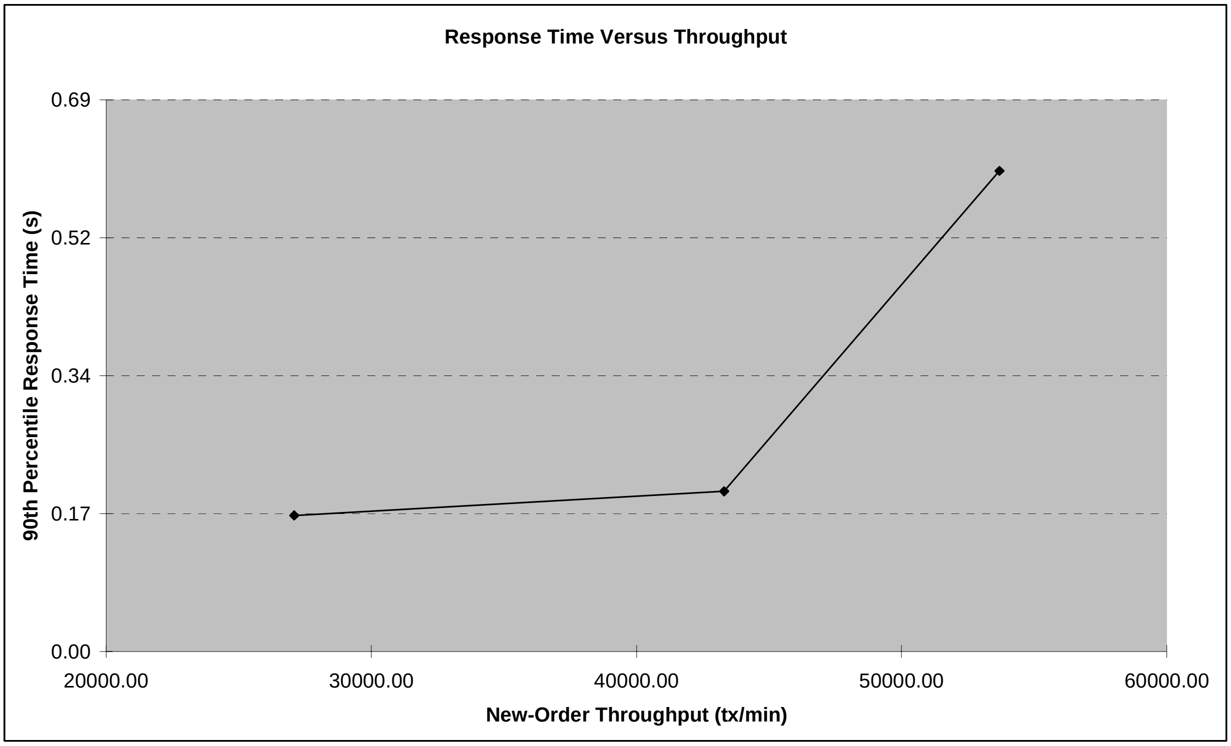


Figure 9: New-Order Think Time Distribution

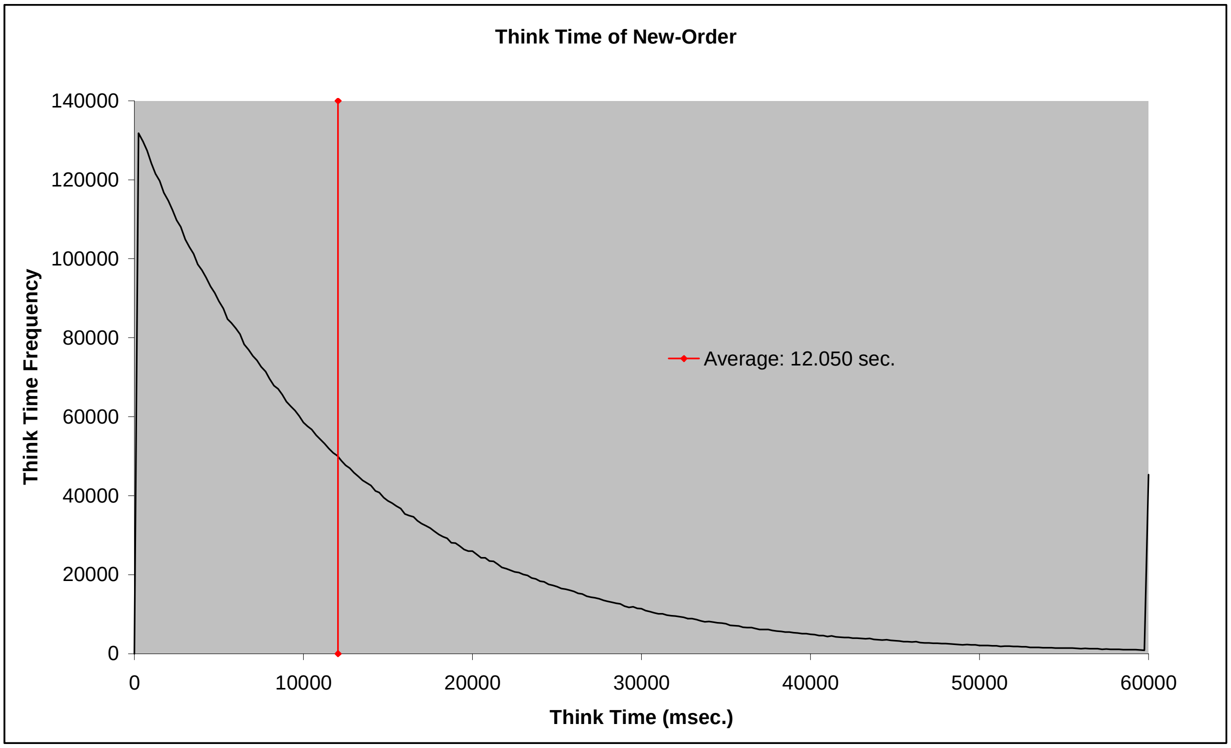
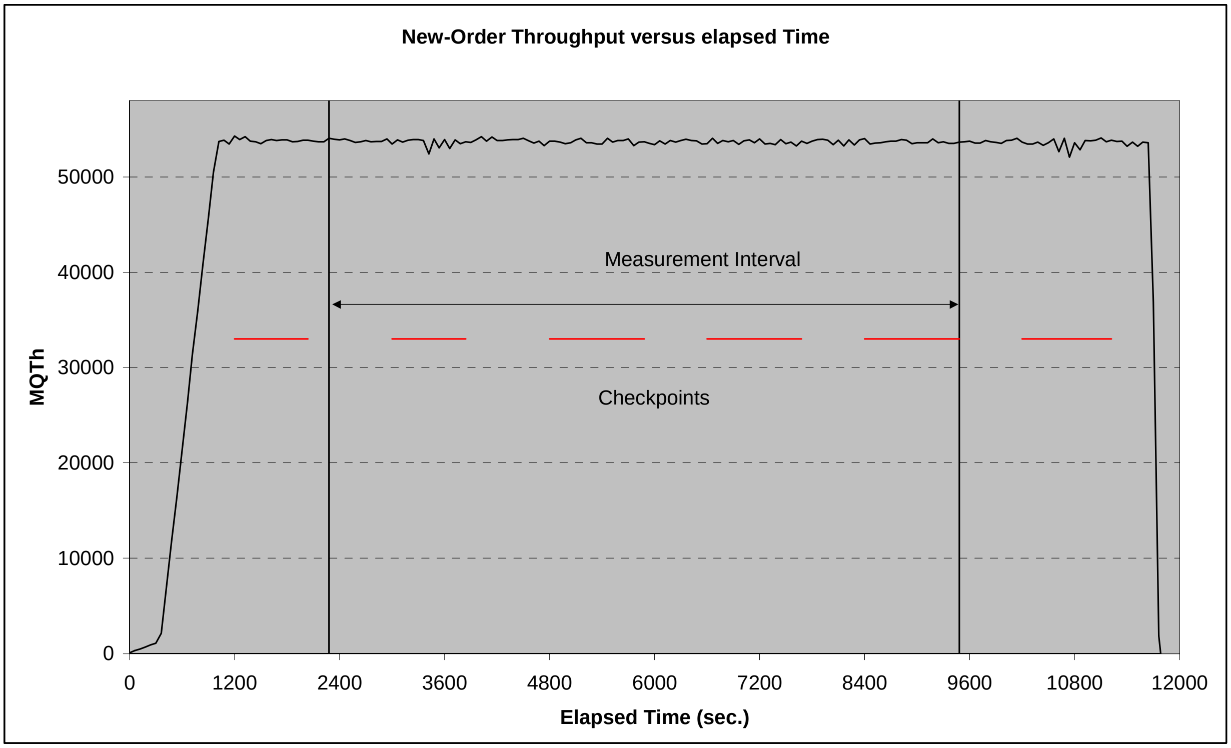


Figure 10: Throughput Versus elapsed Time



6.5 **Steady State Determination**	*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. [Clause 8.1.6.9]*

In all test runs, steady state was achieved before the measurement period began. Steady state was determined to occur based on a visual inspection of tpmC versus time (see graph in section 6.4).

The graph in section 6.4 illustrates that the measurement period was within the steady state period for the run. One checkpoint occurred before and four during the measurement period.

6.6 **Work Performed**	*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. [Clause 8.1.6.10]*

The RTE generated the required input data to choose a transaction from the menu. This data was timestamped and captured in RTE log files before being transmitted. There was one log file for each user. The input screen for the requested transaction was returned and it was also captured and timestamped in the RTE log files. The difference between these two timestamps was the menu response time.

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

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

The RTE transmissions were sent to Internet Information Server running on the client machines through Ethernet LANs. Internet Information Server handled all screen I/O as well as all requests to the database on the server. Internet Information Server communicated with the database server over COM+ which was used as transaction monitor.

All database operations like update, select, delete and insert are performed by one of the TPC-C back end programs. The TPC-C backend program commits the transaction after all the corresponding operations are done.

Modified database buffers are migrated to disk a least-recently-used basis independent of transaction commits. In addition, every block modification is protected by log records. Asynchronously the log buffers are flushed to a log file on disk either when the transaction is committed or when the log buffer's fill state reaches it's limit. The log buffer's always flushed by a commit before it become full.

To perform checkpoints at specific intervals, we wrote a script to schedule multiple checkpoints at specific intervals. By setting the trace flag #3502, SQL Server logged the checkpoint beginning and ending time in the ERRORLOG file. The script included a wait time between each checkpoint equal to a fourth of the measurement interval which was 120 minutes. The checkpoint script was started manually after the RTE had all users logged in and sending transactions.

At each checkpoint, Microsoft SQL Server wrote to disk all memory pages that had been updated but not yet physically written to disk. Upon completion of the checkpoint, Microsoft SQL Server wrote a special record to the recovery log to indicate that all disk operations had been satisfied to this point.

6.7 Duration of Checkpoints

The start time and duration in seconds of at least the four (4) longest checkpoints during the MeasurementInterval must be disclosed (see Clause 5.5.2.2 (2)). [Clause 8.1.6.11]

There was one checkpoint before measurement and four checkpoints during measurement. Starttime and duration of these four checkpoints is listed in the following table:

Table 11: Duration of Checkpoints

Measurement		duration	
Start =	End =	minutes	seconds
10:27:00	12:27:00	120	7200
4 Checkpoints		duration	
Start =	End =	minutes	seconds
10:39:29	10:53:04	13.58	815
11:09:28	11:26:54	17.43	1046
11:39:28	11:56:55	17.45	1047
12:09:27	12:26:57	17.50	1050

6.8 Duration of Measurement

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

The measurement interval of the PRIMERGY TX300 system test was 120 minutes.

6.9 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. [Clause 8.1.6.13]

The transaction mix was regulated by weighted distribution. The chosen weights meet the required minimum percentages of the mix which are described in Clause 5.2.3 of the Standard Specifications. No adjustments were made by the RTE.

6.10 Transaction Mix

The percentage of the total mix for each transaction type must be disclosed. [Clause 8.1.6.14]

Table 12: Transaction Mix

	Percentage
New-Order	44.93 %
Payment	43.00 %
Order-Status	4.02 %
Delivery	4.01 %
Stock-Level	4.03 %

6.11 Transaction Statistics

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

The average number of order-lines entered per New-Order transaction must be disclosed. [Clause 8.1.6.16]

The percentage of remote order-lines entered per New-Order transaction must be disclosed. [Clause 8.1.6.17]

The percentage of remote Payment transactions must be disclosed. [Clause 8.1.6.18]

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

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

The numerical quantities which are required in Clause 8.1.6.15 to 8.1.6.20 are already listed in a table above (see section 3.5).

6.12 Checkpoint Statistics

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. [Clause 8.1.6.21]

The numerical quantities which are required in Clause 8.1.6.21 are already listed above (see section 6.7).

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

7.1 RTE Inputs

If the RTE is commercially available, then its inputs must be specified. Otherwise, a description must be supplied of what inputs (e.g., scripts) to the RTE had been used. [Clause 8.1.7.1]

Microsoft Benchcraft was used as the RTE to emulate the terminals. The input parameters are shown in Appendix C - Tunable Parameters and Options.

7.2 Lost Connections

The number of terminal connections lost during the Measurement Interval must be disclosed (seeClause 6.6.2). [Clause 8.1.7.3]

There were no lost connections during measurement interval.

7.3 Functionality and Performance of 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. [Clause 8.1.7.3]

The Driver System consisted of a PRIMERGY 870. This driver was attached to the client machine through a 100 Mbps ethernet LAN and switch. Since this is exactly the same connectivity as configured in the priced system, no component was emulated. Therefore, the test described in Clause 6.6.3.4 was not required.

7.4 Functional Diagrams of the Benchmarked and Proposed Configuration

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). [Clause 8.1.7.4]

Figure 1 and Figure 2 in section 1.4 show the functional diagrams of the benchmark configuration and the priced configuration.

7.5 Network Configurations of the Tested and Proposed Services

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). [Clause 8.1.7.5]

Figure 1 and Figure 2 in section 1.4 show the network setup of both configurations. The driver replaces the workstations.

In both configurations 2 x 100 Mbps ethernet LAN was used to connect the server with the 2 clients and 100Mbs LAN with switch to connect the RTE systems or 42800 workstations to the clients.

7.6 **Network Bandwidth**	*The bandwidth of the network(s) used in the tested / priced configuration must be disclosed. [Clause 8.1.7.6]*

The ethernet used in the local area network (LAN) between the emulated user system and the front-end system complies with the IEEE 802.3 standard. Its bandwith is 100 Mbps. Between front-end and SUT the bandwidth is 100 Mbps.

7.7 **Operator Intervention**	*If the configuration requires operator intervention (see Clause 6.6.6), the mechanism and the frequency of this intervention must be disclosed. [Clause 8.1.7.7]*

The PRIMERGY TX300 requires no operator intervention to sustain the reported throughput.

8. Clause 7 Related Items - Pricing

8.1 **System Pricing**	*A detailed list of hardware and software used in the priced system must be reported. Each separately orderable item must have vendor part number, description, and release/revision level, and either general availability status or committed delivery 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. [Clause 8.1.8.1]* *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. [Clause 8..1.8.2]*

The details of the hardware and software are reported in the summary in front of this report. Additional quotation letters can be found in Appendix E - Price Quotations.

8.2 **Availability Dates**	*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. [Clause 8.1.8.3]*

All hardware and software components used in the price calculations of the PRIMERGY TX300 system will be generally available as of September 1, 2003.

8.3 **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. [Clause 8.1.8.4]*

PRIMERGY TX300 system was measured at 53,691.33 tpmC with Microsoft SQL Server 2000 Enterprise Edition SP3 with a 3-year system price of $ 205,056. The respective price/performance for the PRIMERGY TX300 is $ 3.82/tpmC. The priced PRIMERGY TX300 will be available as of September 1, 2003.

8.4 **Country Specific Pricing**	*Additional Clause 7 related items may be included in the Full Disclosure Report for each country specific priced configuration. Country specifiv pricing is subject to Clause 7.1.7 [Clause 8.1.8.5]*

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

8.5 **Usage Pricing**	*For any usage pricing, the sponsor must diclose:* • *Usage level at which the component was priced.* • *A statement of the company policy allowing such pricing.* *[Clause 8.1.8.6]*

The component pricing based on usage is shown below:

- One Microsoft SQL Server 2000 Enterprise Edition SP3
- One Microsoft Windows Server 2003 Enterprise Edition
- 2 Microsoft Windows Server 2003 Standard Edition
- One Microsoft Visual C++

9. Clause 8 Related Items - Audit

9.1 **Auditor**	*The auditor's name, address, phone number, and a copy of the auditor's attestation letter indicating compliance must be included in the Full Disclosure Report.* *A review of the pricing model is required to ensure that all components required are priced (see Clause 9.2.8). The auditor is not required to review the final Full Disclosure Report or the final pricing prior to issuing the attestation letter. [Clause 8.1.9]*

The benchmark test of the PRIMERGY TX300 system with Microsoft SQL Server 2000 Enterprise Edition SP3 was independently audited by:

Francois Raab, TPC certified auditors of Infosizing.
The attestation letter is included in Appendix F.

Requests for this TPC-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

or

Fujitsu Siemens Computers
ES PS DS 3
PRIMERGY Server Performance Lab
Mr. Simon
Heinz-Nixdorf-Ring 1
33106 Paderborn
Germany

Appendix A - Application Source Code

```
LIBRARY TPCC.DLL

EXPORTS

     GetExtensionVersion  @1
     HttpExtensionProc    @2
     TerminateExtension   @3


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

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

#define TP_MAX_RETRIES                                   50


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

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


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

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

     CTPCC_BASE *pTxn;

} CLIENTDATA, *PCLIENTDATA;


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

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


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

class CWEBCLNT_ERR : public CBaseErr
{
     public:

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

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

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

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

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

};

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

//function prototypes

BOOL APIENTRY DllMain(HANDLE hModule, DWORD ul_reason_for_call, LPVOID
lpReserved);
void WriteMessageToEventLog(LPTSTR lpszMsg);
void ProcessQueryString(EXTENSION_CONTROL_BLOCK *pECB, int *pCmd, int
*pFormId, int *pTermId, int *pSyncId);
void WelcomeForm(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer);
void SubmitCmd(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer);
void BeginCmd(EXTENSION_CONTROL_BLOCK *pECB, int iFormId, int iTermId);
void ProcessCmd(EXTENSION_CONTROL_BLOCK *pECB, int iFormId, int iTermId);
void StatsCmd(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer);
void ErrorMessage(EXTENSION_CONTROL_BLOCK *pECB, int iError, int iErrorType,
char *szMsg, int iTermId);
void GetKeyValue(char **pQueryString, char *pKey, char *pValue, int iMax,
WEBERROR err);
int  GetIntKeyValue(char **pQueryString, char *pKey, WEBERROR NoKeyErr,
WEBERROR NotIntErr);
void TermInit(void);
void TermDeleteAll(void);
int  TermAdd(void);
void TermDelete(int id);
void ErrorForm(EXTENSION_CONTROL_BLOCK *pECB, int iType, int iErrorNum, int
iTermId, int iSyncId, char *szErrorText, char *szBuffer );
void MakeMainMenuForm(int iTermId, int iSyncId, char *szForm);
void MakeStockLevelForm(int iTermId, STOCK_LEVEL_DATA *pStockLevelData, BOOL
bInput, char *szForm);
void MakeNewOrderForm(int iTermId, NEW_ORDER_DATA *pNewOrderData, BOOL
bInput, char *szForm);
void MakePaymentForm(int iTermId, PAYMENT_DATA *pPaymentData, BOOL bInput,
char *szForm);
void MakeOrderStatusForm(int iTermId, ORDER_STATUS_DATA *pOrderStatusData,
BOOL bInput, char *szForm);
void MakeDeliveryForm(int iTermId, DELIVERY_DATA *pDeliveryData, BOOL
bInput, char *szForm);
void ProcessNewOrderForm(EXTENSION_CONTROL_BLOCK    *pECB, int iTermId, char
*szBuffer);
void ProcessPaymentForm(EXTENSION_CONTROL_BLOCK *pECB, int iTermId, char
*szBuffer);
void ProcessOrderStatusForm(EXTENSION_CONTROL_BLOCK *pECB, int iTermId, char
*szBuffer);
void ProcessDeliveryForm(EXTENSION_CONTROL_BLOCK *pECB, int iTermId, char
*szBuffer);
void ProcessStockLevelForm(EXTENSION_CONTROL_BLOCK *pECB, int iTermId, char
*szBuffer);
void GetNewOrderData(LPSTR lpszQueryString, NEW_ORDER_DATA *pNewOrderData);
void GetPaymentData(LPSTR lpszQueryString, PAYMENT_DATA *pPaymentData);
void GetOrderStatusData(LPSTR lpszQueryString, ORDER_STATUS_DATA
*pOrderStatusData);
BOOL PostDeliveryInfo(short w_id, short o_carrier_id);
BOOL IsNumeric(char *ptr);
BOOL IsDecimal(char *ptr);
void DeliveryWorkerThread(void *ptr);

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

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

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

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

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

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

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

#endif    // !_MAC


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

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

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

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

#endif    // APSTUDIO_INVOKED


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

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


////////////////////////////////////////////////////////////////////////////
/
//
// DESIGNINFO
//
```

```

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

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



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


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


/*   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 <stdarg.h>
```

```
#include <malloc.h>
#include <stdlib.h>
#include <string.h>
#include <time.h>
#include <sys\timeb.h>
#include <io.h>
#include <assert.h>

#include <sqltypes.h>

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

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

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

// Database layer includes
#include "..\..\db_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 Make<Txn>Form calls to distinguish input and output flavors
#define    OUTPUT_FORM     0
#define INPUT_FORM   1

char       szMyComputerName[MAX_COMPUTERNAME_LENGTH+1];

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

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

static     CRITICAL_SECTION          TermCriticalSection;

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

TYPE_CTPCC_DBLIB     *pCTPCC_DBLIB_new;
TYPE_CTPCC_ODBC      *pCTPCC_ODBC_new;
TYPE_CTPCC_TUXEDO    *pCTPCC_TUXEDO_new;
TYPE_CTPCC_ENCINA   *pCTPCC_ENCINA_new;
TYPE_CTPCC_ENCINA   *pCTPCC_ENCINA_post_init;
TYPE_CTPCC_COM       *pCTPCC_COM_new;

// For deferred Delivery txns:

CTxnLog                         *txnDelilog = NULL;            //used to log
delivery transaction information

HANDLE                          hWorkerSemaphore     = INVALID_HANDLE_VALUE;
HANDLE                          hDoneEvent           = INVALID_HANDLE_VALUE;
HANDLE                          *pDeliHandles        = NULL;

// configuration settings from registry
TPCCREGISTRYDATA          Reg;


DWORD                     dwNumDeliveryThreads = 4;
CRITICAL_SECTION          DelBuffCriticalSection;        //critical section
for delivery transactions cache
DELIVERY_TRANSACTION *pDelBuff            = NULL;
DWORD                     dwDelBuffSize        = 100;          // size of
circular buffer for delivery txns
DWORD                     dwDelBuffFreeCount;                  // number of
buffers free
DWORD                     dwDelBuffBusyIndex   = 0;       // index position
of entry waiting to be delivered
DWORD                     dwDelBuffFreeIndex   = 0;       // index position
of unused entry

#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
 *                   DWORDul_reason_for_call   reason for call
 *                   LPVOID    lpReserved          reserved for future use
 *
 * RETURNS:          BOOL FALSE               errors occured in
initialization
 *                              TRUE                DLL successfully
initialized
 */

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

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

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

                    DisableThreadLibraryCalls((HMODULE)hModule);
                    InitializeCriticalSection(&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 connection
                     if ((Reg.eTxnMon == None) || (dwNumDeliveryThreads >
0))
                     {
                         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)
                    {
                         // for deferred delivery txns:
                         hDoneEvent = 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%2.2d.log",
                                      Reg.szPath, Time.wYear % 100,
Time.wMonth, Time.wDay, Time.wHour, 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];
                         pDelBuff = new
DELIVERY_TRANSACTION[dwDelBuffSize];
                         // launch DeliveryWorkerThread to perform actual
delivery txns
                         for(i=0; i<dwNumDeliveryThreads; i++)
                         {
                              pDeliHandles[i] = (HANDLE) _beginthread(
DeliveryWorkerThread, 0, NULL );
                              if (pDeliHandles[i] == INVALID_HANDLE_VALUE)
                                   throw new CWEBCLNT_ERR(
ERR_DELIVERY_THREAD_FAILED );
                         }
                    }

                    break;

               case DLL_PROCESS_DETACH:
                    if (dwNumDeliveryThreads)
                    {
                         if (txnDelilog != NULL)
                         {
                              //write event into txn log for STOP
                              txnDelilog->WriteCtrlRecToLog(TXN_EVENT_STOP,
szMyComputerName, sizeof(szMyComputerName));

                              // This will do a clean shutdown of the
delivery log file
                              CTxnLog    *txnDelilogLocal = txnDelilog;
                              txnDelilog= NULL;
                              delete txnDelilogLocal;
                         }

                         delete [] pDeliHandles;
                         delete [] pDelBuff;

                         CloseHandle( hWorkerSemaphore );
                         CloseHandle( hDoneEvent );
                         DeleteCriticalSection(&DelBuffCriticalSection);
                    }
                    DeleteCriticalSection(&TermCriticalSection);

                    if (hLibInstanceTm != NULL)
                         FreeLibrary( hLibInstanceTm );
                    hLibInstanceTm = NULL;

                    if (hLibInstanceDb != NULL)
                         FreeLibrary( 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);
     lstrcpyn(pVer->lpszExtensionDesc, "TPC-C Server.",
HSE_MAX_EXT_DLL_NAME_LEN);
```

```
     // TODO: why do we need this here instead of in the DLL attach?
     if (Reg.eTxnMon == ENCINA)
          pCTPCC_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 (pDeliHandles)
     {
          SetEvent( hDoneEvent );
          for(DWORD i=0; i<dwNumDeliveryThreads; i++)
               WaitForSingleObject( pDeliHandles[i], INFINITE );
     }

     TermDeleteAll();
     return TRUE;
}


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

DWORD WINAPI HttpExtensionProc(EXTENSION_CONTROL_BLOCK *pECB)
{
     int             iCmd, FormId, TermId, iSyncId;
     char       szBuffer[4096];
     int            lpbSize;
     static char    szHeader[] = "200 Ok";
     DWORD     dwSize = 6;         // 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
               MakeNewOrderForm(TermId, NULL, INPUT_FORM, szBuffer);
               break;
          case 3:
               // payment selected from menu; display payment input form
               MakePaymentForm(TermId, NULL, INPUT_FORM, szBuffer);
               break;
          case 4:
               // delivery selected from menu; display delivery input form
               MakeDeliveryForm(TermId, NULL, INPUT_FORM, szBuffer);
               break;
          case 5:
               // order-status selected from menu; display order-status
input form
               MakeOrderStatusForm(TermId, NULL, INPUT_FORM, szBuffer);
               break;
          case 6:
               // stock-level selected from menu; display stock-level input
form
               MakeStockLevelForm(TermId, NULL, INPUT_FORM, szBuffer);
               break;
          case 7:
               // ExitCmd
               TermDelete(TermId);
               WelcomeForm(pECB, szBuffer);
               break;
          case 8:
               SubmitCmd(pECB, szBuffer);
               break;
          case 9:
               // menu
               MakeMainMenuForm(TermId, Term.pClientData[TermId].iSyncId,
szBuffer);
               break;
          case 10:
               // CMD=Clear
               // resets all connections; should only be used when no other
connections are active
               TermDeleteAll();
               TermInit();
```

```
                WelcomeForm(pECB, szBuffer);
                break;
           case 11:  // CMD=Stats
                StatsCmd(pECB, szBuffer);
                break;
           }
      }
      catch (CBaseErr *e)
      {
           ErrorForm( pECB, e->ErrorType(), e->ErrorNum(), TermId, iSyncId,
e->ErrorText(), szBuffer );
           delete e;
      }
      catch (...)
      {
           ErrorForm( pECB, ERR_TYPE_WEBDLL, 0, TermId, iSyncId, "Error:
Unhandled exception in Web Client.", szBuffer );
      }

#ifdef ICECAP
      StopCAP();
#endif


      lpbSize = strlen(szBuffer);
      wsprintf(szHeader1,
                "Content-Type: text/html\r\n"
                "Content-Length: %d\r\n"
                "Connection: Keep-Alive\r\n\r\n" , lpbSize);
      strcat( szHeader1, szBuffer );

      (*pECB->ServerSupportFunction)(pECB->ConnID,
HSE_REQ_SEND_RESPONSE_HEADER, szHeader, (LPDWORD) &dwSize,
(LPDWORD)szHeader1);

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


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

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

    _stprintf(szMsg, TEXT("Error in TPCC.DLL: "));
    lpszStrings[0] = szMsg;
    lpszStrings[1] = lpszMsg;
```

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

        (VOID) DeregisterEventSource(hEventSource);
    }
}


/* FUNCTION: DeliveryWorkerThread
 *
 * PURPOSE:     This function processes deferred delivery txns.  There are
typically several
 *              threads running this routine.  The number of threads is
determined by an entry
 *              read from the registry.  The thread waits for work by waiting
on semaphore.
 *              When a delivery txn is posted, the semaphore is released.
After processing
 *              the delivery txn, information is logged to record the txn
status and execution
 *              time.
 */

/*static*/ void DeliveryWorkerThread(void *ptr)
{
     CTPCC_BASE      *pTxn = NULL;

     DELIVERY_TRANSACTION      delivery;
     PDELIVERY_DATA                 pDeliveryData;
     TXN_RECORD_TPCC_DELIV_DEF txnDeliRec;

     DWORD                     index;
     HANDLE                         handles[2];

     SYSTEMTIME      trans_end;      //delivery transaction finished time
     SYSTEMTIME      trans_start;    //delivery transaction start time

     assert(txnDelilog != NULL);

     try
     {
          if (Reg.eDB_Protocol == ODBC)
               pTxn = pCTPCC_ODBC_new( Reg.szDbServer, Reg.szDbUser,
Reg.szDbPassword, szMyComputerName, Reg.szDbName );
```

```
          else if (Reg.eDB_Protocol == DBLIB)
               pTxn = pCTPCC_DBLIB_new( Reg.szDbServer, Reg.szDbUser,
Reg.szDbPassword, szMyComputerName, Reg.szDbName );
          pDeliveryData = pTxn->BuffAddr_Delivery();
     }
     catch (CBaseErr *e)
     {
          char szTmp[1024];
          wsprintf( szTmp, "Error in Delivery Txn thread.  Could not connect
to database.  "
                    "%s.  Server=%s, User=%s, Password=%s, Database=%s",
                    e->ErrorText(), Reg.szDbServer, Reg.szDbUser,
Reg.szDbPassword, Reg.szDbName );
          WriteMessageToEventLog( szTmp );
          delete e;
          goto ErrorExit;
     }
     catch (...)
     {
          WriteMessageToEventLog(TEXT("Unhandled exception caught in
DeliveryWorkerThread."));
          goto ErrorExit;
     }

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

                    ZeroMemory(&txnDeliRec, sizeof(txnDeliRec));
                    txnDeliRec.TxnType = TXN_REC_TYPE_TPCC_DELIV_DEF;

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

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

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

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

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

                    if (txnDelilog != NULL)
                         txnDelilog->WriteToLog(&txnDeliRec);
               }
          }
          catch (CBaseErr *e)
          {
               char szTmp[1024];
               wsprintf( szTmp, "Error in Delivery Txn thread.  %s", e-
>ErrorText() );
               WriteMessageToEventLog( szTmp );

               // log the error txn
               txnDeliRec.TxnStatus = e->ErrorType();
               if (txnDelilog != NULL)
                    txnDelilog->WriteToLog(&txnDeliRec);

               delete e;
          }
          catch (...)
          {
               // unhandled exception; shouldn't happen; not much we can
do...
               WriteMessageToEventLog(TEXT("Unhandled exception caught in
DeliveryWorkerThread."));
          }
     }

ErrorExit:
     delete pTxn;
     _endthread();
}
```

```
/* FUNCTION: PostDeliveryInfo
 *
 * PURPOSE:     This function enters the delivery txn into the deferred
delivery buffer.
 *
 * RETURNS:          BOOL FALSE delivery information posted successfully
 *                              TRUE error cannot post delivery info
 */

BOOL PostDeliveryInfo(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 relevent information out of the
http command passed in from
 *              the browser.
 *
 * COMMENTS:    If this is the initial connection i.e. client is at welcome
screen then
 *                   there will not be a terminal id or current form id.  If
this is the case
```

```
 *                   then the pTermid and pFormid return values are
undefined.
 */

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

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

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

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

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

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

     // see which command it matches
     for(i=0; ; i++)
     {
          if (szCmds[i][0] == 0)
               // no more; no match; return error
               throw new CWEBCLNT_ERR( ERR_COMMAND_UNDEFINED );
          if ( !strcmp(szCmds[i], szBuffer) )
          {
               *pCmd = i+1;
               break;
          }
     }
}

/* FUNCTION: void WelcomeForm
 *
 */

void WelcomeForm(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer)
```

```
{
     char szTmp[1024];

     //welcome to tpc-c html form buffer, this is first form client sees.
     strcpy( szBuffer,    "<HTML><HEAD><TITLE>TPC-C Web
Client</TITLE></HEAD><BODY>"
                              "<B><BIG>Microsoft TPC-C Web Client (ver
4.20)</BIG></B> <BR> <BR>"
                              "<font face=\"Courier New\"><PRE>"
                              "Compiled: "__DATE__", "__TIME__" <BR>"
                              "Source:   "__FILE__" ("__TIMESTAMP__") <BR>"
                              "</PRE></font>"
                              "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
                              "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"0\">"
                              "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"
                              "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"1\">"
                              "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"0\">"
                              "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"0\">"
                              "<INPUT TYPE=\"hidden\" NAME=\"VERSION\"
VALUE=\"" WEBCLIENT_VERSION "\">"
               );

     sprintf( szTmp, "Configuration Settings: <BR><font face=\"Courier New\"
color=\"blue\"><PRE>"
                         "Txn Monitor            = <B>%s</B><BR>"
                         "Database protocol      = <B>%s</B><BR>"
                         "Max Connections        = <B>%d</B><BR>"
                         "# of Delivery Threads  = <B>%d</B><BR>"
                         "Max Pending Deliveries = <B>%d</B><BR>"
               , szTxnMonNames[Reg.eTxnMon], szDBNames[Reg.eDB_Protocol],
               Reg.dwMaxConnections, dwNumDeliveryThreads, dwDelBuffSize );
     strcat( szBuffer, szTmp);

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

     if (Reg.eTxnMon == None)
          // connection options may be specified when not using a txn
monitor
          sprintf( szTmp, "Please enter your database options for this
connection:<BR>"
                              "<font face=\"Courier New\"
color=\"blue\"><PRE>"
                              "DB Server    = <INPUT NAME=\"db_server\"
SIZE=20 VALUE=\"%s\"><BR>"
                              "DB User ID   = <INPUT NAME=\"db_user\"
SIZE=20 VALUE=\"%s\"><BR>"
                              "DB Password  = <INPUT NAME=\"db_passwd\"
SIZE=20 VALUE=\"%s\"><BR>"
                              "DB Name      = <INPUT NAME=\"db_name\"
SIZE=20 VALUE=\"%s\"><BR>"
                              "</PRE></font>"
                     , Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword,
Reg.szDbName );
     else
          // if using a txn monitor, connection options are determined from
registry; can't
          // set per user.  show options fyi
          sprintf( szTmp, "Database options which will be used by the
transaction monitor:<BR>"
                              "<font face=\"Courier New\"
color=\"blue\"><PRE>"
                              "DB Server              = <B>%s</B><BR>"
                              "DB User ID             = <B>%s</B><BR>"
                              "DB Password            = <B>%s</B><BR>"
                              "DB Name                = <B>%s</B><BR>"
                              "</PRE></font>"
                     , Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword,
Reg.szDbName );
     strcat( szBuffer, szTmp);

     sprintf( szTmp, "Please enter your Warehouse and District for this
session:<BR>"
                         "<font face=\"Courier New\" color=\"blue\"><PRE>"
);
     strcat( szBuffer, szTmp);
     strcat( szBuffer,    "Warehouse ID = <INPUT NAME=\"w_id\" SIZE=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->lpszQueryString;
     char szVersion[32]   = { 0 };
     char szServer[32]    = { 0 };
     char szUser[32]      = "sa";
     char szPassword[32]  = { 0 };
     char szDatabase[32]  = "tpcc";

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

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

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

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


     iNewTerm = TermAdd();

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

     try
     {
          if (Reg.eTxnMon == TUXEDO)
               Term.pClientData[iNewTerm].pTxn = 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);
          throw;          // pass exception upward
     }

     MakeMainMenuForm(iNewTerm, Term.pClientData[iNewTerm].iSyncId,
szBuffer);
}

/* FUNCTION: StatsCmd
 *
 * PURPOSE:     This function returns to the browser the total number of
active terminal ids.
 *              This routine is for development/debugging purposes.
 *
 */

void StatsCmd(EXTENSION_CONTROL_BLOCK *pECB, char *szBuffer)
{
     int i;
     int  iTotal;

     EnterCriticalSection(&TermCriticalSection);

     iTotal = 0;
     for(i=0; i<Term.iNumEntries; i++)
     {
          if (Term.pClientData[i].iNextFree == -1)
               iTotal++;
     }

     LeaveCriticalSection(&TermCriticalSection);

     wsprintf( szBuffer,
               "<HTML><HEAD><TITLE>TPC-C Web Client Stats</TITLE></HEAD>"
               "<BODY><B><BIG> Total Active Connections: %d
</BIG></B><BR></BODY></HTML>"
               , iTotal );
}

char *CWEBCLNT_ERR::ErrorText()
{
     static SERRORMSG errorMsgs[] =
     {
          {    ERR_COMMAND_UNDEFINED,                                "Command
undefined."                                                                     },
          {    ERR_D_ID_INVALID,                                     "Invalid
District ID Must be 1 to 10."                                             },
          {    ERR_DELIVERY_CARRIER_ID_RANGE,                   "Delivery Carrier
ID out of range must be 1 - 10."                                  },
          {    ERR_DELIVERY_CARRIER_INVALID,                    "Delivery Carrier
ID invalid must be numeric 1 - 10."                          },
          {    ERR_DELIVERY_MISSING_OCD_KEY,                    "Delivery missing
Carrier ID key \"OCD*\"."                                         },
          {    ERR_DELIVERY_THREAD_FAILED,                           "Could not
start delivery worker thread."                                         },
          {    ERR_GETPROCADDR_FAILED,                               "Could not
map proc in DLL.  GetProcAddr error.  DLL="                            },
          {    ERR_HTML_ILL_FORMED,                             "Required key field
is missing from HTML string."                                },
          {    ERR_INVALID_SYNC_CONNECTION,                     "Invalid Terminal
Sync ID."                                                              },
          {    ERR_INVALID_TERMID,                                   "Invalid
Terminal ID."                                                                   },
          {    ERR_LOADDLL_FAILED,                                   "Load of DLL
failed.  DLL="                                                            },
          {    ERR_MAX_CONNECTIONS_EXCEEDED,                    "No connections
available.  Max Connections is probably too low."   },
          {    ERR_MISSING_REGISTRY_ENTRIES,                    "Required registry
entries are missing.  Rerun INSTALL to correct."     },
          {    ERR_NEWORDER_CUSTOMER_INVALID,                   "New Order customer
id invalid data type, range = 1 to 3000."      },
          {    ERR_NEWORDER_CUSTOMER_KEY,                       "New Order missing
Customer key \"CID*\"."                                           },
          {    ERR_NEWORDER_DISTRICT_INVALID,                   "New Order District
ID Invalid range 1 - 10."                                    },
          {    ERR_NEWORDER_FORM_MISSING_DID,                   "New Order missing
District key \"DID*\"."                                           },
          {    ERR_NEWORDER_ITEMID_INVALID,                     "New Order Item Id
is wrong data type, must be numeric."                        },
          {    ERR_NEWORDER_ITEMID_RANGE,                       "New Order Item Id
is out of range. Range = 1 to 999999."                       },
          {    ERR_NEWORDER_ITEMID_WITHOUT_SUPPW,               "New Order Item_Id
field entered without a corresponding Supp_W." },
          {    ERR_NEWORDER_MISSING_IID_KEY,                    "New Order missing
Item Id key \"IID*\"."                                            },
          {    ERR_NEWORDER_MISSING_QTY_KEY,                    "New Order Missing
Qty key \"Qty##*\"."                                              },
          {    ERR_NEWORDER_MISSING_SUPPW_KEY,                  "New Order missing
Supp_W key \"SP##*\"."                                            },
          {    ERR_NEWORDER_NOITEMS_ENTERED,                    "New Order No order
lines entered."                                                   },
          {    ERR_NEWORDER_QTY_INVALID,                        "New Order Qty
invalid must be numeric range 1 - 99."                            },
          {    ERR_NEWORDER_QTY_RANGE,                               "New Order
Qty is out of range. Range = 1 to 99."                                 },
          {    ERR_NEWORDER_QTY_WITHOUT_SUPPW,                  "New Order Qty
field entered without a corresponding Supp_W."      },
```

```
          {    ERR_NEWORDER_SUPPW_INVALID,                           "New Order
Supp_W invalid data type must be numeric."                             },
          {    ERR_NO_SERVER_SPECIFIED,                         "No Server name
specified."                                                                 },
          {    ERR_ORDERSTATUS_CID_AND_CLT,                     "Order Status Only
Customer ID or Last Name may be entered, not both."  },
          {    ERR_ORDERSTATUS_CID_INVALID,                     "Order Status
Customer ID invalid, range must be numeric 1 - 3000."     },
          {    ERR_ORDERSTATUS_CLT_RANGE,                       "Order Status
Customer last name longer than 16 characters."      },
          {    ERR_ORDERSTATUS_DID_INVALID,                     "Order Status
District invalid, value must be numeric 1 - 10."          },
          {    ERR_ORDERSTATUS_MISSING_CID_CLT,                 "Order Status
Either Customer ID or Last Name must be entered."         },
          {    ERR_ORDERSTATUS_MISSING_CID_KEY,                 "Order Status
missing Customer key \"CID*\"."                                   },
          {    ERR_ORDERSTATUS_MISSING_CLT_KEY,                 "Order Status
missing Customer Last Name key \"CLT*\"."                         },
          {    ERR_ORDERSTATUS_MISSING_DID_KEY,                 "Order Status
missing District key \"DID*\"."                                   },
          {    ERR_PAYMENT_CDI_INVALID,                         "Payment Customer
district invalid must be numeric."                           },
          {    ERR_PAYMENT_CID_AND_CLT,                         "Payment Only
Customer ID or Last Name may be entered, not both."  },
          {    ERR_PAYMENT_CUSTOMER_INVALID,                    "Payment Customer
data type invalid, must be numeric."                         },
          {    ERR_PAYMENT_CWI_INVALID,                         "Payment Customer
Warehouse invalid, must be numeric."                         },
          {    ERR_PAYMENT_DISTRICT_INVALID,                    "Payment District
ID is invalid, must be 1 - 10."                              },
          {    ERR_PAYMENT_HAM_INVALID,                         "Payment Amount
invalid data type must be numeric."                               },
          {    ERR_PAYMENT_HAM_RANGE,                                "Payment
Amount out of range, 0 - 9999.99."                                          },
          {    ERR_PAYMENT_LAST_NAME_TO_LONG,                   "Payment Customer
last name longer than 16 characters."                             },
          {    ERR_PAYMENT_MISSING_CDI_KEY,                     "Payment missing
Customer district key \"CDI*\"."                                  },
          {    ERR_PAYMENT_MISSING_CID_CLT,                     "Payment Either
Customer ID or Last Name must be entered."                        },
          {    ERR_PAYMENT_MISSING_CID_KEY,                     "Payment missing
Customer Key \"CID*\"."                                           },
          {    ERR_PAYMENT_MISSING_CLT_KEY,                     "Payment missing
Customer Last Name key \"CLT*\"."                                 },
          {    ERR_PAYMENT_MISSING_CWI_KEY,                     "Payment missing
Customer Warehouse key \"CWI*\"."                                 },
          {    ERR_PAYMENT_MISSING_DID_KEY,                     "Payment missing
District Key \"DID*\"."                                           },
          {    ERR_PAYMENT_MISSING_HAM_KEY,                     "Payment missing
Amount key \"HAM*\"."                                                  },
          {    ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY,            "Stock Level;
missing Threshold key \"TT*\"."                                   },
          {    ERR_STOCKLEVEL_THRESHOLD_INVALID,                "Stock Level;
Threshold value must be in the range = 1 - 99."      },
          {    ERR_STOCKLEVEL_THRESHOLD_RANGE,           "Stock Level
Threshold out of range, range must be 1 - 99."           },
          {    ERR_VERSION_MISMATCH,                          "Invalid
version field.  RTE and Web Client are probably out of sync." },
          {    ERR_W_ID_INVALID,                              "Invalid
Warehouse ID."                                                      },
          {    0,                                                  ""

          }
     };

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

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

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

}

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

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

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

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

     *pQueryString = ptr;
     return;

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

/* FUNCTION: GetIntKeyValue
 *
 * PURPOSE:     This function parses a http formatted string for a specific
key value.
 *
 * ARGUMENTS:   char            *pQueryString   http string from client
browser
 *                   char            *pKey           key value to look for
 *                   WEBERROR        NoKeyErr        error value to throw if
key not found
```

```
 *                    WEBERROR        NotIntErr       error value to throw if
value not numeric
 *
 * RETURNS:           integer
 *
 * ERROR:       if (the pKey value is not found) then
 *                         if (NoKeyErr != NO_ERR)
 *                              throw CWEBCLNT_ERR(err)
 *                         else
 *                              return 0
 *                    else if (non-numeric char found) then
 *                         if (NotIntErr != NO_ERR) then
 *                              throw CWEBCLNT_ERR(err)
 *                         else
 *                              return 0
 *
 * COMMENTS:    http keys are formatted either KEY=value& or KEY=value\0.
This DLL formats
 *                    TPC-C input fields in such a manner that the keys can
be extracted in the
 *                    above manner.
 */

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

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

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

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

     *pQueryString = ptr;
     return atoi(ptr0);

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

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

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

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

     Term.pClientData     = NULL;
     Term.pClientData     = (PCLIENTDATA)malloc(Term.iNumEntries *
sizeof(CLIENTDATA));
     if (Term.pClientData == NULL)
     {
          LeaveCriticalSection(&TermCriticalSection);
          throw new CWEBCLNT_ERR( ERR_MEM_ALLOC_FAILED );
     }

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

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

     LeaveCriticalSection(&TermCriticalSection);
}

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

```
 *
 */

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

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

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

     LeaveCriticalSection(&TermCriticalSection);
}

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

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

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

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

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

     LeaveCriticalSection(&TermCriticalSection);
     return iNewTerm;
}

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

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

          // put onto free list
          EnterCriticalSection(&TermCriticalSection);

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

          LeaveCriticalSection(&TermCriticalSection);
     }
}


/* FUNCTION: MakeErrorForm
```

```
 */

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

/* FUNCTION: MakeMainMenuForm
 */

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

/* FUNCTION: MakeStockLevelForm
 *
 * PURPOSE:     This function constructs the Stock Level HTML page.
```

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

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

     c = wsprintf(szForm,
          "<HTML><HEAD><TITLE>TPC-C Stock Level</TITLE></HEAD><FORM
ACTION=\"tpcc.dll\" METHOD=\"GET\">"
          "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\" VALUE=\"0\">"
          "<INPUT TYPE=\"hidden\" NAME=\"ERROR\" VALUE=\"0\">"
          "<INPUT TYPE=\"hidden\" NAME=\"FORMID\" VALUE=\"%d\">"
          "<INPUT TYPE=\"hidden\" NAME=\"TERMID\" VALUE=\"%d\">"
          "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\" VALUE=\"%d\">"
          "<PRE><font face=\"Courier\">
Stock-Level<BR>"
          "Warehouse: %4.4d   District: %2.2d<BR> <BR>",
          STOCK_LEVEL_FORM, iTermId, Term.pClientData[iTermId].iSyncId,
          Term.pClientData[iTermId].w_id, Term.pClientData[iTermId].d_id);

     if ( bInput )
     {
          strcpy(szForm+c,
               "Stock Level Threshold: <INPUT NAME=\"TT*\" SIZE=2><BR> <BR>"
               "low stock:    </font><BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR>"
               " <BR> <BR> <BR> <BR> <BR> <BR> <BR></PRE><HR>"
               "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Process\">"
               "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Menu\">"
               "</FORM></HTML>" );
     }
     else
     {
          wsprintf(szForm+c,
               "Stock Level Threshold: %2.2d<BR> <BR>"
               "low stock: %3.3d</font> <BR> <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR>"
               " <BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR></PRE><HR>"
               "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..NewOrder..\">"
               "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Payment..\">"
               "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Delivery..\">"
               "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Order-
Status..\">"
               "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Stock-
Level..\">"
               "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Exit..\">"
               "</FORM></HTML>"
               , pStockLevelData->threshold, pStockLevelData->low_stock);
     }
}

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

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

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

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

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

     if ( bInput )
     {
          c += wsprintf(szForm+c, "Warehouse: %4.4d   ",
Term.pClientData[iTermId].w_id );

          strcpy( szForm+c,
               "District: <INPUT NAME=\"DID*\" SIZE=1>
Date:<BR>"
               "Customer:  <INPUT NAME=\"CID*\" SIZE=4>   Name:
Credit:      %Disc:<BR>"
               "Order Number:           Number of Lines:           W_tax:
D_tax:<BR> <BR>"
               " Supp_W  Item_Id  Item Name                Qty  Stock  B/G
Price    Amount<BR>"
               "  <INPUT NAME=\"SP00*\" SIZE=4>  <INPUT NAME=\"IID00*\"
SIZE=6>                            <INPUT NAME=\"Qty00*\" SIZE=1><BR>"
```

```
                "  <INPUT NAME=\"SP01*\" SIZE=4>  <INPUT NAME=\"IID01*\"
SIZE=6>                            <INPUT NAME=\"Qty01*\" SIZE=1><BR>"
                "  <INPUT NAME=\"SP02*\" SIZE=4>  <INPUT NAME=\"IID02*\"
SIZE=6>                            <INPUT NAME=\"Qty02*\" SIZE=1><BR>"
                "  <INPUT NAME=\"SP03*\" SIZE=4>  <INPUT NAME=\"IID03*\"
SIZE=6>                            <INPUT NAME=\"Qty03*\" SIZE=1><BR>"
                "  <INPUT NAME=\"SP04*\" SIZE=4>  <INPUT NAME=\"IID04*\"
SIZE=6>                            <INPUT NAME=\"Qty04*\" SIZE=1><BR>"
                "  <INPUT NAME=\"SP05*\" SIZE=4>  <INPUT NAME=\"IID05*\"
SIZE=6>                            <INPUT NAME=\"Qty05*\" SIZE=1><BR>"
                "  <INPUT NAME=\"SP06*\" SIZE=4>  <INPUT NAME=\"IID06*\"
SIZE=6>                            <INPUT NAME=\"Qty06*\" SIZE=1><BR>"
                "  <INPUT NAME=\"SP07*\" SIZE=4>  <INPUT NAME=\"IID07*\"
SIZE=6>                            <INPUT NAME=\"Qty07*\" SIZE=1><BR>"
                "  <INPUT NAME=\"SP08*\" SIZE=4>  <INPUT NAME=\"IID08*\"
SIZE=6>                            <INPUT NAME=\"Qty08*\" SIZE=1><BR>"
                "  <INPUT NAME=\"SP09*\" SIZE=4>  <INPUT NAME=\"IID09*\"
SIZE=6>                            <INPUT NAME=\"Qty09*\" SIZE=1><BR>"
                "  <INPUT NAME=\"SP10*\" SIZE=4>  <INPUT NAME=\"IID10*\"
SIZE=6>                            <INPUT NAME=\"Qty10*\" SIZE=1><BR>"
                "  <INPUT NAME=\"SP11*\" SIZE=4>  <INPUT NAME=\"IID11*\"
SIZE=6>                            <INPUT NAME=\"Qty11*\" SIZE=1><BR>"
                "  <INPUT NAME=\"SP12*\" SIZE=4>  <INPUT NAME=\"IID12*\"
SIZE=6>                            <INPUT NAME=\"Qty12*\" SIZE=1><BR>"
                "  <INPUT NAME=\"SP13*\" SIZE=4>  <INPUT NAME=\"IID13*\"
SIZE=6>                            <INPUT NAME=\"Qty13*\" SIZE=1><BR>"
                "  <INPUT NAME=\"SP14*\" SIZE=4>  <INPUT NAME=\"IID14*\"
SIZE=6>                            <INPUT NAME=\"Qty14*\" SIZE=1><BR>"
                "Execution Status:
Total:<BR>"
                "</font></PRE><HR>"
                "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Process\">"
                "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Menu\">"
                "</FORM></HTML>"
                );
     }
     else
     {
          c += wsprintf(szForm+c, "Warehouse: %4.4d   District: %2.2d
Date: ",
                pNewOrderData->w_id,
                pNewOrderData->d_id);

          if ( bValid )
          {
                c += wsprintf(szForm+c, "%2.2d-%2.2d-%4.4d
%2.2d:%2.2d:%2.2d",
                     pNewOrderData->o_entry_d.day,
                     pNewOrderData->o_entry_d.month,
                     pNewOrderData->o_entry_d.year,
                     pNewOrderData->o_entry_d.hour,
                     pNewOrderData->o_entry_d.minute,
                     pNewOrderData->o_entry_d.second);
          }
          c += wsprintf(szForm+c, "<BR>Customer:  %4.4d   Name: %-16s
Credit: %-2s   ",
               pNewOrderData->c_id, pNewOrderData->c_last, pNewOrderData-
>c_credit);

          if ( bValid )
          {
               c += sprintf(szForm+c,
                              "%%Disc: %5.2f            <BR>"
                              "Order Number: %8.8d  Number of Lines: %2.2d
W_tax: %5.2f   D_tax: %5.2f  <BR> <BR>"
                              " Supp_W  Item_Id  Item Name
Qty  Stock  B/G  Price    Amount<BR>",
                    100.0*pNewOrderData->c_discount,
                    pNewOrderData->o_id,
                    pNewOrderData->o_ol_cnt,
                    100.0 * pNewOrderData->w_tax,
                    100.0 * pNewOrderData->d_tax);

               for(i=0; i<pNewOrderData->o_ol_cnt; i++)
               {
                    c += sprintf(szForm+c, "  %4.4d   %6.6d   %-24s  %2.2d
%3.3d    %1.1s   $%6.2f  $%7.2f  <BR>",
                         pNewOrderData->OL[i].ol_supply_w_id,
                         pNewOrderData->OL[i].ol_i_id,
                         pNewOrderData->OL[i].ol_i_name,
                         pNewOrderData->OL[i].ol_quantity,
                         pNewOrderData->OL[i].ol_stock,
                         pNewOrderData->OL[i].ol_brand_generic,
                         pNewOrderData->OL[i].ol_i_price,
                         pNewOrderData->OL[i].ol_amount );
               }
          }
          else
          {
               c += wsprintf(szForm+c,
                    "%Disc:<BR>"
                    "Order Number: %8.8d  Number of Lines:
W_tax:         D_tax:<BR> <BR>"
                    " Supp_W  Item_Id  Item Name                 Qty  Stock
B/G  Price    Amount<BR>"
                    , pNewOrderData->o_id);

               i = 0;
          }

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

          if ( bValid )
               c += sprintf(szForm+c, "Execution Status: Transaction
commited.                      Total:  $%8.2f  ",
                    pNewOrderData->total_amount);
```

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

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

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

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

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

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

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

                , Term.pClientData[iTermId].w_id, pPaymentData->d_id
                , pPaymentData->w_street_1, pPaymentData->d_street_1
                , pPaymentData->w_street_2, pPaymentData->d_street_2
                , pPaymentData->w_city, pPaymentData->w_state, pPaymentData-
>w_zip, pPaymentData->w_zip+5
                , pPaymentData->d_city, pPaymentData->d_state, pPaymentData-
>d_zip, pPaymentData->d_zip+5
                , pPaymentData->c_id, pPaymentData->c_w_id,    pPaymentData-
>c_d_id
                , pPaymentData->c_first, pPaymentData->c_middle,
pPaymentData->c_last
                , pPaymentData->c_since.day, pPaymentData->c_since.month,
     pPaymentData->c_since.year
```

```
                , pPaymentData->c_street_1, pPaymentData->c_credit
                );

        c += sprintf(szForm+c,
                "        %-20s                    %%Disc:  %5.2f<BR>",
                pPaymentData->c_street_2, 100.0*pPaymentData->c_discount);

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

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

          if ( pPaymentData->c_credit[0] == 'B' && pPaymentData->c_credit[1]
== 'C' )
                c += wsprintf(szForm+c,
                           "Cust-Data: %-50.50s<BR>           %-50.50s<BR>
%-50.50s<BR>           %-50.50s<BR>",
                           pPaymentData->c_data, pPaymentData->c_data+50,
pPaymentData->c_data+100, pPaymentData->c_data+150 );
          else
                strcpy(szForm+c, "Cust-Data: <BR> <BR> <BR> <BR>");

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

}

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

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

     c = wsprintf(szForm,
          "<HTML><HEAD><TITLE>TPC-C Order-Status</TITLE></HEAD><BODY>"
          "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
          "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\" VALUE=\"0\">"
          "<INPUT TYPE=\"hidden\" NAME=\"ERROR\" VALUE=\"0\">"
          "<INPUT TYPE=\"hidden\" NAME=\"FORMID\" VALUE=\"%d\">"
          "<INPUT TYPE=\"hidden\" NAME=\"TERMID\" VALUE=\"%d\">"
          "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\" VALUE=\"%d\">"
          "<PRE><font face=\"Courier\">
Order-Status<BR>"
          "Warehouse: %4.4d   ",
          ORDER_STATUS_FORM, iTermId, Term.pClientData[iTermId].iSyncId,
Term.pClientData[iTermId].w_id);

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

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

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

          for(i=0; i< pOrderStatusData->o_ol_cnt; i++)
          {
               c += sprintf(szForm+c, "  %4.4d       %6.6d     %2.2d
$%8.2f      %2.2d-%2.2d-%4.4d<BR>",
                    pOrderStatusData->OL[i].ol_supply_w_id,
                    pOrderStatusData->OL[i].ol_i_id,
                    pOrderStatusData->OL[i].ol_quantity,
                    pOrderStatusData->OL[i].ol_amount,
                    pOrderStatusData->OL[i].ol_delivery_d.day,
                    pOrderStatusData->OL[i].ol_delivery_d.month,
                    pOrderStatusData->OL[i].ol_delivery_d.year);
          }

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

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

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

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

     c = wsprintf(szForm,
          "<HTML><HEAD><TITLE>TPC-C Delivery</TITLE></HEAD><BODY>"
          "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
          "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\" VALUE=\"%d\">"
          "<INPUT TYPE=\"hidden\" NAME=\"ERROR\" VALUE=\"0\">"
          "<INPUT TYPE=\"hidden\" NAME=\"FORMID\" VALUE=\"%d\">"
          "<INPUT TYPE=\"hidden\" NAME=\"TERMID\" VALUE=\"%d\">"
          "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\" VALUE=\"%d\">"
          "<PRE><font face=\"Courier\">
Delivery<BR>"
          "Warehouse: %4.4d<BR> <BR>",
          (!bInput && (pDeliveryData->exec_status_code != eOK)) ?
ERR_TYPE_DELIVERY_POST : 0,
          DELIVERY_FORM, iTermId, Term.pClientData[iTermId].iSyncId,
Term.pClientData[iTermId].w_id);

     if ( bInput )
     {
          strcpy( szForm+c,
               "Carrier Number: <INPUT NAME=\"OCD*\" SIZE=1><BR> <BR>"
               "Execution Status: <BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR>"
               " <BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR> </font></PRE><HR>"
               "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Process\">"
               "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Menu\">"
               "</BODY></FORM></HTML>" );
     }
     else
     {
          wsprintf( szForm+c,
               "Carrier Number: %2.2d<BR> <BR>"
               "Execution Status: %s <BR> <BR> <BR> <BR> <BR> <BR> <BR>
<BR>"
               " <BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR> </font></PRE>"
               "<HR><INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..NewOrder..\">"
               "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Payment..\">"
               "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Delivery..\">"
               "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Order-
Status..\">"
               "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Stock-
Level..\">"
               "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..Exit..\">"
               "</BODY></FORM></HTML>"

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

```
}

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

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

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

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

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

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

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

void ProcessPaymentForm(EXTENSION_CONTROL_BLOCK *pECB, int iTermId, char
*szBuffer)
{
     PPAYMENT_DATA   pPayment;

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

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

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

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

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

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

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

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

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

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

     PDELIVERY_DATA  pDelivery;

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

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

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

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

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

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

     PSTOCK_LEVEL_DATA    pStockLevel;

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

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

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

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

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

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

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

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

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

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

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

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

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

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

     pNewOrderData->o_ol_cnt = items;
}
```

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

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

     pPaymentData->d_id = GetIntKeyValue(&ptr, "DID*",
ERR_PAYMENT_MISSING_DID_KEY, ERR_PAYMENT_DISTRICT_INVALID);

     GetKeyValue(&ptr, "CID*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_CID_KEY);
     if ( szTmp[0] == 0 )
     {
          bCustIdBlank = TRUE;
          pPaymentData->c_id = 0;
     }
     else
     {    // parse customer id and verify that last name was NOT entered
          bCustIdBlank = FALSE;
          if ( !IsNumeric(szTmp) )
               throw new CWEBCLNT_ERR( ERR_PAYMENT_CUSTOMER_INVALID );
          pPaymentData->c_id = atoi(szTmp);
     }

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

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

          _strupr( szTmp );
          if ( strlen(pPaymentData->c_last) > LAST_NAME_LEN )
               throw new CWEBCLNT_ERR( ERR_PAYMENT_LAST_NAME_TO_LONG );
          strcpy(pPaymentData->c_last, szTmp);
     }
     else
     {    // parse customer id and verify that last name was NOT entered
          GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_PAYMENT_MISSING_CLT_KEY);
          if ( szTmp[0] != 0 )
               throw new CWEBCLNT_ERR( ERR_PAYMENT_CID_AND_CLT );
     }

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

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

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

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

          _strupr( szTmp );
          if ( strlen(pOrderStatusData->c_last) > LAST_NAME_LEN )
               throw new CWEBCLNT_ERR( ERR_ORDERSTATUS_CLT_RANGE );
          strcpy(pOrderStatusData->c_last, szTmp);
     }
     else
     {    // parse customer id and verify that last name was NOT entered
          if ( !IsNumeric(szTmp) )
               throw new CWEBCLNT_ERR( ERR_ORDERSTATUS_CID_INVALID );
          pOrderStatusData->c_id = atoi(szTmp);
          GetKeyValue(&ptr, "CLT*", szTmp, sizeof(szTmp),
ERR_ORDERSTATUS_MISSING_CLT_KEY);
          if ( szTmp[0] != 0 )
               throw new CWEBCLNT_ERR( ERR_ORDERSTATUS_CID_AND_CLT );
     }

}

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

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

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

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

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

     if ( *ptr == 0 )
          return FALSE;

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

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

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

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

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

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

/*   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 DBLIB
     pReg->eDB_Protocol = Unspecified;
     size = sizeof(szTmp);
     if ( RegQueryValueEx(hKey, "DB_Protocol", 0, &type, (BYTE *)&szTmp,
&size) == ERROR_SUCCESS )
     {
          if ( !stricmp(szTmp, szDBNames[ODBC]) )
               pReg->eDB_Protocol = ODBC;
          else if ( !stricmp(szTmp, szDBNames[DBLIB]) )
               pReg->eDB_Protocol = DBLIB;
     }

     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 ( !stricmp(szTmp, szTxnMonNames[TUXEDO]) )
               pReg->eTxnMon = TUXEDO;
          else if ( !stricmp(szTmp, szTxnMonNames[ENCINA]) )
               pReg->eTxnMon = ENCINA;
          else if ( !stricmp(szTmp, szTxnMonNames[COM]) )
               pReg->eTxnMon = COM;
     }

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

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

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

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

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

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

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

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

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

     RegCloseKey(hKey);

     return FALSE;
}

/*   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, DBLIB };
const char *szDBNames[] = { "Unspecified", "ODBC", "DBLIB" };

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 );

/*   FILE:     ERROR.H
 *                   Microsoft TPC-C Kit Ver. 4.20.000
 *                   Copyright Microsoft, 1999
 *              All Rights Reserved
 *
 *                   Version 4.10.000 audited by Richard Gimarc, Performance
Metrics, 3/17/99
 *
 *   PURPOSE:  Header file for error exception classes.
 *
 *  Change history:
 *        4.20.000 - updated rev number to match kit
 *        4.21.000 - fixed bug: ~CBaseErr needed to be declared virtual
 */

#pragma once

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

```
#endif

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

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

#define ERR_FATAL_LEVEL              1
#define ERR_WARNING_LEVEL      2
#define ERR_INFORMATION_LEVEL   3


#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


class CBaseErr
{
public:
     char *m_szApp;
     char *m_szMsg;
     char *m_szLoc;  // code location where the error occurred
     int       m_idMsg;

     CBaseErr(void)
     {
          m_idMsg         = 0;
          m_szMsg         = new char[m_szMsg_size];
          m_szApp         = new char[m_szApp_size];
          m_szLoc         = NULL;

          m_szMsg[0] = 0;
          m_szApp[0] = 0;

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

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

     CBaseErr(int idMsg)
     {
          m_idMsg         = idMsg;
          m_szApp         = new char[m_szApp_size];
          m_szMsg         = new char[m_szMsg_size];
          m_szLoc         = NULL;

          GetModuleFileName(GetModuleHandle(NULL), m_szApp, m_szApp_size);
          LoadString(GetModuleHandle(NULL), idMsg, m_szMsg, m_szMsg_size);
```

```
     }

     CBaseErr(LPCTSTR szMsg)
     {
          m_idMsg         = 0;
          m_szApp         = new char[m_szApp_size];
          m_szMsg         = new char[m_szMsg_size];
          m_szLoc         = NULL;

          GetModuleFileName(GetModuleHandle(NULL), m_szApp, m_szApp_size);
          strcpy(m_szMsg, szMsg);
     }

     void SetError(char *szMsg, LPCTSTR szLocation)
     {
          if (szMsg != NULL)
               strcpy(m_szMsg, szMsg);
          else
               m_szMsg[0] = 0;

          if (szLocation != NULL)
          {
               delete [] m_szLoc;
               m_szLoc = new char[strlen(szLocation)+1];
               strcpy(m_szLoc, szLocation);
          }
          else
          {
               delete [] m_szLoc;
               m_szLoc = NULL;
          }
     }

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

          if (szStr)
               j = wsprintf(szTmp, "%s\n",szStr);
          if (m_szLoc)
               j += wsprintf(szTmp+j, "Location=%s\n",m_szLoc);
          if (m_szMsg)
               j += wsprintf(szTmp+j, "%s\n", m_szMsg);

          ::MessageBox(hwnd, szTmp, m_szApp, MB_OK);
     }

     char *GetApp(void) { return m_szApp; }
     char *GetMsg(void) { return m_szMsg; }
     char *GetLocation(void) { return m_szLoc; }

     virtual int ErrorType() = 0;    // a value which distinguishes the kind
of error that occurred
```

```
     virtual int ErrorNum() = 0;          // an error value specific to the
error type
     virtual char *ErrorText() = 0;  // a string (i.e., human readable)
representation of the error

};

class CSocketErr : public CBaseErr
{
public:
     enum Action
     {
          eNone,
          eSend,
          eSocket,
          eConnect
     };

     CSocketErr(Action eAction, LPCTSTR szLocation);
     CSocketErr(int iError) { m_errId = iError; };
     int       m_errId;
     Action    m_eAction;

     int ErrorType() { return ERR_TYPE_SOCKET;};
     int ErrorNum() { return m_errId;};
     char *ErrorText(void);
};

class CSystemErr : public CBaseErr
{
public:
     enum Action
     {
          eNone,
          eTransactNamedPipe,
          eWaitNamedPipe,
          eSetNamedPipeHandleState,
          eCreateFile,
          eCreateProcess,
          eCallNamedPipe,
          eCreateEvent,
          eCreateThread,
          eVirtualAlloc,
          eReadFile,
          eWriteFile,
          eMapViewOfFile,
          eCreateFileMapping,
          eInitializeSecurityDescriptor,
          eSetSecurityDescriptorDacl,
          eCreateNamedPipe,
          eConnectNamedPipe,
          eWaitForSingleObject,
          eRegOpenKeyEx,
          eRegQueryValueEx,
```

```
     };

     CSystemErr(Action eAction, LPCTSTR szLocation);

     void Draw(HWND hwnd, LPCTSTR szStr = NULL);

     int       m_errId;
     Action    m_eAction;

     int ErrorType() { return ERR_TYPE_OS;}
     int ErrorNum() { return m_errId;}
     char *ErrorText() { return m_szMsg; }
};

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

     int ErrorType() { return ERR_TYPE_MEMORY;}
     int ErrorNum() { return 0;}
     char *ErrorText() { return "Insufficient Memory to continue.";}
};

/*   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                   1
#define LAST_NAME_LEN              16
#define W_NAME_LEN                 10
#define ADDRESS_LEN                20
#define STATE_LEN                   2
#define ZIP_LEN                     9
#define S_DIST_LEN                 24
```

```
#define S_DATA_LEN                 50
#define D_NAME_LEN                 10
#define FIRST_NAME_LEN             16
#define MIDDLE_NAME_LEN             2
#define PHONE_LEN                  16
#define DATETIME_LEN               30
#define CREDIT_LEN                  2
#define C_DATA_LEN                250
#define H_DATA_LEN                 24
#define DIST_INFO_LEN              24
#define MAX_OL_NEW_ORDER_ITEMS     15
#define MAX_OL_ORDER_STATUS_ITEMS  15
#define STATUS_LEN                 25
#define OL_DIST_INFO_LEN          24

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

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

// transaction structures
typedef struct
{
     // input params
     short                     ol_supply_w_id;
     long                      ol_i_id;
     short                     ol_quantity;

     // output params
     char                      ol_i_name[I_NAME_LEN+1];
     char                      ol_brand_generic[BRAND_LEN+1];
     double                    ol_i_price;
     double                         ol_amount;
     short                          ol_stock;
} OL_NEW_ORDER_DATA;

typedef struct
{
     // input params
     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               c_discount;
     double               w_tax;
     double               d_tax;
     long                 o_id;
     short                o_commit_flag;
     TIMESTAMP_STRUCT     o_entry_d;
     short                o_all_local;
     double               total_amount;
     OL_NEW_ORDER_DATA    OL[MAX_OL_NEW_ORDER_ITEMS];
} NEW_ORDER_DATA, *PNEW_ORDER_DATA;

typedef struct
{    // input params
     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_middle[MIDDLE_NAME_LEN + 1];
     char                      c_street_1[ADDRESS_LEN+1];
     char                      c_street_2[ADDRESS_LEN+1];
     char                        c_city[ADDRESS_LEN+1];
     char                        c_state[STATE_LEN+1];
     char                        c_zip[ZIP_LEN+1];
     char                        c_phone[PHONE_LEN+1];
     TIMESTAMP_STRUCT       c_since;
     char                        c_credit[CREDIT_LEN+1];
     double                      c_credit_lim;
     double                      c_discount;
     double                      c_balance;
     char                        c_data[200+1];
} PAYMENT_DATA, *PPAYMENT_DATA;

typedef struct
{
     long                 ol_i_id;
     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];      // id's of delivered orders for
districts 1 to 10
} DELIVERY_DATA, *PDELIVERY_DATA;
```

```
//This structure is used for posting delivery transactions and for writing
them to the delivery server.
typedef struct _DELIVERY_TRANSACTION
{
     SYSTEMTIME queue;               //time delivery transaction queued
     short      w_id;           //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;

/*   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.
#ifndef DllDecl
#define DllDecl  __declspec( dllimport )
#endif

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

          virtual PNEW_ORDER_DATA        BuffAddr_NewOrder()       = 0;
          virtual PPAYMENT_DATA          BuffAddr_Payment()        = 0;
          virtual PDELIVERY_DATA         BuffAddr_Delivery()       = 0;
          virtual PSTOCK_LEVEL_DATA BuffAddr_StockLevel()     = 0;
          virtual PORDER_STATUS_DATA BuffAddr_OrderStatus()    = 0;
          virtual void NewOrder          () = 0;
          virtual void Payment      () = 0;
          virtual void Delivery          () = 0;
          virtual void StockLevel        () = 0;
          virtual void OrderStatus  () = 0;
};

/*   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
 *                    - 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          iMaxRetries = 10;        // how many retries on deadlock
```

```
static    long iConnectionCount = 0;  // number of current dblib connections

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

BOOL APIENTRY DllMain(HMODULE hModule, DWORD ul_reason_for_call, LPVOID
lpReserved)
{
     switch( ul_reason_for_call )
     {
          case DLL_PROCESS_ATTACH:
               DisableThreadLibraryCalls(hModule);
               dbinit();      // initialize dblib
               break;

          case DLL_PROCESS_DETACH:
               dbexit();      // close all dblib structures/connections
               break;

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


int err_handler(DBPROCESS *dbproc, int severity, int dberr, int oserr,
LPCSTR dberrstr, LPCSTR oserrstr)
{
     CTPCC_DBLIB               *pConn;

     assert(dbproc != NULL);
     pConn = (CTPCC_DBLIB*)dbgetuserdata(dbproc);

     if (pConn != NULL)
     {
          pConn->SetDbLibError( severity, dberr, oserr, dberrstr, oserrstr
);
     }
     return INT_CANCEL;
}

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

// typedef INT (SQLAPI *DBMSGHANDLE_PROC)(PDBPROCESS, DBINT, INT, INT,
LPCSTR, LPCSTR, LPCSTR, DBUSMALLINT);

int msg_handler(DBPROCESS *dbproc, DBINT msgno, int msgstate, int severity,
                     LPCSTR msgtext, LPCSTR srvname, LPCSTR procname,
DBUSMALLINT line)
{
     CTPCC_DBLIB               *pConn;

     assert(dbproc != NULL);
     pConn = (CTPCC_DBLIB*)dbgetuserdata(dbproc);

     if (pConn != NULL)
     {
          pConn->SetSqlError( msgno, msgstate, severity, msgtext );
     }

     return 0;
}

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

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

     return;
```

```
}

/* FUNCTION: CTPCC_DBLIB_ERR::ErrorText
 *
 */

char* CTPCC_DBLIB_ERR::ErrorText(void)
{
     int i;

     static SERRORMSG errorMsgs[] =
     {
          { ERR_WRONG_SP_VERSION,         "Wrong version of stored procs on
database server"     },
          { ERR_INVALID_CUST,             "Invalid Customer id,name."
                                      },
          { ERR_NO_SUCH_ORDER,      "No orders found for customer."
                              },
          { ERR_RETRIED_TRANS,      "Retries before transaction succeeded."
                              },
          { 0,                            ""
                                    }
     };

     static char szNotFound[] = "Unknown error number.";

     for(i=0; errorMsgs[i].szMsg[0]; i++)
     {
          if ( m_errno == errorMsgs[i].iError )
               break;
     }
     if ( !errorMsgs[i].szMsg[0] )
          return szNotFound;
     else
          return errorMsgs[i].szMsg;
}

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


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

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

     m_MaxRetries = 10;        // how many retries on deadlock

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

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

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

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


     DBSETLUSER(login, szUser);
     DBSETLPWD(login, szPassword);
     DBSETLHOST(login, szHost);
     DBSETLPACKET(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
     dbrpcinit(m_dbproc, "tpcc_version", 0);

     if (dbrpcexec(m_dbproc) == FAIL)
          ThrowError(CDBLIBERR::eDbRpcExec);

     if (dbresults(m_dbproc) != SUCCEED)
          ThrowError(CDBLIBERR::eDbResults);

     if (dbnextrow(m_dbproc) != REG_ROW)
          ThrowError(CDBLIBERR::eDbNextRow);

     char szSrvVersion[16];
     pData=dbdata(m_dbproc, 1);
     if (pData)
          UtilStrCpy(szSrvVersion, pData, 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;
          pSqlErr = m_SqlErr;
          m_SqlErr = NULL;     // clear our pointer to instance; catch
handler will delete
          throw pSqlErr;
     }

     CDBLIBERR  *pDbLibErr;
     if (m_DbLibErr == NULL)
          // this case isn't expected to happen, since it means that an
error was returned
          // but the error handlers were not called.
          pDbLibErr = new CDBLIBERR(eAction);
     else
     {
          pDbLibErr = m_DbLibErr;
          pDbLibErr->m_eAction = eAction;
          m_DbLibErr = NULL;        // clear our pointer to instance; catch
handler will delete
     }

     throw pDbLibErr;
}

// Read and discard rows until no more.  Throw an exception if number of
rows read doesn't
// match number of rows expected.  The row count will be ignored if the
expected count value
// passed in is negative.  A typical use of this routine is to verify that
there are no more
// rows to be read.
void CTPCC_DBLIB::DiscardNextRows(int iExpectedCount)
{
     int        iRowsRead = 0;
     RETCODE    rc;

     while (TRUE)
     {
          rc = dbnextrow(m_dbproc);
          if (rc == NO_MORE_ROWS)
               break;
          if (rc == FAIL)
          {
               if (iExpectedCount >= 0)
                    ThrowError(CDBLIBERR::eDbNextRow);
               else
                    break;
          }
          iRowsRead++;
     }
```

```
    if ((iExpectedCount >= 0) &&
        (iExpectedCount != iRowsRead))
        ThrowError(CDBLIBERR::eWrongRowCount);
}

// Read and discard results until no more.  Throw an exception if number of
result sets read doesn't
// match number expected.  The result set count will be ignored if the
expected count value
// passed in is negative.  A typical use of this routine is to verify that
there are no more
// result sets to be read.
void CTPCC_DBLIB::DiscardNextResults(int iExpectedCount)
{
    int         iResultsRead = 0;
    RETCODE     rc;

    while (TRUE)
    {
        rc = dbresults(m_dbproc);
        if (rc == NO_MORE_RESULTS)
            break;
        if (rc == FAIL)
        {
            if (iExpectedCount >= 0)
                ThrowError(CDBLIBERR::eDbResults);
            else
                break;
        }

        DiscardNextRows(-1);
        iResultsRead++;
    }

    if ((iExpectedCount >= 0) &&
        (iExpectedCount != iResultsRead))
        ThrowError(CDBLIBERR::eWrongRowCount);
}

void CTPCC_DBLIB::StockLevel()
{
    int             iTryCount = 0;
    const BYTE  *pData;

    ResetError();

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

```
            dbrpcparam(m_dbproc, NULL, 0, SQLINT2, -1, -1, (BYTE *)
&m_txn.StockLevel.w_id);        // @w_id smallint
            dbrpcparam(m_dbproc, NULL, 0, SQLINT1, -1, -1, (BYTE *)
&m_txn.StockLevel.d_id);        // @d_id tinyint
            dbrpcparam(m_dbproc, NULL, 0, SQLINT2, -1, -1, (BYTE *)
&m_txn.StockLevel.threshold);   // @threshhold smallint

            if (dbrpcexec(m_dbproc) == FAIL)
                ThrowError(CDBLIBERR::eDbRpcExec);

            if (dbresults(m_dbproc) != SUCCEED)
                ThrowError(CDBLIBERR::eDbResults);

            if (dbnextrow(m_dbproc) != REG_ROW)
                ThrowError(CDBLIBERR::eDbNextRow);

            if (pData=dbdata(m_dbproc, 1))
                m_txn.StockLevel.low_stock = *((long *) pData);

            DiscardNextRows(0);
            DiscardNextResults(0);

            m_txn.StockLevel.exec_status_code = eOK;
            return;
        }
        catch (CSQLERR *e)
        {
            if ((e->m_msgno == 1205 ||
                (e->m_msgno == iErrOleDbProvider &&
                strstr(e->m_msgtext, sErrTimeoutExpired) != NULL)) &&
                (++iTryCount <= iMaxRetries))
            {
                // hit deadlock; backoff for increasingly longer period
                delete e;
                Sleep(10 * iTryCount);
            }
            else
                throw;
        }
    }   // while (TRUE)

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


void CTPCC_DBLIB::NewOrder()
{
    int             i;
    DBINT       commit_flag;
    DBDATETIME datetime;
    DBDATEREC   daterec;
    int             iTryCount = 0;
    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_ol_cnt);

            // check whether any order lines are for a remote warehouse
            m_txn.NewOrder.o_all_local = 1;
            for (i = 0; i < m_txn.NewOrder.o_ol_cnt; i++)
            {
                if (m_txn.NewOrder.OL[i].ol_supply_w_id !=
m_txn.NewOrder.w_id)
                {
                    m_txn.NewOrder.o_all_local = 0;  // at least one
remote warehouse
                    break;
                }
            }
            dbrpcparam(m_dbproc, NULL, 0, SQLINT1, -1, -1, (BYTE *)
&m_txn.NewOrder.o_all_local);

            for (i = 0; i < m_txn.NewOrder.o_ol_cnt; i++)
            {
                dbrpcparam(m_dbproc, NULL, 0, SQLINT4, -1, -1, (BYTE *)
&m_txn.NewOrder.OL[i].ol_i_id);
                dbrpcparam(m_dbproc, NULL, 0, SQLINT2, -1, -1, (BYTE *)
&m_txn.NewOrder.OL[i].ol_supply_w_id);
                dbrpcparam(m_dbproc, NULL, 0, SQLINT2, -1, -1, (BYTE *)
&m_txn.NewOrder.OL[i].ol_quantity);
            }

            if (dbrpcexec(m_dbproc) == FAIL)
                ThrowError(CDBLIBERR::eDbRpcExec);


            // Get order line results
            m_txn.NewOrder.total_amount = 0;
            for (i = 0; i<m_txn.NewOrder.o_ol_cnt; i++)
            {
                if (dbresults(m_dbproc) != SUCCEED)
                    ThrowError(CDBLIBERR::eDbResults);

                if (dbnumcols(m_dbproc) != 5)
                    ThrowError(CDBLIBERR::eWrongNumCols);

                if (dbnextrow(m_dbproc) != REG_ROW)
                    ThrowError(CDBLIBERR::eDbNextRow);

                if(pData=dbdata(m_dbproc, 1))
                    UtilStrCpy(m_txn.NewOrder.OL[i].ol_i_name, pData,
dbdatlen(m_dbproc, 1));
                if(pData=dbdata(m_dbproc, 2))
                    m_txn.NewOrder.OL[i].ol_stock = (*(DBSMALLINT *)
pData);
                if(pData=dbdata(m_dbproc, 3))
                    UtilStrCpy(m_txn.NewOrder.OL[i].ol_brand_generic,
pData, dbdatlen(m_dbproc, 3));
                if(pData=dbdata(m_dbproc, 4))
                    dbconvert(m_dbproc, SQLNUMERIC, (LPCBYTE)pData,
dbdatlen(m_dbproc,4),
                    SQLFLT8, (BYTE *)&m_txn.NewOrder.OL[i].ol_i_price,
8);
                if(pData=dbdata(m_dbproc, 5))

                    dbconvert(m_dbproc, SQLNUMERIC, (LPCBYTE)pData,
dbdatlen(m_dbproc,5),
                    SQLFLT8, (BYTE *)&m_txn.NewOrder.OL[i].ol_amount,
8);

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

                DiscardNextRows(0);
            }


            // get remaining values for w_tax, d_tax, o_id, c_last,
c_discount, c_credit, o_entry_d, commit_flag
            if (dbresults(m_dbproc) != SUCCEED)
                ThrowError(CDBLIBERR::eDbResults);

            if (dbnextrow(m_dbproc) != REG_ROW)
                ThrowError(CDBLIBERR::eDbNextRow);

            if (dbnumcols(m_dbproc) != 8)
                ThrowError(CDBLIBERR::eWrongNumCols);

            if (pData=dbdata(m_dbproc, 1))

                dbconvert(m_dbproc, SQLNUMERIC, (LPCBYTE)pData,
dbdatlen(m_dbproc,1), SQLFLT8, (BYTE *)&m_txn.NewOrder.w_tax, 8);
            if (pData=dbdata(m_dbproc, 2))
```

```
                    dbconvert(m_dbproc, SQLNUMERIC, (LPCBYTE)pData,
dbdatlen(m_dbproc,2), SQLFLT8, (BYTE *)&m_txn.NewOrder.d_tax, 8);
               if (pData=dbdata(m_dbproc, 3))
                    m_txn.NewOrder.o_id = (*(DBINT *) pData);
               if (pData=dbdata(m_dbproc, 4))
                    UtilStrCpy(m_txn.NewOrder.c_last, pData,
dbdatlen(m_dbproc, 4));
               if (pData=dbdata(m_dbproc, 5))
                    dbconvert(m_dbproc, SQLNUMERIC, (LPCBYTE)pData,
dbdatlen(m_dbproc,5), SQLFLT8, (BYTE *)&m_txn.NewOrder.c_discount, 8);
               if (pData=dbdata(m_dbproc, 6))
                    UtilStrCpy(m_txn.NewOrder.c_credit, pData,
dbdatlen(m_dbproc, 6));
               if (pData=dbdata(m_dbproc, 7))
               {
                    datetime = *((DBDATETIME *) pData);
                    dbdatecrack(m_dbproc, &daterec, &datetime);
                    m_txn.NewOrder.o_entry_d.year   = daterec.year;
                    m_txn.NewOrder.o_entry_d.month  = daterec.month;
                    m_txn.NewOrder.o_entry_d.day    = daterec.day;
                    m_txn.NewOrder.o_entry_d.hour   = daterec.hour;
                    m_txn.NewOrder.o_entry_d.minute = daterec.minute;
                    m_txn.NewOrder.o_entry_d.second = daterec.second;
               }
               if (pData=dbdata(m_dbproc, 8))
                    commit_flag = (*(DBTINYINT *) pData);

               DiscardNextRows(0);
               DiscardNextResults(0);


               if (commit_flag == 1)
               {
                    m_txn.NewOrder.total_amount *= ((1 +
m_txn.NewOrder.w_tax + m_txn.NewOrder.d_tax) * (1 -
m_txn.NewOrder.c_discount));
                    m_txn.NewOrder.exec_status_code = eOK;
               }
               else
                    m_txn.NewOrder.exec_status_code = eInvalidItem;

               return;
          }
          catch (CSQLERR *e)
          {
               if ((e->m_msgno == 1205 ||
                    (e->m_msgno == iErrOleDbProvider &&
                    strstr(e->m_msgtext, sErrTimeoutExpired) != NULL)) &&
                    (++iTryCount <= iMaxRetries))
               {
                    // hit deadlock; backoff for increasingly longer period
                    delete e;
                    Sleep(10 * iTryCount);
               }
```

```
               else
                    throw;
          }
     }    // while (TRUE)

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


void CTPCC_DBLIB::Payment()
{
     DBDATETIME datetime;
     DBDATEREC  daterec;

     int             iTryCount = 0;
     const BYTE *pData;

     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(CDBLIBERR::eDbRpcExec);

               if (dbresults(m_dbproc) != SUCCEED)
                    ThrowError(CDBLIBERR::eDbResults);

               if (dbnextrow(m_dbproc) != REG_ROW)
                    ThrowError(CDBLIBERR::eDbNextRow);
```

```
                if (dbnumcols(m_dbproc) != 27)
                     ThrowError(CDBLIBERR::eWrongNumCols);

                if (pData=dbdata(m_dbproc, 1))
                     m_txn.Payment.c_id = *((DBINT *) pData);
                if (pData=dbdata(m_dbproc, 2))
                     UtilStrCpy(m_txn.Payment.c_last, pData,
dbdatlen(m_dbproc, 2));
                if (pData=dbdata(m_dbproc, 3))
                {
                     datetime = *((DBDATETIME *) pData);
                     dbdatecrack(m_dbproc, &daterec, &datetime);
                     m_txn.Payment.h_date.year   = daterec.year;
                     m_txn.Payment.h_date.month  = daterec.month;
                     m_txn.Payment.h_date.day    = daterec.day;
                     m_txn.Payment.h_date.hour   = daterec.hour;
                     m_txn.Payment.h_date.minute = daterec.minute;
                     m_txn.Payment.h_date.second = daterec.second;
                }
                if (pData=dbdata(m_dbproc, 4))
                     UtilStrCpy(m_txn.Payment.w_street_1, pData,
dbdatlen(m_dbproc, 4));
                if (pData=dbdata(m_dbproc, 5))
                     UtilStrCpy(m_txn.Payment.w_street_2, pData,
dbdatlen(m_dbproc, 5));
                if (pData=dbdata(m_dbproc, 6))
                     UtilStrCpy(m_txn.Payment.w_city, pData,
dbdatlen(m_dbproc, 6));
                if (pData=dbdata(m_dbproc, 7))
                     UtilStrCpy(m_txn.Payment.w_state, pData,
dbdatlen(m_dbproc, 7));
                if (pData=dbdata(m_dbproc, 8))
                     UtilStrCpy(m_txn.Payment.w_zip, pData,
dbdatlen(m_dbproc, 8));
                if (pData=dbdata(m_dbproc, 9))
                     UtilStrCpy(m_txn.Payment.d_street_1, pData,
dbdatlen(m_dbproc, 9));
                if (pData=dbdata(m_dbproc, 10))
                     UtilStrCpy(m_txn.Payment.d_street_2, pData,
dbdatlen(m_dbproc, 10));
                if (pData=dbdata(m_dbproc, 11))
                     UtilStrCpy(m_txn.Payment.d_city, pData,
dbdatlen(m_dbproc, 11));
                if (pData=dbdata(m_dbproc, 12))
                     UtilStrCpy(m_txn.Payment.d_state, pData,
dbdatlen(m_dbproc, 12));
                if (pData=dbdata(m_dbproc, 13))
                     UtilStrCpy(m_txn.Payment.d_zip, pData,
dbdatlen(m_dbproc, 13));
                if (pData=dbdata(m_dbproc, 14))
                     UtilStrCpy(m_txn.Payment.c_first, pData,
dbdatlen(m_dbproc, 14));
                if (pData=dbdata(m_dbproc, 15))
                     UtilStrCpy(m_txn.Payment.c_middle, pData,
dbdatlen(m_dbproc, 15));
                if (pData=dbdata(m_dbproc, 16))
                     UtilStrCpy(m_txn.Payment.c_street_1, pData,
dbdatlen(m_dbproc, 16));
                if (pData=dbdata(m_dbproc, 17))
                     UtilStrCpy(m_txn.Payment.c_street_2, pData,
dbdatlen(m_dbproc, 17));
                if (pData=dbdata(m_dbproc, 18))
                     UtilStrCpy(m_txn.Payment.c_city, pData,
dbdatlen(m_dbproc, 18));
                if (pData=dbdata(m_dbproc, 19))
                     UtilStrCpy(m_txn.Payment.c_state, pData,
dbdatlen(m_dbproc, 19));
                if (pData=dbdata(m_dbproc, 20))
                     UtilStrCpy(m_txn.Payment.c_zip, pData,
dbdatlen(m_dbproc, 20));
                if (pData=dbdata(m_dbproc, 21))
                     UtilStrCpy(m_txn.Payment.c_phone, pData,
dbdatlen(m_dbproc, 21));
                if (pData=dbdata(m_dbproc, 22))
                {
                     datetime = *((DBDATETIME *) pData);
                     dbdatecrack(m_dbproc, &daterec, &datetime);
                     m_txn.Payment.c_since.year   = daterec.year;
                     m_txn.Payment.c_since.month  = daterec.month;
                     m_txn.Payment.c_since.day    = daterec.day;
                     m_txn.Payment.c_since.hour   = daterec.hour;
                     m_txn.Payment.c_since.minute = daterec.minute;
                     m_txn.Payment.c_since.second = daterec.second;
                }
                if(pData=dbdata(m_dbproc, 23))
                     UtilStrCpy(m_txn.Payment.c_credit, pData,
dbdatlen(m_dbproc, 23));
                if(pData=dbdata(m_dbproc, 24))
                     dbconvert(m_dbproc, SQLNUMERIC, (LPCBYTE)pData,
dbdatlen(m_dbproc,24), SQLFLT8, (BYTE *)&m_txn.Payment.c_credit_lim, 8);
                if(pData=dbdata(m_dbproc, 25))
                     dbconvert(m_dbproc, SQLNUMERIC, (LPCBYTE)pData,
dbdatlen(m_dbproc,25), SQLFLT8, (BYTE *)&m_txn.Payment.c_discount, 8);
                if(pData=dbdata(m_dbproc, 26))
                     dbconvert(m_dbproc, SQLNUMERIC, (LPCBYTE)pData,
dbdatlen(m_dbproc,26), SQLFLT8, (BYTE *)&m_txn.Payment.c_balance, 8);
                if(pData=dbdata(m_dbproc, 27))
                     UtilStrCpy(m_txn.Payment.c_data, pData,
dbdatlen(m_dbproc, 27));

                DiscardNextRows(0);
                DiscardNextResults(0);


                if (m_txn.Payment.c_id == 0)
                     throw new CTPCC_DBLIB_ERR(
CTPCC_DBLIB_ERR::ERR_INVALID_CUST );
```

```
               else
                    m_txn.Payment.exec_status_code = eOK;

               return;
          }
          catch (CSQLERR *e)
          {
               if ((e->m_msgno == 1205 ||
                    (e->m_msgno == iErrOleDbProvider &&
                    strstr(e->m_msgtext, sErrTimeoutExpired) != NULL)) &&
                    (++iTryCount <= iMaxRetries))
               {
                    // hit deadlock; backoff for increasingly longer period
                    delete e;
                    Sleep(10 * iTryCount);
               }
               else
                    throw;
          }
     }    // while (TRUE)

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



void CTPCC_DBLIB::OrderStatus()
{
     int            i;
     DBDATETIME datetime;
     DBDATEREC  daterec;

     int            iTryCount = 0;
     RETCODE        rc;
     const BYTE *pData;

     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 status is by name
```

```
               if (m_txn.OrderStatus.c_id == 0)
                    dbrpcparam(m_dbproc, NULL, 0, SQLCHAR, -1,
strlen(m_txn.OrderStatus.c_last), (unsigned char
*)m_txn.OrderStatus.c_last);


               if (dbrpcexec(m_dbproc) == FAIL)
                    ThrowError(CDBLIBERR::eDbRpcExec);

               // Get order lines
               if (dbresults(m_dbproc) != SUCCEED)
               {
                    if ((m_DbLibErr == NULL) && (m_SqlErr == NULL))
                         throw new CTPCC_DBLIB_ERR(
CTPCC_DBLIB_ERR::ERR_NO_SUCH_ORDER );
                    else
                         ThrowError(CDBLIBERR::eDbResults);
               }

               if (dbnumcols(m_dbproc) != 5)
                    ThrowError(CDBLIBERR::eWrongNumCols);

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

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

```
                          m_txn.OrderStatus.OL[i].ol_delivery_d.day    =
daterec.day;
                          m_txn.OrderStatus.OL[i].ol_delivery_d.hour   =
daterec.hour;
                          m_txn.OrderStatus.OL[i].ol_delivery_d.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) != SUCCEED)
                     ThrowError(CDBLIBERR::eDbResults);

                if (dbnextrow(m_dbproc) != REG_ROW)
                     ThrowError(CDBLIBERR::eDbNextRow);

                if (dbnumcols(m_dbproc) != 8)
                     ThrowError(CDBLIBERR::eWrongNumCols);

                if(pData=dbdata(m_dbproc, 1))
                     m_txn.OrderStatus.c_id = (*(DBINT *) pData);
                if(pData=dbdata(m_dbproc, 2))
                     UtilStrCpy(m_txn.OrderStatus.c_last, pData,
dbdatlen(m_dbproc,2));
                if(pData=dbdata(m_dbproc, 3))
                     UtilStrCpy(m_txn.OrderStatus.c_first, pData,
dbdatlen(m_dbproc,3));
                if(pData=dbdata(m_dbproc, 4))
                     UtilStrCpy(m_txn.OrderStatus.c_middle, pData,
dbdatlen(m_dbproc, 4));
                if(pData=dbdata(m_dbproc, 5))
                {
                     datetime = *((DBDATETIME *) pData);
                     dbdatecrack(m_dbproc, &daterec, &datetime);
                     m_txn.OrderStatus.o_entry_d.year   = daterec.year;
                     m_txn.OrderStatus.o_entry_d.month  = daterec.month;
                     m_txn.OrderStatus.o_entry_d.day    = daterec.day;
                     m_txn.OrderStatus.o_entry_d.hour   = daterec.hour;
                     m_txn.OrderStatus.o_entry_d.minute = daterec.minute;
                     m_txn.OrderStatus.o_entry_d.second = daterec.second;
                }
                if(pData=dbdata(m_dbproc, 6))
                     m_txn.OrderStatus.o_carrier_id = (*(DBSMALLINT *)
pData);
                if(pData=dbdata(m_dbproc, 7))
                     dbconvert(m_dbproc, SQLNUMERIC, (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 == iErrOleDbProvider &&
                     strstr(e->m_msgtext, sErrTimeoutExpired) != NULL)) &&
                     (++iTryCount <= iMaxRetries))
                {
                     // hit deadlock; backoff for increasingly longer period
                     delete e;
                     Sleep(10 * iTryCount);
                }
                else
                     throw;
           }
     }    // while (TRUE)

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


void CTPCC_DBLIB::Delivery()
{
     int            i;
     int            iTryCount = 0;
     const BYTE *pData;

     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) != SUCCEED)
                    ThrowError(CDBLIBERR::eDbResults);

               if (dbnextrow(m_dbproc) != REG_ROW)
                    ThrowError(CDBLIBERR::eDbNextRow);

               if (dbnumcols(m_dbproc) != 10)
                    ThrowError(CDBLIBERR::eWrongNumCols);

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

               DiscardNextRows(0);
               DiscardNextResults(0);

               m_txn.Delivery.exec_status_code = eOK;
               return;
          }
          catch (CSQLERR *e)
          {
               if ((e->m_msgno == 1205 ||
                    (e->m_msgno == iErrOleDbProvider &&
                    strstr(e->m_msgtext, sErrTimeoutExpired) != NULL)) &&
                    (++iTryCount <= iMaxRetries))
               {
                    // hit deadlock; backoff for increasingly longer period
                    delete e;
                    Sleep(10 * iTryCount);
               }
               else
                    throw;
          }
     }    // while (TRUE)

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

void CTPCC_DBLIB::ResetError()
{
     if (m_DbLibErr != NULL)
     {
          delete m_DbLibErr;
          m_DbLibErr = (CDBLIBERR*)NULL;
     }

     if (m_SqlErr != NULL)
     {
          delete m_SqlErr;
          m_SqlErr = (CSQLERR*)NULL;
     }
     return;
}

/*   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.
#ifndef 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
               eDbProcHandler        // error from either dbprocerrhandle or
dbprocmsghandle
          };

          CDBLIBERR(ACTION eAction, int severity = 0, int 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 DllDecl CTPCC_DBLIB : public CTPCC_BASE
{
     private:
          // declare variables and private functions here...
          PDBPROCESS m_dbproc;
          CDBLIBERR  *m_DbLibErr;         // not allocated until needed
(maybe never)
          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
          {
               NEW_ORDER_DATA       NewOrder;
               PAYMENT_DATA         Payment;
               DELIVERY_DATA        Delivery;
               STOCK_LEVEL_DATA     StockLevel;
               ORDER_STATUS_DATA    OrderStatus;
          }               m_txn;

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

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

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


          // these are public because they must be called from the dblib
err_handler and msg_hangler
          // 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" DllDecl 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);
```

```
/*   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 definations 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_pTxn               = NULL;
     m_pNewOrder          = NULL;
     m_pPayment      = NULL;
     m_pStockLevel   = NULL;
     m_pOrderStatus  = NULL;

     m_bSinglePool   = bSinglePool;

     ulTmpSize = (ULONG) sizeof(COM_DATA);
     VariantInit(&m_vTxn);
```

```
    m_vTxn.vt = VT_SAFEARRAY;

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

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

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

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

        // all txns will use same component
        m_pPayment = m_pNewOrder;
        m_pStockLevel = m_pNewOrder;
        m_pOrderStatus = m_pNewOrder;
    }
    else
    {
        // use different components for each txn

        hr = CoCreateInstance(CLSID_NewOrder, NULL, CLSCTX_SERVER,
IID_ITPCC, (void **)&m_pNewOrder);
        if (FAILED(hr))
            throw new CCOMERR(hr);

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

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

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

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

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

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

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

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

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

void CTPCC_COM::NewOrder()
{
    VARIANT   vTxn_out;

    HRESULT hr = m_pNewOrder->NewOrder(m_vTxn, &vTxn_out);
    if (FAILED(hr))
        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 );
}

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 );
}

/*   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.
#ifndef DllDecl
#define DllDecl  __declspec( dllimport )
#endif

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

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

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

          int       m_hr;
          int       m_iErrorType;
          int       m_iError;

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

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

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

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

          void NewOrder        ();
          void Payment         ();
          void StockLevel      ();
```

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


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


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

typedef CTPCC_COM* (TYPE_CTPCC_COM)(BOOL);

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


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

class CCOMPONENT_ERR : public CBaseErr
{
     public:
          CCOMPONENT_ERR(COMPONENT_ERROR Err)
          {
               m_Error = Err;
               m_szTextDetail = NULL;
               m_SystemErr = 0;
               m_szErrorText = NULL;
          };
          CCOMPONENT_ERR(COMPONENT_ERROR Err, char *szTextDetail, DWORD
dwSystemErr)
          {
               m_Error = Err;
               m_szTextDetail = new char[strlen(szTextDetail)+1];
               strcpy( m_szTextDetail, szTextDetail );
               m_SystemErr = dwSystemErr;
               m_szErrorText = NULL;
          };

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

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

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


static void WriteMessageToEventLog(LPTSTR lpszMsg);


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

     CTPCC_Common();
     ~CTPCC_Common();

// ITPCC
public:
     HRESULT __stdcall NewOrder(          int* iSize, UCHAR** txn);
```

```
     HRESULT __stdcall Payment(      int* iSize, UCHAR** txn);
     HRESULT __stdcall Delivery(          int* iSize, UCHAR** txn) {return
E_NOTIMPL;}
     HRESULT __stdcall StockLevel(   int* iSize, UCHAR** txn);
     HRESULT __stdcall OrderStatus(  int* iSize, UCHAR** txn);

     HRESULT __stdcall CallSetComplete();

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

// IObjectConstruct
     STDMETHODIMP Construct(IDispatch * pUnk);

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

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

};

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

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

};
```

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

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

// ITPCC
public:
//   HRESULT __stdcall NewOrder(          int* iSize, UCHAR** txn) {return
E_NOTIMPL;}
     HRESULT __stdcall Payment(     int* iSize, UCHAR** txn) {return
E_NOTIMPL;}
     HRESULT __stdcall StockLevel(   int* iSize, UCHAR** txn) {return
E_NOTIMPL;}
     HRESULT __stdcall OrderStatus(  int* iSize, UCHAR** txn) {return
E_NOTIMPL;}
};


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

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

// ITPCC
public:
     HRESULT __stdcall NewOrder(          int* iSize, UCHAR** txn) {return
E_NOTIMPL;}
     HRESULT __stdcall Payment(     int* iSize, UCHAR** txn) {return
E_NOTIMPL;}
     HRESULT __stdcall StockLevel(   int* iSize, UCHAR** txn) {return
E_NOTIMPL;}
//   HRESULT __stdcall OrderStatus(  int* iSize, UCHAR** txn) {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(          int* iSize, UCHAR** txn) {return
E_NOTIMPL;}
//   HRESULT __stdcall Payment(     int* iSize, UCHAR** txn) {return
E_NOTIMPL;}
     HRESULT __stdcall StockLevel(   int* iSize, UCHAR** txn) {return
E_NOTIMPL;}
     HRESULT __stdcall OrderStatus(  int* iSize, UCHAR** txn) {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(          int* iSize, UCHAR** txn) {return
E_NOTIMPL;}
     HRESULT __stdcall Payment(     int* iSize, UCHAR** txn) {return
E_NOTIMPL;}
//   HRESULT __stdcall StockLevel(   int* iSize, UCHAR** txn) {return
E_NOTIMPL;}
     HRESULT __stdcall OrderStatus(  int* iSize, UCHAR** txn) {return
E_NOTIMPL;}
};


//{{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

/*   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 <initguid.h>
#include <transact.h>
#include <atlimpl.cpp>
#include <comsvcs.h>

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

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


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


CComModule _Module;

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


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

static  HINSTANCE hLibInstanceDb = NULL;

TYPE_CTPCC_DBLIB     *pCTPCC_DBLIB_new;
TYPE_CTPCC_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 = MAX_COMPUTERNAME_LENGTH+1;
               GetComputerName(szMyComputerName, &dwSize);
               szMyComputerName[dwSize] = 0;

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

               if (Reg.eDB_Protocol == DBLIB)
               {
                    strcpy( szDllName, Reg.szPath );
                    strcat( szDllName, "tpcc_dblib.dll");
                    hLibInstanceDb = LoadLibrary( szDllName );
                    if (hLibInstanceDb == NULL)
                         throw new CCOMPONENT_ERR( ERR_LOADDLL_FAILED,
szDllName, GetLastError() );

                    // get function pointer to wrapper for class
constructor
                    pCTPCC_DBLIB_new = (TYPE_CTPCC_DBLIB*)
GetProcAddress(hLibInstanceDb,"CTPCC_DBLIB_new");
                    if (pCTPCC_DBLIB_new == NULL)
                         throw new CCOMPONENT_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 CCOMPONENT_ERR( ERR_LOADDLL_FAILED,
szDllName, GetLastError() );

                    // get function pointer to wrapper for class
constructor
                    pCTPCC_ODBC_new = (TYPE_CTPCC_ODBC*)
GetProcAddress(hLibInstanceDb,"CTPCC_ODBC_new");
                    if (pCTPCC_ODBC_new == NULL)
```

```
                         throw new CCOMPONENT_ERR( ERR_GETPROCADDR_FAILED,
szDllName, GetLastError() );
               }
               else
                    throw new CCOMPONENT_ERR( ERR_UNKNOWN_DB_PROTOCOL );
          }
          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)
{
     _Module.UnregisterServer();
     return S_OK;
}


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

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

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

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

        (VOID) DeregisterEventSource(hEventSource);
    }
}

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

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

```
char* CCOMPONENT_ERR::ErrorText(void)
{
     static SERRORMSG errorMsgs[] =
     {
          { ERR_MISSING_REGISTRY_ENTRIES, "Required entries missing from
registry."                },
          { ERR_LOADDLL_FAILED,                "Load of DLL failed.  DLL="
                                          },
          { ERR_GETPROCADDR_FAILED,       "Could not map proc in DLL.
GetProcAddr error.  DLL=" },
          { ERR_UNKNOWN_DB_PROTOCOL,      "Unknown database protocol
specified in registry."        },
          { 0,                                 ""
                                               }
     };

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

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

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


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

CTPCC_Common::~CTPCC_Common()
{
     if (m_pTxn)
          delete m_pTxn;
```

```
}

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

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

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

     try
     {
          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(int* iSize, UCHAR **txn)
{
```

```
     PNEW_ORDER_DATA pNewOrder;
     COM_DATA        *pData;

     try
     {
          pData = (COM_DATA*)*txn;
          pNewOrder = m_pTxn->BuffAddr_NewOrder();

          memcpy(pNewOrder, &pData->u.NewOrder, sizeof(NEW_ORDER_DATA));
          m_pTxn->NewOrder();
          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(int* iSize, UCHAR** txn)
{
     PPAYMENT_DATA   pPayment;
     COM_DATA        *pData;

     try
     {
          pData = (COM_DATA*)*txn;
          pPayment = m_pTxn->BuffAddr_Payment();

          memcpy(pPayment, &pData->u.Payment, sizeof(PAYMENT_DATA) );
          m_pTxn->Payment();
          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(int* iSize, UCHAR** txn)
{
     PSTOCK_LEVEL_DATA    pStockLevel;
     COM_DATA             *pData;

     try
     {
          pData = (COM_DATA*)*txn;
          pStockLevel = m_pTxn->BuffAddr_StockLevel();

          memcpy(pStockLevel, &pData->u.StockLevel, sizeof(STOCK_LEVEL_DATA)
);
          m_pTxn->StockLevel();
          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(int* iSize, UCHAR** txn)
{
     PORDER_STATUS_DATA   pOrderStatus;
     COM_DATA             *pData;

     try
     {
          pData = (COM_DATA*)*txn;
          pOrderStatus = m_pTxn->BuffAddr_OrderStatus();

          memcpy(pOrderStatus, &pData->u.OrderStatus,
sizeof(ORDER_STATUS_DATA) );
          m_pTxn->OrderStatus();
          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.def : Declares the module parameters.

LIBRARY      "tpcc_com_all.dll"

EXPORTS
     DllCanUnloadNow     @1 PRIVATE
     DllGetClassObject   @2 PRIVATE
     DllRegisterServer   @3 PRIVATE
     DllUnregisterServer  @4 PRIVATE


#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 Mon Jan 24 20:00:20 2000
 */
/* Compiler settings for .\src\tpcc_com_all.idl:
    Oicf (OptLev=i2), 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 __tpcc_com_all_h__
#define __tpcc_com_all_h__

/* Forward Declarations */

#ifndef __TPCC_FWD_DEFINED__
#define __TPCC_FWD_DEFINED__
```

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

#endif    /* __TPCC_FWD_DEFINED__ */


#ifndef __NewOrder_FWD_DEFINED__
#define __NewOrder_FWD_DEFINED__

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

#endif    /* __NewOrder_FWD_DEFINED__ */


#ifndef __OrderStatus_FWD_DEFINED__
#define __OrderStatus_FWD_DEFINED__

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

#endif    /* __OrderStatus_FWD_DEFINED__ */


#ifndef __Payment_FWD_DEFINED__
#define __Payment_FWD_DEFINED__

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

#endif    /* __Payment_FWD_DEFINED__ */


#ifndef __StockLevel_FWD_DEFINED__
#define __StockLevel_FWD_DEFINED__

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

```
#endif 	/* __StockLevel_FWD_DEFINED__ */


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

#ifdef __cplusplus
extern "C"{
#endif

void __RPC_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;


#ifndef __TPCCLib_LIBRARY_DEFINED__
#define __TPCCLib_LIBRARY_DEFINED__

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


EXTERN_C const IID LIBID_TPCCLib;

EXTERN_C const CLSID CLSID_TPCC;

#ifdef __cplusplus

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

EXTERN_C const CLSID CLSID_NewOrder;

#ifdef __cplusplus

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

```
EXTERN_C const CLSID CLSID_OrderStatus;

#ifdef __cplusplus

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

EXTERN_C const CLSID CLSID_Payment;

#ifdef __cplusplus

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

EXTERN_C const CLSID CLSID_StockLevel;

#ifdef __cplusplus

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

/* Additional Prototypes for ALL interfaces */

/* end of Additional Prototypes */

#ifdef __cplusplus
}
#endif

#endif




/*	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;
     };

};
```

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

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

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

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

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

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

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

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

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

#endif    // APSTUDIO_INVOKED


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

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

#endif    // !_MAC


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

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

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

STRINGTABLE DISCARDABLE
BEGIN
    IDS_PROJNAME            "tpcc_com_all"
END

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



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

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


HKCR
{
     TPCC.AllTxns.1 = s 'All Txns Class'
     {
          CLSID = s '{122A3128-2520-11D3-BA71-00C04FBFE08B}'
     }
     TPCC.AllTxns = s 'TPCC Class'
     {
          CurVer = s 'TPCC.AllTxns.1'
     }
     NoRemove CLSID
     {
          ForceRemove {122A3128-2520-11D3-BA71-00C04FBFE08B} = s 'TPCC
Class'
          {
               ProgID = s 'TPCC.AllTxns.1'
               VersionIndependentProgID = s 'TPCC.AllTxns'
               InprocServer32 = s '%MODULE%'
               {
                    val ThreadingModel = s 'Both'
               }
          }
     }
}


#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 Mon Jan 24 20:00:20 2000
 */
/* Compiler settings for .\src\tpcc_com_all.idl:
    Oicf (OptLev=i2), 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(  )

#if !defined(_M_IA64) && !defined(_M_AXP64)

#ifdef __cplusplus
extern "C"{
#endif


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

#ifdef _MIDL_USE_GUIDDEF_

#ifndef INITGUID
#define INITGUID
#include <guiddef.h>
```

```
#undef INITGUID
#else
#include <guiddef.h>
#endif

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

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

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

#endif // __IID_DEFINED__

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

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

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
LIBID_TPCCLib,0x122A3117,0x2520,0x11D3,0xBA,0x71,0x00,0xC0,0x4F,0xBF,0xE0,0x
8B);


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,0x47,0x00,0xC0,0x4F,0xBF,0xE0,0
x8B);


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

```
MIDL_DEFINE_GUID(CLSID,
CLSID_Payment,0xCD02F7EF,0xA4FA,0x11D2,0xBA,0x4E,0x00,0xC0,0x4F,0xBF,0xE0,0x
8B);


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(_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 Mon Jan 24 20:00:20 2000
 */
/* Compiler settings for .\src\tpcc_com_all.idl:
    Oicf (OptLev=i2), W1, 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_HEADING(  )

#if defined(_M_IA64) || defined(_M_AXP64)

#ifdef __cplusplus
extern "C"{
#endif


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

#ifdef _MIDL_USE_GUIDDEF_

#ifndef INITGUID
#define INITGUID
```

```
#include <guiddef.h>
#undef INITGUID
#else
#include <guiddef.h>
#endif

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

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

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

#endif // __IID_DEFINED__

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

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

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
LIBID_TPCCLib,0x122A3117,0x2520,0x11D3,0xBA,0x71,0x00,0xC0,0x4F,0xBF,0xE0,0x
8B);


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,0x47,0x00,0xC0,0x4F,0xBF,0xE0,0
x8B);


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

```
MIDL_DEFINE_GUID(CLSID,
CLSID_Payment,0xCD02F7EF,0xA4FA,0x11D2,0xBA,0x4E,0x00,0xC0,0x4F,0xBF,0xE0,0x
8B);


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(_M_IA64) || defined(_M_AXP64)*/


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

HKCR
{
     TPCC.OrderStatus.1 = s 'OrderStatus Class'
     {
          CLSID = s '{266836AD-A50D-11D2-BA4E-00C04FBFE08B}'
     }
     TPCC.OrderStatus = s 'OrderStatus Class'
     {
          CurVer = s 'TPCC.OrderStatus.1'
     }
     NoRemove CLSID
     {
          ForceRemove {266836AD-A50D-11D2-BA4E-00C04FBFE08B} = s
'OrderStatus Class'
          {
               ProgID = s 'TPCC.OrderStatus.1'
               VersionIndependentProgID = s 'TPCC.OrderStatus'
               InprocServer32 = s '%MODULE%'
               {
                    val ThreadingModel = s 'Both'
               }
          }
     }
}

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


#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 Mon Jan 24 20:00:07 2000
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf (OptLev=i2), 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 * );

#ifndef __ITPCC_INTERFACE_DEFINED__
#define __ITPCC_INTERFACE_DEFINED__

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


EXTERN_C const IID IID_ITPCC;
```

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

    MIDL_INTERFACE("FEEE6AA2-84B1-11d2-BA47-00C04FBFE08B")
    ITPCC : public IUnknown
    {
    public:
        virtual HRESULT __stdcall NewOrder(
            /* [out][in] */ int __RPC_FAR *iSize,
            /* [size_is][size_is][out][in] */ unsigned char __RPC_FAR
*__RPC_FAR *txn) = 0;

        virtual HRESULT __stdcall Payment(
            /* [out][in] */ int __RPC_FAR *iSize,
            /* [size_is][size_is][out][in] */ unsigned char __RPC_FAR
*__RPC_FAR *txn) = 0;

        virtual HRESULT __stdcall Delivery(
            /* [in] */ int __RPC_FAR *iSize,
            /* [size_is][size_is][in] */ unsigned char __RPC_FAR *__RPC_FAR
*txn) = 0;

        virtual HRESULT __stdcall StockLevel(
            /* [out][in] */ int __RPC_FAR *iSize,
            /* [size_is][size_is][out][in] */ unsigned char __RPC_FAR
*__RPC_FAR *txn) = 0;

        virtual HRESULT __stdcall OrderStatus(
            /* [out][in] */ int __RPC_FAR *iSize,
            /* [size_is][size_is][out][in] */ unsigned char __RPC_FAR
*__RPC_FAR *txn) = 0;

        virtual HRESULT __stdcall 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 ( __stdcall __RPC_FAR *NewOrder )(
            ITPCC __RPC_FAR * This,
            /* [out][in] */ int __RPC_FAR *iSize,
            /* [size_is][size_is][out][in] */ unsigned char __RPC_FAR
*__RPC_FAR *txn);

        HRESULT ( __stdcall __RPC_FAR *Payment )(
            ITPCC __RPC_FAR * This,
            /* [out][in] */ int __RPC_FAR *iSize,
            /* [size_is][size_is][out][in] */ unsigned char __RPC_FAR
*__RPC_FAR *txn);

        HRESULT ( __stdcall __RPC_FAR *Delivery )(
            ITPCC __RPC_FAR * This,
            /* [in] */ int __RPC_FAR *iSize,
            /* [size_is][size_is][in] */ unsigned char __RPC_FAR *__RPC_FAR
*txn);

        HRESULT ( __stdcall __RPC_FAR *StockLevel )(
            ITPCC __RPC_FAR * This,
            /* [out][in] */ int __RPC_FAR *iSize,
            /* [size_is][size_is][out][in] */ unsigned char __RPC_FAR
*__RPC_FAR *txn);

        HRESULT ( __stdcall __RPC_FAR *OrderStatus )(
            ITPCC __RPC_FAR * This,
            /* [out][in] */ int __RPC_FAR *iSize,
            /* [size_is][size_is][out][in] */ unsigned char __RPC_FAR
*__RPC_FAR *txn);

        HRESULT ( __stdcall __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,iSize,txn)    \
    (This)->lpVtbl -> NewOrder(This,iSize,txn)

#define ITPCC_Payment(This,iSize,txn)     \
    (This)->lpVtbl -> Payment(This,iSize,txn)

#define ITPCC_Delivery(This,iSize,txn)    \
    (This)->lpVtbl -> Delivery(This,iSize,txn)

#define ITPCC_StockLevel(This,iSize,txn)  \
    (This)->lpVtbl -> StockLevel(This,iSize,txn)

#define ITPCC_OrderStatus(This,iSize,txn) \
    (This)->lpVtbl -> OrderStatus(This,iSize,txn)

#define ITPCC_CallSetComplete(This)  \
    (This)->lpVtbl -> CallSetComplete(This)

#endif /* COBJMACROS */


#endif    /* C style interface */



HRESULT __stdcall ITPCC_NewOrder_Proxy(
    ITPCC __RPC_FAR * This,
    /* [out][in] */ int __RPC_FAR *iSize,
    /* [size_is][size_is][out][in] */ unsigned char __RPC_FAR *__RPC_FAR
*txn);


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


HRESULT __stdcall ITPCC_Payment_Proxy(
    ITPCC __RPC_FAR * This,
    /* [out][in] */ int __RPC_FAR *iSize,
    /* [size_is][size_is][out][in] */ unsigned char __RPC_FAR *__RPC_FAR
*txn);


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] */ int __RPC_FAR *iSize,
    /* [size_is][size_is][in] */ unsigned char __RPC_FAR *__RPC_FAR *txn);


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


HRESULT __stdcall ITPCC_StockLevel_Proxy(
    ITPCC __RPC_FAR * This,
    /* [out][in] */ int __RPC_FAR *iSize,
    /* [size_is][size_is][out][in] */ unsigned char __RPC_FAR *__RPC_FAR
*txn);


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


HRESULT __stdcall ITPCC_OrderStatus_Proxy(
    ITPCC __RPC_FAR * This,
    /* [out][in] */ int __RPC_FAR *iSize,
    /* [size_is][size_is][out][in] */ unsigned char __RPC_FAR *__RPC_FAR
*txn);


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 */

/* end of Additional Prototypes */

#ifdef __cplusplus
}
#endif

#endif




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

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


LIBRARY      "tpcc_com_ps"

DESCRIPTION  'Proxy/Stub DLL'

EXPORTS
     DllGetClassObject       @1PRIVATE
     DllCanUnloadNow         @2PRIVATE
     GetProxyDllInfo         @3PRIVATE
     DllRegisterServer         @4   PRIVATE
     DllUnregisterServer       @5   PRIVATE


#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 Sat Apr 08 16:40:10 2000
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf (OptLev=i2), 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("FEEE6AA2-84B1-11d2-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 )(
            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 ( __stdcall __RPC_FAR *NewOrder )(
            ITPCC __RPC_FAR * This,
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT __RPC_FAR *txn_out);

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

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

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

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

        HRESULT ( __stdcall __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 __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            , 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 * );
```

```
/* end of Additional Prototypes */

#ifdef __cplusplus
}
#endif

#endif



/*   FILE:      ITPCC.IDL
 *                   Microsoft TPC-C Kit Ver. 4.20.000
 *                   Copyright Microsoft, 1999
 *              All Rights Reserved
 *
 *                   not yet audited
 *
 *   PURPOSE:   Defines the interface used by TPCC. This interface can be
implemented by C++ components.
 *
 *  Change history:
 *        4.20.000 - first version
 */

// Forward declare all types defined
interface ITPCC;
import "oaidl.idl";
import "ocidl.idl";

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

        HRESULT _stdcall NewOrder
                              (
                              [in] VARIANT  txn_in,
                              [out] VARIANT *txn_out
                              );

        HRESULT _stdcall Payment
                              (
                              [in] VARIANT txn_in,
                              [out] VARIANT *txn_out
                              );

        HRESULT _stdcall Delivery
                              (
                              [in] VARIANT txn_in,
                              [out] VARIANT *txn_out
                              );

        HRESULT _stdcall StockLevel
                              (
                              [in] VARIANT txn_in,
                              [out] VARIANT *txn_out
                              );

        HRESULT _stdcall OrderStatus
                              (
                              [in] VARIANT txn_in,
                              [out] VARIANT *txn_out
                              );

        HRESULT _stdcall CallSetComplete
                              (
                              );

    };    // interface ITPCC




#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 Sat Apr 08 16:40:10 2000
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf (OptLev=i2), 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(  )

#if !defined(_M_IA64) && !defined(_M_AXP64)

#ifdef __cplusplus
extern "C"{
#endif


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

#ifdef _MIDL_USE_GUIDDEF_
```

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

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

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

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

#endif // __IID_DEFINED__

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

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

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
IID_ITPCC,0xFEEE6AA2,0x84B1,0x11d2,0xBA,0x47,0x00,0xC0,0x4F,0xBF,0xE0,0x8B);

#undef MIDL_DEFINE_GUID

#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 Sat Apr 08 16:40:10 2000
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf (OptLev=i2), W1, 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_HEADING(  )

#if defined(_M_IA64) || defined(_M_AXP64)

#ifdef __cplusplus
extern "C"{
#endif


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

#ifdef _MIDL_USE_GUIDDEF_

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

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

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

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

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

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

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
IID_ITPCC,0xFEEE6AA2,0x84B1,0x11d2,0xBA,0x47,0x00,0xC0,0x4F,0xBF,0xE0,0x8B);

#undef MIDL_DEFINE_GUID

#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 proxy stub code */


 /* File created by MIDL compiler version 5.03.0280 */
/* at Sat Apr 08 16:40:10 2000
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf (OptLev=i2), 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(  )

#if !defined(_M_IA64) && !defined(_M_AXP64)
#define USE_STUBLESS_PROXY


/* verify that the <rpcproxy.h> version is high enough to compile this file*/
#ifndef __REDQ_RPCPROXY_H_VERSION__
#define __REQUIRED_RPCPROXY_H_VERSION__ 440
#endif
```

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


#include "tpcc_com_ps.h"

#define TYPE_FORMAT_STRING_SIZE   997
#define PROC_FORMAT_STRING_SIZE   193
#define TRANSMIT_AS_TABLE_SIZE    0
#define WIRE_MARSHAL_TABLE_SIZE   1

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

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


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,{0xC0,0x00,0x00,0x00,0x00,0x00,0x00,0x46}} */


/* Object interface: ITPCC, ver. 0.0,
   GUID={0xFEEE6AA2,0x84B1,0x11d2,{0xBA,0x47,0x00,0xC0,0x4F,0xBF,0xE0,0x8B}} */


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,
    34,
    68,
    102,
    136,
    170
    };

static const MIDL_SERVER_INFO ITPCC_ServerInfo =
    {
    &Object_StubDesc,
    0,
    __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 =
    {
    0,
    NdrOleAllocate,
    NdrOleFree,
    0,
    0,
    0,
    0,
    0,
    __MIDL_TypeFormatString.Format,
    1, /* -error bounds_check flag */
    0x20000, /* Ndr library version */
    0,
    0x5030118, /* MIDL Version 5.3.280 */
    0,
    UserMarshalRoutines,
    0,  /* notify & notify_flag routine table */
    0x1, /* MIDL flag */
    0,  /* Reserved3 */
    0,  /* Reserved4 */
    0   /* Reserved5 */
    };

#pragma data_seg(".rdata")

static const USER_MARSHAL_ROUTINE_QUADRUPLE UserMarshalRoutines[
WIRE_MARSHAL_TABLE_SIZE ] =
        {

            {
            VARIANT_UserSize
            ,VARIANT_UserMarshal
            ,VARIANT_UserUnmarshal
            ,VARIANT_UserFree
            }

        };


#if !defined(__RPC_WIN32__)
#error  Invalid build platform for this stub.
#endif

#if !(TARGET_IS_NT40_OR_LATER)
#error You need a Windows NT 4.0 or later to run this stub because it uses these features:
#error   -Oif or -Oicf, [wire_marshal] or [user_marshal] attribute.
#error However, your C/C++ compilation flags indicate you intend to run this app on earlier systems.
#error This app will die there with the RPC_X_WRONG_STUB_VERSION error.
#endif
```

```
static const MIDL_PROC_FORMAT_STRING __MIDL_ProcFormatString =
    {
        0,
        {

            /* Procedure NewOrder */

                        0x33,           /* FC_AUTO_HANDLE */
                        0x6c,           /* Old Flags:  object, Oi2 */
/*  2 */ NdrFcLong( 0x0 ),      /* 0 */
/*  6 */ NdrFcShort( 0x3 ),     /* 3 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/*  8 */ NdrFcShort( 0x1c ),    /* x86 Stack size/offset = 28 */
#else
                        NdrFcShort( 0x20 ),     /*  MIPS Stack size/offset = 32 */
#endif
#else
                        NdrFcShort( 0x20 ),     /* PPC Stack size/offset = 32 */
#endif
#else
                        NdrFcShort( 0x28 ),     /* Alpha Stack size/offset = 40 */
#endif
/* 10 */NdrFcShort( 0x0 ),      /* 0 */
/* 12 */NdrFcShort( 0x8 ),      /* 8 */
/* 14 */0x7,            /* Oi2 Flags:  srv must size, clt must size, has return, */
                        0x3,            /* 3 */

            /* Parameter txn_in */

/* 16 */NdrFcShort( 0x8b ),     /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 18 */NdrFcShort( 0x4 ),      /* x86 Stack size/offset = 4 */
#else
                        NdrFcShort( 0x8 ),      /*  MIPS Stack size/offset = 8 */
#endif
#else
                        NdrFcShort( 0x8 ),      /* PPC Stack size/offset = 8 */
#endif
#else
                        NdrFcShort( 0x8 ),      /* Alpha Stack size/offset = 8 */
#endif
/* 20 */NdrFcShort( 0x3c8 ),    /* Type Offset=968 */

            /* Parameter txn_out */

/* 22 */NdrFcShort( 0x4113 ), /* Flags:  must size, must free, out, simple ref, srv alloc size=16 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
```

```
/* 24 */NdrFcShort( 0x14 ),     /* x86 Stack size/offset = 20 */
#else
                        NdrFcShort( 0x18 ),     /*  MIPS Stack size/offset = 24 */
#endif
#else
                        NdrFcShort( 0x18 ),     /* PPC Stack size/offset = 24 */
#endif
#else
                        NdrFcShort( 0x18 ),     /* Alpha Stack size/offset = 24 */
#endif
/* 26 */NdrFcShort( 0x3da ),    /* Type Offset=986 */

            /* Return value */

/* 28 */NdrFcShort( 0x70 ),     /* Flags:  out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 30 */NdrFcShort( 0x18 ),     /* x86 Stack size/offset = 24 */
#else
                        NdrFcShort( 0x1c ),     /*  MIPS Stack size/offset = 28 */
#endif
#else
                        NdrFcShort( 0x1c ),     /* PPC Stack size/offset = 28 */
#endif
#else
                        NdrFcShort( 0x20 ),     /* Alpha Stack size/offset = 32 */
#endif
/* 32 */0x8,            /* FC_LONG */
                        0x0,            /* 0 */

            /* Procedure Payment */

/* 34 */0x33,           /* FC_AUTO_HANDLE */
                        0x6c,           /* Old Flags:  object, Oi2 */
/* 36 */NdrFcLong( 0x0 ),       /* 0 */
/* 40 */NdrFcShort( 0x4 ),      /* 4 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 42 */NdrFcShort( 0x1c ),     /* x86 Stack size/offset = 28 */
#else
                        NdrFcShort( 0x20 ),     /*  MIPS Stack size/offset = 32 */
#endif
#else
                        NdrFcShort( 0x20 ),     /* PPC Stack size/offset = 32 */
#endif
#else
                        NdrFcShort( 0x28 ),     /* Alpha Stack size/offset = 40 */
#endif
/* 44 */NdrFcShort( 0x0 ),      /* 0 */
/* 46 */NdrFcShort( 0x8 ),      /* 8 */
/* 48 */0x7,            /* Oi2 Flags:  srv must size, clt must size, has return, */
```

```
                        0x3,            /* 3 */

        /* Parameter txn_in */

/* 50 */NdrFcShort( 0x8b ),     /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 52 */NdrFcShort( 0x4 ),      /* x86 Stack size/offset = 4 */
#else
                        NdrFcShort( 0x8 ),      /*  MIPS Stack size/offset = 8 */
#endif
#else
                        NdrFcShort( 0x8 ),      /* PPC Stack size/offset = 8 */
#endif
#else
                        NdrFcShort( 0x8 ),      /* Alpha Stack size/offset = 8 */
#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_
#if !defined(_MIPS_)
/* 58 */NdrFcShort( 0x14 ),     /* x86 Stack size/offset = 20 */
#else
                        NdrFcShort( 0x18 ),     /*  MIPS Stack size/offset = 24 */
#endif
#else
                        NdrFcShort( 0x18 ),     /* PPC Stack size/offset = 24 */
#endif
#else
                        NdrFcShort( 0x18 ),     /* Alpha Stack size/offset = 24 */
#endif
/* 60 */NdrFcShort( 0x3da ),    /* Type Offset=986 */

        /* Return value */

/* 62 */NdrFcShort( 0x70 ),     /* Flags:  out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 64 */NdrFcShort( 0x18 ),     /* x86 Stack size/offset = 24 */
#else
                        NdrFcShort( 0x1c ),     /*  MIPS Stack size/offset = 28 */
#endif
#else
                        NdrFcShort( 0x1c ),     /* PPC Stack size/offset = 28 */
#endif
#else
                        NdrFcShort( 0x20 ),     /* Alpha Stack size/offset = 32 */
```

```
#endif
/* 66 */0x8,            /* FC_LONG */
                        0x0,            /* 0 */

        /* Procedure Delivery */

/* 68 */0x33,           /* FC_AUTO_HANDLE */
                        0x6c,           /* Old Flags:  object, Oi2 */
/* 70 */NdrFcLong( 0x0 ),       /* 0 */
/* 74 */NdrFcShort( 0x5 ),      /* 5 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 76 */NdrFcShort( 0x1c ),     /* x86 Stack size/offset = 28 */
#else
                        NdrFcShort( 0x20 ),     /*  MIPS Stack size/offset = 32 */
#endif
#else
                        NdrFcShort( 0x20 ),     /* PPC Stack size/offset = 32 */
#endif
#else
                        NdrFcShort( 0x28 ),     /* Alpha Stack size/offset = 40 */
#endif
/* 78 */NdrFcShort( 0x0 ),      /* 0 */
/* 80 */NdrFcShort( 0x8 ),      /* 8 */
/* 82 */0x7,            /* Oi2 Flags:  srv must size, clt must size, has return, */
                        0x3,            /* 3 */

        /* Parameter txn_in */

/* 84 */NdrFcShort( 0x8b ),     /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 86 */NdrFcShort( 0x4 ),      /* x86 Stack size/offset = 4 */
#else
                        NdrFcShort( 0x8 ),      /*  MIPS Stack size/offset = 8 */
#endif
#else
                        NdrFcShort( 0x8 ),      /* PPC Stack size/offset = 8 */
#endif
#else
                        NdrFcShort( 0x8 ),      /* Alpha Stack size/offset = 8 */
#endif
/* 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_
#if !defined(_MIPS_)
/* 92 */NdrFcShort( 0x14 ),     /* x86 Stack size/offset = 20 */
```

```
#else
                        NdrFcShort( 0x18 ),     /*  MIPS Stack size/offset = 24 */
#endif
#else
                        NdrFcShort( 0x18 ),     /* PPC Stack size/offset = 24 */
#endif
#else
                        NdrFcShort( 0x18 ),     /* Alpha Stack size/offset = 24 */
#endif
/* 94 */NdrFcShort( 0x3da ),    /* Type Offset=986 */

        /* Return value */

/* 96 */NdrFcShort( 0x70 ),     /* Flags:  out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 98 */NdrFcShort( 0x18 ),     /* x86 Stack size/offset = 24 */
#else
                        NdrFcShort( 0x1c ),     /*  MIPS Stack size/offset = 28 */
#endif
#else
                        NdrFcShort( 0x1c ),     /* PPC Stack size/offset = 28 */
#endif
#else
                        NdrFcShort( 0x20 ),     /* Alpha Stack size/offset = 32 */
#endif
/* 100 */       0x8,            /* FC_LONG */
                        0x0,            /* 0 */

        /* Procedure StockLevel */

/* 102 */       0x33,           /* FC_AUTO_HANDLE */
                        0x6c,           /* Old Flags:  object, Oi2 */
/* 104 */       NdrFcLong( 0x0 ),       /* 0 */
/* 108 */       NdrFcShort( 0x6 ),      /* 6 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 110 */       NdrFcShort( 0x1c ),     /* x86 Stack size/offset = 28 */
#else
                        NdrFcShort( 0x20 ),     /*  MIPS Stack size/offset = 32 */
#endif
#else
                        NdrFcShort( 0x20 ),     /* PPC Stack size/offset = 32 */
#endif
#else
                        NdrFcShort( 0x28 ),     /* Alpha Stack size/offset = 40 */
#endif
/* 112 */       NdrFcShort( 0x0 ),      /* 0 */
/* 114 */       NdrFcShort( 0x8 ),      /* 8 */
/* 116 */       0x7,            /* Oi2 Flags:  srv must size, clt must size, has return, */
                        0x3,            /* 3 */
```

```
        /* Parameter txn_in */

/* 118 */       NdrFcShort( 0x8b ),     /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 120 */       NdrFcShort( 0x4 ),      /* x86 Stack size/offset = 4 */
#else
                        NdrFcShort( 0x8 ),      /*  MIPS Stack size/offset = 8 */
#endif
#else
                        NdrFcShort( 0x8 ),      /* PPC Stack size/offset = 8 */
#endif
#else
                        NdrFcShort( 0x8 ),      /* Alpha Stack size/offset = 8 */
#endif
/* 122 */       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_
#if !defined(_MIPS_)
/* 126 */       NdrFcShort( 0x14 ),     /* x86 Stack size/offset = 20 */
#else
                        NdrFcShort( 0x18 ),     /*  MIPS Stack size/offset = 24 */
#endif
#else
                        NdrFcShort( 0x18 ),     /* PPC Stack size/offset = 24 */
#endif
#else
                        NdrFcShort( 0x18 ),     /* Alpha Stack size/offset = 24 */
#endif
/* 128 */       NdrFcShort( 0x3da ),    /* Type Offset=986 */

        /* Return value */

/* 130 */       NdrFcShort( 0x70 ),     /* Flags:  out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 132 */       NdrFcShort( 0x18 ),     /* x86 Stack size/offset = 24 */
#else
                        NdrFcShort( 0x1c ),     /*  MIPS Stack size/offset = 28 */
#endif
#else
                        NdrFcShort( 0x1c ),     /* PPC Stack size/offset = 28 */
#endif
#else
                        NdrFcShort( 0x20 ),     /* Alpha Stack size/offset = 32 */
#endif
```

```
/* 134 */          0x8,                /* FC_LONG */
                   0x0,                /* 0 */

        /* Procedure OrderStatus */

/* 136 */          0x33,               /* FC_AUTO_HANDLE */
                   0x6c,               /* Old Flags:  object, Oi2 */
/* 138 */          NdrFcLong( 0x0 ),       /* 0 */
/* 142 */          NdrFcShort( 0x7 ),      /* 7 */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 144 */          NdrFcShort( 0x1c ),     /* x86 Stack size/offset = 28 */
#else
                   NdrFcShort( 0x20 ),     /*  MIPS Stack size/offset = 32 */
#endif
#else
                   NdrFcShort( 0x20 ),     /* PPC Stack size/offset = 32 */
#endif
#else
                   NdrFcShort( 0x28 ),     /* Alpha Stack size/offset = 40 */
#endif
/* 146 */          NdrFcShort( 0x0 ),      /* 0 */
/* 148 */          NdrFcShort( 0x8 ),      /* 8 */
/* 150 */          0x7,                /* Oi2 Flags:  srv must size, clt must size, has return, */
                   0x3,                /* 3 */

        /* Parameter txn_in */

/* 152 */          NdrFcShort( 0x8b ),     /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 154 */          NdrFcShort( 0x4 ),      /* x86 Stack size/offset = 4 */
#else
                   NdrFcShort( 0x8 ),      /*  MIPS Stack size/offset = 8 */
#endif
#else
                   NdrFcShort( 0x8 ),      /* PPC Stack size/offset = 8 */
#endif
#else
                   NdrFcShort( 0x8 ),      /* Alpha Stack size/offset = 8 */
#endif
/* 156 */          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_
#if !defined(_MIPS_)
/* 160 */          NdrFcShort( 0x14 ),     /* x86 Stack size/offset = 20 */
#else
                   NdrFcShort( 0x18 ),     /*  MIPS Stack size/offset = 24 */
#endif
#else
                   NdrFcShort( 0x18 ),     /* PPC Stack size/offset = 24 */
#endif
#else
                   NdrFcShort( 0x18 ),     /* Alpha Stack size/offset = 24 */
#endif
/* 162 */          NdrFcShort( 0x3da ),    /* Type Offset=986 */

        /* Return value */

/* 164 */          NdrFcShort( 0x70 ),     /* Flags:  out, return, base type, */
#ifndef _ALPHA_
#ifndef _PPC_
#if !defined(_MIPS_)
/* 166 */          NdrFcShort( 0x18 ),     /* x86 Stack size/offset = 24 */
#else
                   NdrFcShort( 0x1c ),     /*  MIPS Stack size/offset = 28 */
#endif
#else
                   NdrFcShort( 0x1c ),     /* PPC Stack size/offset = 28 */
#endif
#else
                   NdrFcShort( 0x20 ),     /* Alpha Stack size/offset = 32 */
#endif
/* 168 */          0x8,                /* FC_LONG */
                   0x0,                /* 0 */

        /* Procedure CallSetComplete */

/* 170 */          0x33,               /* FC_AUTO_HANDLE */
                   0x6c,               /* Old Flags:  object, Oi2 */
/* 172 */          NdrFcLong( 0x0 ),       /* 0 */
/* 176 */          NdrFcShort( 0x8 ),      /* 8 */
#ifndef _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 */          0x4,                /* Oi2 Flags:  has return, */
                   0x1,                /* 1 */

        /* Return value */

/* 186 */          NdrFcShort( 0x70 ),     /* Flags:  out, return, base type, */
#ifndef _ALPHA_
/* 188 */          NdrFcShort( 0x4 ),      /* x86, MIPS, PPC Stack size/offset = 4 */
#else
                   NdrFcShort( 0x8 ),      /* Alpha Stack size/offset = 8 */
#endif
```

```
/* 190 */          0x8,               /* FC_LONG */
                        0x0,               /* 0 */

                        0x0
        }
    };

static const MIDL_TYPE_FORMAT_STRING __MIDL_TypeFormatString =
    {
        0,
        {
                        NdrFcShort( 0x0 ),       /* 0 */
/*  2 */
                        0x12, 0x0,        /* FC_UP */
/*  4 */ NdrFcShort( 0x3b0 ),   /* Offset= 944 (948) */
/*  6 */
                        0x2b,              /* FC_NON_ENCAPSULATED_UNION */
                        0x9,               /* FC_ULONG */
/*  8 */ 0x7,               /* Corr desc: FC_USHORT */
                        0x0,               /*  */
/* 10 */NdrFcShort( 0xfff8 ),   /* -8 */
/* 12 */NdrFcShort( 0x2 ),      /* Offset= 2 (14) */
/* 14 */NdrFcShort( 0x10 ),     /* 16 */
/* 16 */NdrFcShort( 0x2b ),     /* 43 */
/* 18 */NdrFcLong( 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( 0xd6 ),     /* 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( 0x308 ),   /* 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( 0x400d ), /* 16397 */
/* 172 */          NdrFcShort( 0x2e0 ),    /* Offset= 736 (908) */
/* 174 */          NdrFcLong( 0x4009 ), /* 16393 */
/* 178 */          NdrFcShort( 0x2de ),    /* Offset= 734 (912) */
/* 180 */          NdrFcLong( 0x6000 ), /* 24576 */
/* 184 */          NdrFcShort( 0x2dc ),    /* Offset= 732 (916) */
/* 186 */          NdrFcLong( 0x400c ), /* 16396 */
/* 190 */          NdrFcShort( 0x2da ),    /* Offset= 730 (920) */
/* 192 */          NdrFcLong( 0x10 ),      /* 16 */
/* 196 */          NdrFcShort( 0x8002 ), /* Simple arm type: FC_CHAR */
/* 198 */          NdrFcLong( 0x12 ),      /* 18 */
/* 202 */          NdrFcShort( 0x8006 ), /* Simple arm type: FC_SHORT */
/* 204 */          NdrFcLong( 0x13 ),      /* 19 */
/* 208 */          NdrFcShort( 0x8008 ), /* Simple arm type: FC_LONG */
/* 210 */          NdrFcLong( 0x16 ),      /* 22 */
/* 214 */          NdrFcShort( 0x8008 ), /* Simple arm type: FC_LONG */
/* 216 */          NdrFcLong( 0x17 ),      /* 23 */
/* 220 */          NdrFcShort( 0x8008 ), /* Simple arm type: FC_LONG */
/* 222 */          NdrFcLong( 0xe ),       /* 14 */
/* 226 */          NdrFcShort( 0x2be ),    /* Offset= 702 (928) */
/* 228 */          NdrFcLong( 0x400e ), /* 16398 */
/* 232 */          NdrFcShort( 0x2c4 ),    /* Offset= 708 (940) */
/* 234 */          NdrFcLong( 0x4010 ), /* 16400 */
/* 238 */          NdrFcShort( 0x2c2 ),    /* Offset= 706 (944) */
/* 240 */          NdrFcLong( 0x4012 ), /* 16402 */
/* 244 */          NdrFcShort( 0x280 ),    /* Offset= 640 (884) */
/* 246 */          NdrFcLong( 0x4013 ), /* 16403 */
/* 250 */          NdrFcShort( 0x27e ),    /* Offset= 638 (888) */
/* 252 */          NdrFcLong( 0x4016 ), /* 16406 */
/* 256 */          NdrFcShort( 0x278 ),    /* Offset= 632 (888) */
/* 258 */          NdrFcLong( 0x4017 ), /* 16407 */
/* 262 */          NdrFcShort( 0x272 ),    /* Offset= 626 (888) */
/* 264 */     NdrFcLong( 0x0 ),      /* 0 */
/* 268 */     NdrFcShort( 0x0 ),     /* Offset= 0 (268) */
/* 270 */     NdrFcLong( 0x1 ),      /* 1 */
/* 274 */     NdrFcShort( 0x0 ),     /* Offset= 0 (274) */
/* 276 */     NdrFcShort( 0xffffffff ),         /* Offset= -1 (275) */
/* 278 */
                    0x15,            /* FC_STRUCT */
                    0x7,             /* 7 */
/* 280 */     NdrFcShort( 0x8 ),     /* 8 */
/* 282 */     0xb,             /* FC_HYPER */
                    0x5b,            /* FC_END */
/* 284 */
                    0x12, 0x0,       /* FC_UP */
/* 286 */     NdrFcShort( 0xc ),     /* Offset= 12 (298) */
/* 288 */
                    0x1b,            /* FC_CARRAY */
                    0x1,             /* 1 */
/* 290 */     NdrFcShort( 0x2 ),     /* 2 */
/* 292 */     0x9,             /* Corr desc: FC_ULONG */
                    0x0,             /*  */
/* 294 */     NdrFcShort( 0xfffc ),  /* -4 */
/* 296 */     0x6,             /* FC_SHORT */
                    0x5b,            /* FC_END */
/* 298 */
                    0x17,            /* FC_CSTRUCT */
                    0x3,             /* 3 */
/* 300 */     NdrFcShort( 0x8 ),     /* 8 */
/* 302 */     NdrFcShort( 0xfffffff2 ),         /* Offset= -14 (288) */
/* 304 */     0x8,             /* FC_LONG */
                    0x8,             /* FC_LONG */
/* 306 */     0x5c,            /* FC_PAD */
                    0x5b,            /* FC_END */
/* 308 */
                    0x2f,            /* FC_IP */
                    0x5a,            /* FC_CONSTANT_IID */
/* 310 */     NdrFcLong( 0x0 ),      /* 0 */
/* 314 */     NdrFcShort( 0x0 ),     /* 0 */
/* 316 */     NdrFcShort( 0x0 ),     /* 0 */
/* 318 */     0xc0,            /* 192 */
                    0x0,             /* 0 */
/* 320 */     0x0,             /* 0 */
                    0x0,             /* 0 */
/* 322 */     0x0,             /* 0 */
                    0x0,             /* 0 */
/* 324 */     0x0,             /* 0 */
                    0x46,            /* 70 */
/* 326 */
                    0x2f,            /* FC_IP */
                    0x5a,            /* FC_CONSTANT_IID */
/* 328 */     NdrFcLong( 0x20400 ),             /* 132096 */
/* 332 */     NdrFcShort( 0x0 ),     /* 0 */
/* 334 */     NdrFcShort( 0x0 ),     /* 0 */
/* 336 */     0xc0,            /* 192 */
```

```
                    0x0,             /* 0 */
/* 338 */     0x0,             /* 0 */
                    0x0,             /* 0 */
/* 340 */     0x0,             /* 0 */
                    0x0,             /* 0 */
/* 342 */     0x0,             /* 0 */
                    0x46,            /* 70 */
/* 344 */
                    0x12, 0x10,      /* FC_UP [pointer_deref] */
/* 346 */     NdrFcShort( 0x2 ),     /* Offset= 2 (348) */
/* 348 */
                    0x12, 0x0,       /* FC_UP */
/* 350 */     NdrFcShort( 0x1fc ),   /* Offset= 508 (858) */
/* 352 */
                    0x2a,            /* FC_ENCAPSULATED_UNION */
                    0x49,            /* 73 */
/* 354 */     NdrFcShort( 0x18 ),    /* 24 */
/* 356 */     NdrFcShort( 0xa ),     /* 10 */
/* 358 */     NdrFcLong( 0x8 ),      /* 8 */
/* 362 */     NdrFcShort( 0x58 ),    /* Offset= 88 (450) */
/* 364 */     NdrFcLong( 0xd ),      /* 13 */
/* 368 */     NdrFcShort( 0x78 ),    /* Offset= 120 (488) */
/* 370 */     NdrFcLong( 0x9 ),      /* 9 */
/* 374 */     NdrFcShort( 0x94 ),    /* Offset= 148 (522) */
/* 376 */     NdrFcLong( 0xc ),      /* 12 */
/* 380 */     NdrFcShort( 0xbc ),    /* Offset= 188 (568) */
/* 382 */     NdrFcLong( 0x24 ),     /* 36 */
/* 386 */     NdrFcShort( 0x114 ),   /* Offset= 276 (662) */
/* 388 */     NdrFcLong( 0x800d ),   /* 32781 */
/* 392 */     NdrFcShort( 0x130 ),   /* Offset= 304 (696) */
/* 394 */     NdrFcLong( 0x10 ),     /* 16 */
/* 398 */     NdrFcShort( 0x148 ),   /* Offset= 328 (726) */
/* 400 */     NdrFcLong( 0x2 ),      /* 2 */
/* 404 */     NdrFcShort( 0x160 ),   /* Offset= 352 (756) */
/* 406 */     NdrFcLong( 0x3 ),      /* 3 */
/* 410 */     NdrFcShort( 0x178 ),   /* Offset= 376 (786) */
/* 412 */     NdrFcLong( 0x14 ),     /* 20 */
/* 416 */     NdrFcShort( 0x190 ),   /* Offset= 400 (816) */
/* 418 */     NdrFcShort( 0xffffffff ),         /* Offset= -1 (417) */
/* 420 */
                    0x1b,            /* FC_CARRAY */
                    0x3,             /* 3 */
/* 422 */     NdrFcShort( 0x4 ),     /* 4 */
/* 424 */     0x19,            /* Corr desc:  field pointer, FC_ULONG */
                    0x0,             /*  */
/* 426 */     NdrFcShort( 0x0 ),     /* 0 */
/* 428 */
                    0x4b,            /* FC_PP */
                    0x5c,            /* FC_PAD */
/* 430 */
                    0x48,            /* FC_VARIABLE_REPEAT */
                    0x49,            /* FC_FIXED_OFFSET */
/* 432 */     NdrFcShort( 0x4 ),     /* 4 */
/* 434 */       NdrFcShort( 0x0 ),      /* 0 */
/* 436 */       NdrFcShort( 0x1 ),      /* 1 */
/* 438 */       NdrFcShort( 0x0 ),      /* 0 */
/* 440 */       NdrFcShort( 0x0 ),      /* 0 */
/* 442 */       0x12, 0x0,      /* FC_UP */
/* 444 */       NdrFcShort( 0xffffff6e ),       /* Offset= -146 (298) */
/* 446 */
                        0x5b,           /* FC_END */

                        0x8,            /* FC_LONG */
/* 448 */       0x5c,           /* FC_PAD */
                        0x5b,           /* FC_END */
/* 450 */
                        0x16,           /* FC_PSTRUCT */
                        0x3,            /* 3 */
/* 452 */       NdrFcShort( 0x8 ),      /* 8 */
/* 454 */
                        0x4b,           /* FC_PP */
                        0x5c,           /* FC_PAD */
/* 456 */
                        0x46,           /* FC_NO_REPEAT */
                        0x5c,           /* FC_PAD */
/* 458 */       NdrFcShort( 0x4 ),      /* 4 */
/* 460 */       NdrFcShort( 0x4 ),      /* 4 */
/* 462 */       0x11, 0x0,      /* FC_RP */
/* 464 */       NdrFcShort( 0xffffffd4 ),       /* Offset= -44 (420) */
/* 466 */
                        0x5b,           /* FC_END */

                        0x8,            /* FC_LONG */
/* 468 */       0x8,            /* FC_LONG */
                        0x5b,           /* FC_END */
/* 470 */
                        0x21,           /* FC_BOGUS_ARRAY */
                        0x3,            /* 3 */
/* 472 */       NdrFcShort( 0x0 ),      /* 0 */
/* 474 */       0x19,           /* Corr desc:  field pointer, FC_ULONG */
                        0x0,            /*  */
/* 476 */       NdrFcShort( 0x0 ),      /* 0 */
/* 478 */       NdrFcLong( 0xffffffff ),        /* -1 */
/* 482 */       0x4c,           /* FC_EMBEDDED_COMPLEX */
                        0x0,            /* 0 */
/* 484 */       NdrFcShort( 0xffffff50 ),       /* Offset= -176 (308) */
/* 486 */       0x5c,           /* FC_PAD */
                        0x5b,           /* FC_END */
/* 488 */
                        0x1a,           /* FC_BOGUS_STRUCT */
                        0x3,            /* 3 */
/* 490 */       NdrFcShort( 0x8 ),      /* 8 */
/* 492 */       NdrFcShort( 0x0 ),      /* 0 */
/* 494 */       NdrFcShort( 0x6 ),      /* Offset= 6 (500) */
/* 496 */       0x8,            /* FC_LONG */
                        0x36,           /* FC_POINTER */
```

```
/* 498 */       0x5c,           /* FC_PAD */
                        0x5b,           /* FC_END */
/* 500 */
                        0x11, 0x0,      /* FC_RP */
/* 502 */       NdrFcShort( 0xffffffe0 ),       /* Offset= -32 (470) */
/* 504 */
                        0x21,           /* FC_BOGUS_ARRAY */
                        0x3,            /* 3 */
/* 506 */       NdrFcShort( 0x0 ),      /* 0 */
/* 508 */       0x19,           /* Corr desc:  field pointer, FC_ULONG */
                        0x0,            /*  */
/* 510 */       NdrFcShort( 0x0 ),      /* 0 */
/* 512 */       NdrFcLong( 0xffffffff ),        /* -1 */
/* 516 */       0x4c,           /* FC_EMBEDDED_COMPLEX */
                        0x0,            /* 0 */
/* 518 */       NdrFcShort( 0xffffff40 ),       /* Offset= -192 (326) */
/* 520 */       0x5c,           /* FC_PAD */
                        0x5b,           /* FC_END */
/* 522 */
                        0x1a,           /* FC_BOGUS_STRUCT */
                        0x3,            /* 3 */
/* 524 */       NdrFcShort( 0x8 ),      /* 8 */
/* 526 */       NdrFcShort( 0x0 ),      /* 0 */
/* 528 */       NdrFcShort( 0x6 ),      /* Offset= 6 (534) */
/* 530 */       0x8,            /* FC_LONG */
                        0x36,           /* FC_POINTER */
/* 532 */       0x5c,           /* FC_PAD */
                        0x5b,           /* FC_END */
/* 534 */
                        0x11, 0x0,      /* FC_RP */
/* 536 */       NdrFcShort( 0xffffffe0 ),       /* Offset= -32 (504) */
/* 538 */
                        0x1b,           /* FC_CARRAY */
                        0x3,            /* 3 */
/* 540 */       NdrFcShort( 0x4 ),      /* 4 */
/* 542 */       0x19,           /* Corr desc:  field pointer, FC_ULONG */
                        0x0,            /*  */
/* 544 */       NdrFcShort( 0x0 ),      /* 0 */
/* 546 */
                        0x4b,           /* FC_PP */
                        0x5c,           /* FC_PAD */
/* 548 */
                        0x48,           /* FC_VARIABLE_REPEAT */
                        0x49,           /* FC_FIXED_OFFSET */
/* 550 */       NdrFcShort( 0x4 ),      /* 4 */
/* 552 */       NdrFcShort( 0x0 ),      /* 0 */
/* 554 */       NdrFcShort( 0x1 ),      /* 1 */
/* 556 */       NdrFcShort( 0x0 ),      /* 0 */
/* 558 */       NdrFcShort( 0x0 ),      /* 0 */
/* 560 */       0x12, 0x0,      /* FC_UP */
/* 562 */       NdrFcShort( 0x182 ),    /* Offset= 386 (948) */
/* 564 */
                        0x5b,           /* FC_END */
```

```
			0x8,		/* FC_LONG */
/* 566 */	0x5c,		/* FC_PAD */
			0x5b,		/* FC_END */
/* 568 */
			0x1a,		/* FC_BOGUS_STRUCT */
			0x3,		/* 3 */
/* 570 */	NdrFcShort( 0x8 ),	/* 8 */
/* 572 */	NdrFcShort( 0x0 ),	/* 0 */
/* 574 */	NdrFcShort( 0x6 ),	/* Offset= 6 (580) */
/* 576 */	0x8,		/* FC_LONG */
			0x36,		/* FC_POINTER */
/* 578 */	0x5c,		/* FC_PAD */
			0x5b,		/* FC_END */
/* 580 */
			0x11, 0x0,	/* FC_RP */
/* 582 */	NdrFcShort( 0xffffffd4 ),	/* Offset= -44 (538) */
/* 584 */
			0x2f,		/* FC_IP */
			0x5a,		/* FC_CONSTANT_IID */
/* 586 */	NdrFcLong( 0x2f ),	/* 47 */
/* 590 */	NdrFcShort( 0x0 ),	/* 0 */
/* 592 */	NdrFcShort( 0x0 ),	/* 0 */
/* 594 */	0xc0,		/* 192 */
			0x0,		/* 0 */
/* 596 */	0x0,		/* 0 */
			0x0,		/* 0 */
/* 598 */	0x0,		/* 0 */
			0x0,		/* 0 */
/* 600 */	0x0,		/* 0 */
			0x46,		/* 70 */
/* 602 */
			0x1b,		/* FC_CARRAY */
			0x0,		/* 0 */
/* 604 */	NdrFcShort( 0x1 ),	/* 1 */
/* 606 */	0x19,		/* Corr desc:  field pointer, FC_ULONG */
			0x0,		/*  */
/* 608 */	NdrFcShort( 0x4 ),	/* 4 */
/* 610 */	0x1,		/* FC_BYTE */
			0x5b,		/* FC_END */
/* 612 */
			0x1a,		/* FC_BOGUS_STRUCT */
			0x3,		/* 3 */
/* 614 */	NdrFcShort( 0x10 ),	/* 16 */
/* 616 */	NdrFcShort( 0x0 ),	/* 0 */
/* 618 */	NdrFcShort( 0xa ),	/* Offset= 10 (628) */
/* 620 */	0x8,		/* FC_LONG */
			0x8,		/* FC_LONG */
/* 622 */	0x4c,		/* FC_EMBEDDED_COMPLEX */
			0x0,		/* 0 */
/* 624 */	NdrFcShort( 0xffffffd8 ),	/* Offset= -40 (584) */
/* 626 */	0x36,		/* FC_POINTER */
			0x5b,		/* FC_END */
```

```
/* 628 */
			0x12, 0x0,	/* FC_UP */
/* 630 */	NdrFcShort( 0xffffffe4 ),	/* Offset= -28 (602) */
/* 632 */
			0x1b,		/* FC_CARRAY */
			0x3,		/* 3 */
/* 634 */	NdrFcShort( 0x4 ),	/* 4 */
/* 636 */	0x19,		/* Corr desc:  field pointer, FC_ULONG */
			0x0,		/*  */
/* 638 */	NdrFcShort( 0x0 ),	/* 0 */
/* 640 */
			0x4b,		/* FC_PP */
			0x5c,		/* FC_PAD */
/* 642 */
			0x48,		/* FC_VARIABLE_REPEAT */
			0x49,		/* FC_FIXED_OFFSET */
/* 644 */	NdrFcShort( 0x4 ),	/* 4 */
/* 646 */	NdrFcShort( 0x0 ),	/* 0 */
/* 648 */	NdrFcShort( 0x1 ),	/* 1 */
/* 650 */	NdrFcShort( 0x0 ),	/* 0 */
/* 652 */	NdrFcShort( 0x0 ),	/* 0 */
/* 654 */	0x12, 0x0,	/* FC_UP */
/* 656 */	NdrFcShort( 0xffffffd4 ),	/* Offset= -44 (612) */
/* 658 */
			0x5b,		/* FC_END */

			0x8,		/* FC_LONG */
/* 660 */	0x5c,		/* FC_PAD */
			0x5b,		/* FC_END */
/* 662 */
			0x1a,		/* FC_BOGUS_STRUCT */
			0x3,		/* 3 */
/* 664 */	NdrFcShort( 0x8 ),	/* 8 */
/* 666 */	NdrFcShort( 0x0 ),	/* 0 */
/* 668 */	NdrFcShort( 0x6 ),	/* Offset= 6 (674) */
/* 670 */	0x8,		/* FC_LONG */
			0x36,		/* FC_POINTER */
/* 672 */	0x5c,		/* FC_PAD */
			0x5b,		/* FC_END */
/* 674 */
			0x11, 0x0,	/* FC_RP */
/* 676 */	NdrFcShort( 0xffffffd4 ),	/* Offset= -44 (632) */
/* 678 */
			0x1d,		/* FC_SMFARRAY */
			0x0,		/* 0 */
/* 680 */	NdrFcShort( 0x8 ),	/* 8 */
/* 682 */	0x2,		/* FC_CHAR */
			0x5b,		/* FC_END */
/* 684 */
			0x15,		/* FC_STRUCT */
			0x3,		/* 3 */
/* 686 */	NdrFcShort( 0x10 ),	/* 16 */
/* 688 */	0x8,		/* FC_LONG */
```

```
                        0x6,            /* FC_SHORT */
/* 690 */       0x6,            /* FC_SHORT */
                        0x4c,           /* FC_EMBEDDED_COMPLEX */
/* 692 */       0x0,            /* 0 */
                        NdrFcShort( 0xfffffff1 ),       /* Offset= -15 (678) */
                        0x5b,           /* FC_END */
/* 696 */
                        0x1a,           /* FC_BOGUS_STRUCT */
                        0x3,            /* 3 */
/* 698 */       NdrFcShort( 0x18 ),     /* 24 */
/* 700 */       NdrFcShort( 0x0 ),      /* 0 */
/* 702 */       NdrFcShort( 0xa ),      /* Offset= 10 (712) */
/* 704 */       0x8,            /* FC_LONG */
                        0x36,           /* FC_POINTER */
/* 706 */       0x4c,           /* FC_EMBEDDED_COMPLEX */
                        0x0,            /* 0 */
/* 708 */       NdrFcShort( 0xffffffe8 ),       /* Offset= -24 (684) */
/* 710 */       0x5c,           /* FC_PAD */
                        0x5b,           /* FC_END */
/* 712 */
                        0x11, 0x0,      /* FC_RP */
/* 714 */       NdrFcShort( 0xffffff0c ),       /* Offset= -244 (470) */
/* 716 */
                        0x1b,           /* FC_CARRAY */
                        0x0,            /* 0 */
/* 718 */       NdrFcShort( 0x1 ),      /* 1 */
/* 720 */       0x19,           /* Corr desc:  field pointer, FC_ULONG */
                        0x0,            /*  */
/* 722 */       NdrFcShort( 0x0 ),      /* 0 */
/* 724 */       0x1,            /* FC_BYTE */
                        0x5b,           /* FC_END */
/* 726 */
                        0x16,           /* FC_PSTRUCT */
                        0x3,            /* 3 */
/* 728 */       NdrFcShort( 0x8 ),      /* 8 */
/* 730 */
                        0x4b,           /* FC_PP */
                        0x5c,           /* FC_PAD */
/* 732 */
                        0x46,           /* FC_NO_REPEAT */
                        0x5c,           /* FC_PAD */
/* 734 */       NdrFcShort( 0x4 ),      /* 4 */
/* 736 */       NdrFcShort( 0x4 ),      /* 4 */
/* 738 */       0x12, 0x0,      /* FC_UP */
/* 740 */       NdrFcShort( 0xffffffe8 ),       /* Offset= -24 (716) */
/* 742 */
                        0x5b,           /* FC_END */

                        0x8,            /* FC_LONG */
/* 744 */       0x8,            /* FC_LONG */
                        0x5b,           /* FC_END */
/* 746 */
                        0x1b,           /* FC_CARRAY */
```

```
                        0x1,            /* 1 */
/* 748 */       NdrFcShort( 0x2 ),      /* 2 */
/* 750 */       0x19,           /* Corr desc:  field pointer, FC_ULONG */
                        0x0,            /*  */
/* 752 */       NdrFcShort( 0x0 ),      /* 0 */
/* 754 */       0x6,            /* FC_SHORT */
                        0x5b,           /* FC_END */
/* 756 */
                        0x16,           /* FC_PSTRUCT */
                        0x3,            /* 3 */
/* 758 */       NdrFcShort( 0x8 ),      /* 8 */
/* 760 */
                        0x4b,           /* FC_PP */
                        0x5c,           /* FC_PAD */
/* 762 */
                        0x46,           /* FC_NO_REPEAT */
                        0x5c,           /* FC_PAD */
/* 764 */       NdrFcShort( 0x4 ),      /* 4 */
/* 766 */       NdrFcShort( 0x4 ),      /* 4 */
/* 768 */       0x12, 0x0,      /* FC_UP */
/* 770 */       NdrFcShort( 0xffffffe8 ),       /* Offset= -24 (746) */
/* 772 */
                        0x5b,           /* FC_END */

                        0x8,            /* FC_LONG */
/* 774 */       0x8,            /* FC_LONG */
                        0x5b,           /* FC_END */
/* 776 */
                        0x1b,           /* FC_CARRAY */
                        0x3,            /* 3 */
/* 778 */       NdrFcShort( 0x4 ),      /* 4 */
/* 780 */       0x19,           /* Corr desc:  field pointer, FC_ULONG */
                        0x0,            /*  */
/* 782 */       NdrFcShort( 0x0 ),      /* 0 */
/* 784 */       0x8,            /* FC_LONG */
                        0x5b,           /* FC_END */
/* 786 */
                        0x16,           /* FC_PSTRUCT */
                        0x3,            /* 3 */
/* 788 */       NdrFcShort( 0x8 ),      /* 8 */
/* 790 */
                        0x4b,           /* FC_PP */
                        0x5c,           /* FC_PAD */
/* 792 */
                        0x46,           /* FC_NO_REPEAT */
                        0x5c,           /* FC_PAD */
/* 794 */       NdrFcShort( 0x4 ),      /* 4 */
/* 796 */       NdrFcShort( 0x4 ),      /* 4 */
/* 798 */       0x12, 0x0,      /* FC_UP */
/* 800 */       NdrFcShort( 0xffffffe8 ),       /* Offset= -24 (776) */
/* 802 */
                        0x5b,           /* FC_END */
                        0x8,            /* FC_LONG */
/* 804 */       0x8,            /* FC_LONG */
                        0x5b,           /* FC_END */
/* 806 */
                        0x1b,           /* FC_CARRAY */
                        0x7,            /* 7 */
/* 808 */       NdrFcShort( 0x8 ),      /* 8 */
/* 810 */       0x19,           /* Corr desc:  field pointer, FC_ULONG */
                        0x0,            /*  */
/* 812 */       NdrFcShort( 0x0 ),      /* 0 */
/* 814 */       0xb,            /* FC_HYPER */
                        0x5b,           /* FC_END */
/* 816 */
                        0x16,           /* FC_PSTRUCT */
                        0x3,            /* 3 */
/* 818 */       NdrFcShort( 0x8 ),      /* 8 */
/* 820 */
                        0x4b,           /* FC_PP */
                        0x5c,           /* FC_PAD */
/* 822 */
                        0x46,           /* FC_NO_REPEAT */
                        0x5c,           /* FC_PAD */
/* 824 */       NdrFcShort( 0x4 ),      /* 4 */
/* 826 */       NdrFcShort( 0x4 ),      /* 4 */
/* 828 */       0x12, 0x0,      /* FC_UP */
/* 830 */       NdrFcShort( 0xffffffe8 ),       /* Offset= -24 (806) */
/* 832 */
                        0x5b,           /* FC_END */

                        0x8,            /* FC_LONG */
/* 834 */       0x8,            /* FC_LONG */
                        0x5b,           /* FC_END */
/* 836 */
                        0x15,           /* FC_STRUCT */
                        0x3,            /* 3 */
/* 838 */       NdrFcShort( 0x8 ),      /* 8 */
/* 840 */       0x8,            /* FC_LONG */
                        0x8,            /* FC_LONG */
/* 842 */       0x5c,           /* FC_PAD */
                        0x5b,           /* FC_END */
/* 844 */
                        0x1b,           /* FC_CARRAY */
                        0x3,            /* 3 */
/* 846 */       NdrFcShort( 0x8 ),      /* 8 */
/* 848 */       0x7,            /* Corr desc: FC_USHORT */
                        0x0,            /*  */
/* 850 */       NdrFcShort( 0xffd8 ),   /* -40 */
/* 852 */       0x4c,           /* FC_EMBEDDED_COMPLEX */
                        0x0,            /* 0 */
/* 854 */       NdrFcShort( 0xffffffee ),       /* Offset= -18 (836) */
/* 856 */       0x5c,           /* FC_PAD */
                        0x5b,           /* FC_END */
/* 858 */
```

```
                        0x1a,           /* FC_BOGUS_STRUCT */
                        0x3,            /* 3 */
/* 860 */       NdrFcShort( 0x28 ),     /* 40 */
/* 862 */       NdrFcShort( 0xffffffee ),       /* Offset= -18 (844) */
/* 864 */       NdrFcShort( 0x0 ),      /* Offset= 0 (864) */
/* 866 */       0x6,            /* FC_SHORT */
                        0x6,            /* FC_SHORT */
/* 868 */       0x38,           /* FC_ALIGNM4 */
                        0x8,            /* FC_LONG */
/* 870 */       0x8,            /* FC_LONG */
                        0x4c,           /* FC_EMBEDDED_COMPLEX */
/* 872 */       0x0,            /* 0 */
                        NdrFcShort( 0xfffffdf7 ),       /* Offset= -521 (352) */
                        0x5b,           /* FC_END */
/* 876 */
                        0x12, 0x0,      /* FC_UP */
/* 878 */       NdrFcShort( 0xfffffef6 ),       /* Offset= -266 (612) */
/* 880 */
                        0x12, 0x8,      /* FC_UP [simple_pointer] */
/* 882 */       0x1,            /* FC_BYTE */
                        0x5c,           /* FC_PAD */
/* 884 */
                        0x12, 0x8,      /* FC_UP [simple_pointer] */
/* 886 */       0x6,            /* FC_SHORT */
                        0x5c,           /* FC_PAD */
/* 888 */
                        0x12, 0x8,      /* FC_UP [simple_pointer] */
/* 890 */       0x8,            /* FC_LONG */
                        0x5c,           /* FC_PAD */
/* 892 */
                        0x12, 0x8,      /* FC_UP [simple_pointer] */
/* 894 */       0xa,            /* FC_FLOAT */
                        0x5c,           /* FC_PAD */
/* 896 */
                        0x12, 0x8,      /* FC_UP [simple_pointer] */
/* 898 */       0xc,            /* FC_DOUBLE */
                        0x5c,           /* FC_PAD */
/* 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( 0xfffffda6 ),       /* Offset= -602 (308) */
/* 912 */
                        0x12, 0x10,     /* FC_UP [pointer_deref] */
/* 914 */       NdrFcShort( 0xfffffdb4 ),       /* Offset= -588 (326) */
/* 916 */
                        0x12, 0x10,     /* FC_UP [pointer_deref] */
/* 918 */       NdrFcShort( 0xfffffdc2 ),       /* 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 (948) */
/* 928 */
			0x15,		/* FC_STRUCT */
			0x7,		/* 7 */
/* 930 */	NdrFcShort( 0x10 ),	/* 16 */
/* 932 */	0x6,		/* FC_SHORT */
			0x1,		/* FC_BYTE */
/* 934 */	0x1,		/* FC_BYTE */
			0x38,		/* FC_ALIGNM4 */
/* 936 */	0x8,		/* FC_LONG */
			0x39,		/* FC_ALIGNM8 */
/* 938 */	0xb,		/* FC_HYPER */
			0x5b,		/* FC_END */
/* 940 */
			0x12, 0x0,	/* FC_UP */
/* 942 */	NdrFcShort( 0xfffffff2 ),	/* Offset= -14 (928) */
/* 944 */
			0x12, 0x8,	/* FC_UP [simple_pointer] */
/* 946 */	0x2,		/* FC_CHAR */
			0x5c,		/* FC_PAD */
/* 948 */
			0x1a,		/* FC_BOGUS_STRUCT */
			0x7,		/* 7 */
/* 950 */	NdrFcShort( 0x20 ),	/* 32 */
/* 952 */	NdrFcShort( 0x0 ),	/* 0 */
/* 954 */	NdrFcShort( 0x0 ),	/* Offset= 0 (954) */
/* 956 */	0x8,		/* FC_LONG */
			0x8,		/* FC_LONG */
/* 958 */	0x6,		/* FC_SHORT */
			0x6,		/* FC_SHORT */
/* 960 */	0x6,		/* FC_SHORT */
			0x6,		/* FC_SHORT */
/* 962 */	0x4c,		/* FC_EMBEDDED_COMPLEX */
			0x0,		/* 0 */
/* 964 */	NdrFcShort( 0xfffffc42 ),	/* Offset= -958 (6) */
/* 966 */	0x5c,		/* FC_PAD */
			0x5b,		/* FC_END */
/* 968 */	0xb4,		/* FC_USER_MARSHAL */
			0x83,		/* 131 */
/* 970 */	NdrFcShort( 0x0 ),	/* 0 */
/* 972 */	NdrFcShort( 0x10 ),	/* 16 */
/* 974 */	NdrFcShort( 0x0 ),	/* 0 */
/* 976 */	NdrFcShort( 0xfffffc32 ),	/* Offset= -974 (2) */
/* 978 */
			0x11, 0x4,	/* FC_RP [alloced_on_stack] */
/* 980 */	NdrFcShort( 0x6 ),	/* Offset= 6 (986) */
/* 982 */
			0x13, 0x0,	/* FC_OP */
/* 984 */	NdrFcShort( 0xffffffdc ),	/* Offset= -36 (948) */
/* 986 */	0xb4,		/* FC_USER_MARSHAL */
			0x83,		/* 131 */
/* 988 */	NdrFcShort( 0x0 ),	/* 0 */
/* 990 */	NdrFcShort( 0x10 ),	/* 16 */
/* 992 */	NdrFcShort( 0x0 ),	/* 0 */
/* 994 */	NdrFcShort( 0xfffffff4 ),	/* Offset= -12 (982) */

			0x0
        }
    };

const CInterfaceProxyVtbl * _tpcc_com_ps_ProxyVtblList[] = 
{
    ( CInterfaceProxyVtbl *) &_ITPCCProxyVtbl,
    0
};

const CInterfaceStubVtbl * _tpcc_com_ps_StubVtblList[] = 
{
    ( CInterfaceStubVtbl *) &_ITPCCStubVtbl,
    0
};

PCInterfaceName const _tpcc_com_ps_InterfaceNamesList[] = 
{
    "ITPCC",
    0
};


#define _tpcc_com_ps_CHECK_IID(n)	IID_GENERIC_CHECK_IID( _tpcc_com_ps, pIID, n)

int __stdcall _tpcc_com_ps_IID_Lookup( const IID * pIID, int * pIndex )
{
    
    if(!_tpcc_com_ps_CHECK_IID(0))
        {
        *pIndex = 0;
        return 1;
        }

    return 0;
}

const ExtendedProxyFileInfo tpcc_com_ps_ProxyFileInfo = 
{
    (PCInterfaceProxyVtblList *) & _tpcc_com_ps_ProxyVtblList,
    (PCInterfaceStubVtblList *) & _tpcc_com_ps_StubVtblList,
    (const PCInterfaceName * ) & _tpcc_com_ps_InterfaceNamesList,
    0, // no delegation
    & _tpcc_com_ps_IID_Lookup, 
    1,
    2,
    0, /* table of [async_uuid] interfaces */
    0, /* Filler1 */
    0, /* Filler2 */
    0  /* Filler3 */
};


#endif /* !defined(_M_IA64) && !defined(_M_AXP64)*/


#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 Sat Apr 08 16:40:10 2000
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf (OptLev=i2), W1, 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_HEADING(  )

#if defined(_M_IA64) || defined(_M_AXP64)
#define USE_STUBLESS_PROXY


/* verify that the <rpcproxy.h> version is high enough to compile this file*/
#ifndef __REDQ_RPCPROXY_H_VERSION__
#define __REQUIRED_RPCPROXY_H_VERSION__ 475
#endif


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


#include "tpcc_com_ps.h"

#define TYPE_FORMAT_STRING_SIZE   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,{0xC0,0x00,0x00,0x00,0x00,0x00,0x00,0x46}} */


/* Object interface: ITPCC, ver. 0.0,
   GUID={0xFEEE6AA2,0x84B1,0x11d2,{0xBA,0x47,0x00,0xC0,0x4F,0xBF,0xE0,0x8B}} */


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,
    132,
    176,
    220
    };

static const MIDL_SERVER_INFO ITPCC_ServerInfo =
    {
    &Object_StubDesc,
    0,
    __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 =
    {
    0,
    NdrOleAllocate,
    NdrOleFree,
    0,
    0,
    0,
    0,
    0,
    __MIDL_TypeFormatString.Format,
    1, /* -error bounds_check flag */
    0x50002, /* Ndr library version */
    0,
    0x5030118, /* MIDL Version 5.3.280 */
    0,
    UserMarshalRoutines,
    0,  /* notify & notify_flag routine table */
    0x1, /* MIDL flag */
    0,  /* Reserved3 */
    0,  /* Reserved4 */
    0   /* Reserved5 */
    };

#pragma data_seg(".rdata")

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

        };


#if !defined(__RPC_WIN64__)
#error  Invalid build platform for this stub.
#endif

static const MIDL_PROC_FORMAT_STRING __MIDL_ProcFormatString =
    {
        0,
        {

            /* Procedure NewOrder */

                        0x33,           /* FC_AUTO_HANDLE */
                        0x6c,           /* Old Flags:  object, Oi2 */
/*  2 */ NdrFcLong( 0x0 ),      /* 0 */
/*  6 */ NdrFcShort( 0x3 ),     /* 3 */
#ifndef _ALPHA_
/*  8 */ NdrFcShort( 0x38 ),    /* ia64 Stack size/offset = 56 */
#else
                        NdrFcShort( 0x30 ),     /* axp64 Stack size/offset = 48 */
#endif
/* 10 */NdrFcShort( 0x0 ),      /* 0 */
/* 12 */NdrFcShort( 0x8 ),      /* 8 */
/* 14 */0x47,           /* Oi2 Flags:  srv must size, clt must size, has return, has ext, */
                        0x3,            /* 3 */
/* 16 */0xa,            /* 10 */
                        0x7,            /* Ext Flags:  new corr desc, clt corr check, srv corr check, */
/* 18 */NdrFcShort( 0x20 ),     /* 32 */
/* 20 */NdrFcShort( 0x20 ),     /* 32 */
/* 22 */NdrFcShort( 0x0 ),       /* 0 */
/* 24 */NdrFcShort( 0x0 ),       /* 0 */

        /* Parameter txn_in */

/* 26 */NdrFcShort( 0x8b ),     /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
/* 28 */NdrFcShort( 0x10 ),     /* ia64 Stack size/offset = 16 */
#else
                        NdrFcShort( 0x8 ),       /* axp64 Stack size/offset = 8 */
#endif
/* 30 */NdrFcShort( 0x3b6 ),   /* Type Offset=950 */

        /* Parameter txn_out */

/* 32 */NdrFcShort( 0x6113 ), /* Flags:  must size, must free, out, simple ref, srv alloc size=24 */
#ifndef _ALPHA_
/* 34 */NdrFcShort( 0x28 ),     /* ia64 Stack size/offset = 40 */
#else
                        NdrFcShort( 0x20 ),     /* axp64 Stack size/offset = 32 */
#endif
/* 36 */NdrFcShort( 0x3c8 ),   /* Type Offset=968 */

        /* Return value */

/* 38 */NdrFcShort( 0x70 ),     /* Flags:  out, return, base type, */
#ifndef _ALPHA_
/* 40 */NdrFcShort( 0x30 ),     /* ia64 Stack size/offset = 48 */
#else
                        NdrFcShort( 0x28 ),     /* axp64 Stack size/offset = 40 */
#endif
/* 42 */0x8,                    /* FC_LONG */
                        0x0,                    /* 0 */

        /* Procedure Payment */

/* 44 */0x33,                   /* FC_AUTO_HANDLE */
                        0x6c,                   /* Old Flags:  object, Oi2 */
/* 46 */NdrFcLong( 0x0 ),       /* 0 */
/* 50 */NdrFcShort( 0x4 ),      /* 4 */
#ifndef _ALPHA_
/* 52 */NdrFcShort( 0x38 ),     /* ia64 Stack size/offset = 56 */
#else
                        NdrFcShort( 0x30 ),     /* axp64 Stack size/offset = 48 */
#endif
/* 54 */NdrFcShort( 0x0 ),      /* 0 */
/* 56 */NdrFcShort( 0x8 ),      /* 8 */
/* 58 */0x47,                   /* Oi2 Flags:  srv must size, clt must size, has return, has ext, */
                        0x3,                    /* 3 */
/* 60 */0xa,                    /* 10 */
                        0x7,                    /* Ext Flags:  new corr desc, clt corr check, srv corr check, */
/* 62 */NdrFcShort( 0x20 ),     /* 32 */
/* 64 */NdrFcShort( 0x20 ),     /* 32 */
```

```
/* 66 */NdrFcShort( 0x0 ),       /* 0 */
/* 68 */NdrFcShort( 0x0 ),       /* 0 */

        /* Parameter txn_in */

/* 70 */NdrFcShort( 0x8b ),     /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
/* 72 */NdrFcShort( 0x10 ),     /* ia64 Stack size/offset = 16 */
#else
                        NdrFcShort( 0x8 ),       /* axp64 Stack size/offset = 8 */
#endif
/* 74 */NdrFcShort( 0x3b6 ),   /* Type Offset=950 */

        /* Parameter txn_out */

/* 76 */NdrFcShort( 0x6113 ), /* Flags:  must size, must free, out, simple ref, srv alloc size=24 */
#ifndef _ALPHA_
/* 78 */NdrFcShort( 0x28 ),     /* ia64 Stack size/offset = 40 */
#else
                        NdrFcShort( 0x20 ),     /* axp64 Stack size/offset = 32 */
#endif
/* 80 */NdrFcShort( 0x3c8 ),   /* Type Offset=968 */

        /* Return value */

/* 82 */NdrFcShort( 0x70 ),     /* Flags:  out, return, base type, */
#ifndef _ALPHA_
/* 84 */NdrFcShort( 0x30 ),     /* ia64 Stack size/offset = 48 */
#else
                        NdrFcShort( 0x28 ),     /* axp64 Stack size/offset = 40 */
#endif
/* 86 */0x8,                    /* FC_LONG */
                        0x0,                    /* 0 */

        /* Procedure Delivery */

/* 88 */0x33,                   /* FC_AUTO_HANDLE */
                        0x6c,                   /* Old Flags:  object, Oi2 */
/* 90 */NdrFcLong( 0x0 ),       /* 0 */
/* 94 */NdrFcShort( 0x5 ),      /* 5 */
#ifndef _ALPHA_
/* 96 */NdrFcShort( 0x38 ),     /* ia64 Stack size/offset = 56 */
#else
                        NdrFcShort( 0x30 ),     /* axp64 Stack size/offset = 48 */
#endif
/* 98 */NdrFcShort( 0x0 ),      /* 0 */
/* 100 */          NdrFcShort( 0x8 ),      /* 8 */
/* 102 */          0x47,                   /* Oi2 Flags:  srv must size, clt must size, has return, has ext, */
                        0x3,                    /* 3 */
/* 104 */          0xa,                    /* 10 */
                        0x7,                    /* Ext Flags:  new corr desc, clt corr check, srv corr check, */
/* 106 */          NdrFcShort( 0x20 ),     /* 32 */
/* 108 */          NdrFcShort( 0x20 ),     /* 32 */
/* 110 */         NdrFcShort( 0x0 ),      /* 0 */
/* 112 */         NdrFcShort( 0x0 ),      /* 0 */

        /* Parameter txn_in */

/* 114 */         NdrFcShort( 0x8b ),     /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
/* 116 */         NdrFcShort( 0x10 ),     /* ia64 Stack size/offset = 16 */
#else
                        NdrFcShort( 0x8 ),      /* axp64 Stack size/offset = 8 */
#endif
/* 118 */         NdrFcShort( 0x3b6 ),   /* Type Offset=950 */

        /* Parameter txn_out */

/* 120 */         NdrFcShort( 0x6113 ), /* Flags:  must size, must free, out, simple ref, srv alloc size=24 */
#ifndef _ALPHA_
/* 122 */         NdrFcShort( 0x28 ),     /* ia64 Stack size/offset = 40 */
#else
                        NdrFcShort( 0x20 ),     /* axp64 Stack size/offset = 32 */
#endif
/* 124 */         NdrFcShort( 0x3c8 ),   /* Type Offset=968 */

        /* Return value */

/* 126 */         NdrFcShort( 0x70 ),     /* Flags:  out, return, base type, */
#ifndef _ALPHA_
/* 128 */         NdrFcShort( 0x30 ),     /* ia64 Stack size/offset = 48 */
#else
                        NdrFcShort( 0x28 ),     /* axp64 Stack size/offset = 40 */
#endif
/* 130 */         0x8,              /* FC_LONG */
                        0x0,              /* 0 */

        /* Procedure StockLevel */

/* 132 */         0x33,             /* FC_AUTO_HANDLE */
                        0x6c,             /* Old Flags:  object, Oi2 */
/* 134 */         NdrFcLong( 0x0 ),       /* 0 */
/* 138 */         NdrFcShort( 0x6 ),      /* 6 */
#ifndef _ALPHA_
/* 140 */         NdrFcShort( 0x38 ),     /* ia64 Stack size/offset = 56 */
#else
                        NdrFcShort( 0x30 ),     /* axp64 Stack size/offset = 48 */
#endif
/* 142 */         NdrFcShort( 0x0 ),      /* 0 */
/* 144 */         NdrFcShort( 0x8 ),      /* 8 */
/* 146 */         0x47,             /* Oi2 Flags:  srv must size, clt must size, has return, has ext, */
                        0x3,              /* 3 */
/* 148 */         0xa,              /* 10 */
                        0x7,              /* Ext Flags:  new corr desc, clt corr check, srv corr check, */
/* 150 */         NdrFcShort( 0x20 ),     /* 32 */
/* 152 */         NdrFcShort( 0x20 ),     /* 32 */
```

```
/* 154 */         NdrFcShort( 0x0 ),      /* 0 */
/* 156 */         NdrFcShort( 0x0 ),      /* 0 */

        /* Parameter txn_in */

/* 158 */         NdrFcShort( 0x8b ),     /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
/* 160 */         NdrFcShort( 0x10 ),     /* ia64 Stack size/offset = 16 */
#else
                        NdrFcShort( 0x8 ),      /* axp64 Stack size/offset = 8 */
#endif
/* 162 */         NdrFcShort( 0x3b6 ),   /* Type Offset=950 */

        /* Parameter txn_out */

/* 164 */         NdrFcShort( 0x6113 ), /* Flags:  must size, must free, out, simple ref, srv alloc size=24 */
#ifndef _ALPHA_
/* 166 */         NdrFcShort( 0x28 ),     /* ia64 Stack size/offset = 40 */
#else
                        NdrFcShort( 0x20 ),     /* axp64 Stack size/offset = 32 */
#endif
/* 168 */         NdrFcShort( 0x3c8 ),   /* Type Offset=968 */

        /* Return value */

/* 170 */         NdrFcShort( 0x70 ),     /* Flags:  out, return, base type, */
#ifndef _ALPHA_
/* 172 */         NdrFcShort( 0x30 ),     /* ia64 Stack size/offset = 48 */
#else
                        NdrFcShort( 0x28 ),     /* axp64 Stack size/offset = 40 */
#endif
/* 174 */         0x8,              /* FC_LONG */
                        0x0,              /* 0 */

        /* Procedure OrderStatus */

/* 176 */         0x33,             /* FC_AUTO_HANDLE */
                        0x6c,             /* Old Flags:  object, Oi2 */
/* 178 */         NdrFcLong( 0x0 ),       /* 0 */
/* 182 */         NdrFcShort( 0x7 ),      /* 7 */
#ifndef _ALPHA_
/* 184 */         NdrFcShort( 0x38 ),     /* ia64 Stack size/offset = 56 */
#else
                        NdrFcShort( 0x30 ),     /* axp64 Stack size/offset = 48 */
#endif
/* 186 */         NdrFcShort( 0x0 ),      /* 0 */
/* 188 */         NdrFcShort( 0x8 ),      /* 8 */
/* 190 */         0x47,             /* Oi2 Flags:  srv must size, clt must size, has return, has ext, */
                        0x3,              /* 3 */
/* 192 */         0xa,              /* 10 */
                        0x7,              /* Ext Flags:  new corr desc, clt corr check, srv corr check, */
/* 194 */         NdrFcShort( 0x20 ),     /* 32 */
/* 196 */         NdrFcShort( 0x20 ),     /* 32 */
/* 198 */          NdrFcShort( 0x0 ),       /* 0 */
/* 200 */          NdrFcShort( 0x0 ),       /* 0 */

          /* Parameter txn_in */

/* 202 */          NdrFcShort( 0x8b ),     /* Flags:  must size, must free, in, by val, */
#ifndef _ALPHA_
/* 204 */          NdrFcShort( 0x10 ),     /* ia64 Stack size/offset = 16 */
#else
                              NdrFcShort( 0x8 ),       /* axp64 Stack size/offset = 8 */
#endif
/* 206 */          NdrFcShort( 0x3b6 ),   /* Type Offset=950 */

          /* Parameter txn_out */

/* 208 */          NdrFcShort( 0x6113 ), /* Flags:  must size, must free, out, simple ref, srv alloc size=24 */
#ifndef _ALPHA_
/* 210 */          NdrFcShort( 0x28 ),     /* ia64 Stack size/offset = 40 */
#else
                              NdrFcShort( 0x20 ),     /* axp64 Stack size/offset = 32 */
#endif
/* 212 */          NdrFcShort( 0x3c8 ),   /* Type Offset=968 */

          /* Return value */

/* 214 */          NdrFcShort( 0x70 ),     /* Flags:  out, return, base type, */
#ifndef _ALPHA_
/* 216 */          NdrFcShort( 0x30 ),     /* ia64 Stack size/offset = 48 */
#else
                              NdrFcShort( 0x28 ),     /* axp64 Stack size/offset = 40 */
#endif
/* 218 */          0x8,                  /* FC_LONG */
                              0x0,                  /* 0 */

          /* Procedure CallSetComplete */

/* 220 */          0x33,                /* FC_AUTO_HANDLE */
                              0x6c,                /* Old Flags:  object, Oi2 */
/* 222 */          NdrFcLong( 0x0 ),       /* 0 */
/* 226 */          NdrFcShort( 0x8 ),       /* 8 */
/* 228 */          NdrFcShort( 0x10 ),     /* ia64, axp64 Stack size/offset = 16 */
/* 230 */          NdrFcShort( 0x0 ),       /* 0 */
/* 232 */          NdrFcShort( 0x8 ),       /* 8 */
/* 234 */          0x44,                /* Oi2 Flags:  has return, has ext, */
                              0x1,                  /* 1 */
/* 236 */          0xa,                  /* 10 */
                              0x1,                  /* Ext Flags:  new corr desc, */
/* 238 */          NdrFcShort( 0x0 ),       /* 0 */
/* 240 */          NdrFcShort( 0x0 ),       /* 0 */
/* 242 */          NdrFcShort( 0x0 ),       /* 0 */
/* 244 */          NdrFcShort( 0x0 ),       /* 0 */

          /* Return value */
```

```
/* 246 */          NdrFcShort( 0x70 ),     /* Flags:  out, return, base type, */
/* 248 */          NdrFcShort( 0x8 ),       /* ia64, axp64 Stack size/offset = 8 */
/* 250 */          0x8,                  /* FC_LONG */
                              0x0,                  /* 0 */

                              0x0
        }
    };

static const MIDL_TYPE_FORMAT_STRING __MIDL_TypeFormatString =
    {
        0,
        {
                              NdrFcShort( 0x0 ),       /* 0 */
/*  2 */
                              0x12, 0x0,        /* FC_UP */
/*  4 */ NdrFcShort( 0x39e ),   /* Offset= 926 (930) */
/*  6 */
                              0x2b,                /* FC_NON_ENCAPSULATED_UNION */
                              0x9,                  /* FC_ULONG */
/*  8 */ 0x7,                  /* Corr desc: FC_USHORT */
                              0x0,                  /*  */
/* 10 */NdrFcShort( 0xfff8 ),   /* -8 */
/* 12 */NdrFcShort( 0x1 ),       /* Corr flags:  early, */
/* 14 */NdrFcShort( 0x2 ),       /* Offset= 2 (16) */
/* 16 */NdrFcShort( 0x10 ),     /* 16 */
/* 18 */NdrFcShort( 0x2b ),     /* 43 */
/* 20 */NdrFcLong( 0x3 ),       /* 3 */
/* 24 */NdrFcShort( 0x8008 ), /* Simple arm type: FC_LONG */
/* 26 */NdrFcLong( 0x11 ),     /* 17 */
/* 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( 0xa ),       /* 10 */
/* 60 */NdrFcShort( 0x8008 ), /* Simple arm type: FC_LONG */
/* 62 */NdrFcLong( 0x6 ),       /* 6 */
/* 66 */NdrFcShort( 0xd6 ),     /* Offset= 214 (280) */
/* 68 */NdrFcLong( 0x7 ),       /* 7 */
/* 72 */NdrFcShort( 0x800c ), /* Simple arm type: FC_DOUBLE */
/* 74 */NdrFcLong( 0x8 ),       /* 8 */
/* 78 */NdrFcShort( 0xd0 ),     /* Offset= 208 (286) */
/* 80 */NdrFcLong( 0xd ),       /* 13 */
/* 84 */NdrFcShort( 0xe4 ),     /* Offset= 228 (312) */
/* 86 */NdrFcLong( 0x9 ),       /* 9 */
/* 90 */NdrFcShort( 0xf0 ),     /* Offset= 240 (330) */
/* 92 */NdrFcLong( 0x2000 ), /* 8192 */
/* 96 */NdrFcShort( 0xfc ),      /* Offset= 252 (348) */
/* 98 */NdrFcLong( 0x24 ),       /* 36 */
/* 102 */          NdrFcShort( 0x2f4 ),    /* Offset= 756 (858) */
/* 104 */          NdrFcLong( 0x4024 ), /* 16420 */
/* 108 */          NdrFcShort( 0x2ee ),    /* Offset= 750 (858) */
/* 110 */          NdrFcLong( 0x4011 ), /* 16401 */
/* 114 */          NdrFcShort( 0x2ec ),    /* Offset= 748 (862) */
/* 116 */          NdrFcLong( 0x4002 ), /* 16386 */
/* 120 */          NdrFcShort( 0x2ea ),    /* Offset= 746 (866) */
/* 122 */          NdrFcLong( 0x4003 ), /* 16387 */
/* 126 */          NdrFcShort( 0x2e8 ),    /* Offset= 744 (870) */
/* 128 */          NdrFcLong( 0x4004 ), /* 16388 */
/* 132 */          NdrFcShort( 0x2e6 ),    /* Offset= 742 (874) */
/* 134 */          NdrFcLong( 0x4005 ), /* 16389 */
/* 138 */          NdrFcShort( 0x2e4 ),    /* Offset= 740 (878) */
/* 140 */          NdrFcLong( 0x400b ), /* 16395 */
/* 144 */          NdrFcShort( 0x2d2 ),    /* Offset= 722 (866) */
/* 146 */          NdrFcLong( 0x400a ), /* 16394 */
/* 150 */          NdrFcShort( 0x2d0 ),    /* Offset= 720 (870) */
/* 152 */          NdrFcLong( 0x4006 ), /* 16390 */
/* 156 */          NdrFcShort( 0x2d6 ),    /* Offset= 726 (882) */
/* 158 */          NdrFcLong( 0x4007 ), /* 16391 */
/* 162 */          NdrFcShort( 0x2cc ),    /* Offset= 716 (878) */
/* 164 */          NdrFcLong( 0x4008 ), /* 16392 */
/* 168 */          NdrFcShort( 0x2ce ),    /* Offset= 718 (886) */
/* 170 */          NdrFcLong( 0x400d ), /* 16397 */
/* 174 */          NdrFcShort( 0x2cc ),    /* Offset= 716 (890) */
/* 176 */          NdrFcLong( 0x4009 ), /* 16393 */
/* 180 */          NdrFcShort( 0x2ca ),    /* Offset= 714 (894) */
/* 182 */          NdrFcLong( 0x6000 ), /* 24576 */
/* 186 */          NdrFcShort( 0x2c8 ),    /* Offset= 712 (898) */
/* 188 */          NdrFcLong( 0x400c ), /* 16396 */
/* 192 */          NdrFcShort( 0x2c6 ),    /* Offset= 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( 0xe ),       /* 14 */
/* 228 */          NdrFcShort( 0x2aa ),    /* Offset= 682 (910) */
/* 230 */          NdrFcLong( 0x400e ), /* 16398 */
/* 234 */          NdrFcShort( 0x2b0 ),    /* Offset= 688 (922) */
/* 236 */          NdrFcLong( 0x4010 ), /* 16400 */
/* 240 */          NdrFcShort( 0x2ae ),    /* Offset= 686 (926) */
/* 242 */          NdrFcLong( 0x4012 ), /* 16402 */
/* 246 */          NdrFcShort( 0x26c ),    /* Offset= 620 (866) */
/* 248 */          NdrFcLong( 0x4013 ), /* 16403 */
/* 252 */          NdrFcShort( 0x26a ),    /* Offset= 618 (870) */
```

```
/* 254 */          NdrFcLong( 0x4016 ), /* 16406 */
/* 258 */          NdrFcShort( 0x264 ),    /* Offset= 612 (870) */
/* 260 */          NdrFcLong( 0x4017 ), /* 16407 */
/* 264 */          NdrFcShort( 0x25e ),    /* Offset= 606 (870) */
/* 266 */          NdrFcLong( 0x0 ),       /* 0 */
/* 270 */          NdrFcShort( 0x0 ),      /* Offset= 0 (270) */
/* 272 */          NdrFcLong( 0x1 ),       /* 1 */
/* 276 */          NdrFcShort( 0x0 ),      /* Offset= 0 (276) */
/* 278 */          NdrFcShort( 0xffffffff ),          /* Offset= -1 (277) */
/* 280 */
                             0x15,               /* FC_STRUCT */
                             0x7,                /* 7 */
/* 282 */          NdrFcShort( 0x8 ),      /* 8 */
/* 284 */          0xb,                /* FC_HYPER */
                             0x5b,               /* FC_END */
/* 286 */
                             0x12, 0x0,          /* FC_UP */
/* 288 */          NdrFcShort( 0xe ),      /* Offset= 14 (302) */
/* 290 */
                             0x1b,               /* FC_CARRAY */
                             0x1,                /* 1 */
/* 292 */          NdrFcShort( 0x2 ),      /* 2 */
/* 294 */          0x9,                /* Corr desc: FC_ULONG */
                             0x0,                /*  */
/* 296 */          NdrFcShort( 0xfffc ),   /* -4 */
/* 298 */          NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 300 */          0x6,                /* FC_SHORT */
                             0x5b,               /* FC_END */
/* 302 */
                             0x17,               /* FC_CSTRUCT */
                             0x3,                /* 3 */
/* 304 */          NdrFcShort( 0x8 ),      /* 8 */
/* 306 */          NdrFcShort( 0xfffffff0 ),          /* Offset= -16 (290) */
/* 308 */          0x8,                /* FC_LONG */
                             0x8,                /* FC_LONG */
/* 310 */          0x5c,               /* FC_PAD */
                             0x5b,               /* FC_END */
/* 312 */
                             0x2f,               /* FC_IP */
                             0x5a,               /* FC_CONSTANT_IID */
/* 314 */          NdrFcLong( 0x0 ),       /* 0 */
/* 318 */          NdrFcShort( 0x0 ),      /* 0 */
/* 320 */          NdrFcShort( 0x0 ),      /* 0 */
/* 322 */          0xc0,               /* 192 */
                             0x0,                /* 0 */
/* 324 */          0x0,                /* 0 */
                             0x0,                /* 0 */
/* 326 */          0x0,                /* 0 */
                             0x0,                /* 0 */
/* 328 */          0x0,                /* 0 */
                             0x46,               /* 70 */
/* 330 */
                             0x2f,               /* FC_IP */
```

```
                        0x5a,           /* FC_CONSTANT_IID */
/* 332 */       NdrFcLong( 0x20400 ),           /* 132096 */
/* 336 */       NdrFcShort( 0x0 ),      /* 0 */
/* 338 */       NdrFcShort( 0x0 ),      /* 0 */
/* 340 */       0xc0,           /* 192 */
                        0x0,            /* 0 */
/* 342 */       0x0,            /* 0 */
                        0x0,            /* 0 */
/* 344 */       0x0,            /* 0 */
                        0x0,            /* 0 */
/* 346 */       0x0,            /* 0 */
                        0x46,           /* 70 */
/* 348 */
                        0x12, 0x10,     /* FC_UP [pointer_deref] */
/* 350 */       NdrFcShort( 0x2 ),      /* Offset= 2 (352) */
/* 352 */
                        0x12, 0x0,      /* FC_UP */
/* 354 */       NdrFcShort( 0x1e6 ),    /* Offset= 486 (840) */
/* 356 */
                        0x2a,           /* FC_ENCAPSULATED_UNION */
                        0x89,           /* 137 */
/* 358 */       NdrFcShort( 0x20 ),     /* 32 */
/* 360 */       NdrFcShort( 0xa ),      /* 10 */
/* 362 */       NdrFcLong( 0x8 ),       /* 8 */
/* 366 */       NdrFcShort( 0x50 ),     /* Offset= 80 (446) */
/* 368 */       NdrFcLong( 0xd ),       /* 13 */
/* 372 */       NdrFcShort( 0x70 ),     /* Offset= 112 (484) */
/* 374 */       NdrFcLong( 0x9 ),       /* 9 */
/* 378 */       NdrFcShort( 0x90 ),     /* Offset= 144 (522) */
/* 380 */       NdrFcLong( 0xc ),       /* 12 */
/* 384 */       NdrFcShort( 0xb0 ),     /* Offset= 176 (560) */
/* 386 */       NdrFcLong( 0x24 ),      /* 36 */
/* 390 */       NdrFcShort( 0x104 ),    /* Offset= 260 (650) */
/* 392 */       NdrFcLong( 0x800d ),    /* 32781 */
/* 396 */       NdrFcShort( 0x120 ),    /* Offset= 288 (684) */
/* 398 */       NdrFcLong( 0x10 ),      /* 16 */
/* 402 */       NdrFcShort( 0x13a ),    /* Offset= 314 (716) */
/* 404 */       NdrFcLong( 0x2 ),       /* 2 */
/* 408 */       NdrFcShort( 0x150 ),    /* Offset= 336 (744) */
/* 410 */       NdrFcLong( 0x3 ),       /* 3 */
/* 414 */       NdrFcShort( 0x166 ),    /* Offset= 358 (772) */
/* 416 */       NdrFcLong( 0x14 ),      /* 20 */
/* 420 */       NdrFcShort( 0x17c ),    /* Offset= 380 (800) */
/* 422 */       NdrFcShort( 0xffffffff ),       /* Offset= -1 (421) */
/* 424 */
                        0x21,           /* FC_BOGUS_ARRAY */
                        0x3,            /* 3 */
/* 426 */       NdrFcShort( 0x0 ),      /* 0 */
/* 428 */       0x19,           /* Corr desc:  field pointer, FC_ULONG */
                        0x0,            /*  */
/* 430 */       NdrFcShort( 0x0 ),      /* 0 */
/* 432 */       NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 434 */       NdrFcLong( 0xffffffff ),        /* -1 */
```

```
/* 438 */       NdrFcShort( 0x0 ),      /* Corr flags:  */
/* 440 */
                        0x12, 0x0,      /* FC_UP */
/* 442 */       NdrFcShort( 0xffffff74 ),       /* Offset= -140 (302) */
/* 444 */       0x5c,           /* FC_PAD */
                        0x5b,           /* FC_END */
/* 446 */
                        0x1a,           /* FC_BOGUS_STRUCT */
                        0x3,            /* 3 */
/* 448 */       NdrFcShort( 0x10 ),     /* 16 */
/* 450 */       NdrFcShort( 0x0 ),      /* 0 */
/* 452 */       NdrFcShort( 0x6 ),      /* Offset= 6 (458) */
/* 454 */       0x8,            /* FC_LONG */
                        0x39,           /* FC_ALIGNM8 */
/* 456 */       0x36,           /* FC_POINTER */
                        0x5b,           /* FC_END */
/* 458 */
                        0x11, 0x0,      /* FC_RP */
/* 460 */       NdrFcShort( 0xffffffdc ),       /* Offset= -36 (424) */
/* 462 */
                        0x21,           /* FC_BOGUS_ARRAY */
                        0x3,            /* 3 */
/* 464 */       NdrFcShort( 0x0 ),      /* 0 */
/* 466 */       0x19,           /* Corr desc:  field pointer, FC_ULONG */
                        0x0,            /*  */
/* 468 */       NdrFcShort( 0x0 ),      /* 0 */
/* 470 */       NdrFcShort( 0x1 ),      /* Corr flags:  early, */
/* 472 */       NdrFcLong( 0xffffffff ),        /* -1 */
/* 476 */       NdrFcShort( 0x0 ),      /* Corr flags:  */
/* 478 */       0x4c,           /* FC_EMBEDDED_COMPLEX */
                        0x0,            /* 0 */
/* 480 */       NdrFcShort( 0xffffff58 ),       /* Offset= -168 (312) */
/* 482 */       0x5c,           /* FC_PAD */
                        0x5b,           /* FC_END */
/* 484 */
                        0x1a,           /* FC_BOGUS_STRUCT */
                        0x3,            /* 3 */
/* 486 */       NdrFcShort( 0x10 ),     /* 16 */
/* 488 */       NdrFcShort( 0x0 ),      /* 0 */
/* 490 */       NdrFcShort( 0x6 ),      /* Offset= 6 (496) */
/* 492 */       0x8,            /* FC_LONG */
                        0x39,           /* FC_ALIGNM8 */
/* 494 */       0x36,           /* FC_POINTER */
                        0x5b,           /* FC_END */
/* 496 */
                        0x11, 0x0,      /* FC_RP */
/* 498 */       NdrFcShort( 0xffffffdc ),       /* Offset= -36 (462) */
/* 500 */
                        0x21,           /* FC_BOGUS_ARRAY */
                        0x3,            /* 3 */
/* 502 */       NdrFcShort( 0x0 ),      /* 0 */
/* 504 */       0x19,           /* Corr desc:  field pointer, FC_ULONG */
                        0x0,            /*  */
```

```
/* 506 */         NdrFcShort( 0x0 ),       /* 0 */
/* 508 */         NdrFcShort( 0x1 ),       /* Corr flags:  early, */
/* 510 */         NdrFcLong( 0xffffffff ),          /* -1 */
/* 514 */         NdrFcShort( 0x0 ),       /* Corr flags:  */
/* 516 */         0x4c,            /* FC_EMBEDDED_COMPLEX */
                        0x0,             /* 0 */
/* 518 */         NdrFcShort( 0xffffff44 ),         /* Offset= -188 (330) */
/* 520 */         0x5c,            /* FC_PAD */
                        0x5b,            /* FC_END */
/* 522 */
                        0x1a,            /* FC_BOGUS_STRUCT */
                        0x3,             /* 3 */
/* 524 */         NdrFcShort( 0x10 ),      /* 16 */
/* 526 */         NdrFcShort( 0x0 ),       /* 0 */
/* 528 */         NdrFcShort( 0x6 ),       /* Offset= 6 (534) */
/* 530 */         0x8,             /* FC_LONG */
                        0x39,            /* FC_ALIGNM8 */
/* 532 */         0x36,            /* FC_POINTER */
                        0x5b,            /* FC_END */
/* 534 */
                        0x11, 0x0,       /* FC_RP */
/* 536 */         NdrFcShort( 0xffffffdc ),         /* Offset= -36 (500) */
/* 538 */
                        0x21,            /* FC_BOGUS_ARRAY */
                        0x3,             /* 3 */
/* 540 */         NdrFcShort( 0x0 ),       /* 0 */
/* 542 */         0x19,            /* Corr desc:  field pointer, FC_ULONG */
                        0x0,             /*  */
/* 544 */         NdrFcShort( 0x0 ),       /* 0 */
/* 546 */         NdrFcShort( 0x1 ),       /* Corr flags:  early, */
/* 548 */         NdrFcLong( 0xffffffff ),          /* -1 */
/* 552 */         NdrFcShort( 0x0 ),       /* Corr flags:  */
/* 554 */
                        0x12, 0x0,       /* FC_UP */
/* 556 */         NdrFcShort( 0x176 ),     /* Offset= 374 (930) */
/* 558 */         0x5c,            /* FC_PAD */
                        0x5b,            /* FC_END */
/* 560 */
                        0x1a,            /* FC_BOGUS_STRUCT */
                        0x3,             /* 3 */
/* 562 */         NdrFcShort( 0x10 ),      /* 16 */
/* 564 */         NdrFcShort( 0x0 ),       /* 0 */
/* 566 */         NdrFcShort( 0x6 ),       /* Offset= 6 (572) */
/* 568 */         0x8,             /* FC_LONG */
                        0x39,            /* FC_ALIGNM8 */
/* 570 */         0x36,            /* FC_POINTER */
                        0x5b,            /* FC_END */
/* 572 */
                        0x11, 0x0,       /* FC_RP */
/* 574 */         NdrFcShort( 0xffffffdc ),         /* Offset= -36 (538) */
/* 576 */
                        0x2f,            /* FC_IP */
                        0x5a,            /* FC_CONSTANT_IID */
```

```
/* 578 */         NdrFcLong( 0x2f ),       /* 47 */
/* 582 */         NdrFcShort( 0x0 ),       /* 0 */
/* 584 */         NdrFcShort( 0x0 ),       /* 0 */
/* 586 */         0xc0,            /* 192 */
                        0x0,             /* 0 */
/* 588 */         0x0,             /* 0 */
                        0x0,             /* 0 */
/* 590 */         0x0,             /* 0 */
                        0x0,             /* 0 */
/* 592 */         0x0,             /* 0 */
                        0x46,            /* 70 */
/* 594 */
                        0x1b,            /* FC_CARRAY */
                        0x0,             /* 0 */
/* 596 */         NdrFcShort( 0x1 ),       /* 1 */
/* 598 */         0x19,            /* Corr desc:  field pointer, FC_ULONG */
                        0x0,             /*  */
/* 600 */         NdrFcShort( 0x4 ),       /* 4 */
/* 602 */         NdrFcShort( 0x1 ),       /* Corr flags:  early, */
/* 604 */         0x1,             /* FC_BYTE */
                        0x5b,            /* FC_END */
/* 606 */
                        0x1a,            /* FC_BOGUS_STRUCT */
                        0x3,             /* 3 */
/* 608 */         NdrFcShort( 0x18 ),      /* 24 */
/* 610 */         NdrFcShort( 0x0 ),       /* 0 */
/* 612 */         NdrFcShort( 0xc ),       /* Offset= 12 (624) */
/* 614 */         0x8,             /* FC_LONG */
                        0x8,             /* FC_LONG */
/* 616 */         0x4c,            /* FC_EMBEDDED_COMPLEX */
                        0x0,             /* 0 */
/* 618 */         NdrFcShort( 0xffffffd6 ),         /* Offset= -42 (576) */
/* 620 */         0x39,            /* FC_ALIGNM8 */
                        0x36,            /* FC_POINTER */
/* 622 */         0x5c,            /* FC_PAD */
                        0x5b,            /* FC_END */
/* 624 */
                        0x12, 0x0,       /* FC_UP */
/* 626 */         NdrFcShort( 0xffffffe0 ),         /* Offset= -32 (594) */
/* 628 */
                        0x21,            /* FC_BOGUS_ARRAY */
                        0x3,             /* 3 */
/* 630 */         NdrFcShort( 0x0 ),       /* 0 */
/* 632 */         0x19,            /* Corr desc:  field pointer, FC_ULONG */
                        0x0,             /*  */
/* 634 */         NdrFcShort( 0x0 ),       /* 0 */
/* 636 */         NdrFcShort( 0x1 ),       /* Corr flags:  early, */
/* 638 */         NdrFcLong( 0xffffffff ),          /* -1 */
/* 642 */         NdrFcShort( 0x0 ),       /* Corr flags:  */
/* 644 */
                        0x12, 0x0,       /* FC_UP */
/* 646 */         NdrFcShort( 0xffffffd8 ),         /* Offset= -40 (606) */
/* 648 */         0x5c,            /* FC_PAD */
```

```
			0x5b,		/* FC_END */
/* 650 */
			0x1a,		/* FC_BOGUS_STRUCT */
			0x3,		/* 3 */
/* 652 */	NdrFcShort( 0x10 ),	/* 16 */
/* 654 */	NdrFcShort( 0x0 ),	/* 0 */
/* 656 */	NdrFcShort( 0x6 ),	/* Offset= 6 (662) */
/* 658 */	0x8,		/* FC_LONG */
			0x39,		/* FC_ALIGNM8 */
/* 660 */	0x36,		/* FC_POINTER */
			0x5b,		/* FC_END */
/* 662 */
			0x11, 0x0,	/* FC_RP */
/* 664 */	NdrFcShort( 0xffffffdc ),	/* Offset= -36 (628) */
/* 666 */
			0x1d,		/* FC_SMFARRAY */
			0x0,		/* 0 */
/* 668 */	NdrFcShort( 0x8 ),	/* 8 */
/* 670 */	0x2,		/* FC_CHAR */
			0x5b,		/* FC_END */
/* 672 */
			0x15,		/* FC_STRUCT */
			0x3,		/* 3 */
/* 674 */	NdrFcShort( 0x10 ),	/* 16 */
/* 676 */	0x8,		/* FC_LONG */
			0x6,		/* FC_SHORT */
/* 678 */	0x6,		/* FC_SHORT */
			0x4c,		/* FC_EMBEDDED_COMPLEX */
/* 680 */	0x0,		/* 0 */
			NdrFcShort( 0xfffffff1 ),	/* Offset= -15 (666) */
			0x5b,		/* FC_END */
/* 684 */
			0x1a,		/* FC_BOGUS_STRUCT */
			0x3,		/* 3 */
/* 686 */	NdrFcShort( 0x20 ),	/* 32 */
/* 688 */	NdrFcShort( 0x0 ),	/* 0 */
/* 690 */	NdrFcShort( 0xa ),	/* Offset= 10 (700) */
/* 692 */	0x8,		/* FC_LONG */
			0x39,		/* FC_ALIGNM8 */
/* 694 */	0x36,		/* FC_POINTER */
			0x4c,		/* FC_EMBEDDED_COMPLEX */
/* 696 */	0x0,		/* 0 */
			NdrFcShort( 0xffffffe7 ),	/* Offset= -25 (672) */
			0x5b,		/* FC_END */
/* 700 */
			0x11, 0x0,	/* FC_RP */
/* 702 */	NdrFcShort( 0xffffff10 ),	/* Offset= -240 (462) */
/* 704 */
			0x1b,		/* FC_CARRAY */
			0x0,		/* 0 */
/* 706 */	NdrFcShort( 0x1 ),	/* 1 */
/* 708 */	0x19,		/* Corr desc:  field pointer, FC_ULONG */
			0x0,		/*  */
```

```
/* 710 */	NdrFcShort( 0x0 ),	/* 0 */
/* 712 */	NdrFcShort( 0x1 ),	/* Corr flags:  early, */
/* 714 */	0x1,		/* FC_BYTE */
			0x5b,		/* FC_END */
/* 716 */
			0x1a,		/* FC_BOGUS_STRUCT */
			0x3,		/* 3 */
/* 718 */	NdrFcShort( 0x10 ),	/* 16 */
/* 720 */	NdrFcShort( 0x0 ),	/* 0 */
/* 722 */	NdrFcShort( 0x6 ),	/* Offset= 6 (728) */
/* 724 */	0x8,		/* FC_LONG */
			0x39,		/* FC_ALIGNM8 */
/* 726 */	0x36,		/* FC_POINTER */
			0x5b,		/* FC_END */
/* 728 */
			0x12, 0x0,	/* FC_UP */
/* 730 */	NdrFcShort( 0xffffffe6 ),	/* Offset= -26 (704) */
/* 732 */
			0x1b,		/* FC_CARRAY */
			0x1,		/* 1 */
/* 734 */	NdrFcShort( 0x2 ),	/* 2 */
/* 736 */	0x19,		/* Corr desc:  field pointer, FC_ULONG */
			0x0,		/*  */
/* 738 */	NdrFcShort( 0x0 ),	/* 0 */
/* 740 */	NdrFcShort( 0x1 ),	/* Corr flags:  early, */
/* 742 */	0x6,		/* FC_SHORT */
			0x5b,		/* FC_END */
/* 744 */
			0x1a,		/* FC_BOGUS_STRUCT */
			0x3,		/* 3 */
/* 746 */	NdrFcShort( 0x10 ),	/* 16 */
/* 748 */	NdrFcShort( 0x0 ),	/* 0 */
/* 750 */	NdrFcShort( 0x6 ),	/* Offset= 6 (756) */
/* 752 */	0x8,		/* FC_LONG */
			0x39,		/* FC_ALIGNM8 */
/* 754 */	0x36,		/* FC_POINTER */
			0x5b,		/* FC_END */
/* 756 */
			0x12, 0x0,	/* FC_UP */
/* 758 */	NdrFcShort( 0xffffffe6 ),	/* Offset= -26 (732) */
/* 760 */
			0x1b,		/* FC_CARRAY */
			0x3,		/* 3 */
/* 762 */	NdrFcShort( 0x4 ),	/* 4 */
/* 764 */	0x19,		/* Corr desc:  field pointer, FC_ULONG */
			0x0,		/*  */
/* 766 */	NdrFcShort( 0x0 ),	/* 0 */
/* 768 */	NdrFcShort( 0x1 ),	/* Corr flags:  early, */
/* 770 */	0x8,		/* FC_LONG */
			0x5b,		/* FC_END */
/* 772 */
			0x1a,		/* FC_BOGUS_STRUCT */
			0x3,		/* 3 */
```

```
/* 774 */	NdrFcShort( 0x10 ),	/* 16 */
/* 776 */	NdrFcShort( 0x0 ),	/* 0 */
/* 778 */	NdrFcShort( 0x6 ),	/* Offset= 6 (784) */
/* 780 */	0x8,		/* FC_LONG */
			0x39,		/* FC_ALIGNM8 */
/* 782 */	0x36,		/* FC_POINTER */
			0x5b,		/* FC_END */
/* 784 */
			0x12, 0x0,	/* FC_UP */
/* 786 */	NdrFcShort( 0xffffffe6 ),	/* Offset= -26 (760) */
/* 788 */
			0x1b,		/* FC_CARRAY */
			0x7,		/* 7 */
/* 790 */	NdrFcShort( 0x8 ),	/* 8 */
/* 792 */	0x19,		/* Corr desc:  field pointer, FC_ULONG */
			0x0,		/*  */
/* 794 */	NdrFcShort( 0x0 ),	/* 0 */
/* 796 */	NdrFcShort( 0x1 ),	/* Corr flags:  early, */
/* 798 */	0xb,		/* FC_HYPER */
			0x5b,		/* FC_END */
/* 800 */
			0x1a,		/* FC_BOGUS_STRUCT */
			0x3,		/* 3 */
/* 802 */	NdrFcShort( 0x10 ),	/* 16 */
/* 804 */	NdrFcShort( 0x0 ),	/* 0 */
/* 806 */	NdrFcShort( 0x6 ),	/* Offset= 6 (812) */
/* 808 */	0x8,		/* FC_LONG */
			0x39,		/* FC_ALIGNM8 */
/* 810 */	0x36,		/* FC_POINTER */
			0x5b,		/* FC_END */
/* 812 */
			0x12, 0x0,	/* FC_UP */
/* 814 */	NdrFcShort( 0xffffffe6 ),	/* Offset= -26 (788) */
/* 816 */
			0x15,		/* FC_STRUCT */
			0x3,		/* 3 */
/* 818 */	NdrFcShort( 0x8 ),	/* 8 */
/* 820 */	0x8,		/* FC_LONG */
			0x8,		/* FC_LONG */
/* 822 */	0x5c,		/* FC_PAD */
			0x5b,		/* FC_END */
/* 824 */
			0x1b,		/* FC_CARRAY */
			0x3,		/* 3 */
/* 826 */	NdrFcShort( 0x8 ),	/* 8 */
/* 828 */	0x7,		/* Corr desc: FC_USHORT */
			0x0,		/*  */
/* 830 */	NdrFcShort( 0xffc8 ),	/* -56 */
/* 832 */	NdrFcShort( 0x1 ),	/* Corr flags:  early, */
/* 834 */	0x4c,		/* FC_EMBEDDED_COMPLEX */
			0x0,		/* 0 */
/* 836 */	NdrFcShort( 0xffffffec ),	/* Offset= -20 (816) */
/* 838 */	0x5c,		/* FC_PAD */
```

```
			0x5b,		/* FC_END */
/* 840 */
			0x1a,		/* FC_BOGUS_STRUCT */
			0x3,		/* 3 */
/* 842 */	NdrFcShort( 0x38 ),	/* 56 */
/* 844 */	NdrFcShort( 0xffffffec ),	/* Offset= -20 (824) */
/* 846 */	NdrFcShort( 0x0 ),	/* Offset= 0 (846) */
/* 848 */	0x6,		/* FC_SHORT */
			0x6,		/* FC_SHORT */
/* 850 */	0x38,		/* FC_ALIGNM4 */
			0x8,		/* FC_LONG */
/* 852 */	0x8,		/* FC_LONG */
			0x4c,		/* FC_EMBEDDED_COMPLEX */
/* 854 */	0x4,		/* 4 */
			NdrFcShort( 0xfffffe0d ),	/* Offset= -499 (356) */
			0x5b,		/* FC_END */
/* 858 */
			0x12, 0x0,	/* FC_UP */
/* 860 */	NdrFcShort( 0xffffff02 ),	/* Offset= -254 (606) */
/* 862 */
			0x12, 0x8,	/* FC_UP [simple_pointer] */
/* 864 */	0x1,		/* FC_BYTE */
			0x5c,		/* FC_PAD */
/* 866 */
			0x12, 0x8,	/* FC_UP [simple_pointer] */
/* 868 */	0x6,		/* FC_SHORT */
			0x5c,		/* FC_PAD */
/* 870 */
			0x12, 0x8,	/* FC_UP [simple_pointer] */
/* 872 */	0x8,		/* FC_LONG */
			0x5c,		/* FC_PAD */
/* 874 */
			0x12, 0x8,	/* FC_UP [simple_pointer] */
/* 876 */	0xa,		/* FC_FLOAT */
			0x5c,		/* FC_PAD */
/* 878 */
			0x12, 0x8,	/* FC_UP [simple_pointer] */
/* 880 */	0xc,		/* FC_DOUBLE */
			0x5c,		/* FC_PAD */
/* 882 */
			0x12, 0x0,	/* FC_UP */
/* 884 */	NdrFcShort( 0xfffffda4 ),	/* Offset= -604 (280) */
/* 886 */
			0x12, 0x10,	/* FC_UP [pointer_deref] */
/* 888 */	NdrFcShort( 0xfffffda6 ),	/* Offset= -602 (286) */
/* 890 */
			0x12, 0x10,	/* FC_UP [pointer_deref] */
/* 892 */	NdrFcShort( 0xfffffdbc ),	/* Offset= -580 (312) */
/* 894 */
			0x12, 0x10,	/* FC_UP [pointer_deref] */
/* 896 */	NdrFcShort( 0xfffffdca ),	/* Offset= -566 (330) */
/* 898 */
			0x12, 0x10,	/* FC_UP [pointer_deref] */
```

```
/* 900 */       NdrFcShort( 0xfffffdd8 ),       /* Offset= -552 (348) */
/* 902 */
                        0x12, 0x10,     /* FC_UP [pointer_deref] */
/* 904 */       NdrFcShort( 0x2 ),      /* Offset= 2 (906) */
/* 906 */
                        0x12, 0x0,      /* FC_UP */
/* 908 */       NdrFcShort( 0x16 ),     /* Offset= 22 (930) */
/* 910 */
                        0x15,           /* FC_STRUCT */
                        0x7,            /* 7 */
/* 912 */       NdrFcShort( 0x10 ),     /* 16 */
/* 914 */       0x6,            /* FC_SHORT */
                        0x1,            /* FC_BYTE */
/* 916 */       0x1,            /* FC_BYTE */
                        0x38,           /* FC_ALIGNM4 */
/* 918 */       0x8,            /* FC_LONG */
                        0x39,           /* FC_ALIGNM8 */
/* 920 */       0xb,            /* FC_HYPER */
                        0x5b,           /* FC_END */
/* 922 */
                        0x12, 0x0,      /* FC_UP */
/* 924 */       NdrFcShort( 0xfffffff2 ),       /* Offset= -14 (910) */
/* 926 */
                        0x12, 0x8,      /* FC_UP [simple_pointer] */
/* 928 */       0x2,            /* FC_CHAR */
                        0x5c,           /* FC_PAD */
/* 930 */
                        0x1a,           /* FC_BOGUS_STRUCT */
                        0x7,            /* 7 */
/* 932 */       NdrFcShort( 0x20 ),     /* 32 */
/* 934 */       NdrFcShort( 0x0 ),      /* 0 */
/* 936 */       NdrFcShort( 0x0 ),      /* Offset= 0 (936) */
/* 938 */       0x8,            /* FC_LONG */
                        0x8,            /* FC_LONG */
/* 940 */       0x6,            /* FC_SHORT */
                        0x6,            /* FC_SHORT */
/* 942 */       0x6,            /* FC_SHORT */
                        0x6,            /* FC_SHORT */
/* 944 */       0x4c,           /* FC_EMBEDDED_COMPLEX */
                        0x0,            /* 0 */
/* 946 */       NdrFcShort( 0xfffffc54 ),       /* Offset= -940 (6) */
/* 948 */       0x5c,           /* FC_PAD */
                        0x5b,           /* FC_END */
/* 950 */       0xb4,           /* FC_USER_MARSHAL */
                        0x83,           /* 131 */
/* 952 */       NdrFcShort( 0x0 ),      /* 0 */
/* 954 */       NdrFcShort( 0x18 ),     /* 24 */
/* 956 */       NdrFcShort( 0x0 ),      /* 0 */
/* 958 */       NdrFcShort( 0xfffffc44 ),       /* Offset= -956 (2) */
/* 960 */
                        0x11, 0x4,      /* FC_RP [alloced_on_stack] */
/* 962 */       NdrFcShort( 0x6 ),      /* Offset= 6 (968) */
/* 964 */
                        0x13, 0x0,      /* FC_OP */
/* 966 */       NdrFcShort( 0xffffffdc ),       /* Offset= -36 (930) */
/* 968 */       0xb4,           /* FC_USER_MARSHAL */
                        0x83,           /* 131 */
/* 970 */       NdrFcShort( 0x0 ),      /* 0 */
/* 972 */       NdrFcShort( 0x18 ),     /* 24 */
/* 974 */       NdrFcShort( 0x0 ),      /* 0 */
/* 976 */       NdrFcShort( 0xfffffff4 ),       /* Offset= -12 (964) */

                        0x0
        }
    };

const CInterfaceProxyVtbl * _tpcc_com_ps_ProxyVtblList[] =
{
    ( CInterfaceProxyVtbl *) &_ITPCCProxyVtbl,
    0
};

const CInterfaceStubVtbl * _tpcc_com_ps_StubVtblList[] =
{
    ( CInterfaceStubVtbl *) &_ITPCCStubVtbl,
    0
};

PCInterfaceName const _tpcc_com_ps_InterfaceNamesList[] =
{
    "ITPCC",
    0
};


#define _tpcc_com_ps_CHECK_IID(n)       IID_GENERIC_CHECK_IID( _tpcc_com_ps, pIID, n)

int __stdcall _tpcc_com_ps_IID_Lookup( const IID * pIID, int * pIndex )
{

    if(!_tpcc_com_ps_CHECK_IID(0))
        {
        *pIndex = 0;
        return 1;
        }

    return 0;
}

const ExtendedProxyFileInfo tpcc_com_ps_ProxyFileInfo =
{
    (PCInterfaceProxyVtblList *) & _tpcc_com_ps_ProxyVtblList,
    (PCInterfaceStubVtblList *) & _tpcc_com_ps_StubVtblList,
    (const PCInterfaceName * ) & _tpcc_com_ps_InterfaceNamesList,
    0, // no delegation
    & _tpcc_com_ps_IID_Lookup,
    1,
    2,
    0, /* table of [async_uuid] interfaces */
    0, /* Filler1 */
    0, /* Filler2 */
    0  /* Filler3 */
};


#endif /* defined(_M_IA64) || defined(_M_AXP64)*/
```

Appendix B - Database Details

BACKUP.SQL

```
--  File:     BACKUP.SQL
--            Microsoft TPC-C Benchmark Kit Ver. 4.20
--            Copyright Microsoft, 1999
--  Purpose:  Creates backup of tpcc database


declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

dump database tpcc to tpccback1, tpccback2, tpccback3, tpccback4 with init,
stats = 1

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

BACKUPDEV.SQL

```
--  File:     BACKUPDEVB.SQL
--            Microsoft TPC-C Benchmark Kit Ver. 4.20
--            Copyright Microsoft, 1999
--  Purpose:  Creates tpcc database Backup Devices


use master
go

--  create backup devices

exec sp_addumpdevice 'disk','tpccback1','X:\tpccback1.dmp'
exec sp_addumpdevice 'disk','tpccback2','Y:\tpccback2.dmp'
exec sp_addumpdevice 'disk','tpccback3','Z:\tpccback3.dmp'
exec sp_addumpdevice 'disk','tpccback4','W:\tpccback4.dmp'
go
```

CREATEDB.SQL

```
--  File:     CREATEDB.SQL
--            Microsoft TPC-C Benchmark Kit Ver. 4.20
--            Copyright Microsoft, 1999
--  Purpose:  Creates tpcc database and backup files


use master
go

--   Create temporary table for timing

if exists ( select name from sysobjects where name = 'tpcc_timer' )
     drop table tpcc_timer
go

create table tpcc_timer
(
     start_date                char(30),
     end_date                  char(30)
)

insert     into tpcc_timer values (0,0)
go

--   Store starting time

update     tpcc_timer
set   start_date = (select convert(char(30), getdate(),9))
go

--  create main database files

CREATE DATABASE tpcc
ON PRIMARY
(    NAME       = MSSQL70_tpcc_root,
     FILENAME   = "C:\tpcc_root.mdf",
     SIZE       = 50MB,
     FILEGROWTH =0),
FILEGROUP  MSSQL70_cs_fg
(    NAME       = MSSQL70_cs1,
     FILENAME   = "E:",
     SIZE       = 61000MB,
     FILEGROWTH = 0),
(    NAME       = MSSQL70_cs2,
     FILENAME   = "F:",
     SIZE       = 61000MB,
     FILEGROWTH = 0),
(    NAME       = MSSQL70_cs3,
     FILENAME   = "G:",
     SIZE       = 61000MB,
     FILEGROWTH = 0),
(    NAME       = MSSQL70_cs4,
     FILENAME   = "H:",
     SIZE       = 61000MB,
     FILEGROWTH = 0),

FILEGROUP  MSSQL70_misc_fg
(    NAME       = MSSQL70_misc1,
     FILENAME   = "N:",
     SIZE       = 130000MB,
     FILEGROWTH = 0)
LOG ON
(    NAME       =MSSQL70_tpcc_log,
     FILENAME   ="L:",
     SIZE       =80000MB,
     FILEGROWTH =0)
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. 4.21
--            Copyright Microsoft, 1999, 2000
--  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
go

use tpcc
go

checkpoint
go
```

DBOPT2.SQL

```
--  File:     DBOPT2.SQL
--            Microsoft TPC-C Benchmark Kit Ver. 4.21
--            Copyright Microsoft, 1999, 2000
--  Purpose:  Resets database options after data load

sp_dboption tpcc,'select into/bulkcopy',FALSE
GO

sp_dboption tpcc,'trunc. log on chkpt.',FALSE
GO

USE tpcc
GO

CHECKPOINT
GO

sp_configure 'allow updates',1
GO

RECONFIGURE WITH OVERRIDE
GO

DECLARE    @msg       varchar(50)

IF (SELECT (SUBSTRING((SELECT @@version),1,26))) = 'Microsoft SQL Server
2000'
     BEGIN
          --                                             --
          --        OPTIONS FOR SQL SERVER 8.0           --
          -- Set option values for user-defined indexes --
          --                                             --

          SET  @msg = ' '
          PRINT @msg                                  --
          SET  @msg = 'Setting SQL Server 8.0 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
     END
ELSE
     BEGIN
          --                                            --
          --        OPTIONS FOR SQL SERVER 7.0          --
          -- Set option values for user-defined indexes --
          --

          SET  @msg = ' '
          PRINT @msg                                 --
          SET  @msg = 'Setting SQL Server 7.0 indexoptions'
          PRINT @msg
          SET  @msg = ' '
          PRINT @msg                                 --

          EXEC sp_indexoption  'customer',     'AllowPageLocks',    FALSE
          EXEC sp_indexoption  'district',     'AllowPageLocks',    FALSE
          EXEC sp_indexoption  'warehouse',    'AllowPageLocks',    FALSE
          EXEC sp_indexoption  'stock',   'AllowPageLocks',    FALSE
          EXEC sp_indexoption  'order_line',   'AllowRowLocks',     FALSE
          EXEC sp_indexoption  'orders',  'AllowRowLocks',     FALSE
          EXEC sp_indexoption  'new_order',    'AllowRowLocks',     FALSE
          EXEC sp_indexoption  'item',         'AllowRowLocks',     FALSE
          EXEC sp_indexoption  'item',         'AllowPageLocks',    FALSE

     END
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
EXEC sp_dboption tpcc,    'torn page detection',         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
```

REMOVEDB.SQL

```
--  File:     REMOVEDB.SQL
--            Microsoft TPC-C Benchmark Kit Ver. 4.20
--            Copyright Microsoft, 1999
--  Purpose:  Removes tpcc database and backup files


use master
go

--  remove any existing database and backup files

exec sp_dbremove tpcc, dropdev
go

exec sp_dropdevice 'tpccback1'
exec sp_dropdevice 'tpccback2'
exec sp_dropdevice 'tpccback3'
exec sp_dropdevice 'tpccback4'
go
```

RESTORE.SQL

```
--  File:     RESTORE.SQL
--            Microsoft TPC-C Benchmark Kit Ver. 4.20
--            Copyright Microsoft, 1999
--  Purpose:  Loads database backup from backup files
```

```
declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

load database tpcc from tpccback1, tpccback2, tpccback3, tpccback4, with
stats = 1

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

VERIFYTPCCLOAD.SQL

```
--  File:     VERIFYTPCCLOAD.SQL
--            Microsoft TPC-C Benchmark Kit Ver. 4.21
--            Copyright Microsoft, 1999, 2000
--  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    rows
from sysindexes
where id   = object_id("warehouse")
go

print 'DISTRICT TABLE = (10 * No of warehouses)'

select    rows
from sysindexes
where id   =object_id("district")
go

print 'ITEM TABLE = 100,000'

select    rows
from sysindexes
where id   =object_id("item")
go

print 'CUSTOMER TABLE = (30,000 * No of warehouses)'

select    rows
from sysindexes
where id   =object_id("customer")
go

print 'ORDERS TABLE = (30,000 * No of warehouses)'

select    rows
from sysindexes
where id   =object_id("orders")
go

print 'HISTORY TABLE = (30,000 * No of warehouses)'

select    rows
from sysindexes
where id   =object_id("history")
go

print 'STOCK TABLE = (100,000 * No of warehouses)'

select    rows
from sysindexes
where id   =object_id("stock")
go

print 'ORDER_LINE TABLE = (300,000 * No of warehouses + some change)'

select    rows
from sysindexes
where id   =object_id("order_line")
go

print 'NEW_ORDER TABLE = (9000 * No of warehouses)'

select    rows
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
```

IDXCUSCL.SQL

```
--  File:     IDXCUSCL.SQL
--            Microsoft TPC-C Benchmark Kit Ver. 4.20
--            Copyright Microsoft, 1999
--  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 MSSQL70_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. 4.20
--            Copyright Microsoft, 1999
--  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 MSSQL70_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. 4.20
--            Copyright Microsoft, 1999
--  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 MSSQL70_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. 4.20
--            Copyright Microsoft, 1999
--  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 MSSQL70_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. 4.20
--            Copyright Microsoft, 1999
--  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 MSSQL70_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. 4.20
--            Copyright Microsoft, 1999
--  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(ol_w_id, ol_d_id,
ol_o_id, ol_number)
     on MSSQL70_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. 4.20
--            Copyright Microsoft, 1999
--  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 MSSQL70_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. 4.20
--            Copyright Microsoft, 1999
--  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 MSSQL70_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. 4.20
--            Copyright Microsoft, 1999
--  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 MSSQL70_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. 4.20
--            Copyright Microsoft, 1999
--  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 MSSQL70_misc_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate, @enddate)

go
```

TABLES.SQL

```
--  File:     TABLES.SQL
--            Microsoft TPC-C Benchmark Kit Ver. 4.20
--            Copyright Microsoft, 1999
--  Purpose:  Creates TPC-C tables


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                    smallint,
     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 MSSQL70_misc_fg
go

create table district
(
     d_id                    tinyint,
     d_w_id                       smallint,
     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 MSSQL70_misc_fg
go

create table customer
(
     c_id                    int,
     c_d_id                       tinyint,
     c_w_id                       smallint,
     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 MSSQL70_cs_fg
```

```
go

create table history
(
     h_c_id                     int,
     h_c_d_id              tinyint,
     h_c_w_id              smallint,
     h_d_id                     tinyint,
     h_w_id                     smallint,
     h_date                     datetime,
     h_amount              numeric(6,2),
     h_data                     char(24)
) on MSSQL70_misc_fg
go

create table new_order
(
     no_o_id                    int,
     no_d_id                    tinyint,
     no_w_id                    smallint
) on MSSQL70_misc_fg
go

create table orders
(
     o_id                  int,
     o_d_id                     tinyint,
     o_w_id                     smallint,
     o_c_id                     int,
     o_entry_d             datetime,
     o_carrier_id          tinyint,
     o_ol_cnt              tinyint,
     o_all_local                tinyint
) on MSSQL70_misc_fg
go

create table order_line
(
     ol_o_id                    int,
     ol_d_id                    tinyint,
     ol_w_id                    smallint,
     ol_number             tinyint,
     ol_i_id                    int,
     ol_supply_w_id        smallint,
     ol_delivery_d         datetime,
     ol_quantity                smallint,
     ol_amount             numeric(6,2),
     ol_dist_info          char(24)
) on MSSQL70_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 MSSQL70_misc_fg
go

create table stock
(
     s_i_id                     int,
     s_w_id                     smallint,
     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 MSSQL70_cs_fg
go
```

DELIVERY.SQL

```
--  File:     DELIVERY.SQL
--            Microsoft TPC-C Benchmark Kit Ver. 4.21.000
--            Copyright Microsoft, 1999, 2000
--  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
go

create proc tpcc_delivery @w_id           smallint,

                     @o_carrier_id   smallint
as

declare @d_id   tinyint,
        @o_id   int,
        @c_id   int,
        @total  numeric(12,2),
        @oid1   int,
        @oid2   int,
        @oid3   int,
        @oid4   int,
        @oid5   int,
        @oid6   int,
        @oid7   int,
        @oid8   int,
        @oid9   int,
        @oid10  int

select @d_id = 0

begin tran d

     while (@d_id < 10)
     begin

             select  @d_id  = @d_id + 1,
                @total = 0,
                @o_id  = 0

          select    top 1
                @o_id= no_o_id
          from new_order (serializable updlock)
          where no_w_id   = @w_id and
                no_d_id   = @d_id
          order by no_o_id asc

             if (@@rowcount <> 0)
          begin

--  claim the order for this district

                delete    new_order
                where no_w_id   = @w_id and
                     no_d_id   = @d_id and
                     no_o_id   = @o_id

--  set carrier_id on this order (and get customer id)

                update    orders
                set  o_carrier_id    = @o_carrier_id,
                     @c_id     = o_c_id
                where o_w_id         = @w_id and
                     o_d_id         = @d_id and
                     o_id      = @o_id

--  set date in all lineitems for this order (and sum amounts)

                update    order_line
                set  ol_delivery_d   = getdate(),
                     @total         = @total + ol_amount
```

```
                where ol_w_id         = @w_id and
                     ol_d_id         = @d_id and
                     ol_o_id         = @o_id

--  accummulate lineitem amounts for this order into customer

                update    customer
                set  c_balance  = c_balance + @total,
                     c_delivery_cnt  = c_delivery_cnt + 1
                where c_w_id         = @w_id and
                     c_d_id         = @d_id and
                     c_id      = @c_id

           end

     select @oid1 = case @d_id when  1  then @o_id else @oid1 end,
               @oid2 = case @d_id when  2  then @o_id else @oid2 end,
               @oid3 = case @d_id when  3  then @o_id else @oid3 end,
               @oid4 = case @d_id when  4  then @o_id else @oid4 end,
               @oid5 = case @d_id when  5  then @o_id else @oid5 end,
               @oid6 = case @d_id when  6  then @o_id else @oid6 end,
               @oid7 = case @d_id when  7  then @o_id else @oid7 end,
               @oid8 = case @d_id when  8  then @o_id else @oid8 end,
               @oid9 = case @d_id when  9  then @o_id else @oid9 end,
               @oid10 = case @d_id when 10 then @o_id else @oid10 end

    end

commit 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. 4.21.000
--            Copyright Microsoft, 1999, 2000
--  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           smallint,
                          @d_id           tinyint,
                          @c_id           int,
                          @o_ol_cnt       tinyint,
                          @o_all_local    tinyint,
                          @i_id1  int = 0, @s_w_id1  smallint = 0, @ol_qty1
smallint = 0,
                          @i_id2  int = 0, @s_w_id2  smallint = 0, @ol_qty2
smallint = 0,
                          @i_id3  int = 0, @s_w_id3  smallint = 0, @ol_qty3
smallint = 0,
                          @i_id4  int = 0, @s_w_id4  smallint = 0, @ol_qty4
smallint = 0,
                          @i_id5  int = 0, @s_w_id5  smallint = 0, @ol_qty5
smallint = 0,
                          @i_id6  int = 0, @s_w_id6  smallint = 0, @ol_qty6
smallint = 0,
                          @i_id7  int = 0, @s_w_id7  smallint = 0, @ol_qty7
smallint = 0,
                          @i_id8  int = 0, @s_w_id8  smallint = 0, @ol_qty8
smallint = 0,
                          @i_id9  int = 0, @s_w_id9  smallint = 0, @ol_qty9
smallint = 0,
                          @i_id10 int = 0, @s_w_id10 smallint = 0, @ol_qty10
smallint = 0,
                          @i_id11 int = 0, @s_w_id11 smallint = 0, @ol_qty11
smallint = 0,
                          @i_id12 int = 0, @s_w_id12 smallint = 0, @ol_qty12
smallint = 0,
                          @i_id13 int = 0, @s_w_id13 smallint = 0, @ol_qty13
smallint = 0,
                          @i_id14 int = 0, @s_w_id14 smallint = 0, @ol_qty14
smallint = 0,
                          @i_id15 int = 0, @s_w_id15 smallint = 0, @ol_qty15
smallint = 0

as
declare   @w_tax          numeric(4,4),
        @d_tax          numeric(4,4),
        @c_last         char(16),
        @c_credit       char(2),
        @c_discount     numeric(4,4),
        @i_price        numeric(5,2),
        @i_name         char(24),
        @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      smallint,
        @li_qty         smallint,
     @ol_number int,
     @c_id_local     int

begin

begin transaction n

--  get district tax and next availible order id and update
--  plus initialize local variables

     update    district
     set  @d_tax       = d_tax,
          @o_id        = d_next_o_id,
          d_next_o_id  = d_next_o_id + 1,
          @o_entry_d   = getdate(),
          @li_no       = 0,
          @commit_flag = 1
     where d_w_id       = @w_id and
          d_id         = @d_id

--  process orderlines

     while (@li_no < @o_ol_cnt)
     begin

          select @li_no = @li_no + 1

--  set i_id, s_w_id, and qty for this lineitem

          select    @li_id = case @li_no
                      when 1 then @i_id1
                      when 2 then @i_id2
                      when 3 then @i_id3
                      when 4 then @i_id4
                      when 5 then @i_id5
                      when 6 then @i_id6
                      when 7 then @i_id7
                      when 8 then @i_id8
                      when 9 then @i_id9
                      when 10 then @i_id10
                      when 11 then @i_id11
                      when 12 then @i_id12
                      when 13 then @i_id13
                      when 14 then @i_id14
                      when 15 then @i_id15
                      end,

                @li_s_w_id = case @li_no
                          when 1 then @s_w_id1
                          when 2 then @s_w_id2
                          when 3 then @s_w_id3
                          when 4 then @s_w_id4
                          when 5 then @s_w_id5
                          when 6 then @s_w_id6
                          when 7 then @s_w_id7
                          when 8 then @s_w_id8
                          when 9 then @s_w_id9
                          when 10 then @s_w_id10
                          when 11 then @s_w_id11
                          when 12 then @s_w_id12
                          when 13 then @s_w_id13
                          when 14 then @s_w_id14
                          when 15 then @s_w_id15
                          end,

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

--  get item data (no one updates item)

          select     @i_price = i_price,
                @i_name  = i_name,
                @i_data  = i_data
          from  item (tablock repeatableread)
          where i_id = @li_id

--  update stock values

          update     stock
          set   s_ytd      = s_ytd + @li_qty,
                @s_quantity     = s_quantity   = s_quantity - @li_qty +
```

```
                                      case when (s_quantity - @li_qty < 10)
then 91 else 0 end,
                s_order_cnt     = s_order_cnt + 1,
                s_remote_cnt    = s_remote_cnt + case when (@li_s_w_id =
@w_id) then 0 else 1 end,
                @s_data         = s_data,
                @s_dist         = case @d_id
                            when 1  then s_dist_01
                            when 2  then s_dist_02
                            when 3  then s_dist_03
                            when 4  then s_dist_04
                            when 5  then s_dist_05
                            when 6  then s_dist_06
                            when 7  then s_dist_07
                            when 8  then s_dist_08
                            when 9  then s_dist_09
                            when 10 then s_dist_10
                            end
          where s_i_id          = @li_id and
                s_w_id          = @li_s_w_id

--  if there actually is a stock (and item) with these ids, go to work

          if (@@rowcount > 0)
          begin

--  insert order_line data (using data from item and stock)

                insert into order_line values(@o_id,
                                      @d_id,
                                      @w_id,
                                      @li_no,
                                      @li_id,
                                      @li_s_w_id,
                                      "dec 31, 1899",
                                      @li_qty,
                                      @i_price * @li_qty,
                                      @s_dist)

--  send line-item data to client

                select    @i_name,
                     @s_quantity,
                     b_g = case when ( (patindex("%ORIGINAL%",@i_data) > 0)
and
                                  (patindex("%ORIGINAL%",@s_data) > 0) )
                           then "B" else "G" end,
                     @i_price,
                     @i_price * @li_qty

          end
          else
          begin
```

```
--  no item (or stock) found - triggers rollback condition

                select "",0,"",0,0
                select @commit_flag = 0

          end
     end

--  get customer last name, discount, and credit rating

     select     @c_last     = c_last,
          @c_discount = c_discount,
          @c_credit   = c_credit,
          @c_id_local = c_id
     from customer (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,
                          @o_ol_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

--  all that work for nuthin!!!

          rollback transaction n

--  return order data to client

     select     @w_tax,
          @d_tax,
          @o_id,
          @c_last,
          @c_discount,
          @c_credit,
          @o_entry_d,
          @commit_flag

end

go
```

ORDSTAT.SQL

```
--  File:      ORDSTAT.SQL
--             Microsoft TPC-C Benchmark Kit Ver. 4.21.000
--             Copyright Microsoft, 1999, 2000
--  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 smallint,
                     @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 (repeatableread)
        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. 4.21.000
--              Copyright Microsoft, 1999, 2000
--  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           smallint,
                     @c_w_id        smallint,
                     @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     smallint,
      @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 (repeatableread)
          wherec_last    = @c_last and
                    c_w_id    = @c_w_id and
                    c_d_id    = @c_d_id

          select    @val = (@cnt + 1) / 2
          set  rowcount @val

          select    @c_id= c_id
          from customer (repeatableread)
          wherec_last    = @c_last and
                    c_w_id    = @c_w_id and
                    c_d_id    = @c_d_id
          orderby c_last, c_first

          set  rowcount 0
     end

--  get customer info and update balances

     update    customer
     set  @c_balance= c_balance     = c_balance - @h_amount,
          c_payment_cnt   = c_payment_cnt + 1,
          c_ytd_payment   = c_ytd_payment + @h_amount,
          @c_first  = c_first,
          @c_middle = c_middle,
          @c_last        = c_last,
          @c_street_1    = c_street_1,
          @c_street_2    = c_street_2,
          @c_city        = c_city,
          @c_state  = c_state,
          @c_zip         = c_zip,
          @c_phone  = c_phone,
          @c_credit = c_credit,
          @c_credit_lim   = c_credit_lim,
          @c_discount    = c_discount,
          @c_since  = c_since,
          @data     = c_data,
          @c_id_local    = c_id
     wherec_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
          wherec_id = @c_id and
               c_w_id     = @c_w_id and
               c_d_id     = @c_d_id

          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
     whered_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
     wherew_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. 4.21.000
--            Copyright Microsoft, 1999, 2000
--  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           smallint,
                     @d_id           tinyint,
                     @threshhold     smallint
as
```

```
declare   @o_id_low int,
     @o_id_high int

select    @o_id_low  = (d_next_o_id - 20),
     @o_id_high = (d_next_o_id - 1)
from district
where d_w_id         = @w_id and
     d_id      = @d_id

select    count(distinct(s_i_id))
from stock, order_line
where ol_w_id        =  @w_id and
     ol_d_id        =  @d_id and
     ol_o_id           between @o_id_low and
                  @o_id_high and
     s_w_id          =  ol_w_id and
     s_i_id          =  ol_i_id and
     s_quantity <  @threshhold

go
```

VERSION.SQL

```
--  File:     VERSION.SQL
--            Microsoft TPC-C Benchmark Kit Ver. 4.21.000
--            Copyright Microsoft, 1999, 2000
--  Purpose:  Returns version level of TPC-C stored procs
--  Note:     Always update the return value of this proc for
--            any interface changes or "must have" bug fixes.
--
--  The value returned by this SP defines the "interface level",
--  which must match between the stored procs and the client code.
--  The interface level may be down rev from the current kit.  This
--  indicates that the interface hasn't changed since that version.

use tpcc
go

if exists ( select name from sysobjects where name = "tpcc_version" )
     drop procedure tpcc_version
go

create proc tpcc_version
as
declare   @version   char(8)

begin
     select @version = "4.10.000"
     select @version as "Version"
end
go
```

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

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

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

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

          ptr = argv[i];

          switch (ptr[1])
          {
          case 'h':     /* Fall throught */
          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 = atol(ptr+2);
                     break;

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

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

          case 't':
                     {
                          pargs->tables_all = FALSE;
                          if (strcmp(ptr+2,"item") == 0)
                               pargs->table_item = TRUE;
                          else if (strcmp(ptr+2,"warehouse") == 0)
                               pargs->table_warehouse = TRUE;
                          else if (strcmp(ptr+2,"customer") == 0)
                               pargs->table_customer = TRUE;
                          else if (strcmp(ptr+2,"orders") == 0)
                               pargs->table_orders = TRUE;
                          else
                          {
                          printf("\nUnrecognized command");
                          GetArgsLoaderUsage();
                          exit(1);
                          }

                          break;
                     }

                case 'f':
                     pargs->loader_res_file = ptr+2;
                     break;

                case 'p':
                     pargs->pack_size = atol(ptr+2);
                     break;

                case 'i':
                     pargs->build_index = atol(ptr+2);
                     break;

                case 'o':
                     pargs->index_order = atol(ptr+2);
                     break;

                case 'c':
                     pargs->scale_down = atol(ptr+2);
                     break;

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

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

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

    return;
}
```

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

void GetArgsLoaderUsage()
{

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


    printf("TPCCLDR:\n\n");
     printf("Parameter
Default\n");
     printf("---------------------------------------------------------------
\n");
    printf("-W Number of Warehouses to Load                          Required
\n");
    printf("-S Server                                                %s\n",
SERVER);
    printf("-U Username                                              %s\n",
USER);
    printf("-P Password                                              %s\n",
PASSWORD);
    printf("-D Database                                              %s\n",
DATABASE);
     printf("-b Batch Size                                            %ld\n",
(long) BATCH);
     printf("-p TDS packet size                                       %ld\n",
(long) DEFLDPACKSIZE);
     printf("-f Loader Results Output Filename                        %s\n",
LOADER_RES_FILE);
     printf("-s Starting Warehouse                                    %ld\n",
(long) DEF_STARTING_WAREHOUSE);
     printf("-i Build Option (data = 0, data and index = 1)           %ld\n",
(long) BUILD_INDEX);
     printf("-o Cluster Index Build Order (before = 1, after = 0)     %ld\n",
(long) INDEX_ORDER);
     printf("-c Build Scaled Database (normal = 0, tiny = 1)          %ld\n",
(long) SCALE_DOWN);
     printf("-d Index Script Path                                     %s\n",
INDEX_SCRIPT_PATH);
     printf("-t Table to Load                                         all
tables \n");
    printf("   [item|warehouse|customer|orders]\n");
    printf("   Notes: \n");
    printf("     - the '-t' parameter may be included multiple times to
\n");
    printf("       specify multiple tables to be loaded \n");
    printf("     - 'item' loads ITEM table \n");
    printf("     - 'warehouse' loads WAREHOUSE, DISTRICT, and STOCK tables
\n");
    printf("     - 'customer' loads CUSTOMER and HISTORY tables \n");
    printf("     - 'orders' load NEW-ORDER, ORDERS, ORDER-LINE tables \n");

     printf("\nNote:  Command line switches are case sensitive.\n");

    exit(0);
}
```

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  __declspec(thread)

// Globals
long Thread Seed = 0;       /* thread local seed */

/***************************************************************************
***
*
*
* random -
*
*       Implements a GOOD pseudo random number generator.  This generator
*
*       will/should? run the complete period before repeating.
*
*
*
* Copied from:
*
*       Random Numbers Generators: Good Ones Are Hard to Find.
*
*       Communications of the ACM - October 1988 Volume 31 Number 10
*
```

```
*
*
* Machine Dependencies:
*
*       long must be 2 ^ 31 - 1 or greater.
*
*
*
****************************************************************************
**/

/***************************************************************************
***
* seed - load the Seed value used in irand and drand.  Should be used before
*
*       first call to irand or drand.
*
****************************************************************************
**/

void seed(long val)
{

#ifdef DEBUG
    printf("[%ld]DBG: Entering seed()...\n", (int) GetCurrentThreadId());
     printf("Old Seed %ld New Seed %ld\n",Seed, val);
#endif

    if ( val < 0 )
         val = abs(val);

    Seed = val;

}


/***************************************************************************
**
*
*
* irand - returns a 32 bit integer pseudo random number with a period of
*
*       1 to 2 ^ 32 - 1.
*
*
*
* parameters:
*
*       none.
*
*
*
* returns:
*
```

```
*       32 bit integer - defined as long ( see above ).
*
*
*
* side effects:
*
*       seed get recomputed.
*
****************************************************************************
*/

long irand()
{
    register long    s;      /* copy of seed */
    register long    test;   /* test flag */
    register long    hi;     /* tmp value for speed */
    register long    lo;     /* tmp value for speed */

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

    s = Seed;
    hi = s / Q;
    lo = s % Q;

    test = A * lo - R * hi;
    if ( test > 0 )
          Seed = test;
    else
          Seed = test + M;

    return( Seed );
}


/***************************************************************************
**
*
*
* drand - returns a double pseudo random number between 0.0 and 1.0.
*
*       See irand.
*
****************************************************************************
*/
double drand()
{

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

    return( (double)irand() / 2147483647.0);
}


//=========================================================================
// Function   : RandomNumber
//
// Description:
//=========================================================================
long RandomNumber(long lower, long upper)
{
    long rand_num;

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

     if ( upper == lower )      /* pgd 08-13-96 perf enhancement */
          return lower;

     upper++;

    if ( upper <= lower )
          rand_num = upper;
    else
          rand_num = lower + irand() % (upper - lower); /* pgd 08-13-96 perf
enhancement */


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


    return rand_num;
}


#if 0

//Orginal code pgd 08/13/96

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

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

     upper++;

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


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


    return rand_num;
}
#endif

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

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

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

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

    return rand_num;
}
```

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("[%ld]DBG: Entering MakeAddress()\n", (int)
GetCurrentThreadId());
#endif

    MakeAlphaString (10, 20, ADDRESS_LEN, street_1);
    MakeAlphaString (10, 20, ADDRESS_LEN, street_2);
    MakeAlphaString (10, 20, ADDRESS_LEN, city);
    MakeAlphaString ( 2,  2, STATE_LEN, state);
    MakeZipNumberString( 9,  9, ZIP_LEN, zip);

#ifdef DEBUG
    printf("[%ld]DBG: MakeAddress: street_1: %s, street_2: %s, city: %s,
state: %s, zip: %s\n",
                (int) GetCurrentThreadId(), street_1, street_2, city, state,
zip);
#endif

    return;

}


//========================================================================
//
// Function name: LastName
//
//========================================================================

void LastName(int  num,
                char *name)
{
    static char *n[] =
    {
          "BAR" , "OUGHT", "ABLE" , "PRI"  , "PRES",
          "ESE" , "ANTI" , "CALLY", "ATION", "EING"
    };

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

    if ((num >= 0) && (num < 1000))
    {
          strcpy(name, n[(num/100)%10]);
          strcat(name, n[(num/10)%10]);
          strcat(name, n[(num/1)%10]);

          if (strlen(name) < LAST_NAME_LEN)
          {
                PaddString(LAST_NAME_LEN, name);
          }

    }
    else
    {
          printf("\nError in LastName()... num <%ld> out of range
(0,999)\n", num);
          exit(-1);
    }


#ifdef DEBUG
    printf("[%ld]DBG: LastName: num = [%d] ==> [%d][%d][%d]\n",
                (int) GetCurrentThreadId(), num, num/100, (num/10)%10,
num%10);
     printf("[%ld]DBG: LastName: String = %s\n", (int) GetCurrentThreadId(),
name);
#endif

    return;

}


//========================================================================
//
// Function name: MakeAlphaString
//
//========================================================================

//philipdu 08/13/96 Changed MakeAlphaString to use A-Z, a-z, and 0-9 in
//accordance with spec see below:
//The spec says:
//4.3.2.2  The notation random a-string [x .. y]
//(respectively, n-string [x .. y]) represents a string of random
alphanumeric
```

```
//(respectively, numeric) characters of a random length of minimum x,
maximum y,
//and mean (y+x)/2. Alphanumerics are A..Z, a..z, and 0..9.  The only other
//requirement is that the character set used "must be able to represent a
minimum
//of 128 different characters".  We are using 8-bit chars, so this is a non
issue.
//It is completely unreasonable to stuff non-printing chars into the text
fields.
//-CLevine 08/13/96

int MakeAlphaString( int  x, int  y, int  z, char *str)
{
     int        len;
     int        i;
    char    cc = 'a';
     static     char chArray[] =
"0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz";
     static     int  chArrayMax = 61;

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

     len= RandomNumber(x, y);

     for (i=0; i<len; i++)
     {
          cc = chArray[RandomNumber(0, chArrayMax)];
        str[i] = cc;
    }
     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("[%ld]DBG: Entering MakeOriginalAlphaString()\n", (int)
GetCurrentThreadId());
#endif

    // verify prercentage is valid
    if ((percent < 0) || (percent > 100))
    {
          printf("MakeOrigianlAlphaString: Invalid percentage: %d\n",
percent);
          exit(-1);
    }

    // verify string is at least 8 chars in length
    if ((x + 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);
          strncpy(str + start, "ORIGINAL", 8);
    }


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

    return 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("[%ld]DBG: Entering InitString()\n", (int) GetCurrentThreadId());
#endif

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


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

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

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

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

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


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

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

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

     return;
}
```

TIME.C

```
//   File:     TIME.C
//                  Microsoft TPC-C Kit Ver. 4.20
//                  Copyright Microsoft, 1996, 1997, 1998, 1999
//   Purpose:  Source file for time functions


// Includes
#include "tpcc.h"

// Globals
static long start_sec;
```

```
//=======================================================================
//
// Function name: TimeNow
//
//=======================================================================

long TimeNow()
{
   long         time_now;
   struct  _timeb el_time;

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

   _ftime(&el_time);

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

   return time_now;
}
```

TPCC.H

```
//   File:     TPCC.H
//                  Microsoft TPC-C Kit Ver. 4.20
//                  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 <odbcss.h>

// General constants
#define MILLI                    1000
#define FALSE                        0
#define TRUE                         1
#define UNDEF                           -1
#define MINPRINTASCII                   32
#define MAXPRINTASCII                  126

// Default environment constants
#define SERVER                       ""
#define DATABASE                     "tpcc"
#define USER                         "sa"
#define PASSWORD                    ""

// Default loader arguments
#define BATCH                   10000
#define DEFLDPACKSIZE                32768
#define LOADER_RES_FILE           "logs\\load.out"
#define LOADER_NURAND_C                123
#define DEF_STARTING_WAREHOUSE       1
#define BUILD_INDEX                           1    // build both data and
indexes
#define INDEX_ORDER                           1    // build indexes before load
#define SCALE_DOWN                            0   // build a normal scale
database
#define INDEX_SCRIPT_PATH "scripts"

typedef struct
{
    char                  *server;
    char                  *database;
    char                  *user;
    char                  *password;
     BOOL                 tables_all;               // set if loading all
tables
     BOOL                 table_item;               // set if loading ITEM
table specifically
     BOOL                 table_warehouse;     // set if loading WAREHOUSE,
DISTRICT, and STOCK
     BOOL                 table_customer;      // set if loading CUSTOMER
and HISTORY
     BOOL                 table_orders;        // set if loading NEW-ORDER,
ORDERS, ORDER-LINE
    long                       num_warehouses;
    long                       batch;
    long                       verbose;
     long                      pack_size;
     char                 *loader_res_file;
     char                 *synch_servername;
     long                 case_sensitivity;
     long                 starting_warehouse;
     long                 build_index;
     long                 index_order;
     long                 scale_down;
     char                 *index_script_path;
} TPCCLDR_ARGS;

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


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

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

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

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

TPCCLDR.C

```
//   File:     TPCCLDR.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 LoadOrdersTable();
void LoadNewOrderTable();
void LoadOrderLineTable();
void GetPermutation();
void CheckForCommit();
void OpenConnections();
void BuildIndex();
void FormatDate ();

// Shared memory structures

typedef struct
{
    long                ol;
    long                ol_i_id;
    short               ol_supply_w_id;
    short               ol_quantity;
    double              ol_amount;
    char                ol_dist_info[DIST_INFO_LEN+1];
     char                 ol_delivery_d[OL_DELIVERY_D_LEN+1];
} ORDER_LINE_STRUCT;

typedef struct
{
    long                o_id;
    short               o_d_id;
    short               o_w_id;
    long                o_c_id;
    short               o_carrier_id;
    short               o_ol_cnt;
    short               o_all_local;
     ORDER_LINE_STRUCT   o_ol[15];
} ORDERS_STRUCT;

typedef struct
{
    long                  c_id;
    short                 c_d_id;
    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];
     double                    h_amount;
    char                  h_data[H_DATA_LEN+1];
} CUSTOMER_STRUCT;

typedef struct
{
     char                 c_last[LAST_NAME_LEN+1];
     char                 c_first[FIRST_NAME_LEN+1];
    long                  c_id;
} CUSTOMER_SORT_STRUCT;

typedef struct
{
    long                time_start;
} LOADER_TIME_STRUCT;


// Global variables

char szLastError[300];

HENV henv;

HDBC v_hdbc;                              // for SQL Server version
verification
HDBC i_hdbc1;                        // for ITEM table
HDBC w_hdbc1;                        // for WAREHOUSE, DISTRICT, STOCK
HDBC c_hdbc1;                        // for CUSTOMER
HDBC c_hdbc2;                        // for HISTORY
HDBC o_hdbc1;                        // for ORDERS
HDBC o_hdbc2;                        // for NEW-ORDER
HDBC o_hdbc3;                        // for ORDER-LINE

HSTMTv_hstmt;                        // for SQL Server version verification
HSTMTi_hstmt1;
HSTMTw_hstmt1;
HSTMTc_hstmt1, c_hstmt2;
HSTMTo_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;
long            main_time_start;
long            main_time_end;
long            max_items;
long            customers_per_district;
long            orders_per_district;
long            first_new_order;
long            last_new_order;


TPCCLDR_ARGS    *aptr, args;


//=======================================================================
//
// Function name: main
//
//=======================================================================

int main(int  argc, char **argv)
{

     DWORD           dwThreadID[MAX_MAIN_THREADS];
     HANDLE          hThread[MAX_MAIN_THREADS];
     FILE            *fLoader;
     char            buffer[255];
     int                  i;

     for (i=0; i<MAX_MAIN_THREADS; i++)
          hThread[i] = NULL;

    printf("\n***************************************************");
     printf("\n*                                                 *");
     printf("\n*  Microsoft SQL Server                           *");
     printf("\n*                                                 *");
     printf("\n*  TPC-C BENCHMARK KIT:  Database loader          *");
     printf("\n*  Version %s                                   *",
TPCKIT_VER);
     printf("\n*                                                 *");
     printf("\n***************************************************\n\n");

    // process command line arguments

    aptr = &args;
    GetArgsLoader(argc, argv, aptr);

     // 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;
     long          i_im_id;
    char           i_name[I_NAME_LEN+1];
    double         i_price;
    char           i_data[I_DATA_LEN+1];
     char          name[20];
     long          time_start;
     RETCODE            rc;
     DBINT         rcint;
     char          bcphint[128];

     // 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("idxitmcl");

     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 != SUCCEED)
          HandleErrorDBC(i_hdbc1);

     if ((aptr->build_index == 1) && (aptr->index_order == 1))
     {
          sprintf(bcphint, "tablock, order (i_id), ROWS_PER_BATCH =
100000");
          rc = bcp_control(i_hdbc1, BCPHINTS, (void*) bcphint);
          if (rc != SUCCEED)
               HandleErrorDBC(i_hdbc1);
```

```
     }

     rc = bcp_bind(i_hdbc1, (BYTE *) &i_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, 1);
     if (rc != SUCCEED)
          HandleErrorDBC(i_hdbc1);

     rc = bcp_bind(i_hdbc1, (BYTE *) &i_im_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, 2);
     if (rc != SUCCEED)
          HandleErrorDBC(i_hdbc1);

     rc = bcp_bind(i_hdbc1, (BYTE *) i_name, 0, I_NAME_LEN, NULL, 0, 0, 3);
     if (rc != SUCCEED)
          HandleErrorDBC(i_hdbc1);

     rc = bcp_bind(i_hdbc1, (BYTE *) &i_price, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, 4);
     if (rc != SUCCEED)
          HandleErrorDBC(i_hdbc1);

     rc = bcp_bind(i_hdbc1, (BYTE *) i_data, 0, I_DATA_LEN, NULL, 0, 0, 5);
     if (rc != SUCCEED)
          HandleErrorDBC(i_hdbc1);

     time_start = (TimeNow() / MILLI);

     item_rows_loaded = 0;

     for (i_id = 1; i_id <= max_items; i_id++)
     {
          i_im_id = RandomNumber(1L, 10000L);

          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 != SUCCEED)
               HandleErrorDBC(i_hdbc1);

          item_rows_loaded++;
          CheckForCommit(i_hdbc1, i_hstmt1, item_rows_loaded, "item",
&time_start);
     }

     rcint = bcp_done(i_hdbc1);
     if (rcint < 0)
          HandleErrorDBC(i_hdbc1);

     printf("Finished loading item table.\n");
     SQLFreeStmt(i_hstmt1, SQL_DROP);
     SQLDisconnect(i_hdbc1);
     SQLFreeConnect(i_hdbc1);

     // if build index after load
     if ((aptr->build_index == 1) && (aptr->index_order == 0))
          BuildIndex("idxitmcl");

}


//=========================================================================
===
//
// Function   : LoadWarehouse
//
// Loads WAREHOUSE table and loads Stock and District as Warehouses are
created
//
//=========================================================================
===

void LoadWarehouse()
{
    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];
     long 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("idxwarcl");

     InitString(w_name, W_NAME_LEN+1);
     InitAddress(w_street_1, w_street_2, w_city, w_state, w_zip);

     sprintf(name, "%s..%s", aptr->database, "warehouse");
```

```
     rc = bcp_init(w_hdbc1, name, NULL, "logs\\whouse.err", DB_IN);
     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     if ((aptr->build_index == 1) && (aptr->index_order == 1))
     {
          sprintf(bcphint, "tablock, order (w_id), ROWS_PER_BATCH = %d",
aptr->num_warehouses);
          rc = bcp_control(w_hdbc1, BCPHINTS, (void*) bcphint);
          if (rc != SUCCEED)
               HandleErrorDBC(w_hdbc1);
     }

     rc = bcp_bind(w_hdbc1, (BYTE *) &w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 1);
     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     rc = bcp_bind(w_hdbc1, (BYTE *) w_name, 0, W_NAME_LEN, NULL, 0, 0, 2);
     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     rc = bcp_bind(w_hdbc1, (BYTE *) w_street_1, 0, ADDRESS_LEN, NULL, 0, 0,
3);
     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     rc = bcp_bind(w_hdbc1, (BYTE *) w_street_2, 0, ADDRESS_LEN, NULL, 0, 0,
4);
     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     rc = bcp_bind(w_hdbc1, (BYTE *) w_city, 0, ADDRESS_LEN, NULL, 0, 0, 5);
     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     rc = bcp_bind(w_hdbc1, (BYTE *) w_state, 0, STATE_LEN, NULL, 0, 0, 6);
     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     rc = bcp_bind(w_hdbc1, (BYTE *) w_zip, 0, ZIP_LEN, NULL, 0, 0, 7);
     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     rc = bcp_bind(w_hdbc1, (BYTE *) &w_tax, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, 8);
     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     rc = bcp_bind(w_hdbc1, (BYTE *) &w_ytd, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, 9);
     if (rc != SUCCEED)
          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 != SUCCEED)
            HandleErrorDBC(w_hdbc1);

        warehouse_rows_loaded++;
        CheckForCommit(w_hdbc1, i_hstmt1, warehouse_rows_loaded,
"warehouse", &time_start);
    }

    rcint = bcp_done(w_hdbc1);
    if (rcint < 0)
        HandleErrorDBC(w_hdbc1);

    printf("Finished loading warehouse table.\n");

    // if build index after load...
    if ((aptr->build_index == 1) && (aptr->index_order == 0))
        BuildIndex("idxwarcl");

    stock_rows_loaded = 0;
    district_rows_loaded = 0;

    District();
    Stock();

}


//=======================================================================
//
// Function   : District
//
//=======================================================================

void District()
{
    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;
     long  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("idxdiscl");

     InitString(d_name, D_NAME_LEN+1);
     InitAddress(d_street_1, d_street_2, d_city, d_state, d_zip);
     sprintf(name, "%s..%s", aptr->database, "district");

     rc = bcp_init(w_hdbc1, name, NULL, "logs\\district.err", DB_IN);
     if (rc != SUCCEED)
         HandleErrorDBC(w_hdbc1);

     if ((aptr->build_index == 1) && (aptr->index_order == 1))
     {
         sprintf(bcphint, "tablock, order (d_w_id, d_id), ROWS_PER_BATCH =
%u", (aptr->num_warehouses * 10));
         rc = bcp_control(w_hdbc1, BCPHINTS, (void*) bcphint);
         if (rc != SUCCEED)
             HandleErrorDBC(w_hdbc1);
     }

     rc = bcp_bind(w_hdbc1, (BYTE *) &d_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 1);
     if (rc != SUCCEED)
         HandleErrorDBC(w_hdbc1);

     rc = bcp_bind(w_hdbc1, (BYTE *) &d_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 2);
     if (rc != SUCCEED)
         HandleErrorDBC(w_hdbc1);

     rc = bcp_bind(w_hdbc1, (BYTE *) d_name, 0, D_NAME_LEN, NULL, 0, 0, 3);
     if (rc != SUCCEED)
         HandleErrorDBC(w_hdbc1);
     rc = bcp_bind(w_hdbc1, (BYTE *) d_street_1, 0, ADDRESS_LEN, NULL, 0, 0,
4);
     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     rc = bcp_bind(w_hdbc1, (BYTE *) d_street_2, 0, ADDRESS_LEN, NULL, 0, 0,
5);
     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     rc = bcp_bind(w_hdbc1, (BYTE *) d_city, 0, ADDRESS_LEN, NULL, 0, 0, 6);
     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     rc = bcp_bind(w_hdbc1, (BYTE *) d_state, 0, STATE_LEN, NULL, 0, 0, 7);
     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     rc = bcp_bind(w_hdbc1, (BYTE *) d_zip, 0, ZIP_LEN, NULL, 0, 0, 8);
     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     rc = bcp_bind(w_hdbc1, (BYTE *) &d_tax, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, 9);
     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     rc = bcp_bind(w_hdbc1, (BYTE *) &d_ytd, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, 10);
     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     rc = bcp_bind(w_hdbc1, (BYTE *) &d_next_o_id, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT4, 11);
     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     d_ytd  = 30000.0;

     d_next_o_id = orders_per_district+1;

     time_start = (TimeNow() / MILLI);

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

          for (d_id = 1; d_id <= DISTRICT_PER_WAREHOUSE; d_id++)
          {
               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 != SUCCEED)
                     HandleErrorDBC(w_hdbc1);

                district_rows_loaded++;
                CheckForCommit(w_hdbc1, w_hstmt1, district_rows_loaded,
"district", &time_start);
           }
    }

     rcint = bcp_done(w_hdbc1);
     if (rcint < 0)
          HandleErrorDBC(w_hdbc1);

     printf("Finished loading district table.\n");

     // if build index after load...
     if ((aptr->build_index == 1) && (aptr->index_order == 0))
          BuildIndex("idxdiscl");

    return;
}


//=======================================================================
//
// Function   : Stock
//
//=======================================================================

void Stock()
{
    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];
    short len;
     char name[20];
```

```
	long	time_start;
	RETCODE	rc;
	DBINTrcint;
	char	bcphint[128];

	// Seed with unique number
	seed(3);

	// if build index before load...
	if ((aptr->build_index == 1) && (aptr->index_order == 1))
		BuildIndex("idxstkcl");

	sprintf(name, "%s..%s", aptr->database, "stock");

	rc = bcp_init(w_hdbc1, name, NULL, "logs\\stock.err", DB_IN);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	if ((aptr->build_index == 1) && (aptr->index_order == 1))
	{
		sprintf(bcphint, "tablock, order (s_i_id, s_w_id), ROWS_PER_BATCH
= %u", (aptr->num_warehouses * 100000));
		rc = bcp_control(w_hdbc1, BCPHINTS, (void*) bcphint);
		if (rc != SUCCEED)
			HandleErrorDBC(w_hdbc1);
	}

	rc = bcp_bind(w_hdbc1, (BYTE *) &s_i_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, 1);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	bcp_bind(w_hdbc1, (BYTE *) &s_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 2);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) &s_quantity, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT2, 3);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_01, 0, S_DIST_LEN, NULL, 0, 0,
4);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_02, 0, S_DIST_LEN, NULL, 0, 0,
5);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_03, 0, S_DIST_LEN, NULL, 0, 0,
6);
```

```
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_04, 0, S_DIST_LEN, NULL, 0, 0,
7);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_05, 0, S_DIST_LEN, NULL, 0, 0,
8);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_06, 0, S_DIST_LEN, NULL, 0, 0,
9);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_07, 0, S_DIST_LEN, NULL, 0, 0,
10);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_08, 0, S_DIST_LEN, NULL, 0, 0,
11);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_09, 0, S_DIST_LEN, NULL, 0, 0,
12);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_10, 0, S_DIST_LEN, NULL, 0, 0,
13);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) &s_ytd, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, 14);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) &s_order_cnt, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT2, 15);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) &s_remote_cnt, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 16);
	if (rc != SUCCEED)
		HandleErrorDBC(w_hdbc1);

	rc = bcp_bind(w_hdbc1, (BYTE *) s_data, 0, S_DATA_LEN, NULL, 0, 0, 17);
```

```
     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     s_ytd = s_order_cnt = s_remote_cnt = 0;

     time_start = (TimeNow() / MILLI);

     printf("...Loading stock table\n");

     for (s_i_id=1; s_i_id <= max_items; s_i_id++)
     {

          for (s_w_id = (short)aptr->starting_warehouse; s_w_id <= aptr-
>num_warehouses; s_w_id++)
          {

               s_quantity = (short)RandomNumber(10L,100L);
               len = MakeAlphaString(24,24,S_DIST_LEN, s_dist_01);
               len = MakeAlphaString(24,24,S_DIST_LEN, s_dist_02);
               len = MakeAlphaString(24,24,S_DIST_LEN, s_dist_03);
               len = MakeAlphaString(24,24,S_DIST_LEN, s_dist_04);
               len = MakeAlphaString(24,24,S_DIST_LEN, s_dist_05);
               len = MakeAlphaString(24,24,S_DIST_LEN, s_dist_06);
               len = MakeAlphaString(24,24,S_DIST_LEN, s_dist_07);
               len = MakeAlphaString(24,24,S_DIST_LEN, s_dist_08);
               len = MakeAlphaString(24,24,S_DIST_LEN, s_dist_09);
               len = MakeAlphaString(24,24,S_DIST_LEN, s_dist_10);

               len = MakeOriginalAlphaString(26,50, S_DATA_LEN, s_data,10);

               rc = bcp_sendrow(w_hdbc1);
               if (rc != SUCCEED)
                    HandleErrorDBC(w_hdbc1);

               stock_rows_loaded++;
               CheckForCommit(w_hdbc1, w_hstmt1, stock_rows_loaded, "stock",
&time_start);

          }
     }

     rcint = bcp_done(w_hdbc1);
     if (rcint < 0)
          HandleErrorDBC(w_hdbc1);

     printf("Finished loading stock table.\n");

     SQLFreeStmt(w_hstmt1, SQL_DROP);
     SQLDisconnect(w_hdbc1);
     SQLFreeConnect(w_hdbc1);

     // if build index after load...
     if ((aptr->build_index == 1) && (aptr->index_order == 0))
          BuildIndex("idxstkcl");
```

```
     return;
}


//=======================================================================
//
// Function   : LoadCustomer
//
//=======================================================================

void LoadCustomer()
{
     LOADER_TIME_STRUCT      customer_time_start;
     LOADER_TIME_STRUCT      history_time_start;
     short                     w_id;
    short                d_id;
     DWORD                     dwThreadID[MAX_CUSTOMER_THREADS];
     HANDLE                    hThread[MAX_CUSTOMER_THREADS];
     char                      name[20];
     RETCODE                        rc;
     DBINT                     rcint;
     char                      bcphint[128];
     char                      cmd[256];
     // SQLRETURN                   rc_1;
     // 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("idxcuscl");

     // Initialize bulk copy
     sprintf(name, "%s..%s", aptr->database, "customer");

     rc = bcp_init(c_hdbc1, name, NULL, "logs\\customer.err", DB_IN);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

     if ((aptr->build_index == 1) && (aptr->index_order == 1))
     {
          sprintf(bcphint, "tablock, order (c_w_id, c_d_id, c_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 30000));
          rc = bcp_control(c_hdbc1, BCPHINTS, (void*) bcphint);
          if (rc != SUCCEED)
               HandleErrorDBC(c_hdbc1);
     }
     sprintf(name, "%s..%s", aptr->database, "history");

     rc = bcp_init(c_hdbc2, name, NULL, "logs\\history.err", DB_IN);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc2);

     sprintf(bcphint, "tablock");
     rc = bcp_control(c_hdbc2, BCPHINTS, (void*) bcphint);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc2);

     customer_rows_loaded    = 0;
     history_rows_loaded     = 0;

     CustomerBufInit();

     customer_time_start.time_start = (TimeNow() / MILLI);
     history_time_start.time_start = (TimeNow() / MILLI);

     for (w_id = (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("idxcuscl");

     // build non-clustered index
     if (aptr->build_index == 1)
          BuildIndex("idxcusnc");
     // Output the NURAND used for the loader into C_FIRST for C_ID = 1,
     // C_W_ID = 1, and C_D_ID = 1
     sprintf(cmd, "isql -S%s -U%s -P%s -d%s -e -Q\"update customer set
c_first = 'C_LOAD = %d' where c_id = 1 and c_w_id = 1 and c_d_id = 1\" >
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 problem.
          //   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                      i;
    CUSTOMER_SORT_STRUCT    c[CUSTOMERS_PER_DISTRICT];


     for (i=0;i<customers_per_district;i++)
     {
          if (i < 1000)
               LastName(i, c[i].c_last);
          else
               LastName(NURand(255,0,999,LOADER_NURAND_C), c[i].c_last);

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

          MakeAddress(customer_buf[i].c_street_1,
                         customer_buf[i].c_street_2,
                         customer_buf[i].c_city,
                         customer_buf[i].c_state,
                         customer_buf[i].c_zip);

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

          if (RandomNumber(1L, 100L) > 10)
               customer_buf[i].c_credit[0] = 'G';
          else
               customer_buf[i].c_credit[0] = 'B';
          customer_buf[i].c_credit[1] = 'C';

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

          //  fix to avoid ODBC float to numeric conversion problem.

          //  customer_buf[i].c_balance = -10.0;
          strcpy(customer_buf[i].c_balance,"-10.0");

          MakeAlphaString(300, 500, C_DATA_LEN, 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];
     RETCODE         rc;

    rc = bcp_bind(c_hdbc1, (BYTE *) &c_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, 1);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) &c_d_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 2);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

     rc = bcp_bind(c_hdbc1, (BYTE *) &c_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 3);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_first, 0, FIRST_NAME_LEN, NULL, 0, 0,
4);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) c_middle, 0, MIDDLE_NAME_LEN,NULL, 0, 0,
5);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_last, 0, LAST_NAME_LEN, NULL, 0, 0,
6);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_street_1, 0, ADDRESS_LEN, NULL, 0, 0,
7);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_street_2, 0, ADDRESS_LEN, NULL,0,0,
8);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_city, 0, ADDRESS_LEN, NULL, 0, 0, 9);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_state, 0, STATE_LEN, NULL, 0, 0, 10);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_zip, 0, ZIP_LEN, NULL, 0, 0, 11);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_phone, 0, PHONE_LEN, NULL, 0, 0, 12);

     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

     rc = bcp_bind(c_hdbc1, (BYTE *) &c_since, 0, C_SINCE_LEN, NULL, 0,
SQLCHARACTER, 13);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_credit, 0, CREDIT_LEN, NULL, 0, 0,
14);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) &c_credit_lim, 0, SQL_VARLEN_DATA, NULL,
0, SQLFLT8, 15);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) &c_discount, 0, SQL_VARLEN_DATA, NULL,
0, SQLFLT8, 16);
```

```
     if (rc != SUCCEED)
          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 != SUCCEED)
     //   HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) c_balance, 0, 5, NULL, 0, SQLCHARACTER,
17);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);


    rc = bcp_bind(c_hdbc1, (BYTE *) &c_ytd_payment, 0, SQL_VARLEN_DATA,
NULL, 0, SQLFLT8, 18);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) &c_payment_cnt, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 19);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) &c_delivery_cnt,0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 20);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_data, 0, 500, NULL, 0, 0, 21);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

    for (i = 0; i < customers_per_district; i++)
    {
          c_id = customer_buf[i].c_id;
          c_d_id = customer_buf[i].c_d_id;
          c_w_id = customer_buf[i].c_w_id;

          strcpy(c_first, customer_buf[i].c_first);
          strcpy(c_middle, customer_buf[i].c_middle);
          strcpy(c_last, customer_buf[i].c_last);
          strcpy(c_street_1, customer_buf[i].c_street_1);
          strcpy(c_street_2, customer_buf[i].c_street_2);
          strcpy(c_city, customer_buf[i].c_city);
          strcpy(c_state, customer_buf[i].c_state);
          strcpy(c_zip, customer_buf[i].c_zip);
          strcpy(c_phone, customer_buf[i].c_phone);
          strcpy(c_credit, customer_buf[i].c_credit);

          FormatDate(&c_since);
          c_credit_lim = customer_buf[i].c_credit_lim;
          c_discount = customer_buf[i].c_discount;

          //  fix to avoid ODBC float to numeric conversion problem.

          //  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 != SUCCEED)
               HandleErrorDBC(c_hdbc1);

          customer_rows_loaded++;
          CheckForCommit(c_hdbc1, c_hstmt1, customer_rows_loaded,
"customer", &customer_time_start->time_start);
    }

}


//=========================================================================
//
// Function   : LoadHistoryTable
//
//=========================================================================

void LoadHistoryTable(LOADER_TIME_STRUCT *history_time_start)
{
     int         i;
    long        c_id;
    short       c_d_id;
    short       c_w_id;
     double     h_amount;
    char        h_data[H_DATA_LEN+1];
     char       h_date[H_DATE_LEN+1];
     RETCODE         rc;

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, 1);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_d_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 2);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc2);
```

```
    rc = bcp_bind(c_hdbc2, (BYTE *) &c_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 3);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_d_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 4);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 5);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc2);

     rc = bcp_bind(c_hdbc2, (BYTE *) &h_date, 0, H_DATE_LEN, NULL, 0,
SQLCHARACTER, 6);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &h_amount, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, 7);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) h_data, 0, H_DATA_LEN, NULL, 0, 0, 8);
     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc2);

    for (i = 0; i < customers_per_district; i++)
    {
          c_id = customer_buf[i].c_id;
          c_d_id = customer_buf[i].c_d_id;
          c_w_id = customer_buf[i].c_w_id;
          h_amount = customer_buf[i].h_amount;
          strcpy(h_data, customer_buf[i].h_data);

          FormatDate(&h_date);

          // send to server
          rc = bcp_sendrow(c_hdbc2);
          if (rc != SUCCEED)
               HandleErrorDBC(c_hdbc2);

          history_rows_loaded++;
          CheckForCommit(c_hdbc2, c_hstmt2, history_rows_loaded, "history",
&history_time_start->time_start);
    }

}


//============================================================-
===============
//
// Function   : LoadOrders
//
//=========================================================================
==

void LoadOrders()
{
     LOADER_TIME_STRUCT      orders_time_start;
     LOADER_TIME_STRUCT      new_order_time_start;
     LOADER_TIME_STRUCT      order_line_time_start;
     short                     w_id;
    short                 d_id;
     DWORD                     dwThreadID[MAX_ORDER_THREADS];
     HANDLE                    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("idxordcl");
               BuildIndex("idxnodcl");
               BuildIndex("idxodlcl");
     }

     // initialize bulk copy
     sprintf(name, "%s..%s", aptr->database, "orders");

     rc = bcp_init(o_hdbc1, name, NULL, "logs\\orders.err", DB_IN);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc1);

     if ((aptr->build_index == 1) && (aptr->index_order == 1))
     {
          sprintf(bcphint, "tablock, order (o_w_id, o_d_id, o_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 30000));
          rc = bcp_control(o_hdbc1, BCPHINTS, (void*) bcphint);
          if (rc != SUCCEED)
               HandleErrorDBC(o_hdbc1);

     }

     sprintf(name, "%s..%s", aptr->database, "new_order");

     rc = bcp_init(o_hdbc2, name, NULL, "logs\\neword.err", DB_IN);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc2);
```

```
     if ((aptr->build_index == 1) && (aptr->index_order == 1))
     {
          sprintf(bcphint, "tablock, order (no_w_id, no_d_id, no_o_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 9000));
          rc = bcp_control(o_hdbc2, BCPHINTS, (void*) bcphint);
          if (rc != SUCCEED)
               HandleErrorDBC(o_hdbc2);
     }

     sprintf(name, "%s..%s", aptr->database, "order_line");

     rc = bcp_init(o_hdbc3, name, NULL, "logs\\ordline.err", DB_IN);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc3);

    if ((aptr->build_index == 1) && (aptr->index_order == 1))
     {
          sprintf(bcphint, "tablock, order (ol_w_id, ol_d_id, ol_o_id,
ol_number), ROWS_PER_BATCH = %u", (aptr->num_warehouses * 300000));
          rc = bcp_control(o_hdbc3, BCPHINTS, (void*) bcphint);
          if (rc != SUCCEED)
               HandleErrorDBC(o_hdbc3);
     }

     orders_rows_loaded      = 0;
     new_order_rows_loaded   = 0;
     order_line_rows_loaded  = 0;

     OrdersBufInit();

     orders_time_start.time_start = (TimeNow() / MILLI);
     new_order_time_start.time_start = (TimeNow() / MILLI);
     order_line_time_start.time_start = (TimeNow() / MILLI);

     for (w_id = (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)
LoadOrdersTable,
                                                 &orders_time_start,
                                                 0,
                                                 &dwThreadID[0]);

                if (hThread[0] == NULL)
                {
                     printf("Error, failed in creating creating thread =
0.\n");
                     exit(-1);
                }

                // start NewOrder table thread

                printf("...Loading New-Order Table for: d_id = %d, w_id =
%d\n", d_id, w_id);

                hThread[1] = CreateThread(NULL,
                                                 0,
                                                 (LPTHREAD_START_ROUTINE)
LoadNewOrderTable,
                                                 &new_order_time_start,
                                                 0,
                                                 &dwThreadID[1]);

                if (hThread[1] == NULL)
                {
                     printf("Error, failed in creating creating thread =
1.\n");
                     exit(-1);
                }

                // start Order-Line table thread

                printf("...Loading Order-Line Table for: d_id = %d, w_id =
%d\n", d_id, w_id);

                hThread[2] = CreateThread(NULL,
                                                 0,
                                                 (LPTHREAD_START_ROUTINE)
LoadOrderLineTable,
                                                 &order_line_time_start,
                                                 0,
                                                 &dwThreadID[2]);

                if (hThread[2] == NULL)
                {
                     printf("Error, failed in creating creating thread =
2.\n");
                     exit(-1);
                }

                WaitForSingleObject( hThread[0], INFINITE );
                WaitForSingleObject( hThread[1], INFINITE );
                WaitForSingleObject( hThread[2], INFINITE );
```

```
                if (CloseHandle(hThread[0]) == FALSE)
                {
                     printf("Error, failed in closing Orders thread handle
with errno: %d\n", GetLastError());
                }

                if (CloseHandle(hThread[1]) == FALSE)
                {
                     printf("Error, failed in closing NewOrder thread handle
with errno: %d\n", GetLastError());
                }

                if (CloseHandle(hThread[2]) == FALSE)
                {
                     printf("Error, failed in closing OrderLine thread
handle with errno: %d\n", GetLastError());
                }

           }
     }

     printf("Finished loading orders.\n");


    return;
}


//=========================================================================
//
// Function   : OrdersBufInit
//
// Clears shared buffer for ORDERS, NEWORDER, and ORDERLINE
//
//=========================================================================

void OrdersBufInit()
{
     int     i;
     int        j;

     for (i=0;i<orders_per_district;i++)
     {
          orders_buf[i].o_id = 0;
          orders_buf[i].o_d_id = 0;
          orders_buf[i].o_w_id = 0;
          orders_buf[i].o_c_id = 0;
          orders_buf[i].o_carrier_id = 0;
          orders_buf[i].o_ol_cnt = 0;
          orders_buf[i].o_all_local = 0;

          for (j=0;j<=14;j++)
          {
               orders_buf[i].o_ol[j].ol = 0;
               orders_buf[i].o_ol[j].ol_i_id = 0;
               orders_buf[i].o_ol[j].ol_supply_w_id = 0;
               orders_buf[i].o_ol[j].ol_quantity = 0;
               orders_buf[i].o_ol[j].ol_amount = 0;
               strcpy(orders_buf[i].o_ol[j].ol_dist_info,"");
          }
     }

}


//=======================================================================
//
// Function   : OrdersBufLoad
//
// Fills shared buffer for ORDERS, NEWORDER, and ORDERLINE
//
//=======================================================================

void OrdersBufLoad(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);
               orders_buf[o_id].o_all_local  = 1;
          }
          else
          {
               orders_buf[o_id].o_carrier_id = 0;
               orders_buf[o_id].o_all_local  = 1;
          }
```

```
          for (ol=0; ol<orders_buf[o_id].o_ol_cnt; ol++)
          {

               orders_buf[o_id].o_ol[ol].ol = ol+1;
               orders_buf[o_id].o_ol[ol].ol_i_id = RandomNumber(1L,
max_items);
               orders_buf[o_id].o_ol[ol].ol_supply_w_id = w_id;
               orders_buf[o_id].o_ol[ol].ol_quantity = 5;
               MakeAlphaString(24, 24, OL_DIST_INFO_LEN,
&orders_buf[o_id].o_ol[ol].ol_dist_info);

               // Generate ORDER-LINE data
               if (o_id < first_new_order)
               {
                    orders_buf[o_id].o_ol[ol].ol_amount = 0;
                    // Added to insure ol_delivery_d set properly during
load

                    FormatDate(&orders_buf[o_id].o_ol[ol].ol_delivery_d);

               }
               else
               {
                    orders_buf[o_id].o_ol[ol].ol_amount =
RandomNumber(1,999999)/100.0;
                    // Added to insure ol_delivery_d set properly during
load

                    // odbc datetime format
                    strcpy(orders_buf[o_id].o_ol[ol].ol_delivery_d,"1899-
12-31 00:00:00.000");

               }
          }
     }
}


//=======================================================================
//
// Function   : LoadOrdersTable
//
//=======================================================================

void LoadOrdersTable(LOADER_TIME_STRUCT *orders_time_start)
{
     int          i;
    long        o_id;
     short      o_d_id;
     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 != SUCCEED)
          HandleErrorDBC(o_hdbc1);

    rc = bcp_bind(o_hdbc1, (BYTE *) &o_d_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 2);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc1);

    rc = bcp_bind(o_hdbc1, (BYTE *) &o_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 3);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc1);

    rc = bcp_bind(o_hdbc1, (BYTE *) &o_c_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, 4);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc1);

     rc = bcp_bind(o_hdbc1, (BYTE *) &o_entry_d, 0, O_ENTRY_D_LEN, NULL, 0,
SQLCHARACTER, 5);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc1);

    rc = bcp_bind(o_hdbc1, (BYTE *) &o_carrier_id, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT2, 6);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc1);

    rc = bcp_bind(o_hdbc1, (BYTE *) &o_ol_cnt, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 7);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc1);

    rc = bcp_bind(o_hdbc1, (BYTE *) &o_all_local, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT2, 8);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc1);

    for (i = 0; i < orders_per_district; i++)
    {
          o_id         = orders_buf[i].o_id;
          o_d_id       = orders_buf[i].o_d_id;
          o_w_id       = orders_buf[i].o_w_id;
          o_c_id       = orders_buf[i].o_c_id;
          o_carrier_id = orders_buf[i].o_carrier_id;
          o_ol_cnt     = orders_buf[i].o_ol_cnt;
          o_all_local  = orders_buf[i].o_all_local;

          FormatDate(&o_entry_d);

          // send data to server
          rc = bcp_sendrow(o_hdbc1);
          if (rc != SUCCEED)
               HandleErrorDBC(o_hdbc1);

          orders_rows_loaded++;
          CheckForCommit(o_hdbc1, o_hstmt1, orders_rows_loaded, "orders",
&orders_time_start->time_start);
    }

     // rcint = bcp_batch(o_hdbc1);
     // if (rcint < 0)
     //   HandleErrorDBC(o_hdbc1);

     if ((o_w_id == aptr->num_warehouses) && (o_d_id == 10))
     {
          rcint = bcp_done(o_hdbc1);
          if (rcint < 0)
               HandleErrorDBC(o_hdbc1);

          SQLFreeStmt(o_hstmt1, SQL_DROP);
          SQLDisconnect(o_hdbc1);
          SQLFreeConnect(o_hdbc1);

          // if build index after load...
          if ((aptr->build_index == 1) && (aptr->index_order == 0))
               BuildIndex("idxordcl");

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

}


//=======================================================================
//
// Function   : LoadNewOrderTable
//
//=======================================================================

void LoadNewOrderTable(LOADER_TIME_STRUCT *new_order_time_start)
{
    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 != SUCCEED)
          HandleErrorDBC(o_hdbc2);

    rc = bcp_bind(o_hdbc2, (BYTE *) &o_d_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 2);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc2);

    rc = bcp_bind(o_hdbc2, (BYTE *) &o_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 3);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc2);

     for (i = first_new_order; i < last_new_order; i++)
     {
          o_id    = orders_buf[i].o_id;
          o_d_id  = orders_buf[i].o_d_id;
          o_w_id  = orders_buf[i].o_w_id;

          rc = bcp_sendrow(o_hdbc2);
          if (rc != SUCCEED)
               HandleErrorDBC(o_hdbc2);

          new_order_rows_loaded++;
          CheckForCommit(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 == aptr->num_warehouses) && (o_d_id == 10))
     {
          rcint = bcp_done(o_hdbc2);
          if (rcint < 0)
               HandleErrorDBC(o_hdbc2);

          SQLFreeStmt(o_hstmt2, SQL_DROP);
          SQLDisconnect(o_hdbc2);
          SQLFreeConnect(o_hdbc2);

          // if build index after load...
          if ((aptr->build_index == 1) && (aptr->index_order == 0))
               BuildIndex("idxnodcl");

     }

}
```

```
//========================================================================
//
// Function   : LoadOrderLineTable
//
//========================================================================

void LoadOrderLineTable(LOADER_TIME_STRUCT *order_line_time_start)
{
     int         i,j;
    long        o_id;
     short      o_d_id;
     short      o_w_id;
    long        ol;
     long       ol_i_id;
    short       ol_supply_w_id;
    short       ol_quantity;
    double      ol_amount;
    char        ol_dist_info[DIST_INFO_LEN+1];
     char       ol_delivery_d[OL_DELIVERY_D_LEN+1];
     RETCODE         rc;
     DBINT      rcint;

     // bind ORDER-LINE data
    rc = bcp_bind(o_hdbc3, (BYTE *) &o_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, 1);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &o_d_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 2);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &o_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 3);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &ol, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, 4);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_i_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, 5);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_supply_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 6);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc3);
     rc = bcp_bind(o_hdbc3, (BYTE *) &ol_delivery_d, 0, OL_DELIVERY_D_LEN,
NULL, 0, SQLCHARACTER, 7);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_quantity, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT2, 8);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_amount, 0, SQL_VARLEN_DATA, NULL, 0,
SQLFLT8, 9);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) ol_dist_info, 0, DIST_INFO_LEN, NULL, 0,
0, 10);
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc3);

     for (i = 0; i < orders_per_district; i++)
    {
          o_id    = orders_buf[i].o_id;
          o_d_id  = orders_buf[i].o_d_id;
          o_w_id  = orders_buf[i].o_w_id;

          for (j=0; j < orders_buf[i].o_ol_cnt; j++)
          {
               ol             = orders_buf[i].o_ol[j].ol;
               ol_i_id        = orders_buf[i].o_ol[j].ol_i_id;
               ol_supply_w_id = orders_buf[i].o_ol[j].ol_supply_w_id;
               ol_quantity    = orders_buf[i].o_ol[j].ol_quantity;
               ol_amount      = orders_buf[i].o_ol[j].ol_amount;

               strcpy(ol_delivery_d,orders_buf[i].o_ol[j].ol_delivery_d);

               strcpy(ol_dist_info,orders_buf[i].o_ol[j].ol_dist_info);

               rc = bcp_sendrow(o_hdbc3);
               if (rc != SUCCEED)
                    HandleErrorDBC(o_hdbc3);

               order_line_rows_loaded++;
               CheckForCommit(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 == aptr->num_warehouses) && (o_d_id == 10))
     {
          rcint = bcp_done(o_hdbc3);
          if (rcint < 0)
               HandleErrorDBC(o_hdbc3);

          SQLFreeStmt(o_hstmt3, SQL_DROP);
          SQLDisconnect(o_hdbc3);
          SQLFreeConnect(o_hdbc3);

          // if build index after load...
          if ((aptr->build_index == 1) && (aptr->index_order == 0))
               BuildIndex("idxodlcl");

     }

}


//=======================================================================
//
// Function   : GetPermutation
//
//=======================================================================

void GetPermutation(int perm[], int n)
{
     int i, r, t;

     for (i=1;i<=n;i++)
          perm[i] = i;

     for (i=1;i<=n;i++)
     {
          r = RandomNumber(i,n);
          t = perm[i];
          perm[i] = perm[r];
          perm[r] = t;
     }

}


//=======================================================================
//
// Function   : CheckForCommit
//
//=======================================================================

void CheckForCommit(HDBC hdbc,
                          HSTMT hstmt,
                     int rows_loaded,
                          char *table_name,
                     long *time_start)
{
    long   time_end, time_diff;
     // DBINT   rcint;

    if ( !(rows_loaded % aptr->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",
               aptr->batch,
               table_name,
                    time_diff,
               rows_loaded,
                    (float) aptr->batch / (time_diff ? time_diff : 1L));

          *time_start = time_end;
    }

    return;
}


//=========================================================================
//
// Function   : OpenConnections
//
//=========================================================================

void OpenConnections()
{

     RETCODE         rc;

     char            szDriverString[300];
     char            szDriverStringOut[1024];
     SQLSMALLINT          cbDriverStringOut;


     SQLAllocHandle(SQL_HANDLE_ENV, SQL_NULL_HANDLE, &henv );

     SQLSetEnvAttr(henv, SQL_ATTR_ODBC_VERSION, (void*)SQL_OV_ODBC3, 0 );

     SQLAllocHandle(SQL_HANDLE_DBC, henv , &i_hdbc1);
     SQLAllocHandle(SQL_HANDLE_DBC, henv , &w_hdbc1);
     SQLAllocHandle(SQL_HANDLE_DBC, henv , &c_hdbc1);
     SQLAllocHandle(SQL_HANDLE_DBC, henv , &c_hdbc2);
     SQLAllocHandle(SQL_HANDLE_DBC, henv , &o_hdbc1);
     SQLAllocHandle(SQL_HANDLE_DBC, henv , &o_hdbc2);
     SQLAllocHandle(SQL_HANDLE_DBC, henv , &o_hdbc3);

     SQLSetConnectAttr(i_hdbc1, SQL_COPT_SS_BCP, (void *)SQL_BCP_ON,
SQL_IS_INTEGER );
     SQLSetConnectAttr(w_hdbc1, SQL_COPT_SS_BCP, (void *)SQL_BCP_ON,
SQL_IS_INTEGER );
     SQLSetConnectAttr(c_hdbc1, SQL_COPT_SS_BCP, (void *)SQL_BCP_ON,
SQL_IS_INTEGER );
     SQLSetConnectAttr(c_hdbc2, SQL_COPT_SS_BCP, (void *)SQL_BCP_ON,
SQL_IS_INTEGER );
     SQLSetConnectAttr(o_hdbc1, SQL_COPT_SS_BCP, (void *)SQL_BCP_ON,
SQL_IS_INTEGER );
     SQLSetConnectAttr(o_hdbc2, SQL_COPT_SS_BCP, (void *)SQL_BCP_ON,
SQL_IS_INTEGER );
     SQLSetConnectAttr(o_hdbc3, SQL_COPT_SS_BCP, (void *)SQL_BCP_ON,
SQL_IS_INTEGER );

     // Open connections to SQL Server

     // Connection 1

     sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,
                                  aptr->server,
                                  aptr->user,
                                  aptr->password,
                                  aptr->database );

     rc = SQLSetConnectOption (i_hdbc1, SQL_PACKET_SIZE, aptr->pack_size);

     if (rc != SUCCEED)
          HandleErrorDBC(i_hdbc1);

     rc = SQLDriverConnect ( i_hdbc1,
                               NULL,
                                (SQLCHAR*)&szDriverString[0] ,
                                SQL_NTS,
                                (SQLCHAR*)&szDriverStringOut[0],
                                sizeof(szDriverStringOut),
                                &cbDriverStringOut,
                                SQL_DRIVER_NOPROMPT );
     if (rc != SUCCEED)
          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 );
     rc = SQLSetConnectOption (w_hdbc1, SQL_PACKET_SIZE, aptr->pack_size);

     if (rc != SUCCEED)
          HandleErrorDBC(w_hdbc1);

     rc = SQLDriverConnect ( w_hdbc1,
                                      NULL,
                                      (SQLCHAR*)&szDriverString[0] ,
                                      SQL_NTS,
                                      (SQLCHAR*)&szDriverStringOut[0],
                                      sizeof(szDriverStringOut),
                                      &cbDriverStringOut,
                                      SQL_DRIVER_NOPROMPT );
     if (rc != SUCCEED)
          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 );

     rc = SQLSetConnectOption (c_hdbc1, SQL_PACKET_SIZE, aptr->pack_size);

     if (rc != SUCCEED)
          HandleErrorDBC(c_hdbc1);

     rc = SQLDriverConnect ( c_hdbc1,
                                      NULL,
                                      (SQLCHAR*)&szDriverString[0] ,
                                      SQL_NTS,
                                      (SQLCHAR*)&szDriverStringOut[0],
                                      sizeof(szDriverStringOut),
                                      &cbDriverStringOut,
                                      SQL_DRIVER_NOPROMPT );
     if (rc != SUCCEED)
          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 != SUCCEED)
          HandleErrorDBC(c_hdbc2);
```

```

     rc = SQLDriverConnect ( c_hdbc2,
                                      NULL,
                                      (SQLCHAR*)&szDriverString[0] ,
                                      SQL_NTS,
                                      (SQLCHAR*)&szDriverStringOut[0],
                                      sizeof(szDriverStringOut),
                                      &cbDriverStringOut,
                                      SQL_DRIVER_NOPROMPT );
     if (rc != SUCCEED)
          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 != SUCCEED)
          HandleErrorDBC(o_hdbc1);

     rc = SQLDriverConnect ( o_hdbc1,
                                      NULL,
                                      (SQLCHAR*)&szDriverString[0] ,
                                      SQL_NTS,
                                      (SQLCHAR*)&szDriverStringOut[0],
                                      sizeof(szDriverStringOut),
                                      &cbDriverStringOut,
                                      SQL_DRIVER_NOPROMPT );
     if (rc != SUCCEED)
          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 != SUCCEED)
          HandleErrorDBC(o_hdbc2);

     rc = SQLDriverConnect ( o_hdbc2,
                                      NULL,
                                      (SQLCHAR*)&szDriverString[0] ,
                                     SQL_NTS,
                                     (SQLCHAR*)&szDriverStringOut[0],
                                     sizeof(szDriverStringOut),
                                     &cbDriverStringOut,
                                     SQL_DRIVER_NOPROMPT );
     if (rc != SUCCEED)
          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 != SUCCEED)
          HandleErrorDBC(o_hdbc3);

     rc = SQLDriverConnect ( o_hdbc3,
                                     NULL,
                                     (SQLCHAR*)&szDriverString[0] ,
                                     SQL_NTS,
                                     (SQLCHAR*)&szDriverStringOut[0],
                                     sizeof(szDriverStringOut),
                                     &cbDriverStringOut,
                                     SQL_DRIVER_NOPROMPT );
     if (rc != SUCCEED)
          HandleErrorDBC(o_hdbc3);

}

//=======================================================================
//
// Function name: BuildIndex
//
//=======================================================================

void BuildIndex(char *index_script)
{
     char cmd[256];

     printf("Starting index creation:  %s\n",index_script);

     sprintf(cmd, "isql -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)
{

     SQLCHAR        SqlState[6], 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,
                              Msg, sizeof(Msg) , &MsgLen )) != SQL_NO_DATA )
     {

          sprintf( szLastError , "%s" ,  Msg );

          _strtime(timebuf);
          _strdate(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)
{

     SQLCHAR        SqlState[6], 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,
                        Msg, sizeof(Msg) , &MsgLen )) != SQL_NO_DATA )
     {

          sprintf( szLastError , "%s" ,  Msg );

          _strtime(timebuf);
          _strdate(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];
     int                  SQLBuildFlag;

     SQLSMALLINT          cbDriverStringOut;
     SQLCHAR              SQLVersion[19];
     SQLINTEGER      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)aptr-
>pack_size, SQL_IS_UINTEGER ) != SQL_SUCCESS )
          HandleErrorDBC(v_hdbc);

     rc = SQLDriverConnect ( v_hdbc,
                              NULL,
                               (SQLCHAR*)&szDriverString[0] ,
                               SQL_NTS,
                               (SQLCHAR*)&szDriverStringOut[0],
                               sizeof(szDriverStringOut),
                               &cbDriverStringOut,
                               SQL_DRIVER_NOPROMPT );

     if ((rc != SQL_SUCCESS) && (rc != SQL_SUCCESS_WITH_INFO))
          HandleErrorDBC(v_hdbc);

     if ( SQLAllocHandle(SQL_HANDLE_STMT, v_hdbc , &v_hstmt) != SQL_SUCCESS
)
          HandleErrorSTMT(v_hstmt);
```

```
    rc = SQLBindCol(v_hstmt, 4, SQL_C_CHAR, &SQLVersion,
sizeof(SQLVersion), &SQLVersionInd);

    // issue SQL Server extended stored procedure (xp_msver) to determine
installed version
    rc = SQLExecDirect(v_hstmt, "EXECUTE xp_msver ProductVersion",
SQL_NTS);

    if ((rc != SQL_SUCCESS) && (rc != SQL_SUCCESS_WITH_INFO))
        HandleErrorSTMT(v_hstmt);

    rc = SQLFetch(v_hstmt);

    if (rc != SQL_SUCCESS)
        HandleErrorDBC(v_hdbc);

    // Check build number to ensure 7.00.623 or higher

    SQLBuildFlag = 1;

    if ( SQLVersion[0] == 55 )
    {
        if ( SQLVersion[2] == 48 )
        {
            if ( SQLVersion[5] == 56 )
            {
                if ( (SQLVersion[6] >= 48) &  (SQLVersion[7] >= 53) )

                {
                    SQLBuildFlag = 0;
                    printf("You are using SQL Server version =
%9s\n\n", SQLVersion);
                }
                else
                {
                    SQLBuildFlag = 1;
                }
            }
            else
            {
                if ( SQLVersion[5] >= 54 )
                {
                    if ( (SQLVersion[6] >= 50) & (SQLVersion[7] >= 51)
)
                    {
                        SQLBuildFlag = 0;
                        printf("You are using SQL Server version =
%9s\n\n", SQLVersion);
                    }
                    else
                    {
                        SQLBuildFlag = 1;
                    }
                }
                else
                {
                    if ( SQLVersion[5] >= 55 )
                    {
                        if ( (SQLVersion[6] >= 48) & (SQLVersion[7]
>= 48) )
                        {
                            SQLBuildFlag = 0;
                            printf("You are using SQL Server version
= %9s\n\n", SQLVersion);
                        }
                        else
                        {
                            SQLBuildFlag = 1;
                        }
                    }
                }

            }
        }
        else
        {
            if ( SQLVersion[5] >= 49 )
            {
                if ( (SQLVersion[6] >= 52) & (SQLVersion[7] >= 48) )
                {
                    SQLBuildFlag = 0;
                    printf("You are using SQL Server version =
%9s\n\n", SQLVersion);
                }
                else
                {
                    SQLBuildFlag = 1;
                }
            }
            else
            {
                SQLBuildFlag = 1;
            }
        }
    }
    else
    {
        SQLBuildFlag = 1;
    }


    if ( SQLBuildFlag == 1 )
    {
        printf("ERROR.  The SQL Server version you are using is not
supported\n");
        printf("for TPC-C benchmarking.  You currently have SQL Server
version %9s\n",SQLVersion);
```

```
          printf("installed.  Please upgrade to Microsoft SQL Server
7.00.623 or better.\n");
          printf("and re-run the SETUP program.\n\n");
          exit(1);
     }

     SQLFreeHandle(SQL_HANDLE_STMT, v_hstmt);
     SQLDisconnect(v_hdbc);
     SQLFreeHandle(SQL_HANDLE_DBC, v_hdbc);

     return;

}

//=======================================================================
//
// Function   : CheckDataBase
//
//=======================================================================

void CheckDataBase()
{

     RETCODE         rc;

     char            szDriverString[300];
     char            szDriverStringOut[1024];
     char            TablesBitMap[9] = {"000000000"};
     int                  i, ExitFlag;

     SQLSMALLINT          cbDriverStringOut;
     SQLCHAR              TabName[10];
     SQLINTEGER      TabNameInd, TabCount, TabCountInd;


     ExitFlag = 0;

     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;DATABASE=%s" ,
                                 aptr->server,
                                 aptr->user,
                                 aptr->password,
                                 aptr->database );

     rc = SQLSetConnectAttr( v_hdbc, SQL_ATTR_PACKET_SIZE, (SQLPOINTER)aptr-
>pack_size, SQL_IS_UINTEGER );
     if (rc != SQL_SUCCESS)
          HandleErrorDBC(v_hdbc);

     rc = SQLDriverConnect ( v_hdbc,
                             NULL,
                              (SQLCHAR*)&szDriverString[0] ,
                              SQL_NTS,
                              (SQLCHAR*)&szDriverStringOut[0],
                              sizeof(szDriverStringOut),
                              &cbDriverStringOut,
                              SQL_DRIVER_NOPROMPT );

     // if the rc is SQL_ERROR, the the TPCC database probably does not
exist
     if (rc == SQL_ERROR)
     {
          printf("The database TPCC does not appear to exist!\n");
          printf("\nCheck LOGS\\ directory for database creation
errors.\n");

          // cleanup database connections and handles
          SQLFreeHandle(SQL_HANDLE_STMT, v_hstmt);
          SQLDisconnect(v_hdbc);
          SQLFreeHandle(SQL_HANDLE_DBC, v_hdbc);

          // since there is not a database, exit back to SETUP.CMD
          exit(1);
     }

     if ( SQLAllocHandle(SQL_HANDLE_STMT, v_hdbc , &v_hstmt) != SQL_SUCCESS
)
          HandleErrorDBC(v_hdbc);

     if ( SQLBindCol(v_hstmt, 1, SQL_C_ULONG, &TabCount, 0, &TabCountInd) !=
SQL_SUCCESS )
          HandleErrorSTMT(v_hstmt);

     // count the number of user tables from sysobjects
     rc = SQLExecDirect(v_hstmt, "select count(*) from sysobjects where
xtype = \'U\'", SQL_NTS);
     if ((rc != SQL_SUCCESS) && (rc != SQL_SUCCESS_WITH_INFO))
          HandleErrorSTMT(v_hstmt);

     if ( SQLFetch(v_hstmt) != SQL_SUCCESS )
          HandleErrorSTMT(v_hstmt);

     // if the number of tables is less than 9, select all the user tables
in TPCC
     if (TabCount != 9)
     {
          SQLFreeHandle(SQL_HANDLE_STMT, v_hstmt);
          SQLAllocHandle(SQL_HANDLE_STMT, v_hdbc , &v_hstmt);

          if ( SQLBindCol(v_hstmt, 1, SQL_C_CHAR, &TabName, sizeof(TabName),
&TabNameInd) != SQL_SUCCESS )
                HandleErrorSTMT(v_hstmt);

          // select the list of user tables into a result set
          rc = SQLExecDirect(v_hstmt, "select * from sysobjects where xtype
= \'U\'", SQL_NTS);
          if ((rc != SQL_SUCCESS) && (rc != SQL_SUCCESS_WITH_INFO))
                HandleErrorSTMT(v_hstmt);

          // go through the result set and set the bitmap for each found
table
          // set the bitmap to '1' if the table name is found

          while ((rc = SQLFetch(v_hstmt)) != SQL_NO_DATA)
          {
                switch( TabName[0] )
                {
                case 'w':
                     TablesBitMap[0] = '1';
                     break;
                case 'd':
                     TablesBitMap[1] = '1';
                     break;
                case 'c':
                     TablesBitMap[2] = '1';
                     break;
                case 'h':
                     TablesBitMap[3] = '1';
                     break;
                case 'n':
                     TablesBitMap[4] = '1';
                     break;
                case 'o':
                     if (TabName[5] = 's')
                          TablesBitMap[5] = '1';
                     if (TabName[5] = '_')
                          TablesBitMap[6] = '1';
                     break;
                case 'i':
                     TablesBitMap[7] = '1';
                     break;
                case 's':
                     TablesBitMap[8] = '1';
                     break;
                }
          }

          // a '0' ExitFlag means do NOT exit the loader early, a '1' means
exit the loader early
          ExitFlag = 0;
```

```
          // interate through the bitmap to display which table(s) is
actually missing
          for (i = 0; i <= 8; i++)
          {
                switch(i)
                {
                case 0:
                     if (TablesBitMap[i] == '0')
                     {
                          printf("The Warehouse table is missing or
damaged.\n");

                          ExitFlag = 1;
                     }
                     break;
                case 1:
                     if (TablesBitMap[i] == '0')
                     {
                          printf("The District table is missing or
damaged.\n");

                          ExitFlag = 1;
                     }
                     break;
                case 2:
                     if (TablesBitMap[i] == '0')
                     {
                          printf("The Customer table is missing or
damaged.\n");

                          ExitFlag = 1;
                     }
                     break;
                case 3:
                     if (TablesBitMap[i] == '0')
                     {
                          printf("The History table is missing or
damaged.\n");

                          ExitFlag = 1;
                     }
                     break;
                case 4:
                     if (TablesBitMap[i] == '0')
                     {
                          printf("The New_Order table is missing or
damaged.\n");

                          ExitFlag = 1;
                     }
                     break;
                case 5:
                     if (TablesBitMap[i] == '0')
                     {
                          printf("The Orders table is missing or
damaged.\n");

                          ExitFlag = 1;
                     }
```

```
                    break;
               case 6:
                    if (TablesBitMap[i] == '0')
                    {
                         printf("The Order_Line table is missing or 
damaged.\n");
                         ExitFlag = 1;
                    }
                    break;
               case 7:
                    if (TablesBitMap[i] == '0')
                    {
                         printf("The Item table is missing or damaged.\n");
                         ExitFlag = 1;
                    }
                    break;
               case 8:
                    if (TablesBitMap[i] == '0')
                    {
                         printf("The Stock table is missing or 
damaged.\n");
                         ExitFlag = 1;
                    }
                    break;
               }
          }

          // if one or more tables are missing, display message and exit the 
loader
          if (ExitFlag = 1)
          {
               printf("\nExiting TPC-C Loader!\n");
               printf("\nCheck LOGS\\ directory for database\n");
               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 and Options

This section discloses hardware information and the Microsoft Windows Server 2003 Enterprise Edition registry parameters used on the PRIMERGY TX300 server system.

```
System Information report written at: 07/30/03 13:56:02
System Name: TWIX
[System Summary]

Item Value
OS Name    Microsoft(R) Windows(R) Server 2003, Enterprise Edition
Version    5.2.3790  Build 3790
OS Manufacturer Microsoft Corporation
System Name     TWIX
System Manufacturer  FUJITSU SIEMENS
System Model    D1409
System Type     X86-based PC
Processor  x86 Family 15 Model 2 Stepping 5 GenuineIntel ~3066 Mhz
Processor  x86 Family 15 Model 2 Stepping 5 GenuineIntel ~3066 Mhz
Processor  x86 Family 15 Model 2 Stepping 5 GenuineIntel ~3066 Mhz
Processor  x86 Family 15 Model 2 Stepping 5 GenuineIntel ~3066 Mhz
BIOS Version/Date    FUJITSU SIEMENS // Phoenix Technologies Ltd. 4.06
Rev. 1.05A.1409, 7/10/2003
SMBIOS Version  2.31
Windows Directory    C:\WINDOWS
System Directory     C:\WINDOWS\system32
Boot Device     \Device\HarddiskVolume5
Locale    United States
Hardware Abstraction LayerVersion = "5.2.3790.0 (srv03_rtm.030324-2048)"
User Name  TWIX\Administrator
Time Zone  W. Europe Daylight Time
Total Physical Memory     12,288.00 MB
Available Physical Memory 11.19 GB
Total Virtual Memory 24.78 GB
Available Virtual Memory  24.39 GB
Page File Space 13.28 GB
Page File  C:\pagefile.sys

[Hardware Resources]



[Conflicts/Sharing]

Resource   Device
```

```
Memory Address 0xF0000000-0xF1FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xF0000000-0xF1FFFFFF Mylex eXtremeRAID 2000 Disk Array
Controller

I/O Port 0x00000000-0x00000CF7  PCI bus
I/O Port 0x00000000-0x00000CF7  Direct memory access controller

Memory Address 0xF4000000-0xF81FFFFF PCI bus
Memory Address 0xF4000000-0xF81FFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xF4000000-0xF81FFFFF Mylex eXtremeRAID 2000 Disk Array
Controller

I/O Port 0x00002000-0x00002FFF  DEC 21154 PCI to PCI bridge
I/O Port 0x00002000-0x00002FFF  Mylex eXtremeRAID 2000 Disk Array
Controller

Memory Address 0xE8000000-0xEA1FFFFF PCI bus
Memory Address 0xE8000000-0xEA1FFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xE8000000-0xEA1FFFFF Mylex eXtremeRAID 2000 Disk Array
Controller

I/O Port 0x00006000-0x00007FFF  PCI bus
I/O Port 0x00006000-0x00007FFF  DEC 21154 PCI to PCI bridge
I/O Port 0x00006000-0x00007FFF  Mylex eXtremeRAID 2000 Disk Array
Controller

Memory Address 0xF2000000-0xF3FFFFFF PCI bus
Memory Address 0xF2000000-0xF3FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xF2000000-0xF3FFFFFF Mylex eXtremeRAID 2000 Disk Array
Controller

Memory Address 0xEE400000-0xF1FFFFFF PCI bus
Memory Address 0xEE400000-0xF1FFFFFF Adaptec AIC-7902-based Ultra320 SCSI

Memory Address 0xEC000000-0xEDFFFFFF PCI bus
Memory Address 0xEC000000-0xEDFFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xEC000000-0xEDFFFFFF Mylex eXtremeRAID 2000 Disk Array
Controller

I/O Port 0x00003000-0x00003FFF  PCI bus
I/O Port 0x00003000-0x00003FFF  DEC 21154 PCI to PCI bridge
I/O Port 0x00003000-0x00003FFF  Mylex eXtremeRAID 2000 Disk Array
Controller

Memory Address 0xF6000000-0xF7FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xF6000000-0xF7FFFFFF Mylex eXtremeRAID 2000 Disk Array
Controller
```

```
Memory Address 0xFC000000-0xFDFFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xFC000000-0xFDFFFFFF Mylex eXtremeRAID 2000 Disk Array
Controller

I/O Port 0x00005000-0x00005FFF  DEC 21154 PCI to PCI bridge
I/O Port 0x00005000-0x00005FFF  Mylex eXtremeRAID 2000 Disk Array
Controller

Memory Address 0xE4000000-0xE5FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xE4000000-0xE5FFFFFF Mylex eXtremeRAID 2000 Disk Array
Controller

Memory Address 0xE2000000-0xE5FFFFFF PCI bus
Memory Address 0xE2000000-0xE5FFFFFF RAGE XL PCI Family (Microsoft
Corporation)

Memory Address 0xE6000000-0xE7FFFFFF PCI bus
Memory Address 0xE6000000-0xE7FFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xE6000000-0xE7FFFFFF Mylex eXtremeRAID 2000 Disk Array
Controller

Memory Address 0xA0000-0xBFFFF  PCI bus
Memory Address 0xA0000-0xBFFFF  RAGE XL PCI Family (Microsoft Corporation)


I/O Port 0x00007000-0x00007FFF  DEC 21154 PCI to PCI bridge
I/O Port 0x00007000-0x00007FFF  Mylex eXtremeRAID 2000 Disk Array
Controller

Memory Address 0xFA000000-0xFDFFFFFF PCI bus
Memory Address 0xFA000000-0xFDFFFFFF DEC 21154 PCI to PCI bridge
Memory Address 0xFA000000-0xFDFFFFFF Mylex eXtremeRAID 2000 Disk Array
Controller

I/O Port 0x00001000-0x00002FFF  PCI bus
I/O Port 0x00001000-0x00002FFF  RAGE XL PCI Family (Microsoft Corporation)


I/O Port 0x00004000-0x00005FFF  PCI bus
I/O Port 0x00004000-0x00005FFF  Adaptec AIC-7902-based Ultra320 SCSI

Memory Address 0xEE000000-0xEE3FFFFF PCI bus
Memory Address 0xEE000000-0xEE3FFFFF Broadcom NetXtreme Gigabit Ethernet


[DMA]

Resource   Device     Status
Channel 4  Direct memory access controller OK
Channel 2  Standard floppy disk controller OK

[Forced Hardware]

Device     PNP Device ID
```

```
[I/O]

Resource   Device     Status
0x00000000-0x00000CF7     PCI bus    OK
0x00000000-0x00000CF7     Direct memory access controller OK
0x00000D00-0x00000FFF     PCI bus    OK
0x00001000-0x00002FFF     PCI bus    OK
0x00001000-0x00002FFF     RAGE XL PCI Family (Microsoft Corporation)
     OK
0x000003B0-0x000003BB     RAGE XL PCI Family (Microsoft Corporation)
     OK
0x000003C0-0x000003DF     RAGE XL PCI Family (Microsoft Corporation)
     OK
0x00002000-0x00002FFF     DEC 21154 PCI to PCI bridge     OK
0x00002000-0x00002FFF     Mylex eXtremeRAID 2000 Disk Array Controller
     OK
0x00000010-0x0000001F     Motherboard resources     OK
0x00000022-0x0000002D     Motherboard resources     OK
0x00000030-0x0000003F     Motherboard resources     OK
0x0000004E-0x0000004F     Motherboard resources     OK
0x00000050-0x00000053     Motherboard resources     OK
0x00000062-0x00000063     Motherboard resources     OK
0x00000065-0x0000006F     Motherboard resources     OK
0x00000074-0x0000007F     Motherboard resources     OK
0x00000090-0x0000009F     Motherboard resources     OK
0x000000A2-0x000000B1     Motherboard resources     OK
0x000000B4-0x000000BF     Motherboard resources     OK
0x000000E0-0x000000EF     Motherboard resources     OK
0x00000072-0x00000073     Motherboard resources     OK
0x0000040B-0x0000040B     Motherboard resources     OK
0x000004D0-0x000004D1     Motherboard resources     OK
0x000004D6-0x000004D6     Motherboard resources     OK
0x00000600-0x00000603     Motherboard resources     OK
0x00000C00-0x00000C01     Motherboard resources     OK
0x00000C06-0x00000C08     Motherboard resources     OK
0x00000C14-0x00000C14     Motherboard resources     OK
0x00000C4A-0x00000C4A     Motherboard resources     OK
0x00000C50-0x00000C52     Motherboard resources     OK
0x00000C6C-0x00000C6C     Motherboard resources     OK
0x00000C6F-0x00000C6F     Motherboard resources     OK
0x00000CA2-0x00000CA3     Motherboard resources     OK
0x00000CA4-0x00000CA5     Motherboard resources     OK
0x00000CD6-0x00000CD7     Motherboard resources     OK
0x00000F50-0x00000F58     Motherboard resources     OK
0x0000F100-0x0000F11F     Motherboard resources     OK
0x0000F080-0x0000F08F     Motherboard resources     OK
0x0000F090-0x0000F093     Motherboard resources     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
0x00000070-0x00000071     System CMOS/real time clock     OK
0x00000040-0x00000043     System timer    OK
0x000000F0-0x000000FE     Numeric data processor     OK
```

```
0x00000061-0x00000061     System speaker  OK
0x00000060-0x00000060     Standard 101/102-Key or Microsoft Natural PS/2
Keyboard  OK
0x00000064-0x00000064     Standard 101/102-Key or Microsoft Natural PS/2
Keyboard  OK
0x000003F0-0x000003F5     Standard floppy disk controller OK
0x000003F7-0x000003F7     Standard floppy disk controller OK
0x00001400-0x0000140F     Standard Dual Channel PCI IDE Controller  OK
0x000001F0-0x000001F7     Primary IDE Channel  OK
0x000003F6-0x000003F6     Primary IDE Channel  OK
0x00000170-0x00000177     Secondary IDE Channel     OK
0x00000376-0x00000376     Secondary IDE Channel     OK
0x00000A79-0x00000A79     ISAPNP Read Data Port     OK
0x00000279-0x00000279     ISAPNP Read Data Port     OK
0x00000274-0x00000277     ISAPNP Read Data Port     OK
0x00003000-0x00003FFF     PCI bus   OK
0x00003000-0x00003FFF     DEC 21154 PCI to PCI bridge     OK
0x00003000-0x00003FFF     Mylex eXtremeRAID 2000 Disk Array Controller
     OK
0x00004000-0x00005FFF     PCI bus   OK
0x00004000-0x00005FFF     Adaptec AIC-7902-based Ultra320 SCSI OK
0x00004400-0x000044FF     Adaptec AIC-7902-based Ultra320 SCSI OK
0x00004C00-0x00004CFF     Adaptec AIC-7902-based Ultra320 SCSI OK
0x00004800-0x000048FF     Adaptec AIC-7902-based Ultra320 SCSI OK
0x00005000-0x00005FFF     DEC 21154 PCI to PCI bridge     OK
0x00005000-0x00005FFF     Mylex eXtremeRAID 2000 Disk Array Controller
     OK
0x00006000-0x00007FFF     PCI bus   OK
0x00006000-0x00007FFF     DEC 21154 PCI to PCI bridge     OK
0x00006000-0x00007FFF     Mylex eXtremeRAID 2000 Disk Array Controller
     OK
0x00007000-0x00007FFF     DEC 21154 PCI to PCI bridge     OK
0x00007000-0x00007FFF     Mylex eXtremeRAID 2000 Disk Array Controller
     OK

[IRQs]

Resource  Device    Status
IRQ 9 Microsoft ACPI-Compliant System OK
IRQ 16    Mylex eXtremeRAID 2000 Disk Array Controller   OK
IRQ 8 System CMOS/real time clock    OK
IRQ 0 System timer   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 6 Standard floppy disk controller OK
IRQ 15    Secondary IDE Channel     OK
IRQ 28    Mylex eXtremeRAID 2000 Disk Array Controller   OK
IRQ 18    Broadcom NetXtreme Gigabit Ethernet  OK
IRQ 19    Broadcom NetXtreme Gigabit Ethernet #2    OK
IRQ 26    Adaptec AIC-7902-based Ultra320 SCSI OK
IRQ 27    Adaptec AIC-7902-based Ultra320 SCSI OK
IRQ 24    Mylex eXtremeRAID 2000 Disk Array Controller   OK
IRQ 20    Mylex eXtremeRAID 2000 Disk Array Controller   OK
IRQ 22    Mylex eXtremeRAID 2000 Disk Array Controller   OK
```

```

[Memory]

Resource  Device    Status
0xA0000-0xBFFFF PCI bus   OK
0xA0000-0xBFFFF RAGE XL PCI Family (Microsoft Corporation)     OK
0xC8000-0xDFFFF PCI bus   OK
0xE2000000-0xE5FFFFFF     PCI bus   OK
0xE2000000-0xE5FFFFFF     RAGE XL PCI Family (Microsoft Corporation)
     OK
0xE6000000-0xE7FFFFFF     PCI bus   OK
0xE6000000-0xE7FFFFFF     DEC 21154 PCI to PCI bridge     OK
0xE6000000-0xE7FFFFFF     Mylex eXtremeRAID 2000 Disk Array Controller
     OK
0xFED00000-0xFEDFFFFF     PCI bus   OK
0xFEF00000-0xFFBFFFFF     PCI bus   OK
0xE3000000-0xE3FFFFFF     RAGE XL PCI Family (Microsoft Corporation)
     OK
0xE4000000-0xE5FFFFFF     DEC 21154 PCI to PCI bridge     OK
0xE4000000-0xE5FFFFFF     Mylex eXtremeRAID 2000 Disk Array Controller
     OK
0xFEE00000-0xFEEFFFFF     Motherboard resources     OK
0xFEC00000-0xFECFFFFF     Motherboard resources     OK
0xE8000000-0xEA1FFFFF     PCI bus   OK
0xE8000000-0xEA1FFFFF     DEC 21154 PCI to PCI bridge     OK
0xE8000000-0xEA1FFFFF     Mylex eXtremeRAID 2000 Disk Array Controller
     OK
0xEC000000-0xEDFFFFFF     PCI bus   OK
0xEC000000-0xEDFFFFFF     DEC 21154 PCI to PCI bridge     OK
0xEC000000-0xEDFFFFFF     Mylex eXtremeRAID 2000 Disk Array Controller
     OK
0xEE000000-0xEE3FFFFF     PCI bus   OK
0xEE000000-0xEE3FFFFF     Broadcom NetXtreme Gigabit Ethernet  OK
0xEE010000-0xEE01FFFF     Broadcom NetXtreme Gigabit Ethernet  OK
0xEE030000-0xEE03FFFF     Broadcom NetXtreme Gigabit Ethernet #2    OK
0xEE020000-0xEE02FFFF     Broadcom NetXtreme Gigabit Ethernet #2    OK
0xEE400000-0xF1FFFFFF     PCI bus   OK
0xEE400000-0xF1FFFFFF     Adaptec AIC-7902-based Ultra320 SCSI OK
0xF2000000-0xF3FFFFFF     PCI bus   OK
0xF2000000-0xF3FFFFFF     DEC 21154 PCI to PCI bridge     OK
0xF2000000-0xF3FFFFFF     Mylex eXtremeRAID 2000 Disk Array Controller
     OK
0xEE402000-0xEE403FFF     Adaptec AIC-7902-based Ultra320 SCSI OK
0xF0000000-0xF1FFFFFF     DEC 21154 PCI to PCI bridge     OK
0xF0000000-0xF1FFFFFF     Mylex eXtremeRAID 2000 Disk Array Controller
     OK
0xF4000000-0xF81FFFFF     PCI bus   OK
0xF4000000-0xF81FFFFF     DEC 21154 PCI to PCI bridge     OK
0xF4000000-0xF81FFFFF     Mylex eXtremeRAID 2000 Disk Array Controller
     OK
0xFA000000-0xFDFFFFFF     PCI bus   OK
0xFA000000-0xFDFFFFFF     DEC 21154 PCI to PCI bridge     OK
0xFA000000-0xFDFFFFFF     Mylex eXtremeRAID 2000 Disk Array Controller
     OK
0xF6000000-0xF7FFFFFF     DEC 21154 PCI to PCI bridge     OK
```

```
0xF6000000-0xF7FFFFFF     Mylex eXtremeRAID 2000 Disk Array Controller
     OK
0xFC000000-0xFDFFFFFF     DEC 21154 PCI to PCI bridge     OK
0xFC000000-0xFDFFFFFF     Mylex eXtremeRAID 2000 Disk Array Controller
     OK

[Components]



[Multimedia]



[Audio Codecs]

CODEC Manufacturer    Description     Status     File Version    Size
     Creation Date
c:\windows\system32\msaud32.acm Microsoft Corporation     Windows Media
Audio Codec     OK    C:\WINDOWS\system32\MSAUD32.ACM 8.00.00.4487
     288.00 KB (294,912 bytes) 3/25/2003 1:00 PM
c:\windows\system32\tssoft32.acm     DSP GROUP, INC.      OK
     C:\WINDOWS\system32\TSSOFT32.ACM     1.01 9.50 KB (9,728 bytes)
     3/25/2003 1:00 PM
c:\windows\system32\msadp32.acm Microsoft Corporation           OK
     C:\WINDOWS\system32\MSADP32.ACM 5.2.3790.0 (srv03_rtm.030324-2048)
     14.50 KB (14,848 bytes)   3/25/2003 1:00 PM
c:\windows\system32\msg711.acm  Microsoft Corporation           OK
     C:\WINDOWS\system32\MSG711.ACM  5.2.3790.0 (srv03_rtm.030324-2048)
     10.00 KB (10,240 bytes)   3/25/2003 1:00 PM
c:\windows\system32\l3codeca.acm     Fraunhofer Institut Integrierte
Schaltungen IIS Fraunhofer IIS MPEG Layer-3 Codec    OK
     C:\WINDOWS\system32\L3CODECA.ACM     1, 9, 0, 0305   284.00 KB
(290,816 bytes) 3/25/2003 1:00 PM
c:\windows\system32\msgsm32.acm Microsoft Corporation           OK
     C:\WINDOWS\system32\MSGSM32.ACM 5.2.3790.0 (srv03_rtm.030324-2048)
     20.50 KB (20,992 bytes)   3/25/2003 1:00 PM
c:\windows\system32\msg723.acm  Microsoft Corporation           OK
     C:\WINDOWS\system32\MSG723.ACM  4.4.4000   116.00 KB (118,784 bytes)
     6/13/2003 12:21 PM
c:\windows\system32\imaadp32.acm     Microsoft Corporation           OK
     C:\WINDOWS\system32\IMAADP32.ACM     5.2.3790.0 (srv03_rtm.030324-
2048) 15.50 KB (15,872 bytes)   3/25/2003 1:00 PM
c:\windows\system32\sl_anet.acm Sipro Lab Telecom Inc.     Sipro Lab
Telecom Audio Codec  OK   C:\WINDOWS\system32\SL_ANET.ACM 3.02 84.00 KB
(86,016 bytes)  3/25/2003 1:00 PM

[Video Codecs]

CODEC Manufacturer    Description     Status     File Version    Size
     Creation Date
c:\windows\system32\iyuv_32.dll Microsoft Corporation           OK
     C:\WINDOWS\system32\IYUV_32.DLL 5.2.3790.0 (srv03_rtm.030324-2048)
     45.00 KB (46,080 bytes)   3/25/2003 2:49 AM
```

```
c:\windows\system32\tsbyuv.dll  Microsoft Corporation           OK
     C:\WINDOWS\system32\TSBYUV.DLL  5.2.3790.0 (srv03_rtm.030324-2048)
     8.00 KB (8,192 bytes)     3/25/2003 2:50 AM
c:\windows\system32\msh261.drv  Microsoft Corporation           OK
     C:\WINDOWS\system32\MSH261.DRV  4.4.4000   180.00 KB (184,320 bytes)
     6/13/2003 12:21 PM
c:\windows\system32\msyuv.dll   Microsoft Corporation           OK
     C:\WINDOWS\system32\MSYUV.DLL   5.2.3790.0 (srv03_rtm.030324-2048)
     16.50 KB (16,896 bytes)   3/25/2003 2:49 AM
c:\windows\system32\msrle32.dll Microsoft Corporation           OK
     C:\WINDOWS\system32\MSRLE32.DLL 5.2.3790.0 (srv03_rtm.030324-2048)
     10.50 KB (10,752 bytes)   3/25/2003 1:00 PM
c:\windows\system32\msvidc32.dll     Microsoft Corporation           OK
     C:\WINDOWS\system32\MSVIDC32.DLL     5.2.3790.0 (srv03_rtm.030324-
2048) 26.50 KB (27,136 bytes)   3/25/2003 1:00 PM
c:\windows\system32\msh263.drv  Microsoft Corporation           OK
     C:\WINDOWS\system32\MSH263.DRV  4.4.4000   284.00 KB (290,816 bytes)
     3/25/2003 2:46 AM

[CD-ROM]

Item Value
Drive D:
Description     CD-ROM Drive
Media Loaded    No
Media Type CD-ROM
Name MITSUMI CD-ROM SR244W
Manufacturer    (Standard CD-ROM drives)
Status    OK
Transfer Rate   Not Available
SCSI Target ID  0
PNP Device ID   IDE\CDROMMITSUMI_CD-
ROM_SR244W__________________T01A____\5&1607178F&0&0.0.0
Driver    c:\windows\system32\drivers\cdrom.sys (5.2.3790.0
(srv03_rtm.030324-2048), 49.50 KB (50,688 bytes), 3/25/2003 1:00 PM)

[Sound Device]

Item Value

[Display]

Item Value
Name RAGE XL PCI Family (Microsoft Corporation)
PNP Device ID
     PCI\VEN_1002&DEV_4752&SUBSYS_007A1734&REV_27\3&13C0B0C5&0&20
Adapter Type    ATI RAGE XL PCI (B41), ATI Technologies Inc. compatible
Adapter Description  RAGE XL PCI Family (Microsoft Corporation)
Adapter RAM     8.00 MB (8,388,608 bytes)
Installed Drivers    ati2drad.dll
Driver Version  5.10.3663.6013
INF File   atiixpad.inf (ati2mpad section)
Color Planes    1
Color Table Entries  4294967296
Resolution 800 x 600 x 60 hertz
```

```
Bits/Pixel 32
Memory Address  0xE3000000-0xE3FFFFFF
I/O Port   0x00001000-0x00002FFF
Memory Address  0xE2000000-0xE5FFFFFF
I/O Port   0x000003B0-0x000003BB
I/O Port   0x000003C0-0x000003DF
Memory Address  0xA0000-0xBFFFF
Driver     c:\windows\system32\drivers\ati2mpad.sys (5.10.3663.6013,
335.38 KB (343,424 bytes), 6/13/2003 2:12 PM)

[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\5&9583612&0
Number of Function Keys   12
I/O Port   0x00000060-0x00000060
I/O Port   0x00000064-0x00000064
IRQ Channel     IRQ 1
Driver     c:\windows\system32\drivers\i8042prt.sys (5.2.3790.0
(srv03_rtm.030324-2048), 68.50 KB (70,144 bytes), 3/25/2003 1:00 PM)

[Pointing Device]

Item Value
Hardware Type   PS/2 Compatible Mouse
Number of Buttons    3
Status     OK
PNP Device ID   ACPI\PNP0F13\5&9583612&0
Power Management Supported No
Double Click Threshold    6
Handedness Right Handed Operation
IRQ Channel     IRQ 12
Driver     c:\windows\system32\drivers\i8042prt.sys (5.2.3790.0
(srv03_rtm.030324-2048), 68.50 KB (70,144 bytes), 3/25/2003 1:00 PM)

[Modem]

Item Value

[Network]



[Adapter]
```

```
Item Value
Name [00000001] RAS Async Adapter
Adapter Type    Not Available
Product Type    RAS Async Adapter
Installed Yes
PNP Device ID   Not Available
Last Reset 7/30/2003 11:56 AM
Index 1
Service Name    AsyncMac
IP Address Not Available
IP Subnet Not Available
Default IP Gateway   Not Available
DHCP Enabled    No
DHCP Server     Not Available
DHCP Lease Expires   Not Available
DHCP Lease Obtained  Not Available
MAC Address     Not Available

Name [00000002] WAN Miniport (L2TP)
Adapter Type    Not Available
Product Type    WAN Miniport (L2TP)
Installed Yes
PNP Device ID   ROOT\MS_L2TPMINIPORT\0000
Last Reset 7/30/2003 11:56 AM
Index 2
Service Name    Rasl2tp
IP Address Not Available
IP Subnet Not Available
Default IP Gateway   Not Available
DHCP Enabled    No
DHCP Server     Not Available
DHCP Lease Expires   Not Available
DHCP Lease Obtained  Not Available
MAC Address     Not Available
Driver     c:\windows\system32\drivers\rasl2tp.sys (5.2.3790.0
(srv03_rtm.030324-2048), 77.00 KB (78,848 bytes), 3/25/2003 1:00 PM)

Name [00000003] WAN Miniport (PPTP)
Adapter Type    Wide Area Network (WAN)
Product Type    WAN Miniport (PPTP)
Installed Yes
PNP Device ID   ROOT\MS_PPTPMINIPORT\0000
Last Reset 7/30/2003 11:56 AM
Index 3
Service Name    PptpMiniport
IP Address Not Available
IP Subnet Not Available
Default IP Gateway   Not Available
DHCP Enabled    No
DHCP Server     Not Available
DHCP Lease Expires   Not Available
DHCP Lease Obtained  Not Available
MAC Address     50:50:54:50:30:30
```

```
Driver    c:\windows\system32\drivers\raspptp.sys (5.2.3790.0
(srv03_rtm.030324-2048), 70.50 KB (72,192 bytes), 3/25/2003 1:00 PM)

Name [00000004] WAN Miniport (PPPOE)
Adapter Type    Wide Area Network (WAN)
Product Type    WAN Miniport (PPPOE)
Installed Yes
PNP Device ID   ROOT\MS_PPPOEMINIPORT\0000
Last Reset 7/30/2003 11:56 AM
Index 4
Service Name    RasPppoe
IP Address Not Available
IP Subnet Not Available
Default IP Gateway   Not Available
DHCP Enabled    No
DHCP Server     Not Available
DHCP Lease Expires   Not Available
DHCP Lease Obtained  Not Available
MAC Address     33:50:6F:45:30:30
Driver    c:\windows\system32\drivers\raspppoe.sys (5.2.3790.0
(srv03_rtm.030324-2048), 38.00 KB (38,912 bytes), 3/25/2003 1:00 PM)

Name [00000005] Direct Parallel
Adapter Type    Not Available
Product Type    Direct Parallel
Installed Yes
PNP Device ID   ROOT\MS_PTIMINIPORT\0000
Last Reset 7/30/2003 11:56 AM
Index 5
Service Name    Raspti
IP Address Not Available
IP Subnet Not Available
Default IP Gateway   Not Available
DHCP Enabled    No
DHCP Server     Not Available
DHCP Lease Expires   Not Available
DHCP Lease Obtained  Not Available
MAC Address     Not Available
Driver    c:\windows\system32\drivers\raspti.sys (5.2.3790.0
(srv03_rtm.030324-2048), 18.50 KB (18,944 bytes), 3/25/2003 1:00 PM)

Name [00000006] WAN Miniport (IP)
Adapter Type    Not Available
Product Type    WAN Miniport (IP)
Installed Yes
PNP Device ID   ROOT\MS_NDISWANIP\0000
Last Reset 7/30/2003 11:56 AM
Index 6
Service Name    NdisWan
IP Address Not Available
IP Subnet Not Available
Default IP Gateway   Not Available
DHCP Enabled    No
DHCP Server     Not Available
DHCP Lease Expires   Not Available
```

```
DHCP Lease Obtained  Not Available
MAC Address     Not Available
Driver    c:\windows\system32\drivers\ndiswan.sys (5.2.3790.0
(srv03_rtm.030324-2048), 96.50 KB (98,816 bytes), 3/25/2003 1:00 PM)

Name [00000007] Broadcom NetXtreme Gigabit Ethernet
Adapter Type    Ethernet 802.3
Product Type    Broadcom NetXtreme Gigabit Ethernet
Installed Yes
PNP Device ID
     PCI\VEN_14E4&DEV_1648&SUBSYS_100B1734&REV_02\3&29E81982&0&00
Last Reset 7/30/2003 11:56 AM
Index 7
Service Name    b57w2k
IP Address 129.103.181.46
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     00:30:05:2F:A5:1E
Memory Address  0xEE010000-0xEE01FFFF
Memory Address  0xEE000000-0xEE3FFFFF
IRQ Channel     IRQ 18
Driver    c:\windows\system32\drivers\b57xp32.sys (6.34.0.0 built by:
WinDDK, 166.88 KB (170,880 bytes), 6/13/2003 1:00 PM)

Name [00000008] Broadcom NetXtreme Gigabit Ethernet
Adapter Type    Ethernet 802.3
Product Type    Broadcom NetXtreme Gigabit Ethernet
Installed Yes
PNP Device ID
     PCI\VEN_14E4&DEV_1648&SUBSYS_100B1734&REV_02\3&29E81982&0&01
Last Reset 7/30/2003 11:56 AM
Index 8
Service Name    b57w2k
IP Address 129.103.192.46
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     00:30:05:2F:A5:1F
Memory Address  0xEE030000-0xEE03FFFF
Memory Address  0xEE020000-0xEE02FFFF
IRQ Channel     IRQ 19
Driver    c:\windows\system32\drivers\b57xp32.sys (6.34.0.0 built by:
WinDDK, 166.88 KB (170,880 bytes), 6/13/2003 1:00 PM)

[Protocol]

Item Value
Name MSAFD Tcpip [TCP/IP]
```

```
Connectionless Service    No
Guarantees Delivery  Yes
Guarantees Sequencing     Yes
Maximum Address Size 16 bytes
Maximum Message Size 0 bytes
Message Oriented     No
Minimum Address Size 16 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     No
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   Yes
Supports Graceful Closing Yes
Supports Guaranteed Bandwidth   No
Supports Multicasting     No

Name MSAFD Tcpip [UDP/IP]
Connectionless Service    Yes
Guarantees Delivery  No
Guarantees Sequencing     No
Maximum Address Size 16 bytes
Maximum Message Size 63.93 KB (65,467 bytes)
Message Oriented     Yes
Minimum Address Size 16 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     Yes
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth   No
Supports Multicasting     Yes

Name RSVP UDP Service Provider
Connectionless Service    Yes
Guarantees Delivery  No
Guarantees Sequencing     No
Maximum Address Size 16 bytes
Maximum Message Size 63.93 KB (65,467 bytes)
Message Oriented     Yes
Minimum Address Size 16 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     Yes
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  Yes
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth   No
Supports Multicasting     Yes

Name RSVP TCP Service Provider
Connectionless Service    No
```

```
Guarantees Delivery  Yes
Guarantees Sequencing     Yes
Maximum Address Size 16 bytes
Maximum Message Size 0 bytes
Message Oriented     No
Minimum Address Size 16 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     No
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  Yes
Supports Expedited Data   Yes
Supports Graceful Closing Yes
Supports Guaranteed Bandwidth   No
Supports Multicasting     No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{FD9AFE43-E87F-4021-99D5-
41A6A429DC91}] SEQPACKET 3
Connectionless Service    No
Guarantees Delivery  Yes
Guarantees Sequencing     Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented     Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     No
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth   No
Supports Multicasting     No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{FD9AFE43-E87F-4021-99D5-
41A6A429DC91}] DATAGRAM 3
Connectionless Service    Yes
Guarantees Delivery  No
Guarantees Sequencing     No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented     Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     Yes
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth   No
Supports Multicasting     No
```

```
Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{532EAD67-1480-4ED8-B656-
BB8F04D35458}] SEQPACKET 0
Connectionless Service    No
Guarantees Delivery  Yes
Guarantees Sequencing     Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented     Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     No
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth  No
Supports Multicasting     No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{532EAD67-1480-4ED8-B656-
BB8F04D35458}] DATAGRAM 0
Connectionless Service    Yes
Guarantees Delivery  No
Guarantees Sequencing     No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented     Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     Yes
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth  No
Supports Multicasting     No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{6AD052D8-B403-43EF-82C2-
BE118A32A949}] SEQPACKET 1
Connectionless Service    No
Guarantees Delivery  Yes
Guarantees Sequencing     Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented     Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     No
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth  No
Supports Multicasting     No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{6AD052D8-B403-43EF-82C2-
BE118A32A949}] DATAGRAM 1
Connectionless Service    Yes
Guarantees Delivery  No
Guarantees Sequencing     No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented     Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     Yes
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth  No
Supports Multicasting     No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{F5F4CE8A-47F3-4142-B2E6-
C798D85A9233}] SEQPACKET 2
Connectionless Service    No
Guarantees Delivery  Yes
Guarantees Sequencing     Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented     Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     No
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth  No
Supports Multicasting     No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{F5F4CE8A-47F3-4142-B2E6-
C798D85A9233}] DATAGRAM 2
Connectionless Service    Yes
Guarantees Delivery  No
Guarantees Sequencing     No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented     Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     Yes
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth   No
Supports Multicasting     No

[WinSock]

Item Value
File c:\windows\system32\winsock.dll
Size 2.80 KB (2,864 bytes)
Version    3.10

File c:\windows\system32\wsock32.dll
Size 22.00 KB (22,528 bytes)
Version    5.2.3790.0 (srv03_rtm.030324-2048)

[Ports]



[Serial]

Item Value

[Parallel]

Item Value

[Storage]



[Drives]

Item Value
Drive A:
Description     3 1/2 Inch Floppy Drive

Drive C:
Description     Local Fixed Disk
Compressed No
File System     NTFS
Size 17.08 GB (18,342,338,560 bytes)
Free Space 12.60 GB (13,529,067,520 bytes)
Volume Name
Volume Serial Number EC148E9D

Drive D:
Description     CD-ROM Disc

Drive E:
Description     Local Fixed Disk
Compressed Not Available
File System     Not Available
Size Not Available
Free Space Not Available
```

```
Volume Name     Not Available
Volume Serial Number Not Available

Drive 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 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 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 W:
Description     Local Fixed Disk
Compressed No
File System     NTFS
Size 244.14 GB (262,147,862,528 bytes)
Free Space 165.29 GB (177,474,387,968 bytes)
Volume Name     backup4
Volume Serial Number 94C05ADF

Drive X:
Description     Local Fixed Disk
Compressed No
File System     NTFS
Size 244.14 GB (262,147,862,528 bytes)
Free Space 165.28 GB (177,473,220,608 bytes)
Volume Name     backup1
Volume Serial Number 4C8387BD

Drive Y:
Description     Local Fixed Disk
Compressed No
File System     NTFS
Size 244.14 GB (262,147,862,528 bytes)
Free Space 131.56 GB (141,256,638,464 bytes)
Volume Name     backup2
Volume Serial Number 0C9809BA

Drive Z:
Description     Local Fixed Disk
Compressed No
File System     NTFS
Size 244.14 GB (262,147,862,528 bytes)
Free Space 165.29 GB (177,474,387,968 bytes)
Volume Name     backup3
Volume Serial Number 34AC6359

[Disks]

Item Value
Description     \\.\PHYSICALDRIVE3
Manufacturer    Not Available
Model Not Available
Bytes/Sector    512
Media Loaded    Yes
Media Type Fixed hard disk
Partitions 2
SCSI Bus  4
SCSI Logical Unit    0
SCSI Port 5
SCSI Target ID  0
Sectors/Track   63
Size 709.57 GB (761,891,235,840 bytes)
Total Cylinders 92,628
Total Sectors   1,488,068,820
Total Tracks    23,620,140
Tracks/Cylinder 255
Partition  Disk #3, Partition #0
Partition Size  60.55 GB (65,012,580,864 bytes)
Partition Starting Offset 8,257,536 bytes
Partition  Disk #3, Partition #1
Partition Size  244.14 GB (262,147,866,624 bytes)
Partition Starting Offset 65,020,870,656 bytes
```

```
Description     \\.\PHYSICALDRIVE5
Manufacturer    Not Available
Model Not Available
Bytes/Sector    512
Media Loaded    Yes
Media Type Fixed hard disk
Partitions 2
SCSI Bus  4
SCSI Logical Unit    0
SCSI Port 7
SCSI Target ID  0
Sectors/Track   63
Size 709.57 GB (761,891,235,840 bytes)
Total Cylinders 92,628
Total Sectors   1,488,068,820
Total Tracks    23,620,140
Tracks/Cylinder 255
Partition  Disk #5, Partition #0
Partition Size  60.55 GB (65,012,580,864 bytes)
Partition Starting Offset 8,257,536 bytes
Partition  Disk #5, Partition #1
Partition Size  244.14 GB (262,147,866,624 bytes)
Partition Starting Offset 65,020,870,656 bytes

Description     \\.\PHYSICALDRIVE4
Manufacturer    Not Available
Model Not Available
Bytes/Sector    512
Media Loaded    Yes
Media Type Fixed hard disk
Partitions 2
SCSI Bus  4
SCSI Logical Unit    0
SCSI Port 6
SCSI Target ID  0
Sectors/Track   63
Size 709.57 GB (761,891,235,840 bytes)
Total Cylinders 92,628
Total Sectors   1,488,068,820
Total Tracks    23,620,140
Tracks/Cylinder 255
Partition  Disk #4, Partition #0
Partition Size  60.55 GB (65,012,580,864 bytes)
Partition Starting Offset 8,257,536 bytes
Partition  Disk #4, Partition #1
Partition Size  244.14 GB (262,147,866,624 bytes)
Partition Starting Offset 65,020,870,656 bytes

Description     \\.\PHYSICALDRIVE1
Manufacturer    Not Available
Model Not Available
Bytes/Sector    512
Media Loaded    Yes
Media Type Fixed hard disk
```

```
Partitions	1
SCSI Bus	4
SCSI Logical Unit	0
SCSI Port	4
SCSI Target ID	0
Sectors/Track	63
Size	118.23 GB (126,948,971,520 bytes)
Total Cylinders	15,434
Total Sectors	247,947,210
Total Tracks	3,935,670
Tracks/Cylinder	255
Partition	Disk #1, Partition #0
Partition Size	97.66 GB (104,864,062,464 bytes)
Partition Starting Offset	8,257,536 bytes

Description	\\.\PHYSICALDRIVE2
Manufacturer	Not Available
Model	Not Available
Bytes/Sector	512
Media Loaded	Yes
Media Type	Fixed hard disk
Partitions	1
SCSI Bus	4
SCSI Logical Unit	0
SCSI Port	4
SCSI Target ID	1
Sectors/Track	63
Size	473.04 GB (507,927,490,560 bytes)
Total Cylinders	61,752
Total Sectors	992,045,880
Total Tracks	15,746,760
Tracks/Cylinder	255
Partition	Disk #2, Partition #0
Partition Size	128.91 GB (138,414,979,584 bytes)
Partition Starting Offset	8,257,536 bytes

Description	\\.\PHYSICALDRIVE6
Manufacturer	Not Available
Model	Not Available
Bytes/Sector	512
Media Loaded	Yes
Media Type	Fixed hard disk
Partitions	2
SCSI Bus	4
SCSI Logical Unit	0
SCSI Port	8
SCSI Target ID	0
Sectors/Track	63
Size	709.57 GB (761,891,235,840 bytes)
Total Cylinders	92,628
Total Sectors	1,488,068,820
Total Tracks	23,620,140
Tracks/Cylinder	255
Partition	Disk #6, Partition #0
Partition Size	60.55 GB (65,012,580,864 bytes)
Partition Starting Offset	8,257,536 bytes
Partition	Disk #6, Partition #1
Partition Size	244.14 GB (262,147,866,624 bytes)
Partition Starting Offset	65,020,870,656 bytes

Description	Disk drive
Manufacturer	(Standard disk drives)
Model	SEAGATE ST318452LC SCSI Disk Device
Bytes/Sector	512
Media Loaded	Yes
Media Type	Fixed hard disk
Partitions	1
SCSI Bus	0
SCSI Logical Unit	0
SCSI Port	2
SCSI Target ID	0
Sectors/Track	63
Size	17.09 GB (18,350,599,680 bytes)
Total Cylinders	2,231
Total Sectors	35,841,015
Total Tracks	568,905
Tracks/Cylinder	255
Partition	Disk #0, Partition #0
Partition Size	17.08 GB (18,342,342,144 bytes)
Partition Starting Offset	32,256 bytes

[SCSI]

Item	Value
Name	Mylex eXtremeRAID 2000 Disk Array Controller
Manufacturer	Mylex
Status	OK
PNP Device ID
	PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&3A054B57&0&4040
Memory Address	0xE4000000-0xE5FFFFFF
I/O Port	0x00002000-0x00002FFF
Memory Address	0xE6000000-0xE7FFFFFF
IRQ Channel	IRQ 16
Driver	c:\windows\system32\drivers\dac2w2k.sys (80.00-01, 170.38 KB
(174,464 bytes), 6/10/2002 4:11 PM)

Name	Mylex eXtremeRAID 2000 Disk Array Controller
Manufacturer	Mylex
Status	OK
PNP Device ID
	PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&254DAD54&0&4040
Memory Address	0xE8000000-0xEA1FFFFF
I/O Port	0x00003000-0x00003FFF
Memory Address	0xEC000000-0xEDFFFFFF
IRQ Channel	IRQ 28
Driver	c:\windows\system32\drivers\dac2w2k.sys (80.00-01, 170.38 KB
(174,464 bytes), 6/10/2002 4:11 PM)

Name	Adaptec AIC-7902-based Ultra320 SCSI
Manufacturer	Adaptec
```

```
Status    OK
PNP Device ID
     PCI\VEN_9005&DEV_801F&SUBSYS_10111734&REV_03\3&172E68DD&0&20
I/O Port  0x00004400-0x000044FF
Memory Address  0xEE400000-0xF1FFFFFF
I/O Port  0x00004000-0x00005FFF
IRQ Channel    IRQ 26
Driver    c:\windows\system32\drivers\adpu320.sys (6.0.001.000
(Lab01_N(portbld).020729-2000), 101.63 KB (104,064 bytes), 3/25/2003 1:00
PM)

Name Adaptec AIC-7902-based Ultra320 SCSI
Manufacturer   Adaptec
Status    OK
PNP Device ID
     PCI\VEN_9005&DEV_801F&SUBSYS_10111734&REV_03\3&172E68DD&0&21
I/O Port  0x00004C00-0x00004CFF
Memory Address  0xEE402000-0xEE403FFF
I/O Port  0x00004800-0x000048FF
IRQ Channel    IRQ 27
Driver    c:\windows\system32\drivers\adpu320.sys (6.0.001.000
(Lab01_N(portbld).020729-2000), 101.63 KB (104,064 bytes), 3/25/2003 1:00
PM)

Name Mylex eXtremeRAID 2000 Disk Array Controller
Manufacturer   Mylex
Status    OK
PNP Device ID
     PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&12E15626&0&4040
Memory Address  0xF0000000-0xF1FFFFFF
I/O Port  0x00005000-0x00005FFF
Memory Address  0xF2000000-0xF3FFFFFF
IRQ Channel    IRQ 24
Driver    c:\windows\system32\drivers\dac2w2k.sys (80.00-01, 170.38 KB
(174,464 bytes), 6/10/2002 4:11 PM)

Name Mylex eXtremeRAID 2000 Disk Array Controller
Manufacturer   Mylex
Status    OK
PNP Device ID
     PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&331CA374&0&4040
Memory Address  0xF4000000-0xF81FFFFF
I/O Port  0x00006000-0x00007FFF
Memory Address  0xFA000000-0xFDFFFFFF
IRQ Channel    IRQ 20
Driver    c:\windows\system32\drivers\dac2w2k.sys (80.00-01, 170.38 KB
(174,464 bytes), 6/10/2002 4:11 PM)

Name Mylex eXtremeRAID 2000 Disk Array Controller
Manufacturer   Mylex
Status    OK
PNP Device ID
     PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&271617AD&0&4048
Memory Address  0xF6000000-0xF7FFFFFF
I/O Port  0x00007000-0x00007FFF
```

```
Memory Address  0xFC000000-0xFDFFFFFF
IRQ Channel    IRQ 22
Driver    c:\windows\system32\drivers\dac2w2k.sys (80.00-01, 170.38 KB
(174,464 bytes), 6/10/2002 4:11 PM)

[IDE]

Item Value
Name Standard Dual Channel PCI IDE Controller
Manufacturer   (Standard IDE ATA/ATAPI controllers)
Status    OK
PNP Device ID
     PCI\VEN_1166&DEV_0213&SUBSYS_10121734&REV_A0\3&13C0B0C5&0&79
I/O Port  0x00001400-0x0000140F
Driver    c:\windows\system32\drivers\pciide.sys (5.2.3790.0
(srv03_rtm.030324-2048), 5.50 KB (5,632 bytes), 3/25/2003 1:00 PM)

Name Primary IDE Channel
Manufacturer   (Standard IDE ATA/ATAPI controllers)
Status    OK
PNP Device ID   PCIIDE\IDECHANNEL\4&116E3D0F&0&0
I/O Port  0x000001F0-0x000001F7
I/O Port  0x000003F6-0x000003F6
Driver    c:\windows\system32\drivers\atapi.sys (5.2.3790.0
(srv03_rtm.030324-2048), 89.00 KB (91,136 bytes), 3/25/2003 1:00 PM)

Name Secondary IDE Channel
Manufacturer   (Standard IDE ATA/ATAPI controllers)
Status    OK
PNP Device ID   PCIIDE\IDECHANNEL\4&116E3D0F&0&1
I/O Port  0x00000170-0x00000177
I/O Port  0x00000376-0x00000376
IRQ Channel    IRQ 15
Driver    c:\windows\system32\drivers\atapi.sys (5.2.3790.0
(srv03_rtm.030324-2048), 89.00 KB (91,136 bytes), 3/25/2003 1:00 PM)

[Printing]

Name Driver    Port Name  Server Name

[Problem Devices]

Device    PNP Device ID   Error Code

[USB]

Device    PNP Device ID

[Software Environment]



[System Drivers]
```

```
Name Description     File Type Started    Start Mode State Status     Error
Control    Accept Pause    Accept Stop
abiosdsk   Abiosdsk   Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Ignore    No   No
acpi Microsoft ACPI Driver     c:\windows\system32\drivers\acpi.sys
     Kernel Driver   Yes  Boot Running   OK   Normal    No   Yes
acpiec     ACPIEC     c:\windows\system32\drivers\acpiec.sys    Kernel
Driver     No   Disabled  Stopped   OK   Normal    No   No
adpu160m   adpu160m   Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
adpu320    adpu320    c:\windows\system32\drivers\adpu320.sys   Kernel
Driver     Yes  Boot Running   OK   Normal    No   Yes
afcnt afcnt Not Available   Kernel Driver   No   Disabled   Stopped   OK
     Normal    No   No
afd  AFD Networking Support Environment
     c:\windows\system32\drivers\afd.sys  Kernel Driver   Yes  Auto
     Running   OK   Normal    No   Yes
aha154x    Aha154x    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
aic78u2    aic78u2    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
aic78xx    aic78xx    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
aliide     AliIde     Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
asyncmac   RAS Asynchronous Media Driver
     c:\windows\system32\drivers\asyncmac.sys  Kernel Driver   No
     Manual    Stopped   OK   Normal    No   No
atapi Standard IDE/ESDI Hard Disk Controller
     c:\windows\system32\drivers\atapi.sys     Kernel Driver   Yes  Boot
     Running   OK   Normal    No   Yes
atdisk     Atdisk     Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Ignore    No   No
ati2mpad   ati2mpad   c:\windows\system32\drivers\ati2mpad.sys  Kernel
Driver     Yes  Manual    Running   OK   Ignore    No   Yes
atmarpc    ATM ARP Client Protocol
     c:\windows\system32\drivers\atmarpc.sys   Kernel Driver   No
     Manual    Stopped   OK   Normal    No   No
audstub    Audio Stub Driver    c:\windows\system32\drivers\audstub.sys
     Kernel Driver   Yes  Manual    Running   OK   Normal    No   Yes
b57w2k     Broadcom NetXtreme Gigabit Ethernet
     c:\windows\system32\drivers\b57xp32.sys   Kernel Driver   Yes
     Manual    Running   OK   Normal    No   Yes
beep Beep c:\windows\system32\drivers\beep.sys Kernel Driver   Yes
     System    Running   OK   Normal    No   Yes
cbidf2k    cbidf2k    c:\windows\system32\drivers\cbidf2k.sys   Kernel
Driver     No   Disabled  Stopped   OK   Normal    No   No
cd20xrnt   cd20xrnt   Not Available   Kernel Driver   No   Disabled
     Stopped   OK   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   c:\windows\system32\drivers\cdrom.sys     Kernel
Driver     Yes  System    Running   OK   Normal    No   Yes
changer    Changer    Not Available   Kernel Driver   No   System
     Stopped   OK   Ignore    No   No
```

```
clusdisk   Cluster Disk Driver  c:\windows\system32\drivers\clusdisk.sys
     Kernel Driver   No   Disabled  Stopped   OK   Normal    No   No
cmdide     CmdIde     Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
cpqarray   Cpqarray   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
crcdisk    CRC Disk Filter Driver
     c:\windows\system32\drivers\crcdisk.sys   Kernel Driver   Yes  Boot
     Running   OK   Normal    No   Yes
dac2w2k    dac2w2k    c:\windows\system32\drivers\dac2w2k.sys   Kernel
Driver     Yes  Boot Running   OK   Normal    No   Yes
dac960nt   dac960nt   Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
dellcerc   dellcerc   Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
dfsdriver  DfsDriver  c:\windows\system32\drivers\dfs.sys  File System
Driver     Yes  Boot Running   OK   Normal    No   Yes
disk Disk Driver     c:\windows\system32\drivers\disk.sys Kernel Driver
     Yes  Boot Running   OK   Normal    No   Yes
dmboot     dmboot     c:\windows\system32\drivers\dmboot.sys    Kernel
Driver     No   Disabled  Stopped   OK   Normal    No   No
dmio Logical Disk Manager Driver    c:\windows\system32\drivers\dmio.sys
     Kernel Driver   Yes  Boot Running   OK   Normal    No   Yes
dmload     dmload     c:\windows\system32\drivers\dmload.sys    Kernel
Driver     Yes  Boot Running   OK   Normal    No   Yes
dpti2o     dpti2o     Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
dspcicfg   DsPciCfg   \??\c:\windows\system32\drivers\dspcicfg.sys
     Kernel Driver   Yes  Auto Running   OK   Normal    No   Yes
em   em   \??\c:\windows\system32\drivers\em.sys    Kernel Driver   No
     Manual    Stopped   OK   Normal    No   No
fastfat    Fastfat    c:\windows\system32\drivers\fastfat.sys   File
System Driver   Yes  Disabled  Running   OK   Normal    No   Yes
fdc  Floppy Disk Controller Driver  c:\windows\system32\drivers\fdc.sys
     Kernel Driver   Yes  Manual    Running   OK   Normal    No   Yes
fips Fips c:\windows\system32\drivers\fips.sys Kernel Driver   Yes
     System    Running   OK   Normal    No   Yes
flpydisk   Floppy Disk Driver   c:\windows\system32\drivers\flpydisk.sys
     Kernel Driver   Yes  Manual    Running   OK   Normal    No   Yes
ftdisk     Volume Manager Driver
     c:\windows\system32\drivers\ftdisk.sys    Kernel Driver   Yes  Boot
     Running   OK   Normal    No   Yes
gpc  Generic Packet Classifier c:\windows\system32\drivers\msgpc.sys
     Kernel Driver   Yes  Manual    Running   OK   Normal    No   Yes
hpn  hpn  Not Available   Kernel Driver   No   Disabled  Stopped   OK
     Normal    No   No
hpt3xx     hpt3xx     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
i2omp i2omp Not Available   Kernel Driver   No   Disabled   Stopped   OK
     Normal    No   No
i8042prt  i8042 Keyboard and PS/2 Mouse Port Driver
     c:\windows\system32\drivers\i8042prt.sys  Kernel Driver   Yes
     System    Running   OK   Normal    No   Yes
iirsp iirsp Not Available   Kernel Driver   No   Disabled   Stopped   OK
     Normal    No   No
imapi CD-Burning Filter Driver  c:\windows\system32\drivers\imapi.sys
     Kernel Driver   No   System    Stopped   OK   Normal    No   No
intelide  IntelIde  Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
interruptaffinityfilter   Interrupt Affinity Filter
     c:\windows\system32\drivers\intfiltr.sys  Kernel Driver   Yes  Boot
     Running   OK   Normal    No   Yes
ipfilterdriver  IP Traffic Filter Driver
     c:\windows\system32\drivers\ipfltdrv.sys  Kernel Driver   No
     Manual    Stopped   OK   Normal    No   No
ipinip    IP in IP Tunnel Driver
     c:\windows\system32\drivers\ipinip.sys    Kernel Driver   No
     Manual    Stopped   OK   Normal    No   No
ipnat IP Network Address Translator
     c:\windows\system32\drivers\ipnat.sys     Kernel Driver   No
     Manual    Stopped   OK   Normal    No   No
ipsec IPSEC driver    c:\windows\system32\drivers\ipsec.sys     Kernel
Driver    Yes  System    Running   OK   Normal    No   Yes
ipsraidn  ipsraidn  Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
isapnp    PnP ISA/EISA Bus Driver
     c:\windows\system32\drivers\isapnp.sys    Kernel Driver   Yes  Boot
     Running   OK   Critical  No   Yes
kbdclass  Keyboard Class Driver
     c:\windows\system32\drivers\kbdclass.sys  Kernel Driver   Yes
     System    Running   OK   Normal    No   Yes
ksecdd    KSecDD    c:\windows\system32\drivers\ksecdd.sys    Kernel
Driver    Yes  Boot Running   OK   Normal    No   Yes
lp6nds35  lp6nds35  Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
macdisk   macdisk   c:\windows\system32\drivers\mac2w2k.sys   Kernel
Driver    Yes  Boot Running   OK   Normal    No   Yes
mnmdd mnmdd c:\windows\system32\drivers\mnmdd.sys     Kernel Driver   Yes
     System    Running   OK   Ignore    No   Yes
modem Modem c:\windows\system32\drivers\modem.sys     Kernel Driver   No
     Manual    Stopped   OK   Ignore    No   No
mouclass  Mouse Class Driver   c:\windows\system32\drivers\mouclass.sys
     Kernel Driver   Yes  System    Running   OK   Normal    No   Yes
mountmgr  Mount Point Manager  c:\windows\system32\drivers\mountmgr.sys
     Kernel Driver   Yes  Boot Running   OK   Normal    No   Yes
mraid35x  mraid35x  Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
```

```
mrxdav    WebDav Client Redirector
     c:\windows\system32\drivers\mrxdav.sys    File System Driver   No
     Manual    Stopped   OK   Normal    No   No
mrxsmb    MRXSMB    c:\windows\system32\drivers\mrxsmb.sys    File
System Driver   Yes  System    Running   OK   Normal    No   Yes
msfs Msfs c:\windows\system32\drivers\msfs.sys File System Driver   Yes
     System    Running   OK   Normal    No   Yes
mup  Mup  c:\windows\system32\drivers\mup.sys  File System Driver   Yes
     Boot Running   OK   Normal    No   Yes
ndis NDIS System Driver   c:\windows\system32\drivers\ndis.sys Kernel
Driver    Yes  Boot Running   OK   Normal    No   Yes
ndistapi  Remote Access NDIS TAPI Driver
     c:\windows\system32\drivers\ndistapi.sys  Kernel Driver   Yes
     Manual    Running   OK   Normal    No   Yes
ndisuio   NDIS Usermode I/O Protocol
     c:\windows\system32\drivers\ndisuio.sys   Kernel Driver   No
     Manual    Stopped   OK   Normal    No   No
ndiswan   Remote Access NDIS WAN Driver
     c:\windows\system32\drivers\ndiswan.sys   Kernel Driver   Yes
     Manual    Running   OK   Normal    No   Yes
ndproxy   NDIS Proxy c:\windows\system32\drivers\ndproxy.sys   Kernel
Driver    Yes  Manual    Running   OK   Normal    No   Yes
netbios   NetBIOS Interface    c:\windows\system32\drivers\netbios.sys
     File System Driver   Yes  System    Running   OK   Normal    No
     Yes
netbt NetBios over Tcpip   c:\windows\system32\drivers\netbt.sys
     Kernel Driver   Yes  System    Running   OK   Normal    No   Yes
nfrd960   nfrd960   Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
npfs Npfs c:\windows\system32\drivers\npfs.sys File System Driver   Yes
     System    Running   OK   Normal    No   Yes
ntfs Ntfs c:\windows\system32\drivers\ntfs.sys File System Driver   Yes
     Disabled  Running   OK   Normal    No   Yes
null Null c:\windows\system32\drivers\null.sys Kernel Driver   Yes
     System    Running   OK   Normal    No   Yes
parport   Parallel port driver c:\windows\system32\drivers\parport.sys
     Kernel Driver   No   Manual    Stopped   OK   Normal    No   No
partmgr   Partition Manager    c:\windows\system32\drivers\partmgr.sys
     Kernel Driver   Yes  Boot Running   OK   Normal    No   Yes
parvdm    Parvdm    c:\windows\system32\drivers\parvdm.sys    Kernel
Driver    No   Disabled  Stopped   OK   Ignore    No   No
pci  PCI Bus Driver  c:\windows\system32\drivers\pci.sys  Kernel Driver
     Yes  Boot Running   OK   Critical  No   Yes
pciide    PCIIde    c:\windows\system32\drivers\pciide.sys    Kernel
Driver    Yes  Boot Running   OK   Normal    No   Yes
pcmcia    Pcmcia    c:\windows\system32\drivers\pcmcia.sys    Kernel
Driver    No   Disabled  Stopped   OK   Normal    No   No
pdcomp    PDCOMP    Not Available   Kernel Driver   No   Manual
     Stopped   OK   Ignore    No   No
pdframe   PDFRAME   Not Available   Kernel Driver   No   Manual
     Stopped   OK   Ignore    No   No
pdreli    PDRELI    Not Available   Kernel Driver   No   Manual
     Stopped   OK   Ignore    No   No
pdrframe  PDRFRAME  Not Available   Kernel Driver   No   Manual
     Stopped   OK   Ignore    No   No
```

```
perc2 perc2 Not Available   Kernel Driver   No   Disabled   Stopped   OK
     Normal    No   No
perc2hib   perc2hib   Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
pptpminiport   WAN Miniport (PPTP)
     c:\windows\system32\drivers\raspptp.sys   Kernel Driver   Yes
     Manual    Running   OK   Normal    No   Yes
processor  Processor Driver    c:\windows\system32\drivers\processr.sys
     Kernel Driver   Yes  Manual    Running   OK   Normal    No   Yes
ptilink   Direct Parallel Link Driver
     c:\windows\system32\drivers\ptilink.sys   Kernel Driver   Yes
     Manual    Running   OK   Normal    No   Yes
ql1080    ql1080    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
ql10wnt   Ql10wnt   Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
ql12160   ql12160   Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
ql1240    ql1240    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
ql1280    ql1280    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
ql2100    ql2100    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
ql2200    ql2200    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
ql2300    ql2300    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
rasacd    Remote Access Auto Connection Driver
     c:\windows\system32\drivers\rasacd.sys    Kernel Driver   Yes
     System    Running   OK   Normal    No   Yes
rasl2tp   WAN Miniport (L2TP)  c:\windows\system32\drivers\rasl2tp.sys
     Kernel Driver   Yes  Manual    Running   OK   Normal    No   Yes
raspppoe  Remote Access PPPOE Driver
     c:\windows\system32\drivers\raspppoe.sys  Kernel Driver   Yes
     Manual    Running   OK   Normal    No   Yes
raspti    Direct Parallel c:\windows\system32\drivers\raspti.sys
     Kernel Driver   Yes  Manual    Running   OK   Normal    No   Yes
rdbss Rdbss c:\windows\system32\drivers\rdbss.sys     File System Driver
     Yes  System    Running   OK   Normal    No   Yes
rdpcdd    RDPCDD    c:\windows\system32\drivers\rdpcdd.sys    Kernel
Driver    Yes  System    Running   OK   Ignore    No   Yes
rdpdr Terminal Server Device Redirector Driver
     c:\windows\system32\drivers\rdpdr.sys     Kernel Driver   Yes
     Manual    Running   OK   Normal    No   Yes
rdpwd RDPWD c:\windows\system32\drivers\rdpwd.sys     Kernel Driver   No
     Manual    Stopped   OK   Ignore    No   No
redbook   Digital CD Audio Playback Filter Driver
     c:\windows\system32\drivers\redbook.sys   Kernel Driver   Yes
     System    Running   OK   Normal    No   Yes
secdrv    Secdrv    c:\windows\system32\drivers\secdrv.sys    Kernel
Driver    No   Manual    Stopped   OK   Normal    No   No
serenum   Serenum Filter Driver
     c:\windows\system32\drivers\serenum.sys   Kernel Driver   No
     Manual    Stopped   OK   Normal    No   No
```

```
serial    Serial port driver   c:\windows\system32\drivers\serial.sys
     Kernel Driver   No   System    Stopped   OK   Ignore    No   No
sfloppy   Sfloppy   c:\windows\system32\drivers\sfloppy.sys   Kernel
Driver    No   System    Stopped   OK   Ignore    No   No
simbad    Simbad    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
sparrow   Sparrow   Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
srv  Srv  c:\windows\system32\drivers\srv.sys  File System Driver   Yes
     Manual    Running   OK   Normal    No   Yes
swenum    Software Bus Driver  c:\windows\system32\drivers\swenum.sys
     Kernel Driver   Yes  Manual    Running   OK   Normal    No   Yes
symc810   symc810   Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
symc8xx   symc8xx   Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
symmpi    symmpi    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
sym_hi    sym_hi    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
sym_u3    sym_u3    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
sysdrv    Sysdrv    c:\windows\system32\drivers\sysdrv.sys    Kernel
Driver    Yes  Auto Running   OK   Normal    No   Yes
tcpip TCP/IP Protocol Driver    c:\windows\system32\drivers\tcpip.sys
     Kernel Driver   Yes  System    Running   OK   Normal    No   Yes
tdpipe    TDPIPE    c:\windows\system32\drivers\tdpipe.sys    Kernel
Driver    No   Manual    Stopped   OK   Ignore    No   No
tdtcp TDTCP c:\windows\system32\drivers\tdtcp.sys     Kernel Driver   No
     Manual    Stopped   OK   Ignore    No   No
termdd    Terminal Device Driver
     c:\windows\system32\drivers\termdd.sys    Kernel Driver   Yes
     System    Running   OK   Normal    No   Yes
toside    TosIde    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
udfs Udfs c:\windows\system32\drivers\udfs.sys File System Driver   No
     Disabled  Stopped   OK   Normal    No   No
ultra ultra Not Available   Kernel Driver   No   Disabled   Stopped   OK
     Normal    No   No
update    Microcode Update Driver
     c:\windows\system32\drivers\update.sys    Kernel Driver   Yes
     Manual    Running   OK   Normal    No   Yes
usbhub    USB2 Enabled Hub     c:\windows\system32\drivers\usbhub.sys
     Kernel Driver   No   Manual    Stopped   OK   Normal    No   No
usbohci   Microsoft USB Open Host Controller Miniport Driver
     c:\windows\system32\drivers\usbohci.sys   Kernel Driver   No
     Manual    Stopped   OK   Normal    No   No
vgasave   VGA Display Controller.   c:\windows\system32\drivers\vga.sys
     Kernel Driver   Yes  System    Running   OK   Ignore    No   Yes
viaide    ViaIde    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
volsnap   Storage volumes c:\windows\system32\drivers\volsnap.sys
     Kernel Driver   Yes  Boot Running   OK   Normal    No   Yes
```

```
wanarp    Remote Access IP ARP Driver
     c:\windows\system32\drivers\wanarp.sys    Kernel Driver   Yes
     Manual    Running   OK   Normal    No   Yes
wdica WDICA Not Available   Kernel Driver   No   Manual    Stopped   OK
     Ignore    No   No
wlbs Network Load Balancing    c:\windows\system32\drivers\wlbs.sys
     Kernel Driver   No   Manual    Stopped   OK   Normal    No   No

[Signed Drivers]

Device Name    Signed    Device Class   Driver Version  Driver Date
     Manufacturer   INF Name  Driver Name    Device ID
Not Available   Not Available   Not Available   Not Available   Not
Available  Not Available   Not Available   Not Available   HTREE\ROOT\0
ACPI Multiprocessor PC    No   COMPUTER  5.2.3790.0 10/1/2002  (Standard
computers) hal.inf   Not Available   ROOT\ACPI_HAL\0000
Microsoft ACPI-Compliant System No   SYSTEM    5.2.3790.0 10/1/2002
     Microsoft  acpi.inf  Not Available   ACPI_HAL\PNP0C08\0
Processor  No   PROCESSOR  5.2.3790.0 10/1/2002  (Standard processor types)
     cpu.inf   Not Available   ACPI\GENUINEINTEL_-
_X86_FAMILY_15_MODEL_2\_0
Processor  No   PROCESSOR  5.2.3790.0 10/1/2002  (Standard processor types)
     cpu.inf   Not Available   ACPI\GENUINEINTEL_-
_X86_FAMILY_15_MODEL_2\_1
Processor  No   PROCESSOR  5.2.3790.0 10/1/2002  (Standard processor types)
     cpu.inf   Not Available   ACPI\GENUINEINTEL_-
_X86_FAMILY_15_MODEL_2\_2
Processor  No   PROCESSOR  5.2.3790.0 10/1/2002  (Standard processor types)
     cpu.inf   Not Available   ACPI\GENUINEINTEL_-
_X86_FAMILY_15_MODEL_2\_3
ACPI Power Button    No   SYSTEM    5.2.3790.0 10/1/2002  (Standard
system devices) machine.inf    Not Available   ACPI\PNP0C0C\2&DABA3FF&0
PCI bus   No   SYSTEM    5.2.3790.0 10/1/2002  (Standard system devices)
     machine.inf    Not Available   ACPI\PNP0A03\1
ServerWorks (RCC) CMIC_LE Processor to PCI Bridge(*) No   SYSTEM
     5.2.3790.0 10/1/2002  ServerWorks (RCC)    machine.inf    Not
Available  PCI\VEN_1166&DEV_0014&SUBSYS_00000000&REV_31\3&13C0B0C5&0&00
ServerWorks (RCC) CMIC_LE Processor to PCI Bridge(*) No   SYSTEM
     5.2.3790.0 10/1/2002  ServerWorks (RCC)    machine.inf    Not
Available  PCI\VEN_1166&DEV_0014&SUBSYS_00000000&REV_00\3&13C0B0C5&0&01
ServerWorks (RCC) CMIC_LE Processor to PCI Bridge(*) No   SYSTEM
     5.2.3790.0 10/1/2002  ServerWorks (RCC)    machine.inf    Not
Available  PCI\VEN_1166&DEV_0014&SUBSYS_00000000&REV_00\3&13C0B0C5&0&02
RAGE XL PCI Family (Microsoft Corporation)     No   DISPLAY
     5.10.2600.6014  8/8/2001  ATI Technologies Inc.     atiixpad.inf
     Not Available
     PCI\VEN_1002&DEV_4752&SUBSYS_007A1734&REV_27\3&13C0B0C5&0&20
Default Monitor No   MONITOR   5.1.2001.0 6/6/2001   (Standard monitor
types)    monitor.inf    Not Available
     DISPLAY\DEFAULT_MONITOR\4&50FA2B9&0&80000000&00&04
DEC 21154 PCI to PCI bridge    No   SYSTEM    5.2.3790.0 10/1/2002  DEC
     machine.inf    Not Available
     PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&13C0B0C5&0&40
```

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Mylex eXtremeRAID 2000 Disk Array Controller   No   SCSIADAPTER
     9.0.4.0   9/8/2000  Mylex oem1.inf   Not Available
     PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&3A054B57&0&4040
Qlogic processor device   No   SYSTEM    5.2.3790.0 10/1/2002  QLOGIC
     scsidev.inf    Not Available
     SCSI\PROCESSOR&VEN_QLOGIC&PROD_GEM359&REV_1.06\5&2FDFC790&0&080
Qlogic processor device   No   SYSTEM    5.2.3790.0 10/1/2002  QLOGIC
     scsidev.inf    Not Available
     SCSI\PROCESSOR&VEN_QLOGIC&PROD_GEM359&REV_1.06\5&2FDFC790&0&180
Qlogic processor device   No   SYSTEM    5.2.3790.0 10/1/2002  QLOGIC
     scsidev.inf    Not Available
     SCSI\PROCESSOR&VEN_QLOGIC&PROD_GEM359&REV_1.09\5&2FDFC790&0&280
Qlogic processor device   No   SYSTEM    5.2.3790.0 10/1/2002  QLOGIC
     scsidev.inf    Not Available
     SCSI\PROCESSOR&VEN_QLOGIC&PROD_GEM359&REV_1.09\5&2FDFC790&0&380
Mylex Accelerated Driver  No   DISKDRIVE Not Available   9/8/2000   Mylex
     oem2.inf  Not Available
     SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0701\5&2FDFC790&0&400
Mylex Accelerated Driver  No   DISKDRIVE Not Available   9/8/2000   Mylex
     oem2.inf  Not Available
     SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0701\5&2FDFC790&0&410
Mylex GAM Device    No   SYSTEM    5.2.3790.0 10/1/2002  Mylex
     scsidev.inf    Not Available
     SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&2FDFC790&0&660
ServerWorks Champion CSB6 - SouthBridge 6 No   SYSTEM    5.2.3790.0
     10/1/2002  ServerWorks (RCC)    machine.inf    Not Available
     PCI\VEN_1166&DEV_0203&SUBSYS_00000000&REV_A0\3&13C0B0C5&0&78
Motherboard resources     No   SYSTEM    5.2.3790.0 10/1/2002  (Standard
system devices) machine.inf    Not Available   ACPI\PNP0C02\4&2ABF84DD&0
Direct memory access controller No   SYSTEM    5.2.3790.0 10/1/2002
     (Standard system devices) machine.inf    Not Available
     ACPI\PNP0200\4&2ABF84DD&0
Programmable interrupt controller    No   SYSTEM    5.2.3790.0 10/1/2002
     (Standard system devices) machine.inf    Not Available
     ACPI\PNP0000\4&2ABF84DD&0
System CMOS/real time clock    No   SYSTEM    5.2.3790.0 10/1/2002
     (Standard system devices) machine.inf    Not Available
     ACPI\PNP0B00\4&2ABF84DD&0
System timer   No   SYSTEM    5.2.3790.0 10/1/2002  (Standard system
devices)  machine.inf    Not Available   ACPI\PNP0100\4&2ABF84DD&0
Numeric data processor    No   SYSTEM    5.2.3790.0 10/1/2002  (Standard
system devices) machine.inf    Not Available   ACPI\PNP0C04\4&2ABF84DD&0
System speaker  No   SYSTEM    5.2.3790.0 10/1/2002  (Standard system
devices)  machine.inf    Not Available   ACPI\PNP0800\4&2ABF84DD&0
Generic Bus    No   SYSTEM    5.2.3790.0 10/1/2002  (Standard system
devices)  machine.inf    Not Available   ACPI\PNP0A05\1
Standard 101/102-Key or Microsoft Natural PS/2 Keyboard   No   KEYBOARD
     5.2.3790.0 10/1/2002  (Standard keyboards) keyboard.inf    Not
Available  ACPI\PNP0303\5&9583612&0
PS/2 Compatible Mouse     No   MOUSE 5.2.3790.0 10/1/2002  Microsoft
     msmouse.inf    Not Available   ACPI\PNP0F13\5&9583612&0
Standard floppy disk controller No   FDC  5.2.3790.0 10/1/2002  (Standard
floppy disk controllers)  fdc.inf   Not Available
     ACPI\PNP0700\5&9583612&0
```

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Floppy disk drive    No   FLOPPYDISK 5.2.3790.0 10/1/2002  (Standard
floppy disk drives)  flpydisk.inf    Not Available
     FDC\GENERIC_FLOPPY_DRIVE\6&375CD811&0&0
Generic Bus     No   SYSTEM     5.2.3790.0 10/1/2002  (Standard system
devices)  machine.inf     Not Available   ACPI\PNP0A05\2
Standard Dual Channel PCI IDE Controller  No   HDC  5.2.3790.0 10/1/2002
     (Standard IDE ATA/ATAPI controllers) mshdc.inf  Not Available
     PCI\VEN_1166&DEV_0213&SUBSYS_10121734&REV_A0\3&13C0B0C5&0&79
Primary IDE Channel  No   HDC  5.2.3790.0 10/1/2002  (Standard IDE
ATA/ATAPI controllers)    mshdc.inf  Not Available
     PCIIDE\IDECHANNEL\4&116E3D0F&0&0
Secondary IDE Channel      No   HDC  5.2.3790.0 10/1/2002  (Standard IDE
ATA/ATAPI controllers)    mshdc.inf  Not Available
     PCIIDE\IDECHANNEL\4&116E3D0F&0&1
CD-ROM Drive    No   CDROM 5.2.3790.0 10/1/2002  (Standard CD-ROM drives)
     cdrom.inf  Not Available   IDE\CDROMMITSUMI_CD-
ROM_SR244W__________________T01A____\5&1607178F&0&0.0.0
Serverworks Champion CSB6 - SouthBridge 6 LPC  No   SYSTEM     5.2.3790.0
     10/1/2002  ServerWorks (RCC)    machine.inf     Not Available
     PCI\VEN_1166&DEV_0227&SUBSYS_00000000&REV_00\3&13C0B0C5&0&7B
ISAPNP Read Data Port      No   SYSTEM     5.2.3790.0 10/1/2002  (Standard
system devices) machine.inf     Not Available   ISAPNP\READDATAPORT\0
ServerWorks Grand Champion CIOB_E - I/O Bridge with GB Ethernet     No
     SYSTEM     5.2.3790.0 10/1/2002  ServerWorks (RCC)    machine.inf
     Not Available
     PCI\VEN_1166&DEV_0110&SUBSYS_00000000&REV_12\3&13C0B0C5&0&80
ServerWorks Grand Champion CIOB_E - I/O Bridge with GB Ethernet     No
     SYSTEM     5.2.3790.0 10/1/2002  ServerWorks (RCC)    machine.inf
     Not Available
     PCI\VEN_1166&DEV_0110&SUBSYS_00000000&REV_12\3&13C0B0C5&0&82
ServerWorks Grand Champion CIOB_X2 - I/O Bridge 133 Mhz   No   SYSTEM
     5.2.3790.0 10/1/2002  ServerWorks (RCC)    machine.inf     Not
Available  PCI\VEN_1166&DEV_0101&SUBSYS_00000000&REV_03\3&13C0B0C5&0&88
ServerWorks Grand Champion CIOB_X2 - I/O Bridge 133 Mhz   No   SYSTEM
     5.2.3790.0 10/1/2002  ServerWorks (RCC)    machine.inf     Not
Available  PCI\VEN_1166&DEV_0101&SUBSYS_00000000&REV_03\3&13C0B0C5&0&8A
PCI bus    No   SYSTEM     5.2.3790.0 10/1/2002  (Standard system devices)
     machine.inf     Not Available   ACPI\PNP0A03\2
DEC 21154 PCI to PCI bridge     No   SYSTEM     5.2.3790.0 10/1/2002  DEC
     machine.inf     Not Available
     PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&1070020&0&40
Mylex eXtremeRAID 2000 Disk Array Controller   No   SCSIADAPTER
     9.0.4.0   9/8/2000   Mylex oem1.inf   Not Available
     PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&254DAD54&0&4040
Qlogic processor device   No   SYSTEM     5.2.3790.0 10/1/2002  QLOGIC
     scsidev.inf     Not Available
     SCSI\PROCESSOR&VEN_QLOGIC&PROD_GEM359&REV_1.07\5&2D708BC0&0&080
Qlogic processor device   No   SYSTEM     5.2.3790.0 10/1/2002  QLOGIC
     scsidev.inf     Not Available
     SCSI\PROCESSOR&VEN_QLOGIC&PROD_GEM359&REV_1.07\5&2D708BC0&0&180
Qlogic processor device   No   SYSTEM     5.2.3790.0 10/1/2002  QLOGIC
     scsidev.inf     Not Available
     SCSI\PROCESSOR&VEN_QLOGIC&PROD_GEM359&REV_1.07\5&2D708BC0&0&280
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Mylex Accelerated Driver  No   DISKDRIVE  Not Available   9/8/2000   Mylex
     oem2.inf  Not Available
     SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0701\5&2D708BC0&0&400
Mylex GAM Device     No   SYSTEM     5.2.3790.0 10/1/2002  Mylex
     scsidev.inf     Not Available
     SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&2D708BC0&0&660
PCI bus    No   SYSTEM     5.2.3790.0 10/1/2002  (Standard system devices)
     machine.inf     Not Available   ACPI\PNP0A03\3
Broadcom NetXtreme Gigabit Ethernet  No   NET  6.34.0.0   2/17/2003
     Broadcom  oem0.inf  Not Available
     PCI\VEN_14E4&DEV_1648&SUBSYS_100B1734&REV_02\3&29E81982&0&00
Broadcom NetXtreme Gigabit Ethernet  No   NET  6.34.0.0   2/17/2003
     Broadcom  oem0.inf  Not Available
     PCI\VEN_14E4&DEV_1648&SUBSYS_100B1734&REV_02\3&29E81982&0&01
PCI bus    No   SYSTEM     5.2.3790.0 10/1/2002  (Standard system devices)
     machine.inf     Not Available   ACPI\PNP0A03\4
Adaptec AIC-7902-based Ultra320 SCSI No   SCSIADAPTER     5.2.3790.0
     10/1/2002  Adaptec   pnpscsi.inf     Not Available
     PCI\VEN_9005&DEV_801F&SUBSYS_10111734&REV_03\3&172E68DD&0&20
Disk drive No   DISKDRIVE  5.2.3790.0 10/1/2002  (Standard disk drives)
     disk.inf  Not Available
     SCSI\DISK&VEN_SEAGATE&PROD_ST318452LC&REV_8500\4&16B96407&0&000
HP SAF-TE SCSI Processor Device No   SYSTEM     5.2.3790.0 10/1/2002  HP
     scsidev.inf     Not Available
     SCSI\PROCESSOR&VEN_SDR&PROD_GEM318&REV_0\4&16B96407&0&080
Adaptec AIC-7902-based Ultra320 SCSI No   SCSIADAPTER     5.2.3790.0
     10/1/2002  Adaptec   pnpscsi.inf     Not Available
     PCI\VEN_9005&DEV_801F&SUBSYS_10111734&REV_03\3&172E68DD&0&21
DEC 21154 PCI to PCI bridge     No   SYSTEM     5.2.3790.0 10/1/2002  DEC
     machine.inf     Not Available
     PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&172E68DD&0&40
Mylex eXtremeRAID 2000 Disk Array Controller   No   SCSIADAPTER
     9.0.4.0   9/8/2000   Mylex oem1.inf   Not Available
     PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&12E15626&0&4040
Qlogic processor device   No   SYSTEM     5.2.3790.0 10/1/2002  QLOGIC
     scsidev.inf     Not Available
     SCSI\PROCESSOR&VEN_QLOGIC&PROD_GEM359&REV_1.07\5&E99DB85&0&080
Qlogic processor device   No   SYSTEM     5.2.3790.0 10/1/2002  QLOGIC
     scsidev.inf     Not Available
     SCSI\PROCESSOR&VEN_QLOGIC&PROD_GEM359&REV_1.09\5&E99DB85&0&180
Qlogic processor device   No   SYSTEM     5.2.3790.0 10/1/2002  QLOGIC
     scsidev.inf     Not Available
     SCSI\PROCESSOR&VEN_QLOGIC&PROD_GEM359&REV_1.09\5&E99DB85&0&280
Mylex Accelerated Driver  No   DISKDRIVE  Not Available   9/8/2000   Mylex
     oem2.inf  Not Available
     SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0701\5&E99DB85&0&400
Mylex GAM Device     No   SYSTEM     5.2.3790.0 10/1/2002  Mylex
     scsidev.inf     Not Available
     SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&E99DB85&0&660
PCI bus    No   SYSTEM     5.2.3790.0 10/1/2002  (Standard system devices)
     machine.inf     Not Available   ACPI\PNP0A03\5
DEC 21154 PCI to PCI bridge     No   SYSTEM     5.2.3790.0 10/1/2002  DEC
     machine.inf     Not Available
     PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&474B838&0&40
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Mylex eXtremeRAID 2000 Disk Array Controller   No   SCSIADAPTER
     9.0.4.0   9/8/2000  Mylex oem1.inf  Not Available
     PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&331CA374&0&4040
Qlogic processor device   No   SYSTEM    5.2.3790.0 10/1/2002  QLOGIC
     scsidev.inf    Not Available
     SCSI\PROCESSOR&VEN_QLOGIC&PROD_GEM359&REV_1.09\5&28B5EC1E&0&080
Qlogic processor device   No   SYSTEM    5.2.3790.0 10/1/2002  QLOGIC
     scsidev.inf    Not Available
     SCSI\PROCESSOR&VEN_QLOGIC&PROD_GEM359&REV_1.09\5&28B5EC1E&0&180
Qlogic processor device   No   SYSTEM    5.2.3790.0 10/1/2002  QLOGIC
     scsidev.inf    Not Available
     SCSI\PROCESSOR&VEN_QLOGIC&PROD_GEM359&REV_1.09\5&28B5EC1E&0&280
Mylex Accelerated Driver  No   DISKDRIVE Not Available   9/8/2000  Mylex
     oem2.inf  Not Available
     SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0701\5&28B5EC1E&0&400
Mylex GAM Device    No   SYSTEM    5.2.3790.0 10/1/2002  Mylex
     scsidev.inf    Not Available
     SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&28B5EC1E&0&660
DEC 21154 PCI to PCI bridge    No   SYSTEM    5.2.3790.0 10/1/2002  DEC
     machine.inf    Not Available
     PCI\VEN_1011&DEV_0026&SUBSYS_00000000&REV_05\3&474B838&0&48
Mylex eXtremeRAID 2000 Disk Array Controller   No   SCSIADAPTER
     9.0.4.0   9/8/2000  Mylex oem1.inf  Not Available
     PCI\VEN_1069&DEV_BA56&SUBSYS_00401069&REV_00\4&271617AD&0&4048
Qlogic processor device   No   SYSTEM    5.2.3790.0 10/1/2002  QLOGIC
     scsidev.inf    Not Available
     SCSI\PROCESSOR&VEN_QLOGIC&PROD_GEM359&REV_1.09\5&11875BC&0&080
Qlogic processor device   No   SYSTEM    5.2.3790.0 10/1/2002  QLOGIC
     scsidev.inf    Not Available
     SCSI\PROCESSOR&VEN_QLOGIC&PROD_GEM359&REV_1.09\5&11875BC&0&180
Qlogic processor device   No   SYSTEM    5.2.3790.0 10/1/2002  QLOGIC
     scsidev.inf    Not Available
     SCSI\PROCESSOR&VEN_QLOGIC&PROD_GEM359&REV_1.09\5&11875BC&0&280
Mylex Accelerated Driver  No   DISKDRIVE Not Available   9/8/2000  Mylex
     oem2.inf  Not Available
     SCSI\DISK&VEN_MYLEX&PROD_EXTREMERAID_2000&REV_0701\5&11875BC&0&400
Mylex GAM Device    No   SYSTEM    5.2.3790.0 10/1/2002  Mylex
     scsidev.inf    Not Available
     SCSI\PROCESSOR&VEN_MYLEX&PROD_GAM_DEVICE&REV_\5&11875BC&0&660
ACPI Fixed Feature Button No   SYSTEM    5.2.3790.0 10/1/2002  (Standard
system devices) machine.inf    Not Available
     ACPI\FIXEDBUTTON\2&DABA3FF&0
Logical Disk Manager No   SYSTEM    5.2.3790.0 10/1/2002  (Standard
system devices) machine.inf    Not Available   ROOT\DMIO\0000
Volume Manager  No   SYSTEM    5.2.3790.0 10/1/2002  (Standard system
devices)  machine.inf    Not Available   ROOT\FTDISK\0000
Generic volume  No   VOLUME    5.2.3790.0 10/1/2002  Microsoft  volume.inf
     Not Available
     STORAGE\VOLUME\1&30A96598&0&SIGNATURE7FA19E73OFFSET7E0000LENGTH186A6
29C00
Generic volume  No   VOLUME    5.2.3790.0 10/1/2002  Microsoft  volume.inf
     Not Available
     STORAGE\VOLUME\1&30A96598&0&SIGNATURE78701B32OFFSET7E0000LENGTH203A2
CFA00
```

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Generic volume  No   VOLUME    5.2.3790.0 10/1/2002  Microsoft  volume.inf
     Not Available
     STORAGE\VOLUME\1&30A96598&0&SIGNATURE9C24CF9FOFFSET7E0000LENGTHF230D
4200
Generic volume  No   VOLUME    5.2.3790.0 10/1/2002  Microsoft  volume.inf
     Not Available
     STORAGE\VOLUME\1&30A96598&0&SIGNATURE9C24CF9FOFFSETF238BC000LENGTH3D
093B0000
Generic volume  No   VOLUME    5.2.3790.0 10/1/2002  Microsoft  volume.inf
     Not Available
     STORAGE\VOLUME\1&30A96598&0&SIGNATUREB318785BOFFSET7E00LENGTH44549EE
00
Generic volume  No   VOLUME    5.2.3790.0 10/1/2002  Microsoft  volume.inf
     Not Available
     STORAGE\VOLUME\1&30A96598&0&SIGNATURE96D2244BOFFSET7E0000LENGTHF230D
4200
Generic volume  No   VOLUME    5.2.3790.0 10/1/2002  Microsoft  volume.inf
     Not Available
     STORAGE\VOLUME\1&30A96598&0&SIGNATURE96D2244BOFFSETF238BC000LENGTH3D
093B0000
Generic volume  No   VOLUME    5.2.3790.0 10/1/2002  Microsoft  volume.inf
     Not Available
     STORAGE\VOLUME\1&30A96598&0&SIGNATUREF91AC8ACOFFSET7E0000LENGTHF230D
4200
Generic volume  No   VOLUME    5.2.3790.0 10/1/2002  Microsoft  volume.inf
     Not Available
     STORAGE\VOLUME\1&30A96598&0&SIGNATUREF91AC8ACOFFSETF238BC000LENGTH3D
093B0000
Generic volume  No   VOLUME    5.2.3790.0 10/1/2002  Microsoft  volume.inf
     Not Available
     STORAGE\VOLUME\1&30A96598&0&SIGNATURE96D2244COFFSET7E0000LENGTHF230D
4200
Generic volume  No   VOLUME    5.2.3790.0 10/1/2002  Microsoft  volume.inf
     Not Available
     STORAGE\VOLUME\1&30A96598&0&SIGNATURE96D2244COFFSETF238BC000LENGTH3D
093B0000
AFD Networking Support Environment   Not Available   LEGACYDRIVER    Not
Available  Not Available   Not Available   Not Available   Not Available
     ROOT\LEGACY_AFD\0000
Beep Not Available   LEGACYDRIVER    Not Available   Not Available   Not
Available  Not Available   Not Available   ROOT\LEGACY_BEEP\0000
CRC Disk Filter Driver    Not Available   LEGACYDRIVER    Not Available
     Not Available   Not Available   Not Available   Not Available
     ROOT\LEGACY_CRCDISK\0000
dmboot    Not Available   LEGACYDRIVER    Not Available   Not Available
     Not Available   Not Available   Not Available
     ROOT\LEGACY_DMBOOT\0000
dmload    Not Available   LEGACYDRIVER    Not Available   Not Available
     Not Available   Not Available   Not Available
     ROOT\LEGACY_DMLOAD\0000
DsPciCfg  Not Available   LEGACYDRIVER    Not Available   Not Available
     Not Available   Not Available   Not Available
     ROOT\LEGACY_DSPCICFG\0000
em   Not Available   LEGACYDRIVER    Not Available   Not Available   Not
Available  Not Available   Not Available   ROOT\LEGACY_EM\0000
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Fips Not Available   LEGACYDRIVER    Not Available   Not Available   Not
Available Not Available   Not Available   ROOT\LEGACY_FIPS\0000
Generic Packet Classifier Not Available   LEGACYDRIVER    Not Available
     Not Available   Not Available   Not Available   Not Available
     ROOT\LEGACY_GPC\0000
IPSEC driver    Not Available   LEGACYDRIVER    Not Available   Not
Available Not Available   Not Available   Not Available
     ROOT\LEGACY_IPSEC\0000
ksecdd    Not Available   LEGACYDRIVER    Not Available   Not Available
     Not Available   Not Available   Not Available
     ROOT\LEGACY_KSECDD\0000
macdisk   Not Available   LEGACYDRIVER    Not Available   Not Available
     Not Available   Not Available   Not Available
     ROOT\LEGACY_MACDISK\0000
mnmdd Not Available   LEGACYDRIVER    Not Available   Not Available   Not
Available Not Available   Not Available   ROOT\LEGACY_MNMDD\0000
mountmgr  Not Available   LEGACYDRIVER    Not Available   Not Available
     Not Available   Not Available   Not Available
     ROOT\LEGACY_MOUNTMGR\0000
NDIS System Driver   Not Available   LEGACYDRIVER    Not Available   Not
Available Not Available   Not Available   Not Available
     ROOT\LEGACY_NDIS\0000
Remote Access NDIS TAPI Driver  Not Available   LEGACYDRIVER    Not
Available Not Available   Not Available   Not Available   Not Available
     ROOT\LEGACY_NDISTAPI\0000
NDIS Usermode I/O Protocol Not Available   LEGACYDRIVER    Not Available
     Not Available   Not Available   Not Available   Not Available
     ROOT\LEGACY_NDISUIO\0000
NDProxy   Not Available   LEGACYDRIVER    Not Available   Not Available
     Not Available   Not Available   Not Available
     ROOT\LEGACY_NDPROXY\0000
NetBios over Tcpip   Not Available   LEGACYDRIVER    Not Available   Not
Available Not Available   Not Available   Not Available
     ROOT\LEGACY_NETBT\0000
Null Not Available   LEGACYDRIVER    Not Available   Not Available   Not
Available Not Available   Not Available   ROOT\LEGACY_NULL\0000
Partition Manager    Not Available   LEGACYDRIVER    Not Available   Not
Available Not Available   Not Available   Not Available
     ROOT\LEGACY_PARTMGR\0000
Parvdm    Not Available   LEGACYDRIVER    Not Available   Not Available
     Not Available   Not Available   Not Available
     ROOT\LEGACY_PARVDM\0000
Remote Access Auto Connection Driver Not Available   LEGACYDRIVER    Not
Available Not Available   Not Available   Not Available   Not Available
     ROOT\LEGACY_RASACD\0000
RDPCDD    Not Available   LEGACYDRIVER    Not Available   Not Available
     Not Available   Not Available   Not Available
     ROOT\LEGACY_RDPCDD\0000
Sysdrv    Not Available   LEGACYDRIVER    Not Available   Not Available
     Not Available   Not Available   Not Available
     ROOT\LEGACY_SYSDRV\0000
TCP/IP Protocol Driver    Not Available   LEGACYDRIVER    Not Available
     Not Available   Not Available   Not Available   Not Available
     ROOT\LEGACY_TCPIP\0000
```

```
VGA Display Controller.   Not Available   LEGACYDRIVER    Not Available
     Not Available   Not Available   Not Available   Not Available
     ROOT\LEGACY_VGASAVE\0000
volsnap   Not Available   LEGACYDRIVER    Not Available   Not Available
     Not Available   Not Available   Not Available
     ROOT\LEGACY_VOLSNAP\0000
Remote Access IP ARP Driver    Not Available   LEGACYDRIVER    Not
Available Not Available   Not Available   Not Available   Not Available
     ROOT\LEGACY_WANARP\0000
Audio Codecs    No   MEDIA 5.2.3790.0 10/1/2002  (Standard system devices)
     wave.inf  Not Available   ROOT\MEDIA\MS_MMACM
Legacy Audio Drivers No   MEDIA 5.2.3790.0 10/1/2002  (Standard system
devices)  wave.inf  Not Available   ROOT\MEDIA\MS_MMDRV
Media Control Devices     No   MEDIA 5.2.3790.0 10/1/2002  (Standard
system devices) wave.inf  Not Available   ROOT\MEDIA\MS_MMMCI
Legacy Video Capture Devices    No   MEDIA 5.2.3790.0 10/1/2002  (Standard
system devices) wave.inf  Not Available   ROOT\MEDIA\MS_MMVCD
Video Codecs    No   MEDIA 5.2.3790.0 10/1/2002  (Standard system devices)
     wave.inf  Not Available   ROOT\MEDIA\MS_MMVID
WAN Miniport (L2TP)  No   NET  5.2.3790.0 10/1/2002  Microsoft
     netrasa.inf    Not Available   ROOT\MS_L2TPMINIPORT\0000
WAN Miniport (IP)    No   NET  5.2.3790.0 10/1/2002  Microsoft
     netrasa.inf    Not Available   ROOT\MS_NDISWANIP\0000
WAN Miniport (PPPOE) No   NET  5.2.3790.0 10/1/2002  Microsoft
     netrasa.inf    Not Available   ROOT\MS_PPPOEMINIPORT\0000
WAN Miniport (PPTP)  No   NET  5.2.3790.0 10/1/2002  Microsoft
     netrasa.inf    Not Available   ROOT\MS_PPTPMINIPORT\0000
Direct Parallel No   NET  5.2.3790.0 10/1/2002  Microsoft  netrasa.inf
     Not Available   ROOT\MS_PTIMINIPORT\0000
Terminal Server Device Redirector    No   SYSTEM    5.2.3790.0 10/1/2002
     (Standard system devices) machine.inf    Not Available
     ROOT\RDPDR\0000
Terminal Server Keyboard Driver No   SYSTEM    5.2.3790.0 10/1/2002
     (Standard system devices) machine.inf    Not Available
     ROOT\RDP_KBD\0000
Terminal Server Mouse Driver    No   SYSTEM    5.2.3790.0 10/1/2002
     (Standard system devices) machine.inf    Not Available
     ROOT\RDP_MOU\0000
Plug and Play Software Device Enumerator  No   SYSTEM    5.2.3790.0
     10/1/2002  (Standard system devices) machine.inf    Not Available
     ROOT\SYSTEM\0000
Microcode Update Device   No   SYSTEM    5.2.3790.0 10/1/2002  (Standard
system devices) machine.inf    Not Available   ROOT\SYSTEM\0001

[Environment Variables]

Variable  Value User Name
ClusterLog C:\WINDOWS\Cluster\cluster.log  <SYSTEM>
ComSpec   %SystemRoot%\system32\cmd.exe   <SYSTEM>
NUMBER_OF_PROCESSORS 4    <SYSTEM>
OS   Windows_NT <SYSTEM>
Path
     %SystemRoot%\system32;%SystemRoot%;%SystemRoot%\System32\Wbem;C:\Pro
gram Files\Microsoft SQL Server\MSSQL\BINN;C:\Program Files\Microsoft SQL
Server\80\Tools\BINN <SYSTEM>
```

```
PATHEXT    .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH     <SYSTEM>
PROCESSOR_ARCHITECTURE     x86  <SYSTEM>
PROCESSOR_IDENTIFIER x86 Family 15 Model 2 Stepping 5, GenuineIntel
     <SYSTEM>
PROCESSOR_LEVEL 15   <SYSTEM>
PROCESSOR_REVISION   0205 <SYSTEM>
TEMP %SystemRoot%\TEMP    <SYSTEM>
TMP  %SystemRoot%\TEMP    <SYSTEM>
windir    %SystemRoot%    <SYSTEM>
TEMP %USERPROFILE%\Local Settings\Temp    NT AUTHORITY\SYSTEM
TMP  %USERPROFILE%\Local Settings\Temp    NT AUTHORITY\SYSTEM
TEMP %USERPROFILE%\Local Settings\Temp    NT AUTHORITY\LOCAL SERVICE
TMP  %USERPROFILE%\Local Settings\Temp    NT AUTHORITY\LOCAL SERVICE
TEMP %USERPROFILE%\Local Settings\Temp    TWIX\Administrator
TMP  %USERPROFILE%\Local Settings\Temp    TWIX\Administrator

[Print Jobs]

Document   Size Owner Notify     Status     Time Submitted  Start Time Until
Time Elapsed Time    Pages Printed   Job ID     Priority   Parameters
     Driver     Print Processor Host Print Queue     Data Type  Name

[Network Connections]

Local Name Remote Name     Type Status     User Name

[Running Tasks]

Name Path Process ID Priority   Min Working Set Max Working Set Start Time
     Version    Size File Date
system idle process  Not Available   0    0    Not Available   Not
Available  Not Available   Not Available   Not Available   Not Available
system     Not Available   4    8    0    1413120    Not Available   Not
Available  Not Available   Not Available
smss.exe   Not Available   376  11   204800     1413120    7/30/2003 11:57
AM   Not Available   Not Available   Not Available
csrss.exe  Not Available   572  13   Not Available   Not Available
     7/30/2003 11:57 AM   Not Available   Not Available   Not Available
winlogon.exe    c:\windows\system32\winlogon.exe     596  13   204800
     1413120    7/30/2003 11:57 AM   5.2.3790.0 (srv03_rtm.030324-2048)
     536.50 KB (549,376 bytes) 3/25/2003 1:00 PM
services.exe    c:\windows\system32\services.exe     640  9    204800
     1413120    7/30/2003 11:57 AM   5.2.3790.0 (srv03_rtm.030324-2048)
     102.00 KB (104,448 bytes) 3/25/2003 1:00 PM
lsass.exe  c:\windows\system32\lsass.exe   652  9    204800     1413120
     7/30/2003 11:57 AM   5.2.3790.0 (srv03_rtm.030324-2048)   13.00 KB
(13,312 bytes)  3/25/2003 1:00 PM
svchost.exe     c:\windows\system32\svchost.exe 860  8    204800
     1413120    7/30/2003 11:57 AM   5.2.3790.0 (srv03_rtm.030324-2048)
     13.00 KB (13,312 bytes)   3/25/2003 1:00 PM
svchost.exe     Not Available   948  8    Not Available   Not Available
     7/30/2003 11:57 AM   Not Available   Not Available   Not Available
svchost.exe     c:\windows\system32\svchost.exe 988  8    204800
     1413120    7/30/2003 11:57 AM   5.2.3790.0 (srv03_rtm.030324-2048)
     13.00 KB (13,312 bytes)   3/25/2003 1:00 PM
```

```
explorer.exe    c:\windows\explorer.exe   1268 8    204800     1413120
     7/30/2003 11:57 AM   6.00.3790.0 (srv03_rtm.030324-2048)  1,008.50
KB (1,032,704 bytes) 3/25/2003 1:00 PM
wmiprvse.exe    Not Available   1940 8    Not Available   Not Available
     7/30/2003 11:58 AM   Not Available   Not Available   Not Available
helpctr.exe     c:\windows\pchealth\helpctr\binaries\helpctr.exe    2008
     8    204800     1413120   7/30/2003 1:55 PM    5.2.3790.0
(srv03_rtm.030324-2048)   764.00 KB (782,336 bytes) 6/13/2003 12:21 PM
wmiprvse.exe    Not Available   2036 8    Not Available   Not Available
     7/30/2003 1:55 PM    Not Available   Not Available   Not Available
helpsvc.exe     c:\windows\pchealth\helpctr\binaries\helpsvc.exe    972
     8    204800     1413120   7/30/2003 1:55 PM    5.2.3790.0
(srv03_rtm.030324-2048)   720.00 KB (737,280 bytes) 6/13/2003 12:21 PM

[Loaded Modules]

Name Version    Size File Date Manufacturer    Path
winlogon  5.2.3790.0 (srv03_rtm.030324-2048)   536.50 KB (549,376 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\winlogon.exe
ntdll5.2.3790.0 (srv03_rtm.030324-2048)   722.50 KB (739,840 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ntdll.dll
kernel32  5.2.3790.0 (srv03_rtm.030324-2048)   965.00 KB (988,160 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\kernel32.dll
msvcrt    7.0.3790.0 (srv03_rtm.030324-2048)   319.50 KB (327,168 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\msvcrt.dll
advapi32  5.2.3790.0 (srv03_rtm.030324-2048)   559.50 KB (572,928 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\advapi32.dll
rpcrt4    5.2.3790.0 (srv03_rtm.030324-2048)   643.50 KB (658,944 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rpcrt4.dll
user32    5.2.3790.0 (srv03_rtm.030324-2048)   562.00 KB (575,488 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\user32.dll
gdi32 5.2.3790.0 (srv03_rtm.030324-2048)   263.00 KB (269,312 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\gdi32.dll
userenv   5.2.3790.0 (srv03_rtm.030324-2048)   732.50 KB (750,080 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\userenv.dll
nddeapi   5.2.3790.0 (srv03_rtm.030324-2048)   16.00 KB (16,384 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\nddeapi.dll
crypt32   5.131.3790.0 (srv03_rtm.030324-2048) 598.00 KB (612,352 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\crypt32.dll
msasn1    5.2.3790.0 (srv03_rtm.030324-2048)   58.00 KB (59,392 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\msasn1.dll
```

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secur32   5.2.3790.0 (srv03_rtm.030324-2048)   63.00 KB (64,512 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\secur32.dll
winsta    5.2.3790.0 (srv03_rtm.030324-2048)   51.00 KB (52,224 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\winsta.dll
netapi32  5.2.3790.0 (srv03_rtm.030324-2048)   317.00 KB (324,608 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\netapi32.dll
profmap   5.2.3790.0 (srv03_rtm.030324-2048)   22.00 KB (22,528 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\profmap.dll
regapi    5.2.3790.0 (srv03_rtm.030324-2048)   48.50 KB (49,664 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\regapi.dll
ws2_32    5.2.3790.0 (srv03_rtm.030324-2048)   87.50 KB (89,600 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ws2_32.dll
ws2help   5.2.3790.0 (srv03_rtm.030324-2048)   19.50 KB (19,968 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ws2help.dll
psapi5.2.3790.0 (srv03_rtm.030324-2048)   21.50 KB (22,016 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\psapi.dll
version   5.2.3790.0 (srv03_rtm.030324-2048)   17.00 KB (17,408 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\version.dll
setupapi  5.2.3790.0 (srv03_rtm.030324-2048)   1,014.50 KB (1,038,848
bytes)    3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\setupapi.dll
msgina    5.2.3790.0 (srv03_rtm.030324-2048)   1.14 MB (1,191,936 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\msgina.dll
shsvcs    6.00.3790.0 (srv03_rtm.030324-2048)  121.50 KB (124,416 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\shsvcs.dll
shlwapi   6.00.3790.0 (srv03_rtm.030324-2048)  281.00 KB (287,744 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\shlwapi.dll
sfc  5.2.3790.0 (srv03_rtm.030324-2048)   4.50 KB (4,608 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\sfc.dll
sfc_os    5.2.3790.0 (srv03_rtm.030324-2048)   133.00 KB (136,192 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\sfc_os.dll
wintrust  5.131.3790.0 (srv03_rtm.030324-2048) 161.50 KB (165,376 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\wintrust.dll
ole325.2.3790.0 (srv03_rtm.030324-2048)   1.13 MB (1,187,328 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ole32.dll
imagehlp  5.2.3790.0 (srv03_rtm.030324-2048)   142.50 KB (145,920 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\imagehlp.dll
```

```
comctl32  6.0 (srv03_rtm.030324-2048)     907.00 KB (928,768 bytes)
     6/13/2003 2:08 PM    Microsoft Corporation
     c:\windows\winsxs\x86_microsoft.windows.common-
controls_6595b64144ccf1df_6.0.100.0_x-ww_8417450b\comctl32.dll
winscard  5.2.3790.0 (srv03_rtm.030324-2048)   98.50 KB (100,864 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\winscard.dll
wtsapi32  5.2.3790.0 (srv03_rtm.030324-2048)   17.50 KB (17,920 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\wtsapi32.dll
sxs  5.2.3790.0 (srv03_rtm.030324-2048)   733.00 KB (750,592 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\sxs.dll
wldap32   5.2.3790.0 (srv03_rtm.030324-2048)   158.00 KB (161,792 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\wldap32.dll
rsaenh    5.2.3790.0 (srv03_rtm.030324-2048)   176.83 KB (181,072 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rsaenh.dll
shell32   6.00.3790.0 (srv03_rtm.030324-2048)  7.79 MB (8,166,400 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\shell32.dll
cscdll    5.2.3790.0 (srv03_rtm.030324-2048)   99.00 KB (101,376 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\cscdll.dll
wlnotify  5.2.3790.0 (srv03_rtm.030324-2048)   87.50 KB (89,600 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\wlnotify.dll
winmm5.2.3790.0 (srv03_rtm.030324-2048)   166.00 KB (169,984 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\winmm.dll
winspool  5.2.3790.0 (srv03_rtm.030324-2048)   140.00 KB (143,360 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\winspool.drv
mpr  5.2.3790.0 (srv03_rtm.030324-2048)   56.00 KB (57,344 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\mpr.dll
comctl32  5.82 (srv03_rtm.030324-2048)    561.00 KB (574,464 bytes)
     6/13/2003 2:08 PM    Microsoft Corporation
     c:\windows\winsxs\x86_microsoft.windows.common-
controls_6595b64144ccf1df_5.82.0.0_x-ww_8a69ba05\comctl32.dll
uxtheme   6.00.3790.0 (srv03_rtm.030324-2048)  196.00 KB (200,704 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\uxtheme.dll
samlib    5.2.3790.0 (srv03_rtm.030324-2048)   49.00 KB (50,176 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\samlib.dll
cscui5.2.3790.0 (srv03_rtm.030324-2048)   305.00 KB (312,320 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\cscui.dll
oleaut32  5.2.3790.0 486.00 KB (497,664 bytes) 3/25/2003 1:00 PM
     Microsoft Corporation     c:\windows\system32\oleaut32.dll
clbcatq   2001.12.4720.0 (srv03_rtm.030324-2048)    481.00 KB (492,544
bytes)    6/13/2003 12:18 PM   Microsoft Corporation
     c:\windows\system32\clbcatq.dll
```

```
comres    2001.12.4720.0 (srv03_rtm.030324-2048)    778.00 KB (796,672
bytes)    3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\comres.dll
ntmarta   5.2.3790.0 (srv03_rtm.030324-2048)   114.00 KB (116,736 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ntmarta.dll
wbemprox  5.2.3790.0 (srv03_rtm.030324-2048)   17.50 KB (17,920 bytes)
     6/13/2003 12:18 PM   Microsoft Corporation
     c:\windows\system32\wbem\wbemprox.dll
wbemcomn  5.2.3790.0 (srv03_rtm.030324-2048)   211.50 KB (216,576 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\wbem\wbemcomn.dll
wbemsvc   5.2.3790.0 (srv03_rtm.030324-2048)   42.50 KB (43,520 bytes)
     6/13/2003 12:18 PM   Microsoft Corporation
     c:\windows\system32\wbem\wbemsvc.dll
fastprox  5.2.3790.0 (srv03_rtm.030324-2048)   443.00 KB (453,632 bytes)
     6/13/2003 12:18 PM   Microsoft Corporation
     c:\windows\system32\wbem\fastprox.dll
msvcp60   6.05.2144.0     388.00 KB (397,312 bytes) 3/25/2003 1:00 PM
     Microsoft Corporation     c:\windows\system32\msvcp60.dll
ntdsapi   5.2.3790.0 (srv03_rtm.030324-2048)   76.00 KB (77,824 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ntdsapi.dll
dnsapi    5.2.3790.0 (srv03_rtm.030324-2048)   147.50 KB (151,040 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\dnsapi.dll
services  5.2.3790.0 (srv03_rtm.030324-2048)   102.00 KB (104,448 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\services.exe
scesrv    5.2.3790.0 (srv03_rtm.030324-2048)   316.50 KB (324,096 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\scesrv.dll
authz 5.2.3790.0 (srv03_rtm.030324-2048)   67.00 KB (68,608 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\authz.dll
umpnpmgr  5.2.3790.0 (srv03_rtm.030324-2048)   121.50 KB (124,416 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\umpnpmgr.dll
ncobjapi  5.2.3790.0 (srv03_rtm.030324-2048)   34.50 KB (35,328 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ncobjapi.dll
eventlog  5.2.3790.0 (srv03_rtm.030324-2048)   60.50 KB (61,952 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\eventlog.dll
lsass 5.2.3790.0 (srv03_rtm.030324-2048)   13.00 KB (13,312 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\lsass.exe
lsasrv    5.2.3790.0 (srv03_rtm.030324-2048)   780.50 KB (799,232 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\lsasrv.dll
samsrv    5.2.3790.0 (srv03_rtm.030324-2048)   452.00 KB (462,848 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\samsrv.dll
```

```
cryptdll  5.2.3790.0 (srv03_rtm.030324-2048)   34.00 KB (34,816 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\cryptdll.dll
msprivs   5.2.3790.0 (srv03_rtm.030324-2048)   46.50 KB (47,616 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\msprivs.dll
kerberos  5.2.3790.0 (srv03_rtm.030324-2048)   332.50 KB (340,480 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\kerberos.dll
msv1_0    5.2.3790.0 (srv03_rtm.030324-2048)   127.00 KB (130,048 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\msv1_0.dll
netlogon  5.2.3790.0 (srv03_rtm.030324-2048)   409.00 KB (418,816 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\netlogon.dll
w32time   5.2.3790.0 (srv03_rtm.030324-2048)   216.00 KB (221,184 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\w32time.dll
iphlpapi  5.2.3790.0 (srv03_rtm.030324-2048)   82.50 KB (84,480 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\iphlpapi.dll
schannel  5.2.3790.0 (srv03_rtm.030324-2048)   149.50 KB (153,088 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\schannel.dll
wdigest   5.2.3790.0 (srv03_rtm.030324-2048)   61.00 KB (62,464 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\wdigest.dll
rassfm    5.2.3790.0 (srv03_rtm.030324-2048)   20.50 KB (20,992 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rassfm.dll
kdcsvc    5.2.3790.0 (srv03_rtm.030324-2048)   221.00 KB (226,304 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\kdcsvc.dll
ntdsa 5.2.3790.0 (srv03_rtm.030324-2048)   1.45 MB (1,520,640 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ntdsa.dll
ntdsatq   5.2.3790.0 (srv03_rtm.030324-2048)   32.00 KB (32,768 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ntdsatq.dll
mswsock   5.2.3790.0 (srv03_rtm.030324-2048)   254.00 KB (260,096 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\mswsock.dll
esent 5.2.3790.0 (srv03_rtm.030324-2048)   1.01 MB (1,056,256 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\esent.dll
scecli    5.2.3790.0 (srv03_rtm.030324-2048)   179.50 KB (183,808 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\scecli.dll
pstorsvc  5.2.3790.0 (srv03_rtm.030324-2048)   24.00 KB (24,576 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\pstorsvc.dll
psbase    5.2.3790.0 (srv03_rtm.030324-2048)   81.00 KB (82,944 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\psbase.dll
```

```
wshtcpip   5.2.3790.0 (srv03_rtm.030324-2048)   18.00 KB (18,432 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\wshtcpip.dll
dssenh     5.2.3790.0 (srv03_rtm.030324-2048)   131.33 KB (134,480 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\dssenh.dll
svchost    5.2.3790.0 (srv03_rtm.030324-2048)   13.00 KB (13,312 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\svchost.exe
rpcss 5.2.3790.0 (srv03_rtm.030324-2048)   276.50 KB (283,136 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rpcss.dll
wkssvc     5.2.3790.0 (srv03_rtm.030324-2048)   125.00 KB (128,000 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\wkssvc.dll
es    2001.12.4720.0 (srv03_rtm.030324-2048)    221.50 KB (226,816 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\es.dll
srvsvc     5.2.3790.0 (srv03_rtm.030324-2048)   89.00 KB (91,136 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\srvsvc.dll
wmisvc     5.2.3790.0 (srv03_rtm.030324-2048)   131.00 KB (134,144 bytes)
     6/13/2003 12:18 PM   Microsoft Corporation
     c:\windows\system32\wbem\wmisvc.dll
vssapi     5.2.3790.0 (srv03_rtm.030324-2048)   528.00 KB (540,672 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\vssapi.dll
atl   3.05.2283  83.00 KB (84,992 bytes)   3/25/2003 1:00 PM    Microsoft
Corporation     c:\windows\system32\atl.dll
sens  5.2.3790.0 (srv03_rtm.030324-2048)   35.50 KB (36,352 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\sens.dll
comsvcs    2001.12.4720.0 (srv03_rtm.030324-2048)    1.14 MB (1,199,616
bytes)     6/13/2003 12:18 PM   Microsoft Corporation
     c:\windows\system32\comsvcs.dll
netman     5.2.3790.0 (srv03_rtm.030324-2048)   209.00 KB (214,016 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\netman.dll
mprapi     5.2.3790.0 (srv03_rtm.030324-2048)   81.00 KB (82,944 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\mprapi.dll
activeds   5.2.3790.0 (srv03_rtm.030324-2048)   189.00 KB (193,536 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\activeds.dll
adsldpc    5.2.3790.0 (srv03_rtm.030324-2048)   142.50 KB (145,920 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\adsldpc.dll
credui     5.2.3790.0 (srv03_rtm.030324-2048)   159.00 KB (162,816 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\credui.dll
rtutils    5.2.3790.0 (srv03_rtm.030324-2048)   32.00 KB (32,768 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rtutils.dll
```

```
rasapi32   5.2.3790.0 (srv03_rtm.030324-2048)   227.50 KB (232,960 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rasapi32.dll
rasman     5.2.3790.0 (srv03_rtm.030324-2048)   56.50 KB (57,856 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rasman.dll
tapi32     5.2.3790.0 (srv03_rtm.030324-2048)   175.00 KB (179,200 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\tapi32.dll
wzcsvc     5.2.3790.0 (srv03_rtm.030324-2048)   272.50 KB (279,040 bytes)
     3/25/2003 1:15 PM    Microsoft Corporation
     c:\windows\system32\wzcsvc.dll
wmi  5.2.3790.0 (srv03_rtm.030324-2048)   6.50 KB (6,656 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\wmi.dll
dhcpcsvc   5.2.3790.0 (srv03_rtm.030324-2048)   101.50 KB (103,936 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\dhcpcsvc.dll
wzcsapi    5.2.3790.0 (srv03_rtm.030324-2048)   24.50 KB (25,088 bytes)
     3/25/2003 1:15 PM    Microsoft Corporation
     c:\windows\system32\wzcsapi.dll
netshell   5.2.3790.0 (srv03_rtm.030324-2048)   1.67 MB (1,747,456 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\netshell.dll
clusapi    5.2.3790.0 (srv03_rtm.030324-2048)   56.00 KB (57,344 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\clusapi.dll
hnetcfg    5.2.3790.0 (srv03_rtm.030324-2048)   243.50 KB (249,344 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\hnetcfg.dll
wininet    6.00.3790.0 (srv03_rtm.030324-2048)  609.00 KB (623,616 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\wininet.dll
wbemcore   5.2.3790.0 (srv03_rtm.030324-2048)   457.00 KB (467,968 bytes)
     6/13/2003 12:18 PM   Microsoft Corporation
     c:\windows\system32\wbem\wbemcore.dll
esscli     5.2.3790.0 (srv03_rtm.030324-2048)   235.50 KB (241,152 bytes)
     6/13/2003 12:18 PM   Microsoft Corporation
     c:\windows\system32\wbem\esscli.dll
wmiutils   5.2.3790.0 (srv03_rtm.030324-2048)   90.50 KB (92,672 bytes)
     6/13/2003 12:18 PM   Microsoft Corporation
     c:\windows\system32\wbem\wmiutils.dll
repdrvfs   5.2.3790.0 (srv03_rtm.030324-2048)   165.00 KB (168,960 bytes)
     6/13/2003 12:18 PM   Microsoft Corporation
     c:\windows\system32\wbem\repdrvfs.dll
wmiprvsd   5.2.3790.0 (srv03_rtm.030324-2048)   405.50 KB (415,232 bytes)
     6/13/2003 12:18 PM   Microsoft Corporation
     c:\windows\system32\wbem\wmiprvsd.dll
wbemess    5.2.3790.0 (srv03_rtm.030324-2048)   256.50 KB (262,656 bytes)
     6/13/2003 12:18 PM   Microsoft Corporation
     c:\windows\system32\wbem\wbemess.dll
rasdlg     5.2.3790.0 (srv03_rtm.030324-2048)   642.00 KB (657,408 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rasdlg.dll
```

```
rasadhlp  5.2.3790.0 (srv03_rtm.030324-2048)  6.50 KB (6,656 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\rasadhlp.dll
ncprov    5.2.3790.0 (srv03_rtm.030324-2048)  43.00 KB (44,032 bytes)
     6/13/2003 12:18 PM  Microsoft Corporation
     c:\windows\system32\wbem\ncprov.dll
netcfgx   5.2.3790.0 (srv03_rtm.030324-2048)  726.00 KB (743,424 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\netcfgx.dll
winipsec  5.2.3790.0 (srv03_rtm.030324-2048)  34.50 KB (35,328 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\winipsec.dll
ntlsapi   5.2.3790.0 (srv03_rtm.030324-2048)  8.00 KB (8,192 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\ntlsapi.dll
pchsvc    5.2.3790.0 (srv03_rtm.030324-2048)  31.50 KB (32,256 bytes)
     6/13/2003 12:21 PM  Microsoft Corporation
     c:\windows\pchealth\helpctr\binaries\pchsvc.dll
wbemcons  5.2.3790.0 (srv03_rtm.030324-2048)  69.00 KB (70,656 bytes)
     6/13/2003 12:18 PM  Microsoft Corporation
     c:\windows\system32\wbem\wbemcons.dll
explorer  6.00.3790.0 (srv03_rtm.030324-2048) 1,008.50 KB (1,032,704
bytes)    3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\explorer.exe
browseui  6.00.3790.0 (srv03_rtm.030324-2048) 1.01 MB (1,057,280 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\browseui.dll
shdocvw   6.00.3790.0 (srv03_rtm.030324-2048) 1.33 MB (1,393,664 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\shdocvw.dll
apphelp   5.2.3790.0 (srv03_rtm.030324-2048)  122.00 KB (124,928 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\apphelp.dll
themeui   6.00.3790.0 (srv03_rtm.030324-2048) 360.50 KB (369,152 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\themeui.dll
msimg32   5.2.3790.0 (srv03_rtm.030324-2048)  4.50 KB (4,608 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\msimg32.dll
ntshrui   6.00.3790.0 (srv03_rtm.030324-2048) 136.00 KB (139,264 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\ntshrui.dll
webcheck  6.00.3790.0 (srv03_rtm.030324-2048) 261.50 KB (267,776 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\webcheck.dll
wsock32   5.2.3790.0 (srv03_rtm.030324-2048)  22.00 KB (22,528 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\wsock32.dll
stobject  5.2.3790.0 (srv03_rtm.030324-2048)  117.50 KB (120,320 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\stobject.dll
batmeter  6.00.3790.0 (srv03_rtm.030324-2048) 28.50 KB (29,184 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\batmeter.dll
```

```
powrprof  6.00.3790.0 (srv03_rtm.030324-2048) 14.50 KB (14,848 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\powrprof.dll
linkinfo  5.2.3790.0 (srv03_rtm.030324-2048)  16.50 KB (16,896 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\linkinfo.dll
urlmon    6.00.3790.0 (srv03_rtm.030324-2048) 501.50 KB (513,536 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\urlmon.dll
printui   5.2.3790.0 (srv03_rtm.030324-2048)  536.50 KB (549,376 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\printui.dll
cfgmgr32  5.2.3790.0 (srv03_rtm.030324-2048)  17.50 KB (17,920 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\cfgmgr32.dll
drprov    5.2.3790.0 (srv03_rtm.030324-2048)  12.50 KB (12,800 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\drprov.dll
ntlanman  5.2.3790.0 (srv03_rtm.030324-2048)  41.00 KB (41,984 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\ntlanman.dll
netui0    5.2.3790.0 (srv03_rtm.030324-2048)  75.50 KB (77,312 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\netui0.dll
netui1    5.2.3790.0 (srv03_rtm.030324-2048)  184.00 KB (188,416 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\netui1.dll
davclnt   5.2.3790.0 (srv03_rtm.030324-2048)  23.50 KB (24,064 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\davclnt.dll
browselc  6.00.3790.0 (srv03_rtm.030324-2048) 62.00 KB (63,488 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\browselc.dll
shdoclc   6.00.3790.0 (srv03_rtm.030324-2048) 588.50 KB (602,624 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\shdoclc.dll
zipfldr   6.00.3790.0 (srv03_rtm.030324-2048) 316.00 KB (323,584 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\zipfldr.dll
actxprxy  6.00.3790.0 (srv03_rtm.030324-2048) 95.00 KB (97,280 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\actxprxy.dll
helpctr   5.2.3790.0 (srv03_rtm.030324-2048)  764.00 KB (782,336 bytes)
     6/13/2003 12:21 PM  Microsoft Corporation
     c:\windows\pchealth\helpctr\binaries\helpctr.exe
hcappres  5.2.3790.0 (srv03_rtm.030324-2048)  6.50 KB (6,656 bytes)
     6/13/2003 12:21 PM  Microsoft Corporation
     c:\windows\pchealth\helpctr\binaries\hcappres.dll
itss 5.2.3790.0 (srv03_rtm.030324-2048)  119.50 KB (122,368 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\itss.dll
msxml3    8.40.9419.0    1.28 MB (1,337,344 bytes) 3/25/2003 1:00 PM
     Microsoft Corporation     c:\windows\system32\msxml3.dll
```

```
pchshell	5.2.3790.0 (srv03_rtm.030324-2048)	100.50 KB (102,912 bytes)
	6/13/2003 12:21 PM	Microsoft Corporation
	c:\windows\pchealth\helpctr\binaries\pchshell.dll
mlang	6.00.3790.0 (srv03_rtm.030324-2048)	570.00 KB (583,680 bytes)
	3/25/2003 1:00 PM	Microsoft Corporation
	c:\windows\system32\mlang.dll
mshtml	6.00.3790.0 (srv03_rtm.030324-2048)	2.78 MB (2,916,352 bytes)
	3/25/2003 1:00 PM	Microsoft Corporation
	c:\windows\system32\mshtml.dll
msimtf	5.2.3790.0 (srv03_rtm.030324-2048)	149.00 KB (152,576 bytes)
	3/25/2003 1:00 PM	Microsoft Corporation
	c:\windows\system32\msimtf.dll
msctf	5.2.3790.0 (srv03_rtm.030324-2048)	287.00 KB (293,888 bytes)
	3/25/2003 1:00 PM	Microsoft Corporation
	c:\windows\system32\msctf.dll
jscript	5.6.0.8515	436.00 KB (446,464 bytes)	3/25/2003 1:00 PM
	Microsoft Corporation	c:\windows\system32\jscript.dll
msls31	3.10.349.0	147.00 KB (150,528 bytes)	3/25/2003 1:00 PM
	Microsoft Corporation	c:\windows\system32\msls31.dll
imm32	5.2.3790.0 (srv03_rtm.030324-2048)	105.50 KB (108,032 bytes)
	3/25/2003 1:00 PM	Microsoft Corporation
	c:\windows\system32\imm32.dll
mshtmled	6.00.3790.0 (srv03_rtm.030324-2048)	443.50 KB (454,144 bytes)
	3/25/2003 1:00 PM	Microsoft Corporation
	c:\windows\system32\mshtmled.dll
vbscript	5.6.0.8515	404.00 KB (413,696 bytes)	3/25/2003 1:00 PM
	Microsoft Corporation	c:\windows\system32\vbscript.dll
mfc42	6.05.3014.0	960.00 KB (983,040 bytes)	3/25/2003 1:00 PM
	Microsoft Corporation	c:\windows\system32\mfc42.dll
msinfo	5.2.3790.0 (srv03_rtm.030324-2048)	358.50 KB (367,104 bytes)
	6/13/2003 12:21 PM	Microsoft Corporation
	c:\windows\pchealth\helpctr\binaries\msinfo.dll
mfc42u	6.05.3014.0	960.00 KB (983,040 bytes)	3/25/2003 1:00 PM
	Microsoft Corporation	c:\windows\system32\mfc42u.dll
comdlg32	6.00.3790.0 (srv03_rtm.030324-2048)	261.00 KB (267,264 bytes)
	3/25/2003 1:00 PM	Microsoft Corporation
	c:\windows\system32\comdlg32.dll
riched32	5.2.3790.0 (srv03_rtm.030324-2048)	3.50 KB (3,584 bytes)
	3/25/2003 1:00 PM	Microsoft Corporation
	c:\windows\system32\riched32.dll
riched20	5.31.23.1218	406.00 KB (415,744 bytes)	3/25/2003 1:00 PM
	Microsoft Corporation	c:\windows\system32\riched20.dll
helpsvc	5.2.3790.0 (srv03_rtm.030324-2048)	720.00 KB (737,280 bytes)
	6/13/2003 12:21 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	Running	Auto	Share Process
	c:\windows\system32\svchost.exe -k localservice	Normal	NT
AUTHORITY\LocalService	0
```

```
Application Layer Gateway Service	ALG	Stopped	Manual	Own
Process	c:\windows\system32\alg.exe	Normal	NT
AUTHORITY\LocalService	0
Application Management	AppMgmt	Stopped	Manual	Share Process
	c:\windows\system32\svchost.exe -k netsvcs	Normal
	LocalSystem	0
Windows Audio	AudioSrv	Stopped	Disabled	Share Process
	c:\windows\system32\svchost.exe -k netsvcs	Normal
	LocalSystem	0
Background Intelligent Transfer Service	BITS	Stopped	Manual	Share
Process	c:\windows\system32\svchost.exe -k netsvcs	Normal
	LocalSystem	0
Computer Browser	Browser	Stopped	Disabled	Share Process
	c:\windows\system32\svchost.exe -k netsvcs	Normal
	LocalSystem	0
Indexing Service	CiSvc	Stopped	Disabled	Share Process
	c:\windows\system32\cisvc.exe	Normal	LocalSystem	0
ClipBook	ClipSrv	Stopped	Disabled	Own Process
	c:\windows\system32\clipsrv.exe	Normal	LocalSystem	0
COM+ System Application	COMSysApp	Stopped	Manual	Own Process
	c:\windows\system32\dllhost.exe /processid:{02d4b3f1-fd88-11d1-960d-
00805fc79235}	Normal	LocalSystem	0
Cryptographic Services	CryptSvc	Stopped	Manual	Share Process
	c:\windows\system32\svchost.exe -k netsvcs	Normal
	LocalSystem	0
Distributed File System	Dfs	Stopped	Manual	Own Process
	c:\windows\system32\dfssvc.exe	Normal	LocalSystem	0
DHCP Client	Dhcp	Stopped	Disabled	Share Process
	c:\windows\system32\svchost.exe -k networkservice	Normal	NT
AUTHORITY\NetworkService	0
Logical Disk Manager Administrative Service	dmadmin	Stopped
	Manual	Share Process	c:\windows\system32\dmadmin.exe /com
	Normal	LocalSystem	0
Logical Disk Manager	dmserver	Stopped	Manual	Share Process
	c:\windows\system32\svchost.exe -k netsvcs	Normal
	LocalSystem	0
DNS Client	Dnscache	Stopped	Manual	Share Process
	c:\windows\system32\svchost.exe -k networkservice	Normal	NT
AUTHORITY\NetworkService	0
Error Reporting Service	ERSvc	Stopped	Manual	Share Process
	c:\windows\system32\svchost.exe -k winerr	Ignore	LocalSystem
	0
Event Log	Eventlog	Running	Auto	Share Process
	c:\windows\system32\services.exe	Normal	LocalSystem	0
COM+ Event System	EventSystem	Running	Manual	Share Process
	c:\windows\system32\svchost.exe -k netsvcs	Normal
	LocalSystem	0
Help and Support	helpsvc	Running	Manual	Share Process
	c:\windows\system32\svchost.exe -k netsvcs	Normal
	LocalSystem	0
Human Interface Device Access	HidServ	Stopped	Disabled	Share
Process	c:\windows\system32\svchost.exe -k netsvcs	Normal
	LocalSystem	0
HTTP SSL	HTTPFilter	Stopped	Manual	Share Process
	c:\windows\system32\lsass.exe	Normal	LocalSystem	0
```

```
IMAPI CD-Burning COM Service   ImapiService   Stopped   Disabled   Own
Process   c:\windows\system32\imapi.exe   Normal   LocalSystem   0
Intersite Messaging  IsmServ   Stopped   Disabled   Own Process
     c:\windows\system32\ismserv.exe Normal   LocalSystem   0
Kerberos Key Distribution Center   kdc   Stopped   Disabled   Share
Process   c:\windows\system32\lsass.exe   Normal   LocalSystem   0
Server   lanmanserver   Running   Auto Share Process
     c:\windows\system32\svchost.exe -k netsvcs   Normal
     LocalSystem   0
Workstation   lanmanworkstation   Running   Auto Share Process
     c:\windows\system32\svchost.exe -k netsvcs   Normal
     LocalSystem   0
License Logging LicenseService  Stopped   Disabled   Own Process
     c:\windows\system32\llssrv.exe  Normal   NT
AUTHORITY\NetworkService  0
TCP/IP NetBIOS Helper   LmHosts   Running   Auto Share Process
     c:\windows\system32\svchost.exe -k localservice Normal   NT
AUTHORITY\LocalService   0
Messenger  Messenger  Stopped   Disabled   Share Process
     c:\windows\system32\svchost.exe -k netsvcs   Normal
     LocalSystem   0
NetMeeting Remote Desktop Sharing   mnmsrvc   Stopped   Disabled   Own
Process   c:\windows\system32\mnmsrvc.exe Normal   LocalSystem   0
Distributed Transaction Coordinator  MSDTC Stopped   Manual   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  Stopped   Manual   Share Process
     "c:\program files\common files\system\mssearch\bin\mssearch.exe"
     Normal   LocalSystem   0
MSSQLSERVER   MSSQLSERVER   Stopped   Manual   Own Process
     c:\progra~1\micros~1\mssql\binn\sqlservr.exe   Normal
     LocalSystem   0
MSSQLServerADHelper  MSSQLServerADHelper  Stopped   Manual   Own
Process   c:\program files\microsoft sql
server\80\tools\binn\sqladhlp.exe   Normal   LocalSystem   0
Network DDE   NetDDE   Stopped   Disabled   Share Process
     c:\windows\system32\netdde.exe  Normal   LocalSystem   0
Network DDE DSDM   NetDDEdsdm Stopped   Disabled   Share Process
     c:\windows\system32\netdde.exe  Normal   LocalSystem   0
Net Logon  Netlogon  Stopped   Manual   Share Process
     c:\windows\system32\lsass.exe   Normal   LocalSystem   0
Network Connections  Netman   Running   Manual   Share Process
     c:\windows\system32\svchost.exe -k netsvcs   Normal
     LocalSystem   0
Network Location Awareness (NLA)   Nla  Running   Manual   Share
Process   c:\windows\system32\svchost.exe -k netsvcs   Normal
     LocalSystem   0
File Replication   NtFrs Stopped   Manual   Own Process
     c:\windows\system32\ntfrs.exe   Ignore   LocalSystem   0
NT LM Security Support Provider NtLmSsp   Stopped   Manual   Share
Process   c:\windows\system32\lsass.exe   Normal   LocalSystem   0
```

```
Removable Storage   NtmsSvc   Stopped   Manual   Share Process
     c:\windows\system32\svchost.exe -k netsvcs   Normal
     LocalSystem   0
Plug and Play  PlugPlay  Running   Auto Share Process
     c:\windows\system32\services.exe   Normal   LocalSystem   0
IPSEC Services  PolicyAgent   Stopped   Manual   Share Process
     c:\windows\system32\lsass.exe  Normal   LocalSystem   0
Protected Storage   ProtectedStorage   Running   Auto Share Process
     c:\windows\system32\lsass.exe  Normal   LocalSystem   0
Remote Access Auto Connection Manager   RasAuto   Stopped   Manual
     Share Process  c:\windows\system32\svchost.exe -k netsvcs
     Normal   LocalSystem   0
Remote Access Connection Manager   RasMan   Stopped   Manual   Share
Process   c:\windows\system32\svchost.exe -k netsvcs   Normal
     LocalSystem   0
Remote Desktop Help Session Manager  RDSessMgr  Stopped   Manual   Own
Process   c:\windows\system32\sessmgr.exe Normal   LocalSystem   0
Routing and Remote Access  RemoteAccess   Stopped   Disabled  Share
Process   c:\windows\system32\svchost.exe -k netsvcs   Normal
     LocalSystem   0
Remote Registry RemoteRegistry  Stopped   Manual   Share Process
     c:\windows\system32\svchost.exe -k regsvc Normal   NT
AUTHORITY\LocalService   0
Remote Procedure Call (RPC) Locator  RpcLocator Stopped   Manual   Own
Process   c:\windows\system32\locator.exe Normal   NT
AUTHORITY\NetworkService  0
Remote Procedure Call (RPC)   RpcSs Running   Auto Share Process
     c:\windows\system32\svchost -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 Stopped   Manual   Share Process
     c:\windows\system32\lsass.exe  Normal   LocalSystem   0
Smart Card SCardSvr  Stopped   Manual   Share Process
     c:\windows\system32\scardsvr.exe   Ignore   NT
AUTHORITY\LocalService   0
Task Scheduler  Schedule  Stopped   Manual   Share Process
     c:\windows\system32\svchost.exe -k netsvcs   Normal
     LocalSystem   0
Secondary Logon seclogon  Stopped   Manual   Share Process
     c:\windows\system32\svchost.exe -k netsvcs   Ignore
     LocalSystem   0
System Event Notification SENS Running   Auto Share Process
     c:\windows\system32\svchost.exe -k netsvcs   Normal
     LocalSystem   0
Internet Connection Firewall (ICF) / Internet Connection Sharing (ICS)
     SharedAccess   Stopped   Disabled  Share Process
     c:\windows\system32\svchost.exe -k netsvcs   Normal
     LocalSystem   0
Shell Hardware Detection  ShellHWDetection   Stopped   Manual   Share
Process   c:\windows\system32\svchost.exe -k netsvcs   Ignore
     LocalSystem   0
```

```
Print Spooler   Spooler    Stopped    Disabled   Own Process
     c:\windows\system32\spoolsv.exe Normal     LocalSystem     0
SQLSERVERAGENT  SQLSERVERAGENT  Stopped    Manual     Own Process
     c:\progra~1\micros~1\mssql\binn\sqlagent.exe   Normal
     LocalSystem     0
Windows Image Acquisition (WIA) stisvc     Stopped    Disabled   Share
Process    c:\windows\system32\svchost.exe -k imgsvc Normal     NT
AUTHORITY\LocalService    0
Microsoft Software Shadow Copy Provider    swprv Stopped    Manual     Own
Process    c:\windows\system32\svchost.exe -k swprv  Normal
     LocalSystem     0
Performance Logs and Alerts     SysmonLog  Stopped    Manual     Own
Process    c:\windows\system32\smlogsvc.exe     Normal     NT
Authority\NetworkService  0
Telephony  TapiSrv    Stopped    Manual     Share Process
     c:\windows\system32\svchost.exe -k tapisrv     Normal
     LocalSystem     0
Terminal Services    TermService     Stopped    Disabled   Share Process
     c:\windows\system32\svchost.exe -k termsvcs    Normal
     LocalSystem     0
Themes     Themes     Stopped    Disabled   Share Process
     c:\windows\system32\svchost.exe -k netsvcs     Normal
     LocalSystem     0
Telnet     TlntSvr    Stopped    Disabled   Own Process
     c:\windows\system32\tlntsvr.exe Normal     NT AUTHORITY\LocalService
     0
Distributed Link Tracking Server     TrkSvr     Stopped    Disabled   Share
Process    c:\windows\system32\svchost.exe -k netsvcs     Normal
     LocalSystem     0
Distributed Link Tracking Client     TrkWks     Stopped    Manual     Share
Process    c:\windows\system32\svchost.exe -k netsvcs     Normal
     LocalSystem     0
Terminal Services Session Directory  Tssdis     Stopped    Disabled   Own
Process    c:\windows\system32\tssdis.exe  Normal     LocalSystem     0
Upload Manager  uploadmgr  Stopped    Manual     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     LocalSystem     0
Virtual Disk Service vds  Stopped    Manual     Own Process
     c:\windows\system32\vds.exe     Normal     LocalSystem     0
Volume Shadow Copy   VSS  Stopped    Manual     Own Process
     c:\windows\system32\vssvc.exe   Normal     LocalSystem     0
Windows Time    W32Time    Stopped    Disabled   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
```

```
Portable Media Serial Number Service WmdmPmSN   Stopped    Manual     Share
Process    c:\windows\system32\svchost.exe -k netsvcs     Normal
     LocalSystem     0
Windows Management Instrumentation Driver Extensions Wmi   Stopped
     Manual     Share Process   c:\windows\system32\svchost.exe -k netsvcs
     Normal     LocalSystem     0
WMI Performance Adapter    WmiApSrv   Stopped    Manual     Own Process
     c:\windows\system32\wbem\wmiapsrv.exe     Normal     LocalSystem
     0
Automatic Updates    wuauserv   Stopped    Disabled   Share Process
     c:\windows\system32\svchost.exe -k netsvcs     Normal
     LocalSystem     0
Wireless Configuration    WZCSVC     Stopped    Disabled   Share Process
     c:\windows\system32\svchost.exe -k netsvcs     Normal
     LocalSystem     0

[Program Groups]

Group Name Name  User Name
Accessories     Default User:Accessories   Default User
Accessories\Accessibility Default User:Accessories\Accessibility
     Default User
Accessories\Entertainment Default User:Accessories\Entertainment
     Default User
Startup    Default User:Startup Default User
Accessories     All Users:Accessories     All Users
Accessories\Accessibility All Users:Accessories\Accessibility  All Users
Accessories\Communications All Users:Accessories\Communications All Users
Accessories\Entertainment All Users:Accessories\Entertainment  All Users
Accessories\System Tools  All Users:Accessories\System Tools   All Users
Administrative Tools All Users:Administrative Tools  All Users
Microsoft SQL Server All Users:Microsoft SQL Server  All Users
Microsoft SQL Server - Switch   All Users:Microsoft SQL Server - Switch
     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     TWIX\Administrator:Accessories  TWIX\Administrator
Accessories\Accessibility TWIX\Administrator:Accessories\Accessibility
     TWIX\Administrator
Accessories\Entertainment TWIX\Administrator:Accessories\Entertainment
     TWIX\Administrator
Administrative Tools TWIX\Administrator:Administrative Tools
     TWIX\Administrator
Startup    TWIX\Administrator:Startup TWIX\Administrator

[Startup Programs]

Program    Command    User Name  Location
desktop    desktop.ini     NT AUTHORITY\SYSTEM  Startup
desktop    desktop.ini     TWIX\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 nt\accessories\wordpad.exe"
Windows Media Services DRM Storage object Not Available
Bitmap Image    mspaint.exe

[Windows Error Reporting]

Time Type Details

[Internet Settings]



[Internet Explorer]

[ Following are sub-categories of this main category ]
[Summary]

Item Value
Version   6.0.3790.0
Build 63790
Application Path     C:\Program Files\Internet Explorer
Language  English (United States)
Active Printer  Not Available

Cipher Strength 128-bit
Content Advisor Disabled
IEAK Install    No

[File Versions]

File Version    Size Date Path Company
actxprxy.dll    6.0.3790.0 95 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
advpack.dll     6.0.3790.0 94 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
asctrls.ocx     6.0.3790.0 90 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
browselc.dll    6.0.3790.0 62 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
browseui.dll    6.0.3790.0 1,033 KB   3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
cdfview.dll     6.0.3790.0 144 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
```

```
comctl32.dll    5.82.3790.0     561 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
dxtrans.dll     6.3.3790.0 198 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
dxtmsft.dll     6.3.3790.0 344 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
iecont.dll <File Missing>  Not Available   Not Available   Not Available
     Not Available
iecontlc.dll    <File Missing>  Not Available   Not Available   Not
Available  Not Available
iedkcs32.dll    16.0.3790.0     300 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
iepeers.dll     6.0.3790.0 230 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
iesetup.dll     6.0.3790.0 59 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
ieuinit.inf     Not Available   20 KB 3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Not Available
iexplore.exe    6.0.3790.0 90 KB 3/25/2003 2:00:00 PM C:\Program
Files\Internet Explorer   Microsoft Corporation
imgutil.dll     5.2.3790.0 35 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
inetcpl.cpl     6.0.3790.0 303 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
inetcplc.dll    6.0.3790.0 109 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
inseng.dll 6.0.3790.0 72 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
mlang.dll  6.0.3790.0 570 KB     3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
msencode.dll    2002.10.4.0     112 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Not Available
mshta.exe  6.0.3790.0 26 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
mshtml.dll 6.0.3790.0 2,848 KB   3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
mshtml.tlb 6.0.3790.0 1,319 KB   3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
mshtmled.dll    6.0.3790.0 444 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
mshtmler.dll    6.0.3790.0 55 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
msident.dll     6.0.3790.0 47 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
msidntld.dll    6.0.3790.0 15 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
msieftp.dll     6.0.3790.0 230 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
msrating.dll    6.0.3790.0 132 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
mstime.dll 6.0.3790.0 491 KB     3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
occache.dll     6.0.3790.0 89 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
```

```
proctexe.ocx    6.3.3790.0 78 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Intel Corporation
sendmail.dll    6.0.3790.0 52 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
shdoclc.dll     6.0.3790.0 589 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
shdocvw.dll     6.0.3790.0 1,361 KB   3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
shfolder.dll    6.0.3790.0 23 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
shlwapi.dll     6.0.3790.0 281 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
tdc.ocx    1.3.0.3130 58 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
url.dll    6.0.3790.0 36 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
urlmon.dll 6.0.3790.0 502 KB     3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
webcheck.dll    6.0.3790.0 262 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
wininet.dll     6.0.3790.0 609 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation

[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\LocalService\Local Settings\Temporary Internet Files
Total Disk Space     Not Available
Available Disk Space Not Available
Maximum Cache Size   Not Available
Available Cache Size Not Available

[List of Objects]

Program File    Status     CodeBase
No cached object information available
```

```

[Content]

[ Following are sub-categories of this main category ]
[Summary]

Item Value
Content Advisor Disabled

[Personal Certificates]

Issued To  Issued By  Validity   Signature Algorithm
No personal certificate information available

[Other People Certificates]

Issued To  Issued By  Validity   Signature Algorithm
No other people certificate information available

[Publishers]

Name
No publisher information available

[Security]

Zone Security Level
My Computer     Custom
Local intranet  Medium-low
Trusted sites   Medium
Internet   High
Restricted sites     High


GCFVERSION=2.00;
Begin
 BeginGroup
     PhysicalDevice0 = Channel=0, Target=0, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice1 = Channel=1, Target=0, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice2 = Channel=0, Target=1, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice3 = Channel=1, Target=1, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice4 = Channel=0, Target=2, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice5 = Channel=1, Target=2, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice6 = Channel=0, Target=3, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice7 = Channel=1, Target=3, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice8 = Channel=0, Target=4, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
```

```
      PhysicalDevice9 = Channel=1, Target=4, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice10 = Channel=0, Target=10, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice11 = Channel=1, Target=10, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice12 = Channel=0, Target=11, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice13 = Channel=1, Target=11, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      IntermediateDevice0 = StripeSize=128KB, Raid=1, WriteThrough=1,
Size=17296MB,
           (PhysicalDevice0, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
           (PhysicalDevice1, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks);
      IntermediateDevice1 = StripeSize=128KB, Raid=1, WriteThrough=1,
Size=17296MB,
           (PhysicalDevice2, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
           (PhysicalDevice3, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks);
      IntermediateDevice2 = StripeSize=128KB, Raid=1, WriteThrough=1,
Size=17296MB,
           (PhysicalDevice4, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
           (PhysicalDevice5, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks);
      IntermediateDevice3 = StripeSize=128KB, Raid=1, WriteThrough=1,
Size=17296MB,
           (PhysicalDevice6, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
           (PhysicalDevice7, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks);
      IntermediateDevice4 = StripeSize=128KB, Raid=1, WriteThrough=1,
Size=17296MB,
           (PhysicalDevice8, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
           (PhysicalDevice9, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks);
      IntermediateDevice5 = StripeSize=128KB, Raid=1, WriteThrough=1,
Size=17296MB,
           (PhysicalDevice10, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
           (PhysicalDevice11, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks);
      IntermediateDevice6 = StripeSize=128KB, Raid=1, WriteThrough=1,
Size=17296MB,
           (PhysicalDevice12, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
           (PhysicalDevice13, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks);
      LogicalDevice0 = StripeSize=128KB, Raid=12, WriteThrough=1,
Size=121072MB, BIOSGeometry=8GB,
           (IntermediateDevice0, StartAddress=0MB, Size=17296MB),
           (IntermediateDevice1, StartAddress=0MB, Size=17296MB),
           (IntermediateDevice2, StartAddress=0MB, Size=17296MB),
           (IntermediateDevice3, StartAddress=0MB, Size=17296MB),
           (IntermediateDevice4, StartAddress=0MB, Size=17296MB),
           (IntermediateDevice5, StartAddress=0MB, Size=17296MB),
           (IntermediateDevice6, StartAddress=0MB, Size=17296MB);
      PhysicalDevice14 = Channel=2, Target=0, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice15 = Channel=2, Target=1, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice16 = Channel=2, Target=2, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice17 = Channel=2, Target=3, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice18 = Channel=2, Target=4, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice19 = Channel=2, Target=5, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice20 = Channel=2, Target=6, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice21 = Channel=2, Target=9, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice22 = Channel=2, Target=10, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice23 = Channel=2, Target=11, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice24 = Channel=2, Target=12, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice25 = Channel=2, Target=13, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice26 = Channel=2, Target=14, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice27 = Channel=2, Target=15, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice28 = Channel=3, Target=0, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice29 = Channel=3, Target=1, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice30 = Channel=3, Target=2, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice31 = Channel=3, Target=3, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice32 = Channel=3, Target=4, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice33 = Channel=3, Target=5, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice34 = Channel=3, Target=6, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice35 = Channel=3, Target=9, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice36 = Channel=3, Target=10, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice37 = Channel=3, Target=11, Size=17300MB, State=Online,
           TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
      PhysicalDevice38 = Channel=3, Target=12, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice39 = Channel=3, Target=13, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice40 = Channel=3, Target=14, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice41 = Channel=3, Target=15, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     IntermediateDevice7 = StripeSize=128KB, Raid=0, WriteThrough=1,
Size=242200MB,
          (PhysicalDevice14, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice15, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice16, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice17, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice18, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice19, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice20, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice21, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice22, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice23, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice24, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice25, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice26, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice27, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks);
     IntermediateDevice8 = StripeSize=128KB, Raid=0, WriteThrough=1,
Size=242200MB,
          (PhysicalDevice28, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice29, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice30, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice31, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice32, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice33, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice34, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice35, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
```

```
          (PhysicalDevice36, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice37, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice38, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice39, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice40, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks),
          (PhysicalDevice41, StartAddress=0MB/0Blocks,
Size=17300MB/35430400Blocks);
     LogicalDevice1 = StripeSize=128KB, Raid=12, WriteThrough=1,
Size=484400MB, BIOSGeometry=8GB,
          (IntermediateDevice7, StartAddress=0MB, Size=242200MB),
          (IntermediateDevice8, StartAddress=0MB, Size=242200MB);
 EndGroup
 EndGroup
 BeginControllerParameter
     ControllerName = eXtremeRAID 2000;
     ControllerType = 28;
     FirmwareVersion = 7.01;
     CacheLineSize = 8KB;
     AutomaticRebuildRate = 50;
     BackgroundInitializeRate = 50;
     ConsistencyCheckRate = 50;
     MORERate = 50;
     InitiatorID = 7;
     DevicesPerSpin = 2;
     SequentialDelay = 6S;
     EnableDriveSizing = 1;
     EnableClustering = 0;
     EnableBGInit = 1;
     EnableBiosLoadDelay = 0;
     EnableForcedUnitAccess = 0;
     DisableBios = 1;
     EnableCDROMBoot = 0;
     EnableStorageWorks = 0;
     EnableSAFTE = 0;
     EnableSES = 0;
     EnableARM = 0;
     EnableOFM = 0;
     OEMCode = 16;
     StartupOption = 4;
     EnableTempOffline = 0;
     EnablePatrolRead = 0;
     EnableSmartMode = 0;
     DlyBtwnIterations = 336;
     SmartScanInterval = 0;
 EndControllerParameter
End

========================== Controller 1 .. 4 =========================

GCFVERSION=2.00;
```

```
Begin
 BeginGroup
     PhysicalDevice0 = Channel=0, Target=0, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice1 = Channel=0, Target=1, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice2 = Channel=0, Target=2, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice3 = Channel=0, Target=3, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice4 = Channel=0, Target=4, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice5 = Channel=0, Target=5, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice6 = Channel=0, Target=6, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice7 = Channel=0, Target=9, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice8 = Channel=0, Target=10, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice9 = Channel=0, Target=11, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice10 = Channel=0, Target=12, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice11 = Channel=0, Target=13, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice12 = Channel=0, Target=14, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice13 = Channel=0, Target=15, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice14 = Channel=1, Target=0, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice15 = Channel=1, Target=1, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice16 = Channel=1, Target=2, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice17 = Channel=1, Target=3, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice18 = Channel=1, Target=4, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice19 = Channel=1, Target=5, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice20 = Channel=1, Target=6, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice21 = Channel=1, Target=9, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice22 = Channel=1, Target=10, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice23 = Channel=1, Target=11, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice24 = Channel=1, Target=12, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice25 = Channel=1, Target=13, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice26 = Channel=1, Target=14, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice27 = Channel=1, Target=15, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice28 = Channel=2, Target=0, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice29 = Channel=2, Target=1, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice30 = Channel=2, Target=2, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice31 = Channel=2, Target=3, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice32 = Channel=2, Target=4, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice33 = Channel=2, Target=5, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice34 = Channel=2, Target=6, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice35 = Channel=2, Target=9, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice36 = Channel=2, Target=10, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice37 = Channel=2, Target=11, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice38 = Channel=2, Target=12, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice39 = Channel=2, Target=13, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice40 = Channel=2, Target=14, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     PhysicalDevice41 = Channel=2, Target=15, Size=17300MB, State=Online,
          TransferSpeed=80MHz, TransferWidth=16Bit, MaxTag=16;
     IntermediateDevice0 = StripeSize=128KB, Raid=0, WriteThrough=1,
Size=242144MB,
          (PhysicalDevice0, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice1, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice2, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice3, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice4, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice5, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice6, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice7, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice8, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice9, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice10, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice11, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice12, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice13, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks);
     IntermediateDevice1 = StripeSize=128KB, Raid=0, WriteThrough=1,
Size=242144MB,
          (PhysicalDevice14, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice15, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice16, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice17, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice18, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice19, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice20, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice21, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice22, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice23, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice24, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice25, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice26, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice27, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks);
     IntermediateDevice2 = StripeSize=128KB, Raid=0, WriteThrough=1,
Size=242144MB,
          (PhysicalDevice28, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice29, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice30, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice31, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice32, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice33, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice34, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice35, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice36, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice37, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice38, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice39, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice40, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks),
          (PhysicalDevice41, StartAddress=0MB/0Blocks,
Size=17296MB/35422208Blocks);
     LogicalDevice0 = StripeSize=128KB, Raid=12, WriteThrough=1,
Size=726432MB, BIOSGeometry=8GB,
          (IntermediateDevice0, StartAddress=0MB, Size=242144MB),
          (IntermediateDevice1, StartAddress=0MB, Size=242144MB),
          (IntermediateDevice2, StartAddress=0MB, Size=242144MB);
 EndGroup
 BeginControllerParameter
     ControllerName = eXtremeRAID 2000;
     ControllerType = 28;
     FirmwareVersion = 7.01;
     CacheLineSize = 8KB;
     AutomaticRebuildRate = 50;
     BackgroundInitializeRate = 50;
     ConsistencyCheckRate = 50;
     MORERate = 50;
     InitiatorID = 7;
     DevicesPerSpin = 2;
     SequentialDelay = 6S;
     EnableDriveSizing = 1;
     EnableClustering = 0;
     EnableBGInit = 0;
     EnableBiosLoadDelay = 0;
     EnableForcedUnitAccess = 0;
     DisableBios = 1;
     EnableCDROMBoot = 0;
     EnableStorageWorks = 0;
     EnableSAFTE = 0;
     EnableSES = 0;
     EnableARM = 0;
     EnableOFM = 0;
     OEMCode = 16;
     StartupOption = 4;
     EnableTempOffline = 0;
     EnablePatrolRead = 0;
     EnableSmartMode = 0;
     DlyBtwnIterations = 336;
     SmartScanInterval = 0;
 EndControllerParameter
End

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\dac2w2k\Parameters\D
evice
```

```
Class Name:        <NO CLASS>
Last Write Time:   7/23/2003 - 1:21 PM
Value 0
  Name:            MaximumSGList
  Type:            REG_DWORD
  Data:            0xc8

Value 1
  Name:            NumberOfRequests
  Type:            REG_DWORD
  Data:            0xc8

Value 2
  Name:            DriverParameter
  Type:            REG_SZ
  Data:            EnableSIR


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\I/O
System
Class Name:        <NO CLASS>
Last Write Time:   6/16/2003 - 9:14 AM
Value 0
  Name:            CountOperations
  Type:            REG_DWORD
  Data:            0


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session
Manager\Memory Management
Class Name:        <NO CLASS>
Last Write Time:   6/16/2003 - 9:19 AM
Value 0
  Name:            ClearPageFileAtShutdown
  Type:            REG_DWORD
  Data:            0

Value 1
  Name:            DisablePagingExecutive
  Type:            REG_DWORD
  Data:            0

Value 2
  Name:            LargeSystemCache
  Type:            REG_DWORD
  Data:            0

Value 3
  Name:            NonPagedPoolQuota
  Type:            REG_DWORD
  Data:            0

Value 4
  Name:            NonPagedPoolSize
  Type:            REG_DWORD
  Data:            0

Value 5
  Name:            PagedPoolQuota
  Type:            REG_DWORD
  Data:            0

Value 6
  Name:            PagedPoolSize
  Type:            REG_DWORD
  Data:            0

Value 7
  Name:            SecondLevelDataCache
  Type:            REG_DWORD
  Data:            0

Value 8
  Name:            SystemPages
  Type:            REG_DWORD
  Data:            0

Value 9
  Name:            PagingFiles
  Type:            REG_MULTI_SZ
  Data:            C:\pagefile.sys 2046 4092

Value 10
  Name:            PhysicalAddressExtension
  Type:            REG_DWORD
  Data:            0x1

Value 11
  Name:            WriteWatch
  Type:            REG_DWORD
  Data:            0x1

Value 12
  Name:            SessionViewSize
  Type:            REG_DWORD
  Data:            0x30

Value 13
  Name:            SessionPoolSize
  Type:            REG_DWORD
  Data:            0x4

Value 14
  Name:            DontVerifyRandomDrivers
  Type:            REG_DWORD
  Data:            0x1
```

```
Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session
Manager\Memory Management\PrefetchParameters
Class Name:        <NO CLASS>
Last Write Time:   7/30/2003 - 11:57 AM
Value 0
  Name:            VideoInitTime
  Type:            REG_DWORD
  Data:            0x109

Value 1
  Name:            EnablePrefetcher
  Type:            REG_DWORD
  Data:            0x2

Value 2
  Name:            AppLaunchMaxNumPages
  Type:            REG_DWORD
  Data:            0xfa0

Value 3
  Name:            AppLaunchMaxNumSections
  Type:            REG_DWORD

  Data:            0xaa

Value 4
  Name:            AppLaunchTimerPeriod
  Type:            REG_BINARY
  Data:
80 69 67 ff ff ff ff ff -                          .igÿÿÿÿÿ

Value 5
  Name:            BootMaxNumPages
  Type:            REG_DWORD
  Data:            0x1f400

Value 6
  Name:            BootMaxNumSections
  Type:            REG_DWORD
  Data:            0xff0

Value 7
  Name:            BootTimerPeriod
  Type:            REG_BINARY
  Data:
00 f2 d8 f8 ff ff ff ff -                          .òØøÿÿÿÿ

Value 8
  Name:            MaxNumActiveTraces
  Type:            REG_DWORD
  Data:            0x8

Value 9
  Name:            MaxNumSavedTraces
```

```
  Type:            REG_DWORD
  Data:            0x8

Value 10
  Name:            RootDirPath
  Type:            REG_SZ
  Data:            Prefetch

Value 11
  Name:            HostingAppList
  Type:            REG_SZ
  Data:            DLLHOST.EXE,MMC.EXE,RUNDLL32.EXE


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007
Class Name:        <NO CLASS>
Last Write Time:   7/16/2003 - 2:23 PM
Value 0
  Name:            TxPacketDescCnt
  Type:            REG_SZ
  Data:            1200

Value 1
  Name:            RxStdDescCnt
  Type:            REG_SZ
  Data:            1200

Value 2
  Name:            RxCoalescingTicks
  Type:            REG_SZ
  Data:            5000

Value 3
  Name:            TxCoalescingTicks
  Type:            REG_SZ
  Data:            5000

Value 4
  Name:            RxMaxCoalescedFrames
  Type:            REG_SZ
  Data:            330

Value 5
  Name:            TxMaxCoalescedFrames
  Type:            REG_SZ
  Data:            330

Value 6
  Name:            Characteristics
  Type:            REG_DWORD
  Data:            0x84

Value 7
```

```
  Name:            BusType
  Type:            REG_SZ
  Data:            5

Value 8
  Name:            ComponentId
  Type:            REG_SZ
  Data:            pci\ven_14e4&dev_1648

Value 9
  Name:            Enable8021p
  Type:            REG_SZ
  Data:            0

Value 10
  Name:            FlowControlCap
  Type:            REG_SZ
  Data:            2147483648

Value 11
  Name:            LargeSendOffload
  Type:            REG_SZ
  Data:            1

Value 12
  Name:            RequestedMediaType
  Type:            REG_SZ
  Data:            6

Value 13
  Name:            RxMtu
  Type:            REG_SZ
  Data:            1500

Value 14
  Name:            TaskOffloadCap
  Type:            REG_SZ
  Data:            63

Value 15
  Name:            WakeUpModeCap
  Type:            REG_SZ
  Data:            0

Value 16
  Name:            WireSpeed
  Type:            REG_SZ
  Data:            1

Value 17
  Name:            WolSpeed
  Type:            REG_SZ
  Data:            2

Value 18
```

```
  Name:            InfPath
  Type:            REG_SZ
  Data:            oem0.inf

Value 19
  Name:            InfSection
  Type:            REG_SZ
  Data:            BCM5704.XpInst

Value 20
  Name:            InfSectionExt
  Type:            REG_SZ
  Data:            .NTx86

Value 21
  Name:            ProviderName
  Type:            REG_SZ
  Data:            Broadcom

Value 22
  Name:            DriverDateData
  Type:            REG_BINARY
  Data:
00 80 95 83 17 d6 c2 01 -                          .....ÖÂ.

Value 23
  Name:            DriverDate
  Type:            REG_SZ
  Data:            2-17-2003

Value 24
  Name:            DriverVersion
  Type:            REG_SZ
  Data:            6.34.0.0

Value 25
  Name:            MatchingDeviceId
  Type:            REG_SZ
  Data:            pci\ven_14e4&dev_1648

Value 26
  Name:            DriverDesc
  Type:            REG_SZ
  Data:            Broadcom NetXtreme Gigabit Ethernet

Value 27
  Name:            NetCfgInstanceId
  Type:            REG_SZ
  Data:            {532EAD67-1480-4ED8-B656-BB8F04D35458}

Value 28
  Name:            PnPCapabilities
  Type:            REG_DWORD
  Data:            0x38
```

```
Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Linkage
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            RootDevice
  Type:            REG_MULTI_SZ
  Data:            {532EAD67-1480-4ED8-B656-BB8F04D35458}

Value 1
  Name:            UpperBind
  Type:            REG_MULTI_SZ
  Data:            RasPppoe
                   Ndisuio
                   Tcpip

Value 2
  Name:            Export
  Type:            REG_MULTI_SZ
  Data:            \Device\{532EAD67-1480-4ED8-B656-BB8F04D35458}


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            Service
  Type:            REG_SZ
  Data:            b57w2k


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Interfaces
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            UpperRange
  Type:            REG_SZ
  Data:            ndis5

Value 1
  Name:            LowerRange
  Type:            REG_SZ
  Data:            ethernet


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params\Enable8021p
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            802.1p QOS

Value 1
  Name:            default
  Type:            REG_SZ
  Data:            0

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            enum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params\Enable8021p\enum
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            0
  Type:            REG_SZ
  Data:            Disable

Value 1
  Name:            1
  Type:            REG_SZ
  Data:            Enable


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params\FlowControlCap
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ

  Data:            Flow Control

Value 1
  Name:            default
  Type:            REG_SZ
  Data:            2147483648
```

```
Value 2
  Name:            type
  Type:            REG_SZ
  Data:            enum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params\FlowControlCap\enum
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            0
  Type:            REG_SZ
  Data:            Disable

Value 1
  Name:            1
  Type:            REG_SZ
  Data:            Rx PAUSE

Value 2
  Name:            2
  Type:            REG_SZ
  Data:            Tx PAUSE

Value 3
  Name:            3
  Type:            REG_SZ
  Data:            Rx/Tx PAUSE

Value 4
  Name:            2147483648
  Type:            REG_SZ
  Data:            Auto


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params\LargeSendOffload
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Large Send Offload

Value 1
  Name:            default
  Type:            REG_SZ
  Data:            1

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            enum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params\LargeSendOffload\enum
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            0
  Type:            REG_SZ
  Data:            Disable

Value 1
  Name:            1
  Type:            REG_SZ
  Data:            Enable


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params\NetworkAddress
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Locally Administered Address

Value 1
  Name:            Default
  Type:            REG_SZ
  Data:

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            edit

Value 3
  Name:            LimitText
  Type:            REG_SZ
  Data:            12

Value 4
  Name:            UpperCase
  Type:            REG_SZ
  Data:            1

Value 5
  Name:            optional
  Type:            REG_SZ
  Data:            1
```

```
Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params\RequestedMediaType
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Speed & Duplex

Value 1
  Name:            default
  Type:            REG_SZ
  Data:            0

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            enum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params\RequestedMediaType\enum
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            0
  Type:            REG_SZ
  Data:            Auto

Value 1
  Name:            3
  Type:            REG_SZ
  Data:            10 Mb Half

Value 2
  Name:            4
  Type:            REG_SZ
  Data:            10 Mb Full

Value 3
  Name:            5
  Type:            REG_SZ
  Data:            100 Mb Half

Value 4
  Name:            6
  Type:            REG_SZ
  Data:            100 Mb Full


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params\RxMtu
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Jumbo Mtu

Value 1
  Name:            default
  Type:            REG_SZ
  Data:            1500

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            dword

Value 3
  Name:            min
  Type:            REG_SZ
  Data:            1500

Value 4
  Name:            max
  Type:            REG_SZ
  Data:            9000

Value 5
  Name:            step
  Type:            REG_SZ
  Data:            500

Value 6
  Name:            base
  Type:            REG_SZ
  Data:            10


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params\TaskOffloadCap
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Checksum Offload

Value 1
  Name:            default
  Type:            REG_SZ
  Data:            63

Value 2
  Name:            type
  Type:             REG_SZ
  Data:             enum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params\TaskOffloadCap\enum
Class Name:         <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:             0
  Type:             REG_SZ
  Data:             None

Value 1
  Name:             42
  Type:             REG_SZ
  Data:             Rx TCP/IP Checksum

Value 2
  Name:             21
  Type:             REG_SZ
  Data:             Tx TCP/IP Checksum

Value 3
  Name:             63
  Type:             REG_SZ
  Data:             Tx/Rx TCP/IP Checksum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params\WakeUpModeCap
Class Name:         <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:             ParamDesc
  Type:             REG_SZ
  Data:             Wake Up Capabilities

Value 1
  Name:             default
  Type:             REG_SZ
  Data:             3

Value 2
  Name:             type
  Type:             REG_SZ
  Data:             enum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params\WakeUpModeCap\enum
Class Name:         <NO CLASS>
```

```
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:             0
  Type:             REG_SZ
  Data:             None

Value 1
  Name:             1
  Type:             REG_SZ
  Data:             Magic Packet

Value 2
  Name:             2
  Type:             REG_SZ
  Data:             Wake Up Frame

Value 3
  Name:             3
  Type:             REG_SZ
  Data:             Both


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params\WireSpeed
Class Name:         <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:             ParamDesc
  Type:             REG_SZ
  Data:             Ethernet@WireSpeed

Value 1
  Name:             default
  Type:             REG_SZ
  Data:             1

Value 2
  Name:             type
  Type:             REG_SZ
  Data:             enum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params\WireSpeed\enum
Class Name:         <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:             0
  Type:             REG_SZ
  Data:             Disable

Value 1
  Name:             1
  Type:            REG_SZ
  Data:            Enable


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params\WolSpeed
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            WOL Speed

Value 1
  Name:            default
  Type:            REG_SZ
  Data:            0

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            enum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0007\Ndi\Params\WolSpeed\enum
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            0
  Type:            REG_SZ
  Data:            Auto

Value 1
  Name:            1
  Type:            REG_SZ
  Data:            10 Mb

Value 2
  Name:            2
  Type:            REG_SZ
  Data:            100 Mb


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008
Class Name:        <NO CLASS>
Last Write Time:   7/16/2003 - 2:23 PM
Value 0
  Name:            TxPacketDescCnt
  Type:            REG_SZ
  Data:            1200
```

```

Value 1
  Name:            RxStdDescCnt
  Type:            REG_SZ
  Data:            1200

Value 2
  Name:            RxCoalescingTicks
  Type:            REG_SZ
  Data:            5000

Value 3
  Name:            TxCoalescingTicks
  Type:            REG_SZ
  Data:            5000

Value 4
  Name:            RxMaxCoalescedFrames
  Type:            REG_SZ
  Data:            330

Value 5
  Name:            TxMaxCoalescedFrames
  Type:            REG_SZ
  Data:            330

Value 6
  Name:            Characteristics
  Type:            REG_DWORD
  Data:            0x84

Value 7
  Name:            BusType
  Type:            REG_SZ
  Data:            5

Value 8
  Name:            ComponentId
  Type:            REG_SZ
  Data:            pci\ven_14e4&dev_1648

Value 9
  Name:            Enable8021p
  Type:            REG_SZ
  Data:            0

Value 10
  Name:            FlowControlCap
  Type:            REG_SZ
  Data:            2147483648

Value 11
  Name:            LargeSendOffload
  Type:            REG_SZ
  Data:            1
```

```
Value 12
  Name:              RequestedMediaType
  Type:              REG_SZ
  Data:              6

Value 13
  Name:              RxMtu
  Type:              REG_SZ
  Data:              1500

Value 14
  Name:              TaskOffloadCap
  Type:              REG_SZ
  Data:              63

Value 15
  Name:              WakeUpModeCap
  Type:              REG_SZ
  Data:              0

Value 16
  Name:              WireSpeed
  Type:              REG_SZ
  Data:              1

Value 17
  Name:              WolSpeed
  Type:              REG_SZ
  Data:              2

Value 18
  Name:              InfPath
  Type:              REG_SZ
  Data:              oem0.inf

Value 19
  Name:              InfSection
  Type:              REG_SZ
  Data:              BCM5704.XpInst

Value 20
  Name:              InfSectionExt
  Type:              REG_SZ
  Data:              .NTx86

Value 21
  Name:              ProviderName
  Type:              REG_SZ
  Data:              Broadcom

Value 22
  Name:              DriverDateData
  Type:              REG_BINARY
  Data:
00 80 95 83 17 d6 c2 01 -                                   .....ÖÂ.

Value 23
  Name:              DriverDate
  Type:              REG_SZ
  Data:              2-17-2003

Value 24
  Name:              DriverVersion
  Type:              REG_SZ
  Data:              6.34.0.0

Value 25
  Name:              MatchingDeviceId
  Type:              REG_SZ
  Data:              pci\ven_14e4&dev_1648

Value 26
  Name:              DriverDesc
  Type:              REG_SZ
  Data:              Broadcom NetXtreme Gigabit Ethernet

Value 27
  Name:              NetCfgInstanceId
  Type:              REG_SZ
  Data:              {FD9AFE43-E87F-4021-99D5-41A6A429DC91}

Value 28
  Name:              PnPCapabilities
  Type:              REG_DWORD
  Data:              0x38


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Linkage
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:              RootDevice
  Type:              REG_MULTI_SZ
  Data:              {FD9AFE43-E87F-4021-99D5-41A6A429DC91}

Value 1
  Name:              UpperBind
  Type:              REG_MULTI_SZ
  Data:              RasPppoe
                     Ndisuio
                     Tcpip

Value 2
  Name:              Export
  Type:              REG_MULTI_SZ
  Data:              \Device\{FD9AFE43-E87F-4021-99D5-41A6A429DC91}
```

```
Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            Service
  Type:            REG_SZ
  Data:            b57w2k


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Interfaces
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            UpperRange
  Type:            REG_SZ
  Data:            ndis5

Value 1
  Name:            LowerRange
  Type:            REG_SZ
  Data:            ethernet


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params\Enable8021p
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            802.1p QOS

Value 1
  Name:            default
  Type:            REG_SZ
  Data:            0

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            enum
```

```
Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params\Enable8021p\enum
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            0
  Type:            REG_SZ
  Data:            Disable

Value 1
  Name:            1
  Type:            REG_SZ
  Data:            Enable


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params\FlowControlCap
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Flow Control

Value 1
  Name:            default
  Type:            REG_SZ
  Data:            2147483648

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            enum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params\FlowControlCap\enum
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            0
  Type:            REG_SZ
  Data:            Disable

Value 1
  Name:            1
  Type:            REG_SZ
  Data:            Rx PAUSE

Value 2
  Name:            2
  Type:            REG_SZ
  Data:            Tx PAUSE

Value 3
  Name:            3
  Type:            REG_SZ
  Data:            Rx/Tx PAUSE

Value 4
  Name:            2147483648
  Type:            REG_SZ
  Data:            Auto


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params\LargeSendOffload
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Large Send Offload

Value 1
  Name:            default
  Type:            REG_SZ
  Data:            1

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            enum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params\LargeSendOffload\enum
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            0
  Type:            REG_SZ
  Data:            Disable

Value 1
  Name:            1
  Type:            REG_SZ
  Data:            Enable


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params\NetworkAddress
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
```

```
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Locally Administered Address

Value 1
  Name:            Default
  Type:            REG_SZ
  Data:

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            edit

Value 3
  Name:            LimitText
  Type:            REG_SZ
  Data:            12

Value 4
  Name:            UpperCase
  Type:            REG_SZ
  Data:            1

Value 5
  Name:            optional
  Type:            REG_SZ
  Data:            1


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params\RequestedMediaType
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Speed & Duplex

Value 1
  Name:            default
  Type:            REG_SZ
  Data:            0

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            enum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params\RequestedMediaType\enum
```

```
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            0
  Type:            REG_SZ
  Data:            Auto

Value 1
  Name:            3
  Type:            REG_SZ
  Data:            10 Mb Half

Value 2
  Name:            4
  Type:            REG_SZ
  Data:            10 Mb Full

Value 3
  Name:            5
  Type:            REG_SZ
  Data:            100 Mb Half

Value 4
  Name:            6
  Type:            REG_SZ
  Data:            100 Mb Full


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params\RxMtu
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Jumbo Mtu

Value 1
  Name:            default
  Type:            REG_SZ
  Data:            1500

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            dword

Value 3
  Name:            min
  Type:            REG_SZ
  Data:            1500

Value 4
  Name:            max
  Type:            REG_SZ
  Data:            9000

Value 5
  Name:            step
  Type:            REG_SZ
  Data:            500

Value 6
  Name:            base
  Type:            REG_SZ
  Data:            10


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params\TaskOffloadCap
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Checksum Offload

Value 1
  Name:            default
  Type:            REG_SZ
  Data:            63

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            enum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params\TaskOffloadCap\enum
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            0
  Type:            REG_SZ
  Data:            None

Value 1
  Name:            42
  Type:            REG_SZ
  Data:            Rx TCP/IP Checksum

Value 2
  Name:            21
  Type:            REG_SZ
  Data:            Tx TCP/IP Checksum
```

```
Value 3
  Name:            63
  Type:            REG_SZ
  Data:            Tx/Rx TCP/IP Checksum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params\WakeUpModeCap
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Wake Up Capabilities

Value 1
  Name:            default
  Type:            REG_SZ
  Data:            3

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            enum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params\WakeUpModeCap\enum
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            0
  Type:            REG_SZ
  Data:            None

Value 1
  Name:            1
  Type:            REG_SZ
  Data:            Magic Packet

Value 2
  Name:            2
  Type:            REG_SZ
  Data:            Wake Up Frame

Value 3
  Name:            3
  Type:            REG_SZ
  Data:            Both
```

```
Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params\WireSpeed
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Ethernet@WireSpeed

Value 1
  Name:            default
  Type:            REG_SZ
  Data:            1

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            enum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params\WireSpeed\enum
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            0
  Type:            REG_SZ
  Data:            Disable

Value 1
  Name:            1
  Type:            REG_SZ
  Data:            Enable


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params\WolSpeed
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            WOL Speed

Value 1
  Name:            default
  Type:            REG_SZ
  Data:            0

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            enum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0008\Ndi\Params\WolSpeed\enum
Class Name:        <NO CLASS>
Last Write Time:   6/13/2003 - 1:00 PM
Value 0
  Name:            0
  Type:            REG_SZ
  Data:            Auto

Value 1
  Name:            1
  Type:            REG_SZ
  Data:            10 Mb

Value 2
  Name:            2
  Type:            REG_SZ
  Data:            100 Mb
```

This section discloses hardware information and the Windows 2000 registry parameters used on the PRIMERGY C200 client systems.

```
System Information report written at: 07/30/03 14:09:28
System Name: C200CL2
[System Summary]

Item Value
OS Name    Microsoft(R) Windows(R) Server 2003, Standard Edition
Version    5.2.3790  Build 3790
OS Manufacturer Microsoft Corporation
System Name     C200CL2
System Manufacturer  FUJITSU SIEMENS
System Model    D1306
System Type     X86-based PC
Processor  x86 Family 6 Model 11 Stepping 1 GenuineIntel ~1393 Mhz
Processor  x86 Family 6 Model 11 Stepping 1 GenuineIntel ~1393 Mhz
BIOS Version/Date    FUJITSU SIEMENS // Phoenix Technologies Ltd. 4.06
Rev. 1.03.1306, 5/7/2002
SMBIOS Version  2.31
Windows Directory    C:\WINDOWS
System Directory     C:\WINDOWS\system32
Boot Device     \Device\HarddiskVolume1
Locale    United States
Hardware Abstraction LayerVersion = "5.2.3790.0 (srv03_rtm.030324-2048)"
User Name  C200CL2\Administrator
Time Zone  W. Europe Daylight Time
```

```
Total Physical Memory     768.00 MB
Available Physical Memory 365.96 MB
Total Virtual Memory 2.10 GB
Available Virtual Memory  1.85 GB
Page File Space 1.60 GB
Page File  C:\pagefile.sys

[Hardware Resources]



[Conflicts/Sharing]

Resource   Device
I/O Port 0x00000000-0x00000CF7  PCI bus
I/O Port 0x00000000-0x00000CF7  Direct memory access controller

Memory Address 0xFC900000-0xFCCFFFFF PCI bus
Memory Address 0xFC900000-0xFCCFFFFF Fibre Channel Controller

I/O Port 0x00002000-0x000020FF  PCI bus
I/O Port 0x00002000-0x000020FF  LSI Logic 53C1010-66 Device

Memory Address 0xFC500000-0xFC8FFFFF PCI bus
Memory Address 0xFC500000-0xFC8FFFFF LSI Logic 53C1010-66 Device

Memory Address 0xFC400000-0xFC4FFFFF PCI bus
Memory Address 0xFC400000-0xFC4FFFFF Intel(R) PRO/100+ PCI Adapter

Memory Address 0xFB000000-0xFC3FFFFF PCI bus
Memory Address 0xFB000000-0xFC3FFFFF RAGE XL PCI Family (Microsoft
Corporation)

I/O Port 0x00002400-0x000024FF  PCI bus
I/O Port 0x00002400-0x000024FF  Fibre Channel Controller

Memory Address 0xA0000-0xBFFFF  PCI bus
Memory Address 0xA0000-0xBFFFF  RAGE XL PCI Family (Microsoft Corporation)


I/O Port 0x00001000-0x00001C0F  PCI bus
I/O Port 0x00001000-0x00001C0F  RAGE XL PCI Family (Microsoft Corporation)



[DMA]

Resource   Device     Status
Channel 4  Direct memory access controller OK
Channel 2  Standard floppy disk controller OK

[Forced Hardware]

Device     PNP Device ID
```

```
[I/O]

Resource	Device	Status
0x00000000-0x00000CF7	PCI bus	OK
0x00000000-0x00000CF7	Direct memory access controller	OK
0x00000D00-0x00000FFF	PCI bus	OK
0x00001000-0x00001C0F	PCI bus	OK
0x00001000-0x00001C0F	RAGE XL PCI Family (Microsoft Corporation)
	OK
0x000003B0-0x000003BB	RAGE XL PCI Family (Microsoft Corporation)
	OK
0x000003C0-0x000003DF	RAGE XL PCI Family (Microsoft Corporation)
	OK
0x00001400-0x0000141F	Intel(R) PRO/100+ PCI Adapter	OK
0x00001800-0x0000183F	Fujitsu Siemens Computers 82559-based Onboard
Ethernet with WoL and AoL	OK
0x00000A79-0x00000A79	ISAPNP Read Data Port	OK
0x00000279-0x00000279	ISAPNP Read Data Port	OK
0x00000274-0x00000277	ISAPNP Read Data Port	OK
0x00000010-0x0000001F	Motherboard resources	OK
0x00000022-0x0000002D	Motherboard resources	OK
0x00000030-0x0000003F	Motherboard resources	OK
0x00000050-0x00000053	Motherboard resources	OK
0x00000062-0x00000063	Motherboard resources	OK
0x00000065-0x0000006F	Motherboard resources	OK
0x00000074-0x0000007F	Motherboard resources	OK
0x00000090-0x0000009F	Motherboard resources	OK
0x000000A2-0x000000B1	Motherboard resources	OK
0x000000B4-0x000000BF	Motherboard resources	OK
0x000000E0-0x000000EF	Motherboard resources	OK
0x00000072-0x00000073	Motherboard resources	OK
0x000004D0-0x000004D1	Motherboard resources	OK
0x0000F100-0x0000F10F	Motherboard resources	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
0x00000070-0x00000071	System CMOS/real time clock	OK
0x00000040-0x00000043	System timer	OK
0x000000F0-0x000000FE	Numeric data processor	OK
0x00000061-0x00000061	System speaker	OK
0x00000060-0x00000060	Standard 101/102-Key or Microsoft Natural PS/2
Keyboard	OK
0x00000064-0x00000064	Standard 101/102-Key or Microsoft Natural PS/2
Keyboard	OK
0x000003F0-0x000003F5	Standard floppy disk controller	OK
0x000003F7-0x000003F7	Standard floppy disk controller	OK
0x00001C00-0x00001C0F	OSB4 IDE Controller	OK
0x000001F0-0x000001F7	Primary IDE Channel	OK
0x000003F6-0x000003F6	Primary IDE Channel	OK
0x00000170-0x00000177	Secondary IDE Channel	OK
0x00000376-0x00000376	Secondary IDE Channel	OK
0x00002000-0x000020FF	PCI bus	OK
0x00002000-0x000020FF	LSI Logic 53C1010-66 Device	OK
0x00002400-0x000024FF	PCI bus	OK
0x00002400-0x000024FF	Fibre Channel Controller	OK

[IRQs]

Resource	Device	Status
IRQ 9	Microsoft ACPI-Compliant System	OK
IRQ 18	Intel(R) PRO/100+ PCI Adapter	OK
IRQ 30	Fujitsu Siemens Computers 82559-based Onboard Ethernet with WoL
and AoL	OK
IRQ 8	System CMOS/real time clock	OK
IRQ 0	System timer	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 6	Standard floppy disk controller	OK
IRQ 15	Secondary IDE Channel	OK
IRQ 29	LSI Logic 53C1010-66 Device	OK
IRQ 5	Fibre Channel Controller	OK

[Memory]

Resource	Device	Status
0xA0000-0xBFFFF	PCI bus	OK
0xA0000-0xBFFFF	RAGE XL PCI Family (Microsoft Corporation)	OK
0xC8000-0xDFFFF	PCI bus	OK
0xFB000000-0xFC3FFFFF	PCI bus	OK
0xFB000000-0xFC3FFFFF	RAGE XL PCI Family (Microsoft Corporation)
	OK
0xFC400000-0xFC4FFFFF	PCI bus	OK
0xFC400000-0xFC4FFFFF	Intel(R) PRO/100+ PCI Adapter	OK
0xFED00000-0xFEDFFFFF	PCI bus	OK
0xFEE01000-0xFFBFFFFF	PCI bus	OK
0xFC120000-0xFC120FFF	RAGE XL PCI Family (Microsoft Corporation)
	OK
0xFC000000-0xFC0FFFFF	Intel(R) PRO/100+ PCI Adapter	OK
0xFC121000-0xFC121FFF	Fujitsu Siemens Computers 82559-based Onboard
Ethernet with WoL and AoL	OK
0xFC100000-0xFC11FFFF	Fujitsu Siemens Computers 82559-based Onboard
Ethernet with WoL and AoL	OK
0xFC500000-0xFC8FFFFF	PCI bus	OK
0xFC500000-0xFC8FFFFF	LSI Logic 53C1010-66 Device	OK
0xFC502000-0xFC5023FF	LSI Logic 53C1010-66 Device	OK
0xFC900000-0xFCCFFFFF	PCI bus	OK
0xFC900000-0xFCCFFFFF	Fibre Channel Controller	OK

[Components]



[Multimedia]



[Audio Codecs]
```

```
CODEC Manufacturer    Description     Status     File Version    Size
     Creation Date
c:\windows\system32\sl_anet.acm Sipro Lab Telecom Inc.     Sipro Lab
Telecom Audio Codec  OK   C:\WINDOWS\system32\SL_ANET.ACM 3.02 84.00 KB
(86,016 bytes)  3/25/2003 1:00 PM
c:\windows\system32\msaud32.acm Microsoft Corporation     Windows Media
Audio Codec     OK   C:\WINDOWS\system32\MSAUD32.ACM 8.00.00.4487
     288.00 KB (294,912 bytes) 3/25/2003 1:00 PM
c:\windows\system32\msadp32.acm Microsoft Corporation          OK
     C:\WINDOWS\system32\MSADP32.ACM 5.2.3790.0 (srv03_rtm.030324-2048)
     14.50 KB (14,848 bytes)   3/25/2003 1:00 PM
c:\windows\system32\msgsm32.acm Microsoft Corporation          OK
     C:\WINDOWS\system32\MSGSM32.ACM 5.2.3790.0 (srv03_rtm.030324-2048)
     20.50 KB (20,992 bytes)   3/25/2003 1:00 PM
c:\windows\system32\msg711.acm  Microsoft Corporation          OK
     C:\WINDOWS\system32\MSG711.ACM  5.2.3790.0 (srv03_rtm.030324-2048)
     10.00 KB (10,240 bytes)   3/25/2003 1:00 PM
c:\windows\system32\l3codeca.acm     Fraunhofer Institut Integrierte
Schaltungen IIS Fraunhofer IIS MPEG Layer-3 Codec    OK
     C:\WINDOWS\system32\L3CODECA.ACM     1, 9, 0, 0305   284.00 KB
(290,816 bytes) 3/25/2003 1:00 PM
c:\windows\system32\tssoft32.acm     DSP GROUP, INC.      OK
     C:\WINDOWS\system32\TSSOFT32.ACM     1.01 9.50 KB (9,728 bytes)
     3/25/2003 1:00 PM
c:\windows\system32\msg723.acm  Microsoft Corporation          OK
     C:\WINDOWS\system32\MSG723.ACM  4.4.4000  116.00 KB (118,784 bytes)
     6/25/2003 11:47 AM
c:\windows\system32\imaadp32.acm     Microsoft Corporation          OK
     C:\WINDOWS\system32\IMAADP32.ACM     5.2.3790.0 (srv03_rtm.030324-
2048) 15.50 KB (15,872 bytes)   3/25/2003 1:00 PM

[Video Codecs]

CODEC Manufacturer    Description     Status     File Version    Size
     Creation Date
c:\windows\system32\msh263.drv  Microsoft Corporation          OK
     C:\WINDOWS\system32\MSH263.DRV  4.4.4000  284.00 KB (290,816 bytes)
     3/25/2003 2:46 AM
c:\windows\system32\msyuv.dll   Microsoft Corporation          OK
     C:\WINDOWS\system32\MSYUV.DLL   5.2.3790.0 (srv03_rtm.030324-2048)
     16.50 KB (16,896 bytes)   3/25/2003 2:49 AM
c:\windows\system32\tsbyuv.dll  Microsoft Corporation          OK
     C:\WINDOWS\system32\TSBYUV.DLL  5.2.3790.0 (srv03_rtm.030324-2048)
     8.00 KB (8,192 bytes)     3/25/2003 2:50 AM
c:\windows\system32\msrle32.dll Microsoft Corporation          OK
     C:\WINDOWS\system32\MSRLE32.DLL 5.2.3790.0 (srv03_rtm.030324-2048)
     10.50 KB (10,752 bytes)   3/25/2003 1:00 PM
c:\windows\system32\iyuv_32.dll Microsoft Corporation          OK
     C:\WINDOWS\system32\IYUV_32.DLL 5.2.3790.0 (srv03_rtm.030324-2048)
     45.00 KB (46,080 bytes)   3/25/2003 2:49 AM
c:\windows\system32\msh261.drv  Microsoft Corporation          OK
     C:\WINDOWS\system32\MSH261.DRV  4.4.4000  180.00 KB (184,320 bytes)
     6/25/2003 11:47 AM
```

```
c:\windows\system32\msvidc32.dll     Microsoft Corporation          OK
     C:\WINDOWS\system32\MSVIDC32.DLL     5.2.3790.0 (srv03_rtm.030324-
2048) 26.50 KB (27,136 bytes)   3/25/2003 1:00 PM

[CD-ROM]

Item Value
Drive D:
Description     CD-ROM Drive
Media Loaded    No
Media Type CD-ROM
Name MITSUMI CD-ROM FX4830T!B
Manufacturer    (Standard CD-ROM drives)
Status     OK
Transfer Rate   Not Available
SCSI Target ID  0
PNP Device ID   IDE\CDROMMITSUMI_CD-
ROM_FX4830T!B________________R02E____\5&3858FEE&0&0.0.0
Driver     c:\windows\system32\drivers\cdrom.sys (5.2.3790.0
(srv03_rtm.030324-2048), 49.50 KB (50,688 bytes), 3/25/2003 1:00 PM)

[Sound Device]

Item Value

[Display]

Item Value
Name RAGE XL PCI Family (Microsoft Corporation)
PNP Device ID
     PCI\VEN_1002&DEV_4752&SUBSYS_007A110A&REV_27\3&13C0B0C5&0&20
Adapter Type    ATI RAGE XL PCI (B41), ATI Technologies Inc. compatible
Adapter Description  RAGE XL PCI Family (Microsoft Corporation)
Adapter RAM     8.00 MB (8,388,608 bytes)
Installed Drivers    ati2drad.dll
Driver Version  5.10.3663.6013
INF File  atiixpad.inf (ati2mpad section)
Color Planes    1
Color Table Entries  4294967296
Resolution 800 x 600 x 72 hertz
Bits/Pixel 32
Memory Address  0xFB000000-0xFC3FFFFF
I/O Port   0x00001000-0x00001C0F
Memory Address  0xFC120000-0xFC120FFF
I/O Port   0x000003B0-0x000003BB
I/O Port   0x000003C0-0x000003DF
Memory Address  0xA0000-0xBFFFF
Driver     c:\windows\system32\drivers\ati2mpad.sys (5.10.3663.6013,
335.38 KB (343,424 bytes), 6/25/2003 1:06 PM)

[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\5&1413D98F&0
Number of Function Keys   12
I/O Port   0x00000060-0x00000060
I/O Port   0x00000064-0x00000064
IRQ Channel     IRQ 1
Driver     c:\windows\system32\drivers\i8042prt.sys (5.2.3790.0
(srv03_rtm.030324-2048), 68.50 KB (70,144 bytes), 3/25/2003 1:00 PM)

[Pointing Device]

Item Value
Hardware Type   PS/2 Compatible Mouse
Number of Buttons    3
Status     OK
PNP Device ID   ACPI\PNP0F13\5&1413D98F&0
Power Management Supported No
Double Click Threshold    6
Handedness Right Handed Operation
IRQ Channel     IRQ 12
Driver     c:\windows\system32\drivers\i8042prt.sys (5.2.3790.0
(srv03_rtm.030324-2048), 68.50 KB (70,144 bytes), 3/25/2003 1:00 PM)

[Modem]

Item Value

[Network]



[Adapter]

Item Value
Name [00000001] Fujitsu Siemens Computers 82559-based Onboard Ethernet
with WoL and AoL
Adapter Type    Ethernet 802.3
Product Type    Fujitsu Siemens Computers 82559-based Onboard Ethernet
with WoL and AoL
Installed  Yes
PNP Device ID
     PCI\VEN_8086&DEV_1229&SUBSYS_004B110A&REV_09\3&13C0B0C5&0&50
Last Reset 7/30/2003 11:03 AM
Index 1
Service Name    E100B
IP Address 129.103.212.1
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     00:30:05:1A:36:94
Memory Address  0xFC121000-0xFC121FFF
I/O Port   0x00001800-0x0000183F
Memory Address  0xFC100000-0xFC11FFFF
IRQ Channel     IRQ 30
Driver     c:\windows\system32\drivers\e100b325.sys (6.6.8.1 built by:
WinDDK, 138.50 KB (141,824 bytes), 6/25/2003 1:06 PM)

Name [00000002] Intel(R) PRO/100+ PCI Adapter
Adapter Type    Ethernet 802.3
Product Type    Intel(R) PRO/100+ PCI Adapter
Installed  Yes
PNP Device ID
     PCI\VEN_8086&DEV_1229&SUBSYS_00098086&REV_05\3&13C0B0C5&0&48
Last Reset 7/30/2003 11:03 AM
Index 2
Service Name    E100B
IP Address 129.103.192.212
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:A0:C9:D5:AB:36
Memory Address  0xFC400000-0xFC4FFFFF
I/O Port   0x00001400-0x0000141F
Memory Address  0xFC000000-0xFC0FFFFF
IRQ Channel     IRQ 18
Driver     c:\windows\system32\drivers\e100b325.sys (6.6.8.1 built by:
WinDDK, 138.50 KB (141,824 bytes), 6/25/2003 1:06 PM)

Name [00000003] RAS Async Adapter
Adapter Type    Not Available
Product Type    RAS Async Adapter
Installed  Yes
PNP Device ID   Not Available
Last Reset 7/30/2003 11:03 AM
Index 3
Service Name    AsyncMac
IP Address Not Available
IP Subnet  Not Available
Default IP Gateway   Not Available
DHCP Enabled    No
DHCP Server     Not Available
DHCP Lease Expires   Not Available
DHCP Lease Obtained  Not Available
MAC Address     Not Available

Name [00000004] WAN Miniport (L2TP)
```

```
Adapter Type    Not Available
Product Type    WAN Miniport (L2TP)
Installed  Yes
PNP Device ID   ROOT\MS_L2TPMINIPORT\0000
Last Reset 7/30/2003 11:03 AM
Index 4
Service Name    Rasl2tp
IP Address Not Available
IP Subnet  Not Available
Default IP Gateway   Not Available
DHCP Enabled    No
DHCP Server     Not Available
DHCP Lease Expires   Not Available
DHCP Lease Obtained  Not Available
MAC Address     Not Available
Driver     c:\windows\system32\drivers\rasl2tp.sys (5.2.3790.0
(srv03_rtm.030324-2048), 77.00 KB (78,848 bytes), 3/25/2003 1:00 PM)

Name [00000005] WAN Miniport (PPTP)
Adapter Type    Wide Area Network (WAN)
Product Type    WAN Miniport (PPTP)
Installed  Yes
PNP Device ID   ROOT\MS_PPTPMINIPORT\0000
Last Reset 7/30/2003 11:03 AM
Index 5
Service Name    PptpMiniport
IP Address Not Available
IP Subnet  Not Available
Default IP Gateway   Not Available
DHCP Enabled    No
DHCP Server     Not Available
DHCP Lease Expires   Not Available
DHCP Lease Obtained  Not Available
MAC Address     50:50:54:50:30:30
Driver     c:\windows\system32\drivers\raspptp.sys (5.2.3790.0
(srv03_rtm.030324-2048), 70.50 KB (72,192 bytes), 3/25/2003 1:00 PM)

Name [00000006] WAN Miniport (PPPOE)
Adapter Type    Wide Area Network (WAN)
Product Type    WAN Miniport (PPPOE)
Installed  Yes
PNP Device ID   ROOT\MS_PPPOEMINIPORT\0000
Last Reset 7/30/2003 11:03 AM
Index 6
Service Name    RasPppoe
IP Address Not Available
IP Subnet  Not Available
Default IP Gateway   Not Available
DHCP Enabled    No
DHCP Server     Not Available
DHCP Lease Expires   Not Available
DHCP Lease Obtained  Not Available
MAC Address     33:50:6F:45:30:30
Driver     c:\windows\system32\drivers\raspppoe.sys (5.2.3790.0
(srv03_rtm.030324-2048), 38.00 KB (38,912 bytes), 3/25/2003 1:00 PM)
```

```

Name [00000007] Direct Parallel
Adapter Type    Not Available
Product Type    Direct Parallel
Installed  Yes
PNP Device ID   ROOT\MS_PTIMINIPORT\0000
Last Reset 7/30/2003 11:03 AM
Index 7
Service Name    Raspti
IP Address Not Available
IP Subnet  Not Available
Default IP Gateway   Not Available
DHCP Enabled    No
DHCP Server     Not Available
DHCP Lease Expires   Not Available
DHCP Lease Obtained  Not Available
MAC Address     Not Available
Driver     c:\windows\system32\drivers\raspti.sys (5.2.3790.0
(srv03_rtm.030324-2048), 18.50 KB (18,944 bytes), 3/25/2003 1:00 PM)

Name [00000008] WAN Miniport (IP)
Adapter Type    Not Available
Product Type    WAN Miniport (IP)
Installed  Yes
PNP Device ID   ROOT\MS_NDISWANIP\0000
Last Reset 7/30/2003 11:03 AM
Index 8
Service Name    NdisWan
IP Address Not Available
IP Subnet  Not Available
Default IP Gateway   Not Available
DHCP Enabled    No
DHCP Server     Not Available
DHCP Lease Expires   Not Available
DHCP Lease Obtained  Not Available
MAC Address     Not Available
Driver     c:\windows\system32\drivers\ndiswan.sys (5.2.3790.0
(srv03_rtm.030324-2048), 96.50 KB (98,816 bytes), 3/25/2003 1:00 PM)

[Protocol]

Item Value
Name MSAFD Tcpip [TCP/IP]
Connectionless Service    No
Guarantees Delivery  Yes
Guarantees Sequencing     Yes
Maximum Address Size 16 bytes
Maximum Message Size 0 bytes
Message Oriented     No
Minimum Address Size 16 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     No
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   Yes
Supports Graceful Closing Yes
Supports Guaranteed Bandwidth  No
Supports Multicasting     No

Name MSAFD Tcpip [UDP/IP]
Connectionless Service    Yes
Guarantees Delivery  No
Guarantees Sequencing     No
Maximum Address Size 16 bytes
Maximum Message Size 63.93 KB (65,467 bytes)
Message Oriented     Yes
Minimum Address Size 16 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     Yes
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth  No
Supports Multicasting     Yes

Name RSVP UDP Service Provider
Connectionless Service    Yes
Guarantees Delivery  No
Guarantees Sequencing     No
Maximum Address Size 16 bytes
Maximum Message Size 63.93 KB (65,467 bytes)
Message Oriented     Yes
Minimum Address Size 16 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     Yes
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  Yes
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth  No
Supports Multicasting     Yes

Name RSVP TCP Service Provider
Connectionless Service    No
Guarantees Delivery  Yes
Guarantees Sequencing     Yes
Maximum Address Size 16 bytes
Maximum Message Size 0 bytes
Message Oriented     No
Minimum Address Size 16 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     No
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  Yes
Supports Expedited Data   Yes
```

```
Supports Graceful Closing Yes
Supports Guaranteed Bandwidth  No
Supports Multicasting     No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{EE3E3AF4-97B5-40D2-A7B3-
7ECEF7FB1B9F}] SEQPACKET 0
Connectionless Service    No
Guarantees Delivery  Yes
Guarantees Sequencing     Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented     Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     No
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth  No
Supports Multicasting     No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{EE3E3AF4-97B5-40D2-A7B3-
7ECEF7FB1B9F}] DATAGRAM 0
Connectionless Service    Yes
Guarantees Delivery  No
Guarantees Sequencing     No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented     Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     Yes
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth  No
Supports Multicasting     No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{DD47AFE2-41DD-439A-A190-
D80B1E3A624F}] SEQPACKET 1
Connectionless Service    No
Guarantees Delivery  Yes
Guarantees Sequencing     Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented     Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     No
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth  No
Supports Multicasting     No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{DD47AFE2-41DD-439A-A190-
D80B1E3A624F}] DATAGRAM 1
Connectionless Service    Yes
Guarantees Delivery  No
Guarantees Sequencing     No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented     Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     Yes
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth  No
Supports Multicasting     No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{CE79D215-52F2-434F-8A02-
79AFE8AD60A6}] SEQPACKET 2
Connectionless Service    No
Guarantees Delivery  Yes
Guarantees Sequencing     Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented     Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     No
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth  No
Supports Multicasting     No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{CE79D215-52F2-434F-8A02-
79AFE8AD60A6}] DATAGRAM 2
Connectionless Service    Yes
Guarantees Delivery  No
Guarantees Sequencing     No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented     Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     Yes
```

```
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth  No
Supports Multicasting     No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{7194AB16-BBB2-4891-ADFB-
5EB2C4719557}] SEQPACKET 3
Connectionless Service    No
Guarantees Delivery  Yes
Guarantees Sequencing     Yes
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented     Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     No
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth  No
Supports Multicasting     No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{7194AB16-BBB2-4891-ADFB-
5EB2C4719557}] DATAGRAM 3
Connectionless Service    Yes
Guarantees Delivery  No
Guarantees Sequencing     No
Maximum Address Size 20 bytes
Maximum Message Size 62.50 KB (64,000 bytes)
Message Oriented     Yes
Minimum Address Size 20 bytes
Pseudo Stream Oriented    No
Supports Broadcasting     Yes
Supports Connect Data     No
Supports Disconnect Data  No
Supports Encryption  No
Supports Expedited Data   No
Supports Graceful Closing No
Supports Guaranteed Bandwidth  No
Supports Multicasting     No

[WinSock]

Item Value
File c:\windows\system32\winsock.dll
Size 2.80 KB (2,864 bytes)
Version   3.10

File c:\windows\system32\wsock32.dll
Size 22.00 KB (22,528 bytes)
```

```
Version    5.2.3790.0 (srv03_rtm.030324-2048)

[Ports]



[Serial]

Item Value

[Parallel]

Item Value

[Storage]



[Drives]

Item Value
Drive A:
Description     3 1/2 Inch Floppy Drive

Drive C:
Description     Local Fixed Disk
Compressed No
File System     NTFS
Size 17.08 GB (18,342,338,560 bytes)
Free Space 13.96 GB (14,987,931,648 bytes)
Volume Name
Volume Serial Number 60ADEDC9

Drive D:
Description     CD-ROM Disc

[Disks]

Item Value
Description     Disk drive
Manufacturer    (Standard disk drives)
Model SEAGATE ST318452LC SCSI Disk Device
Bytes/Sector    512
Media Loaded    Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus   0
SCSI Logical Unit    0
SCSI Port  2
SCSI Target ID  0
Sectors/Track   63
Size 17.09 GB (18,350,599,680 bytes)
Total Cylinders 2,231
Total Sectors   35,841,015
Total Tracks    568,905
```

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Tracks/Cylinder 255
Partition  Disk #0, Partition #0
Partition Size  17.08 GB (18,342,342,144 bytes)
Partition Starting Offset 32,256 bytes

[SCSI]

Item Value
Name LSI Logic 53C1010-66 Device
Manufacturer    LSI Logic Inc.
Status     OK
PNP Device ID
     PCI\VEN_1000&DEV_0021&SUBSYS_6030110A&REV_01\3&1070020&0&50
I/O Port   0x00002000-0x000020FF
Memory Address  0xFC502000-0xFC5023FF
Memory Address  0xFC500000-0xFC8FFFFF
IRQ Channel     IRQ 29
Driver     c:\windows\system32\drivers\sym_u3.sys (5.2.3673.0 (_.020828-
1450), 30.38 KB (31,104 bytes), 3/25/2003 1:00 PM)

[IDE]

Item Value
Name OSB4 IDE Controller
Manufacturer    ServerWorks
Status     OK
PNP Device ID
     PCI\VEN_1166&DEV_0211&SUBSYS_00000000&REV_00\3&13C0B0C5&0&79
I/O Port   0x00001C00-0x00001C0F
Driver     c:\windows\system32\drivers\pciide.sys (5.2.3790.0
(srv03_rtm.030324-2048), 5.50 KB (5,632 bytes), 3/25/2003 1:00 PM)

Name Primary IDE Channel
Manufacturer    (Standard IDE ATA/ATAPI controllers)
Status     OK
PNP Device ID   PCIIDE\IDECHANNEL\4&328CD2DD&0&0
I/O Port   0x000001F0-0x000001F7
I/O Port   0x000003F6-0x000003F6
Driver     c:\windows\system32\drivers\atapi.sys (5.2.3790.0
(srv03_rtm.030324-2048), 89.00 KB (91,136 bytes), 3/25/2003 1:00 PM)

Name Secondary IDE Channel
Manufacturer    (Standard IDE ATA/ATAPI controllers)
Status     OK
PNP Device ID   PCIIDE\IDECHANNEL\4&328CD2DD&0&1
I/O Port   0x00000170-0x00000177
I/O Port   0x00000376-0x00000376
IRQ Channel     IRQ 15
Driver     c:\windows\system32\drivers\atapi.sys (5.2.3790.0
(srv03_rtm.030324-2048), 89.00 KB (91,136 bytes), 3/25/2003 1:00 PM)

[Printing]

Name Driver     Port Name  Server Name
```

```
[Problem Devices]

Device     PNP Device ID   Error Code
Fibre Channel Controller
     PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\3&29E81982&0&48   The
drivers for this device are not installed.

[USB]

Device     PNP Device ID

[Software Environment]



[System Drivers]

Name Description     File Type Started    Start Mode State Status     Error
Control    Accept Pause    Accept Stop
abiosdsk   Abiosdsk   Not Available   Kernel Driver   No    Disabled
     Stopped    OK    Ignore     No    No
acpi Microsoft ACPI Driver     c:\windows\system32\drivers\acpi.sys
     Kernel Driver   Yes  Boot Running    OK    Normal     No    Yes
acpiec     ACPIEC     c:\windows\system32\drivers\acpiec.sys    Kernel
Driver     No    Disabled   Stopped    OK    Normal     No    No
adpu160m   adpu160m   Not Available   Kernel Driver   No    Disabled
     Stopped    OK    Normal     No    No
adpu320    adpu320    Not Available   Kernel Driver   No    Disabled
     Stopped    OK    Normal     No    No
afcnt afcnt Not Available   Kernel Driver   No    Disabled   Stopped    OK
     Normal     No    No
afd  AFD Networking Support Environment
     c:\windows\system32\drivers\afd.sys  Kernel Driver   Yes  Auto
     Running    OK    Normal     No    Yes
aha154x    Aha154x    Not Available   Kernel Driver   No    Disabled
     Stopped    OK    Normal     No    No
aic78u2    aic78u2    Not Available   Kernel Driver   No    Disabled
     Stopped    OK    Normal     No    No
aic78xx    aic78xx    Not Available   Kernel Driver   No    Disabled
     Stopped    OK    Normal     No    No
aliide     AliIde     Not Available   Kernel Driver   No    Disabled
     Stopped    OK    Normal     No    No
asyncmac   RAS Asynchronous Media Driver
     c:\windows\system32\drivers\asyncmac.sys  Kernel Driver   No
     Manual     Stopped    OK    Normal     No    No
atapi Standard IDE/ESDI Hard Disk Controller
     c:\windows\system32\drivers\atapi.sys     Kernel Driver   Yes  Boot
     Running    OK    Normal     No    Yes
atdisk     Atdisk     Not Available   Kernel Driver   No    Disabled
     Stopped    OK    Ignore     No    No
ati2mpad   ati2mpad   c:\windows\system32\drivers\ati2mpad.sys  Kernel
Driver     Yes  Manual     Running    OK    Ignore     No    Yes
atmarpc    ATM ARP Client Protocol
     c:\windows\system32\drivers\atmarpc.sys   Kernel Driver   No
     Manual     Stopped    OK    Normal     No    No
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audstub    Audio Stub Driver    c:\windows\system32\drivers\audstub.sys
     Kernel Driver   Yes  Manual     Running    OK    Normal     No    Yes
beep Beep c:\windows\system32\drivers\beep.sys Kernel Driver   Yes
     System     Running    OK    Normal     No    Yes
cbidf2k    cbidf2k    c:\windows\system32\drivers\cbidf2k.sys   Kernel
Driver     No    Disabled   Stopped    OK    Normal     No    No
cd20xrnt   cd20xrnt   Not Available   Kernel Driver   No    Disabled
     Stopped    OK    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   c:\windows\system32\drivers\cdrom.sys     Kernel
Driver     Yes  System     Running    OK    Normal     No    Yes
changer    Changer    Not Available   Kernel Driver   No    System
     Stopped    OK    Ignore     No    No
clusdisk   Cluster Disk Driver  c:\windows\system32\drivers\clusdisk.sys
     Kernel Driver   No    Disabled   Stopped    OK    Normal     No    No
cmdide     CmdIde     Not Available   Kernel Driver   No    Disabled
     Stopped    OK    Normal     No    No
cpqarray   Cpqarray   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
crcdisk    CRC Disk Filter Driver
     c:\windows\system32\drivers\crcdisk.sys   Kernel Driver   Yes  Boot
     Running    OK    Normal     No    Yes
dac960nt   dac960nt   Not Available   Kernel Driver   No    Disabled
     Stopped    OK    Normal     No    No
dellcerc   dellcerc   Not Available   Kernel Driver   No    Disabled
     Stopped    OK    Normal     No    No
dfsdriver  DfsDriver  c:\windows\system32\drivers\dfs.sys  File System
Driver     Yes  Boot Running    OK    Normal     No    Yes
disk Disk Driver     c:\windows\system32\drivers\disk.sys Kernel Driver
     Yes  Boot Running    OK    Normal     No    Yes
dmboot     dmboot     c:\windows\system32\drivers\dmboot.sys    Kernel
Driver     No    Disabled   Stopped    OK    Normal     No    No
dmio Logical Disk Manager Driver    c:\windows\system32\drivers\dmio.sys
     Kernel Driver   Yes  Boot Running    OK    Normal     No    Yes
dmload     dmload     c:\windows\system32\drivers\dmload.sys    Kernel
Driver     Yes  Boot Running    OK    Normal     No    Yes
dpti2o     dpti2o     Not Available   Kernel Driver   No    Disabled
     Stopped    OK    Normal     No    No
e100b Intel(R) PRO Adapter Driver
     c:\windows\system32\drivers\e100b325.sys  Kernel Driver   Yes
     Manual     Running    OK    Normal     No    Yes
fastfat    Fastfat    c:\windows\system32\drivers\fastfat.sys   File
System Driver   No    Disabled   Stopped    OK    Normal     No    No
fdc  Floppy Disk Controller Driver   c:\windows\system32\drivers\fdc.sys
     Kernel Driver   Yes  Manual     Running    OK    Normal     No    Yes
fips Fips c:\windows\system32\drivers\fips.sys Kernel Driver   Yes
     System     Running    OK    Normal     No    Yes
```

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flpydisk  Floppy Disk Driver  c:\windows\system32\drivers\flpydisk.sys
     Kernel Driver  Yes  Manual    Running   OK   Normal    No   Yes
ftdisk    Volume Manager Driver
     c:\windows\system32\drivers\ftdisk.sys    Kernel Driver  Yes  Boot
     Running   OK   Normal    No   Yes
gpc  Generic Packet Classifier c:\windows\system32\drivers\msgpc.sys
     Kernel Driver  Yes  Manual    Running   OK   Normal    No   Yes
hpn  hpn  Not Available  Kernel Driver  No   Disabled  Stopped   OK
     Normal    No   No
hpt3xx    hpt3xx    Not Available  Kernel Driver  No   Disabled
     Stopped   OK   Normal    No   No
http HTTP c:\windows\system32\drivers\http.sys Kernel Driver  Yes
     Manual    Running   OK   Normal    No   Yes
i2omgmt   i2omgmt   Not Available  Kernel Driver  No   System
     Stopped   OK   Normal    No   No
i2omp i2omp Not Available  Kernel Driver  No   Disabled  Stopped   OK
     Normal    No   No
i8042prt  i8042 Keyboard and PS/2 Mouse Port Driver
     c:\windows\system32\drivers\i8042prt.sys  Kernel Driver  Yes
     System    Running   OK   Normal    No   Yes
iirsp iirsp Not Available  Kernel Driver  No   Disabled  Stopped   OK
     Normal    No   No
imapi CD-Burning Filter Driver  c:\windows\system32\drivers\imapi.sys
     Kernel Driver  No   System    Stopped   OK   Normal    No   No
intelide  IntelIde  Not Available  Kernel Driver  No   Disabled
     Stopped   OK   Normal    No   No
ipfilterdriver  IP Traffic Filter Driver
     c:\windows\system32\drivers\ipfltdrv.sys  Kernel Driver  No
     Manual    Stopped   OK   Normal    No   No
ipinip    IP in IP Tunnel Driver
     c:\windows\system32\drivers\ipinip.sys    Kernel Driver  No
     Manual    Stopped   OK   Normal    No   No
ipnat IP Network Address Translator
     c:\windows\system32\drivers\ipnat.sys     Kernel Driver  No
     Manual    Stopped   OK   Normal    No   No
ipsec IPSEC driver   c:\windows\system32\drivers\ipsec.sys     Kernel
Driver    Yes  System    Running   OK   Normal    No   Yes
ipsraidn  ipsraidn  Not Available  Kernel Driver  No   Disabled
     Stopped   OK   Normal    No   No
irenum    IR Enumerator Service
     c:\windows\system32\drivers\irenum.sys    Kernel Driver  No
     Manual    Stopped   OK   Normal    No   No
isapnp    PnP ISA/EISA Bus Driver
     c:\windows\system32\drivers\isapnp.sys    Kernel Driver  Yes  Boot
     Running   OK   Critical  No   Yes
kbdclass  Keyboard Class Driver
     c:\windows\system32\drivers\kbdclass.sys  Kernel Driver  Yes
     System    Running   OK   Normal    No   Yes
ksecdd    KSecDD    c:\windows\system32\drivers\ksecdd.sys    Kernel
Driver    Yes  Boot Running   OK   Normal    No   Yes
lp6nds35  lp6nds35  Not Available  Kernel Driver  No   Disabled
     Stopped   OK   Normal    No   No
mnmdd mnmdd c:\windows\system32\drivers\mnmdd.sys     Kernel Driver  Yes
     System    Running   OK   Ignore    No   Yes
```

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modem Modem c:\windows\system32\drivers\modem.sys     Kernel Driver  No
     Manual    Stopped   OK   Ignore    No   No
mouclass  Mouse Class Driver  c:\windows\system32\drivers\mouclass.sys
     Kernel Driver  Yes  System    Running   OK   Normal    No   Yes
mountmgr  Mount Point Manager  c:\windows\system32\drivers\mountmgr.sys
     Kernel Driver  Yes  Boot Running   OK   Normal    No   Yes
mraid35x  mraid35x  Not Available  Kernel Driver  No   Disabled
     Stopped   OK   Normal    No   No
mrxdav    WebDav Client Redirector
     c:\windows\system32\drivers\mrxdav.sys    File System Driver  No
     Manual    Stopped   OK   Normal    No   No
mrxsmb    MRXSMB    c:\windows\system32\drivers\mrxsmb.sys    File
System Driver  Yes  System    Running   OK   Normal    No   Yes
msfs Msfs c:\windows\system32\drivers\msfs.sys File System Driver  Yes
     System    Running   OK   Normal    No   Yes
mup  Mup  c:\windows\system32\drivers\mup.sys  File System Driver  Yes
     Boot Running   OK   Normal    No   Yes
ndis NDIS System Driver  c:\windows\system32\drivers\ndis.sys Kernel
Driver    Yes  Boot Running   OK   Normal    No   Yes
ndistapi  Remote Access NDIS TAPI Driver
     c:\windows\system32\drivers\ndistapi.sys  Kernel Driver  Yes
     Manual    Running   OK   Normal    No   Yes
ndisuio   NDIS Usermode I/O Protocol
     c:\windows\system32\drivers\ndisuio.sys   Kernel Driver  No
     Manual    Stopped   OK   Normal    No   No
ndiswan   Remote Access NDIS WAN Driver
     c:\windows\system32\drivers\ndiswan.sys   Kernel Driver  Yes
     Manual    Running   OK   Normal    No   Yes
ndproxy   NDIS Proxy c:\windows\system32\drivers\ndproxy.sys   Kernel
Driver    Yes  Manual    Running   OK   Normal    No   Yes
netbios   NetBIOS Interface   c:\windows\system32\drivers\netbios.sys
     File System Driver  Yes  System    Running   OK   Normal    No
     Yes
netbt NetBios over Tcpip  c:\windows\system32\drivers\netbt.sys
     Kernel Driver  Yes  System    Running   OK   Normal    No   Yes
nfrd960   nfrd960   Not Available  Kernel Driver  No   Disabled
     Stopped   OK   Normal    No   No
npfs Npfs c:\windows\system32\drivers\npfs.sys File System Driver  Yes
     System    Running   OK   Normal    No   Yes
ntfs Ntfs c:\windows\system32\drivers\ntfs.sys File System Driver  Yes
     Disabled  Running   OK   Normal    No   Yes
null Null c:\windows\system32\drivers\null.sys Kernel Driver  Yes
     System    Running   OK   Normal    No   Yes
p3   Intel PentiumIII Processor Driver
     c:\windows\system32\drivers\p3.sys  Kernel Driver  Yes  Manual
     Running   OK   Normal    No   Yes
parport   Parport   c:\windows\system32\drivers\parport.sys   Kernel
Driver    No   Manual    Stopped   OK   Ignore    No   No
partmgr   Partition Manager   c:\windows\system32\drivers\partmgr.sys
     Kernel Driver  Yes  Boot Running   OK   Normal    No   Yes
pci  PCI Bus Driver  c:\windows\system32\drivers\pci.sys  Kernel Driver
     Yes  Boot Running   OK   Critical  No   Yes
pciide    PCIIde    c:\windows\system32\drivers\pciide.sys    Kernel
Driver    Yes  Boot Running   OK   Normal    No   Yes
```

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pcmcia     Pcmcia     c:\windows\system32\drivers\pcmcia.sys    Kernel
Driver     No   Disabled  Stopped   OK   Normal     No   No
pdcomp     PDCOMP     Not Available   Kernel Driver   No   Manual
     Stopped   OK   Ignore    No   No
pdframe    PDFRAME    Not Available   Kernel Driver   No   Manual
     Stopped   OK   Ignore    No   No
pdreli     PDRELI     Not Available   Kernel Driver   No   Manual
     Stopped   OK   Ignore    No   No
pdrframe   PDRFRAME   Not Available   Kernel Driver   No   Manual
     Stopped   OK   Ignore    No   No
perc2 perc2 Not Available   Kernel Driver   No   Disabled  Stopped   OK
     Normal    No   No
perc2hib   perc2hib   Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
pptpminiport    WAN Miniport (PPTP)
     c:\windows\system32\drivers\raspptp.sys   Kernel Driver   Yes
     Manual    Running   OK   Normal    No   Yes
ptilink    Direct Parallel Link Driver
     c:\windows\system32\drivers\ptilink.sys   Kernel Driver   Yes
     Manual    Running   OK   Normal    No   Yes
ql1080     ql1080     Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
ql10wnt    Ql10wnt    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
ql12160    ql12160    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
ql1240     ql1240     Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
ql1280     ql1280     Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
ql2100     ql2100     Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
ql2200     ql2200     Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
ql2300     ql2300     Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
rasacd     Remote Access Auto Connection Driver
     c:\windows\system32\drivers\rasacd.sys    Kernel Driver   Yes
     System    Running   OK   Normal    No   Yes
rasl2tp    WAN Miniport (L2TP)  c:\windows\system32\drivers\rasl2tp.sys
     Kernel Driver   Yes  Manual    Running   OK   Normal    No   Yes
raspppoe   Remote Access PPPOE Driver
     c:\windows\system32\drivers\raspppoe.sys  Kernel Driver   Yes
     Manual    Running   OK   Normal    No   Yes
raspti     Direct Parallel c:\windows\system32\drivers\raspti.sys
     Kernel Driver   Yes  Manual    Running   OK   Normal    No   Yes
rdbss Rdbss c:\windows\system32\drivers\rdbss.sys     File System Driver
     Yes  System    Running   OK   Normal    No   Yes
rdpcdd     RDPCDD     c:\windows\system32\drivers\rdpcdd.sys    Kernel
Driver     Yes  System    Running   OK   Ignore    No   Yes
rdpdr Terminal Server Device Redirector Driver
     c:\windows\system32\drivers\rdpdr.sys     Kernel Driver   Yes
     Manual    Running   OK   Normal    No   Yes
rdpwd RDPWD c:\windows\system32\drivers\rdpwd.sys     Kernel Driver   No
     Manual    Stopped   OK   Ignore    No   No
```

```
redbook    Digital CD Audio Playback Filter Driver
     c:\windows\system32\drivers\redbook.sys   Kernel Driver   Yes
     System    Running   OK   Normal    No   Yes
secdrv     Secdrv     c:\windows\system32\drivers\secdrv.sys    Kernel
Driver     No   Manual    Stopped   OK   Normal    No   No
serial     Serial     c:\windows\system32\drivers\serial.sys    Kernel
Driver     No   Auto Stopped   OK   Ignore    No   No
sfloppy    Sfloppy    c:\windows\system32\drivers\sfloppy.sys   Kernel
Driver     No   System    Stopped   OK   Ignore    No   No
simbad     Simbad     Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
sparrow    Sparrow    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
srv  Srv  c:\windows\system32\drivers\srv.sys  File System Driver   Yes
     Manual    Running   OK   Normal    No   Yes
swenum     Software Bus Driver  c:\windows\system32\drivers\swenum.sys
     Kernel Driver   Yes  Manual    Running   OK   Normal    No   Yes
symc810    symc810    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
symc8xx    symc8xx    Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
symmpi     symmpi     Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
sym_hi     sym_hi     Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
sym_u3     sym_u3     c:\windows\system32\drivers\sym_u3.sys    Kernel
Driver     Yes  Boot Running   OK   Normal    No   Yes
tcpip TCP/IP Protocol Driver    c:\windows\system32\drivers\tcpip.sys
     Kernel Driver   Yes  System    Running   OK   Normal    No   Yes
tdpipe     TDPIPE     c:\windows\system32\drivers\tdpipe.sys    Kernel
Driver     No   Manual    Stopped   OK   Ignore    No   No
tdtcp TDTCP c:\windows\system32\drivers\tdtcp.sys     Kernel Driver   No
     Manual    Stopped   OK   Ignore    No   No
termdd     Terminal Device Driver
     c:\windows\system32\drivers\termdd.sys    Kernel Driver   Yes
     System    Running   OK   Normal    No   Yes
toside     TosIde     Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
udfs Udfs c:\windows\system32\drivers\udfs.sys File System Driver   No
     Disabled  Stopped   OK   Normal    No   No
ultra ultra Not Available   Kernel Driver   No   Disabled  Stopped   OK
     Normal    No   No
update     Microcode Update Driver
     c:\windows\system32\drivers\update.sys    Kernel Driver   Yes
     Manual    Running   OK   Normal    No   Yes
vgasave    VGA Display Controller.   c:\windows\system32\drivers\vga.sys
     Kernel Driver   Yes  System    Running   OK   Ignore    No   Yes
viaide     ViaIde     Not Available   Kernel Driver   No   Disabled
     Stopped   OK   Normal    No   No
volsnap    Storage volumes c:\windows\system32\drivers\volsnap.sys
     Kernel Driver   Yes  Boot Running   OK   Normal    No   Yes
wanarp     Remote Access IP ARP Driver
     c:\windows\system32\drivers\wanarp.sys    Kernel Driver   Yes
     Manual    Running   OK   Normal    No   Yes
```

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wdica WDICA Not Available   Kernel Driver   No   Manual    Stopped   OK
     Ignore    No   No
wlbs Network Load Balancing    c:\windows\system32\drivers\wlbs.sys
     Kernel Driver   No   Manual    Stopped   OK   Normal    No   No

[Signed Drivers]

Device Name    Signed    Device Class   Driver Version  Driver Date
     Manufacturer   INF Name  Driver Name    Device ID
Not Available   Not Available   Not Available   Not Available   Not
Available  Not Available   Not Available   Not Available   HTREE\ROOT\0
ACPI Multiprocessor PC    Yes  COMPUTER  5.2.3790.0 10/1/2002  (Standard
computers) hal.inf   Not Available   ROOT\ACPI_HAL\0000
Microsoft ACPI-Compliant System Yes  SYSTEM    5.2.3790.0 10/1/2002
     Microsoft  acpi.inf  Not Available   ACPI_HAL\PNP0C08\0
Intel PentiumIII Processor Yes  PROCESSOR  5.2.3790.0 10/1/2002  Intel
     cpu.inf   Not Available   ACPI\GENUINEINTEL_-
_X86_FAMILY_6_MODEL_11\_0
Intel PentiumIII Processor Yes  PROCESSOR  5.2.3790.0 10/1/2002  Intel
     cpu.inf   Not Available   ACPI\GENUINEINTEL_-
_X86_FAMILY_6_MODEL_11\_1
ACPI Power Button    Yes  SYSTEM    5.2.3790.0 10/1/2002  (Standard
system devices) machine.inf    Not Available   ACPI\PNP0C0C\2&DABA3FF&0
PCI bus    Yes  SYSTEM    5.2.3790.0 10/1/2002  (Standard system devices)
     machine.inf    Not Available   ACPI\PNP0A03\1
ServerWorks (RCC) CNB20-HE Processor to PCI Bridge   Yes  SYSTEM
     5.2.3790.0 10/1/2002  ServerWorks (RCC)    machine.inf    Not
Available  PCI\VEN_1166&DEV_0008&SUBSYS_00000000&REV_23\3&13C0B0C5&0&00
ServerWorks (RCC) CNB20-HE Processor to PCI Bridge   Yes  SYSTEM
     5.2.3790.0 10/1/2002  ServerWorks (RCC)    machine.inf    Not
Available  PCI\VEN_1166&DEV_0008&SUBSYS_00000000&REV_01\3&13C0B0C5&0&01
PCI standard host CPU bridge   Yes  SYSTEM    5.2.3790.0 10/1/2002
     (Standard system devices) machine.inf    Not Available
     PCI\VEN_1166&DEV_0006&SUBSYS_00000000&REV_01\3&13C0B0C5&0&02
PCI standard host CPU bridge   Yes  SYSTEM    5.2.3790.0 10/1/2002
     (Standard system devices) machine.inf    Not Available
     PCI\VEN_1166&DEV_0006&SUBSYS_00000000&REV_01\3&13C0B0C5&0&03
RAGE XL PCI Family (Microsoft Corporation)     Yes  DISPLAY
     5.10.2600.6014  8/8/2001  ATI Technologies Inc.     atiixpad.inf
     Not Available
     PCI\VEN_1002&DEV_4752&SUBSYS_007A110A&REV_27\3&13C0B0C5&0&20
Default Monitor Yes  MONITOR   5.1.2001.0 6/6/2001  (Standard monitor
types)    monitor.inf    Not Available
     DISPLAY\DEFAULT_MONITOR\4&383927BA&0&80000000&00&04
Intel(R) PRO/100+ PCI Adapter   Yes  NET  6.6.8.1   10/1/2002  Intel
     net557.inf Not Available
     PCI\VEN_8086&DEV_1229&SUBSYS_00098086&REV_05\3&13C0B0C5&0&48
Fujitsu Siemens Computers 82559-based Onboard Ethernet with WoL and AoL
     Yes  NET  6.6.8.1   10/1/2002  Fujitsu Siemens net557.inf Not
Available  PCI\VEN_8086&DEV_1229&SUBSYS_004B110A&REV_09\3&13C0B0C5&0&50
ServerWorks Champion OSB4 - SouthBridge 4 Yes  SYSTEM    5.2.3790.0
     10/1/2002  ServerWorks (RCC)    machine.inf    Not Available
     PCI\VEN_1166&DEV_0200&SUBSYS_00000000&REV_51\3&13C0B0C5&0&78
ISAPNP Read Data Port     Yes  SYSTEM    5.2.3790.0 10/1/2002  (Standard
system devices) machine.inf    Not Available   ISAPNP\READDATAPORT\0
```

```
Motherboard resources     Yes  SYSTEM    5.2.3790.0 10/1/2002  (Standard
system devices) machine.inf    Not Available   ACPI\PNP0C02\4&C1B9986&0
Direct memory access controller Yes  SYSTEM    5.2.3790.0 10/1/2002
     (Standard system devices) machine.inf    Not Available
     ACPI\PNP0200\4&C1B9986&0
Programmable interrupt controller    Yes  SYSTEM    5.2.3790.0 10/1/2002
     (Standard system devices) machine.inf    Not Available
     ACPI\PNP0000\4&C1B9986&0
System CMOS/real time clock    Yes  SYSTEM    5.2.3790.0 10/1/2002
     (Standard system devices) machine.inf    Not Available
     ACPI\PNP0B00\4&C1B9986&0
System timer   Yes  SYSTEM    5.2.3790.0 10/1/2002  (Standard system
devices)  machine.inf    Not Available   ACPI\PNP0100\4&C1B9986&0
Numeric data processor    Yes  SYSTEM    5.2.3790.0 10/1/2002  (Standard
system devices) machine.inf    Not Available   ACPI\PNP0C04\4&C1B9986&0
System speaker  Yes  SYSTEM    5.2.3790.0 10/1/2002  (Standard system
devices)  machine.inf    Not Available   ACPI\PNP0800\4&C1B9986&0
Generic Bus    Yes  SYSTEM    5.2.3790.0 10/1/2002  (Standard system
devices)  machine.inf    Not Available   ACPI\PNP0A05\4&C1B9986&0
Standard 101/102-Key or Microsoft Natural PS/2 Keyboard   Yes  KEYBOARD
     5.2.3790.0 10/1/2002  (Standard keyboards) keyboard.inf   Not
Available  ACPI\PNP0303\5&1413D98F&0
PS/2 Compatible Mouse     Yes  MOUSE 5.2.3790.0 10/1/2002  Microsoft
     msmouse.inf    Not Available   ACPI\PNP0F13\5&1413D98F&0
Standard floppy disk controller Yes  FDC  5.2.3790.0 10/1/2002  (Standard
floppy disk controllers)  fdc.inf   Not Available
     ACPI\PNP0700\5&1413D98F&0
Floppy disk drive    Yes  FLOPPYDISK 5.2.3790.0 10/1/2002  (Standard
floppy disk drives)  flpydisk.inf   Not Available
     FDC\GENERIC_FLOPPY_DRIVE\6&38B39496&0&0
OSB4 IDE Controller  Yes  HDC  5.2.3790.0 10/1/2002  ServerWorks
     mshdc.inf Not Available
     PCI\VEN_1166&DEV_0211&SUBSYS_00000000&REV_00\3&13C0B0C5&0&79
Primary IDE Channel  Yes  HDC  5.2.3790.0 10/1/2002  (Standard IDE
ATA/ATAPI controllers)    mshdc.inf Not Available
     PCIIDE\IDECHANNEL\4&328CD2DD&0&0
Secondary IDE Channel     Yes  HDC  5.2.3790.0 10/1/2002  (Standard IDE
ATA/ATAPI controllers)    mshdc.inf Not Available
     PCIIDE\IDECHANNEL\4&328CD2DD&0&1
CD-ROM Drive   Yes  CDROM 5.2.3790.0 10/1/2002  (Standard CD-ROM drives)
     cdrom.inf Not Available   IDE\CDROMMITSUMI_CD-
ROM_FX4830T!B________________R02E____\5&3858FEE&0&0.0.0
PCI bus    Yes  SYSTEM    5.2.3790.0 10/1/2002  (Standard system devices)
     machine.inf    Not Available   ACPI\PNP0A03\2
LSI Logic 53C1010-66 Device    Yes  SCSIADAPTER    5.2.3790.0 10/1/2002
     LSI Logic Inc.  pnpscsi.inf    Not Available
     PCI\VEN_1000&DEV_0021&SUBSYS_6030110A&REV_01\3&1070020&0&50
Disk drive Yes  DISKDRIVE  5.2.3790.0 10/1/2002  (Standard disk drives)
     disk.inf  Not Available
     SCSI\DISK&VEN_SEAGATE&PROD_ST318452LC&REV_8501\4&3180F9AC&0&000
HP SAF-TE SCSI Processor Device Yes  SYSTEM    5.2.3790.0 10/1/2002  HP
     scsidev.inf    Not Available
     SCSI\PROCESSOR&VEN_SDR&PROD_GEM318&REV_0\4&3180F9AC&0&080
PCI bus    Yes  SYSTEM    5.2.3790.0 10/1/2002  (Standard system devices)
     machine.inf    Not Available   ACPI\PNP0A03\3
```

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Fibre Channel Controller  Not Available   UNKNOWN   Not Available   Not
Available  Not Available   Not Available   Not Available
     PCI\VEN_1077&DEV_2312&SUBSYS_010C1077&REV_02\3&29E81982&0&48
ACPI Fixed Feature Button Yes  SYSTEM    5.2.3790.0 10/1/2002  (Standard
system devices) machine.inf    Not Available
     ACPI\FIXEDBUTTON\2&DABA3FF&0
Logical Disk Manager Yes  SYSTEM    5.2.3790.0 10/1/2002  (Standard
system devices) machine.inf    Not Available   ROOT\DMIO\0000
Volume Manager  Yes  SYSTEM    5.2.3790.0 10/1/2002  (Standard system
devices)  machine.inf    Not Available   ROOT\FTDISK\0000
Generic volume  Yes  VOLUME    5.2.3790.0 10/1/2002  Microsoft  volume.inf
     Not Available
     STORAGE\VOLUME\1&30A96598&0&SIGNATURE996A996AOFFSET7E00LENGTH44549EE
00
AFD Networking Support Environment   Not Available   LEGACYDRIVER   Not
Available  Not Available   Not Available   Not Available   Not Available
     ROOT\LEGACY_AFD\0000
Beep Not Available   LEGACYDRIVER   Not Available   Not Available   Not
Available  Not Available   Not Available   ROOT\LEGACY_BEEP\0000
CRC Disk Filter Driver    Not Available   LEGACYDRIVER   Not Available
     Not Available   Not Available   Not Available   Not Available
     ROOT\LEGACY_CRCDISK\0000
dmboot    Not Available   LEGACYDRIVER   Not Available   Not Available
     Not Available   Not Available   Not Available
     ROOT\LEGACY_DMBOOT\0000
dmload    Not Available   LEGACYDRIVER   Not Available   Not Available
     Not Available   Not Available   Not Available
     ROOT\LEGACY_DMLOAD\0000
Fips Not Available   LEGACYDRIVER   Not Available   Not Available   Not
Available  Not Available   Not Available   ROOT\LEGACY_FIPS\0000
Generic Packet Classifier Not Available   LEGACYDRIVER   Not Available
     Not Available   Not Available   Not Available   Not Available
     ROOT\LEGACY_GPC\0000
HTTP Not Available   LEGACYDRIVER   Not Available   Not Available   Not
Available  Not Available   Not Available   ROOT\LEGACY_HTTP\0000
IPSEC driver   Not Available   LEGACYDRIVER   Not Available   Not
Available  Not Available   Not Available   Not Available
     ROOT\LEGACY_IPSEC\0000
ksecdd    Not Available   LEGACYDRIVER   Not Available   Not Available
     Not Available   Not Available   Not Available
     ROOT\LEGACY_KSECDD\0000
mnmdd Not Available   LEGACYDRIVER   Not Available   Not Available   Not
Available  Not Available   Not Available   ROOT\LEGACY_MNMDD\0000
mountmgr  Not Available   LEGACYDRIVER   Not Available   Not Available
     Not Available   Not Available   Not Available
     ROOT\LEGACY_MOUNTMGR\0000
NDIS System Driver   Not Available   LEGACYDRIVER   Not Available   Not
Available  Not Available   Not Available   Not Available
     ROOT\LEGACY_NDIS\0000
Remote Access NDIS TAPI Driver  Not Available   LEGACYDRIVER   Not
Available  Not Available   Not Available   Not Available   Not Available
     ROOT\LEGACY_NDISTAPI\0000
NDIS Usermode I/O Protocol Not Available   LEGACYDRIVER   Not Available
     Not Available   Not Available   Not Available   Not Available
     ROOT\LEGACY_NDISUIO\0000
```

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NDProxy   Not Available   LEGACYDRIVER   Not Available   Not Available
     Not Available   Not Available   Not Available
     ROOT\LEGACY_NDPROXY\0000
NetBios over Tcpip   Not Available   LEGACYDRIVER   Not Available   Not
Available  Not Available   Not Available   Not Available
     ROOT\LEGACY_NETBT\0000
Null Not Available   LEGACYDRIVER   Not Available   Not Available   Not
Available  Not Available   Not Available   ROOT\LEGACY_NULL\0000
Partition Manager   Not Available   LEGACYDRIVER   Not Available   Not
Available  Not Available   Not Available   Not Available
     ROOT\LEGACY_PARTMGR\0000
Remote Access Auto Connection Driver Not Available   LEGACYDRIVER   Not
Available  Not Available   Not Available   Not Available   Not Available
     ROOT\LEGACY_RASACD\0000
RDPCDD    Not Available   LEGACYDRIVER   Not Available   Not Available
     Not Available   Not Available   Not Available
     ROOT\LEGACY_RDPCDD\0000
TCP/IP Protocol Driver   Not Available   LEGACYDRIVER   Not Available
     Not Available   Not Available   Not Available   Not Available
     ROOT\LEGACY_TCPIP\0000
VGA Display Controller.   Not Available   LEGACYDRIVER   Not Available
     Not Available   Not Available   Not Available   Not Available
     ROOT\LEGACY_VGASAVE\0000
volsnap   Not Available   LEGACYDRIVER   Not Available   Not Available
     Not Available   Not Available   Not Available
     ROOT\LEGACY_VOLSNAP\0000
Remote Access IP ARP Driver   Not Available   LEGACYDRIVER   Not
Available  Not Available   Not Available   Not Available   Not Available
     ROOT\LEGACY_WANARP\0000
Audio Codecs   Yes  MEDIA 5.2.3790.0 10/1/2002  (Standard system devices)
     wave.inf  Not Available   ROOT\MEDIA\MS_MMACM
Legacy Audio Drivers Yes  MEDIA 5.2.3790.0 10/1/2002  (Standard system
devices)  wave.inf  Not Available   ROOT\MEDIA\MS_MMDRV
Media Control Devices    Yes  MEDIA 5.2.3790.0 10/1/2002  (Standard
system devices) wave.inf  Not Available   ROOT\MEDIA\MS_MMMCI
Legacy Video Capture Devices   Yes  MEDIA 5.2.3790.0 10/1/2002  (Standard
system devices) wave.inf  Not Available   ROOT\MEDIA\MS_MMVCD
Video Codecs   Yes  MEDIA 5.2.3790.0 10/1/2002  (Standard system devices)
     wave.inf  Not Available   ROOT\MEDIA\MS_MMVID
WAN Miniport (L2TP)  Yes  NET  5.2.3790.0 10/1/2002  Microsoft
     netrasa.inf    Not Available   ROOT\MS_L2TPMINIPORT\0000
WAN Miniport (IP)    Yes  NET  5.2.3790.0 10/1/2002  Microsoft
     netrasa.inf    Not Available   ROOT\MS_NDISWANIP\0000
WAN Miniport (PPPOE) Yes  NET  5.2.3790.0 10/1/2002  Microsoft
     netrasa.inf    Not Available   ROOT\MS_PPPOEMINIPORT\0000
WAN Miniport (PPTP)  Yes  NET  5.2.3790.0 10/1/2002  Microsoft
     netrasa.inf    Not Available   ROOT\MS_PPTPMINIPORT\0000
Direct Parallel Yes  NET  5.2.3790.0 10/1/2002  Microsoft  netrasa.inf
     Not Available   ROOT\MS_PTIMINIPORT\0000
Terminal Server Device Redirector   Yes  SYSTEM    5.2.3790.0 10/1/2002
     (Standard system devices) machine.inf    Not Available
     ROOT\RDPDR\0000
Terminal Server Keyboard Driver Yes  SYSTEM    5.2.3790.0 10/1/2002
     (Standard system devices) machine.inf    Not Available
     ROOT\RDP_KBD\0000
```

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Terminal Server Mouse Driver    Yes  SYSTEM     5.2.3790.0 10/1/2002
     (Standard system devices) machine.inf     Not Available
     ROOT\RDP_MOU\0000
Plug and Play Software Device Enumerator  Yes  SYSTEM     5.2.3790.0
     10/1/2002  (Standard system devices) machine.inf     Not Available
     ROOT\SYSTEM\0000
Microcode Update Device   Yes  SYSTEM     5.2.3790.0 10/1/2002  (Standard
system devices) machine.inf     Not Available   ROOT\SYSTEM\0001

[Environment Variables]

Variable  Value User Name
ComSpec   %SystemRoot%\system32\cmd.exe   <SYSTEM>
Path
     %SystemRoot%\system32;%SystemRoot%;%SystemRoot%\System32\Wbem;C:\Pro
gram 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>
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    C200CL2\Administrator
TMP  %USERPROFILE%\Local Settings\Temp    C200CL2\Administrator

[Print Jobs]

Document  Size Owner Notify    Status    Time Submitted  Start Time Until
Time Elapsed Time    Pages Printed   Job ID    Priority   Parameters
     Driver    Print Processor Host Print Queue     Data Type  Name

[Network Connections]

Local Name Remote Name     Type Status    User Name

[Running Tasks]

Name Path Process ID Priority  Min Working Set Max Working Set Start Time
     Version   Size File Date
system idle process  Not Available   0    0    Not Available   Not
Available  Not Available   Not Available   Not Available   Not Available
system    Not Available   4    8    0    1413120   Not Available   Not
Available  Not Available   Not Available
```

```
smss.exe  Not Available   484  11   204800    1413120   7/30/2003 11:03
AM   Not Available   Not Available   Not Available
csrss.exe Not Available   532  13   Not Available   Not Available
     7/30/2003 11:03 AM   Not Available   Not Available   Not Available
winlogon.exe    c:\windows\system32\winlogon.exe     556  13   204800
     1413120   7/30/2003 11:03 AM   5.2.3790.0 (srv03_rtm.030324-2048)
     536.50 KB (549,376 bytes) 3/25/2003 1:00 PM
services.exe    c:\windows\system32\services.exe     600  9    204800
     1413120   7/30/2003 11:03 AM   5.2.3790.0 (srv03_rtm.030324-2048)
     102.00 KB (104,448 bytes) 3/25/2003 1:00 PM
lsass.exe c:\windows\system32\lsass.exe  612  9    204800    1413120
     7/30/2003 11:03 AM   5.2.3790.0 (srv03_rtm.030324-2048)   13.00 KB
(13,312 bytes)  3/25/2003 1:00 PM
svchost.exe     c:\windows\system32\svchost.exe 788  8    204800
     1413120   7/30/2003 11:03 AM   5.2.3790.0 (srv03_rtm.030324-2048)
     13.00 KB (13,312 bytes)   3/25/2003 1:00 PM
svchost.exe     c:\windows\system32\svchost.exe 836  8    204800
     1413120   7/30/2003 11:03 AM   5.2.3790.0 (srv03_rtm.030324-2048)
     13.00 KB (13,312 bytes)   3/25/2003 1:00 PM
svchost.exe     Not Available   972  8    Not Available   Not Available
     7/30/2003 11:03 AM   Not Available   Not Available   Not Available
svchost.exe     c:\windows\system32\svchost.exe 1008 8    204800
     1413120   7/30/2003 11:03 AM   5.2.3790.0 (srv03_rtm.030324-2048)
     13.00 KB (13,312 bytes)   3/25/2003 1:00 PM
msdtc.exe Not Available   1128 8    Not Available   Not Available
     7/30/2003 11:03 AM   Not Available   Not Available   Not Available
svchost.exe     c:\windows\system32\svchost.exe 1228 8    204800
     1413120   7/30/2003 11:03 AM   5.2.3790.0 (srv03_rtm.030324-2048)
     13.00 KB (13,312 bytes)   3/25/2003 1:00 PM
inetinfo.exe    c:\windows\system32\inetsrv\inetinfo.exe  1268 8
     204800    1413120   7/30/2003 11:03 AM   6.0.3790.0
(srv03_rtm.030324-2048)   13.00 KB (13,312 bytes)   6/25/2003 2:48 PM
explorer.exe    c:\windows\explorer.exe   1744 8    204800    1413120
     7/30/2003 11:03 AM   6.00.3790.0 (srv03_rtm.030324-2048)  1,008.50
KB (1,032,704 bytes) 3/25/2003 1:00 PM
svchost.exe     c:\windows\system32\svchost.exe 1888 8    204800
     1413120   7/30/2003 11:03 AM   5.2.3790.0 (srv03_rtm.030324-2048)
     13.00 KB (13,312 bytes)   3/25/2003 1:00 PM
wmiprvse.exe    Not Available   1352 8    Not Available   Not Available
     7/30/2003 11:05 AM   Not Available   Not Available   Not Available
dllhost.exe     c:\windows\system32\dllhost.exe 1992 8    204800
     1413120   7/30/2003 11:11 AM   5.2.3790.0 (srv03_rtm.030324-2048)
     5.50 KB (5,632 bytes)     3/25/2003 1:00 PM
wmiprvse.exe    Not Available   4592 8    Not Available   Not Available
     7/30/2003 2:06 PM    Not Available   Not Available   Not Available
helpctr.exe     c:\windows\pchealth\helpctr\binaries\helpctr.exe     2584
     8    204800    1413120   7/30/2003 2:08 PM    5.2.3790.0
(srv03_rtm.030324-2048)   764.00 KB (782,336 bytes) 6/25/2003 11:47 AM
helpsvc.exe     c:\windows\pchealth\helpctr\binaries\helpsvc.exe     4212
     8    204800    1413120   7/30/2003 2:08 PM    5.2.3790.0
(srv03_rtm.030324-2048)   720.00 KB (737,280 bytes) 6/25/2003 11:47 AM

[Loaded Modules]

Name Version   Size File Date Manufacturer    Path
```

```
winlogon   5.2.3790.0 (srv03_rtm.030324-2048)   536.50 KB (549,376 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\winlogon.exe
ntdll5.2.3790.0 (srv03_rtm.030324-2048)   722.50 KB (739,840 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ntdll.dll
kernel32   5.2.3790.0 (srv03_rtm.030324-2048)   965.00 KB (988,160 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\kernel32.dll
msvcrt     7.0.3790.0 (srv03_rtm.030324-2048)   319.50 KB (327,168 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\msvcrt.dll
advapi32   5.2.3790.0 (srv03_rtm.030324-2048)   559.50 KB (572,928 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\advapi32.dll
rpcrt4     5.2.3790.0 (srv03_rtm.030324-2048)   643.50 KB (658,944 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rpcrt4.dll
user32     5.2.3790.0 (srv03_rtm.030324-2048)   562.00 KB (575,488 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\user32.dll
gdi325.2.3790.0 (srv03_rtm.030324-2048)   263.00 KB (269,312 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\gdi32.dll
userenv    5.2.3790.0 (srv03_rtm.030324-2048)   732.50 KB (750,080 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\userenv.dll
nddeapi    5.2.3790.0 (srv03_rtm.030324-2048)   16.00 KB (16,384 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\nddeapi.dll
crypt32    5.131.3790.0 (srv03_rtm.030324-2048) 598.00 KB (612,352 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\crypt32.dll
msasn1     5.2.3790.0 (srv03_rtm.030324-2048)   58.00 KB (59,392 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\msasn1.dll
secur32    5.2.3790.0 (srv03_rtm.030324-2048)   63.00 KB (64,512 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\secur32.dll
winsta     5.2.3790.0 (srv03_rtm.030324-2048)   51.00 KB (52,224 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\winsta.dll
netapi32   5.2.3790.0 (srv03_rtm.030324-2048)   317.00 KB (324,608 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\netapi32.dll
profmap    5.2.3790.0 (srv03_rtm.030324-2048)   22.00 KB (22,528 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\profmap.dll
regapi     5.2.3790.0 (srv03_rtm.030324-2048)   48.50 KB (49,664 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\regapi.dll
ws2_32     5.2.3790.0 (srv03_rtm.030324-2048)   87.50 KB (89,600 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ws2_32.dll
```

```
ws2help    5.2.3790.0 (srv03_rtm.030324-2048)   19.50 KB (19,968 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ws2help.dll
psapi5.2.3790.0 (srv03_rtm.030324-2048)   21.50 KB (22,016 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\psapi.dll
version    5.2.3790.0 (srv03_rtm.030324-2048)   17.00 KB (17,408 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\version.dll
setupapi   5.2.3790.0 (srv03_rtm.030324-2048)   1,014.50 KB (1,038,848
bytes)     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\setupapi.dll
msgina     5.2.3790.0 (srv03_rtm.030324-2048)   1.14 MB (1,191,936 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\msgina.dll
shsvcs     6.00.3790.0 (srv03_rtm.030324-2048)  121.50 KB (124,416 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\shsvcs.dll
shlwapi    6.00.3790.0 (srv03_rtm.030324-2048)  281.00 KB (287,744 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\shlwapi.dll
sfc  5.2.3790.0 (srv03_rtm.030324-2048)   4.50 KB (4,608 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\sfc.dll
sfc_os     5.2.3790.0 (srv03_rtm.030324-2048)   133.00 KB (136,192 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\sfc_os.dll
wintrust   5.131.3790.0 (srv03_rtm.030324-2048) 161.50 KB (165,376 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\wintrust.dll
ole325.2.3790.0 (srv03_rtm.030324-2048)   1.13 MB (1,187,328 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ole32.dll
imagehlp   5.2.3790.0 (srv03_rtm.030324-2048)   142.50 KB (145,920 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\imagehlp.dll
comctl32   6.0 (srv03_rtm.030324-2048)     907.00 KB (928,768 bytes)
     6/25/2003 1:02 PM    Microsoft Corporation
     c:\windows\winsxs\x86_microsoft.windows.common-
controls_6595b64144ccf1df_6.0.100.0_x-ww_8417450b\comctl32.dll
winscard   5.2.3790.0 (srv03_rtm.030324-2048)   98.50 KB (100,864 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\winscard.dll
wtsapi32   5.2.3790.0 (srv03_rtm.030324-2048)   17.50 KB (17,920 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\wtsapi32.dll
sxs  5.2.3790.0 (srv03_rtm.030324-2048)   733.00 KB (750,592 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\sxs.dll
winmm5.2.3790.0 (srv03_rtm.030324-2048)   166.00 KB (169,984 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\winmm.dll
shell32    6.00.3790.0 (srv03_rtm.030324-2048)  7.79 MB (8,166,400 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\shell32.dll
```

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rsaenh     5.2.3790.0 (srv03_rtm.030324-2048)   176.83 KB (181,072 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rsaenh.dll
wldap32    5.2.3790.0 (srv03_rtm.030324-2048)   158.00 KB (161,792 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\wldap32.dll
cscdll     5.2.3790.0 (srv03_rtm.030324-2048)   99.00 KB (101,376 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\cscdll.dll
wlnotify   5.2.3790.0 (srv03_rtm.030324-2048)   87.50 KB (89,600 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\wlnotify.dll
winspool   5.2.3790.0 (srv03_rtm.030324-2048)   140.00 KB (143,360 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\winspool.drv
mpr  5.2.3790.0 (srv03_rtm.030324-2048)   56.00 KB (57,344 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\mpr.dll
comctl32   5.82 (srv03_rtm.030324-2048)   561.00 KB (574,464 bytes)
     6/25/2003 1:02 PM    Microsoft Corporation
     c:\windows\winsxs\x86_microsoft.windows.common-
controls_6595b64144ccf1df_5.82.0.0_x-ww_8a69ba05\comctl32.dll
uxtheme    6.00.3790.0 (srv03_rtm.030324-2048)  196.00 KB (200,704 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\uxtheme.dll
samlib     5.2.3790.0 (srv03_rtm.030324-2048)   49.00 KB (50,176 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\samlib.dll
cscui 5.2.3790.0 (srv03_rtm.030324-2048)   305.00 KB (312,320 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\cscui.dll
oleaut32   5.2.3790.0 486.00 KB (497,664 bytes) 3/25/2003 1:00 PM
     Microsoft Corporation     c:\windows\system32\oleaut32.dll
clbcatq    2001.12.4720.0 (srv03_rtm.030324-2048)    481.00 KB (492,544
bytes)     6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\clbcatq.dll
comres     2001.12.4720.0 (srv03_rtm.030324-2048)    778.00 KB (796,672
bytes)     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\comres.dll
ntmarta    5.2.3790.0 (srv03_rtm.030324-2048)   114.00 KB (116,736 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ntmarta.dll
wbemprox   5.2.3790.0 (srv03_rtm.030324-2048)   17.50 KB (17,920 bytes)
     6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\wbem\wbemprox.dll
wbemcomn   5.2.3790.0 (srv03_rtm.030324-2048)   211.50 KB (216,576 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\wbem\wbemcomn.dll
wbemsvc    5.2.3790.0 (srv03_rtm.030324-2048)   42.50 KB (43,520 bytes)
     6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\wbem\wbemsvc.dll
fastprox   5.2.3790.0 (srv03_rtm.030324-2048)   443.00 KB (453,632 bytes)
     6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\wbem\fastprox.dll
msvcp60    6.05.2144.0     388.00 KB (397,312 bytes) 3/25/2003 1:00 PM
     Microsoft Corporation     c:\windows\system32\msvcp60.dll
ntdsapi    5.2.3790.0 (srv03_rtm.030324-2048)   76.00 KB (77,824 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ntdsapi.dll
dnsapi     5.2.3790.0 (srv03_rtm.030324-2048)   147.50 KB (151,040 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\dnsapi.dll
services   5.2.3790.0 (srv03_rtm.030324-2048)   102.00 KB (104,448 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\services.exe
scesrv     5.2.3790.0 (srv03_rtm.030324-2048)   316.50 KB (324,096 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\scesrv.dll
authz 5.2.3790.0 (srv03_rtm.030324-2048)   67.00 KB (68,608 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\authz.dll
umpnpmgr   5.2.3790.0 (srv03_rtm.030324-2048)   121.50 KB (124,416 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\umpnpmgr.dll
ncobjapi   5.2.3790.0 (srv03_rtm.030324-2048)   34.50 KB (35,328 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ncobjapi.dll
eventlog   5.2.3790.0 (srv03_rtm.030324-2048)   60.50 KB (61,952 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\eventlog.dll
lsass 5.2.3790.0 (srv03_rtm.030324-2048)   13.00 KB (13,312 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\lsass.exe
lsasrv     5.2.3790.0 (srv03_rtm.030324-2048)   780.50 KB (799,232 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\lsasrv.dll
samsrv     5.2.3790.0 (srv03_rtm.030324-2048)   452.00 KB (462,848 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\samsrv.dll
cryptdll   5.2.3790.0 (srv03_rtm.030324-2048)   34.00 KB (34,816 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\cryptdll.dll
msprivs    5.2.3790.0 (srv03_rtm.030324-2048)   46.50 KB (47,616 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\msprivs.dll
kerberos   5.2.3790.0 (srv03_rtm.030324-2048)   332.50 KB (340,480 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\kerberos.dll
msv1_0     5.2.3790.0 (srv03_rtm.030324-2048)   127.00 KB (130,048 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\msv1_0.dll
netlogon   5.2.3790.0 (srv03_rtm.030324-2048)   409.00 KB (418,816 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\netlogon.dll
w32time    5.2.3790.0 (srv03_rtm.030324-2048)   216.00 KB (221,184 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\w32time.dll
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iphlpapi  5.2.3790.0 (srv03_rtm.030324-2048)  82.50 KB (84,480 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\iphlpapi.dll
schannel  5.2.3790.0 (srv03_rtm.030324-2048)  149.50 KB (153,088 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\schannel.dll
wdigest   5.2.3790.0 (srv03_rtm.030324-2048)  61.00 KB (62,464 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\wdigest.dll
rassfm    5.2.3790.0 (srv03_rtm.030324-2048)  20.50 KB (20,992 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\rassfm.dll
kdcsvc    5.2.3790.0 (srv03_rtm.030324-2048)  221.00 KB (226,304 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\kdcsvc.dll
ntdsa5.2.3790.0 (srv03_rtm.030324-2048)  1.45 MB (1,520,640 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\ntdsa.dll
ntdsatq   5.2.3790.0 (srv03_rtm.030324-2048)  32.00 KB (32,768 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\ntdsatq.dll
mswsock   5.2.3790.0 (srv03_rtm.030324-2048)  254.00 KB (260,096 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\mswsock.dll
esent5.2.3790.0 (srv03_rtm.030324-2048)  1.01 MB (1,056,256 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\esent.dll
scecli    5.2.3790.0 (srv03_rtm.030324-2048)  179.50 KB (183,808 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\scecli.dll
wshtcpip  5.2.3790.0 (srv03_rtm.030324-2048)  18.00 KB (18,432 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\wshtcpip.dll
ipsecsvc  5.2.3790.0 (srv03_rtm.030324-2048)  162.50 KB (166,400 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\ipsecsvc.dll
oakley    5.2.3790.0 (srv03_rtm.030324-2048)  325.50 KB (333,312 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\oakley.dll
winipsec  5.2.3790.0 (srv03_rtm.030324-2048)  34.50 KB (35,328 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\winipsec.dll
pstorsvc  5.2.3790.0 (srv03_rtm.030324-2048)  24.00 KB (24,576 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\pstorsvc.dll
psbase    5.2.3790.0 (srv03_rtm.030324-2048)  81.00 KB (82,944 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\psbase.dll
dssenh    5.2.3790.0 (srv03_rtm.030324-2048)  131.33 KB (134,480 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\dssenh.dll
wlbsctrl  5.2.3790.0 (srv03_rtm.030324-2048)  78.00 KB (79,872 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\wlbsctrl.dll
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w3ssl6.0.3790.0 (srv03_rtm.030324-2048)  15.00 KB (15,360 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\w3ssl.dll
strmfilt  6.0.3790.0 (srv03_rtm.030324-2048)  70.50 KB (72,192 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\strmfilt.dll
httpapi   5.2.3790.0 (srv03_rtm.030324-2048)  26.50 KB (27,136 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\httpapi.dll
svchost   5.2.3790.0 (srv03_rtm.030324-2048)  13.00 KB (13,312 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\svchost.exe
rpcss5.2.3790.0 (srv03_rtm.030324-2048)  276.50 KB (283,136 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\rpcss.dll
termsrv   5.2.3790.0 (srv03_rtm.030324-2048)  216.50 KB (221,696 bytes)
     6/25/2003 11:43 AM  Microsoft Corporation
     c:\windows\system32\termsrv.dll
icaapi    5.2.3790.0 (srv03_rtm.030324-2048)  10.50 KB (10,752 bytes)
     6/25/2003 11:43 AM  Microsoft Corporation
     c:\windows\system32\icaapi.dll
mstlsapi  5.2.3790.0 (srv03_rtm.030324-2048)  104.50 KB (107,008 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\mstlsapi.dll
activeds  5.2.3790.0 (srv03_rtm.030324-2048)  189.00 KB (193,536 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\activeds.dll
adsldpc   5.2.3790.0 (srv03_rtm.030324-2048)  142.50 KB (145,920 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\adsldpc.dll
credui    5.2.3790.0 (srv03_rtm.030324-2048)  159.00 KB (162,816 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\credui.dll
atl  3.05.2283 83.00 KB (84,992 bytes)  3/25/2003 1:00 PM   Microsoft
Corporation    c:\windows\system32\atl.dll
schedsvc  5.2.3790.0 (srv03_rtm.030324-2048)  176.00 KB (180,224 bytes)
     6/25/2003 11:47 AM  Microsoft Corporation
     c:\windows\system32\schedsvc.dll
wiarpc    5.2.3790.0 (srv03_rtm.030324-2048)  30.00 KB (30,720 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\wiarpc.dll
wkssvc    5.2.3790.0 (srv03_rtm.030324-2048)  125.00 KB (128,000 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\wkssvc.dll
msidle    6.00.3790.0 (srv03_rtm.030324-2048) 5.50 KB (5,632 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\msidle.dll
es   2001.12.4720.0 (srv03_rtm.030324-2048)   221.50 KB (226,816 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\es.dll
srvsvc    5.2.3790.0 (srv03_rtm.030324-2048)  89.00 KB (91,136 bytes)
     3/25/2003 1:00 PM   Microsoft Corporation
     c:\windows\system32\srvsvc.dll
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sens 5.2.3790.0 (srv03_rtm.030324-2048)   35.50 KB (36,352 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\sens.dll
wmisvc    5.2.3790.0 (srv03_rtm.030324-2048)   131.00 KB (134,144 bytes)
     6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\wbem\wmisvc.dll
vssapi    5.2.3790.0 (srv03_rtm.030324-2048)   528.00 KB (540,672 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\vssapi.dll
comsvcs   2001.12.4720.0 (srv03_rtm.030324-2048)    1.14 MB (1,199,616
bytes)    6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\comsvcs.dll
netman    5.2.3790.0 (srv03_rtm.030324-2048)   209.00 KB (214,016 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\netman.dll
mprapi    5.2.3790.0 (srv03_rtm.030324-2048)   81.00 KB (82,944 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\mprapi.dll
rtutils   5.2.3790.0 (srv03_rtm.030324-2048)   32.00 KB (32,768 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rtutils.dll
rasapi32  5.2.3790.0 (srv03_rtm.030324-2048)   227.50 KB (232,960 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rasapi32.dll
rasman    5.2.3790.0 (srv03_rtm.030324-2048)   56.50 KB (57,856 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rasman.dll
tapi32    5.2.3790.0 (srv03_rtm.030324-2048)   175.00 KB (179,200 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\tapi32.dll
wzcsvc    5.2.3790.0 (srv03_rtm.030324-2048)   272.50 KB (279,040 bytes)
     3/25/2003 1:15 PM    Microsoft Corporation
     c:\windows\system32\wzcsvc.dll
wmi  5.2.3790.0 (srv03_rtm.030324-2048)   6.50 KB (6,656 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\wmi.dll
dhcpcsvc  5.2.3790.0 (srv03_rtm.030324-2048)   101.50 KB (103,936 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\dhcpcsvc.dll
wzcsapi   5.2.3790.0 (srv03_rtm.030324-2048)   24.50 KB (25,088 bytes)
     3/25/2003 1:15 PM    Microsoft Corporation
     c:\windows\system32\wzcsapi.dll
netshell  5.2.3790.0 (srv03_rtm.030324-2048)   1.67 MB (1,747,456 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\netshell.dll
clusapi   5.2.3790.0 (srv03_rtm.030324-2048)   56.00 KB (57,344 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\clusapi.dll
netcfgx   5.2.3790.0 (srv03_rtm.030324-2048)   726.00 KB (743,424 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\netcfgx.dll
hnetcfg   5.2.3790.0 (srv03_rtm.030324-2048)   243.50 KB (249,344 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\hnetcfg.dll
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wininet   6.00.3790.0 (srv03_rtm.030324-2048)  609.00 KB (623,616 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\wininet.dll
wbemcore  5.2.3790.0 (srv03_rtm.030324-2048)   457.00 KB (467,968 bytes)
     6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\wbem\wbemcore.dll
esscli    5.2.3790.0 (srv03_rtm.030324-2048)   235.50 KB (241,152 bytes)
     6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\wbem\esscli.dll
wmiutils  5.2.3790.0 (srv03_rtm.030324-2048)   90.50 KB (92,672 bytes)
     6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\wbem\wmiutils.dll
repdrvfs  5.2.3790.0 (srv03_rtm.030324-2048)   165.00 KB (168,960 bytes)
     6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\wbem\repdrvfs.dll
wmiprvsd  5.2.3790.0 (srv03_rtm.030324-2048)   405.50 KB (415,232 bytes)
     6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\wbem\wmiprvsd.dll
wbemess   5.2.3790.0 (srv03_rtm.030324-2048)   256.50 KB (262,656 bytes)
     6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\wbem\wbemess.dll
rasmans   5.2.3790.0 (srv03_rtm.030324-2048)   163.50 KB (167,424 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rasmans.dll
rastapi   5.2.3790.0 (srv03_rtm.030324-2048)   57.00 KB (58,368 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rastapi.dll
rasppp    5.2.3790.0 (srv03_rtm.030324-2048)   195.00 KB (199,680 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rasppp.dll
ntlsapi   5.2.3790.0 (srv03_rtm.030324-2048)   8.00 KB (8,192 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ntlsapi.dll
raschap   5.2.3790.0 (srv03_rtm.030324-2048)   106.00 KB (108,544 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\raschap.dll
rastls    5.2.3790.0 (srv03_rtm.030324-2048)   155.00 KB (158,720 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rastls.dll
cryptui   5.131.3790.0 (srv03_rtm.030324-2048) 473.50 KB (484,864 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\cryptui.dll
ipbootp   5.2.3790.0 (srv03_rtm.030324-2048)   34.50 KB (35,328 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ipbootp.dll
rasdlg    5.2.3790.0 (srv03_rtm.030324-2048)   642.00 KB (657,408 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rasdlg.dll
rasadhlp  5.2.3790.0 (srv03_rtm.030324-2048)   6.50 KB (6,656 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\rasadhlp.dll
cryptsvc  5.2.3790.0 (srv03_rtm.030324-2048)   51.00 KB (52,224 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\cryptsvc.dll
```

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certcli   5.2.3790.0 (srv03_rtm.030324-2048)   228.00 KB (233,472 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\certcli.dll
ncprov    5.2.3790.0 (srv03_rtm.030324-2048)   43.00 KB (44,032 bytes)
     6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\wbem\ncprov.dll
pchsvc    5.2.3790.0 (srv03_rtm.030324-2048)   31.50 KB (32,256 bytes)
     6/25/2003 11:47 AM   Microsoft Corporation
     c:\windows\pchealth\helpctr\binaries\pchsvc.dll
wbemcons  5.2.3790.0 (srv03_rtm.030324-2048)   69.00 KB (70,656 bytes)
     6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\wbem\wbemcons.dll
ersvc5.2.3790.0 (srv03_rtm.030324-2048)   22.00 KB (22,528 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ersvc.dll
inetinfo  6.0.3790.0 (srv03_rtm.030324-2048)   13.00 KB (13,312 bytes)
     6/25/2003 2:48 PM    Microsoft Corporation
     c:\windows\system32\inetsrv\inetinfo.exe
iisutil   6.0.3790.0 (srv03_rtm.030324-2048)   177.00 KB (181,248 bytes)
     6/25/2003 2:48 PM    Microsoft Corporation
     c:\windows\system32\inetsrv\iisutil.dll
rpcref    6.0.3790.0 (srv03_rtm.030324-2048)   4.00 KB (4,096 bytes)
     6/25/2003 2:48 PM    Microsoft Corporation
     c:\windows\system32\inetsrv\rpcref.dll
iisrtl    6.0.3790.0 (srv03_rtm.030324-2048)   129.00 KB (132,096 bytes)
     6/25/2003 2:48 PM    Microsoft Corporation
     c:\windows\system32\iisrtl.dll
iisadmin  6.0.3790.0 (srv03_rtm.030324-2048)   18.50 KB (18,944 bytes)
     6/25/2003 2:48 PM    Microsoft Corporation
     c:\windows\system32\inetsrv\iisadmin.dll
coadmin   6.0.3790.0 (srv03_rtm.030324-2048)   48.50 KB (49,664 bytes)
     6/25/2003 2:48 PM    Microsoft Corporation
     c:\windows\system32\inetsrv\coadmin.dll
admwprox  6.0.3790.0 (srv03_rtm.030324-2048)   44.00 KB (45,056 bytes)
     6/25/2003 2:48 PM    Microsoft Corporation
     c:\windows\system32\admwprox.dll
iiscfg    6.0.3790.0 (srv03_rtm.030324-2048)   1.06 MB (1,116,160 bytes)
     6/25/2003 2:48 PM    Microsoft Corporation
     c:\windows\system32\inetsrv\iiscfg.dll
metadata  6.0.3790.0 (srv03_rtm.030324-2048)   218.50 KB (223,744 bytes)
     6/25/2003 2:48 PM    Microsoft Corporation
     c:\windows\system32\inetsrv\metadata.dll
msxml3    8.40.9419.0     1.28 MB (1,337,344 bytes) 3/25/2003 1:00 PM
     Microsoft Corporation     c:\windows\system32\msxml3.dll
svcext    6.0.3790.0 (srv03_rtm.030324-2048)   41.50 KB (42,496 bytes)
     6/25/2003 2:48 PM    Microsoft Corporation
     c:\windows\system32\inetsrv\svcext.dll
security  5.2.3790.0 (srv03_rtm.030324-2048)   5.50 KB (5,632 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\security.dll
iismap    6.0.3790.0 (srv03_rtm.030324-2048)   55.00 KB (56,320 bytes)
     6/25/2003 2:48 PM    Microsoft Corporation
     c:\windows\system32\iismap.dll
```

```
wamreg    6.0.3790.0 (srv03_rtm.030324-2048)   52.00 KB (53,248 bytes)
     6/25/2003 2:48 PM    Microsoft Corporation
     c:\windows\system32\inetsrv\wamreg.dll
explorer  6.00.3790.0 (srv03_rtm.030324-2048)  1,008.50 KB (1,032,704
bytes)    3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\explorer.exe
browseui  6.00.3790.0 (srv03_rtm.030324-2048)  1.01 MB (1,057,280 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\browseui.dll
shdocvw   6.00.3790.0 (srv03_rtm.030324-2048)  1.33 MB (1,393,664 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\shdocvw.dll
apphelp   5.2.3790.0 (srv03_rtm.030324-2048)   122.00 KB (124,928 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\apphelp.dll
themeui   6.00.3790.0 (srv03_rtm.030324-2048)  360.50 KB (369,152 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\themeui.dll
msimg32   5.2.3790.0 (srv03_rtm.030324-2048)   4.50 KB (4,608 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\msimg32.dll
linkinfo  5.2.3790.0 (srv03_rtm.030324-2048)   16.50 KB (16,896 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\linkinfo.dll
ntshrui   6.00.3790.0 (srv03_rtm.030324-2048)  136.00 KB (139,264 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ntshrui.dll
webcheck  6.00.3790.0 (srv03_rtm.030324-2048)  261.50 KB (267,776 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\webcheck.dll
wsock32   5.2.3790.0 (srv03_rtm.030324-2048)   22.00 KB (22,528 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\wsock32.dll
stobject  5.2.3790.0 (srv03_rtm.030324-2048)   117.50 KB (120,320 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\stobject.dll
batmeter  6.00.3790.0 (srv03_rtm.030324-2048)  28.50 KB (29,184 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\batmeter.dll
powrprof  6.00.3790.0 (srv03_rtm.030324-2048)  14.50 KB (14,848 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\powrprof.dll
browselc  6.00.3790.0 (srv03_rtm.030324-2048)  62.00 KB (63,488 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\browselc.dll
urlmon    6.00.3790.0 (srv03_rtm.030324-2048)  501.50 KB (513,536 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\urlmon.dll
printui   5.2.3790.0 (srv03_rtm.030324-2048)   536.50 KB (549,376 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\printui.dll
cfgmgr32  5.2.3790.0 (srv03_rtm.030324-2048)   17.50 KB (17,920 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\cfgmgr32.dll
```

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cryptnet  5.131.3790.0 (srv03_rtm.030324-2048) 59.50 KB (60,928 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\cryptnet.dll
sensapi   5.2.3790.0 (srv03_rtm.030324-2048)  6.00 KB (6,144 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\sensapi.dll
cabinet   5.2.3790.0 (srv03_rtm.030324-2048)  61.00 KB (62,464 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\cabinet.dll
drprov    5.2.3790.0 (srv03_rtm.030324-2048)  12.50 KB (12,800 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\drprov.dll
ntlanman  5.2.3790.0 (srv03_rtm.030324-2048)  41.00 KB (41,984 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ntlanman.dll
netui0    5.2.3790.0 (srv03_rtm.030324-2048)  75.50 KB (77,312 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\netui0.dll
netui1    5.2.3790.0 (srv03_rtm.030324-2048)  184.00 KB (188,416 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\netui1.dll
davclnt   5.2.3790.0 (srv03_rtm.030324-2048)  23.50 KB (24,064 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\davclnt.dll
shdoclc   6.00.3790.0 (srv03_rtm.030324-2048)  588.50 KB (602,624 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\shdoclc.dll
mydocs    6.00.3790.0 (srv03_rtm.030324-2048)  88.00 KB (90,112 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\mydocs.dll
mmcshext  5.2.3790.0 (srv03_rtm.030324-2048)  50.00 KB (51,200 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\mmcshext.dll
hhsetup   5.2.3790.0 (srv03_rtm.030324-2048)  38.00 KB (38,912 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\hhsetup.dll
zipfldr   6.00.3790.0 (srv03_rtm.030324-2048)  316.00 KB (323,584 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\zipfldr.dll
actxprxy  6.00.3790.0 (srv03_rtm.030324-2048)  95.00 KB (97,280 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\actxprxy.dll
tapisrv   5.2.3790.0 (srv03_rtm.030324-2048)  238.50 KB (244,224 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\tapisrv.dll
unimdm    5.2.3790.0 (srv03_rtm.030324-2048)  190.50 KB (195,072 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\unimdm.tsp
uniplat   5.2.3790.0 (srv03_rtm.030324-2048)  15.00 KB (15,360 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\uniplat.dll
kmddsp    5.2.3790.0 (srv03_rtm.030324-2048)  34.00 KB (34,816 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\kmddsp.tsp
```

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ndptsp    5.2.3790.0 (srv03_rtm.030324-2048)  54.50 KB (55,808 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ndptsp.tsp
ipconf    5.2.3790.0 (srv03_rtm.030324-2048)  16.50 KB (16,896 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\ipconf.tsp
h323 5.2.3790.0 (srv03_rtm.030324-2048)  250.00 KB (256,000 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\h323.tsp
hidphone  5.2.3790.0 (srv03_rtm.030324-2048)  28.00 KB (28,672 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\hidphone.tsp
hid  5.2.3790.0 (srv03_rtm.030324-2048)  17.50 KB (17,920 bytes)
     3/25/2003 2:48 AM    Microsoft Corporation
     c:\windows\system32\hid.dll
dllhost   5.2.3790.0 (srv03_rtm.030324-2048)  5.50 KB (5,632 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\dllhost.exe
mtxoci    2001.12.4720.0 (srv03_rtm.030324-2048)    101.00 KB (103,424
bytes)    6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\mtxoci.dll
txflog    2001.12.4720.0 (srv03_rtm.030324-2048)    92.50 KB (94,720
bytes)    3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\txflog.dll
xolehlp   2001.12.4720.0 (srv03_rtm.030324-2048)    8.50 KB (8,704 bytes)
     6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\xolehlp.dll
msdtcprx  2001.12.4720.0 (srv03_rtm.030324-2048)    427.50 KB (437,760
bytes)    6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\msdtcprx.dll
mtxclu    2001.12.4720.0 (srv03_rtm.030324-2048)    74.50 KB (76,288
bytes)    3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\mtxclu.dll
resutils  5.2.3790.0 (srv03_rtm.030324-2048)  59.00 KB (60,416 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\resutils.dll
mfc42u    6.05.3014.0    960.00 KB (983,040 bytes) 3/25/2003 1:00 PM
     Microsoft Corporation     c:\windows\system32\mfc42u.dll
winrnr    5.2.3790.0 (srv03_rtm.030324-2048)  15.00 KB (15,360 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\winrnr.dll
catsrv    2001.12.4720.0 (srv03_rtm.030324-2048)    256.00 KB (262,144
bytes)    6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\catsrv.dll
clbcatex  2001.12.4720.0 (srv03_rtm.030324-2048)    96.00 KB (98,304
bytes)    6/25/2003 11:43 AM   Microsoft Corporation
     c:\windows\system32\clbcatex.dll
helpctr   5.2.3790.0 (srv03_rtm.030324-2048)  764.00 KB (782,336 bytes)
     6/25/2003 11:47 AM   Microsoft Corporation
     c:\windows\pchealth\helpctr\binaries\helpctr.exe
hcappres  5.2.3790.0 (srv03_rtm.030324-2048)  6.50 KB (6,656 bytes)
     6/25/2003 11:47 AM   Microsoft Corporation
     c:\windows\pchealth\helpctr\binaries\hcappres.dll
```

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itss 5.2.3790.0 (srv03_rtm.030324-2048)   119.50 KB (122,368 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\itss.dll
pchshell  5.2.3790.0 (srv03_rtm.030324-2048)  100.50 KB (102,912 bytes)
     6/25/2003 11:47 AM   Microsoft Corporation
     c:\windows\pchealth\helpctr\binaries\pchshell.dll
mlang 6.00.3790.0 (srv03_rtm.030324-2048)  570.00 KB (583,680 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\mlang.dll
mshtml    6.00.3790.0 (srv03_rtm.030324-2048)  2.78 MB (2,916,352 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\mshtml.dll
msimtf    5.2.3790.0 (srv03_rtm.030324-2048)  149.00 KB (152,576 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\msimtf.dll
msctf 5.2.3790.0 (srv03_rtm.030324-2048)   287.00 KB (293,888 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\msctf.dll
jscript   5.6.0.8515 436.00 KB (446,464 bytes) 3/25/2003 1:00 PM
     Microsoft Corporation     c:\windows\system32\jscript.dll
msls31    3.10.349.0 147.00 KB (150,528 bytes) 3/25/2003 1:00 PM
     Microsoft Corporation     c:\windows\system32\msls31.dll
imm32 5.2.3790.0 (srv03_rtm.030324-2048)   105.50 KB (108,032 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\imm32.dll
mshtmled  6.00.3790.0 (srv03_rtm.030324-2048)  443.50 KB (454,144 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\mshtmled.dll
vbscript  5.6.0.8515 404.00 KB (413,696 bytes) 3/25/2003 1:00 PM
     Microsoft Corporation     c:\windows\system32\vbscript.dll
mfc42 6.05.3014.0     960.00 KB (983,040 bytes) 3/25/2003 1:00 PM
     Microsoft Corporation     c:\windows\system32\mfc42.dll
msinfo    5.2.3790.0 (srv03_rtm.030324-2048)  358.50 KB (367,104 bytes)
     6/25/2003 11:47 AM   Microsoft Corporation
     c:\windows\pchealth\helpctr\binaries\msinfo.dll
comdlg32  6.00.3790.0 (srv03_rtm.030324-2048)  261.00 KB (267,264 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\comdlg32.dll
riched32  5.2.3790.0 (srv03_rtm.030324-2048)  3.50 KB (3,584 bytes)
     3/25/2003 1:00 PM    Microsoft Corporation
     c:\windows\system32\riched32.dll
riched20  5.31.23.1218    406.00 KB (415,744 bytes) 3/25/2003 1:00 PM
     Microsoft Corporation     c:\windows\system32\riched20.dll
helpsvc   5.2.3790.0 (srv03_rtm.030324-2048)  720.00 KB (737,280 bytes)
     6/25/2003 11:47 AM   Microsoft Corporation
     c:\windows\pchealth\helpctr\binaries\helpsvc.exe

[Services]

Display Name    Name State Start Mode Service Type    Path Error Control
     Start Name Tag ID
Alerter   Alerter   Running    Auto Share Process
     c:\windows\system32\svchost.exe -k localservice Normal    NT
AUTHORITY\LocalService    0
Application Layer Gateway Service    ALG  Stopped    Manual    Own
Process    c:\windows\system32\alg.exe    Normal    NT
AUTHORITY\LocalService    0
Application Management    AppMgmt   Stopped    Manual    Share Process
     c:\windows\system32\svchost.exe -k netsvcs    Normal
     LocalSystem    0
Windows Audio   AudioSrv  Stopped    Disabled  Share Process
     c:\windows\system32\svchost.exe -k netsvcs    Normal
     LocalSystem    0
Background Intelligent Transfer Service   BITS Stopped    Manual    Share
Process    c:\windows\system32\svchost.exe -k netsvcs    Normal
     LocalSystem    0
Computer Browser    Browser   Stopped    Manual    Share Process
     c:\windows\system32\svchost.exe -k netsvcs    Normal
     LocalSystem    0
Indexing Service    CiSvc Stopped    Disabled  Share Process
     c:\windows\system32\cisvc.exe  Normal    LocalSystem    0
ClipBook  ClipSrv   Stopped    Disabled  Own Process
     c:\windows\system32\clipsrv.exe Normal    LocalSystem    0
COM+ System Application   COMSysApp Running    Manual    Own Process
     c:\windows\system32\dllhost.exe /processid:{02d4b3f1-fd88-11d1-960d-
00805fc79235}  Normal    LocalSystem    0
Cryptographic Services    CryptSvc  Running    Manual    Share Process
     c:\windows\system32\svchost.exe -k netsvcs    Normal
     LocalSystem    0
Distributed File System   Dfs  Stopped    Manual    Own Process
     c:\windows\system32\dfssvc.exe Normal    LocalSystem    0
DHCP Client    Dhcp Stopped    Manual    Share Process
     c:\windows\system32\svchost.exe -k networkservice   Normal    NT
AUTHORITY\NetworkService  0
Logical Disk Manager Administrative Service    dmadmin   Stopped
     Manual    Share Process   c:\windows\system32\dmadmin.exe /com
     Normal    LocalSystem    0
Logical Disk Manager dmserver  Stopped    Manual    Share Process
     c:\windows\system32\svchost.exe -k netsvcs    Normal
     LocalSystem    0
DNS Client Dnscache  Stopped    Manual    Share Process
     c:\windows\system32\svchost.exe -k networkservice   Normal    NT
AUTHORITY\NetworkService  0
Error Reporting Service   ERSvc Running    Auto Share Process
     c:\windows\system32\svchost.exe -k winerr Ignore    LocalSystem
     0
Event Log  Eventlog  Running    Auto Share Process
     c:\windows\system32\services.exe    Normal    LocalSystem    0
COM+ Event System    EventSystem    Running    Manual    Share Process
     c:\windows\system32\svchost.exe -k netsvcs    Normal
     LocalSystem    0
Help and Support    helpsvc   Running    Manual    Share Process
     c:\windows\system32\svchost.exe -k netsvcs    Normal
     LocalSystem    0
Human Interface Device Access  HidServ   Stopped    Disabled  Share
Process    c:\windows\system32\svchost.exe -k netsvcs    Normal
     LocalSystem    0
HTTP SSL  HTTPFilter Running    Manual    Share Process
     c:\windows\system32\lsass.exe  Normal    LocalSystem    0
```

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IIS Admin Service    IISADMIN   Running    Auto Share Process
     c:\windows\system32\inetsrv\inetinfo.exe  Normal     LocalSystem
     0
IMAPI CD-Burning COM Service    ImapiService    Stopped    Disabled   Own
Process    c:\windows\system32\imapi.exe   Normal     LocalSystem     0
Intersite Messaging  IsmServ    Stopped    Disabled   Own Process
     c:\windows\system32\ismserv.exe Normal     LocalSystem     0
Kerberos Key Distribution Center     kdc  Stopped    Disabled   Share
Process    c:\windows\system32\lsass.exe   Normal     LocalSystem     0
Server     lanmanserver    Running    Auto Share Process
     c:\windows\system32\svchost.exe -k netsvcs     Normal
     LocalSystem     0
Workstation     lanmanworkstation    Running    Auto Share Process
     c:\windows\system32\svchost.exe -k netsvcs     Normal
     LocalSystem     0
License Logging LicenseService  Stopped    Disabled   Own Process
     c:\windows\system32\llssrv.exe  Normal     NT
AUTHORITY\NetworkService  0
TCP/IP NetBIOS Helper      LmHosts    Running    Auto Share Process
     c:\windows\system32\svchost.exe -k localservice Normal     NT
AUTHORITY\LocalService    0
Messenger  Messenger  Stopped    Disabled   Share Process
     c:\windows\system32\svchost.exe -k netsvcs     Normal
     LocalSystem     0
NetMeeting Remote Desktop Sharing    mnmsrvc    Stopped    Disabled   Own
Process    c:\windows\system32\mnmsrvc.exe Normal     LocalSystem     0
Distributed Transaction Coordinator  MSDTC Running    Auto Own Process
     c:\windows\system32\msdtc.exe   Normal     NT
AUTHORITY\NetworkService  0
Windows Installer    MSIServer  Stopped    Manual     Share Process
     c:\windows\system32\msiexec.exe /v   Normal     LocalSystem     0
Network DDE     NetDDE     Stopped    Disabled   Share Process
     c:\windows\system32\netdde.exe  Normal     LocalSystem     0
Network DDE DSDM     NetDDEdsdm Stopped    Disabled   Share Process
     c:\windows\system32\netdde.exe  Normal     LocalSystem     0
Net Logon  Netlogon   Stopped    Manual     Share Process
     c:\windows\system32\lsass.exe   Normal     LocalSystem     0
Network Connections  Netman     Running    Manual     Share Process
     c:\windows\system32\svchost.exe -k netsvcs     Normal
     LocalSystem     0
Network Location Awareness (NLA)     Nla  Running    Manual     Share
Process    c:\windows\system32\svchost.exe -k netsvcs     Normal
     LocalSystem     0
File Replication     NtFrs Stopped    Manual     Own Process
     c:\windows\system32\ntfrs.exe   Ignore     LocalSystem     0
NT LM Security Support Provider NtLmSsp    Stopped    Manual     Share
Process    c:\windows\system32\lsass.exe   Normal     LocalSystem     0
Removable Storage    NtmsSvc    Stopped    Manual     Share Process
     c:\windows\system32\svchost.exe -k netsvcs     Normal
     LocalSystem     0
Plug and Play   PlugPlay   Running    Auto Share Process
     c:\windows\system32\services.exe     Normal     LocalSystem     0
IPSEC Services  PolicyAgent     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  Stopped    Manual     Share Process
     c:\windows\system32\svchost.exe -k regsvc Normal     NT
AUTHORITY\LocalService    0
Remote Command Service    RMSYS Stopped    Manual     Own Process
     c:\benchcrf_422\rsys.exe  Normal     LocalSystem     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 Card SCardSvr   Stopped    Manual     Share Process
     c:\windows\system32\scardsvr.exe     Ignore     NT
AUTHORITY\LocalService    0
Task Scheduler  Schedule   Running    Auto Share Process
     c:\windows\system32\svchost.exe -k netsvcs     Normal
     LocalSystem     0
Secondary Logon seclogon   Stopped    Manual     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
Internet Connection Firewall (ICF) / Internet Connection Sharing (ICS)
     SharedAccess    Stopped    Disabled   Share Process
     c:\windows\system32\svchost.exe -k netsvcs     Normal
     LocalSystem     0
Shell Hardware Detection  ShellHWDetection     Running    Auto Share
Process    c:\windows\system32\svchost.exe -k netsvcs     Ignore
     LocalSystem     0
Print Spooler   Spooler    Stopped    Manual     Own Process
     c:\windows\system32\spoolsv.exe Normal     LocalSystem     0
Windows Image Acquisition (WIA) stisvc     Stopped    Disabled   Share
Process    c:\windows\system32\svchost.exe -k imgsvc Normal     NT
AUTHORITY\LocalService    0
```

```
Microsoft Software Shadow Copy Provider   swprv Stopped   Manual    Own
Process   c:\windows\system32\svchost.exe -k swprv  Normal
     LocalSystem    0
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
Themes    Themes    Stopped   Disabled  Share Process
     c:\windows\system32\svchost.exe -k netsvcs    Normal
     LocalSystem    0
Telnet    TlntSvr   Stopped   Disabled  Own Process
     c:\windows\system32\tlntsvr.exe Normal    NT AUTHORITY\LocalService
     0
Distributed Link Tracking Server    TrkSvr    Stopped   Disabled  Share
Process   c:\windows\system32\svchost.exe -k netsvcs    Normal
     LocalSystem    0
Distributed Link Tracking Client    TrkWks    Stopped   Manual    Share
Process   c:\windows\system32\svchost.exe -k netsvcs    Normal
     LocalSystem    0
Terminal Services Session Directory  Tssdis    Stopped   Disabled  Own
Process   c:\windows\system32\tssdis.exe  Normal    LocalSystem    0
Upload Manager  uploadmgr  Stopped   Manual    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   Stopped   Manual    Share Process
     c:\windows\system32\svchost.exe -k netsvcs    Normal
     LocalSystem    0
World Wide Web Publishing Service   W3SVC Stopped   Auto Share Process
     c:\windows\system32\svchost.exe -k iissvcs    Normal
     LocalSystem    0
WebClient  WebClient  Stopped   Disabled  Share Process
     c:\windows\system32\svchost.exe -k localservice Normal    NT
AUTHORITY\LocalService   0
WinHTTP Web Proxy Auto-Discovery Service  WinHttpAutoProxySvc  Stopped
     Manual    Share Process   c:\windows\system32\svchost.exe -k
localservice   Normal    NT AUTHORITY\LocalService 0
Windows Management Instrumentation   winmgmt   Running   Auto Share
Process   c:\windows\system32\svchost.exe -k netsvcs    Ignore
     LocalSystem    0
Portable Media Serial Number Service WmdmPmSN  Stopped   Manual    Share
Process   c:\windows\system32\svchost.exe -k netsvcs    Normal
     LocalSystem    0
```

```
Windows Management Instrumentation Driver Extensions Wmi  Stopped
     Manual    Share Process   c:\windows\system32\svchost.exe -k netsvcs
     Normal    LocalSystem    0
WMI Performance Adapter   WmiApSrv  Stopped   Manual    Own Process
     c:\windows\system32\wbem\wmiapsrv.exe    Normal    LocalSystem
     0
Automatic Updates    wuauserv  Stopped   Manual    Share Process
     c:\windows\system32\svchost.exe -k netsvcs    Normal
     LocalSystem    0
Wireless Configuration    WZCSVC    Stopped   Manual    Share Process
     c:\windows\system32\svchost.exe -k netsvcs    Normal
     LocalSystem    0

[Program Groups]

Group Name Name  User Name
Accessories    Default User:Accessories  Default User
Accessories\Accessibility Default User:Accessories\Accessibility
     Default User
Accessories\Entertainment Default User:Accessories\Entertainment
     Default User
Startup   Default User:Startup Default User
Accessories    All Users:Accessories    All Users
Accessories\Accessibility All Users:Accessories\Accessibility  All Users
Accessories\Communications All Users:Accessories\Communications All Users
Accessories\Entertainment All Users:Accessories\Entertainment  All Users
Accessories\System Tools  All Users:Accessories\System Tools   All Users
Administrative Tools All Users:Administrative Tools  All Users
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    C200CL2\Administrator:Accessories   C200CL2\Administrator

Accessories\Accessibility C200CL2\Administrator:Accessories\Accessibility
     C200CL2\Administrator
Accessories\Entertainment C200CL2\Administrator:Accessories\Entertainment
     C200CL2\Administrator
Administrative Tools C200CL2\Administrator:Administrative Tools
     C200CL2\Administrator
Startup   C200CL2\Administrator:Startup  C200CL2\Administrator

[Startup Programs]

Program   Command   User Name  Location
desktop   desktop.ini    NT AUTHORITY\SYSTEM  Startup
desktop   desktop.ini    C200CL2\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 nt\accessories\wordpad.exe"
Windows Media Services DRM Storage object Not Available
Bitmap Image    mspaint.exe

[Windows Error Reporting]

Time Type Details

[Internet Settings]



[Internet Explorer]

[ Following are sub-categories of this main category ]
[Summary]

Item Value
Version   6.0.3790.0
Build 63790
Application Path     C:\Program Files\Internet Explorer
Language  English (United States)
Active Printer  Not Available

Cipher Strength 128-bit
Content Advisor Disabled
IEAK Install    No

[File Versions]

File Version    Size Date Path Company
actxprxy.dll    6.0.3790.0 95 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
advpack.dll     6.0.3790.0 94 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
asctrls.ocx     6.0.3790.0 90 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
browselc.dll    6.0.3790.0 62 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
browseui.dll    6.0.3790.0 1,033 KB   3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
cdfview.dll     6.0.3790.0 144 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
comctl32.dll    5.82.3790.0     561 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
dxtrans.dll     6.3.3790.0 198 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
```

```
dxtmsft.dll     6.3.3790.0 344 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
iecont.dll <File Missing>  Not Available   Not Available   Not Available
     Not Available
iecontlc.dll    <File Missing>  Not Available   Not Available   Not
Available  Not Available
iedkcs32.dll    16.0.3790.0     300 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
iepeers.dll     6.0.3790.0 230 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
iesetup.dll     6.0.3790.0 59 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
ieuinit.inf     Not Available   20 KB 3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Not Available
iexplore.exe    6.0.3790.0 90 KB 3/25/2003 2:00:00 PM C:\Program
Files\Internet Explorer   Microsoft Corporation
imgutil.dll     5.2.3790.0 35 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
inetcpl.cpl     6.0.3790.0 303 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
inetcplc.dll    6.0.3790.0 109 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
inseng.dll 6.0.3790.0 72 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
mlang.dll  6.0.3790.0 570 KB     3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
msencode.dll    2002.10.4.0     112 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Not Available
mshta.exe  6.0.3790.0 26 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
mshtml.dll 6.0.3790.0 2,848 KB   3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
mshtml.tlb 6.0.3790.0 1,319 KB   3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
mshtmled.dll    6.0.3790.0 444 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
mshtmler.dll    6.0.3790.0 55 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
msident.dll     6.0.3790.0 47 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
msidntld.dll    6.0.3790.0 15 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
msieftp.dll     6.0.3790.0 230 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
msrating.dll    6.0.3790.0 132 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
mstime.dll 6.0.3790.0 491 KB     3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
occache.dll     6.0.3790.0 89 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
proctexe.ocx    6.3.3790.0 78 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Intel Corporation
sendmail.dll    6.0.3790.0 52 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
```

```
shdoclc.dll     6.0.3790.0 589 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
shdocvw.dll     6.0.3790.0 1,361 KB   3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
shfolder.dll    6.0.3790.0 23 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
shlwapi.dll     6.0.3790.0 281 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
tdc.ocx    1.3.0.3130 58 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
url.dll    6.0.3790.0 36 KB 3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
urlmon.dll 6.0.3790.0 502 KB     3/25/2003 2:00:00 PM C:\WINDOWS\system32
     Microsoft Corporation
webcheck.dll    6.0.3790.0 262 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation
wininet.dll     6.0.3790.0 609 KB     3/25/2003 2:00:00 PM
     C:\WINDOWS\system32  Microsoft Corporation

[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
No publisher information available

[Security]

Zone  Security Level
My Computer     Custom
Local intranet  Medium-low
Trusted sites   Medium
Internet   High
Restricted sites     High

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0001
Class Name:        <NO CLASS>
Last Write Time:   7/30/2003 - 11:00 AM
Value 0
  Name:            Threshold
  Type:            REG_SZ
  Data:            12

Value 1
  Name:            PcNic
  Type:            REG_SZ
  Data:            0

Value 2
  Name:            Adaptive_IFS
  Type:            REG_SZ
  Data:            1

Value 3
  Name:            UcodeSW
  Type:            REG_SZ
  Data:            1

Value 4
```

```
  Name:            Coalesce
  Type:            REG_SZ
  Data:            0

Value 5
  Name:            CPUSaver
  Type:            REG_SZ
  Data:            1536

Value 6
  Name:            MWIEnable
  Type:            REG_SZ
  Data:            1

Value 7
  Name:            EnablePME
  Type:            REG_SZ
  Data:            2

Value 8
  Name:            AutoPowerSaveModeEnabled
  Type:            REG_SZ
  Data:            0

Value 9
  Name:            LogErrorMessages
  Type:            REG_SZ
  Data:            1

Value 10
  Name:            IPSecTunnelMode
  Type:            REG_SZ
  Data:            1

Value 11
  Name:            Characteristics
  Type:            REG_DWORD
  Data:            0x84

Value 12
  Name:            BusType
  Type:            REG_SZ
  Data:            5

Value 13
  Name:            ComponentId
  Type:            REG_SZ
  Data:            pci\ven_8086&dev_1229&subsys_004b110a

Value 14
  Name:            FlowControl
  Type:            REG_SZ
  Data:            0

Value 15
```

```
  Name:            IPSecEnabled
  Type:            REG_SZ
  Data:            1

Value 16
  Name:            MaxNumSecAssoc
  Type:            REG_SZ
  Data:            64

Value 17
  Name:            NumCoalesce
  Type:            REG_SZ
  Data:            32

Value 18
  Name:            NumRfd
  Type:            REG_SZ
  Data:            256

Value 19
  Name:            NumTcb
  Type:            REG_SZ
  Data:            64

Value 20
  Name:            SpeedDuplex
  Type:            REG_SZ
  Data:            4

Value 21
  Name:            TaggingMode
  Type:            REG_SZ
  Data:            0

Value 22
  Name:            InfPath
  Type:            REG_SZ
  Data:            net557.inf

Value 23
  Name:            InfSection
  Type:            REG_SZ
  Data:            D101S.ndi

Value 24
  Name:            InfSectionExt
  Type:            REG_SZ
  Data:            .NTx86

Value 25
  Name:            ProviderName
  Type:            REG_SZ
  Data:            Microsoft

Value 26
```

```
  Name:             DriverDateData
  Type:             REG_BINARY
  Data:
00 40 2a 7c dd 68 c2 01 -                          .@*|ÝhÂ.

Value 27
  Name:             DriverDate
  Type:             REG_SZ
  Data:             10-1-2002

Value 28
  Name:             DriverVersion
  Type:             REG_SZ
  Data:             6.6.8.1

Value 29
  Name:             MatchingDeviceId
  Type:             REG_SZ
  Data:             pci\ven_8086&dev_1229&subsys_004b110a

Value 30
  Name:             DriverDesc
  Type:             REG_SZ
  Data:             Fujitsu Siemens Computers 82559-based Onboard Ethernet
with WoL and AoL

Value 31
  Name:             NetCfgInstanceId
  Type:             REG_SZ
  Data:             {EE3E3AF4-97B5-40D2-A7B3-7ECEF7FB1B9F}

Value 32
  Name:             PnPCapabilities
  Type:             REG_DWORD
  Data:             0x38


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0001\Linkage
Class Name:         <NO CLASS>
Last Write Time:    6/25/2003 - 11:17 AM
Value 0
  Name:             RootDevice
  Type:             REG_MULTI_SZ
  Data:             {EE3E3AF4-97B5-40D2-A7B3-7ECEF7FB1B9F}

Value 1
  Name:             UpperBind
  Type:             REG_MULTI_SZ
  Data:             Ndisuio
                    RasPppoe
                    Tcpip

Value 2
```

```
  Name:             Export
  Type:             REG_MULTI_SZ
  Data:             \Device\{EE3E3AF4-97B5-40D2-A7B3-7ECEF7FB1B9F}


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0001\Ndi
Class Name:         <NO CLASS>
Last Write Time:    6/25/2003 - 1:06 PM
Value 0
  Name:             Service
  Type:             REG_SZ
  Data:             E100B


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0001\Ndi\Interfaces
Class Name:         <NO CLASS>
Last Write Time:    6/25/2003 - 1:06 PM
Value 0
  Name:             UpperRange
  Type:             REG_SZ
  Data:             ndis5

Value 1
  Name:             LowerRange
  Type:             REG_SZ
  Data:             ethernet


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0001\Ndi\params
Class Name:         <NO CLASS>
Last Write Time:    6/25/2003 - 1:06 PM

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0001\Ndi\params\FlowControl
Class Name:         <NO CLASS>
Last Write Time:    6/25/2003 - 1:06 PM
Value 0
  Name:             ParamDesc
  Type:             REG_SZ
  Data:             Flow Control Settings

Value 1
  Name:             Type
  Type:             REG_SZ
  Data:             enum

Value 2
  Name:             Default
  Type:             REG_SZ
  Data:             0


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0001\Ndi\params\FlowControl\Enum
Class Name:         <NO CLASS>
Last Write Time:    6/25/2003 - 1:06 PM
Value 0
  Name:             3
  Type:             REG_SZ
  Data:             Respond and Generate

Value 1
  Name:             2
  Type:             REG_SZ
  Data:             Respond

Value 2
  Name:             1
  Type:             REG_SZ
  Data:             Generate

Value 3
  Name:             0
  Type:             REG_SZ
  Data:             Off


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0001\Ndi\params\IPSecEnabled
Class Name:         <NO CLASS>
Last Write Time:    6/25/2003 - 1:06 PM
Value 0
  Name:             ParamDesc
  Type:             REG_SZ
  Data:             IP Security

Value 1
  Name:             Type
  Type:             REG_SZ
  Data:             enum

Value 2
  Name:             Default
  Type:             REG_SZ
  Data:             1


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0001\Ndi\params\IPSecEnabled\Enum
Class Name:         <NO CLASS>
Last Write Time:    6/25/2003 - 1:06 PM
Value 0
  Name:             0
  Type:             REG_SZ
  Data:             Disabled

Value 1
  Name:             1
  Type:             REG_SZ
  Data:             Enabled


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0001\Ndi\params\MaxNumSecAssoc
Class Name:         <NO CLASS>
Last Write Time:    6/25/2003 - 1:06 PM
Value 0
  Name:             ParamDesc
  Type:             REG_SZ
  Data:             Security Associations

Value 1
  Name:             Type
  Type:             REG_SZ
  Data:             int

Value 2
  Name:             Default
  Type:             REG_SZ
  Data:             64

Value 3
  Name:             Min
  Type:             REG_SZ
  Data:             1

Value 4
  Name:             Max
  Type:             REG_SZ
  Data:             5000

Value 5
  Name:             Step
  Type:             REG_SZ
  Data:             1

Value 6
  Name:             Base
  Type:             REG_SZ
  Data:             10
```

```
Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0001\Ndi\params\NetworkAddress
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 1:06 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Locally Administered Address

Value 1
  Name:            Default
  Type:            REG_SZ
  Data:

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            edit

Value 3
  Name:            LimitText
  Type:            REG_SZ
  Data:            12

Value 4
  Name:            UpperCase
  Type:            REG_SZ
  Data:            1

Value 5
  Name:            optional
  Type:            REG_SZ
  Data:            1


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0001\Ndi\params\NumCoalesce
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 1:06 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Coalesce Buffers

Value 1
  Name:            Type
  Type:            REG_SZ
  Data:            int

Value 2
  Name:            Default
  Type:            REG_SZ
  Data:            8
```

```
Value 3
  Name:            Min
  Type:            REG_SZ
  Data:            1

Value 4
  Name:            Max
  Type:            REG_SZ
  Data:            32

Value 5
  Name:            Step
  Type:            REG_SZ
  Data:            1

Value 6
  Name:            Base
  Type:            REG_SZ
  Data:            10


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0001\Ndi\params\NumRfd
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 1:06 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Receive Buffers

Value 1
  Name:            Type
  Type:            REG_SZ
  Data:            int

Value 2
  Name:            Default
  Type:            REG_SZ
  Data:            48

Value 3
  Name:            Min
  Type:            REG_SZ
  Data:            8

Value 4
  Name:            Max
  Type:            REG_SZ
  Data:            1024

Value 5
  Name:            Step
  Type:            REG_SZ
  Data:            1

Value 6
  Name:            Base
  Type:            REG_SZ
  Data:            10


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0001\Ndi\params\NumTcb
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 1:06 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Transmit Control Blocks

Value 1
  Name:            Type
  Type:            REG_SZ
  Data:            int

Value 2
  Name:            Default
  Type:            REG_SZ
  Data:            16

Value 3
  Name:            Min
  Type:            REG_SZ
  Data:            8

Value 4
  Name:            Max
  Type:            REG_SZ
  Data:            64

Value 5
  Name:            Step
  Type:            REG_SZ
  Data:            1

Value 6
  Name:            Base
  Type:            REG_SZ
  Data:            10


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0001\Ndi\params\SpeedDuplex
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 1:06 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Link Speed & Duplex

Value 1
  Name:            default
  Type:            REG_SZ
  Data:            0

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            enum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0001\Ndi\params\SpeedDuplex\enum
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 1:06 PM
Value 0
  Name:            0
  Type:            REG_SZ
  Data:            Auto Detect

Value 1
  Name:            1
  Type:            REG_SZ
  Data:            10Mbps/Half Duplex

Value 2
  Name:            2
  Type:            REG_SZ
  Data:            10Mbps/Full Duplex

Value 3
  Name:            3
  Type:            REG_SZ
  Data:            100Mbps/Half Duplex

Value 4
  Name:            4
  Type:            REG_SZ
  Data:            100Mbps/Full Duplex


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0001\Ndi\params\TaggingMode
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 1:06 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            802.1p QoS Packet Tagging
```

```
Value 1
  Name:            Type
  Type:            REG_SZ
  Data:            enum

Value 2
  Name:            Default
  Type:            REG_SZ
  Data:            0


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0001\Ndi\params\TaggingMode\Enum
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 1:06 PM
Value 0
  Name:            1
  Type:            REG_SZ
  Data:            Enabled

Value 1
  Name:            0
  Type:            REG_SZ
  Data:            Disabled


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0002
Class Name:        <NO CLASS>
Last Write Time:   7/1/2003 - 3:18 PM
Value 0
  Name:            Threshold
  Type:            REG_SZ
  Data:            12

Value 1
  Name:            PcNic
  Type:            REG_SZ
  Data:            0

Value 2
  Name:            Adaptive_IFS
  Type:            REG_SZ
  Data:            1

Value 3
  Name:            UcodeSW
  Type:            REG_SZ
  Data:            1

Value 4
  Name:            Coalesce
```

```
  Type:            REG_SZ
  Data:            0

Value 5
  Name:            CPUSaver
  Type:            REG_SZ
  Data:            1536

Value 6
  Name:            MWIEnable
  Type:            REG_SZ
  Data:            1

Value 7
  Name:            EnablePME
  Type:            REG_SZ
  Data:            2

Value 8
  Name:            AutoPowerSaveModeEnabled
  Type:            REG_SZ
  Data:            0

Value 9
  Name:            LogErrorMessages
  Type:            REG_SZ
  Data:            1

Value 10
  Name:            Characteristics
  Type:            REG_DWORD
  Data:            0x84

Value 11
  Name:            BusType
  Type:            REG_SZ
  Data:            5

Value 12
  Name:            ComponentId
  Type:            REG_SZ
  Data:            pci\ven_8086&dev_1229&subsys_00098086

Value 13
  Name:            FlowControl
  Type:            REG_SZ
  Data:            0

Value 14
  Name:            LargeSendEnabled
  Type:            REG_SZ
  Data:            1

Value 15
  Name:            NumCoalesce
  Type:            REG_SZ
  Data:            64

Value 16
  Name:            NumRfd
  Type:            REG_SZ
  Data:            64

Value 17
  Name:            NumTcb
  Type:            REG_SZ
  Data:            64

Value 18
  Name:            SpeedDuplex
  Type:            REG_SZ
  Data:            4

Value 19
  Name:            TaggingMode
  Type:            REG_SZ
  Data:            0

Value 20
  Name:            InfPath
  Type:            REG_SZ
  Data:            net557.inf

Value 21
  Name:            InfSection
  Type:            REG_SZ
  Data:            D101.ndi

Value 22
  Name:            InfSectionExt
  Type:            REG_SZ
  Data:            .NTx86

Value 23
  Name:            ProviderName
  Type:            REG_SZ
  Data:            Microsoft

Value 24
  Name:            DriverDateData
  Type:            REG_BINARY
  Data:
00 40 2a 7c dd 68 c2 01 -                          .@*|ÝhÂ.

Value 25
  Name:            DriverDate
  Type:            REG_SZ
  Data:            10-1-2002

Value 26
```

```
  Name:            DriverVersion
  Type:            REG_SZ
  Data:            6.6.8.1

Value 27
  Name:            MatchingDeviceId
  Type:            REG_SZ
  Data:            pci\ven_8086&dev_1229&subsys_00098086

Value 28
  Name:            DriverDesc
  Type:            REG_SZ
  Data:            Intel(R) PRO/100+ PCI Adapter

Value 29
  Name:            NetCfgInstanceId
  Type:            REG_SZ
  Data:            {DD47AFE2-41DD-439A-A190-D80B1E3A624F}

Value 30
  Name:            PnPCapabilities
  Type:            REG_DWORD
  Data:            0x38


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0002\Linkage
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 11:17 AM
Value 0
  Name:            RootDevice
  Type:            REG_MULTI_SZ
  Data:            {DD47AFE2-41DD-439A-A190-D80B1E3A624F}

Value 1
  Name:            UpperBind
  Type:            REG_MULTI_SZ
  Data:            Ndisuio
                   RasPppoe
                   Tcpip

Value 2
  Name:            Export
  Type:            REG_MULTI_SZ
  Data:            \Device\{DD47AFE2-41DD-439A-A190-D80B1E3A624F}


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0002\Ndi
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 1:07 PM
Value 0
  Name:            Service
  Type:             REG_SZ
  Data:             E100B


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0002\Ndi\Interfaces
Class Name:         <NO CLASS>
Last Write Time:    6/25/2003 - 1:07 PM
Value 0
  Name:             UpperRange
  Type:             REG_SZ
  Data:             ndis5

Value 1
  Name:             LowerRange
  Type:             REG_SZ
  Data:             ethernet


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0002\Ndi\params
Class Name:         <NO CLASS>
Last Write Time:    6/25/2003 - 1:07 PM

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0002\Ndi\params\FlowControl
Class Name:         <NO CLASS>
Last Write Time:    6/25/2003 - 1:07 PM
Value 0
  Name:             ParamDesc
  Type:             REG_SZ
  Data:             Flow Control Settings

Value 1
  Name:             Type
  Type:             REG_SZ
  Data:             enum

Value 2
  Name:             Default
  Type:             REG_SZ
  Data:             0


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0002\Ndi\params\FlowControl\Enum
Class Name:         <NO CLASS>
Last Write Time:    6/25/2003 - 1:07 PM
Value 0
  Name:             3
  Type:             REG_SZ
  Data:             Respond and Generate

Value 1
  Name:             2
  Type:             REG_SZ
  Data:             Respond

Value 2
  Name:             1
  Type:             REG_SZ
  Data:             Generate

Value 3
  Name:             0
  Type:             REG_SZ
  Data:             Off


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0002\Ndi\params\LargeSendEnabled
Class Name:         <NO CLASS>
Last Write Time:    6/25/2003 - 1:07 PM
Value 0
  Name:             ParamDesc
  Type:             REG_SZ
  Data:             Large Send

Value 1
  Name:             Type
  Type:             REG_SZ
  Data:             enum

Value 2
  Name:             Default
  Type:             REG_SZ
  Data:             1


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0002\Ndi\params\LargeSendEnabled\Enum
Class Name:         <NO CLASS>
Last Write Time:    6/25/2003 - 1:07 PM
Value 0
  Name:             0
  Type:             REG_SZ
  Data:             Disabled

Value 1
  Name:             1
  Type:             REG_SZ
  Data:             Enabled
```

```
Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0002\Ndi\params\NetworkAddress
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 1:07 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Locally Administered Address

Value 1
  Name:            Default
  Type:            REG_SZ
  Data:

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            edit

Value 3
  Name:            LimitText
  Type:            REG_SZ
  Data:            12

Value 4
  Name:            UpperCase
  Type:            REG_SZ
  Data:            1

Value 5
  Name:            optional
  Type:            REG_SZ
  Data:            1


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0002\Ndi\params\NumCoalesce
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 1:07 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Coalesce Buffers

Value 1
  Name:            Type
  Type:            REG_SZ
  Data:            int

Value 2
  Name:            Default
  Type:            REG_SZ
  Data:            8

Value 3
  Name:            Min
  Type:            REG_SZ
  Data:            1

Value 4
  Name:            Max
  Type:            REG_SZ
  Data:            32

Value 5
  Name:            Step
  Type:            REG_SZ
  Data:            1

Value 6
  Name:            Base
  Type:            REG_SZ
  Data:            10


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0002\Ndi\params\NumRfd
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 1:07 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Receive Buffers

Value 1
  Name:            Type
  Type:            REG_SZ
  Data:            int

Value 2
  Name:            Default
  Type:            REG_SZ
  Data:            48

Value 3
  Name:            Min
  Type:            REG_SZ
  Data:            8

Value 4
  Name:            Max
  Type:            REG_SZ
  Data:            1024

Value 5
  Name:            Step
  Type:            REG_SZ
  Data:            1

Value 6
  Name:            Base
  Type:            REG_SZ
  Data:            10


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0002\Ndi\params\NumTcb
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 1:07 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Transmit Control Blocks

Value 1
  Name:            Type
  Type:            REG_SZ
  Data:            int

Value 2
  Name:            Default
  Type:            REG_SZ
  Data:            16

Value 3
  Name:            Min
  Type:            REG_SZ
  Data:            8

Value 4
  Name:            Max
  Type:            REG_SZ
  Data:            64

Value 5
  Name:            Step
  Type:            REG_SZ
  Data:            1

Value 6
  Name:            Base
  Type:            REG_SZ
  Data:            10


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0002\Ndi\params\SpeedDuplex
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 1:07 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            Link Speed & Duplex

Value 1
  Name:            default
  Type:            REG_SZ
  Data:            0

Value 2
  Name:            type
  Type:            REG_SZ
  Data:            enum


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0002\Ndi\params\SpeedDuplex\enum
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 1:07 PM
Value 0
  Name:            0
  Type:            REG_SZ
  Data:            Auto Detect

Value 1
  Name:            1
  Type:            REG_SZ
  Data:            10Mbps/Half Duplex

Value 2
  Name:            2
  Type:            REG_SZ
  Data:            10Mbps/Full Duplex

Value 3
  Name:            3
  Type:            REG_SZ
  Data:            100Mbps/Half Duplex

Value 4
  Name:            4
  Type:            REG_SZ
  Data:            100Mbps/Full Duplex


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0002\Ndi\params\TaggingMode
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 1:07 PM
Value 0
  Name:            ParamDesc
  Type:            REG_SZ
  Data:            802.1p QoS Packet Tagging
```

```
Value 1
  Name:            Type
  Type:            REG_SZ
  Data:            enum

Value 2
  Name:            Default
  Type:            REG_SZ
  Data:            0


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E972-E325-
11CE-BFC1-08002bE10318}\0002\Ndi\params\TaggingMode\Enum
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 1:07 PM
Value 0
  Name:            1
  Type:            REG_SZ
  Data:            Enabled

Value 1
  Name:            0
  Type:            REG_SZ
  Data:            Disabled


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 2:48 PM

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Parameters
Class Name:        <NO CLASS>
Last Write Time:   7/24/2003 - 1:27 PM
Value 0
  Name:            ListenBackLog
  Type:            REG_DWORD
  Data:            0x19

Value 1
  Name:            PoolThreadLimit
  Type:            REG_DWORD
  Data:            0x400

Value 2
  Name:            ThreadTimeout
  Type:            REG_DWORD
  Data:            0x15180

Value 3
  Name:            MaxPoolThreads
  Type:            REG_DWORD
  Data:            0x400


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Performance
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 2:50 PM
Value 0
  Name:            Library
  Type:            REG_SZ
  Data:            infoctrs.dll

Value 1
  Name:            Open
  Type:            REG_SZ
  Data:            OpenINFOPerformanceData

Value 2
  Name:            Close
  Type:            REG_SZ
  Data:            CloseINFOPerformanceData

Value 3
  Name:            Collect
  Type:            REG_SZ
  Data:            CollectINFOPerformanceData

Value 4
  Name:            PerfIniFile
  Type:            REG_SZ
  Data:            infoctrs.ini

Value 5
  Name:            Last Counter
  Type:            REG_DWORD
  Data:            0x9a6

Value 6
  Name:            Last Help
  Type:            REG_DWORD
  Data:            0x9a7

Value 7
  Name:            First Counter
  Type:            REG_DWORD
  Data:            0x966

Value 8
  Name:            First Help
  Type:            REG_DWORD
  Data:            0x967

Value 9
  Name:            Object List
  Type:            REG_SZ
  Data:            2406

Value 10
  Name:            Library Validation Code
  Type:            REG_BINARY
  Data:
00000000   00 e8 d0 0b 18 3b c3 01 - 00 20 00 00 00 00 00 00  .èÐ..;Ã..
......


Value 11
  Name:            WbemAdapFileSignature
  Type:            REG_BINARY
  Data:
00000000   4c c3 d3 e7 44 ca 56 e0 - f3 e8 a0 14 52 26 fb 0f
LÃÓçDÊVàóè .R&û.


Value 12
  Name:            WbemAdapFileTime
  Type:            REG_BINARY
  Data:
7c 10 b9 0b 18 3b c3 01 -                          |.¹..;Ã.

Value 13
  Name:            WbemAdapFileSize
  Type:            REG_DWORD
  Data:            0x2000

Value 14
  Name:            WbemAdapStatus
  Type:            REG_DWORD
  Data:            0


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC
Class Name:        <NO CLASS>
Last Write Time:   7/30/2003 - 11:03 AM
Value 0
  Name:            Type
  Type:            REG_DWORD
  Data:            0x20

Value 1
  Name:            Start
  Type:            REG_DWORD
  Data:            0x2

Value 2
  Name:            ErrorControl
  Type:            REG_DWORD
  Data:            0x1

Value 3
  Name:            ImagePath
  Type:            REG_EXPAND_SZ
  Data:            %SystemRoot%\System32\svchost.exe -k iissvcs

Value 4
  Name:            DisplayName
  Type:            REG_SZ
  Data:            World Wide Web Publishing Service

Value 5
  Name:            DependOnService
  Type:            REG_MULTI_SZ
  Data:            RPCSS
                   HTTPFilter
                   IISADMIN

Value 6
  Name:            DependOnGroup
  Type:            REG_MULTI_SZ
  Data:

Value 7
  Name:            ObjectName
  Type:            REG_SZ
  Data:            LocalSystem

Value 8
  Name:            Description
  Type:            REG_SZ
  Data:            Provides Web connectivity and administration through
the Internet Information Services Manager

Value 9
  Name:            FailureActions
  Type:            REG_BINARY
  Data:
00000000   80 51 01 00 01 00 00 00 - 00 00 00 00 03 00 00 00
.Q..............
00000010   53 00 65 00 01 00 00 00 - 01 00 00 00 01 00 00 00
S.e.............
01 00 00 00 01 00 00 00 - 01 00 00 00              ............


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters
Class Name:        <NO CLASS>
Last Write Time:   6/26/2003 - 12:42 PM
Value 0
  Name:            MajorVersion
  Type:            REG_DWORD
  Data:            0x6

Value 1
  Name:            MinorVersion
  Type:            REG_DWORD
  Data:            0

Value 2
  Name:            InstallPath
  Type:            REG_SZ
  Data:            C:\WINDOWS\system32\inetsrv

Value 3
  Name:            AccessDeniedMessage
  Type:            REG_SZ
  Data:            Error: Access is Denied.

Value 4
  Name:            ServiceDll
  Type:            REG_EXPAND_SZ
  Data:            C:\WINDOWS\system32\inetsrv\iisw3adm.dll

Value 5
  Name:            AcceptExOutstanding
  Type:            REG_DWORD
  Data:            0x28


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADC
Launch
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 2:48 PM

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADC
Launch\AdvancedDataFactory
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 2:48 PM

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\ADC
Launch\RDSServer.DataFactory
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 2:48 PM

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Parameters\Vir
tual Roots
Class Name:        <NO CLASS>
Last Write Time:   6/26/2003 - 12:41 PM
Value 0
  Name:            /
  Type:            REG_SZ
  Data:            C:\inetpub\wwwroot,,205


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Performance
Class Name:        <NO CLASS>
```

```
Last Write Time:   6/25/2003 - 2:48 PM
Value 0
  Name:            Library
  Type:            REG_SZ
  Data:            C:\WINDOWS\system32\inetsrv\w3ctrs.dll

Value 1
  Name:            Open
  Type:            REG_SZ
  Data:            OpenW3PerformanceData

Value 2
  Name:            Close
  Type:            REG_SZ
  Data:            CloseW3PerformanceData

Value 3
  Name:            Collect
  Type:            REG_SZ
  Data:            CollectW3PerformanceData

Value 4
  Name:            PerfIniFile
  Type:            REG_SZ
  Data:            w3ctrs.ini

Value 5
  Name:            Last Counter
  Type:            REG_DWORD
  Data:            0xa9e

Value 6
  Name:            Last Help
  Type:            REG_DWORD
  Data:            0xa9f

Value 7
  Name:            First Counter
  Type:            REG_DWORD
  Data:            0x9a8

Value 8
  Name:            First Help
  Type:            REG_DWORD
  Data:            0x9a9

Value 9
  Name:            Object List
  Type:            REG_SZ
  Data:            2472 2646

Value 10
  Name:            Library Validation Code
  Type:            REG_BINARY
  Data:
```

```
00000000   00 f6 f7 12 18 3b c3 01 - 00 5e 00 00 00 00 00 00
.ö÷..;Ã..^......



Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Security
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 2:48 PM
Value 0
  Name:            Security
  Type:            REG_BINARY
  Data:
00000000   01 00 14 80 90 00 00 00 - 9c 00 00 00 14 00 00 00
................
00000010   30 00 00 00 02 00 1c 00 - 01 00 00 00 02 80 14 00
0...............
00000020   ff 01 0f 00 01 01 00 00 - 00 00 00 01 00 00 00 00
ÿ...............
00000030   02 00 60 00 04 00 00 00 - 00 00 14 00 fd 01 02 00
..`.........ý...
00000040   01 01 00 00 00 00 00 05 - 12 00 00 00 00 00 18 00
................
00000050   ff 01 0f 00 01 02 00 00 - 00 00 00 05 20 00 00 00
ÿ........... ...
00000060   20 02 00 00 00 00 14 00 - 8d 01 02 00 01 01 00 00
...............
00000070   00 00 00 05 0b 00 00 00 - 00 00 18 00 fd 01 02 00
............ý...
00000080   01 02 00 00 00 00 00 05 - 20 00 00 00 23 02 00 00  ........
...#...
00000090   01 01 00 00 00 00 00 05 - 12 00 00 00 01 01 00 00
................
00 00 00 05 12 00 00 00 -                          ........


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\Enum
Class Name:        <NO CLASS>
Last Write Time:   7/30/2003 - 11:03 AM
Value 0
  Name:            0
  Type:            REG_SZ
  Data:            Root\LEGACY_W3SVC\0000

Value 1
  Name:            Count
  Type:            REG_DWORD
  Data:            0x1

Value 2
  Name:            NextInstance
  Type:            REG_DWORD
  Data:            0x1
```

```
Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\HTTP\Parameters
Class Name:        <NO CLASS>
Last Write Time:   7/30/2003 - 11:03 AM
Value 0
  Name:            DisableServerHeader
  Type:            REG_DWORD
  Data:            0x1

Value 1
  Name:            UriEnableCache
  Type:            REG_DWORD
  Data:            0

Value 2
  Name:            UriScavengerPeriod
  Type:            REG_DWORD
  Data:            0x2a30

Value 3
  Name:            MaxConnections
  Type:            REG_DWORD
  Data:            0x186a0


Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\HTTP\Parameters\SslB
indingInfo
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 2:49 PM

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\HTTP\Parameters\UrlA
clInfo
Class Name:        <NO CLASS>
Last Write Time:   6/25/2003 - 2:49 PM

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\HTTP\Parameters\Sync
hronize
Class Name:        <NO CLASS>
Last Write Time:   7/30/2003 - 11:03 AM
```

Component Services Configuration:
COM+ Component TPCC.AllTXns Settings:

Enable object pooling
Minimum pool size 100
Maximum pool size100
Creation timeout 60,000
Enable object construction
Enable just in time activation

Concurrency required

This section discloses the RTE parameters used on the PRIMERGY 870 system.

```
Profile:  TX300_HTML_4RTE_4280
File Path:F:\TX300_TPCC\TX300_HTML_4RTE_4280.pro
Version:  1.0.1

     Number of Engines: 8

          Name: DRIVER01
          Description: B210RT4 CL1
          Directory: c:\b210rt4_cl1.log
          Machine: b210rt4
          Parameter Set: All_Times3
          Index: 0
          Seed: 11063
          Configured Users: 5350
          Pipe Name: DRIVER1424171
          Connect Rate: 200
          Start Rate: 200
          CLIENT_NURAND: 233
          CPU: 0

          Name: DRIVER02
          Description: B210RT4 CL2
          Directory: c:\b210rt4_cl2.log
          Machine: b210rt4
          Parameter Set: All_Times3
          Index: 100000000
          Seed: 11063
          Configured Users: 5350
          Pipe Name: DRIVER2559625
          Connect Rate: 200
          Start Rate: 200
          CLIENT_NURAND: 233
          CPU: 1

          Name: DRIVER03
          Description: B210RT5 CL1
          Directory: c:\b210rt5_cl1.log
          Machine: b210rt5
          Parameter Set: All_Times3
          Index: 200000000
          Seed: 11063
          Configured Users: 5350
          Pipe Name: DRIVER31152533829
          Connect Rate: 200
          Start Rate: 200
          CLIENT_NURAND: 233
          CPU: 0

          Name: DRIVER04
          Description: B210RT5 CL2
          Directory: c:\b210rt5_cl2.log
          Machine: b210rt5
          Parameter Set: All_Times3
          Index: 300000000
          Seed: 11063
          Configured Users: 5350
          Pipe Name: DRIVER41152613064
          Connect Rate: 200
          Start Rate: 200
          CLIENT_NURAND: 233
          CPU: 1

          Name: DRIVER05
          Description: B210RT6 CL1
          Directory: c:\b210rt6_cl1.log
          Machine: b210rt6
          Parameter Set: All_Times3
          Index: 400000000
          Seed: 11063
          Configured Users: 5350
          Pipe Name: DRIVER51152680861
          Connect Rate: 200
          Start Rate: 200
          CLIENT_NURAND: 233
          CPU: 0

          Name: DRIVER06
          Description: B210RT6 CL2
          Directory: c:\b210rt6_cl2.log
          Machine: b210rt6
          Parameter Set: All_Times3
          Index: 500000000
          Seed: 11063
          Configured Users: 5350
          Pipe Name: DRIVER61152759001
          Connect Rate: 200
          Start Rate: 200
          CLIENT_NURAND: 233
          CPU: 1

          Name: DRIVER07
          Description: violet CL1
          Directory: c:\violet_cl1.log
          Machine: violet
          Parameter Set: All_Times3
          Index: 600000000
          Seed: 11063
          Configured Users: 5350
          Pipe Name: DRIVER7529280671
          Connect Rate: 200
          Start Rate: 200
          CLIENT_NURAND: 233
```

```
        CPU: 2

        Name: DRIVER08
        Description: violet CL2
        Directory: c:\violet_cl2.log
        Machine: violet
        Parameter Set: All_Times3
        Index: 700000000
        Seed: 11063
        Configured Users: 5350
        Pipe Name: DRIVER8529438500
        Connect Rate: 200
        Start Rate: 200
        CLIENT_NURAND: 233
        CPU: 3

    Number of User groups: 8

        Driver Engine: DRIVER01
        IIS Server: c200cl1
        SQL Server: twix
        User: sa
        Protocol: Html
        w_id Range: 1 - 535
        w_id Max Warehouse: 4280
        Scale: Normal
        User Count: 5350
        District id: 1
        Scale Down: No

        Driver Engine: DRIVER02
        IIS Server: c200cl2
        SQL Server: twix
        User: sa
        Protocol: Html
        w_id Range: 536 - 1070
        w_id Max Warehouse: 4280
        Scale: Normal
        User Count: 5350
        District id: 1
        Scale Down: No

        Driver Engine: DRIVER03
        IIS Server: c200cl1
        SQL Server: twix
        User: sa
        Protocol: Html
        w_id Range: 1071 - 1605
        w_id Max Warehouse: 4280
        Scale: Normal
        User Count: 5350
        District id: 1
        Scale Down: No

        Driver Engine: DRIVER04
        IIS Server: c200cl2
        SQL Server: twix
        User: sa
        Protocol: Html
        w_id Range: 1606 - 2140
        w_id Max Warehouse: 4280
        Scale: Normal
        User Count: 5350
        District id: 1
        Scale Down: No

        Driver Engine: DRIVER05
        IIS Server: c200cl1
        SQL Server: twix
        User: sa
        Protocol: Html
        w_id Range: 2141 - 2675
        w_id Max Warehouse: 4280
        Scale: Normal
        User Count: 5350
        District id: 1
        Scale Down: No

        Driver Engine: DRIVER06
        IIS Server: c200cl2
        SQL Server: twix
        User: sa
        Protocol: Html
        w_id Range: 2676 - 3210
        w_id Max Warehouse: 4280
        Scale: Normal
        User Count: 5350
        District id: 1
        Scale Down: No

        Driver Engine: DRIVER07
        IIS Server: c200cl1
        SQL Server: twix
        User: sa
        Protocol: Html
        w_id Range: 3211 - 3745
        w_id Max Warehouse: 4280
        Scale: Normal
        User Count: 5350
        District id: 1
        Scale Down: No

        Driver Engine: DRIVER08
        IIS Server: c200cl2
        SQL Server: twix
        User: sa
        Protocol: Html
        w_id Range: 3746 - 4280
        w_id Max Warehouse: 4280
        Scale: Normal
```

```
          User Count: 5350
          District id: 1
          Scale Down: No

     Number of Parameter Sets: 2


          All_Times3
          Run 2H
                          Txn     Think   Key     RT      RT      Menu
                          Weight  Time    Time    Delay   Fence   Delay
          New Order         44.90     12.05      18.01      0.10
5.00    0.10
          Payment           43.02     12.05       3.01      0.10
5.00    0.10
          Delivery           4.02      5.05       2.01      0.10
5.00    0.10
          Stock Level        4.03      5.05       2.01      0.10
20.00   0.10
          Order Status       4.03     10.05       2.01      0.10
5.00    0.10

          ~Default
          Default Parameter Set
                          Txn     Think   Key     RT      RT      Menu
                          Weight  Time    Time    Delay   Fence   Delay
          New Order         10.00     12.05      18.01      0.10
5.00    0.10
          Payment           10.00     12.05       3.01      0.10
5.00    0.10
          Delivery           1.00      5.05       2.01      0.10
5.00    0.10
          Stock Level        1.00      5.05       2.01      0.10
20.00   0.10
          Order Status       1.00     10.05       2.01      0.10
5.00    0.10
```

This section discloses the Microsoft SQL Server 2000 Enterprise Edition SP3 parameters used on the PRIMERGY TX300 server system.

```
Microsoft SQL Server Startup Parameters:

sqlservr -c -x -T3502 -g100

where:
-c Start SQL Server independently of the Windows NT Service Control Manager
-x Disables the keeping of CPU time and cache-hit ratio statistics
-T3502 Prints a message to the SQL Server log at start and end of each checkpoint
-g100 memory in MB reserved for memory requests outside the buffer pool

Microsoft SQL Server Stack Size:

The default stack size for Microsoft SQL Server 2000 was changed using the EDITBIN utility:
editbin /STACK:131072

1> 2> 3> 4> 5> 6> 7> 8> 9> 10> 11>
--  File:     VERSION.SQL
--            Microsoft TPC-C Benchmark Kit Ver. 4.22
--            Copyright Microsoft, 2001
--  Purpose:  Returns SQL Server version string



print " "
select convert(char(30), getdate(),9)
print " "

 ------------------------------
 Jul 25 2003 11:55:53:390AM

(1 row affected)

1> 2> 3>
select @@version




 ------------------------------------------------------------------------------
     -----------------------------------------------------------------------
     -----------------------------------------------------------------------
     -----------------------------------
 Microsoft SQL Server  2000 - 8.00.760 (Intel X86)
     Dec 17 2002 14:22:05
     Cop
     yright (c) 1988-2003 Microsoft Corporation
     Enterprise Edition on Windo
     ws NT 5.2 (Build 3790: )



(1 row affected)
1> 2>
1> 2> 3> 4> 5> 6> 7> 8> 9> 10>
--  File:     CONFIG.SQL
--            Microsoft TPC-C Benchmark Kit Ver. 4.22
--            Copyright Microsoft, 2001
--  Purpose:  Collects SQL Server configuration parameters


print " "
select convert(char(30), getdate(),9)
print " "

 ------------------------------
 Jul 25 2003 11:55:54:437AM

(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           15          15
 allow updates                  0           1            0           0
 awe enabled                    0           1            1           1
 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          -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   2147483647  2147483647
 max text repl size (B)         0  2147483647        65536       65536
 max worker threads            32       32767          252         252
 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          116         116
 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

Note : Numbers are in KBytes unless otherwise specified						U
Warehouses	**4280**	**tpmC**	53691	**tpmC/W**	12.54	
Table	**Rows**	**Data**	**Index**	**5% Space**	**8H Space**	**Total Space**
Warehouse	4,280	464	16	24		504
District	42,800	4,760	16	239		5,015
Item	100,000	9,528	32	478		10,038
New-order	38,520,000	609,016	1,400		342,400	952,816
History	128,400,000	7,133,344	16		1,431,765	8,565,125
Orders	128,400,000	3,935,640	1,789,632		1,149,142	6,874,414
Customer	128,400,000	93,381,824	5,568,136	4,947,498		103,897,458
Order-line	1,283,995,844	80,249,744	169,848		16,141,339	96,560,931
Stock	428,000,000	136,960,000	255,856	6,860,793		144,076,649
Totals		322,284,320	7,784,952	11,809,032	19,064,647	360,942,951
Segment	**LogDev Cnt.**	**Seg. Size**	**Needed**	**Overhead**		**Not Needed**
misc	1	133,120,000	114,098,532	1,140,985		17,880,482
customer/stock	4	249,856,000	250,453,848	2,504,538		(3,102,386)
Totals		382,976,000	364,552,380	3,645,524		14,778,096
Dynamic space	91,318,728	Sum of Data for Order, Order-Line and History				
Static space	254,205,099	Data + Index + 5% Space + Overhead - Dynamic space				
Free space	22,674,077	Total Seg. Size - Dynamic Space - Static Space - Not Needed				
Daily growth	18,328,949	(Dynamic space/W * 62.5)* tpmC				
Daily spread	(4,819,347)	Free space - 1.5 * Daily growth (zero if negative)				
60 day (KB)	1,353,942,032	Static space + 60 (daily growth + daily spread)				
60 day (GB)	1,291.22	60-day space in GB (excludes OS, Paging and RDBMS Logs)				
Log size (MB)	80,000	Total size of log file				
% Log used	55.4134	% of log file used during entire run				
Total N-O Txn	9798068	Total count of N-O transactions during entire run				
Log per N-O txn	4.6330	KB of log per New-Order transaction				
8 Hour Log (GB)	113.87	8 hours of log in GB (excluding space for redundancy)				
Disk Capacity	**MB**	**GB**	**disks needed**	**disks priced**	**GB priced**	
18 GB 15000 rpm	17300	16.89		196	3,311.33	
60 day (GB)		1,291.22	76.43	196	3,311.33	
Disk Capacity	**MB**	**GB**	**disks needed**	**disks priced**		
18 GB 15000 rpm	17300	16.89				
8 Hour Log (RAID 1)		113.87	6.74	7+7		

Appendix E - Price Quotations

Microsoft Corporation
One Microsoft Way
Redmond, WA 98052-6399

Tel 425 882 8080
Fax 425 936 7329
http://www.microsoft.com/

Microsoft

July 27, 2003

Fujitsu-Siemens Computers
Detlev Seidel
FSC EP PS DS3
Heinz-Nixdorf-Ring 1
Paderborn, AL 33106

Mr. Seidel:

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
810-00845	**SQL Server 2000 Enterprise Edition** *Per processor licensing* *Discount Schedule: Open Program Level B* *Unit Price reflects a 14% discount from the retail unit price of $19,999.*	$17,279	2	$34,558
P73-00295	**Windows Server 2003, Standard Edition** *Server license only - No CALs* *Discount Schedule: Open Program - No Level* *Unit Price reflects a 26% discount from the retail unit price of $999.*	$738	2	$1,476
P72-00264	**Windows Server 2003, Enterprise Edition** *Server license only - No CALs* *Discount Schedule: Open Program - No Level* *Unit Price reflects a 40% discount from the retail unit price of $3,999.*	$2,399	1	$2,399
254-00170	**Visual C++ Standard** *No discounts applied*	$109	1	$109
PRO-PRORS-16U-01	**Database Server Support Package** *1 Year Term*	$1,950	3	$5,850

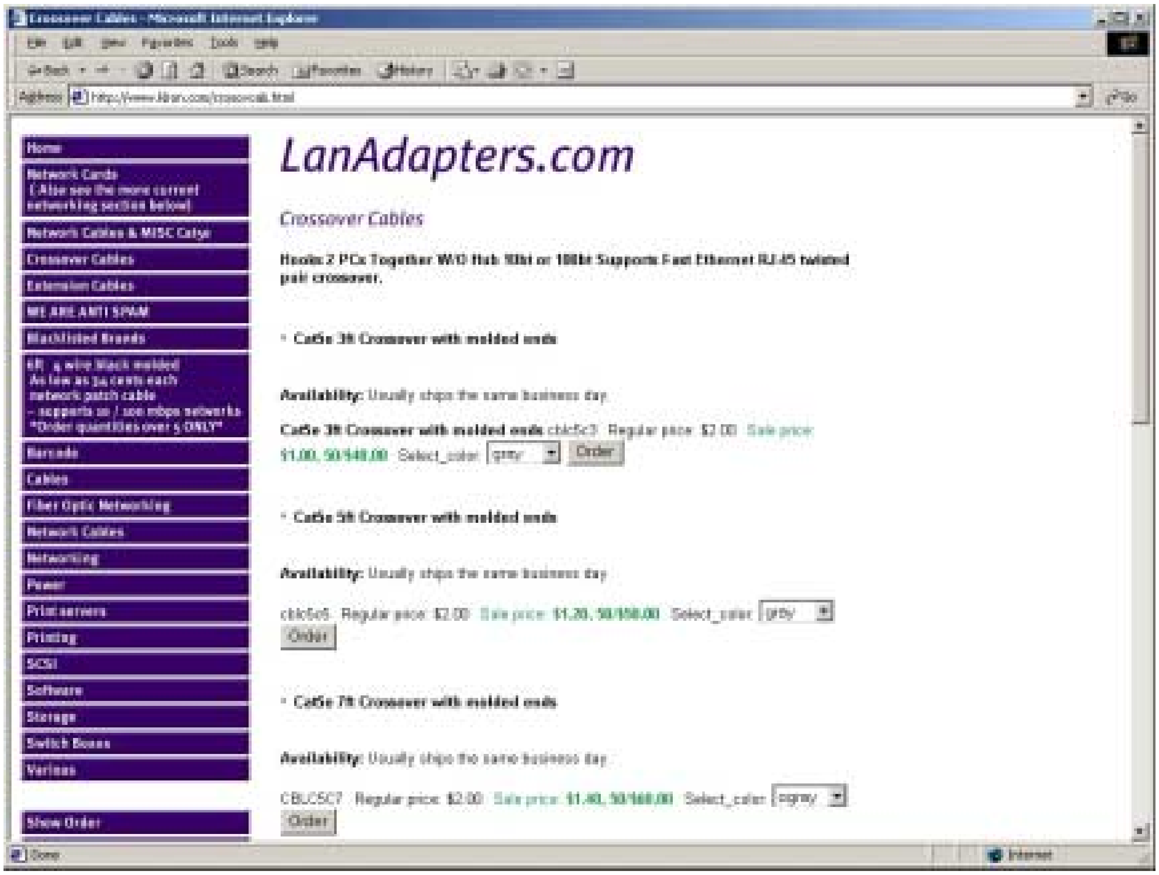
Some products may not be currently orderable but will be available through Microsoft's normal distribution channels by April 2, 2003.

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: PCdese0327079036

Please include this Reference ID in any correspondence regarding this price quote.


Crossover Cables - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://www.lanadapters.com/crossovcab.html
Go
Home
Network Cards (Also see the more current networking section below)
Network Cables & MISC Catye
Crossover Cables
Extension Cables
WE ARE ANTI SPAM
Blacklisted Brands
6ft 4 wire black molded As low as 34 cents each network patch cable - supports 10 / 100 mbps networks *Order quantities over 5 ONLY*
Barcode
Cables
Fiber Optic Networking
Network Cables
Networking
Power
Print servers
Printing
SCSI
Software
Storage
Switch Boxes
Various
Show Order
Done
Internet

LanAdapters.com

Crossover Cables

Hooks 2 PCs Together W/O Hub 10bt or 100bt Supports Fast Ethernet RJ45 twisted pair crossover.

- **Cat5e 3ft Crossover with molded ends**

Availability: Usually ships the same business day.

Cat5e 3ft Crossover with molded ends cblc5c3 Regular price: $2.00 Sale price: $1.00, 50/$40.00 Select_color: grey Order

- **Cat5e 5ft Crossover with molded ends**

Availability: Usually ships the same business day

cblc5c5 Regular price: $2.00 Sale price: $1.20, 50/$50.00 Select_color: grey Order

- **Cat5e 7ft Crossover with molded ends**

Availability: Usually ships the same business day

CBLC5C7 Regular price: $2.00 Sale price: $1.40, 50/$60.00 Select_color: ltgrey Order

Appendix F - Attestation Letter

Benchmark Sponsor: Peter Simon
Fujitsu Siemens Computers
Heinz-Nixdorf-Ring 1
D-33106 Paderborn, Germany

August 8, 2003

We remotely verified the TPC Benchmark™ C performance of the following Client/Server configuration:

Platform:	**Siemens PRIMERGY TX300**
Operating system:	**Microsoft Windows Server 2003 Enterprise Edition**
Database Manager:	**Microsoft SQL Server 2000 Enterprise Edition SP3**
Transaction Manager:	**Microsoft COM+ (Included in Windows 2003)**

The results were:

CPU's Speed	Memory	Disks	NewOrder 90% Response Time	**tpmC**
Server: Siemens PRIMERGY TX300				
2 x Intel Xeon DP (3.06 GHz)	12 GB Main (1M iL3 Cache per processor)	211 x 18 GB	0.60 Seconds	**53,691.33**
Two (2) Clients: PRIMERGY C200 (Specification for each)				
2 x Pentium III (1400 MHz)	512 MB Main Cache: 512 KB	1 x 18 GB	n/a	n/a

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

- The database records were the proper size
- The database was properly scaled and populated

- The required ACID properties were met
- The transactions were correctly implemented
- 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.
- All 90% response times were under the specified maximums
- At least 90% of all delivery transactions met the 80 Second completion time limit
- The reported measurement interval was 120 minutes (7200 seconds)
- The reported measurement interval was representative of steady state conditions
- One checkpoint was taken during the reported measurement interval
- The repeatability of the measured performance was verified
- The 60 day storage requirement was correctly computed
- The system pricing was verified for major components and maintenance

Respectfully Yours,

François Raab, President

Bradley J. Askins, Auditor